HES Cabling Systems
Connecting Networks™

HCS Product Catalog

HCS, HES CABLING SYSTEMS

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HCS Company Profile

New Horizons in LAN Cabling Systems

As opposed to many of our competitors, the HCS concept is based on true technical advantage not on marketing hype.
HCS products and solutions are designed to provide long-lasting, future-proof cabling systems, backed with the HCS Unique Century™ Lifetime Warranty, which covers both the components and performance.
HCS, with its headquarters in Istanbul and with branches all over Turkey, is geared to provide true, up-to-date technical assistance in the design, selection and installation of local area networks.
The high level of Turkish content, combined with the latest West-European and North-American know-how, technology and machinery, provide the best cost/performance ratio in the Turkish market, beyond any competition.
HCS experts are trained to provide true technical advice and assistance for LAN cabling designers, installers and end-users.
The mission of the HCS marketing engineers is to provide a full range of technical solutions, from which the customer can select the optimal solution for his specific need.
Most HCS products are manufactured in Turkey, so instead of spending money on transportation, import duties and currency conversion the Turkish customers have, for the first time, the opportunity to pay only for the product itself.
The extensive HCS program is specifically built for the market needs, so the designers, integrators and installers of LAN cabling systems have the option to select the products they need - not the products that happen to be available in stock.

Concept

The HCS concept is based on one major goal: To provide total customer satisfaction for the entire lifetime of the cabling system.
For this purpose, all HCS components are designed and manufactured in full compliance with the most updated cabling standards and drafts, and tested rigorously, providing a fail-safe operation of the installed system.
HCS provides total network cabling solutions, based on innovative products for the transmission of voice, data and video-imaging signals.
The HCS program includes a wide range of UTP, FTP, SFTP and S-STP Copper and Fiber Optics products, including backbone cables, horizontal cables, flexible terminated cords, connecting hardware and other passive elements.
All products and services meet or exceed all recognized industry standards and drafts, including ISO/IEC 11801, IEC 61156, CENELEC EN 50173 & EN50228, TIA/EIA-568-A, TIA/EIA-568-B. and TIA/EIA-568-C

Major key benefits offered by HES Cabling Systems are listed below:

- Century™ Lifetime Warranty - Providing the best possible warranty program.
- Highly competitive price and outstanding cost/performance ratio.
- Fully verified components by independent test facilities - ensuring highest and constant quality.
- Turkish made components - Duty-free and low cost of delivery.
- DoubleSafe™ Quality Assurance Program - ensuring lowest rejection rate.
- The one and only Turkish manufacturer of state-of-the-art LAN Cabling Systems, based on European know-how, machinery and technology.
- 24 hours Technical Support in Turkish and English.
- Ergonomic components, tools and accessories - for fast and easy installation.
- Technical literature, catalogs and specifications printed in English and Turkish.
- All components available in local stocks, ensuring fast and reliable deliveries and service.
- HCS is a part of HES Kablo and the BOYDAK Group, one of Turkey's largest industrial groups.
- OEM and custom production and marking available upon request

HCS DoubleSafe™ Quality Program

Our Motto: Good Products = Happy Customers

The DoubleSafe™ Program combines HCS state-of-the-art QA system with the best warranty in the industry, The Century™ Lifetime Warranty .
This unique combination ensures that any properly installed and maintained HCS network will not only exceed all standard requirements and pass the autotest in the first trial - but it will also continue to exceed the original requirements with no time limitation.

The transmission properties of all HES Cabling Systems and their ability to support all present application are warranted for lifetime.

This unprecedented warranty is based on high performance components designed by experts, installed and maintained by HCS certified installers.

Being a part of the BOYDAK Group - one of Turkey's largest corporations, the HCS is backed by a large enterprise with manufacturing sites, R&D centers and sales offices all over Turkey.

The main manufacturing and development center in Kayseri is ISO 9001, 14001, 18001 certified.

HCS strategic distribution partners deliver HCS systems to installers and resellers all over Turkey, so when you choose HCS, you choose a partner who can design, install and service your networks anywhere in Turkey.
The quality of the HCS components is assured by the personal responsibility of each and every team member, being personally responsible for the quality of its own work and having the authority to control it.

HCS is driven by a deep commitment to quality, as reflected in ISO 9001 and ISO 14001

HCS is guided by 3 cornerstones:

- To be a market-driven, cost effective producer of high-quality, innovative products providing the needs of the world telecommunications market.
- To accomplish this through a process of ongoing improvements driven by the HCS people working together to realize their individual potential and the potential of all HES and HCS resources.
- To consistently demonstrate superior services to our customers and to contribute to the success and the growth of HCS.

HCS is committed to supply state of the art, quality products with guaranteed performance levels which not only meet but exceed international standards.

HCS products are designed to minimize environmental impact by the use of materials and construction that facilitate long life, re-use, recycling and responsible disposal at the end of their life, as defined by ISO/EN 14001.

Accreditation to the ISO 9001 standard together with the “Total Quality” manufacturing and business excellence program are used to assure a total satisfaction of the HCS clients and trouble-free operation of the HES Cabling Systems for long and successful years.

HCS Century™ Lifetime Warranty

Lifetime Warranty Coverage

Component Warranty
All HCS components are warranted to be free from manufacturing defects in material or workmanship, under normal and proper use, subject to the terms & conditions of the HCS Component Warranty.

System Performance Warranty
All HCS channels and permanent links are warranted to comply with the category the system is certified to, as indicated in the specific warranty.

Application Assurance Warranty
All HCS networks are warranted to be free from defects which prevent the operation of standards based applications and protocols for the category which the system is certified to, as detailed in the attached Supported Application Table.

HCS Definitions

An HCS Certified System is defined as follows:
All the system components must be HCS approved passive connectivity products. Any active equipment, public network interface, or terminal equipment are not covered by the HCS Lifetime Warranty.
The entire system must be installed and commissioned by an authorized HCS Certified Installer. Other installations are not covered by the HCS Lifetime Warranty.
All equipment used in the installation must be installed and tested in full compliance to the practices specified in the HCS Manuals, according to relevant standards and with full compliance with the registered category performance.
The entire system must be instaled according to the **INCREMENTAL INSTALLTION & TESTING PROCEDURE**, detailed below.

HCS Performance Commitment
In case a certified HCS channel fails to comply with any of the warranted parameters an HCS expert will evaluate the HCS responsibilities under this warranty and provide the remedies promised herein. Any such repair or replacement shall be warranted under the terms of this warranty. In case the failure is proved to be caused by an HCS component the rectification of the system will be made at no cost to the end user. HCS will supply or repair all components free of charge and pay the labor costs associated with system fault diagnosis and rectification.
The HCS Performance Commitment, The HCS Component Warranty, The HCS Performance Warranty and the HCS Application Asurance Quality are void in case the **INCREMENTAL INSTALLATION & TESTING PROCEDURE** is not followed & documented properly.

Warranty Limitations
Only the repair or replacement of elements in a Certified HCS network by HCS or by its designated Certified Installer is provided under this warranty.
This warranty is limited to the original and user for whom it was installed and is not transferable.
This warranty is only applicable to the transmission properties and applications of the category, standard or draft standard to which the warranted channels or links were tested to, as indicated in the specific warranty. Updates, modifications and revisions of standarts published after the date of testing may not be retroactively applied to this warranty.
This warranty is only applicable to Channels and Links that were tested & reported. Failed or non-tested Links or Channels are automatically excluted from the warranty. Channel warranty is not applicable to Link warranty and vice-versa.
HCS makes on other representation or warranty of any other kind, expressed or implied with respect to the components sold hereunder, whether as to merchantability, fitness for a particular purpose or any other matter.
Under no circumstances or conditions shall the HCS be liable or responsible for any claim of any buyer for costs, expenses, direct or consequential damages due to the use or misuse of the HCS products.
This warranty does not cover failure of any HCS systems or components resulting from actions or events beyond the control of HCS including, without limitation, unauthorized or improper repairs, modifications, misuse, accidents, fire, water damage, and acts of God.
This warranty does not include modular cords and terminated work-area cables.
This warranty shall be expanded only to the extent required by applicable local law.
The HCS sole liability relevant to the HCS Component Warranty is limited to the costs of the HCS components.
HCS shall not be liable for any other cots, including but not limited to cots associated with components fault diagnosis, rectifaction and installation lobar.

HCS CABLING SYSTEMS SUPPORTED APPLICATION

Applications	Source	DataLink 100 CAT 5	DataLink 100E CAT 5E Class D	DataLink 250 CAT 6 Class E	DataLink 500A CAT 6A Class EA	DataLink 600 CAT 7 Class F	DataLink 1000 CAT 7A Class FA	DataLink 1200	DataLight 62.5/125µ OM1&OM2 MM FO	DataLight 50/125µ OM1&OM2 MM FO	DataLight 50/125µ OM3&OM4 MM FO	DataLight 9/125µ OS1 SM FO	DataLight 9/125µ OS2 SM FO
Token-Ring 4&16 Mbps	IEEE 802.5	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
Token-Ring FO	IEEE 802.5j	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	NO	NO
10BASE-T	IEEE 802.3j	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
10BASE-F	IEEE 802.3j	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	NO	NO
100BASE-TX	IEEE802.3u	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
100BASE-T4	IEEE802.3u	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
100BASE-FX	IEEE802.3u	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	NO	NO
1000BASE-T	IEEE802.3ab	NO	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
1000BASE-F	IEEE802.3z	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	YES	YES
1000BASE-TX	TIA/EIA-854	NO	NO	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
10GBASE-T	IEEE802.3an	NO	NO	NO	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
40 GBASE-LR4	IEEE802.3ba	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	NO	NO	YES	YES
40 GBASE-SR4	IEEE802.3ba	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	NO	YES	NO	NO
40 GBASE-CR4	IEEE802.3ba	NO	NO	NO	NO	NO	NO	NO	N/A	N/A	N/A	N/A	N/A
40 GBASE-KR4	IEEE802.3ba	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100GBASE-ER4	IEEE802.3ba	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	NO	NO	NO	YES
100GBASE-LR4	IEEE802.3ba	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	NO	NO	YES	YES
100GBASE-SR10	IEEE802.3ba	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	NO	YES	NO	NO
100GBASE-CR10	IEEE802.3ba	NO	NO	NO	NO	NO	NO	NO	N/A	N/A	N/A	N/A	N/A
ATM PMD25.6 Mbps on TP	ATM Forum	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
ATM PMD51.8 Mbps on TP	ATMForum	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
ATM PMD155 Mbps on TP	ATMForum	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A
ATM PMD155 Mbps on MMF	ATMForum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	YES	YES
ATM PMD1.2 Gbps onMM/SMF	ATMForum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	YES	YES
ATM PMD2.5 Gbps onMM/SMF	ATMForum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	YES	YES
FDDI PMD	ANSIX3T9.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	NO	NO
FDDI LCF PMD	ANSIX3.237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	YES	NO	NO
FDDI SM PMD	ANSIX3.184	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	NO	NO	YES	YES
FDDI TP-PMD	ANSIX3.263	YES	YES	YES	YES	YES	YES	YES	N/A	N/A	N/A	N/A	N/A

HCS INCREMENTAL INSTALLATION & TESTING PROCEDURE

Each and every HCS site shall be installed according to the INCREMENTAL INSTALLATION & TESTING PROCEDURE, as follows:

1. In any new installation, first install 20-30 links, terminate them and test them as Permanent Links.
In cases where the termination stage is done later, the installer shall temporarily terminate the links with HCS keystone jacks having the same Category as the horizontal cable.

2. Review all the results carefully and verify that all parameters, including but not limited to RL & NEXT, pass with margins of 3 dB minimum over the standard requirements.

3. If all results provide 3 dB minimum margin in all parameters you may continue the installation, installing 50 links at a time and testing at least 10% of links installed (5 links minimum in every 50 link batch).

4. In case any link shows margins smaller than of 3 dB stop the installation and check for the reason.
If you cannot find the reason please contact HCS for assistance.
The installation process must not continue until the source of problem is found and all results obtained are above the 3 dB minimum margin
In any case of doubt, question or problem please contact HCS headquarters for further instruction.

5. All the above pilot tests shall be saved properly, indicating all the relevant details, including time, date and site name, and shall be sent to HCS headquarters for inspection.

Support, Installation and Training Program

HCS service and support

Selecting HCS as the network supplier assures the best service and support available today.

An HCS certified installer will design, install and throughly test the system. All test results and documentations will be submitted to the HCS experts for evaluation. Upon approval, the HCS will issue the Century™ Lifetime Warranty Certificate that insures the performance of the system for its entire lifetime. HCS experts can also maintain all system moves, adds and changes, to ensure it operates as it should throughout the system's lifetime.

Installation and Training Programs

Even the best cabling system, designed by the best engineers, can fail if improperly installed.
For this reason only trained and certified professional are allowed to install the HCS components and to grant the Century™ Lifetime Warranty Certificate .

The HCS Training Centers are geared to provide in-depth installation seminars which include comprehensive training and rigorous tests. Only these experts who pass the final exams are allowed to become Certified HCS Installation Partners (CHIP).

All certified installers are required to constantly keep up-to-date on the latest HCS products and systems by undergoing compliance training on an annual basis.

Goals of The HCS Training Program (HTP)

The HTP is a comprehensive training program, designed for people with an adequate background. The HCS program includes a basic training and a constant updating program. This ensures superior workmanship, outstanding network performance and data integrity when HCS Networks are specified.

The basic training starts with intensive course in which participants learn how their installation practices can maximize the performance of the HCS physical layer components in voice, data, and video networks.

All HCS certified installers must participate in annual updating training and product education to retain their certificates. These updates cover new products, applications, sales tools, training options, and other updates.

HES and BOYDAK Group

HCS - HES Cabling Systems is a member of Boydak Holding - one of Turkey's Largest Industrial groups. Boydak Holding started as a small workshop in Kayseri (Turkey) in 1957, expanded to various branches and became a major player in Turkey's economics, with a wide range of products with a world-wide reputation.
The Boydak Group activity includes consumer products, marketing, textile & furniture production, banking & finance, cable production, transportation and more.
In Kayseri, one of Turkey's major industrial centers, The Boydak Group has four production sites with a 690,000 m^2 manufacturing area, 12500 employees, millions of US$ investments utilizing the most advanced, state-of-the-art technology and know-how.

HES KABLO

HES Hacılar Elektrik Sanayi ve Ticaret A.S. (HES) established in 1974 is a leading cable manufacturer in Turkey and the Globe.
Having 35 years of experience, HES has become an international leading company in wire and cable industry producing Copper Telecommunication Cable, Fiber Optic Cable, Data & LAN Cable, Energy Cable, Overhead Line Conductor, Copper Wire, Enameled Wire and PVC Granule. HES has completed the investment of a new integrated production plant where the production of high voltage cables up to 154 kV (max 220 kV) is performed by most advanced technology and methods.
The production is performed at fully integrated plant with the total floor space of 71,000 m^2 and site area of 234,500 m^2 with the latest technologies and using the most updated machinery and methods under the supervision of skilled and experienced staff assuring the most updated & quality products.
All the production and QC procedures are achieved by the procedures and regulations of obtained ISO 9001, ISO 14001, OHSAS 18001 and relevant international standards.
Being a leading international cable manufacturer, HES products are supplied to all over the world over 30 years, in conformity with the international standards such as VDE, IEC, BS, CENELEC, TIA/ EIA and also special customer requirements. Quality control of the products is fastidiously performed by the most updated equipments and methods.
All these advanced technology and experience ensure high quality of products and make. HES as a reputable brand name worldwide in cable industry.



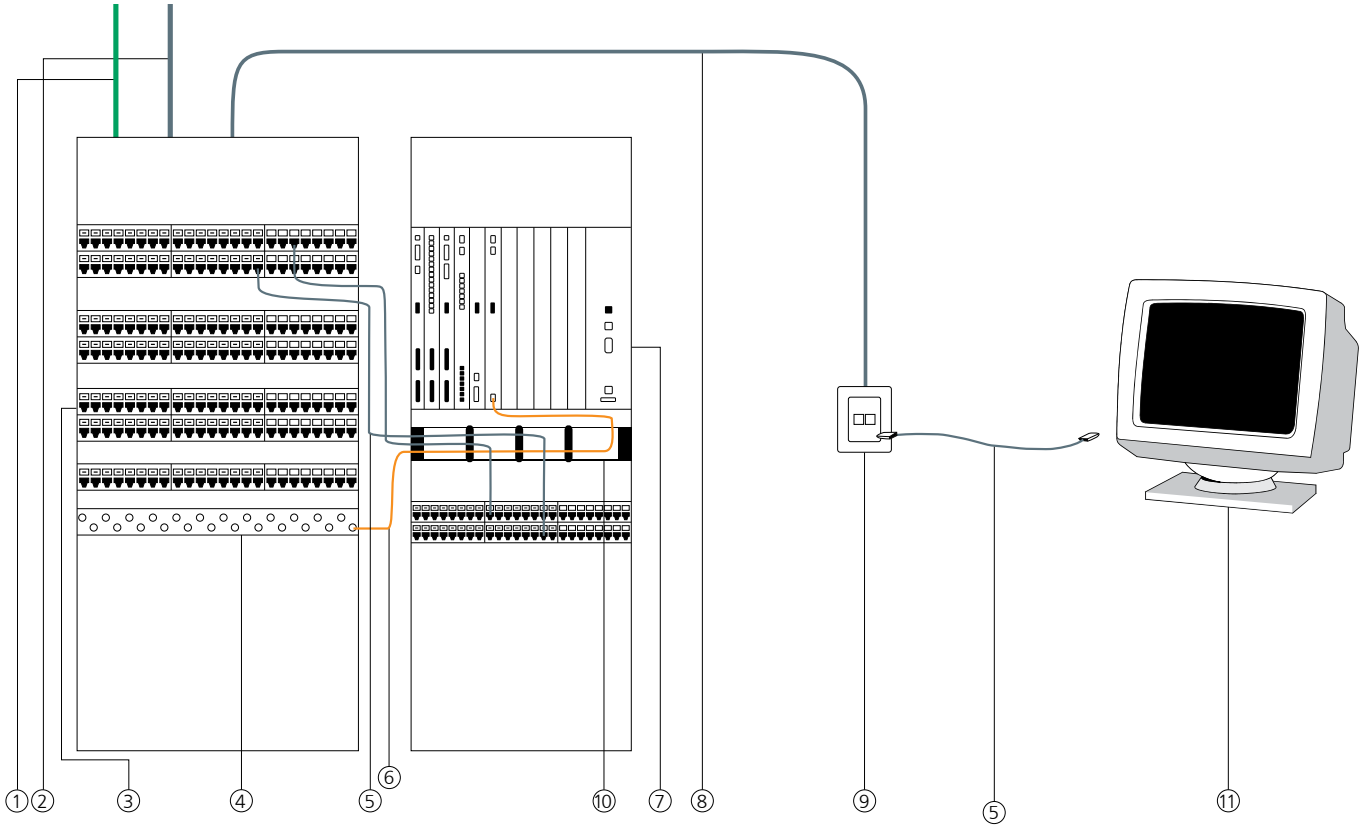

HCS Standard References

HCS products and networking components conform to the relevant parts of the following standards and drafts

Standard/Draft	Title	Date of Reference
ANSI/TIA/EIA-568-A&B	Telecommunications Cabling Standards	Obsolete
ANSI/TIA-568-C.0	Generic Telecommunications Cabling for Customer Premises	February 2009
ANSI/TIA-568-C.1	Commercial Building Telecommunications Cabling Standard	February 2009
ANSI/TIA-568-C.2	Balanced Twisted-Pair Telecommunications Cabling and Components Standards	August 2009
ANSI/TIA-568-C.3	Optical Fiber Cabling Components Standard	June 2008
ANSI/TIA/EIA-570-B	Residential Telecommunications Infrastructure Standard	April 2004
ISO/IEC 11801:2002	Information Technology - Cabling for customer premises - Corr. 1 & 2	2002
ISO/IEC 11801:2008	Information Technology - Generic cabling for customer premises - Amendments 1 & 2	2008-2009
IEC 60603-7	Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	July 2008
IEC 60603-7-1	Connectors for electronic equipment - Part 7-1: Detail specification for 8-way, shielded, free and fixed connectors	June 2009
IEC 60603-7-2	Connectors for electronic equipment - Part 7-2: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz	March 2007
IEC 60603-7-3	Connectors for electronic equipment - Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz	January 2008
IEC 60603-7-4	Connectors for electronic equipment - Part 7-4: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	February 2005
IEC 60603-7-5	Connectors for electronic equipment - Part 7-5: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	March 2007
IEC 60603-7-7	Connectors for electronic equipment - Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 600 MHz	June 2006
IEC 60603-7-41	Connectors for electronic equipment - Part 7-41: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz	Forecast: 2010
IEC 60603-7-51	Connectors for electronic equipment - Part 7-51: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz	Forecast: 2010
IEC 60793-1	Optical fibers definitions & test methods, sections 1-54	2001-2008
IEC 60793-2	Optical fibers - Part 2: Product specifications sections 10-60	2001-2008
IEC 60794-1-1&2	Optical fiber cables - Part 1-1 & 1-2: Generic specification	2001-2003
IEC 60794-2	Optical fiber cables - Part 2: Indoor cables - Sectional specification, Sections 10-50	2002-2008
IEC 60794-3	Optical fiber cables - Part 3: Sectional specification - Outdoor cables - Sections 10-60	2001-2008
IEC 60874	Connectors for optical fibers and cables - Parts 1, 10, 14, 17 & 19	1997-2009
IEC 61156-1	Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification	October 2009
IEC 61156-2	Multicore and symmetrical pair/quad cables for digital communications - Part 2: Horizontal floor wiring - Sectional specification	April 2003
IEC 61156-3	Multicore and symmetrical pair/quad cables for digital communications - Part 3: Work area wiring - Sectional specification	November 2008
IEC 61156-4	Multicore and symmetrical pair/quad cables for digital communications - Part 4: Riser cables - Sectional specification	May 2009
IEC 61156-5	Multicore and symmetrical pair/quad cables for digital communications - Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1000 MHz - Horizontal floor wiring - Sectional specification	May 2009
IEC 61156-6	Multicore and symmetrical pair/quad cables for digital communications - Part 6: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz - Work area wiring - Sectional specification	June 2007
IEC 61156-7	Multicore and symmetrical pair/quad cables for digital communications - Part 7: Symmetrical pair cables with transmission characteristics up to 1200 MHz - Sectional specification for digital and analog communication cables	May 2005
IEC 61156-8	Multicore and symmetrical pair/quad cables for digital communications - Part 8: Symmetrical pair/quad cables with transmission characteristics up to 1200 MHz - Work area wiring - Sectional specification	May 2009
IEC 61935-1	Specification for the testing of balanced and coaxial information technology cabling - Part 1: Installed balanced cabling as specified in ISO/IEC 11801 and related standards	July 2009
IEC 61935-2	Specification for the testing of balanced and coaxial information technology cabling - Part 2: Cords and work area cords as specified in ISO/IEC 11801 and related standards	Forecast: 2010

Standard/Draft	Title	Date of Reference
EN 50173-1:2007	Information technology. Generic cabling systems. General requirements	August 2007
EN 50173-2:2007	Information technology. Generic cabling systems. Office premises	August 2007
EN 50173-3:2007	Information technology. Generic cabling systems. Industrial premises	December 2007
EN 50173-4:2007	Information technology. Generic cabling systems. Homes.	August 2007
EN 50173-5:2007	Information technology. Generic cabling systems. Data centers	August 2007
EN 50173-6	Information technology - Generic cabling systems - Part 6: Design of generic cabling within existing and new cabling structures in support service/application overlays other than those explicitly detailed in the other premises-specific standards	Forecast: 2011
EN 50288-1:2003	Multi-element metallic cables used in analogue and digital communication and control - Part 1: Generic specification	January 2004
EN 50288-2-1:2003	Multi-element metallic cables used in analogue and digital communication and control -Part 2-1: Sectional specification for screened cables characterized up to 100 MHz - Horizontal and building backbone cables	January 2004
EN 50288-2-2:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 2-2: Sectional specification for screened cables characterized up to 100 MHz - Work area and patch cord cables	January 2004
EN 50288-3-1:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 3-1: Sectional specification for unscreened cables characterized up to 100 MHz - Horizontal and building backbone cables	January 2004
EN 50288-3-2:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 3-2: Sectional specification for unscreened cables characterized up to 100 MHz - Work area and patch cord cables	January 2004
EN 50288-4-1:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 4-1: Sectional specification for screened cables characterized up to 600 MHz - Horizontal and building backbone cables	January 2004
EN 50288-4-2:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 4-2: Sectional specification for screened cables characterized up to 600 MHz - Work area and patch cord cables	January 2004
EN 50288-5-1:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 5-1: Sectional specification for screened cables characterized up to 250 MHz - Horizontal and building backbone cables	February 2004
EN 50288-5-2:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 5-2: Sectional specification for screened cables characterized up to 250 MHz - Work area and patch cord cables	February 2004
EN 50288-6-1:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 6-1: Sectional specification for unscreened cables characterized up to 250 MHz - Horizontal and building backbone cables	February 2004
EN 50288-6-2:2003	Multi-element metallic cables used in analogue and digital communication and control -- Part 6-2: Sectional specification for unscreened cables characterized up to 250 MHz - Work area and patch cord cables	February 2004
prEN 50288-9-1:200X	Multi-element metallic cables used in analogue and digital communications and control -- Part 9-1: Sectional specification for screened cables characterized up to 1 000 MHz - Horizontal and building backbone cables	Forecast: 2010
prEN 50288-10:200X	Multi-element metallic cables used in analogue and digital communication and control -- Part 10: Sectional specification for cables characterized up to 500 MHz - Horizontal and building backbone cables	Forecast: 2010
prEN 50288-11:200X	Multi-element metallic cables used in analogue and digital communication and control -- Part 11: Sectional specification for un-screened cables, characterized up to 500 MHz, for horizontal and building backbone wiring	Forecast: 2010

Category 5E UTP System Demonstration



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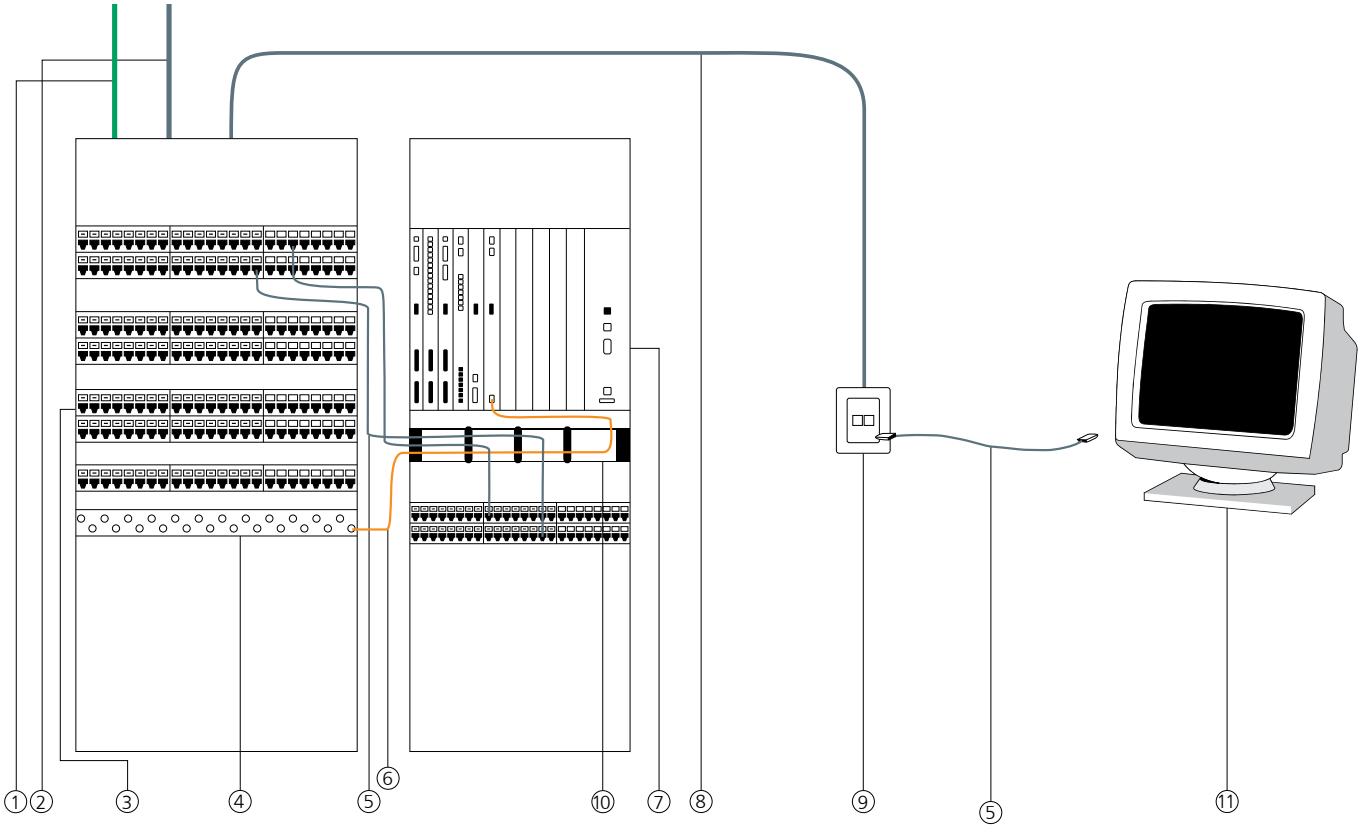
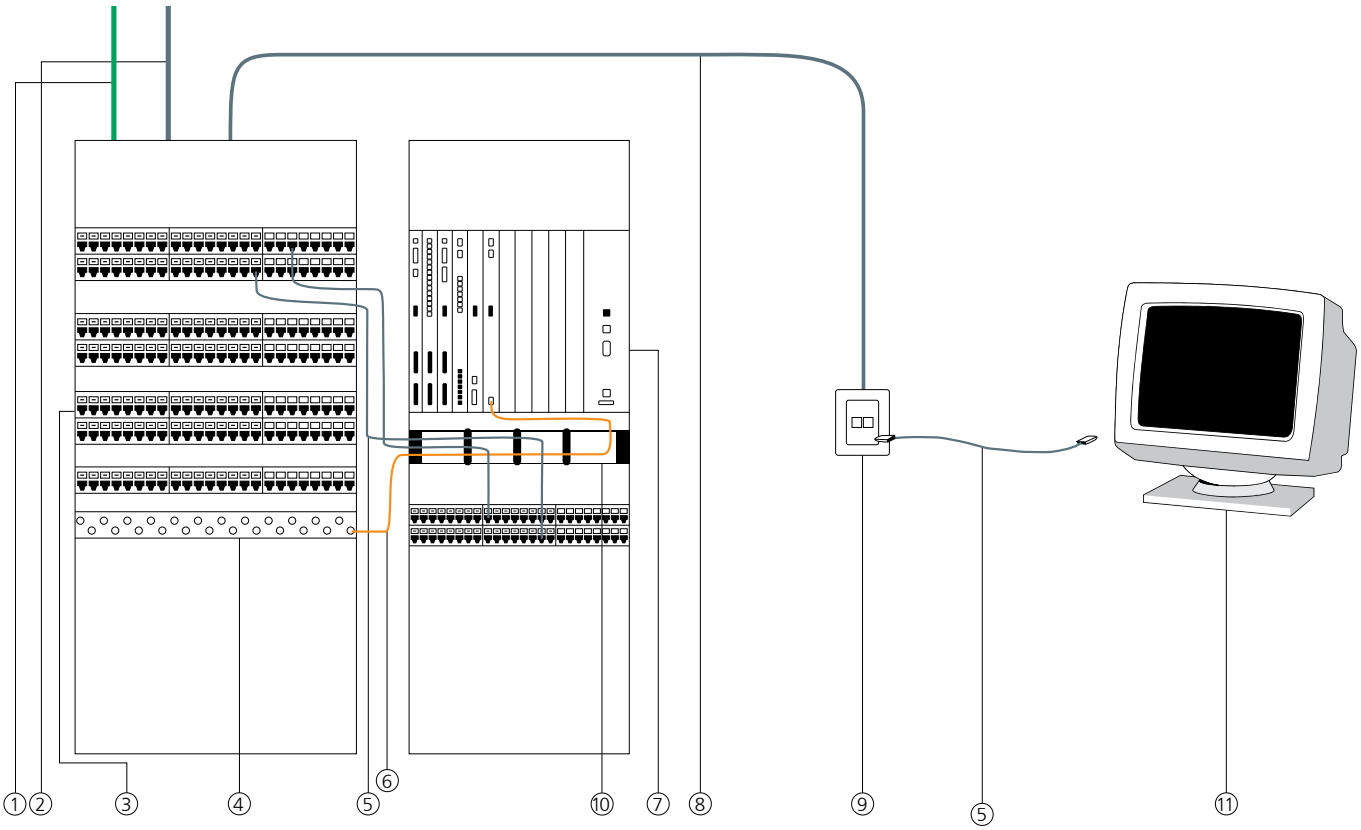
		Japanese Type Faceplates	259
10.	Cable Management	Cable Organizer	252
11.	PC (Personal Computer)	Customer Provided	

Category 5E Shielded System Demonstration



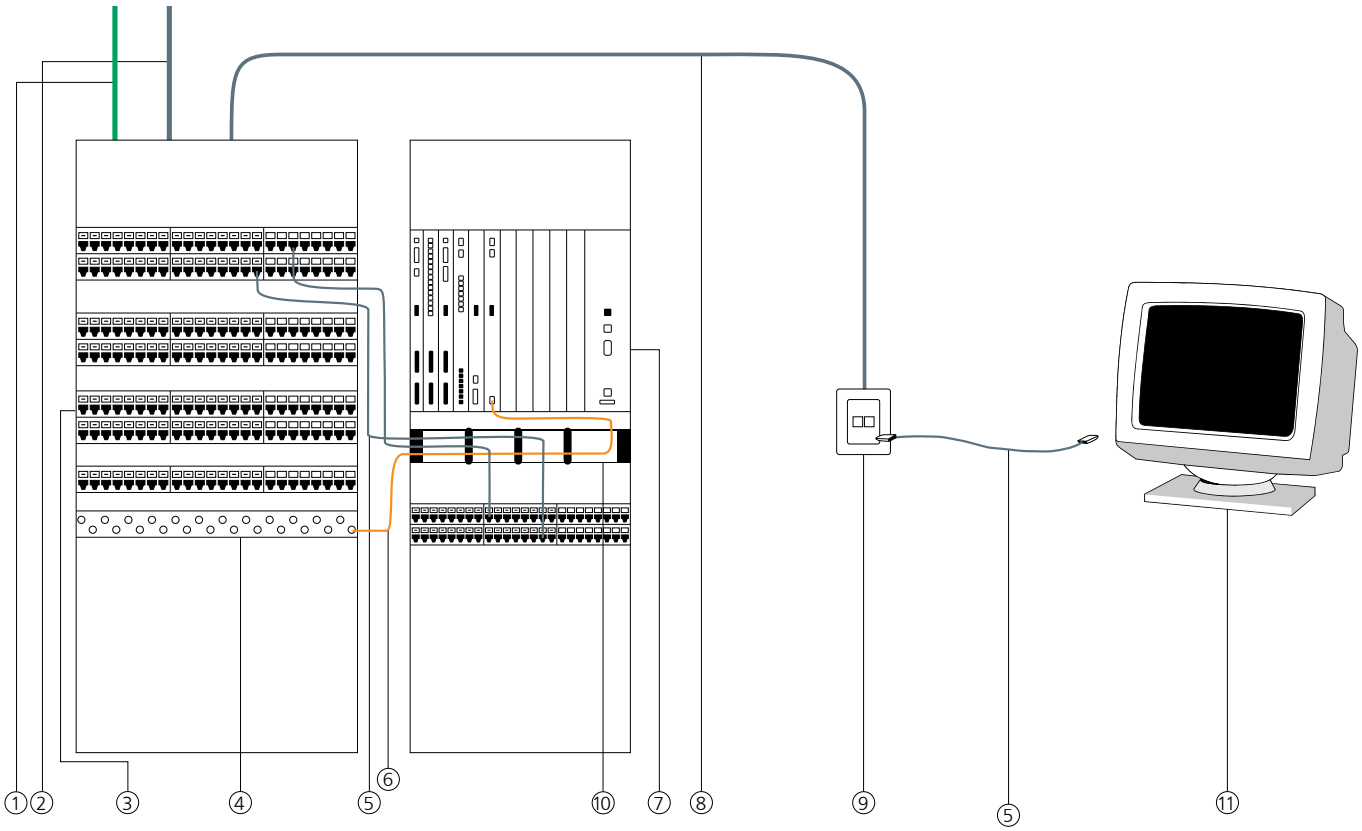
	DESCRIPTION	PRODUCT	PAGE NO.
1.	Fiber Optic Backbone Cable	Indoor Multi-Tight Distribution Fiber Optic Cables Breakout Fiber Optic Cables Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables Indoor/Outdoor Single Loose Tube Fiber Optic Cables	202-203 200-201 204-205 208-209
2.	Copper Backbone Cables	Category 5 F/UTP 100 Ohm Horizontal and Backbone LAN Cables Category 5 SF/UTP 100 Ohm Horizontal and Backbone LAN Cables	48-49 52-53
3.	Horizontal and Backbone Distribution Copper Patch Panel	Category 5E Unshielded RJ45 Copper Patch Panels Keystone Jack Copper Patch Panels	110-111 122-123
4.	Backbone Distribution Fiber Optic Patch Panel	Fiber Optic Standard 19” Patch Panels	232-233
5.	Copper Patchcords	Category 5E F/UTP 100 Ohm Patch Cords Category 5E SF/UTP 100 Ohm Patch Cords	128-129 130-131
6.	Fiber Optic Patchcords	Fiber Optic Patch Cords	240-241
7.	Active Equipment	Customer Provided	
8.	Horizontal Distribution Cable	Category 5E F/UTP 100 Ohm Horizontal LAN Cables Category 5E SF/UTP 100 Ohm Horizontal LAN Cable	48-49 52-53
9.	Workstation Outlet	German Style Faceplates Category 5E Shielded RJ-45 Keystone Jacks French (Legrand) Type Faceplates UK Type Faceplates US Type Faceplates LJ6C Type Faceplates Surface Boxes Multimedia Communications Boxes Japanese Type Faceplates	188-189/190-191 166-167/168-169 254 255 253 256 258 257 259
10.	Cable Management	Cable Organizer	252
11.	PC (Personal Computer)	Customer Provided	

Category 6 UTP System Demonstration



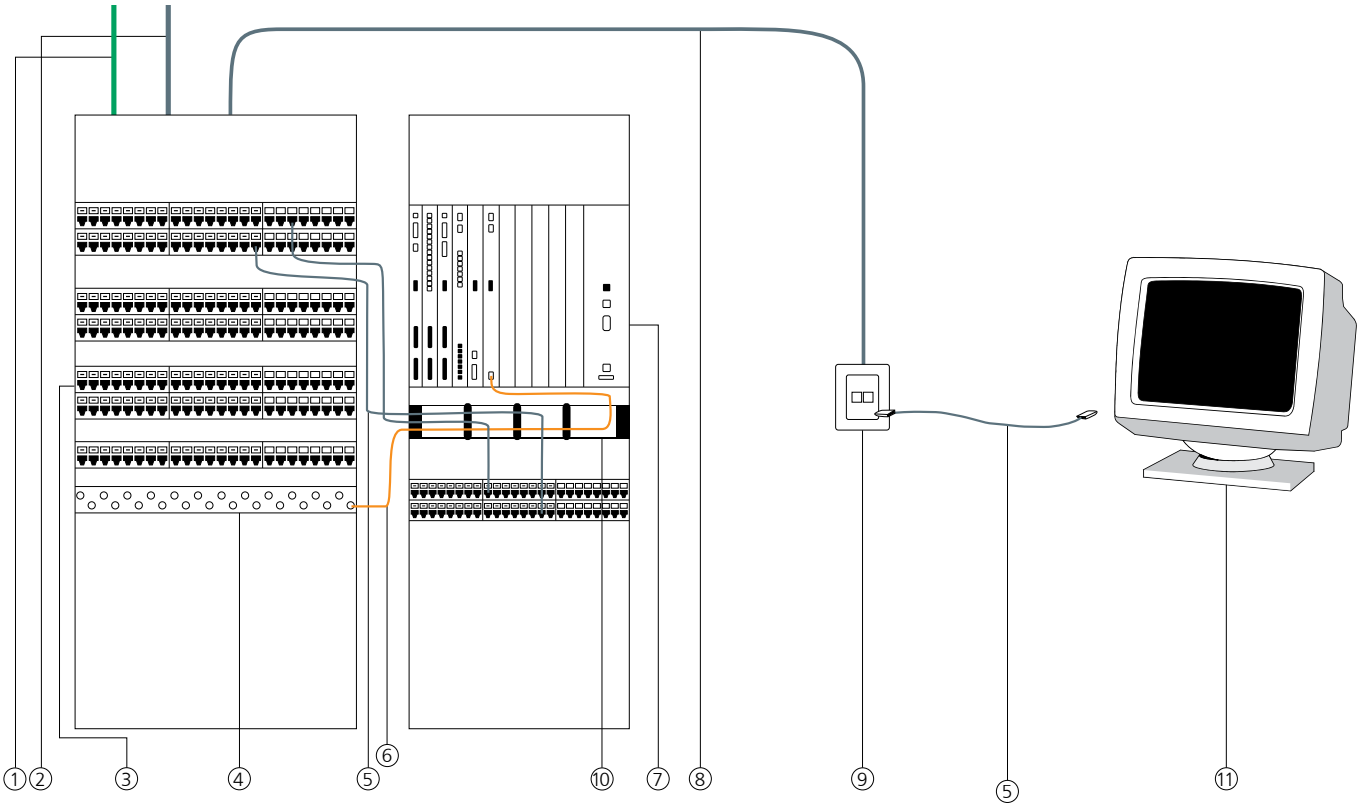
	DESCRIPTION	PRODUCT	PAGE NO.
1.	Fiber Optic Backbone Cable	Indoor Multi-Tight Distribution Fiber Optic Cables Breakout Fiber Optic Cables Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables Indoor/Outdoor Single Loose Tube Fiber Optic Cables	202-203 200-201 204-205 208-209
2.	Copper Backbone Cables	Category 5 U/UTP 100 Ohm Horizontal and Backbone LAN Cables	46-47
3.	Horizontal and Backbone Distribution Copper Patch Panel	Category 6E Unshielded RJ45 Copper Straight Patch Panels Keystone Jack Copper Patch Panels	114-115/116-117/118-119 122-123
4.	Backbone Distribution Fiber Optic Patch Panel	Fiber Optic Standard 19” Patch Panels	232-233
5.	Copper Patchcords	Category 6 U/UTP 100 Ohm Patch Cords	132-133
6.	Fiber Optic Patchcords	Fiber Optic Patch Cords	240-241
7.	Active Equipment	Customer Provided	
8.	Horizontal Distribution Cable	Category 6 U/UTP 100 Ohm Horizontal LAN Cables Category 6E U/UTP 100 Ohm Horizontal LAN Cables	60-61 72-73
9.	Workstation Outlet	Category 6E Unshielded RJ-45 Keystone Jacks French (Legrand) Type Faceplates UK Type Faceplates US Type Faceplates LJ6C Type Faceplates Surface Boxes Multimedia Communications Boxes Japanese Type Faceplates	170-171/172-173 254 255 253 256 258 257 259
10.	Cable Management	Cable Organizer	
11.	PC (Personal Computer)	Customer Provided	

Category 6 Shielded System Demonstration



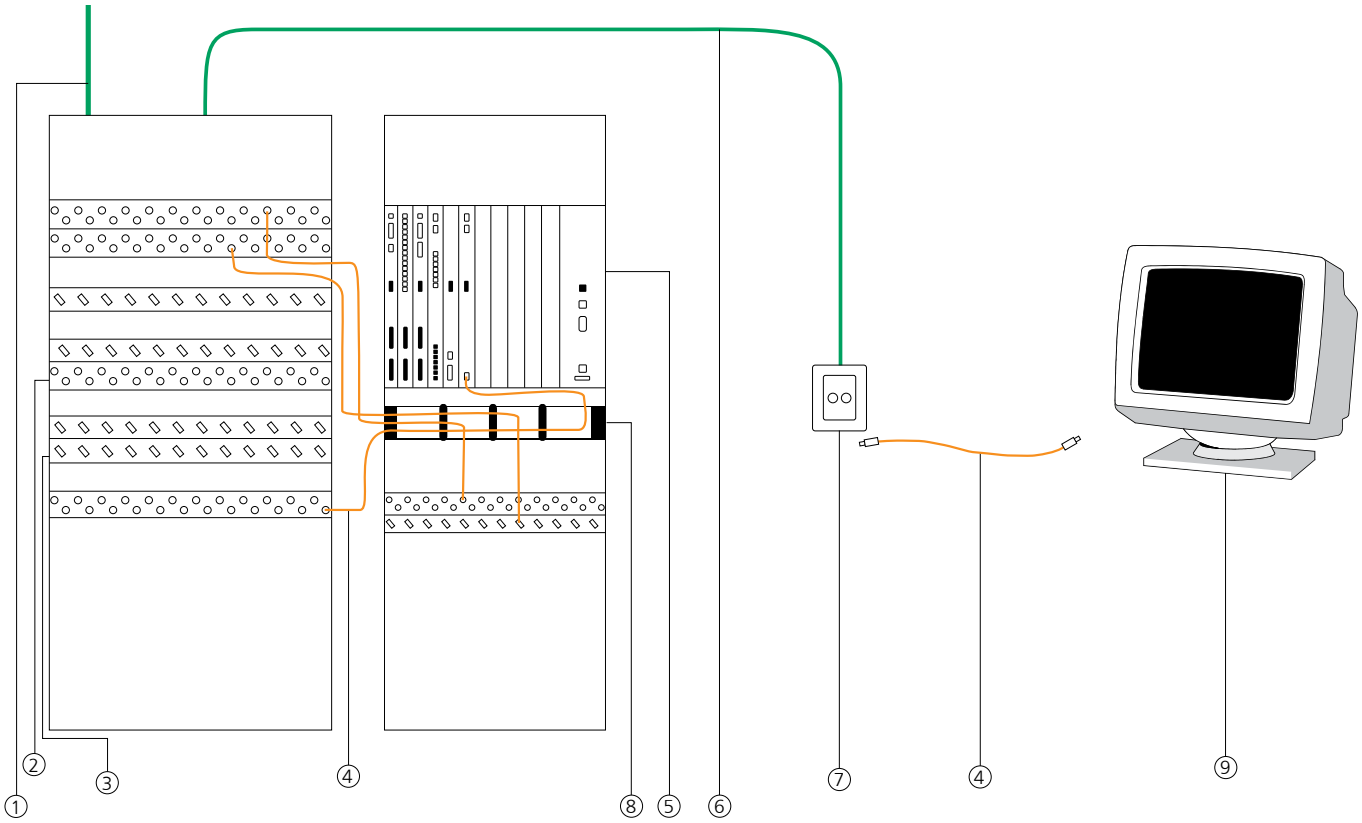
	DESCRIPTION	PRODUCT	PAGE NO.
1.	Fiber Optic Backbone Cable	Indoor Multi-Tight Distribution Fiber Optic Cables Breakout Fiber Optic Cables Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables Indoor/Outdoor Single Loose Tube Fiber Optic Cables	202-203 200-201 204-205 208-209
2.	Copper Backbone Cables	Category 5 F/UTP 100 Ohm Horizontal and Backbone LAN Cables	42-43
3.	Horizontal and Backbone Distribution Copper Patch Panel	Keystone Jack Copper Patch Panels	122-123
4.	Backbone Distribution Fiber Optic Patch Panel	Fiber Optic Standard 19” Patch Panels	232-233
5.	Copper Patchcords	Category 6 Shielded 100 Ohm Patch Cords Category 6 S/FTP 100 Ohm Patch Cords	136-137 150-151
6.	Fiber Optic Patchcords	Fiber Optic Patch Cords	240-241
7.	Active Equipment	Customer Provided	
8.	Horizontal Distribution Cable	Category 6 F/UTP 100 Ohm Horizontal LAN Cables Category 6 U/FTP 100 Ohm Horizontal LAN Cables Category 6 F/FTP 100 Ohm Horizontal LAN Cables	64-65 66-67 70-71
9.	Workstation Outlet	Category 6E Shielded RJ-45 Keystone Jacks French (Legrand) Type Faceplates UK Type Faceplates US Type Faceplates LJ6C Type Faceplates Surface Boxes Multimedia Communications Boxes Japanese Type Faceplates	174-175/176-177 254 255 253 256 258 257 259
10.	Cable Management	Cable Organizer	252
11.	PC (Personal Computer)	Customer Provided	

Category 6A UTP System Demonstration



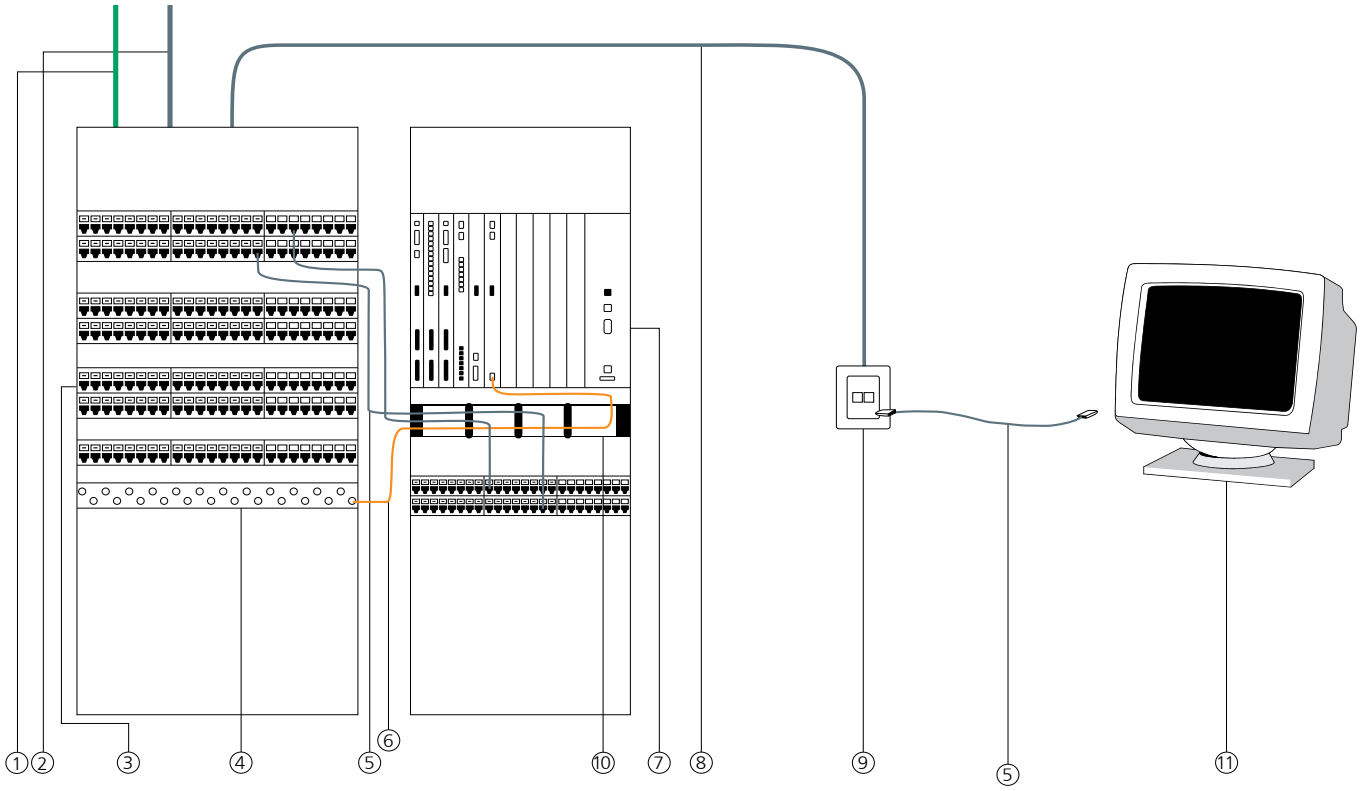
	DESCRIPTION	PRODUCT	PAGE NO.
1.	Fiber Optic Backbone Cable	Indoor Multi-Tight Distribution Fiber Optic Cables	202-203
		Breakout Fiber Optic Cables	200-201
		Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables	204-205
		Indoor/Outdoor Single Loose Tube Fiber Optic Cables	208-209
2.	Copper Backbone Cables	Category 5 U/UTP 100 Ohm Horizontal and Backbone LAN Cables	40-41
3.	Horizontal and Backbone Distribution Copper Patch Panel	Keystone Jack Copper Patch Panels	122-123
4.	Backbone Distribution Fiber Optic Patch Panel	FiberOptic Standard 19” Patch Panels	232-233
5.	Copper Patchcords	Category 6A UTP 100 Ohm Patch Cords	144-145
6.	Fiber Optic Patchcords	Fiber Optic Patch Cords	240-241
7.	Active Equipment	Customer Provided	
8.	Horizontal Distribution Cable	Category 6A MR/UTP 100 Ohm Horizontal LAN Cables	74-75
		Category 6A U/MRTP 100 Ohm Horizontal LAN Cables	76-77
9.	Workstation Outlet	Category 6A Unshielded RJ-45 Keystone Jacks	178-179
		French (Legrand) Type Faceplates	254
		UK Type Faceplates	255
		US Type Faceplates	253
		LJ6C Type Faceplates	256
		Surface Boxes	258
		Multimedia Communications Boxes	257
		Japanese Type Faceplates	259
10.	Cable Management	Cable Organizer	252
11.	PC (Personal Computer)	Customer Provided	

Category 6A Shielded System Demonstration



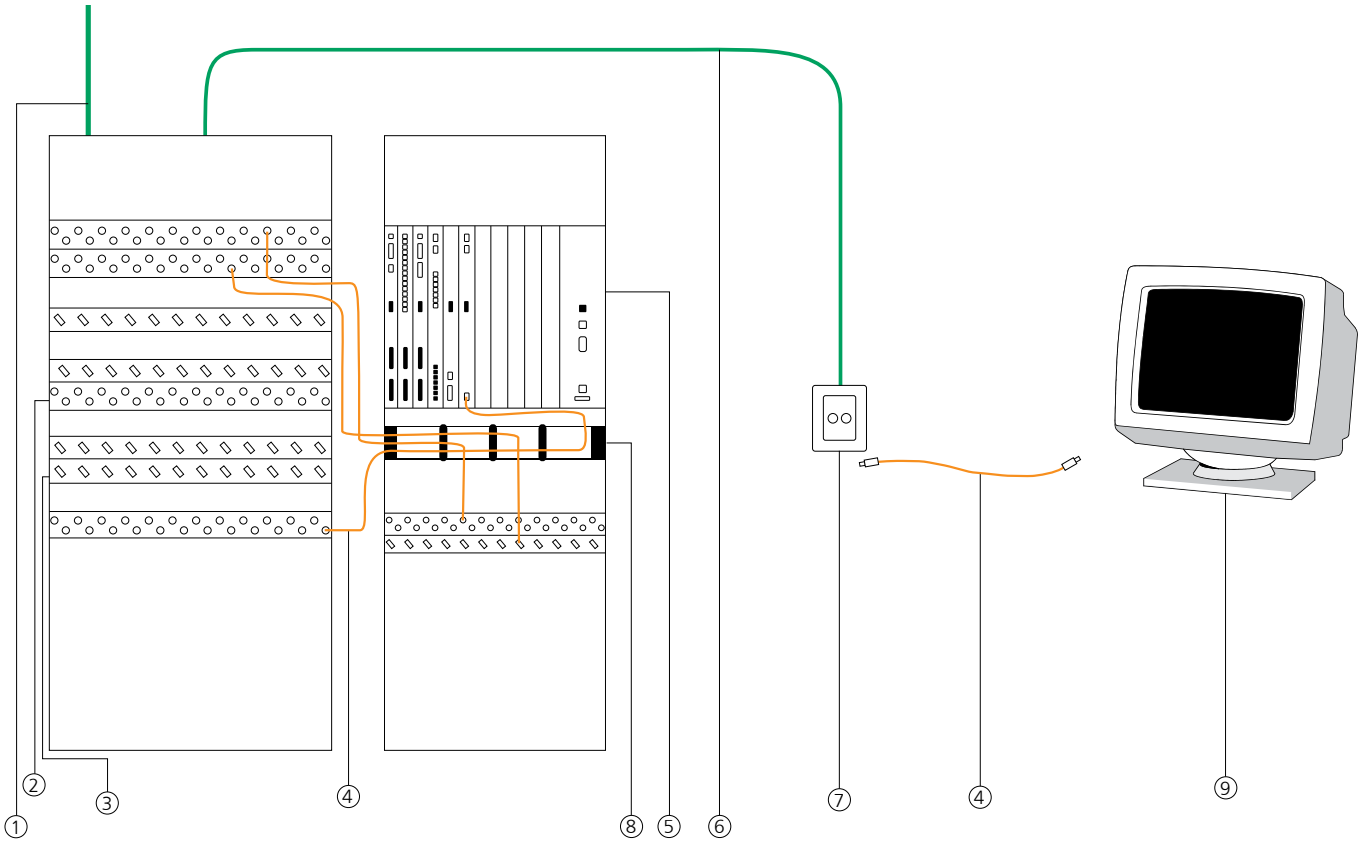
	DESCRIPTION	PRODUCT	PAGE NO.
1.	Fiber Optic Backbone Cable	Indoor Multi-Tight Distribution Fiber Optic Cables Breakout Fiber Optic Cables Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables Indoor/Outdoor Single Loose Tube Fiber Optic Cables	202-203 200-201 204-205 208-209
2.	Copper Backbone Cables	Category 5 F/UTP 100 Ohm Horizontal and Backbone LAN Cables	42-43
3.	Horizontal and Backbone Distribution Copper Patch Panel	Keystone Jack Copper Patch Panels	122-123
4.	Backbone Distribution Fiber Optic Patch Panel	FiberOptic Standard 19” Patch Panels	232-233
5.	Copper Patchcords	Category 6A F/UTP 100 Ohm Patch Cords Category 6A S/FTP 100 Ohm Patch Cords	146-147 150-151
6.	Fiber Optic Patchcords	Fiber Optic Patch Cords	240-241
7.	Active Equipment	Customer Provided	
8.	Horizontal Distribution Cable	Category 6A F/UTP 100 Ohm Horizontal LAN Cables Category 6A U/FTP 100 Ohm Horizontal LAN Cables Category 6A F/FTP 100 Ohm Horizontal LAN Cables Category 6A S/FTP 100 Ohm Horizontal LAN Cables	78-79 80-81 84-85 86-87
9.	Workstation Outlet	Category 6A Shielded RJ-45 Keystone Jacks French (Legrand) Type Faceplates UK Type Faceplates US Type Faceplates LJ6C Type Faceplates Surface Boxes Multimedia Communications Boxes Japanese Type Faceplates	180-181/182-183 254 255 253 256 258 257 259
10.	Cable Management	Cable Organizer	252
11.	PC (Personal Computer)	Customer Provided	

Category 7 / Category 7A / Category 7B System Demonstration



	DESCRIPTION	PRODUCT	PAGE NO.
1.	Fiber Optic Backbone Cable	Indoor Multi-Tight Distribution Fiber Optic Cables Breakout Fiber Optic Cables Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables Indoor/Outdoor Single Loose Tube Fiber Optic Cables	202-203 200-201 204-205 208-209
2.	Copper Backbone Cables	Category 5 F/UTP 100 Ohm Horizontal and Backbone LAN Cables	42-43
3.	Horizontal and Backbone Distribution Copper Patch Panel	Blank DL-1200 Panels	124
4.	Backbone Distribution Fiber Optic Patch Panel	FiberOptic Standard 19” Patch Panels	232-233
5.	Copper Patchcords	DL-1200 Patch Cords	154-155
6.	Fiber Optic Patchcords	Fiber Optic Patch Cords	240-241
7.	Active Equipment	Customer Provided	
8.	Horizontal Distribution Cable	Category 7 S/FTP Cables-Tested up to 600MHz Category 7+ S/FTP Cables-Tested up to 1000MHz Category 7+ S/FTP Cables-Tested up to 1200MHz Category 7A S/FTP Cables-Tested up to 1000MHz Category 7A S/FTP Cables-Tested up to 1200MHz Category 7A S/FTP Cables-Tested up to 1500MHz Category 7B S/FTP Cables-Tested up to 1200MHz Category 7B S/FTP Cables-Tested up to 1500MHz	88-89 92-93 94-95 96-97 98-99 100-101 102-103 104-105
9.	Workstation Outlet	DL-1200 Outlets DL-1200 Face Plates	184-185 260
10.	Cable Management	Cable Organizer	252
11.	PC (Personal Computer)	Customer Provided	

Fiber to Desk System Demonstration

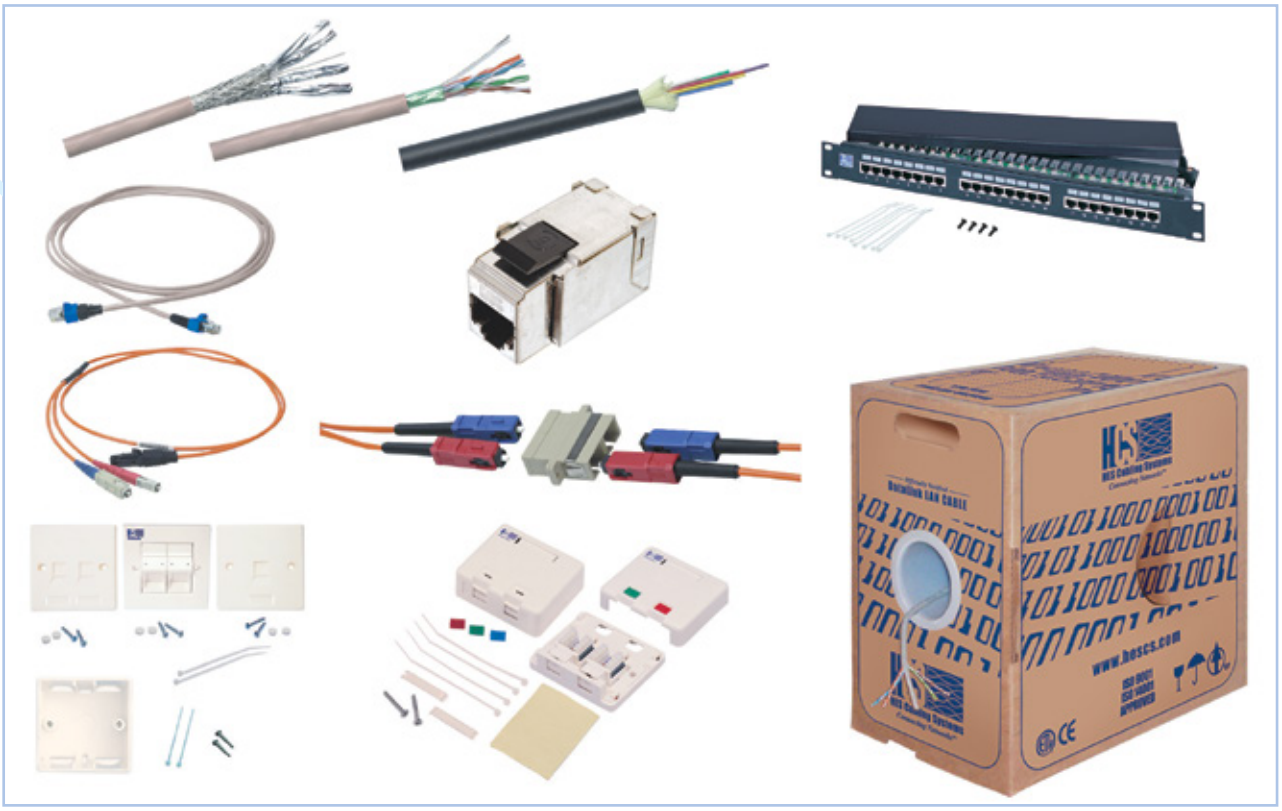


	DESCRIPTION	PRODUCT	PAGE NO.
1.	Fiber Optic Backbone Cable	Indoor Multi-Tight Distribution Fiber Optic Cables Breakout Fiber Optic Cables Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables Indoor/Outdoor Single Loose Tube Fiber Optic Cables Simplex/Duplex Fiber Optic Cables	202-203 200-201 204-205 208-209 198-199
2.	Horizontal and Backbone Distribution Copper Patch Panel	Fiber Optic Standard 19” Patch Panels	232-233
3.	Backbone Distribution Fiber Optic Patch Panel	Fiber Optic Standard 19” Patch Panels	232-233
4.	Fiber Optic Patchcords	Fiber Optic Patch Cords	240-241
5.	Active Equipment	Customer Provided	
6.	Horizontal Distribution Cable	Indoor Multi-Tight Distribution Fiber Optic Cables Breakout Fiber Optic Cables Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables Indoor/Outdoor Single Loose Tube Fiber Optic Cables Simplex/Duplex Fiber Optic Cables	202-203 200-201 204-205 208-209 198-199
7.	Workstation Outlet	Fiber Optic connectors and adapters French (Legrand) Type Faceplates US Type Faceplates LJ6C Type Faceplates Surface Boxes Multimedia Communications Boxes Japanese Type Faceplates	242-243/246-247 254 253 256 258 257 259
8.	Cable Management	Cable Organizer	252
9.	PC (Personal Computer)	Customer Provided	

HCS P/N System

Basic P/N						Packaging and Length		
X	NN	-	Fnn	NN(**)	-	X	Y	C
A = Armored Breakout FO cables	00 = Not Aplicable		Number of Pairs, Ports	Sequential Number (01-99)		A = Special	C =50 m	Jacket Color
B = Baluns	01 = Power & Control					B = Reelex II™	D =90 m	Default
C = Cabinets & Wiring Blocks	02 = Voice & DSL Grade					C = Coil	H =100 m	Gray
D = Fiber-to-the-desk FO Cables	03 = Category 3					D = Drum	J =200 m	RAL 7035
E = Armored SLT FO Cables	05 = Category 5					F = Reel in box	L =250 m	
F = Flexible Copper Cables	5E = Category 5E					G = Reelex I™	K =305 m	
G = Armored MTD FO Cables	5F = Category 5 120 Ohm						P =500 m	
H = Solid Copper Cables							M =1000 m	
J = Copper Connectors	06 = Category 6						Q =1500	
K = Kits, Tools & Splitters	6E = Category 6E (600 MHz)						R =2000 m	
L = Simplex/Duplex FO Cables	6A = Category 6A (500 MHz)						T =3000 m	
M = Indoor/Outdoor MTD FO Cables	07 = Category 7 (600 MHz)						N =5000	
N = Indoor MTD FO Cables	7A = Category 7A (1000 MHz)						S =10 km	
P = Panels	7B = Category 7B (1200 MHz)							
Q = Outdoor MLT FO Cables	10 = DataLine 10							
R = Breakout FO Cables	20 = DataLine 20							
S = Outdoor SLT FO Cables	30 = DataLine 30							
T = Terminated Cords & Patch Cables (*)	51 = 50/125 FO Standard Grade							
U = Armored MLT FO Cables	52 = 50/125 FO Premium Grade							
V = FO Connectors and Couplers	53 = 50/125 FO Patch Cord Grade							
W = Outlets and Faceplates	54 = 50/125 Optimized for 300m 10GBE							
X = Aerial FIG-8 Armored SLT FO Cables	55 = 50/125 Modified for 150m 10GBE							
Y = Special FO Cables	56 = 50/125 Modified for 600m 10GBE							
Z = Special Copper Cables	61 = 62.5/125 FO Standard Grade							
	62 = 62.5/125 FO Premium Grade							
	63 = 62.5/125 FO Patch Cord Grade							
	91 = Singlemode FO Standard Grade							
	92 = Singlemode FO Premium Grade							
	93 = Singlemode FO ITU-T G.652							
	94 = Singlemode FO ITU-T G.652e							
	95 = Singlemode FO ITU-T G.655							
	96 = Singlemode FO ITU-T G.656							
	97 = Singlemode FO ITU-T G.657							
	MC = Mixed Copper components							
	MF = Mixed Fiber Types							
	FO = FO products							

* For P/N designation of FiberOptic cords use the DataLight Ordering Information Table of Terminated Modular Cords
** In copper terminated cords the last digit indicates the jacket color, based on color table No. 6.



HCS - HES Cabling Systems

HCS COMPONENT WARRANTY

HCS warranty No. _____

This warranty is granted to:

_____

This warranty covers HCS components sold separately, including HCS cable, connectors and connecting hardware (hereinafter : "HCS Components") listed in the attached sales contract.

Warranted HCS Components shall be free from defects in material and workmanship for a period of thirty-six (36) months following the effective date stated below.

HCS Products shall meet the prescribed mechanical and transmission specifications described in the HCS Product Catalog published before the effective date.
All warranties shall be subject to the installation, operation and maintenance practices, testing and environmental conditions described in the relevant standards and HCS manuals.

Disclaimer Notice: HCS does not assume any liability expressed or implied, with respect to the HCS components, whether as to merchantability, fitness for a particular purpose or any other matter. Under no circumstances or conditions shall HCS be liable or responsible for any claim of any buyer for costs, expenses, direct or indirect or consequential damages due to the use or misuse of any HCS product.

This warranty is applicable only to the extent of attached HCS Warranty terms, conditions and limitations.

Effective Date: _____

International Certificates

HES Cabling Systems
Connecting Networks™

ETL - ITS Intertek Testing Services USA

HORIZONTAL CABLES

HCS H03-0251x 25X2X24# F/UTP CATEGORY 3 DataLink 16 SHIELDED BACKBONE CABLE ETL Tested to IEC 61156-4
HCS H03-0501x 50X2X24# F/UTP CATEGORY 3 DataLink 16 SHIELDED BACKBONE CABLE ETL Tested to IEC 61156-4
HCS H03-1001x 100X2X24# F/UTP CATEGORY 3 DataLink 16 SHIELDED BACKBONE CABLE ETL Tested to IEC 61156-4
HCS H5E-00401 4X2X24# U/UTP CATEGORY 5E DataLink 100E SHIELDED CABLE ETL VERIFIED to ANSI/TIA/EIA-568-B.2
HCS H5E-00411 4X2X24# F/UTP CATEGORY 5E DataLink 100E SHIELDED CABLE ETL VERIFIED to ANSI/TIA/EIA-568-B.2
HCS H5E-00401 4X2X24# U/UTP CATEGORY 5E DataLink 100E CABLE ETL VERIFIED to ISO/IEC-11801 & IEC 61156-5
HCS H5E-00411 4X2X24# F/UTP CATEGORY 5E DataLink 100E SHIELDED CABLE ETL VERIFIED to ISO/IEC-11801 & IEC 61156-5
HCS H5E-00422 4X2X24# SF/UTP CATEGORY 5E DataLink 100E SHIELDED CABLE ETL VERIFIED to ISO/IEC-11801 & IEC 61156-5
HCS H5E-02501 25X2X24# U/UTP CATEGORY 5E DataLink 100E UNSHIELDED CABLE ETL VERIFIED to ANSI/TIA-568-C.2, ISO/IEC-11801 & IEC 61156-5
HCS H06-F0401 4X2X23# U/UTP PVC CATEGORY 6 DataLink 250 CABLE ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS H06-F0402 4X2X23# U/UTP LS0H CATEGORY 6 DataLink 250 CABLE ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS H06-F0401 4X2X23# U/UTP CATEGORY 6 DataLink 250 CABLE ETL VERIFIED to ISO/IEC-11801 & IEC 61156-5
HCS H06-F0402 4X2X23# U/UTP LS0H CATEGORY 6 DataLink 250 CABLE ETL VERIFIED to ISO/IEC-11801 & IEC 61156-5
HCS H6E-F0401 4X2X23# U/UTP CATEGORY 6e DataLink 250E CABLE ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS H6E-F0402 4X2X23# U/UTP LS0H CATEGORY 6e DataLink 250E CABLE ETL VERIFIED to ANSI/TIA-568-C.2 tested up to 600MHz
HCS H6E-F0402 4X2X23# U/UTP LS0H CATEGORY 6e DataLink 250E CABLE ETL VERIFIED to IEC 61156-5 & ISO/IEC 11801 tested up to 600MHz
HCS H6E-F0402 4X2X23# U/UTP LS0H CATEGORY 6e DataLink 250E CABLE ETL VERIFIED to CENELEC EN 50288-6-1 tested up to 600MHz
HCS H06-F0411 4X2X23# F/UTP CATEGORY 6 DataLink 250 CABLE ETL VERIFIED to ISO/IEC-11801 & IEC 61156-5
HCS H06-F0431 4X2X23# U/FTP PVC CATEGORY 6 DataLink 250 CABLE ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS H06-F0432 4X2X23# U/FTP LS0H CATEGORY 6 DataLink 250 CABLE ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS H6A-F0411 4X2X23# F/UTP CATEGORY 6A DataLink 500A CABLE ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS H6A-F0431 4X2X23# U/FTP PVC CATEGORY 6A DataLink 500A CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5 & ANSI/TIA-568-C.2
HCS H6A-F0432 4X2X23# U/FTP LS0H CATEGORY 6A DataLink 500A CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5 & ANSI/TIA-568-C.2
HCS H07-F0402 4X2X23# S/FTP CATEGORY 7 DataLink 600 CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5
HCS H07-F0412 4X2X23# S/FTP CATEGORY 7+ DataLink 600 CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5
HCS H07-F0422 4X2X23# S/FTP CATEGORY 7+ DataLink 600 CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5
HCS H7A-F0402 4X2X22# S/FTP CATEGORY 7A DataLink 1000 CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5
HCS H7A-F0412 4X2X22# S/FTP CATEGORY 7A+ DataLink 1000 CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5
HCS H7A-F0422 4X2X22# S/FTP CATEGORY 7A+ DataLink 1000 CABLE ETL VERIFIED to ISO/IEC 11801 & IEC 61156-5

PERMANENT LINK AND CHANNEL

DataLink 250E CATEGORY 6E Unshielded PERMANENT LINK tested to ANSI/TIA/EIA-568-C.2
DataLink 250E CATEGORY 6E Unshielded LS0H CHANNEL (2 Connector HCS P/N J6E-00873) tested to ANSI/TIA/EIA-568-C.2
DataLink 250E CATEGORY 6E Unshielded LS0H CHANNEL (2 Connector HCS P/N J6E-00883) tested to ANSI/TIA/EIA-568-C.2
DataLink 250E CATEGORY 6E Unshielded LS0H CHANNEL (2 Connector) tested to ANSI/TIA/EIA-568-C.2
DataLink 250 E CATEGORY 6E Unshielded CHANNEL (3 Connector) tested to ANSI/TIA/EIA-568-C.2
DataLink 500A CATEGORY 6A Unshielded PERMANENT LINK tested to ANSI/TIA/EIA-568-C.2
DataLink 500A CATEGORY 6A Shielded PERMANENT LINK tested to ANSI/TIA/EIA-568-C.2
DataLink 500A CATEGORY 6A Unshielded CHANNEL tested to ANSI/TIA/EIA-568-C.2
DataLink 500A CATEGORY 6A Shielded CHANNEL tested to ANSI/TIA/EIA-568-C.2
DataLink 500A CATEGORY 6A Unshielded CHANNEL tested to IEEE 802.3an 10GBASE-T
DataLink 500A CATEGORY 6A Shielded CHANNEL tested to IEEE 802.3an 10GBASE-T
DataLink 500A Unshielded CLASS EA CHANNEL tested to ISO/IEC-11801
DataLink 500A Shielded CLASS EA CHANNEL tested to ISO/IEC-11801

TERMINATED MODULAR CORDS

HCS T06-0041X-YYX DataLink 250 CATEGORY 6 Unshielded U/UTP RJ-45 PVC Terminated Modular Cord ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS T06-0042X-YYX DataLink 250 CATEGORY 6 Unshielded U/UTP RJ-45 LS0H Terminated Modular Cord ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS T06-0043X-YYX DataLink 250 CATEGORY 6 Shielded F/UTP RJ-45 PVC Terminated Modular Cord ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS T06-0044X-YYX DataLink 250 CATEGORY 6 Shielded F/UTP RJ-45 LS0H Terminated Modular Cord ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS T06-0047X-YYX DataLink 250 CATEGORY 6 Shielded S/FTP RJ-45 PVC Terminated Modular Cord ETL VERIFIED to ANSI/TIA/EIA-568-C.2
HCS T06-0048X-YYX DataLink 250 CATEGORY 6 Shielded S/FTP RJ-45 LS0H Terminated Modular Cord ETL VERIFIED to ANSI/TIA/EIA-568-C.2

CONNECTING HARDWARE

HCS J6E-00813 DataLink 250E CATEGORY 6E Unshielded RJ-45 90º Keystone Jack ETL VERIFIED to ANSI/TIA/EIA-568-C.2, IEC 60603-7-4 and ISO/IEC 11801

HCS J6E-00823 DataLink 250E CATEGORY 6E Shielded RJ-45 90º Keystone Jack ETL VERIFIED to ANSI/TIA/EIA-568-C.2, IEC 60603-7-5 and ISO/IEC 11801

HCS J6E-00873 DataLink 250E CATEGORY 6E Unshielded RJ-45 180º Keystone Jack ETL VERIFIED to ANSI/TIA/EIA-568-C.2, IEC 60603-7-5 and ISO/IEC 11801

HCS P6E-0XX03-YU DataLink 250E CATEGORY 6E Unshielded RJ-45 Patch Panels ETL VERIFIED to ANSI/TIA/EIA-568-C.2, IEC 60603-7-4 and ISO/IEC 11801

HCS P5E-02412 DataLink 100E CATEGORY 5E Shielded RJ-45 Patch Panel ETL Tested to ANSI/TIA/EIA-568-C.2

HCS J6E-008D2 DataLink 250E CATEGORY 6E Unshielded RJ-45 Jack ETL VERIFIED to ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568-B.2-6, IEC 60603-7-4 and ISO/IEC 11801 new

HCS J6E-008D3 DataLink 250E CATEGORY 6E Unshielded RJ-45 Jack ETL VERIFIED to ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568-B.2-6, IEC 60603-7-4 and ISO/IEC 11801 new

HCS P6E-02404-1U DataLink 250E CATEGORY 6E Unshielded RJ-45 24-Port Angled Patch Panels ETL VERIFIED to ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568-B.2-6, IEC 60603-7-4 and ISO/IEC 11801 new

HCS P6E-04804-2U DataLink 250E CATEGORY 6E Unshielded RJ-45 48-Port Angled Patch Panels ETL VERIFIED to ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568-B.2-6, IEC 60603-7-4 and ISO/IEC 11801 new

HCS P6E-02405-1U DataLink 250E CATEGORY 6E Unshielded RJ-45 24-Port Straight Patch Panels ETL VERIFIED to ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568-B.2-6, IEC 60603-7-4 and ISO/IEC 11801 new

HCS P6E-04805-2U DataLink 250E CATEGORY 6E Unshielded RJ-45 48-Port Straight Patch Panels ETL VERIFIED to ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568-B.2-6, IEC 60603-7-4 and ISO/IEC 11801 new

HCS W6E-008D2 DataLink 250E CATEGORY 6E Unshielded RJ-45 Category 6E Unshielded French Style Modules ETL VERIFIED to ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568-B.2-6, IEC 60603-7-4 and ISO/IEC 11801 new

UL - Underwriters Laboratories USA

CONNECTING HARDWARE

Duplex keystone jack box HCS P/N W5E-00806

Keystone jacks HCS P/N J5E-00816, J5E-00826, J06-00813, J06-00823, J6E-00861, J6E-00862, J6E-00863

Keystone jack box HCS P/N W5E-00803

Keystone jack patch panels HCS P/N P00-01610-1U, P00-03210-2U

Modular IDC patch panels HCS P/N P5E-02403-1U, P5E-02409-1U, P5E-04803-2U

Snap-in type outlet (SIP) HCS P/N W00-30201, W00-30301

3P - 3rd Party Testing Denmark

PATCH CABLES

HCS T5E-00410 4X2X24# U/UTP CATEGORY 5E DataLink 100E PATCH 3P VERIFIED to EN 50173, ISO/IEC-11801 IEC 61156-6 & EIA/TIA-568-A-5

HCS T5E-00430 4X2X26# F/UTP CATEGORY 5E DataLink 100E PATCH 3P VERIFIED to EN 50173, ISO/IEC-11801 IEC 61156-6 & EIA/TIA-568-A-5

HCS T5E-00450 4X2X26# S/FTP CATEGORY 5E DataLink 100E PATCH 3P VERIFIED to EN 50173, ISO/IEC-11801 IEC 61156-6 & EIA/TIA-568-A-5

HCS T06-00410 4X2X24# U/UTP CATEGORY 6 DataLink 250 PATCH 3P VERIFIED to EN 50173, ISO/IEC-11801 & ANSI/TIA/EIA-568-C.2

HCS T6E-00470 4X2X26# S/FTP CATEGORY 6E DataLink 250E PATCH 3P VERIFIED to EN 50173, ISO/IEC-11801 & ANSI/TIA/EIA-568-C.2

PERMANENT LINK AND CHANNEL

DataLink 100E CATEGORY 5E PERMANENT LINK made with CAT 5E Unshielded Tool-Less Keystone jacks tested to ANSI/TIA/EIA-568-B.2, ISO/IEC 2nd Edition:2002,EN 50173-1:2002

DELTA- Danish Electronics, Light & Acoustics Denmark

TERMINATED MODULAR CORDS

HCS T6A-0047X-YYZ DataLink 500A CATEGORY 6A Shielded RJ-45 PVC Modular Cords EC VERIFIED to ANSI/TIA/EIA-568-C.2, ISO/IEC 11801, EN 50173 & IEC 61935-2.

HCS T6A-0048X-YYZ DataLink 500A CATEGORY 6A Shielded RJ-45 LS0H Modular Cords EC VERIFIED to ANSI/TIA/EIA-568-C.2, ISO/IEC 11801, EN 50173 & IEC 61935-2.

CONNECTING HARDWARE

HCS J6A-00813 DataLink 500A CATEGORY 6A Unshielded RJ-45 Keystone Jack tested to ANSI/TIA/EIA-568-C.2

HCS J6A-00823 DataLink 500A CATEGORY 6A Shielded RJ-45 Keystone Jack tested to ANSI/TIA/EIA-568-C.2

HCS J6A-0082X DataLink 500A CATEGORY 6A Shielded RJ-45 Keystone Jack DELTA-EC VERIFIED to ISO/IEC 11801 2nd Amendment, IEC 60603-7-51 and ANSI/TIA-568-C.2

PERMANENT LINK AND CHANNEL

DataLink 100E CATEGORY 5E PERMANENT LINK tested to ANSI/TIA/EIA-568-B.2, ISO/IEC 2nd Edition: 2002, EN 50173-1:2002

DataLink 100 E CATEGORY 5E CHANNEL (3 Connector) tested to ANSI/TIA/EIA-568-B.2, ISO/IEC 2nd Edition: 2002, EN 50173-1:2002

DataLink 250 CATEGORY 6 UTP CHANNEL (2 x 180° Keystone Jacks) tested to ISO/IEC 11801 2nd edition:2002, EN 50173-1:2002, ANSI/TIA/EIA-568-B.1-2001, ANSI/TIA/EIA-568-B.2-2001 & ANSI/TIA/EIA-568-B.2-1-2002

DataLink 250 CATEGORY 6 UTP CHANNEL (3 Connector) tested to CENELEC EN 50289-1-6 Coupling Attenuation and EMC

DataLink 250 CATEGORY 6 UTP CHANNEL (2x180° Keystone Jacks) EMC conformance to CENELEC EN 55022, EN 50024 and FCC

ABS Type Approval Program

GENERAL CERTIFICATES

HCS H5E-00422 4x2x24# Category 5E SF/UTP LS0H DataLink 100E Horizontal Cable

HCS H07-00402 4x2x23# CATEGORY 7 S/FTP LS0H DataLink 600 Horizontal Cable

GOST R Certification System - Electrocert Russia

GENERAL CERTIFICATES

HCS DataLink LAN Copper Horizontal Cables

HCS DataLink LAN FO Horizontal Cables

HCS DataLink LAN Copper & FO Modular Cords

HCS DataLink LAN Copper & FO Connectors

HCS DataLink LAN Copper & FO Panels & Faceplates

HCS DataLink LAN Copper & FO Racks & Cabinets

FLAME TEST CERTIFICATES

HCS DataLink LAN Copper Horizontal Cables

HCS DataLink LAN FO SLT Horizontal Cables

HCS DataLink LAN FO MTD & BRK Horizontal Cables

UkrSEPRO Certificates - UKRAINE

GENERAL CERTIFICATES

HCS DataLink LAN Copper Horizontal Cables

HCS DataLight LAN FO Horizontal Cables

HCS DataLink LAN Copper Modular Cords

HCS DataLight LAN FO Modular Cords

All HCS certificates can be found & downloaded from our website www.hescs.com, “Verifications” section.

HES Cabling Systems
Connecting Networks™

Structured Cabling Copper Products

DataLink 16

Category 3 U/UTP 100 Ohm Horizontal and Backbone Indoor LAN Cables

HES Cabling Systems
Connecting Networks™

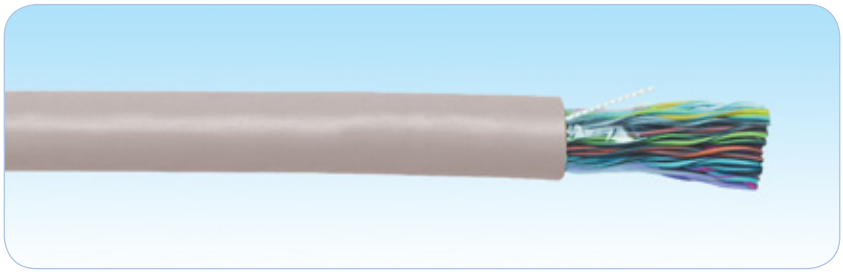
Description

HCS DataLink 16 indoor cable series consists of 100 Ohm impedance, 4-300 pair U/UTP cables for indoor horizontal and backbone installations in local area networks (LANs).All cables fully conform to and provide a substantial margin above all Category 3 ANSI/TIA/568-C.2 requirements.

Applications

HCS DataLink 16 Horizontal and backbone cables support the following protocols:

- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 16 Cables are tested and verified for full compliance with the following standard:

- ➔ Category 3 according to ANSI/TIA/568-C.2
- ➔ Category 3 according to IEC 61156-4

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4-300 Color-coded, unshielded twisted pairs cabled together and overall jacketed.

Basic Conductor	Solid, 24AWG, bare annealed copper, PO Insulated.
Insulation	Polyolefin.
Color Code	See below Color Code table
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other color available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

COLOR CODE - WIRE COLOR INSIDE EACH 25-PAIR GROUP

Pair No.	Color Code	Pair No.	Color Code
1	White x Blue	13	Black x Green
2	White x Orange	14	Black x Brown
3	White x Green	15	Black x Gray
4	White x Brown	16	Yellow x Blue
5	White x Gray	17	Yellow x Orange
6	Red x Blue	18	Yellow x Green
7	Red x Orange	19	Yellow x Brown
8	Red x Green	20	Yellow x Gray
9	Red x Brown	21	Violet x Blue
10	Red x Gray	22	Violet x Orange
11	Black x Blue	23	Violet x Green
12	Black x Orange	24	Violet x Brown
		25	Violet x Gray

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	SRL	Prop. Delay
MHz	dB/100m	dB	dB/100m	dB	nS/100m
	Max	Min	Min	Min	Max
1.00	2.6	41.0	41.0	12.0	570.0
4.00	5.6	32.3	32.3	12.0	552.0
10.00	9.7	26.3	26.3	12.0	545.4
16.00	13.1	23.3	23.3	10.0	543.0

Characteristic Impedance	100+/-15 Ohm @ 1-16 MHz
Resistance Unbalance	5% max.
Capacitance	66 pF/m max. @ 1 KHz
Cap. Unbalance (Wire to Ground)	3300 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max
Dielectric Strength	1500 Volts/1 minute rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Transfer Impedance	NA

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H03-00201-DM	2x2x24# U/UTP CAT3 PVC Gray	4.2	20	365	1000m Drum	
H03-00202-DM	2x2x24# U/UTP CAT3 LS0H Gray	4.2	19	360	1000m Drum	
H03-00301-DM	3x2x24# U/UTP CAT3 PVC Gray	4.5	26	400	1000m Drum	
H03-00302-DM	3x2x24# U/UTP CAT3 LS0H Gray	4.5	25	390	1000m Drum	
H03-00401-DM	4x2x24# U/UTP CAT3 PVC Gray	5.1	31	475	1000m Drum	
H03-00402-DM	4x2x24# U/UTP CAT3 LS0H Gray	5.1	30	485	1000m Drum	
H03-00601-DM	6x2x24# U/UTP CAT3 PVC Gray	6.0	50	780	1000m Drum	
H03-00602-DM	6x2x24# U/UTP CAT3 LS0H Gray	6.1	49	760	1000m Drum	
H03-01201-DM	12x2x24# U/UTP CAT3 PVC Gray	8.0	82	1270	1000m Drum	
H03-01202-DM	12x2x24# U/UTP CAT3 LS0H Gray	8.1	80	1250	1000m Drum	
H03-02501-DM	25x2x24# U/UTP CAT3 PVC Gray	11.5	170	2800	1000m Drum	
H03-02502-DM	25x2x24# U/UTP CAT3 LS0H Gray	11.5	165	2850	1000m Drum	
H03-05001-DM	50x2x24# U/UTP CAT3 PVC Gray	15.4	315	5000	1000m Drum	
H03-05002-DM	50x2x24# U/UTP CAT3 LS0H Gray	15.4	310	5050	1000m Drum	
H03-10001-DP	100x2x24# U/UTP CAT3 PVC Gray	24.0	610	11000	500m Drum	
H03-10001-DM	100x2x24# U/UTP CAT3 PVC Gray	24.0	610	11000	1000m Drum	
H03-10002-DP	100x2x24# U/UTP CAT3 LS0H Gray	24.0	600	11200	500m Drum	
H03-10002-DM	100x2x24# U/UTP CAT3 LS0H Gray	24.0	600	11200	1000m Drum	
H03-20001-DP	200x2x24# U/UTP CAT3 PVC Gray	29.0	1320	23000	500m Drum	
H03-20001-DM	200x2x24# UTP CAT3 PVC Gray	29.0	1320	23000	1000m Drum	
H03-20002-DP	200x2x24# U/UTP CAT3 LS0H Gray	29.0	1300	23500	500m Drum	
H03-20002-DM	200x2x24# U/UTP CAT3 LS0H Gray	29.0	1300	23500	1000m Drum	
H03-30001-DP	300x2x24# U/UTP CAT3 PVC Gray	35.0	1880	32700	500m Drum	
H03-30001-DM	300x2x24# U/UTP CAT3 PVC Gray	35.0	1880	32700	1000m Drum	
H03-30002-DP	300x2x24# U/UTP CAT3 LS0H Gray	35.0	1860	32800	500m Drum	
H03-30002-DM	300x2x24# U/UTP CAT3 LS0H Gray	35.0	1860	32800	1000m Drum	

DataLink 16

Category 3 F/UTP 100 Ohm Horizontal and Backbone Indoor LAN Cables

HES Cabling Systems
Connecting Networks™

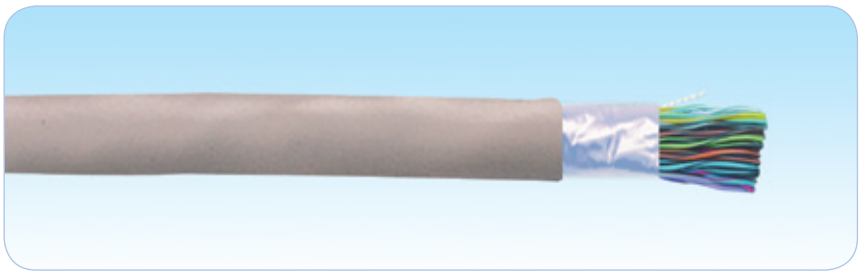
Description

HCS DataLink 16 indoor cable series consists of 100 Ohm impedance, 4-300 pair F/UTP cables for indoor horizontal and backbone installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 3 ANSI/TIA/568-C.2 & IEC 61156-4 transmission requirements.

Applications

HCS DataLink 16 Horizontal and backbone cables support the following protocols:

- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 16 Cables are tested and verified for full compliance with the following standard:

- ➔ Category 3 according to ANSI/TIA/568-C.2
- ➔ Category 3 according to IEC 61156-4

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Overall 50µm Aluminum shield- Providing excellent EMC.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4-300 Color-coded, unshielded twisted pairs cabled together, Overall Shielded with a 50µm aluminum foil and overall jacketed.

Basic Conductor	Solid, 24AWG, bare annealed copper, PO Insulated.
Insulation	Polyolefin.
Core construction	All twisted pairs cabled in a concentric formation.
Color Code	Next page.
Overall Shield	50µm aluminum foil providing 100% coverage laid in close contact with a TC drain wire.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other color available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm.
Long Term Bend Radius	4xOD mm.
Storage Temperature	-20 to +80C.
Temperature Operating Range	-20 to +60C.
Flame Test	IEC 60332-1.
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

COLOR CODE - WIRE COLOR INSIDE EACH 25-PAIR GROUP

Pair No.	Color Code	Pair No.	Color Code
1	White x Blue	13	Black x Green
2	White x Orange	14	Black x Brown
3	White x Green	15	Black x Gray
4	White x Brown	16	Yellow x Blue
5	White x Gray	17	Yellow x Orange
6	Red x Blue	18	Yellow x Green
7	Red x Orange	19	Yellow x Brown
8	Red x Green	20	Yellow x Gray
9	Red x Brown	21	Violet x Blue
10	Red x Gray	22	Violet x Orange
11	Black x Blue	23	Violet x Green
12	Black x Orange	24	Violet x Brown
		25	Violet x Gray

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	PS NEXT	PS EL FEXT	PS IO FEXT	RL & SRL	(Propagation Delay)
MHz	dB/100m	dB	dB/100m	dB/100m	dB	nS/100m
	Max	Min	Min	Min	Min	Max
1.00	2.6	41.0	39	42	12.0	570.0
4.00	5.6	32.3	27	33	12.0	552.0
10.00	9.7	26.3	19	29	12.0	545.4
16.00	13.0	23.3	15	28	10.0	543.0

Characteristic Impedance	100±15 Ohm @ 1-16 MHz
Resistance Unbalance	5% max.
Capacitance	66 pF/m max. @ 1 KHz
Cap. Unbalance (Wire to Ground)	3300 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Transfer Impedance	50 mOhm/m @ 1 MHz. 100 mOhm/m @ 10 MHz.

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H03-02511-DM	25x2x24# F/UTP CAT3 PVC Gray	12.6	187	3135	1000m Drum	
H03-02512-DM	25x2x24# F/UTP CAT3 LS0H Gray	12.6	187	3135	1000m Drum	
H03-05011-DM	50x2x24# F/UTP CAT3 PVC Gray	16.9	346	5550	1000m Drum	
H03-05012-DM	50x2x24# F/UTP CAT3 LS0H Gray	16.9	346	5550	1000m Drum	
H03-10011-DP	100x2x24# F/UTP CAT3 PVC Gray	26.4	670	12100	500m Drum	
H03-10011-DM	100x2x24# F/UTP CAT3 PVC Gray	26.4	670	12100	1000m Drum	
H03-10012-DP	100x2x24# F/UTP CAT3 LS0H Gray	26.4	670	12100	500m Drum	
H03-10012-DM	100x2x24# F/UTP CAT3 LS0H Gray	26.4	670	12100	1000m Drum	
H03-20011-DP	200x2x24# F/UTP CAT3 PVC Gray	32.0	1450	25300	500m Drum	
H03-20011-DM	200x2x24# F/UTP CAT3 PVC Gray	32.0	1450	25300	1000m Drum	
H03-20012-DP	200x2x24# F/UTP CAT3 LS0H Gray	32.0	1450	25300	500m Drum	
H03-20012-DM	200x2x24# F/UTP CAT3 LS0H Gray	32.0	1450	25300	1000m Drum	
H03-30011-DP	300x2x24# F/UTP CAT3 PVC Gray	38.0	2068	36000	500m Drum	
H03-30011-DM	300x2x24# F/UTP CAT3 PVC Gray	38.0	2068	36000	1000m Drum	
H03-30012-DP	300x2x24# F/UTP CAT3 LS0H Gray	38.0	2068	36000	500m Drum	
H03-30012-DM	300x2x24# F/UTP CAT3 LS0H Gray	38.0	2068	36000	1000m Drum	

DataLink 16

Category 3 U/UTP 100 Ohm Horizontal and Backbone Outdoor LAN Cables

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 16 outdoor cable series consists of 100 Ohm impedance, 4-1200 pair U/UTP cables for outdoor installations. All cables fully conform to and provide a substantial margin above all Category 3 ANSI/TIA/568-C.2 transmission properties.

Applications

HCS DataLink 16 Horizontal and backbone cables support the following protocols:

- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 16 Cables are tested and verified for full compliance with the following standard:

- ➔ Category 3 according to ANSI/TIA/568-C.2
- ➔ Category 3 according to IEC 61156-4

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Heavy duty, UV resistant PE outer jacket - Providing a long term protection in harsh conditions.
- ➔ Petroleum jelly core filling - Providing an efficient longitudinal water protection.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4-1200 Color-coded, unshielded twisted pairs cabled together, and tape wrapped. A black PE outer jacket render the cable suitable for outdoor installations.

Basic Conductor	Solid, 24AWG, bare annealed copper.
Insulation	Polyolefin.
Color Code	See below Color Code table.
Core Filling	Petroleum jelly.
Overall Tape wrap	Plastic binders.
Inner Jacket	None.
Outer Jacket	Heavy duty UV resistant PE jacket.
Jacket Color	Black
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Conductor Size Test	UL 444.
Temperature Operating Range	-20 to +60C

COLOR CODE - WIRE COLOR INSIDE EACH 25-PAIR GROUP

Pair No.	Color Code	Pair No.	Color Code
1	White x Blue	13	Black x Green
2	White x Orange	14	Black x Brown
3	White x Green	15	Black x Gray
4	White x Brown	16	Yellow x Blue
5	White x Gray	17	Yellow x Orange
6	Red x Blue	18	Yellow x Green
7	Red x Orange	19	Yellow x Brown
8	Red x Green	20	Yellow x Gray
9	Red x Brown	21	Violet x Blue
10	Red x Gray	22	Violet x Orange
11	Black x Blue	23	Violet x Green
12	Black x Orange	24	Violet x Brown
		25	Violet x Gray

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS EL FEXT	PS IO FEXT	RL & SRL	(Propagation Delay)
MHz	dB/100m	dB	dB/100m	dB/100m	dB	nS/100m
	Max	Min	Min	Min	Min	Max
1.00	2.6	41.0	39	42	12.0	570.0
4.00	5.6	32.3	27	33	12.0	552.0
10.00	9.7	26.3	19	29	12.0	545.4
16.00	13.0	23.3	15	28	10.0	543.0

Characteristic Impedance	100+/-15 Ohm @ 1-16 MHz
Resistance Unbalance	5% max.
Capacitance	66 pF/m max. @ 1 KHz
Cap. Unbalance (Wire to Ground)	3300 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Packaging	Notes
H03-00403-DP	4x2x24# U/UTP CAT3 Black	6.5	42	500m Drum	-
H03-00403-DM	4x2x24# U/UTP CAT3 Black	6.5	42	1000m Drum	-
H03-02503-DM	25x2x24# U/UTP CAT3 Black	12.7	200	1000m Drum	-
H03-10003-DM	100x2x24# U/UTP CAT3 Black	22.5	830	1000m Drum	-
H03-20003-DP	200x2x24# U/UTP CAT3 Black	30.0	1150	500m Drum	-
H03-30003-DP	300x2x24# U/UTP CAT3 Black	35.0	1700	500m Drum	-
H03-40003-DP	400x2x24# U/UTP CAT3 Black	41.0	2200	500m Drum	-
H03-60003-DP	600x2x24# U/UTP CAT3 Black	49.0	3250	500m Drum	-
H03-90003-DP	900x2x24# U/UTP CAT3 Black	60.0	4900	500m Drum	-

DataLink 16

Category 3 F/UTP 100 Ohm Horizontal and Backbone Outdoor LAN Cables

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 16 outdoor cable series consists of 100 Ohm impedance, 4-900 pair F/UTP cables for outdoor installations.
All cables fully conform to and provide a substantial margin above all Category 3 ANSI/TIA/568-C.2 & IEC 61156-4 transmission properties.

Applications

HCS DataLink 16 Horizontal and backbone cables support the following protocols:

- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 16 Cables are tested and verified for full compliance with the transmission properties of following standard:

- Category 3 according to ANSI/TIA/568-C.2
- Category 3 according to IEC 61156-4

Benefits & Features

- Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- Revolutionary pair lay scheme - Providing an extremely low delay skew.
- Overall 50µm Aluminum shield- Providing excellent EMC.
- Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- Descending sequential meter mark - Providing easy stock and left-over handling.
- Petroleum jelly core filling - Providing an efficient longitudinal water protection.
- Heavy duty, UV resistant PE outer jacket - Providing a long term protection in harsh conditions.
- Batch number printed every meter - Providing fast retrieval of test results from data-base.
- A comprehensive product range - Providing all state-of-the-art cable constructions.
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4-900 Color-coded, unshielded twisted pairs cabled together and Overall Shielded with a 50µm aluminum foil. Jelly filling and black PE outer jacket render the cable suitable for outdoor installations.

Basic Conductor	Solid, 24AWG, bare annealed copper.
Insulation	Polyolefin.
Core construction	All twisted pairs cabled in a concentric formation.
Color Code	Next page.
Core Filling	Petroleum jelly.
Overall Shield	50µm aluminum foil providing 100% coverage laid in close contact with a TC drain wire.
Outer Jacket	Heavy duty UV resistant PE jacket.
Jacket Color	Black
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Conductor Size Test	UL 444.
Temperature Operating Range	-20 to +60C

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	PS NEXT	PS EL FEXT	PS IO FEXT	RL & SRL	(Propagation Delay)
MHz	dB/100m	dB	dB/100m	dB/100m	dB	nS/100m
	Max	Min	Min	Min	Min	Max
1.00	2.6	41.0	39	42	12.0	570.0
4.00	5.6	32.3	27	33	12.0	552.0
10.00	9.7	26.3	19	29	12.0	545.4
16.00	13.0	23.3	15	28	10.0	543.0

Characteristic Impedance	100±15 Ohm @ 1-16 MHz
Resistance Unbalance	5% max.
Capacitance	66 pF/m max. @ 1 KHz
Cap. Unbalance (Wire to Ground)	3300 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Transfer Impedance	50 mOhm/m @ 1 MHz. 100 mOhm/m @ 10 MHz.

COLOR CODE - WIRE COLOR INSIDE EACH 25-PAIR GROUP

Pair No.	Color Code	Pair No.	Color Code
1	White x Blue	13	Black x Green
2	White x Orange	14	Black x Brown
3	White x Green	15	Black x Gray
4	White x Brown	16	Yellow x Blue
5	White x Gray	17	Yellow x Orange
6	Red x Blue	18	Yellow x Green
7	Red x Orange	19	Yellow x Brown
8	Red x Green	20	Yellow x Gray
9	Red x Brown	21	Violet x Blue
10	Red x Gray	22	Violet x Orange
11	Black x Blue	23	Violet x Green
12	Black x Orange	24	Violet x Brown
		25	Violet x Gray

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Packaging	Notes
H03-02513-DM	25x2x24# F/UTP CAT3 Outdoor Black	14.0	220	1000m Drum	
H03-05013-DM	50x2x24# F/UTP CAT3 Outdoor Black	18.9	430	1000m Drum	
H03-10013-DM	100x2x24# F/UTP CAT3 Outdoor Black	24.8	915	1000m Drum	
H03-20013-DP	200x2x24# F/UTP CAT3 Outdoor Black	33.0	1265	500m Drum	
H03-30013-DP	300x2x24# F/UTP CAT3 Outdoor Black	38.5	1870	500m Drum	
H03-40013-DP	400x2x24# F/UTP CAT3 Outdoor Black	45.0	2420	500m Drum	
H03-60013-DP	600x2x24# F/UTP CAT3 Outdoor Black	54.0	3575	500m Drum	
H03-90013-DP	900x2x24# F/UTP CAT3 Outdoor Black	66.0	5390	500m Drum	

DataLink 100

Category 5 U/UTP 100 Ohm Horizontal & Backbone LAN Cables

HES Cabling Systems
Connecting Networks™

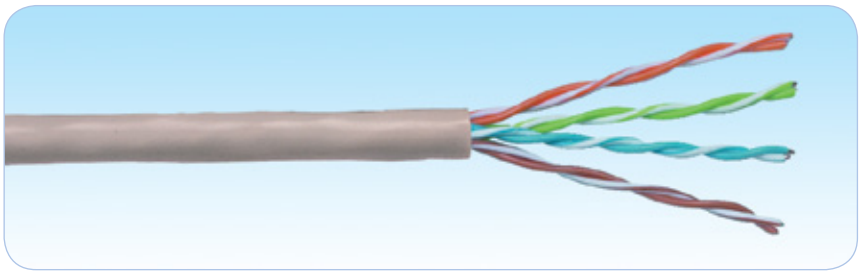
Description

HCS DataLink 100 U/UTP cable series consists of 100 Ohm impedance, 4-100 pair U/UTP cables for horizontal and backbone installations in local area networks (LANs).All cables fully conform to and provide a substantial margin above all Category 5 TIA/EIA-568-A and ISO/IEC-11801 requirements.

Applications

HCS DataLink 100 U/UTP cables support the following protocols:

- ☑ ATM 155
- ☑ 100 Mbps TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100 U/UTP Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5 according to ANSI/TIA/EIA-568-A-1995
- ➔ Category 5 according to ISO/IEC-11801-1995

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4-100 Color-coded, unshielded twisted pairs cabled together and overall jacketed.

Basic Conductor	Solid, 24AWG, bare annealed copper, PO Insulated.
Total Number of Twisted Pairs	4-100
Color Code	Color table No. 1.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	SRL	Zo	(Propagation Delay)
MHz	dB/100m	dB	dB	dB	Ohm	nS/100m
	Max	Min	Min	Min		Max
0.772	1.8	64.0	64.0	23.0	100+/-15	575.0
1.00	2.0	62.3	62.3	23.0	100+/-15	570.0
4.00	4.1	53.3	53.3	23.0	100+/-15	552.0
8.00	5.8	48.8	48.8	23.0	100+/-15	546.7
10.00	6.5	47.3	47.3	23.0	100+/-15	545.4
16.00	8.2	44.3	44.3	23.0	100+/-15	543.0
25.00	10.4	41.3	41.3	22.0	100+/-15	541.2
31.25	11.7	39.9	39.9	21.1	100+/-15	540.4
62.50	17.0	35.4	35.4	18.1	100+/-15	538.6
100.00	22.0	32.3	32.3	16.0	100+/-15	537.6

Resistance Unbalance	3% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	152 MegaOhm•Km min. @ 500 Vdc

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H05-00401-BK	4x2x24# U/UTP CAT5 PVC Gray	5.0	31	475	1000ft Reelex II™	-
H05-00401-BP	4x2x24# U/UTP CAT5 PVC Gray	5.0	31	475	500m Reelex II™	-
H05-00401-DP	4x2x24# U/UTP CAT5 PVC Gray	5.0	31	475	500m Drum	-
H05-00401-DM	4x2x24# U/UTP CAT5 PVC Gray	5.0	31	475	1000m Drum	-
H05-00402-DP	4x2x24# U/UTP CAT5 LS0H Gray	5.0	31	475	500m Drum	-
H05-00402-DM	4x2x24# U/UTP CAT5 LS0H Gray	5.0	31	475	1000m Drum	-
H05-00801-DM	8x2x24# U/UTP CAT5 PVC Gray	7.7	62	930	1000m Drum	-
H05-00802-DM	8x2x24# U/UTP CAT5 LS0H Gray	7.7	62	930	1000m Drum	-
H05-01601-DM	16x2x24# U/UTP CAT5 PVC Gray	8.2	100	1500	1000m Drum	-
H05-01602-DM	16x2x24# U/UTP CAT5 LS0H Gray	8.2	100	1500	1000m Drum	-
H05-02501-DM	25x2x24# U/UTP CAT5 PVC Gray	12.2	180	2700	1000m Drum	-
H05-02502-DM	25x2x24# U/UTP CAT5 LS0H Gray	12.2	180	2700	1000m Drum	-
H05-05001-DM	50x2x24# U/UTP CAT5 PVC Gray	24.5x12.3	365	5200	1000m Drum	2x25P
H05-05002-DM	50x2x24# U/UTP CAT5 LS0H Gray	24.5x12.3	365	5200	1000m Drum	2x25P
H05-10001-DP	100x2x24# U/UTP CAT5 PVC Gray	30.0	830	11000	500m Drum	4x25P
H05-10001-DM	100x2x24# U/UTP CAT5 PVC Gray	30.0	830	11000	1000m Drum	4x25P
H05-10002-DP	100x2x24# U/UTP CAT5 LS0H Gray	30.0	830	11000	500m Drum	4x25P
H05-10002-DM	100x2x24# U/UTP CAT5 LS0H Gray	30.0	830	11000	1000m Drum	4x25P

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100

Category 5 F/UTP Ohm Horizontal & Backbone LAN Cables

HES Cabling Systems
Connecting Networks™

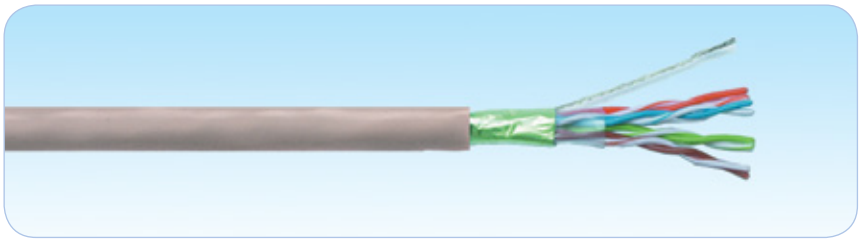
Description

HCS DataLink 100 F/UTP cable series consists of 100 Ohm impedance, 4-100 pair overall foil-shielded (F/UTP) cables for horizontal and backbone installations in local area networks (LANs).
All cables fully conform to and provide a substantial margin above all Category 5 TIA/EIA-568-A and ISO/IEC-11801 requirements.

Applications

HCS DataLink 100 F/UTP cables support the following protocols:

- ☑ ATM 155
- ☑ 100 Mbps TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100 F/UTP Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5 according to ANSI/TIA/EIA-568-A-1995
- ➔ Category 5 according to ISO/IEC-11801-1995

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall foil shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4-100 Color-coded, unshielded twisted pairs cabled together, Overall Shielded with polyester-aluminum foil and jacketed.

Basic Conductor	Solid, 24AWG, bare annealed copper, PO Insulated.
Total Number of Twisted Pairs	4-100
Color Code	Color table No. 1.
Overall Tape	Polyester, providing 100% coverage.
Overall Shield	Polyester-Aluminum foil + 24AWG Solid TC drain wire, providing 100% coverage.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	SRL	Zo	(Propagation Delay)
MHz	dB/100m	dB	dB	dB	Ohm	nS/100m
	Max	Min	Min	Min		Max
0.772	1.8	64.0	64.0	23.0	100+/-15	575.0
1.00	2.0	62.3	62.3	23.0	100+/-15	570.0
4.00	4.1	53.3	53.3	23.0	100+/-15	552.0
8.00	5.8	48.8	48.8	23.0	100+/-15	546.7
10.00	6.5	47.3	47.3	23.0	100+/-15	545.4
16.00	8.2	44.3	44.3	23.0	100+/-15	543.0
25.00	10.4	41.3	41.3	22.0	100+/-15	541.2
31.25	11.7	39.9	39.9	21.1	100+/-15	540.4
62.50	17.0	35.4	35.4	18.1	100+/-15	538.6
100.00	22.0	32.3	32.3	16.0	100+/-15	537.6

Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minutes rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	152 MegaOhm•Km min. @ 500 Vdc

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H05-00411-DP	4x2x24# F/UTP CAT5 PVC Gray	5.9	38	480	500m Drum	-
H05-00411-DM	4x2x24# F/UTP CAT5 PVC Gray	5.9	38	480	1000m Drum	-
H05-00412-DP	4x2x24# F/UTP CAT5 LS0H Gray	5.9	38	480	500m Drum	-
H05-00412-DM	4x2x24# F/UTP CAT5 LS0H Gray	5.9	38	480	1000m Drum	-
H05-00811-DM	8x2x24# F/UTP CAT5 PVC Gray	8.8	65	960	1000m Drum	-
H05-00812-DM	8x2x24# F/UTP CAT5 LS0H Gray	8.8	65	960	1000m Drum	-
H05-01611-DM	16x2x24# F/UTP CAT5 PVC Gray	9.7	135	1600	1000m Drum	-
H05-01612-DM	16x2x24# F/UTP CAT5 LS0H Gray	9.7	135	1600	1000m Drum	-
H05-02511-DM	25x2x24# F/UTP CAT5 PVC Gray	14.0	235	3000	1000m Drum	-
H05-02512-DM	25x2x24# F/UTP CAT5 LS0H Gray	14.0	235	3000	1000m Drum	-
H05-05011-DM	50x2x24# F/UTP CAT5 PVC Gray	14.1x28.2	480	6000	1000m Drum	2x25P
H05-05012-DM	50x2x24# F/UTP CAT5 LS0H Gray	14.1x28.2	480	6000	1000m Drum	2x25P
H05-10011-DP	100x2x24# F/UTP CAT5 PVC Gray	34.0	890	11500	500m Drum	4x25P
H05-10011-DM	100x2x24# F/UTP CAT5 PVC Gray	34.0	890	11500	1000m Drum	4x25P
H05-10012-DP	100x2x24# F/UTP CAT5 LS0H Gray	34.0	890	11500	500m Drum	4x25P
H05-10012-DM	100x2x24# F/UTP CAT5 LS0H Gray	34.0	890	11500	1000m Drum	4x25P

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100

Category 5 SF/UTP 100 Ohm Horizontal & Backbone LAN Cables

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 100 SF/UTP cable series consists of 100 Ohm impedance, 4-100 pair overall double-shielded cables (aluminum foil plus copper braid = SF/UTP) for horizontal and backbone installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5 TIA/EIA-568-A and ISO/IEC-11801 requirements.

Applications

HCS DataLink 100 SF/UTP cables support the following protocols:

- ☑ ATM 155
- ☑ 100 Mbps TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100 SF/UTP Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5 according to ANSI/TIA/EIA-568-A-1995
- ➔ Category 5 according to ISO/IEC-11801-1995

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall foil + braid shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4-100 Color-coded, unshielded twisted pairs cabled together, Overall Shielded with polyester-aluminum foil + tinned-copper braid and jacketed.

Basic Conductor	Solid, 24AWG, bare annealed copper, PO Insulated.
Total Number of Twisted Pairs	4-100
Color Code	Color table No. 1.
Overall Tape	Polyester, providing 100% coverage.
Overall Inner Shield	Polyester-Aluminum foil, providing 100% coverage.
Overall Outer Shield	Tinned copper braid, laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	SRL	Zo	(Propagation Delay)
MHz	dB/100m	dB	dB	dB	Ohm	nS/100m
	Max	Min	Min	Min		Max
0.772	1.8	64.0	64.0	23.0	100+/-15	575.0
1.00	2.0	62.3	62.3	23.0	100+/-15	570.0
4.00	4.1	53.3	53.3	23.0	100+/-15	552.0
8.00	5.8	48.8	48.8	23.0	100+/-15	546.7
10.00	6.5	47.3	47.3	23.0	100+/-15	545.4
16.00	8.2	44.3	44.3	23.0	100+/-15	543.0
25.00	10.4	41.3	41.3	22.0	100+/-15	541.2
31.25	11.7	39.9	39.9	21.1	100+/-15	540.4
62.50	17.0	35.4	35.4	18.1	100+/-15	538.6
100.00	22.0	32.3	32.3	16.0	100+/-15	537.6

Resistance Unbalance	3% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	152 MegaOhm•Km min. @ 500 Vdc

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H05-00421-DP	4x2x24# SF/UTP CAT5 PVC Gray	6.1	41	520	500m Drum	-
H05-00421-DM	4x2x24# SF/UTP CAT5 PVC Gray	6.1	41	520	1000m Drum	-
H05-00422-DP	4x2x24# SF/UTP CAT5 LS0H Gray	6.1	41	520	500m Drum	-
H05-00422-DM	4x2x24# SF/UTP CAT5 LS0H Gray	6.1	41	520	1000m Drum	-
H05-00821-DM	8x2x24# SF/UTP CAT5 PVC Gray	9.1	80	1000	1000m Drum	-
H05-00822-DM	8x2x24# SF/UTP CAT5 LS0H Gray	9.1	80	1000	1000m Drum	-
H05-01621-DM	16x2x24# SF/UTP CAT5 PVC Gray	10.2	155	1650	1000m Drum	-
H05-01622-DM	16x2x24# SF/UTP CAT5 LS0H Gray	10.2	155	1650	1000m Drum	-
H05-02521-DM	25x2x24# SF/UTP CAT5 PVC Gray	14.6	260	3100	1000m Drum	-
H05-02522-DM	25x2x24# SF/UTP CAT5 LS0H Gray	14.6	260	3100	1000m Drum	-
H05-05021-DM	50x2x24# SF/UTP CAT5 PVC Gray	14.7x29.5	520	6200	1000m Drum	2x25P
H05-05022-DM	50x2x24# SF/UTP CAT5 LS0H Gray	14.7x29.5	520	6200	1000m Drum	2x25P
H05-10021-DP	100x2x24# SF/UTP CAT5 PVC Gray	35.0	980	12000	500m Drum	4x25P
H05-10021-DM	100x2x24# SF/UTP CAT5 PVC Gray	35.0	980	12000	1000m Drum	4x25P
H05-10022-DP	100x2x24# SF/UTP CAT5 LS0H Gray	35.0	980	12000	500m Drum	4x25P
H05-10022-DM	100x2x24# SF/UTP CAT5 LS0H Gray	35.0	980	12000	1000m Drum	4x25P

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100e

Category 5E U/UTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

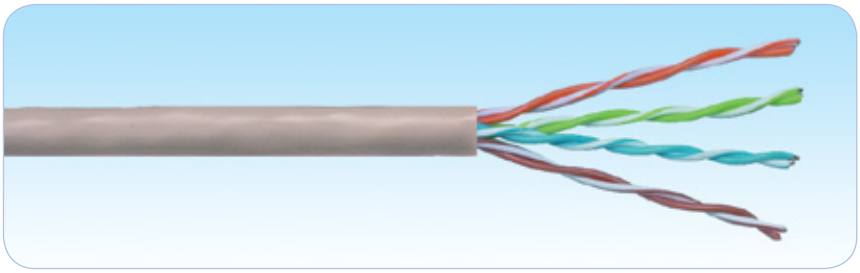
Description

HCS DataLink 100E cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/UTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5E requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 100E Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 100 MHz according to CENELEC EN 50288-3
- ➔ Category 5 according to ICEA S-90-661-1997

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 24AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		PS NEXT		EL FEXT		PS EL FEXT		RL		(SKEW)	(Prop. Delay)	TCL
MHz	dB/100m		dB		dB		dB/100m		dB/100m		dB		nS/100m	nS/100m	dB
	Max	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Max	Max	Min
1.00	2.1	1.8	68.3	90	66.3	86	67.8	90	65.8	87	20.0	30	40.0	550	40.0
4.00	4.1	3.7	59.3	75	57.3	71	55.7	80	53.7	77	23.3	35	40.0	532	34.0
8.00	5.8	5.3	54.8	70	52.8	66	49.7	75	47.7	72	25.0	35	40.0	527	31.0
10.00	6.5	6.0	53.3	67	51.3	63	47.8	70	45.8	67	25.5	35	40.0	525	30.0
16.00	8.2	7.6	50.3	65	48.3	61	43.7	65	41.7	62	25.5	40	40.0	523	28.0
25.00	10.3	9.6	47.3	63	45.3	59	39.8	60	37.8	57	25.5	40	40.0	521	26.0
31.25	11.5	10.7	45.9	60	43.9	56	37.9	55	35.9	52	24.4	40	40.0	520	25.1
62.50	16.4	15.3	41.4	58	39.4	54	31.8	50	29.8	47	22.7	35	40.0	519	22.0
100.00	21.0	19.8	38.3	53	36.3	49	27.8	45	25.8	42	21.5	35	40.0	518	20.0
200.00	30.2	28.5	33.8	50	31.8	46	21.7	40	19.7	37	19.0	30	40.0	517	17.0
250.00	34.0	33.0	32.3	47	30.3	43	19.8	35	17.8	32	18.4	30	40.0	516	16.0

Characteristic Impedance	100±6 Ohm @ 1-100 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H5E-00401-BK	4x2x24# U/UTP CAT 5E PVC Gray	4.8	30	475	305m Reelex II™	-
H5E-00401-BP	4x2x24# U/UTP CAT 5E PVC Gray	4.8	30	475	500m Reelex II™	-
H5E-00401-DP	4x2x24# U/UTP CAT 5E PVC Gray	4.8	30	475	500m Drum	-
H5E-00401-DM	4x2x24# U/UTP CAT 5E PVC Gray	4.8	30	475	1000m Drum	-
H5E-00402-BK	4x2x24# U/UTP CAT 5E LSOH Gray	4.8	30	485	305m Reelex II™	-
H5E-00402-DP	4x2x24# U/UTP CAT 5E LSOH Gray	4.8	30	485	500m Drum	-
H5E-00402-DM	4x2x24# U/UTP CAT 5E LSOH Gray	4.8	30	485	1000m Drum	-
H5E-00803-DP	2x(4x2x24#) U/UTP CAT 5E PVC Gray	4.8x9.6	60	950	500m Drum	FIG-8
H5E-00803-DM	2x(4x2x24#) U/UTP CAT 5E PVC Gray	4.8x9.6	60	950	1000m Drum	FIG-8
H5E-00804-DP	2x(4x2x24#) U/UTP CAT 5E LSOH Gray	4.8x9.6	60	970	500m Drum	FIG-8
H5E-00804-DM	2x(4x2x24#) U/UTP CAT 5E LSOH Gray	4.8x9.6	60	970	1000m Drum	FIG-8

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100e

Category 5E F/UTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

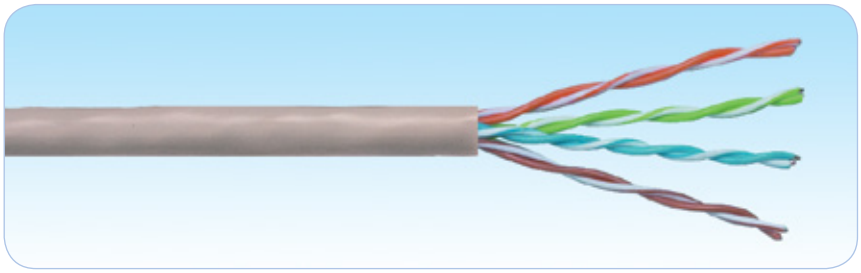
Description

HCS DataLink 100E cable series consists of 100 Ohm impedance, 4-pair and 8-pair F/UTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5E requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 100E Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 100 MHz according to CENELEC EN 50288-2
- ➔ Category 5 according to ICEA S-90-661-1997

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, Overall Taped-wrapped with a polyester tape and an aluminum foil and overall jacketed.
Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 24AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Plastic tape, providing 100% coverage.
Overall Shield	Laminated aluminum foil (foil face in) providing 100% coverage.
Drain Wire	24 AWG solid tin-coated copper conductor laid in close contact under the shield.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm² max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		PS NEXT		EL FEXT		PS EL FEXT		RL		(SKEW)	(Prop. Delay)	TCL
MHz	dB/100m		dB		dB		dB/100m		dB/100m		dB		nS/100m	nS/100m	dB
	Max	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Max	Max	Min
1.00	2.0	1.8	65.3	90	62.3	86	63.8	90	60.8	87	20.0	30	40.0	550	40.0
4.00	4.1	3.7	56.3	75	53.3	71	51.7	80	48.8	77	23.3	35	40.0	532	34.0
8.00	5.8	5.3	51.8	70	48.8	66	45.7	75	42.7	72	25.0	35	40.0	527	31.0
10.00	6.5	6.0	50.3	67	47.3	63	43.8	70	40.8	67	25.0	35	40.0	525	30.0
16.00	8.2	7.6	47.3	65	44.3	61	39.7	65	36.7	62	25.0	40	40.0	523	28.0
25.00	10.4	9.6	44.3	63	41.3	59	35.8	60	32.8	57	25.0	40	40.0	521	26.0
31.25	11.7	10.7	42.9	60	39.9	56	33.9	55	30.9	52	24.1	40	40.0	520	25.1
62.50	17.0	15.3	38.4	58	35.4	54	27.8	50	24.8	47	22.0	35	40.0	519	22.0
100.00	22.0	19.8	35.3	53	32.3	49	23.8	45	20.8	42	20.6	35	40.0	518	20.0

Characteristic Impedance	100±6 Ohm @ 1-100 MHz.
Resistance Unbalance	2% max.
Capacitance	47 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz
Transfer Impedance	50 mOhm/m max. @ 1-30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H5E-00411-DK	4x2x24# F/UTP CAT 5E PVC Gray	5.9	39	481	305m Drum	-
H5E-00411-DP	4x2x24# F/UTP CAT 5E PVC Gray	5.9	39	481	500m Drum	-
H5E-00411-DM	4x2x24# F/UTP CAT 5E PVC Gray	5.9	39	481	1000m Drum	-
H5E-00412-DP	4x2x24# F/UTP CAT 5E LS0H Gray	5.9	39	482	500m Drum	-
H5E-00412-DM	4x2x24# F/UTP CAT 5E LS0H Gray	5.9	39	484	1000m Drum	-
H5E-00813-DP	2x(4x2x24#) F/UTP CAT 5E PVC Gray	5.9x11.8	78	965	500m Drum	FIG-8
H5E-00813-DM	2x(4x2x24#) F/UTP CAT 5E PVC Gray	5.9x11.8	78	965	1000m Drum	FIG-8
H5E-00814-DP	2x(4x2x24#) F/UTP CAT 5E LS0H Gray	5.9x11.8	78	975	500m Drum	FIG-8
H5E-00814-DM	2x(4x2x24#) F/UTP CAT 5E LS0H Gray	5.9x11.8	78	975	1000m Drum	FIG-8

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100e

Category 5E F/UTP 100 Ohm Outdoor LAN Cables

HES Cabling Systems
Connecting Networks™

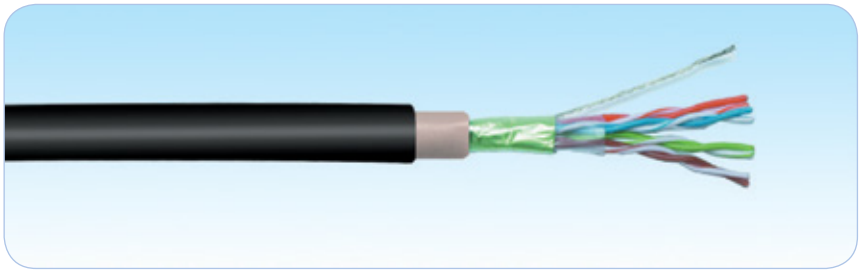
Description

HCS DataLink 100E outdoor cable series consists of 100 Ohm impedance, 4-pair and 8-pair F/UTP cables double-jacketed with LS0H compound + heavy-duty, black, UV-resistant PVC compound for outdoor horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5E requirements of ANSI/TIA-568-C.2 and IEC 61156-5.

Applications

HCS DataLink 100E outdoor cables support all relevant LAN applications, including the following protocols

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA-568-C.2
- ➔ Category 5E according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 100 MHz according to CENELEC EN 50288-2
- ➔ Category 5 according to ICEA S-90-661-1997

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ LS0H inner jacket - Providing safe use in indoor installations.
- ➔ Heavy-duty, black, UV-resistant outer jacket - Providing low-cost outdoor cables for mild environments.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, Overall Taped-wrapped with a polyester tape and an aluminum foil and overall jacketed with LS0H compound (inner) and heavy-duty, black, UV-resistant PVC compound for outdoor use.

Basic Conductor	Solid, 24AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Plastic tape, providing 100% coverage.
Drain Wire	24 AWG solid tin-coated copper conductor laid in close contact under the shield.
Overall Shield	Laminated aluminum foil (foil face in) providing 100% coverage.
Inner Jacket	LS0H compound for indoor use.
Inner Jacket Color	Gray RAL 7035.
Outer Jacket	Heavy-duty, black, UV-resistant PVC compound for outdoor use.
Outer Jacket Color	Black RAL 9005.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		PS NEXT		EL FEXT		PS EL FEXT		RL		(SKEW)	(Prop. Delay)	TCL
MHz	dB/100m		dB		dB		dB/100m		dB/100m		dB		nS/100m	nS/100m	dB
	Max	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Max	Max	Min
1.00	2.0	1.8	65.3	90	62.3	86	63.8	90	60.8	87	20.0	30	40.0	550	40.0
4.00	4.1	3.7	56.3	75	53.3	71	51.7	80	48.8	77	23.3	35	40.0	532	34.0
8.00	5.8	5.3	51.8	70	48.8	66	45.7	75	42.7	72	25.0	35	40.0	527	31.0
10.00	6.5	6.0	50.3	67	47.3	63	43.8	70	40.8	67	25.0	35	40.0	525	30.0
16.00	8.2	7.6	47.3	65	44.3	61	39.7	65	36.7	62	25.0	40	40.0	523	28.0
25.00	10.4	9.6	44.3	63	41.3	59	35.8	60	32.8	57	25.0	40	40.0	521	26.0
31.25	11.7	10.7	42.9	60	39.9	56	33.9	55	30.9	52	24.1	40	40.0	520	25.1
62.50	17.0	15.3	38.4	58	35.4	54	27.8	50	24.8	47	22.0	35	40.0	519	22.0
100.00	22.0	19.8	35.3	53	32.3	49	23.8	45	20.8	42	20.6	35	40.0	518	20.0

Characteristic Impedance	100±6 Ohm @ 1-100 MHz.
Resistance Unbalance	2% max.
Capacitance	47 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz
Transfer Impedance	50 mOhm/m max. @ 1-30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Packaging	Notes
H5E-00481-DP	4x2x24# F/UTP CAT 5E Outdoor Black	7.5	74	500m Drum	-
H5E-00481-DM	4x2x24# F/UTP CAT 5E Outdoor Black	7.5	74	1000m Drum	-
H5E-00481-DR	4x2x24# F/UTP CAT 5E Outdoor Black	7.5	74	2000m Drum	-
H5E-00481-DT	4x2x24# F/UTP CAT 5E Outdoor Black	7.5	74	3000m Drum	-

DataLink 100e

Category 5E SF/UTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

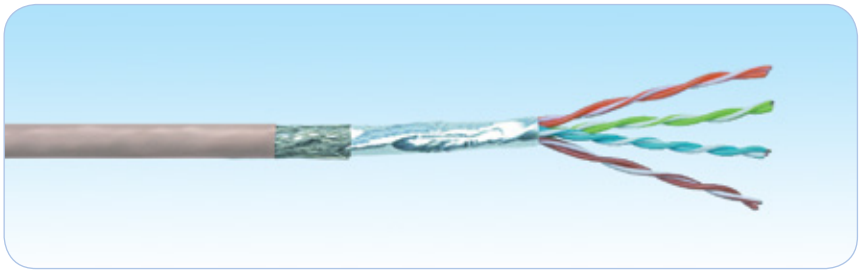
Description

HCS DataLink 100E cable series consists of 100 Ohm impedance, 4-pair and 8-pair SF/UTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5E requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 100E Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 100 MHz according to CENELEC EN 50288-2
- ➔ Category 5 according to ICEA S-90-661-1997

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, Overall Taped-wrapped with a polyester tape, shielded with an aluminum foil plus a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 24AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Polyester tape, providing 100% coverage.
Overall Inner Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Overall Outer Shield	Tin coated copper braid, laid in close contact over the foil.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		PS NEXT		EL FEXT		PS EL FEXT		RL		(SKEW)	(Prop. Delay)	TCL
MHz	dB/100m		dB		dB		dB/100m		dB/100m		dB		nS/100m	nS/100m	dB
	Max	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Max	Max	Min
1.00	2.0	1.8	65.3	90	62.3	86	63.8	90	60.8	87	20.0	30	40.0	550	40.0
4.00	4.1	3.7	56.3	75	53.3	71	51.7	80	48.7	77	23.3	35	40.0	532	34.0
8.00	5.8	5.3	51.8	70	48.8	66	45.7	75	42.7	72	25.0	35	40.0	527	31.0
10.00	6.5	6.0	50.3	67	47.3	63	43.8	70	40.8	67	25.5	35	40.0	525	30.0
16.00	8.2	7.6	47.3	65	44.3	61	39.7	65	36.7	62	25.5	40	40.0	523	28.0
25.00	10.4	9.6	44.3	63	41.3	59	35.8	60	32.8	57	25.5	40	40.0	521	26.0
31.25	11.7	10.7	42.9	60	39.9	56	33.9	55	30.9	52	24.4	40	40.0	520	25.1
62.50	17.0	15.3	38.4	58	35.4	54	27.8	50	24.8	47	22.7	35	40.0	519	22.0
100.00	22.0	19.8	35.3	53	32.3	49	23.8	45	20.8	42	21.5	35	40.0	518	20.0
200.00	30.2	28.5	30.8	50	27.8	46	17.7	40	14.7	37	19.0	30	40.0	517	17.0
250.00	34.0	33.0	29.3	47	26.3	43	15.8	35	12.8	32	18.4	30	40.0	516	16.0

Characteristic Impedance	100±6 Ohm @ 1-100 MHz.
Resistance Unbalance	2% max.
Capacitance	47 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	65 dB min @ 30-100 MHz
Transfer Impedance	30 mOhm/m max. @ 1-30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H5E-00421-DP	4x2x24# SF/UTP CAT 5E PVC Gray	6.1	41	520	500m Drum	-
H5E-00421-DM	4x2x24# SF/UTP CAT 5E PVC Gray	6.1	41	520	1000m Drum	-
H5E-00422-DP	4x2x24# SF/UTP CAT 5E LS0H Gray	6.1	41	523	500m Drum	-
H5E-00422-DM	4x2x24# SF/UTP CAT 5E LS0H Gray	6.1	41	523	1000m Drum	-
H5E-00823-DP	2x(4x2x24#) CAT 5E SF/UTP PVC Gray	6.1x12.2	82	1050	500m Drum	FIG-8
H5E-00823-DM	2x(4x2x24#) CAT 5E SF/UTP PVC Gray	6.1x12.2	82	1050	1000m Drum	FIG-8
H5E-00824-DP	2x(4x2x24#) CAT 5E SF/UTP LS0H Gray	6.1x12.2	82	1055	500m Drum	FIG-8
H5E-00824-DM	2x(4x2x24#) CAT 5E SF/UTP LS0H Gray	6.1x12.2	82	1055	1000m Drum	FIG-8

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100e

Category 5E U/UTP 100 Ohm LAN Patch Cables

HES Cabling Systems
Connecting Networks™

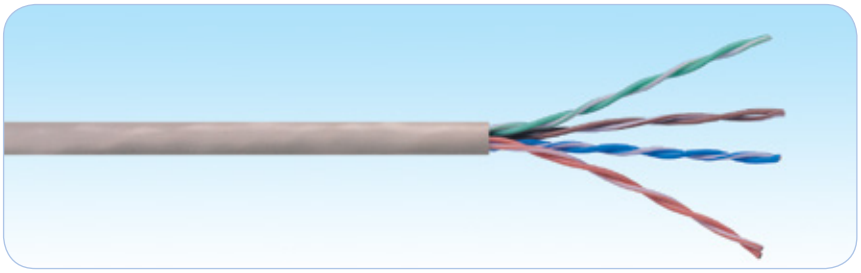
Description

HCS DataLink 100E patch cable series consists of 100 Ohm impedance, 4-pair U/UTP cables for work-area, jumper and patch cord use in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5E requirements of ANSI/TIA/568-C.2 and IEC 61156-6.

Applications

HCS DataLink 100E Patch cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E Patch Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to IEC 61156-6 (for ISO/IEC-11801 2nd Edition).
- ➔ 100 MHz according to CENELEC EN 50288-3
- ➔ Category 5 according to ICEA S-90-661-1997

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a long lasting patch-cords.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and overall jacketed.

Basic Conductor	Stranded, 24AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	(SKEW)	(Propagation Delay)	TCL
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	nS/100m	dB
	Max	Min	Min	Min	Min	Min	Max	Max	Min
1.00	3.0	65.3	62.3	63.8	60.8	20.0	45.0	570.0	40
4.00	6.0	56.3	53.3	51.7	48.7	23.0	45.0	552.0	34
10.00	9.5	50.3	47.3	43.8	40.8	25.0	45.0	545.4	30
16.00	12.1	47.3	44.3	39.7	36.7	25.0	45.0	543.0	28
25.00	15.2	44.3	41.3	35.8	32.8	24.2	45.0	541.2	26
31.25	17.1	42.9	39.9	33.9	30.9	23.3	45.0	540.4	25
62.50	24.8	38.4	35.4	27.8	24.8	20.7	45.0	538.6	22
100.00	32.0	35.3	32.3	23.8	20.8	19.0	45.0	537.6	20

Characteristic Impedance	100±6 Ohm @ 1-100 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
T5E-00410-DP	4x2x24# U/UTP CAT 5E PVC Gray	5.3	32	475	500m Drum	
T5E-00410-DM	4x2x24# U/UTP CAT 5E PVC Gray	5.3	32	475	1000m Drum	
T5E-00410-DK	4x2x24# U/UTP CAT 5E PVC Gray	5.3	32	475	1000ft Drum	
T5E-00420-DP	4x2x24# U/UTP CAT 5E LS0H Gray	5.3	31	485	500m Drum	
T5E-00420-DM	4x2x24# U/UTP CAT 5E LS0H Gray	5.3	31	485	1000m Drum	

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100e

Category 5E F/UTP 100 Ohm LAN Patch Cables

HES Cabling Systems
Connecting Networks™

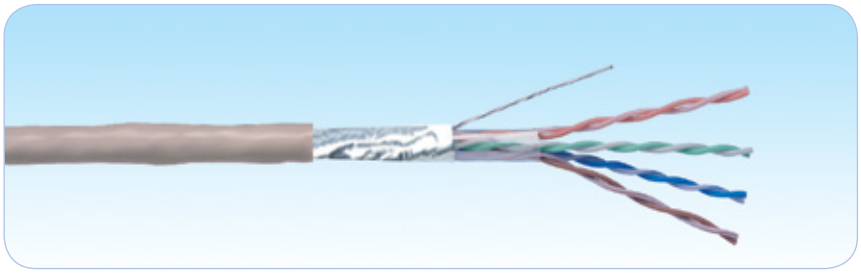
Description

HCS DataLink 100E patch cable series consists of 100 Ohm impedance, 4-pair F/UTP cables for work-area, jumper and patch cord use in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5E requirements of ANSI/TIA/568-C.2 and IEC 61156-6.

Applications

HCS DataLink 100E Patch cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E Cables are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to IEC 61156-6 (for ISO/IEC-11801 2nd Edition).
- ➔ 100 MHz according to CENELEC EN 50288-2
- ➔ Category 5 according to ICEA S-90-661-1997

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a long lasting patch-cords.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, Overall Taped-wrapped with a polyester tape and an aluminum foil and overall jacketed.

Basic Conductor	Stranded, 26AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Polyester tape, providing 100% coverage.
Overall Shield	Laminated aluminum foil (foil face inward) providing 100% coverage.
Drain Wire	26 AWG stranded (7x0.16mm) tin-coated copper conductor laid in close contact under the shield.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm² max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	(SKEW)	(Propagation Delay)	TCL
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	nS/100m	dB
	Max	Min	Min	Min	Min	Min	Max	Max	Min
1.00	3.0	65.3	62.3	63.8	60.8	20.0	45.0	570.0	40
4.00	6.0	56.3	53.3	51.7	48.7	23.0	45.0	552.0	34
10.00	9.5	50.3	47.3	43.8	40.8	25.0	45.0	545.4	30
16.00	12.1	47.3	44.3	39.7	36.7	25.0	45.0	543.0	28
25.00	15.2	44.3	41.3	35.8	32.8	24.2	45.0	541.2	26
31.25	17.1	42.9	39.9	33.9	30.9	23.3	45.0	540.4	25
62.50	24.8	38.4	35.4	27.8	24.8	20.7	45.0	538.6	22
100.00	32.0	35.3	32.3	23.8	20.8	19.0	45.0	537.6	20

Characteristic Impedance	100±6 Ohm @ 1-100 MHz.
Resistance Unbalance	2% max.
Capacitance	47 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz
Transfer Impedance	50 mOhm/m max. @ 1-30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
T5E-00430-DP	4x2x26# F/UTP CAT 5E PVC Gray	5.5	30	391	500m Drum	
T5E-00430-DM	4x2x26# F/UTP CAT 5E PVC Gray	5.5	30	391	1000m Drum	
T5E-00440-DP	4x2x26# F/UTP CAT 5E LS0H Gray	5.5	29	393	500m Drum	
T5E-00440-DM	4x2x26# F/UTP CAT 5E LS0H Gray	5.5	29	393	1000m Drum	

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 100e

Category 5E SF/UTP 100 Ohm LAN Patch Cables

HES Cabling Systems
Connecting Networks™

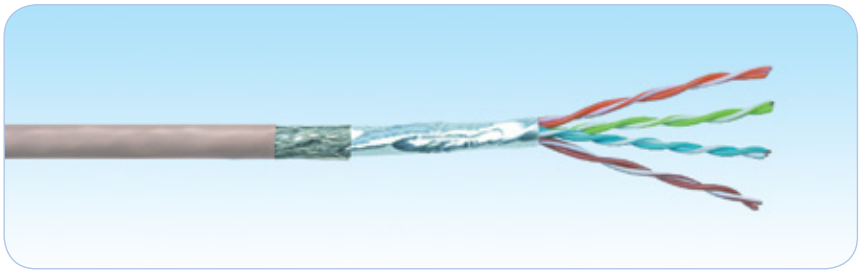
Description

HCS DataLink 100E patch cable series consists of 100 Ohm impedance, 4-pair SF/UTP cables for work-area, jumper and patch cord use in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 5E requirements of ANSI/TIA/568-C.2 and IEC 61156-6.

Applications

HCS DataLink 100E patch cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E patch cables support all presently available LAN applications, including the following protocols:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to IEC 61156-6 (for ISO/IEC-11801 2nd Edition).
- ➔ 100 MHz according to CENELEC EN 50288-2
- ➔ Category 5 according to ICEA S-90-661-1997

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a long lasting patch-cords.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, Overall Taped-wrapped with a polyester tape, shielded with an aluminum foil plus a tin-coated copper braid and overall jacketed.

Basic Conductor	Stranded, 26AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Polyester tape, providing 100% coverage.
Overall Inner Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Overall Outer Shield	Tin coated copper braid, laid in close contact over the foil.
Outer Jacket	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LSOH Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	(SKEW)	(Propagation Delay)	TCL
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	nS/100m	dB
	Max	Min	Min	Min	Min	Min	Max	Max	Min
1.00	3.0	65.3	62.3	63.8	60.8	20.0	45.0	570.0	40
4.00	6.0	56.3	53.3	51.7	48.7	23.0	45.0	552.0	34
10.00	9.5	50.3	47.3	43.8	40.8	25.0	45.0	545.4	30
16.00	12.1	47.3	44.3	39.7	36.7	25.0	45.0	543.0	28
25.00	15.2	44.3	41.3	35.8	32.8	24.2	45.0	541.2	26
31.25	17.1	42.9	39.9	33.9	30.9	23.3	45.0	540.4	25
62.50	24.8	38.4	35.4	27.8	24.8	20.7	45.0	538.6	22
100.00	32.0	35.3	32.3	23.8	20.8	19.0	45.0	537.6	20

Characteristic Impedance	100±6 Ohm @ 1-100 MHz.
Resistance Unbalance	2% max.
Capacitance	47 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	65 dB min @ 30-100 MHz
Transfer Impedance	30 mOhm/m max. @ 1-30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
T5E-00450-DP	4x2x26# SF/UTP CAT 5E PVC Gray	5.7	38	400	500m Drum	
T5E-00450-DM	4x2x26# SF/UTP CAT 5E PVC Gray	5.7	38	400	1000m Drum	
T5E-00460-DP	4x2x26# SF/UTP CAT 5E LS0H Gray	5.7	37	395	500m Drum	
T5E-00460-DM	4x2x26# SF/UTP CAT 5E LS0H Gray	5.7	37	395	1000m Drum	

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 250

Category 6 U/UTP 100 Ohm Horizontal LAN Cables (23 AWG)

HES Cabling Systems
Connecting Networks™

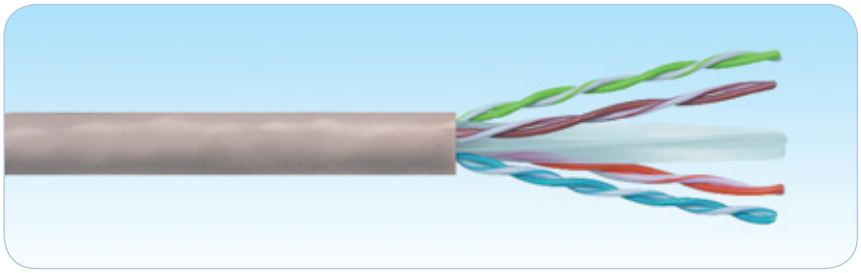
Description

HCS DataLink 250 cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/UTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 250 Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a star-shaped filler and overall jacketed.
Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	84.3	74.3	75.3	82.3	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	69.3	59.3	60.3	67.3	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	63.3	53.3	54.3	61.3	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	61.9	51.9	52.9	59.9	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	57.4	47.4	48.4	55.4	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	54.3	44.3	45.3	52.3	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	49.8	39.8	40.8	47.8	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	48.3	38.3	39.3	46.3	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS
300.00	36.1	34.6	NS	40.1	43.0	NS	38.1	40.0	NS	21.3	32	NS	19.3	29	NS	17.8	25	NS	NS	NS

Characteristic Impedance	100±6 Ohm @ 1-300 MHz
DC Resistance	93.0 Ohm/Km max.
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-300 MHz
Propagation Delay Skew	35 nS/100m max @ 1-300 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20Log(f/100) @100-300 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H06-F0401-BK	4x2x23# U/UTP CAT 6 PVC Gray	5.6	36	580	1000ft Reelex II™	-
H06-F0401-DP	4x2x23# U/UTP CAT 6 PVC Gray	5.6	36	580	500m Drum	-
H06-F0401-DM	4x2x23# U/UTP CAT 6 PVC Gray	5.6	36	580	1000m Drum	-
H06-F0402-FK	4x2x23# U/UTP CAT 6 LS0H Gray	5.6	36	585	1000ft Reelex II™	-
H06-F0402-DP	4x2x23# U/UTP CAT 6 LS0H Gray	5.6	36	585	500m Drum	-
H06-F0402-DM	4x2x23# U/UTP CAT 6 LS0H Gray	5.6	36	585	1000m Drum	-
H06-F0803-DP	2x(4x2x23#) CAT 6 U/UTP PVC Gray	5.6x11.3	72	1180	500m Drum	FIG-8
H06-F0803-DM	2x(4x2x23#) CAT 6 U/UTP PVC Gray	5.6x11.3	72	1180	1000m Drum	FIG-8
H06-F0804-DP	2x(4x2x23#) CAT 6 U/UTP LS0H Gray	5.6x11.3	72	1190	500m Drum	FIG-8
H06-F0804-DM	2x(4x2x23#) CAT 6 U/UTP LS0H Gray	5.6x11.3	72	1190	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 250

Category 6 U/UTP 100 Ohm Horizontal LAN Cables (24 AWG)

HES Cabling Systems
Connecting Networks™

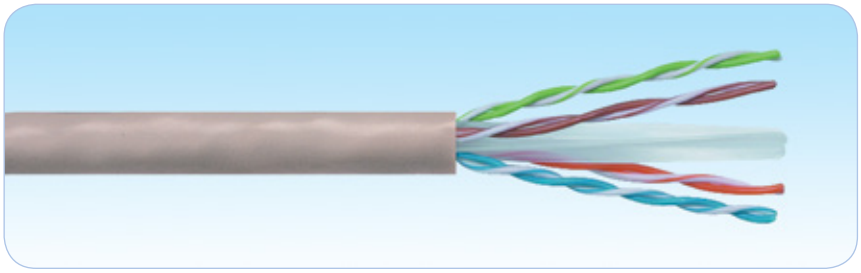
Description

HCS DataLink 250 cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/UTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA-568-C.2 and IEC 61156-5. All cables fully support IEEE 802.3at 2009 Part 3 Amendment 3 including PoE+.

Applications

HCS DataLink 250 Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - proving fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a star-shaped filler and overall jacketed.
Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with a longitudinal rib.

Basic Conductor	Solid, 24AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	84.3	74.3	75.3	82.3	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	69.3	59.3	60.3	67.3	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	63.3	53.3	54.3	61.3	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	61.9	51.9	52.9	59.9	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	57.4	47.4	48.4	55.4	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	54.3	44.3	45.3	52.3	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	49.8	39.8	40.8	47.8	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	48.3	38.3	39.3	46.3	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS
300.00	36.1	34.6	NS	40.1	43.0	NS	38.1	40.0	NS	21.3	32	NS	19.3	29	NS	17.8	25	NS	NS	NS

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
DC Resistance	93.0 Ohm/Km max.
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-300 MHz
Propagation Delay Skew	45 nS/100m max @ 1-300 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	IEC 61156-5 Type III
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
HS6-00401-BK	4x2x24# U/UTP CAT 6 PVC Gray	5.5	31	580	305m Reelex II™	-
HS6-00401-FK	4x2x24# U/UTP CAT 6 PVC Gray	5.5	31	580	305m Reel-in-box	-
HS6-00401-DP	4x2x24# U/UTP CAT 6 PVC Gray	5.5	31	580	500m Drum	-
HS6-00401-DM	4x2x24# U/UTP CAT 6 PVC Gray	5.5	31	580	1000m Drum	-
HS6-00402-FK	4x2x24# U/UTP CAT 6 LS0H Gray	5.5	31	585	305m Reel-in-box	-
HS6-00402-DP	4x2x24# U/UTP CAT 6 LS0H Gray	5.5	31	585	500m Drum	-
HS6-00402-DM	4x2x24# U/UTP CAT 6 LS0H Gray	5.5	31	585	1000m Drum	-

DataLink 250

Category 6 U/UTP SFF 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

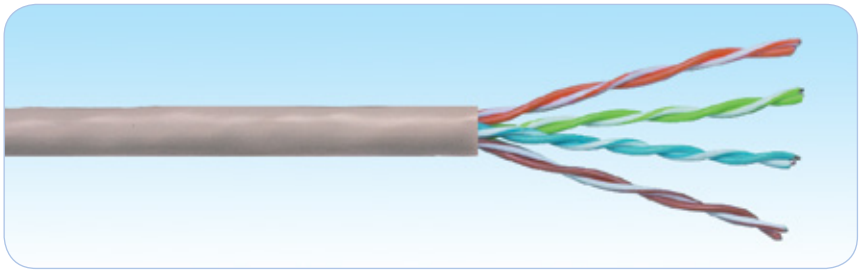
Description

HCS DataLink 250 SFF cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/UTP Small Form Factor cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA-568-C.2 and IEC 61156-5. All cables fully support IEEE 802.3at 2009 Part 3 Amendment 3 including PoE+.

Applications

HCS DataLink 250 Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 SFF Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - proving fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program providing lowest rejection rate available.
- ➔ Small Form Factor cable without any spacers - providing the smallest Category 6 in the market.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and overall jacketed.

Basic Conductor	Solid, 24AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	84.3	74.3	75.3	82.3	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	69.3	59.3	60.3	67.3	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	63.3	53.3	54.3	61.3	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	61.9	51.9	52.9	59.9	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	57.4	47.4	48.4	55.4	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	54.3	44.3	45.3	52.3	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	49.8	39.8	40.8	47.8	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	48.3	38.3	39.3	46.3	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
DC Resistance	93.0 Ohm/Km max.
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-300 MHz
Propagation Delay Skew	45 nS/100m max @ 1-300 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20Log(f/100) @100-300 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
HT6-00401-BK	4x2x24# U/UTP SFF CAT 6 PVC Gray	5.2	33	550	305m Reelex II™	-
HT6-00401-FK	4x2x24# U/UTP SFF CAT 6 PVC Gray	5.2	33	550	305m Reel-in-box	-
HT6-00401-DP	4x2x24# U/UTP SFF CAT 6 PVC Gray	5.2	33	550	500m Drum	-
HT6-00401-DM	4x2x24# U/UTP SFF CAT 6 PVC Gray	5.2	33	550	1000m Drum	-
HT6-00402-FK	4x2x24# U/UTP SFF CAT 6 LS0H Gray	5.2	33	550	305m Reel-in-box	-
HT6-00402-DP	4x2x24# U/UTP SFF CAT 6 LS0H Gray	5.2	33	550	500m Drum	-
HT6-00402-DM	4x2x24# U/UTP SFF CAT 6 LS0H Gray	5.2	33	550	1000m Drum	-

DataLink 250

Category 6 U/UTP 100 Ohm Outdoor LAN Cables

HES Cabling Systems
Connecting Networks™

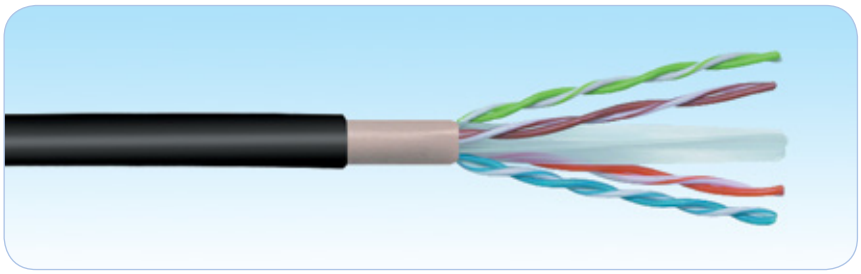
Description

HCS DataLink 250 outdoor cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/UTP cables double jacketed with LS0H (inner jacket) + heavy-duty, black, UV-resistant PE compound for horizontal outdoor installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA-568-C.2 and IEC 61156-5.

Applications

HCS DataLink 250 horizontal outdoor cables support the following protocols:

- ☑ 1000BASE-TX Gigabit Ethernet Over Category 6 (TIA/EIA SP-4657)
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 horizontal outdoor cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA-568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Heavy-duty, black, UV-resistant jacket - Providing low-cost outdoor cables for mild environments.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a star-shaped filler and overall jacketed with LS0H compound (inner) and heavy-duty, black, UV-resistant PE compound for outdoor use.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Inner Jacket	LS0H Compound
Jacket Color	Gray RAL 7035
Outer Jacket	Heavy-duty, black, UV-resistant PE compound for outdoor use.
Jacket Color	Black RAL 9005.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Conductor Size Test	UL 444.
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	84.3	74.3	75.3	82.3	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	69.3	59.3	60.3	67.3	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	63.3	53.3	54.3	61.3	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	61.9	51.9	52.9	59.9	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	57.4	47.4	48.4	55.4	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	54.3	44.3	45.3	52.3	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	49.8	39.8	40.8	47.8	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	48.3	38.3	39.3	46.3	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-300 MHz
Propagation Delay Skew	35 nS/100m max @ 1-300 MHz
Insulation Resistance	500 MegaOhm.Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20Log(f/100) @100-300 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Packaging	Notes
H06-00465-DK	4x2x23# U/UTP CAT 6 Outdoor Black	8.0	57	305m Drum	-
H06-00465-DP	4x2x23# U/UTP CAT 6 Outdoor Black	8.0	57	500m Drum	-
H06-00465-DM	4x2x23# U/UTP CAT 6 Outdoor Black	8.0	57	1000m Drum	-
H06-00465-DR	4x2x23# U/UTP CAT 6 Outdoor Black	8.0	57	2000m Drum	-
H06-00465-DT	4x2x23# U/UTP CAT 6 Outdoor Black	8.0	57	3000m Drum	-

DataLink 250

Category 6 F/UTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

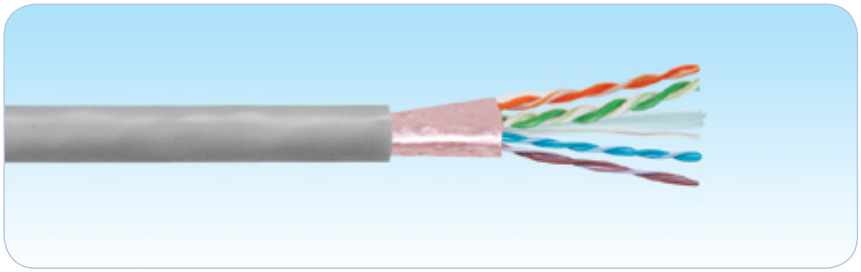
Description

HCS DataLink 250 cable series consists of 100 Ohm impedance, 4-pair and 8-pair F/UTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 250 Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a star-shaped filler, Overall Taped-wrapped with a polyester tape and an aluminum foil and overall jacketed.Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Plastic tape, providing 100% coverage.
Drain wire	24 AWG solid tin-coated copper conductor laid in close contact under the shield.
Overall Shield	Laminated aluminum foil (foil face in) providing 100% coverage.
Outer Jacket	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LSOH Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	84.3	74.3	75.3	82.3	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	69.3	59.3	60.3	67.3	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	63.3	53.3	54.3	61.3	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	61.9	51.9	52.9	59.9	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	57.4	47.4	48.4	55.4	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	54.3	44.3	45.3	52.3	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	49.8	39.8	40.8	47.8	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	48.3	38.3	39.3	46.3	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-250 MHz
Propagation Delay Skew	45 nS/100m max @ 1-250 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20Log(f/100) @100-250 MHz
Transfer Impedance	10 mOhm/m max @ 1-10 MHz 30 mOhm/m max @ 30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H06-F0411-DK	4x2x23# F/UTP CAT 6 PVC Gray	8.0	58	580	305m Drum	-
H06-F0411-DP	4x2x23# F/UTP CAT 6 PVC Gray	8.0	58	580	500m Drum	-
H06-F0411-DM	4x2x23# F/UTP CAT 6 PVC Gray	8.0	58	580	1000m Drum	-
H06-F0412-DK	4x2x23# F/UTP CAT 6 LS0H Gray	8.0	58	585	305m Drum	-
H06-F0412-DP	4x2x23# F/UTP CAT 6 LS0H Gray	8.0	58	585	500m Drum	-
H06-F0412-DM	4x2x23# F/UTP CAT 6 LS0H Gray	8.0	58	585	1000m Drum	-
H06-F0813-DP	2x(4x2x23#) CAT 6 F/UTP PVC Gray	8.0x16.1	116	1180	500m Drum	FIG-8
H06-F0813-DM	2x(4x2x23#) CAT 6 F/UTP PVC Gray	8.0x16.1	116	1180	1000m Drum	FIG-8
H06-F0814-DP	2x(4x2x23#) CAT 6 F/UTP LS0H Gray	8.0x16.1	116	1190	500m Drum	FIG-8
H06-F0814-DM	2x(4x2x23#) CAT 6 F/UTP LS0H Gray	8.0x16.1	116	1190	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 250

Category 6 U/FTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

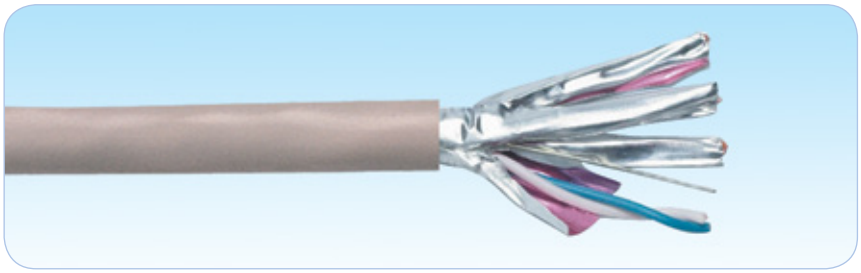
Description

HCS DataLink 250 cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 250 Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and individual pair shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together with a tin-coated drain-wire, overall wrapped with a polyester tape and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Drain wire	Solid, 24AWG, 0.51 mm, tin-coated annealed copper
Overall Tape Wrap	Polyester tape, providing 100% coverage.
Outer Jacket	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LSOH Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	80.0	74.3	75.3	77.0	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	80.0	59.3	60.3	77.0	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	80.0	53.3	54.3	77.0	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	80.0	51.9	52.9	77.0	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	75.0	47.4	48.4	72.0	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	72.0	44.3	45.3	69.0	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	68.0	39.8	40.8	65.0	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	63.0	38.3	39.3	60.0	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	78-80%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-250 MHz
Propagation Delay Skew	25 nS/100m max @ 1-250 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 55-20Log(f/100) @100-250 MHz
Transfer Impedance	10 mOhm/m max @ 1-10 MHz 30 mOhm/m max @ 30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H06-F0431-DP	4x2x23# U/FTP CAT 6 PVC Gray	6.8	47	600	500m Drum	-
H06-F0431-DM	4x2x23# U/FTP CAT 6 PVC Gray	6.8	47	600	1000m Drum	-
H06-F0432-DP	4x2x23# U/FTP CAT 6 LS0H Gray	6.8	47	605	500m Drum	-
H06-F0432-DM	4x2x23# U/FTP CAT 6 LS0H Gray	6.8	47	605	1000m Drum	-
H06-F0833-DP	2x(4x2x23#) U/FTP CAT 6 PVC Gray	6.8x13.7	94	1200	500m Drum	FIG-8
H06-F0833-DM	2x(4x2x23#) U/FTP CAT 6 PVC Gray	6.8x13.7	94	1200	1000m Drum	FIG-8
H06-F0834-DP	2x(4x2x23#) U/FTP CAT 6 LS0H Gray	6.8x13.7	94	1210	500m Drum	FIG-8
H06-F0834-DM	2x(4x2x23#) U/FTP CAT 6 LS0H Gray	6.8x13.7	94	1210	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 250

Category 6 U/FTP 100 Ohm Outdoor LAN Cables

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250 outdoor cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/FTP cables jacketed with heavy-duty, black, UV-resistant PE compound for horizontal outdoor installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA/-568-C.2 and IEC 61156-5.

Applications

HCS DataLink 250 outdoor horizontal cables support the following LAN applications:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ITU V.21 and X.11
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN

Qualifications and Approvals

HCS DataLink 250 outdoor cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA-568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and individual pair shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Heavy-duty, black, UV-resistant jacket - Providing low-cost outdoor cables for mild environments.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together with a tin-coated drain-wire, overall wrapped with a polyester tape and overall jacketed with heavy-duty, black, UV-resistant PE compound for outdoor use.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Drain Wire	Solid, 24AWG, 0.51 mm, tin-coated annealed copper
Overall Tape Wrap	Polyester tape, providing 100% coverage.
Outer Jacket	Heavy-duty, black, UV-resistant PE compound for outdoor use.
Jacket Color	Black RAL 9005.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Conductor Size Test	UL 444.
Temperature Operating Range	-20 to +60C

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	80.0	74.3	75.3	77.0	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	80.0	59.3	60.3	77.0	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	80.0	53.3	54.3	77.0	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	80.0	51.9	52.9	77.0	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	75.0	47.4	48.4	72.0	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	72.0	44.3	45.3	69.0	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	68.0	39.8	40.8	65.0	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	63.0	38.3	39.3	60.0	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	78-80%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-250 MHz
Propagation Delay Skew	25 nS/100m max @ 1-250 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-250 MHz
Transfer Impedance	10 mOhm/m max @ 1-10 MHz 30 mOhm/m max @ 30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Packaging	Notes
H06-00439-DK	4x2x23# U/FTP CAT 6 Outdoor Black	9.3	72	300m Drum	-
H06-00439-DP	4x2x23# U/FTP CAT 6 Outdoor Black	9.3	72	500m Drum	-
H06-00439-DM	4x2x23# U/FTP CAT 6 Outdoor Black	9.3	72	1000m Drum	-

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 250

Category 6 F/FTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250 cable series consists of 100 Ohm impedance, 4-pair and 8-pair F/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 250 Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance, individual pair shield and overall foil shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together with a tin-coated drain-wire, overall wrapped with a polyester-aluminum tape and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Drain wire	Solid, 24AWG, 0.51 mm, tin-coated annealed copper
Overall Shield	Polyester-aluminum tape (foil face inward) providing 100% coverage.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss			NEXT			PS NEXT			EL FEXT			PS EL FEXT			RL			TCL	EL TCL
MHz	dB/100m			dB			dB			dB/100m			dB/100m			dB			dB	dB
	Max	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	std	Min	Nom	Std	Min	Min
1.00	2.0	1.65	2.0	77.3	80.0	74.3	75.3	77.0	72.3	70.8	80	67.8	68.8	77	64.8	20.0	25	20.0	40	35
10.00	5.9	5.6	6.0	61.3	80.0	59.3	60.3	77.0	57.3	50.8	65	47.8	48.8	62	44.8	26.0	30	25.0	40	15
25.00	9.4	9.0	9.5	56.3	80.0	53.3	54.3	77.0	51.3	42.8	57	39.8	40.8	54	36.8	25.3	30	24.3	36	7.0
31.25	10.6	10.2	10.7	54.9	80.0	51.9	52.9	77.0	49.9	40.9	53	37.9	38.9	50	34.9	24.6	28	23.6	35.1	5.5
62.50	15.2	14.9	15.4	50.4	75.0	47.4	48.4	72.0	45.4	34.9	45	31.9	32.9	43	28.9	22.5	27	21.5	32	NS
100.00	19.6	19.2	19.8	47.3	72.0	44.3	45.3	69.0	42.3	30.8	43	27.8	28.8	40	24.8	21.1	26	20.1	30	NS
200.00	28.7	27.5	29.0	42.8	68.0	39.8	40.8	65.0	37.8	24.8	40	21.8	22.8	37	18.8	19.0	25	18.0	27	NS
250.00	32.6	31.0	32.8	41.3	63.0	38.3	39.3	60.0	36.3	22.8	37	19.8	20.8	34	16.8	18.3	25	17.3	26	NS

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	78-80%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-250 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-250 MHz
Transfer Impedance	10 mOhm/m max @ 1-10 MHz 30 mOhm/m max @ 30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H06-F0441-DP	4x2x23# F/FTP CAT 6 PVC Gray	7.3	50	600	500m Drum	-
H06-F0441-DM	4x2x23# F/FTP CAT 6 PVC Gray	7.3	50	600	1000m Drum	-
H06-F0442-DP	4x2x23# F/FTP CAT 6 LS0H Gray	7.3	50	605	500m Drum	-
H06-F0442-DM	4x2x23# F/FTP CAT 6 LS0H Gray	7.3	50	605	1000m Drum	-
H06-F0843-DP	2x(4x2x23#) F/FTP CAT 6 PVC Gray	7.3x14.7	100	1200	500m Drum	FIG-8
H06-F0843-DM	2x(4x2x23#) F/FTP CAT 6 PVC Gray	7.3x14.7	100	1200	1000m Drum	FIG-8
H06-F0844-DP	2x(4x2x23#) F/FTP CAT 6 LS0H Gray	7.3x14.7	100	1210	500m Drum	FIG-8
H06-F0844-DM	2x(4x2x23#) F/FTP CAT 6 LS0H Gray	7.3x14.7	100	1210	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 250E

Category 6E U/UTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

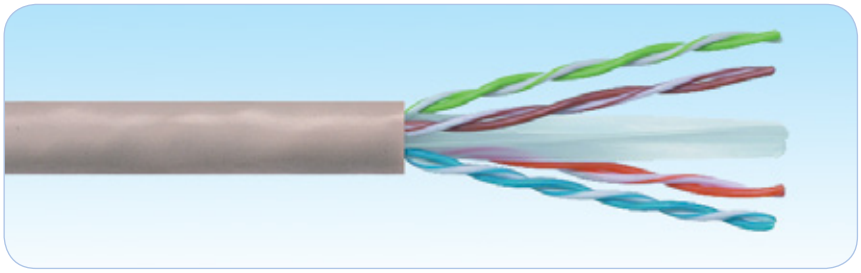
Description

HCS DataLink 250E cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/UTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6 requirements of ANSI/TIA/568-C.2 and IEC 61156-5.

Applications

HCS DataLink 250E Horizontal cables support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250E Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 250 MHz according to CENELEC EN 50288-5

Benefits & Features

- ➔ Testing every box or reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a star-shaped filler and overall jacketed.
Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		PS NEXT		EL FEXT		PS EL FEXT		RL		(SKEW)	Delay	TCL	EL TCL
MHz	dB/100m		dB		dB		dB/100m		dB/100m		dB		nS/100m	nS/100m	dB	dB
	Max	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Min	Nom	Max	Max	Min	Min
1.00	2.0	1.7	74.3	82	72.3	79	67.8	75	64.8	72	20.0	28	30	570	40.0	35.0
10.00	5.9	5.4	59.3	79	57.3	76	47.8	70	44.8	67	25.0	32	30	545	40.0	15.0
20.00	8.3	7.5	54.8	75	52.8	72	41.8	60	38.8	57	25.0	33	30	542	37.0	9.0
25.00	9.3	8.4	53.3	73	51.3	70	39.8	58	36.8	55	24.3	33	30	541	36.0	7.0
30.00	10.2	9.5	52.1	72	50.1	69	38.3	55	35.3	52	23.8	33	30	541	35.2	5.5
62.50	14.9	13.5	47.4	70	45.4	67	31.9	48	28.9	45	21.5	35	30	539	32.0	NS
100.00	19.0	17.5	44.3	65	42.3	62	27.8	46	24.8	43	20.1	34	30	538	30.0	NS
200.00	27.5	25.1	39.8	58	37.8	55	21.8	40	18.8	37	18.0	30	30	537	27.0	NS
250.00	31.0	28.3	38.3	55	36.3	52	19.8	38	16.8	35	17.3	25	30	536	26.0	NS
300.00	34.2	31.0	37.1	52	35.1	49	18.3	32	15.3	29	16.8	23	30	536	25.2	NS
400.00	40.0	36.0	35.3	48	33.3	45	15.8	28	12.8	25	15.9	22	30	536	24.0	NS
500.00	45.3	41.1	33.8	47	31.8	44	13.8	25	10.8	22	15.2	21	30	536	23.0	NS
600.00	50.1	45.0	32.6	46	30.6	43	12.2	22	9.2	19	14.7	20	30	535	22.2	NS

Characteristic Impedance	100±6 Ohm @ 1-600 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay	514 + 36/f1/2 nS/100m max @ 1-600 MHz
Propagation Delay Skew	35 nS/100m max @ 1-600 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20Log(f/100) @100-600 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H6E-F0401-DP	4x2x23# U/UTP CAT 6E PVC Gray	5.6	36	580	500m Drum	-
H6E-F0401-DM	4x2x23# U/UTP CAT 6E PVC Gray	5.6	36	580	1000m Drum	-
H6E-F0402-DP	4x2x23# U/UTP CAT 6E LS0H Gray	5.6	36	585	500m Drum	-
H6E-F0402-DM	4x2x23# U/UTP CAT 6E LS0H Gray	5.6	36	585	1000m Drum	-

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 500A

Category 6A MR/UTP
100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

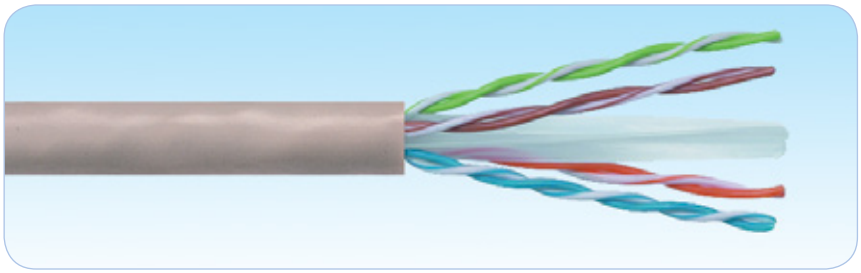
Description

HCS DataLink 500A cable series consists of 100 Ohm impedance, 4-pair and 8-pair MR/UTP with Metal Reflector (MR) cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6A requirements of ANSI/TIA/568-C.2 and Category 6A of IEC 61156-5.

Applications

HCS DataLink 500A Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards::

- ➔ Category 6A MR/UTP according to ANSI/TIA/568-C.2
- ➔ Category 6A according to IEC 61156-5.

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and inner metal reflector (MR) - Providing excellent EMC (Electro Magnetic Compatibility) & outstanding alien-crosstalk loss, minimizing radiation and maximizing noise immunity.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a star-shaped filler, Overall Taped-wrapped with a polyester tape & aluminum foil and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with a longitudinal rib.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual metal reflectors (MR)	Laminated aluminum foil providing 100% coverage.
Drain wire	None.
Overall Tape	Polyester tape providing 100% coverage.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	ACR-F	PS ACR-F	RL	Delay	TCL	EL TCL	PS ANEXT	PS AACR-F
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Min	Min	Min	Min
1	2.08	75.30	73.30	68.00	65.00	20.00	570.00	40.00	35.00	67.00	67.00
10	5.93	60.30	58.30	48.00	45.00	25.00	545.38	40.00	15.00	67.00	58.20
20	8.38	55.78	53.78	41.98	38.98	25.00	542.05	36.99	8.98	67.00	52.18
25	9.38	54.33	52.33	40.04	37.04	24.32	541.20	36.02	7.04	67.00	50.24
30	10.29	53.14	51.14	38.46	35.46	23.77	540.57	35.23	5.46	67.00	48.66
62.5	14.99	48.36	46.36	32.08	29.08	21.54	538.55	32.04	NS	65.56	42.28
100	19.14	45.30	43.30	28.00	25.00	20.11	537.60	30.00	NS	62.50	38.20
200	27.58	40.78	38.78	21.98	18.98	18.00	536.55	26.99	NS	57.98	32.18
250	31.07	39.33	37.33	20.04	17.04	17.32	536.28	26.02	NS	56.53	30.24
300	34.27	38.14	36.14	18.46	15.46	17.30	536.08	25.23	NS	55.34	28.66
400	40.05	36.27	34.27	15.96	12.96	17.30	535.80	23.98	NS	53.47	26.16
500	45.26	34.82	32.82	14.02	11.02	17.30	535.61	23.01	NS	52.02	24.22

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay Skew	45 nS/100m max @ 1-500 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20Log(f/100) @100-500 MHz
Transfer Impedance	NA

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H6A-F0403-DK	4x2x23# MR/UTP CAT 6A PVC Gray	8.0	57	580	305m Drum	-
H6A-F0403-DP	4x2x23# MR/UTP CAT 6A PVC Gray	8.0	57	580	500m Drum	-
H6A-F0403-DM	4x2x23# MR/UTP CAT 6A PVC Gray	8.0	57	580	1000m Drum	-
H6A-F0404-DK	4x2x23# MR/UTP CAT 6A LS0H Gray	8.0	57	585	305m Drum	-
H6A-F0404-DP	4x2x23# MR/UTP CAT 6A LS0H Gray	8.0	57	585	500m Drum	-
H6A-F0404-DM	4x2x23# MR/UTP CAT 6A LS0H Gray	8.0	57	585	1000m Drum	-
H6A-F0803-DP	2x(4x2x23#) MR/UTP CAT 6A PVC Gray	8.0x16.1	114	1180	500m Drum	FIG-8
H6A-F0803-DM	2x(4x2x23#) MR/UTP CAT 6A PVC Gray	8.0x16.1	114	1180	1000m Drum	FIG-8
H6A-F0804-DP	2x(4x2x23#) MR/UTP CAT 6A LS0H Gray	8.0x16.1	114	1190	500m Drum	FIG-8
H6A-F0804-DM	2x(4x2x23#) MR/UTP CAT 6A LS0H Gray	8.0x16.1	114	1190	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 500A

Category 6A U/MRTP
100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

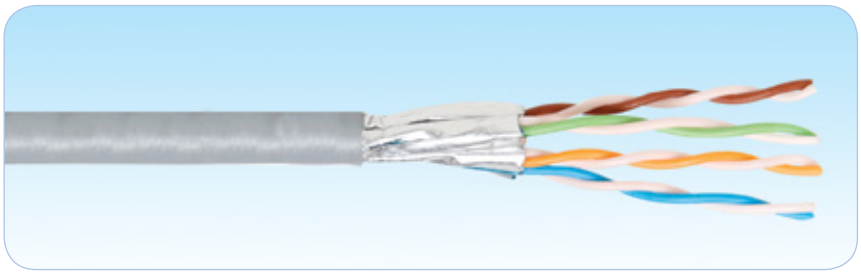
Description

HCS DataLink 500A cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/MRTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6A UTP requirements of TIA/EIA 568-C.2 and Category 6A of IEC 61156-5.

Applications

HCS DataLink 500A Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- Category 6A UTP according to ANSI/TIA/EIA-568-C.2
- Category 6A according to IEC 61156-5.

Benefits & Features

- Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- Revolutionary pair lay scheme - Providing an extremely low delay skew.
- Descending sequential meter mark - Providing easy stock and left-over handling.
- Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- Batch number printed every meter - Providing fast retrieval of test results from data-base.
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded twisted pairs, each covered by a metal-reflector, cabled together, overall wrapped with a polyester tape and overall jacketed.
Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Overall Tape Wrap	Plastic tape, providing 100% coverage.
Drain wire	None.
Metal Reflector	Laminated aluminum foil (foil face in) providing 100% coverage.
Outer Jacket	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LSOH Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	Delay	TCL	EL TCL	PS ANEXT	PS AACR-F
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Min	Min	Min	Min
1	2.0	74.3	72.3	67.8	64.8	20.0	570	40.0	35.0	67.0	67.0
10	5.9	59.3	57.3	47.8	44.8	25.0	545	40.0	15.0	67.0	58.2
20	8.3	54.8	52.8	41.8	38.8	25.0	542	37.0	9.0	67.0	52.2
25	9.3	53.3	51.3	49.8	36.8	24.3	541	36.0	7.0	67.0	50.2
30	10.2	52.1	50.1	38.3	35.3	23.8	541	35.2	5.5	67.0	48.7
62.5	14.9	47.4	45.4	31.9	28.9	21.5	539	32.0	NS	65.6	42.3
100	19.0	44.3	42.3	27.8	24.8	20.1	538	30.0	NS	62.5	38.2
200	27.5	39.8	37.8	21.8	18.8	18.0	537	27.0	NS	58.0	32.2
250	31.0	38.3	36.3	19.8	16.8	17.3	536	26.0	NS	56.5	30.2
300	34.2	37.1	35.1	18.3	15.3	16.8	536	25.2	NS	55.3	28.7
400	40.0	35.3	33.3	15.8	12.8	15.9	536	24.0	NS	53.5	26.2
500	45.3	33.8	31.8	13.8	10.8	15.2	536	23.0	NS	52.0	24.2

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay Skew	45 nS/100m max @ 1-500 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20Log(f/100) @100-500 MHz
Transfer Impedance	NA

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H6A-F0405-DK	4x2x23# U/MRTP CAT 6A PVC Gray	6.8	46	600	305m Drum	-
H6A-F0405-DP	4x2x23# U/MRTP CAT 6A PVC Gray	6.8	46	600	500m Drum	-
H6A-F0405-DM	4x2x23# U/MRTP CAT 6A PVC Gray	6.8	46	600	1000m Drum	-
H6A-F0406-DK	4x2x23# U/MRTP CAT 6A LS0H Gray	6.8	46	605	305m Drum	-
H6A-F0406-DP	4x2x23# U/MRTP CAT 6A LS0H Gray	6.8	46	605	500m Drum	-
H6A-F0406-DM	4x2x23# U/MRTP CAT 6A LS0H Gray	6.8	46	605	1000m Drum	-
H6A-F0805-DP	2x(4x2x23#) U/MRTP CAT 6A PVC Gray	6.8x13.7	92	1200	500m Drum	FIG-8
H6A-F0805-DM	2x(4x2x23#) U/MRTP CAT 6A PVC Gray	6.8x13.7	92	1200	1000m Drum	FIG-8
H6A-F0806-DP	2x(4x2x23#) U/MRTP CAT 6A LS0H Gray	6.8x13.7	92	1210	500m Drum	FIG-8
H6A-F0806-DM	2x(4x2x23#) U/MRTP CAT 6A LS0H Gray	6.8x13.7	92	1210	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 500A

Category 6A F/UTP
100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

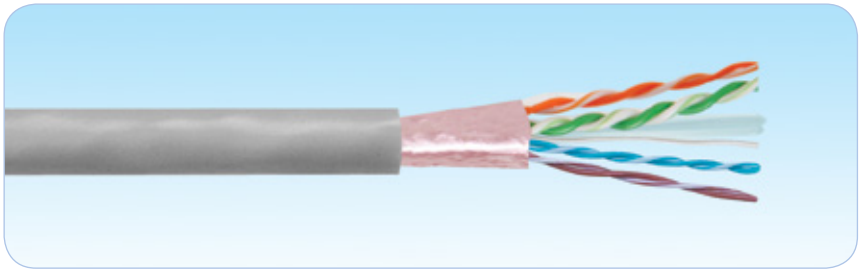
Description

HCS DataLink 500A cable series consists of 100 Ohm impedance, 4-pair and 8-pair F/UTP cables for horizontal installations in local area networks (LANs).
All cables fully conform to and provide a substantial margin above all Category 6A ScTP requirements of ANSI/TIA/568-C.2 and Category 6A of IEC 61156-5.

Applications

HCS DataLink 500A Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6A ScTP according to ANSI/TIA/568-C.2
- ➔ Category 6A according to IEC 61156-5.

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and 50µ aluminum shield - Providing excellent EMC (Electro Magnetic Compatibility) & outstanding alien-crosstalk loss, minimizing radiation and maximizing noise immunity.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a star-shaped filler, Overall Taped-wrapped with a polyester tape & aluminum foil and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Plastic tape, providing 100% coverage.
Drain wire	24 AWG solid tin-coated copper conductor laid in close contact under the shield.
Overall Shield	Laminated aluminum foil (foil face in) providing 100% coverage.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	ACR-F	PS ACR-F	RL	Delay	TCL	EL TCL	PS ANEXT	PS AACR-F
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Min	Min	Min	Min
1	2.08	75.30	73.30	68.00	65.00	20.00	570.00	40.00	35.00	67.00	67.00
10	5.93	60.30	58.30	48.00	45.00	25.00	545.38	40.00	15.00	67.00	58.20
20	8.38	55.78	53.78	41.98	38.98	25.00	542.05	36.99	8.98	67.00	52.18
25	9.38	54.33	52.33	40.04	37.04	24.32	541.20	36.02	7.04	67.00	50.24
30	10.29	53.14	51.14	38.46	35.46	23.77	540.57	35.23	5.46	67.00	48.66
62.5	14.99	48.36	46.36	32.08	29.08	21.54	538.55	32.04	NS	65.56	42.28
100	19.14	45.30	43.30	28.00	25.00	20.11	537.60	30.00	NS	62.50	38.20
200	27.58	40.78	38.78	21.98	18.98	18.00	536.55	26.99	NS	57.98	32.18
250	31.07	39.33	37.33	20.04	17.04	17.32	536.28	26.02	NS	56.53	30.24
300	34.27	38.14	36.14	18.46	15.46	17.30	536.08	25.23	NS	55.34	28.66
400	40.05	36.27	34.27	15.96	12.96	17.30	535.80	23.98	NS	53.47	26.16
500	45.26	34.82	32.82	14.02	11.02	17.30	535.61	23.01	NS	52.02	24.22

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	67-69%
Propagation Delay Skew	45 nS/100m max @ 1-500 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20Log(f/100) @100-500 MHz
Transfer Impedance	50 mOhm/m max @ 1 MHz.
	100 mOhm/m max @ 10 MHz.
	200 mOhm/m max @ 30 MHz.
	1000 mOhm/m max @ 100 MHz.

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H6A-F0411-DK	4x2x23# F/UTP CAT 6A PVC Gray	8.0	58	580	305m Drum	-
H6A-F0411-DP	4x2x23# F/UTP CAT 6A PVC Gray	8.0	58	580	500m Drum	-
H6A-F0411-DM	4x2x23# F/UTP CAT 6A PVC Gray	8.0	58	580	1000m Drum	-
H6A-F0412-DK	4x2x23# F/UTP CAT 6A LS0H Gray	8.0	58	585	305m Drum	-
H6A-F0412-DP	4x2x23# F/UTP CAT 6A LS0H Gray	8.0	58	585	500m Drum	-
H6A-F0412-DM	4x2x23# F/UTP CAT 6A LS0H Gray	8.0	58	585	1000m Drum	-
H6A-F0813-DP	2x(4x2x23#) F/UTP CAT 6A PVC Gray	8.0x16.1	116	1180	500m Drum	FIG-8
H6A-F0813-DM	2x(4x2x23#) F/UTP CAT 6A PVC Gray	8.0x16.1	116	1180	1000m Drum	FIG-8
H6A-F0814-DP	2x(4x2x23#) F/UTP CAT 6A LS0H Gray	8.0x16.1	116	1190	500m Drum	FIG-8
H6A-F0814-DM	2x(4x2x23#) F/UTP CAT 6A LS0H Gray	8.0x16.1	116	1190	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 500A

Category 6A U/FTP
100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

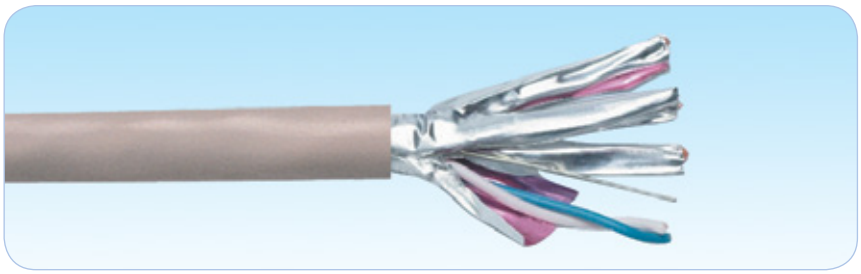
Description

HCS DataLink 500A cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6A ScTP requirements of ANSI/TIA/568-C.2 and Category 6A of IEC 61156-5.

Applications

HCS DataLink 500A Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6A ScTP according to ANSI/TIA/568-C.2
- ➔ Category 6A according to IEC 61156-5.

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and individual foil shields - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together with a tin-coated drain-wire, overall wrapped with a polyester tape and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Drain Wire	Solid, 24AWG, 0.51 mm, tin-coated annealed copper
Overall Tape	Polyester tape providing 100% coverage.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	ACR-F	PS ACR-F	RL	Delay	TCL	EL TCL	PS ANEXT	PS AACR-F
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Min	Min	Min	Min
1	2.08	75.30	73.30	68.00	65.00	20.00	570.00	40.00	35.00	67.00	67.00
10	5.93	60.30	58.30	48.00	45.00	25.00	545.38	40.00	15.00	67.00	58.20
20	8.38	55.78	53.78	41.98	38.98	25.00	542.05	36.99	8.98	67.00	52.18
25	9.38	54.33	52.33	40.04	37.04	24.32	541.20	36.02	7.04	67.00	50.24
30	10.29	53.14	51.14	38.46	35.46	23.77	540.57	35.23	5.46	67.00	48.66
62.5	14.99	48.36	46.36	32.08	29.08	21.54	538.55	32.04	NS	65.56	42.28
100	19.14	45.30	43.30	28.00	25.00	20.11	537.60	30.00	NS	62.50	38.20
200	27.58	40.78	38.78	21.98	18.98	18.00	536.55	26.99	NS	57.98	32.18
250	31.07	39.33	37.33	20.04	17.04	17.32	536.28	26.02	NS	56.53	30.24
300	34.27	38.14	36.14	18.46	15.46	17.30	536.08	25.23	NS	55.34	28.66
400	40.05	36.27	34.27	15.96	12.96	17.30	535.80	23.98	NS	53.47	26.16
500	45.26	34.82	32.82	14.02	11.02	17.30	535.61	23.01	NS	52.02	24.22

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	78-80%
Propagation Delay Skew	45 nS/100m max @ 1-500 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20Log(f/100) @100-500 MHz
Transfer Impedance	10 mOhm/m max @ 1-10 MHz 30 mOhm/m max @ 30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H6A-F0431-DK	4x2x23# U/FTP CAT 6A PVC Gray	6.8	47	600	305m Drum	-
H6A-F0431-DP	4x2x23# U/FTP CAT 6A PVC Gray	6.8	47	600	500m Drum	-
H6A-F0431-DM	4x2x23# U/FTP CAT 6A PVC Gray	6.8	47	600	1000m Drum	-
H6A-F0432-DK	4x2x23# U/FTP CAT 6A LS0H Gray	6.8	47	605	305m Drum	-
H6A-F0432-DP	4x2x23# U/FTP CAT 6A LS0H Gray	6.8	47	605	500m Drum	-
H6A-F0432-DM	4x2x23# U/FTP CAT 6A LS0H Gray	6.8	47	605	1000m Drum	-
H6A-F0833-DP	2x(4x2x23#) U/FTP CAT 6A PVC Gray	6.8x13.7	94	1200	500m Drum	FIG-8
H6A-F0833-DM	2x(4x2x23#) U/FTP CAT 6A PVC Gray	6.8x13.7	94	1200	1000m Drum	FIG-8
H6A-F0834-DP	2x(4x2x23#) U/FTP CAT 6A LS0H Gray	6.8x13.7	94	1210	500m Drum	FIG-8
H6A-F0834-DM	2x(4x2x23#) U/FTP CAT 6A LS0H Gray	6.8x13.7	94	1210	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 500A

Category 6A U/FTP
100 Ohm Outdoor LAN Cables

HES Cabling Systems
Connecting Networks™

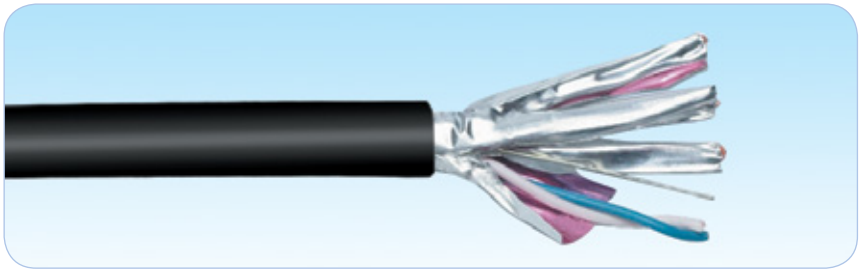
Description

HCS DataLink 500A outdoor cable series consists of 100 Ohm impedance, 4-pair and 8-pair U/FTP cables jacketed with heavy-duty, black, UV-resistant PE compound for horizontal outdoor installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6A requirements of ANSI/TIA/-568-C.2 and IEC 61156-5.

Applications

HCS DataLink 500A Horizontal outdoor cables support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ITU V.21 and X.11
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN



Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- Category 6A according to ANSI/TIA/-568-C.2.
- Category 6A according to IEC 61156-5.

Benefits & Features

- Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- Extremely high pair-balance and individual foil shields - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- Revolutionary pair lay scheme - Providing an extremely low delay skew.
- Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- Descending sequential meter mark - Providing easy stock and left-over handling.
- Heavy-duty, black, UV-resistant jacket - Providing low-cost outdoor cables for mild environments.
- Batch number printed every meter - Providing fast retrieval of test results from data-base.
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together with a tin-coated drain-wire, overall wrapped with a polyester tape and overall jacketed with heavy-duty, black, UV-resistant PE compound for outdoor use.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Drain Wire	Solid, 24AWG, 0.51 mm, tin-coated annealed copper
Overall Tape	Polyester tape providing 100% coverage.
Outer Jacket	heavy-duty, black, UV-resistant PE compound for outdoor use.
Standard Jacket Color	Black RAL 9005.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Conductor Size Test	UL 444.
Temperature Operating Range	-20 to +60C

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	ACR-F	PS ACR-F	RL	Delay	TCL	EL TCL	PS ANEXT	PS AACR-F
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Min	Min	Min	Min
1	2.08	75.30	73.30	68.00	65.00	20.00	570.00	40.00	35.00	67.00	67.00
10	5.93	60.30	58.30	48.00	45.00	25.00	545.38	40.00	15.00	67.00	58.20
20	8.38	55.78	53.78	41.98	38.98	25.00	542.05	36.99	8.98	67.00	52.18
25	9.38	54.33	52.33	40.04	37.04	24.32	541.20	36.02	7.04	67.00	50.24
30	10.29	53.14	51.14	38.46	35.46	23.77	540.57	35.23	5.46	67.00	48.66
62.5	14.99	48.36	46.36	32.08	29.08	21.54	538.55	32.04	NS	65.56	42.28
100	19.14	45.30	43.30	28.00	25.00	20.11	537.60	30.00	NS	62.50	38.20
200	27.58	40.78	38.78	21.98	18.98	18.00	536.55	26.99	NS	57.98	32.18
250	31.07	39.33	37.33	20.04	17.04	17.32	536.28	26.02	NS	56.53	30.24
300	34.27	38.14	36.14	18.46	15.46	17.30	536.08	25.23	NS	55.34	28.66
400	40.05	36.27	34.27	15.96	12.96	17.30	535.80	23.98	NS	53.47	26.16
500	45.26	34.82	32.82	14.02	11.02	17.30	535.61	23.01	NS	52.02	24.22

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	78-80%
Propagation Delay Skew	45 nS/100m max @ 1-500 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20Log(f/100) @100-500 MHz
Transfer Impedance	10 mOhm/m max @ 1-10 MHz 30 mOhm/m max @ 30 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Packaging	Notes
H6A-00439-DK	4x2x23# U/FTP CAT 6A Outdoor Black	9.3	72	305m Drum	-
H6A-00439-DP	4x2x23# U/FTP CAT 6A Outdoor Black	9.3	72	500m Drum	-
H6A-00439-DM	4x2x23# U/FTP CAT 6A Outdoor Black	9.3	72	1000m Drum	-

DataLink 500A

Category 6A F/FTP
100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

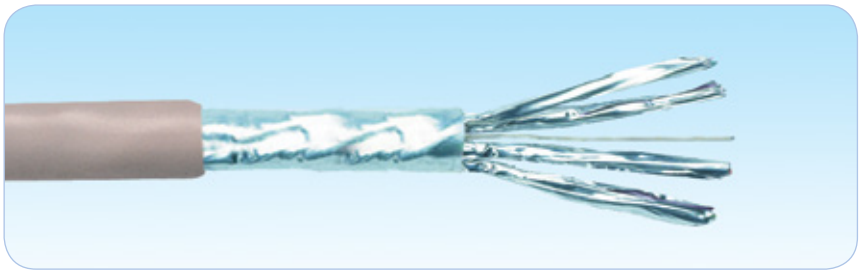
Description

HCS DataLink 500A cable series consists of 100 Ohm impedance, 4-pair and 8-pair F/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 6A ScTP requirements of ANSI/TIA/568-C.2 and Category 6A of IEC 61156-5.

Applications

HCS DataLink 500A Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6A ScTP according to ANSI/TIA/568-C.2
- ➔ Category 6A according to IEC 61156-5.

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance, individual and overall foil shields - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together with a tin-coated drain-wire, overall wrapped with a polyester-aluminum tape and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Drain wire	Solid, 24AWG, 0.51 mm, tin-coated annealed copper
Overall Shield	Polyester-aluminum tape (foil face inward) providing 100% coverage.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	ACR-F	PS ACR-F	RL	Delay	TCL	EL TCL	PS ANEXT	PS AACR-F
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Min	Min	Min	Min
1	2.08	75.30	73.30	68.00	65.00	20.00	570.00	40.00	35.00	67.00	67.00
10	5.93	60.30	58.30	48.00	45.00	25.00	545.38	40.00	15.00	67.00	58.20
20	8.38	55.78	53.78	41.98	38.98	25.00	542.05	36.99	8.98	67.00	52.18
25	9.38	54.33	52.33	40.04	37.04	24.32	541.20	36.02	7.04	67.00	50.24
30	10.29	53.14	51.14	38.46	35.46	23.77	540.57	35.23	5.46	67.00	48.66
62.5	14.99	48.36	46.36	32.08	29.08	21.54	538.55	32.04	NS	65.56	42.28
100	19.14	45.30	43.30	28.00	25.00	20.11	537.60	30.00	NS	62.50	38.20
200	27.58	40.78	38.78	21.98	18.98	18.00	536.55	26.99	NS	57.98	32.18
250	31.07	39.33	37.33	20.04	17.04	17.32	536.28	26.02	NS	56.53	30.24
300	34.27	38.14	36.14	18.46	15.46	17.30	536.08	25.23	NS	55.34	28.66
400	40.05	36.27	34.27	15.96	12.96	17.30	535.80	23.98	NS	53.47	26.16
500	45.26	34.82	32.82	14.02	11.02	17.30	535.61	23.01	NS	52.02	24.22

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	78-80%
Propagation Delay Skew	45 nS/100m max @ 1-500 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-500 MHz
Transfer Impedance	50 mOhm/m max @ 1 MHz.
	100 mOhm/m max @ 10 MHz.
	200 mOhm/m max @ 30 MHz.
	1000 mOhm/m max @ 100 MHz.

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H6A-F0441-DK	4x2x23# F/FTP CAT 6A PVC Gray	7.3	50	600	305m Drum	-
H6A-F0441-DP	4x2x23# F/FTP CAT 6A PVC Gray	7.3	50	600	500m Drum	-
H6A-F0441-DM	4x2x23# F/FTP CAT 6A PVC Gray	7.3	50	600	1000m Drum	-
H6A-F0442-DK	4x2x23# F/FTP CAT 6A LS0H Gray	7.3	50	605	305m Drum	-
H6A-F0442-DP	4x2x23# F/FTP CAT 6A LS0H Gray	7.3	50	605	500m Drum	-
H6A-F0442-DM	4x2x23# F/FTP CAT 6A LS0H Gray	7.3	50	605	1000m Drum	-
H6A-F0843-DP	2x(4x2x23#) F/FTP CAT 6A PVC Gray	7.3x14.7	100	1200	500m Drum	FIG-8
H6A-F0843-DM	2x(4x2x23#) F/FTP CAT 6A PVC Gray	7.3x14.7	100	1200	1000m Drum	FIG-8
H6A-F0844-DP	2x(4x2x23#) F/FTP CAT 6A LS0H Gray	7.3x14.7	100	1210	500m Drum	FIG-8
H6A-F0844-DM	2x(4x2x23#) F/FTP CAT 6A LS0H Gray	7.3x14.7	100	1210	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 500A

Category 6A S/FTP
100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

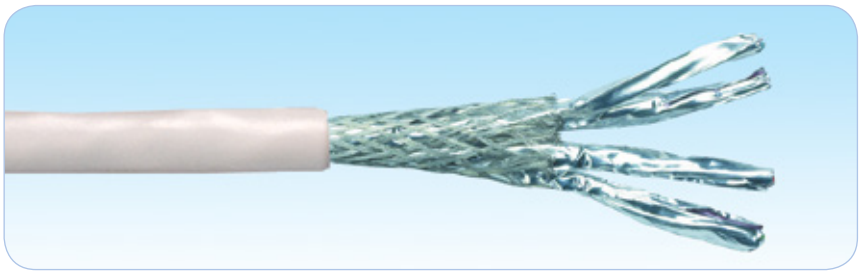
Description

HCS DataLink 500A cable series consists of 100 Ohm impedance, 4-pair and 8-pair S/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margins above all Category 6A ScTP requirements of ANSI/TIA/568-C.2 and Category 6A of IEC 61156-5.

Applications

HCS DataLink 500A Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- Category 6A ScTP according to ANSI/TIA/568-C.2
- Category 6A according to IEC 61156-5.

Benefits & Features

- Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- Extremely high pair-balance, individual and overall foil shields - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- Revolutionary pair lay scheme - Providing an extremely low delay skew.
- Batch number printed every meter - Providing fast retrieval of test results from data-base.
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together, Overall Shielded with tin-coated copper braid and overall jacketed.
Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Laminated aluminum foil (foil face outward) providing 100% coverage.
Drain Wire	None.
Overall Shield	Tin coated copper braid laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	ACR-F	PS ACR-F	RL	Delay	TCL	EL TCL	PS ANEXT	PS AACR-F
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Min	Min	Min	Min
1	2.08	75.30	73.30	68.00	65.00	20.00	570.00	40.00	35.00	67.00	67.00
10	5.93	60.30	58.30	48.00	45.00	25.00	545.38	40.00	15.00	67.00	58.20
20	8.38	55.78	53.78	41.98	38.98	25.00	542.05	36.99	8.98	67.00	52.18
25	9.38	54.33	52.33	40.04	37.04	24.32	541.20	36.02	7.04	67.00	50.24
30	10.29	53.14	51.14	38.46	35.46	23.77	540.57	35.23	5.46	67.00	48.66
62.5	14.99	48.36	46.36	32.08	29.08	21.54	538.55	32.04	NS	65.56	42.28
100	19.14	45.30	43.30	28.00	25.00	20.11	537.60	30.00	NS	62.50	38.20
200	27.58	40.78	38.78	21.98	18.98	18.00	536.55	26.99	NS	57.98	32.18
250	31.07	39.33	37.33	20.04	17.04	17.32	536.28	26.02	NS	56.53	30.24
300	34.27	38.14	36.14	18.46	15.46	17.30	536.08	25.23	NS	55.34	28.66
400	40.05	36.27	34.27	15.96	12.96	17.30	535.80	23.98	NS	53.47	26.16
500	45.26	34.82	32.82	14.02	11.02	17.30	535.61	23.01	NS	52.02	24.22

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	1500 Volts/1 minute min rms
Velocity of Propagation (NVP)	78-80%
Propagation Delay Skew	45 nS/100m max @ 1-500 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-500 MHz
Transfer Impedance	50 mOhm/m max @ 1 MHz.
	100 mOhm/m max @ 10 MHz.
	200 mOhm/m max @ 30 MHz.
	1000 mOhm/m max @ 100 MHz.

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H6A-F0451-DK	4x2x23# S/FTP CAT 6A PVC Gray	7.0	50	650	305m Drum	-
H6A-F0451-DP	4x2x23# S/FTP CAT 6A PVC Gray	7.0	50	650	500m Drum	-
H6A-F0451-DM	4x2x23# S/FTP CAT 6A PVC Gray	7.0	50	650	1000m Drum	-
H6A-F0452-DK	4x2x23# S/FTP CAT 6A LS0H Gray	7.0	50	655	305m Drum	-
H6A-F0452-DP	4x2x23# S/FTP CAT 6A LS0H Gray	7.0	50	655	500m Drum	-
H6A-F0452-DM	4x2x23# S/FTP CAT 6A LS0H Gray	7.0	50	655	1000m Drum	-
H6A-F0853-DP	2x(4x2x23#) S/FTP CAT 6A PVC Gray	7.0x14.1	100	1300	500m Drum	FIG-8
H6A-F0853-DM	2x(4x2x23#) S/FTP CAT 6A PVC Gray	7.0x14.1	100	1300	1000m Drum	FIG-8
H6A-F0854-DP	2x(4x2x23#) S/FTP CAT 6A LS0H Gray	7.0x14.1	100	1310	500m Drum	FIG-8
H6A-F0854-DM	2x(4x2x23#) S/FTP CAT 6A LS0H Gray	7.0x14.1	100	1310	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 600

Category 7 S/FTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

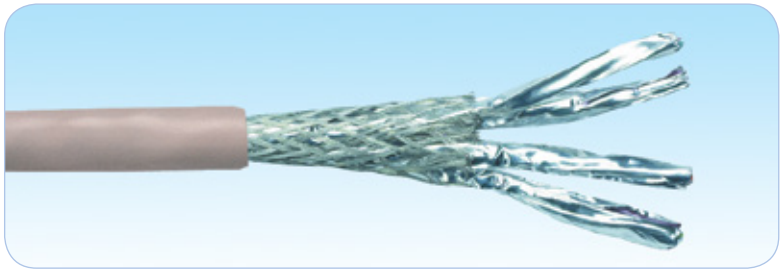
Description

HCS DataLink 600 CAT 7 cable series consists of 100 Ohm impedance, 4-pair and 8-pair S/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 7 requirements of IEC 61156-5 (Specified in ISO/IEC 11801) and are tested up to 600MHz.

Applications

HCS DataLink 600 CAT 7 Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ Broadband Digital and Analog CATV signals up to 600 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.1110BASE-T Ethernet



Qualifications and Approvals

HCS DataLink 600 CAT 7 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 7 according to IEC 61156-5 (for ISO/IEC-11801).
- ➔ 600 MHz according to CENELEC EN 50288-4

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +60C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.74	78.0	75.0	83.3	80.3	23.0	40.0	23.0	67.0	67.0
8	5.24	78.0	75.0	77.2	74.2	24.5	40.0	16.9	67.0	67.0
10	5.86	78.0	75.0	75.3	72.3	25.0	40.0	15.0	67.0	67.0
16	7.41	78.0	75.0	71.2	68.2	26.0	38.0	10.9	67.0	67.0
20	8.29	78.0	75.0	69.3	66.3	25.0	37.0	9.0	67.0	67.0
25	9.29	78.0	75.0	67.3	64.3	24.3	36.0	7.0	67.0	65.2
31.25	10.41	78.0	75.0	65.4	62.4	23.6	35.1	5.1	67.0	63.3
62.5	14.88	75.5	72.5	59.4	56.4	21.5	32.0	NS	67.0	57.3
100	19.02	72.4	69.4	55.3	52.3	20.1	30.0	NS	67.0	53.2
150	23.56	69.8	66.8	51.8	48.8	18.9	28.2	NS	67.0	49.7
200	27.47	67.9	64.9	49.3	46.3	18.0	27.0	NS	67.0	47.2
250	30.97	66.4	63.4	47.3	44.3	17.3	26.0	NS	67.0	45.2
300	34.19	65.2	62.2	45.8	42.8	17.3	NS	NS	67.0	43.7
400	40.01	63.4	60.4	43.3	40.3	17.3	NS	NS	67.0	41.2
500	45.26	61.9	58.9	41.3	38.3	17.3	NS	NS	67.0	39.2
600	50.10	60.7	57.7	39.7	36.7	17.3	NS	NS	65.8	37.6

Characteristic Impedance	100±5 Ohm @ 1-600 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80%
Propagation Delay	500+36/f1/2
Delay Skew	25 nS/100m max @ 1-600 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-600 MHz
Screening Attenuation	60 dB min @ 30-600 MHz
Transfer Impedance	10 mOhm/m max @ 1-30 MHz 30 MOhm/m max @ 30-100 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H07-F0401-DP	4x2x23# S/FTP CAT 7 PVC Gray	7.0	48	660	500m Drum	
H07-F0401-DM	4x2x23# S/FTP CAT 7 PVC Gray	7.0	48	660	1000m Drum	
H07-F0402-DP	4x2x23# S/FTP CAT 7 LS0H Gray	7.0	48	660	500m Drum	
H07-F0402-DM	4x2x23# S/FTP CAT 7 LS0H Gray	7.0	48	660	1000m Drum	
H07-F0803-DP	2x(4x2x23#) CAT 7 S/FTP PVC Gray	7.0x14.2	100	1320	500m Drum	FIG-8
H07-F0803-DM	2x(4x2x23#) CAT 7 S/FTP PVC Gray	7.0x14.2	100	1320	1000m Drum	FIG-8
H07-F0804-DP	2x(4x2x23#) CAT 7 S/FTP LS0H Gray	7.0x14.2	100	1320	500m Drum	FIG-8
H07-F0804-DM	2x(4x2x23#) CAT 7 S/FTP LS0H Gray	7.0x14.2	100	1320	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 600

Category 7 S/FTP 100 Ohm Outdoor LAN Cables

HES Cabling Systems
Connecting Networks™

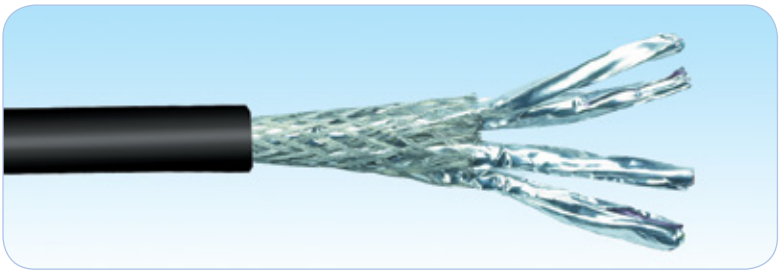
Description

HCS DataLink 600 outdoor CAT 7 cable series consists of 100 Ohm impedance, 4-pair and 8-pair S/FTP cables jacketed with heavy-duty, black, UV-resistant PE compound for horizontal outdoor installations in local area networks (LANs) All cables fully conform to and provide a substantial margin above all Category 7 requirements of IEC 61156-5 (Specified in ISO/IEC 11801) and are tested up to 600MHz.

Applications

HCS DataLink 600 CAT 7 Horizontal outdoor cables support all presently available LAN applications, including the following protocols:

- ☑ Broadband Digital and Analog CATV signals up to 600 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 600 CAT 7 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 7 according to IEC 61156-5 (for ISO/IEC-11801)
- ➔ 600 MHz according to CENELEC EN 50288-4

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and individual foil shields - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Co-extruded crisp and clear spiral color coding of wires - Providing positive wire identification and ease of installation.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Heavy-duty, black, UV-resistant jacket - Providing low-cost outdoor cables for mild environments.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with a tin-coated copper braid and overall jacketed with heavy-duty, black, UV-resistant PE compound for outdoor use.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors 8, twisted in 4 pairs.	(8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage
Overall Shield	Tin coated copper braid laid in close contact over the inner foils
Outer Jacket	Heavy-duty, black, UV-resistant PE compound for outdoor use
Jacket Color	Black, RAL 9005.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Pulling Force	50 N/mm^2 max
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +60C
Conductor Size Test	UL 444.
Operating Temperature	-20 to +60C
Installation Temperature	0 to +50C

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.74	78.0	75.0	83.3	80.3	23.0	40.0	23.0	67.0	67.0
8	5.24	78.0	75.0	77.2	74.2	24.5	40.0	16.9	67.0	67.0
10	5.86	78.0	75.0	75.3	72.3	25.0	40.0	15.0	67.0	67.0
16	7.41	78.0	75.0	71.2	68.2	26.0	38.0	10.9	67.0	67.0
20	8.29	78.0	75.0	69.3	66.3	25.0	37.0	9.0	67.0	67.0
25	9.29	78.0	75.0	67.3	64.3	24.3	36.0	7.0	67.0	65.2
31.25	10.41	78.0	75.0	65.4	62.4	23.6	35.1	5.1	67.0	63.3
62.5	14.88	75.5	72.5	59.4	56.4	21.5	32.0	NS	67.0	57.3
100	19.02	72.4	69.4	55.3	52.3	20.1	30.0	NS	67.0	53.2
150	23.56	69.8	66.8	51.8	48.8	18.9	28.2	NS	67.0	49.7
200	27.47	67.9	64.9	49.3	46.3	18.0	27.0	NS	67.0	47.2
250	30.97	66.4	63.4	47.3	44.3	17.3	26.0	NS	67.0	45.2
300	34.19	65.2	62.2	45.8	42.8	17.3	NS	NS	67.0	43.7
400	40.01	63.4	60.4	43.3	40.3	17.3	NS	NS	67.0	41.2
500	45.26	61.9	58.9	41.3	38.3	17.3	NS	NS	67.0	39.2
600	50.10	60.7	57.7	39.7	36.7	17.3	NS	NS	65.8	37.6

Characteristic Impedance	100±5 Ohm @ 1-600 MHz
Resistance Unbalance	2% max
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz
Voltage Rating	72 Vdc max
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80%
Propagation Delay	500+36/f1/2 @ 1-600 MHz.
Delay Skew	25 nS/100m max @ 1-600 MHz
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-600 MHz
Screening Attenuation	60 dB min @ 30-600 MHz
Transfer Impedance	10 mOhm/m max @ 1-30 MHz 30 MOhm/m max @ 30-100 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Packaging	Notes
H07-00465-DK	4x2x23# S/FTP CAT 7 Outdoor Black	9.5	75	305m Drum	-
H07-00465-DP	4x2x23# S/FTP CAT 7 Outdoor Black	9.5	75	500m Drum	-
H07-00465-DM	4x2x23# S/FTP CAT 7 Outdoor Black	9.5	75	1000m Drum	-

DataLink 600

Category 7+ S/FTP 100 Ohm Horizontal LAN Cables Tested to 1000 MHz

HES Cabling Systems
Connecting Networks™

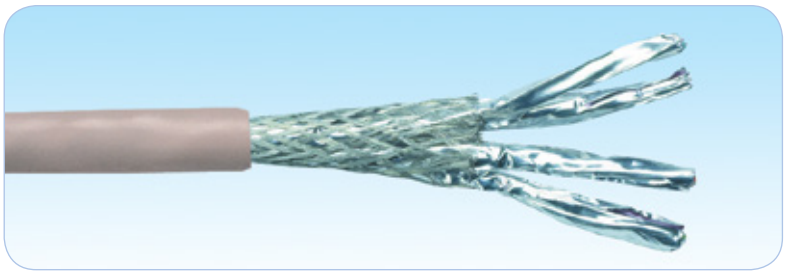
Description

HCS DataLink 600 CAT 7+ cable series consists of 100 Ohm impedance, 4-pair and 8-pair S/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 7 requirements of IEC 61156-5 (Specified in ISO/IEC 11801) and are tested up to 1000MHz.

Applications

HCS DataLink 600 CAT 7+ Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ Broadband Digital and Analog CATV signals up to 1000 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 600 CAT 7+ Cables are tested and verified for full compliance with the following standards:

- ➔ Category 7 according to IEC 61156-5 (for ISO/IEC-11801).
- ➔ 600 MHz according to CENELEC EN 50288-4

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +60C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.74	78.0	75.0	83.3	80.3	23.0	40.0	23.0	67.0	67.0
8	5.24	78.0	75.0	77.2	74.2	24.5	40.0	16.9	67.0	67.0
10	5.86	78.0	75.0	75.3	72.3	25.0	40.0	15.0	67.0	67.0
16	7.41	78.0	75.0	71.2	68.2	26.0	38.0	10.9	67.0	67.0
20	8.29	78.0	75.0	69.3	66.3	25.0	37.0	9.0	67.0	67.0
25	9.29	78.0	75.0	67.3	64.3	24.3	36.0	7.0	67.0	65.2
31.25	10.41	78.0	75.0	65.4	62.4	23.6	35.1	5.1	67.0	63.3
62.5	14.88	75.5	72.5	59.4	56.4	21.5	32.0	NS	67.0	57.3
100	19.02	72.4	69.4	55.3	52.3	20.1	30.0	NS	67.0	53.2
150	23.56	69.8	66.8	51.8	48.8	18.9	28.2	NS	67.0	49.7
200	27.47	67.9	64.9	49.3	46.3	18.0	27.0	NS	67.0	47.2
250	30.97	66.4	63.4	47.3	44.3	17.3	26.0	NS	67.0	45.2
300	34.19	65.2	62.2	45.8	42.8	17.3	NS	NS	67.0	43.7
400	40.01	63.4	60.4	43.3	40.3	17.3	NS	NS	67.0	41.2
500	45.26	61.9	58.9	41.3	38.3	17.3	NS	NS	67.0	39.2
600	50.10	60.7	57.7	39.7	36.7	17.3	NS	NS	65.8	37.6
700	54.63	59.7	56.7	38.4	35.4	16.6	NS	NS	64.8	36.3
800	58.92	58.9	55.9	37.2	34.2	16.1	NS	NS	64.0	35.1
1000	66.93	57.4	54.4	35.3	32.3	15.1	NS	NS	62.5	33.2

Note: Values above 600Mhz are nominal, for reference only

Characteristic Impedance	100±5 Ohm @ 1-1000 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80%
Propagation Delay	500 + 36/f1/2 @ 1-1000 MHz.
Delay Skew	25 nS/100m max @ 1-1000 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-600 MHz
Screening Attenuation	60 dB min @ 30-600 MHz
Transfer Impedance	10 mOhm/m max @ 1-30 MHz 30 MOhm/m max @ 30-100 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H07-F0411-DP	4x2x23# S/FTP CAT 7+ PVC Gray, Tested to 1000 MHz	7.0	48	660	500m Drum	
H07-F0411-DM	4x2x23# S/FTP CAT 7+ PVC Gray, Tested to 1000 MHz	7.0	48	660	1000m Drum	
H07-F0412-DP	4x2x23# S/FTP CAT 7+ LS0H Gray, Tested to 1000 MHz	7.0	48	660	500m Drum	
H07-F0412-DM	4x2x23# S/FTP CAT 7+ LS0H Gray, Tested to 1000 MHz	7.0	48	660	1000m Drum	
H07-F0813-DP	2x(4x2x23#) CAT 7+ S/FTP PVC Gray,Tested to 1000 MHz	7.0x14.2	100	1320	500m Drum	FIG-8
H07-F0813-DM	2x(4x2x23#) CAT 7+ S/FTP PVC Gray,Tested to 1000 MHz	7.0x14.2	100	1320	1000m Drum	FIG-8
H07-F0814-DP	2x(4x2x23#) CAT 7+ S/FTP LS0H Gray, Tested to 1000 MHz	7.0x14.2	100	1320	500m Drum	FIG-8
H07-F0814-DM	2x(4x2x23#) CAT 7+ S/FTP LS0H Gray, Tested to 1000 MHz	7.0x14.2	100	1320	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 600

Category 7+ S/FTP 100 Ohm Horizontal LAN Cables Tested to 1200 MHz

HES Cabling Systems
Connecting Networks™

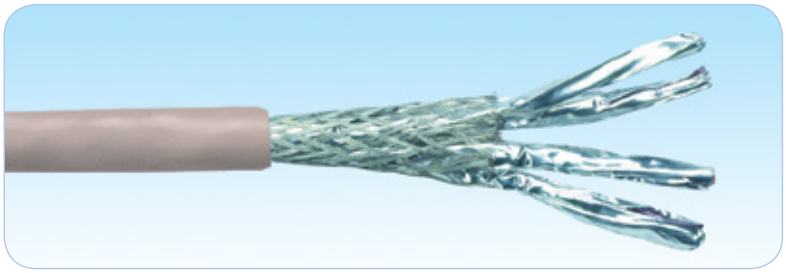
Description

HCS DataLink 600 CAT 7+ cable series consists of 100 Ohm impedance, 4-pair and 8-pair S/FTP cables for horizontal installations in localarea networks (LANs). All cables fully conform to and provide a substantial margin above all Category 7 requirements of IEC 61156-5 (Specified in ISO/IEC 11801) and are tested up to 1200MHz.

Applications

HCS DataLink 600 CAT 7+ Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ Broadband Digital and Analog CATV signals up to 1200 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 600 CAT 7+ Cables are tested and verified for full compliance with the following standards:

- ➔ Category 7 according to IEC 61156-5 (for ISO/IEC-11801).
- ➔ 600 MHz according to CENELEC EN 50288-4

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 23AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Temperature Operating Range	-20 to +60C
Installation Temperature Range	0 to +50C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.74	78.0	75.0	83.3	80.3	23.0	40.0	23.0	67.0	67.0
8	5.24	78.0	75.0	77.2	74.2	24.5	40.0	16.9	67.0	67.0
10	5.86	78.0	75.0	75.3	72.3	25.0	40.0	15.0	67.0	67.0
16	7.41	78.0	75.0	71.2	68.2	26.0	38.0	10.9	67.0	67.0
20	8.29	78.0	75.0	69.3	66.3	25.0	37.0	9.0	67.0	67.0
25	9.29	78.0	75.0	67.3	64.3	24.3	36.0	7.0	67.0	65.2
31.25	10.41	78.0	75.0	65.4	62.4	23.6	35.1	5.1	67.0	63.3
62.5	14.88	75.5	72.5	59.4	56.4	21.5	32.0	NS	67.0	57.3
100	19.02	72.4	69.4	55.3	52.3	20.1	30.0	NS	67.0	53.2
150	23.56	69.8	66.8	51.8	48.8	18.9	28.2	NS	67.0	49.7
200	27.47	67.9	64.9	49.3	46.3	18.0	27.0	NS	67.0	47.2
250	30.97	66.4	63.4	47.3	44.3	17.3	26.0	NS	67.0	45.2
300	34.19	65.2	62.2	45.8	42.8	17.3	NS	NS	67.0	43.7
400	40.01	63.4	60.4	43.3	40.3	17.3	NS	NS	67.0	41.2
500	45.26	61.9	58.9	41.3	38.3	17.3	NS	NS	67.0	39.2
600	50.10	60.7	57.7	39.7	36.7	17.3	NS	NS	65.8	37.6
700	54.63	59.7	56.7	38.4	35.4	16.6	NS	NS	64.8	36.3
800	58.92	58.9	55.9	37.2	34.2	16.1	NS	NS	64.0	35.1
1000	66.93	57.4	54.4	35.3	32.3	15.1	NS	NS	62.5	33.2
1200	74.36	56.2	53.2	33.7	30.7	14.3	NS	NS	61.3	31.6

Note: Values above 600Mhz are nominal, for reference only

Characteristic Impedance	100±5 Ohm @ 1-1200 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80%
Propagation Delay	500 + 36/f1/2 @ 1-1200 MHz.
Delay Skew	25 nS/100m max @ 1-1200 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-600 MHz
Screening Attenuation	60 dB min @ 30-600 MHz
Transfer Impedance	10 mOhm/m max @ 1-30 MHz 30 MOhm/m max @ 30-100 MHz

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H07-F0421-DP	4x2x23# S/FTP CAT 7+ PVC Gray, Tested to 1200 MHz	7.0	48	660	500m Drum	
H07-F0421-DM	4x2x23# S/FTP CAT 7+ PVC Gray, Tested to 1200 MHz	7.0	48	660	1000m Drum	
H07-F0422-DP	4x2x23# S/FTP CAT 7+ LS0H Gray, Tested to 1200 MHz	7.0	48	660	500m Drum	
H07-F0422-DM	4x2x23# S/FTP CAT 7+ LS0H Gray, Tested to 1200 MHz	7.0	48	660	1000m Drum	
H07-F0823-DP	2x(4x2x23#) CAT 7+ S/FTP PVC Gray, Tested to 1200 MHz	7.0x14.2	100	1320	500m Drum	FIG-8
H07-F0823-DM	2x(4x2x23#) CAT 7+ S/FTP PVC Gray, Tested to 1200 MHz	7.0x14.2	100	1320	1000m Drum	FIG-8
H07-F0824-DP	2x(4x2x23#) CAT 7+ S/FTP LS0H Gray, Tested to 1200 MHz	7.0x14.2	100	1320	500m Drum	FIG-8
H07-F0824-DM	2x(4x2x23#) CAT 7+ S/FTP LS0H Gray, Tested to 1200 MHz	7.0x14.2	100	1320	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 1000

Category 7A S/FTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

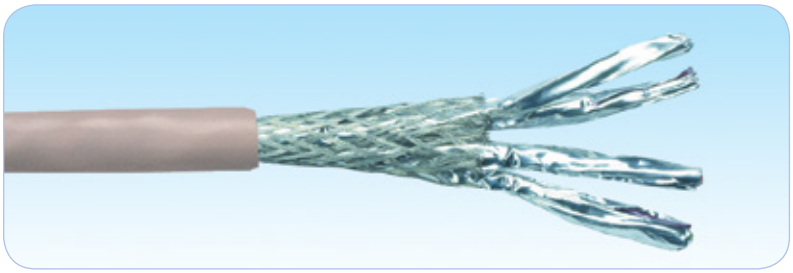
Description

HCS DataLink 1000 cable series consists of 100 Ohm impedance, 4-pair and 8-pair 23AWG or 22AWG S/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 7A requirements of IEC 61156-5 (Specified in ISO/IEC 11801). All cables fully support IEEE 802.3at 2009 Part 3 Amendment 3 including PoE+.

Applications

HCS DataLink 1000 Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ Broadband Digital and Analog CATV signals up to 1000 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 1000 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 7A according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, overall shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with a longitudinal rib.

Basic Conductor	Solid, 23AWG or 22AWG, bare annealed copper.
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid, laid in close contact over the inner foils.
Outer Jacket	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Operating Temperature	-20 to +60C
Installation Temperature	0 to +50C
Optional Flame Tests	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
LSOH Cables Gas & Smoke Tests	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.75	78.0	75.0	83.1	80.1	23.0	40.0	23.0	67.0	67.0
10	5.82	78.0	75.0	75.1	72.1	25.0	40.0	15.0	67.0	67.0
20	8.21	78.0	75.0	69.1	66.1	25.0	37.0	9.0	67.0	67.0
25	9.18	78.0	75.0	67.1	64.1	24.3	36.0	7.0	67.0	65.2
31.25	10.26	78.0	75.0	65.2	62.2	23.6	35.1	5.1	67.0	63.3
62.5	14.57	78.0	75.0	59.2	56.2	21.5	32.0	NS	67.0	57.3
100	18.53	75.4	72.4	55.1	52.1	20.1	30.0	NS	67.0	53.2
200	26.47	70.9	67.9	49.1	46.1	18.0	27.0	NS	67.0	47.2
250	29.73	69.4	66.4	47.1	44.1	17.3	26.0	NS	67.0	45.2
300	32.69	68.2	65.2	45.6	42.6	17.3	NS	NS	67.0	43.7
400	38.01	66.4	63.4	43.1	40.1	17.3	NS	NS	67.0	41.2
500	42.76	64.9	61.9	41.1	38.1	17.3	NS	NS	67.0	39.2
600	47.10	63.7	60.7	39.5	36.5	17.3	NS	NS	65.8	37.6
700	51.13	62.7	59.7	38.2	35.2	16.6	NS	NS	64.8	36.3
800	54.92	61.9	58.9	37.0	34.0	16.1	NS	NS	64.0	35.1
1000	61.93	60.4	57.4	35.1	32.1	15.1	NS	NS	62.5	33.2

Characteristic Impedance	100±5 Ohm @ 1-1000 MHz
DC Resistance	93.0 Ohm/Km max.
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80% @ 1-1000 MHz
Propagation Delay	534+36/f1/2 nS/100m max. @ 1-1000 MHz
Delay Skew	15 nS/100m max @ 1-1000 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	IEC 61156-5 Type I
Screening Attenuation	60 dB min @ 30-1000 MHz
Transfer Impedance	IEC 61156-5 Grade 1

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H7A-F040K-DP	4x2x23# S/FTP CAT 7A LS0H Gray	7.2	55	600	500m Drum	-
H7A-F040K-DM	4x2x23# S/FTP CAT 7A LS0H Gray	7.2	55	600	1000m Drum	-
H7A-F0402-DP	4x2x22# S/FTP CAT 7A LS0H Gray	7.6	61	650	500m Drum	-
H7A-F0402-DM	4x2x22# S/FTP CAT 7A LS0H Gray	7.6	61	650	1000m Drum	-
H7A-F080K-DP	2x(4x2x23#) S/FTP CAT 7A LS0H Gray	7.2 x 14.5	110	1200	500m Drum	FIG-8
H7A-F080K-DM	2x(4x2x23#) S/FTP CAT 7A LS0H Gray	7.2 x 14.5	110	1200	1000m Drum	FIG-8
H7A-F0804-DP	2x(4x2x22#) S/FTP CAT 7A LS0H Gray	7.6 x 15.3	121	1300	500m Drum	FIG-8
H7A-F0804-DM	2x(4x2x22#) S/FTP CAT 7A LS0H Gray	7.6 x 15.3	121	1300	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25** **F=E: EU CPR**

DataLink 1000

Category 7A+ S/FTP 100 Ohm Horizontal LAN Cables Tested to 1200MHz

HES Cabling Systems
Connecting Networks™

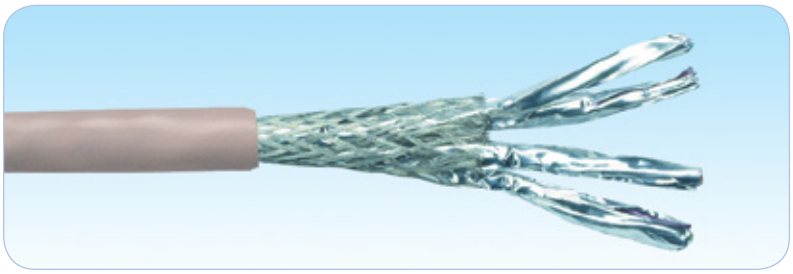
Description

HCS DataLink 1000 cable series consists of 100 Ohm impedance, 4-pair and 8-pair 23AWG or 22AWG S/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 7A requirements of IEC 61156-5 (Specified in ISO/IEC 11801), tested up to 1200MHz. All cables fully support IEEE 802.3at 2009 Part 3 Amendment 3 including PoE+.

Applications

HCS DataLink 1000 Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ Broadband Digital and Analog CATV signals up to 1000 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 1000 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 7A according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, overall shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with a longitudinal rib.

Basic Conductor	Solid, 23AWG or 22AWG, bare annealed copper.
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid, laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Operating Temperature	-20 to +60C
Installation Temperature	0 to +50C
Optional Flame Tests	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
LS0H Cables Gas & Smoke Tests	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.75	78.0	75.0	83.1	80.1	23.0	40.0	23.0	67.0	67.0
10	5.82	78.0	75.0	75.1	72.1	25.0	40.0	15.0	67.0	67.0
20	8.21	78.0	75.0	69.1	66.1	25.0	37.0	9.0	67.0	67.0
25	9.18	78.0	75.0	67.1	64.1	24.3	36.0	7.0	67.0	65.2
31.25	10.26	78.0	75.0	65.2	62.2	23.6	35.1	5.1	67.0	63.3
62.5	14.57	78.0	75.0	59.2	56.2	21.5	32.0	NS	67.0	57.3
100	18.53	75.4	72.4	55.1	52.1	20.1	30.0	NS	67.0	53.2
200	26.47	70.9	67.9	49.1	46.1	18.0	27.0	NS	67.0	47.2
250	29.73	69.4	66.4	47.1	44.1	17.3	26.0	NS	67.0	45.2
300	32.69	68.2	65.2	45.6	42.6	17.3	NS	NS	67.0	43.7
400	38.01	66.4	63.4	43.1	40.1	17.3	NS	NS	67.0	41.2
500	42.76	64.9	61.9	41.1	38.1	17.3	NS	NS	67.0	39.2
600	47.10	63.7	60.7	39.5	36.5	17.3	NS	NS	65.8	37.6
700	51.13	62.7	59.7	38.2	35.2	16.6	NS	NS	64.8	36.3
800	54.92	61.9	58.9	37.0	34.0	16.1	NS	NS	64.0	35.1
1000	61.93	60.4	57.4	35.1	32.1	15.1	NS	NS	62.5	33.2
1200	68.36	59.2	56.2	33.5	30.5	14.3	NS	NS	61.3	31.6

Note: Values above 1000MHz are nominal, for reference only

Characteristic Impedance	100±5 Ohm @ 1-1200 MHz
DC Resistance	93.0 Ohm/Km max.
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80% @ 1-1200 MHz
Propagation Delay	534+36/f1/2 nS/100m max. @ 1-1200 MHz
Delay Skew	15 nS/100m max @ 1-1200 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	IEC 61156-5 Type I
Screening Attenuation	60 dB min @ 30-1000 MHz
Transfer Impedance	IEC 61156-5 Grade 1

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H7A-F041K-DP	4x2x23# S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.2	55	600	500m Drum	-
H7A-F041K-DM	4x2x23# S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.2	55	600	1000m Drum	-
H7A-F0412-DP	4x2x22# S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.6	61	650	500m Drum	-
H7A-F0412-DM	4x2x22# S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.6	61	650	1000m Drum	-
H7A-F081K-DP	2x(4x2x23#) S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.2 x 14.5	110	1200	500m Drum	FIG-8
H7A-F081K-DM	2x(4x2x23#) S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.2 x 14.5	110	1200	1000m Drum	FIG-8
H7A-F0814-DP	2x(4x2x22#) S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.6 x 15.3	121	1300	500m Drum	FIG-8
H7A-F0814-DM	2x(4x2x22#) S/FTP CAT 7A+ LS0H Gray Tested to 1200MHz	7.6 x 15.3	121	1300	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25** **F=E: EU CPR**

DataLink 1000

Category 7A+ S/FTP 100 Ohm Horizontal LAN Cables Tested to 1500MHz

HES Cabling Systems
Connecting Networks™

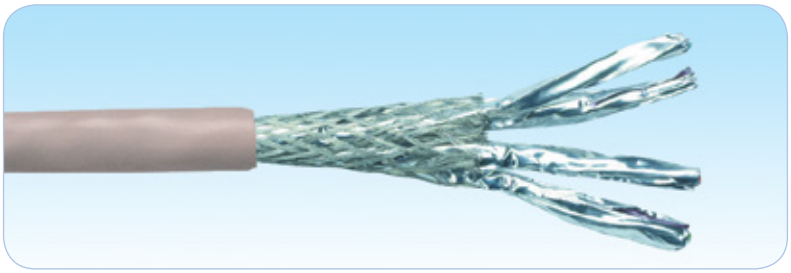
Description

HCS DataLink 1000 cable series consists of 100 Ohm impedance, 4-pair and 8-pair 23AWG or 22AWG S/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all Category 7A requirements of IEC 61156-5 (Specified in ISO/IEC 11801), tested up to 1500MHz. All cables fully support IEEE 802.3at 2009 Part 3 Amendment 3 including PoE+.

Applications

HCS DataLink 1000 Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ Broadband Digital and Analog CATV signals up to 1000 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 1000 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 7A according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, overall shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with a longitudinal rib.

Basic Conductor	Solid, 23AWG or 22AWG, bare annealed copper.
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid, laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Operating Temperature	-20 to +60C
Installation Temperature	0 to +50C
Optional Flame Tests	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
LS0H Cables Gas & Smoke Tests	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.75	78.0	75.0	83.1	80.1	23.0	40.0	23.0	67.0	67.0
10	5.82	78.0	75.0	75.1	72.1	25.0	40.0	15.0	67.0	67.0
20	8.21	78.0	75.0	69.1	66.1	25.0	37.0	9.0	67.0	67.0
25	9.18	78.0	75.0	67.1	64.1	24.3	36.0	7.0	67.0	65.2
31.25	10.26	78.0	75.0	65.2	62.2	23.6	35.1	5.1	67.0	63.3
62.5	14.57	78.0	75.0	59.2	56.2	21.5	32.0	NS	67.0	57.3
100	18.53	75.4	72.4	55.1	52.1	20.1	30.0	NS	67.0	53.2
200	26.47	70.9	67.9	49.1	46.1	18.0	27.0	NS	67.0	47.2
250	29.73	69.4	66.4	47.1	44.1	17.3	26.0	NS	67.0	45.2
300	32.69	68.2	65.2	45.6	42.6	17.3	NS	NS	67.0	43.7
400	38.01	66.4	63.4	43.1	40.1	17.3	NS	NS	67.0	41.2
500	42.76	64.9	61.9	41.1	38.1	17.3	NS	NS	67.0	39.2
600	47.10	63.7	60.7	39.5	36.5	17.3	NS	NS	65.8	37.6
700	51.13	62.7	59.7	38.2	35.2	16.6	NS	NS	64.8	36.3
800	54.92	61.9	58.9	37.0	34.0	16.1	NS	NS	64.0	35.1
1000	61.93	60.4	57.4	35.1	32.1	15.1	NS	NS	62.5	33.2
1200	68.36	59.2	56.2	33.5	30.5	14.3	NS	NS	61.3	31.6
1400	74.36	58.2	55.2	32.2	29.2	13.6	NS	NS	60.3	30.3
1500	77.22	57.8	54.8	31.6	28.6	13.3	NS	NS	59.9	29.7

Note: Values above 1000MHz are nominal, for reference only

Characteristic Impedance	100±5 Ohm @ 1-1500 MHz
DC Resistance	93.0 Ohm/Km max.
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80% @ 1-1500 MHz
Propagation Delay	534+36/f1/2 nS/100m max. @ 1-1500 MHz
Delay Skew	15 nS/100m max @ 1-1500 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	IEC 61156-5 Type I
Screening Attenuation	60 dB min @ 30-1000 MHz
Transfer Impedance	IEC 61156-5 Grade 1

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H7A-F042K-DP	4x2x23# S/FTP CAT 7A+ PVC Gray Tested to 1500MHz	7.2	55	600	500m Drum	-
H7A-F042K-DM	4x2x23# S/FTP CAT 7A+ PVC Gray Tested to 1500MHz	7.2	55	600	1000m Drum	-
H7A-F0422-DP	4x2x22# S/FTP CAT 7A+ LS0H Gray Tested to 1500MHz	7.6	61	650	500m Drum	-
H7A-F0422-DM	4x2x22# S/FTP CAT 7A+ LS0H Gray Tested to 1500MHz	7.6	61	650	1000m Drum	-
H7A-F082K-DP	2x(4x2x23#) S/FTP CAT 7A+ PVC Gray Tested to 1500MHz	7.2 x 14.5	110	1200	500m Drum	FIG-8
H7A-F082K-DM	2x(4x2x23#) S/FTP CAT 7A+ PVC Gray Tested to 1500MHz	7.2 x 14.5	110	1200	1000m Drum	FIG-8
H7A-F0824-DP	2x(4x2x22#) S/FTP CAT 7A+ LS0H Gray Tested to 1500MHz	7.6 x 15.3	121	1300	500m Drum	FIG-8
H7A-F0824-DM	2x(4x2x22#) S/FTP CAT 7A+ LS0H Gray Tested to 1500MHz	7.6 x 15.3	121	1300	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25** **F=E: EU CPR**

DataLink 1200

Category 7B
S/FTP 100 Ohm Cables

HES Cabling Systems
Connecting Networks™

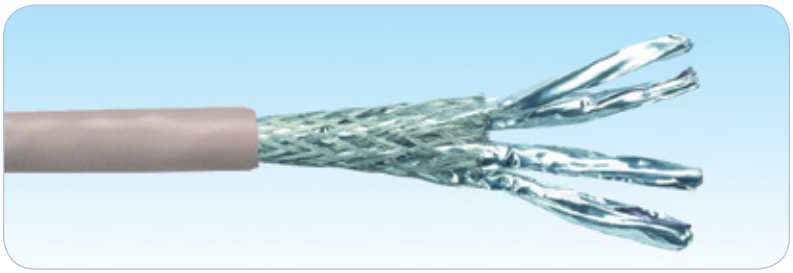
Description

HCS DataLink 1200 cable series consists of 100 Ohm impedance, 4-pair and 8-pair S/FTP cables. All cables fully conform to and provide a substantial margin above all transmission requirements of IEC 61156-7 (Symmetrical Pair/Quad cables for digital and analog communications with transmission characteristics up to 1200 MHz).

Applications

HCS DataLink 1200 Horizontal cables support all presently available and future LAN applications, including the following:

- ☑ Broadband Digital and Analog CATV signals up to 1200 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs.
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ ITU V.21 and X.11
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN



Qualifications and Approvals

HCS DataLink 1200 Cables are tested and verified for full compliance with the following standards:

- ➔ IEC 61156-7 Symmetrical Pair/Quad cables for digital and analog communications with transmission characteristics up to 1200 MHz.
- ➔ Category 7 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 600 MHz according to CENELEC EN 50288-4

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 22 AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid, laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +60C
Operating Temperature	-20 to +60C
Installation Temperature	0 to +50C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.5	78.0	75.0	78.0	75.0	23.0	40.0	23.0	67.0	67.0
10	5.4	78.0	75.0	74.0	71.0	25.0	40.0	15.0	67.0	58.2
20	7.6	78.0	75.0	68.0	65.0	25.0	37.0	9.0	67.0	52.2
25	8.5	78.0	75.0	66.0	63.0	24.3	36.0	7.0	67.0	50.2
30	9.4	78.0	75.0	64.5	61.5	23.8	35.2	5.5	67.0	48.7
62.5	13.7	79.1	76.1	58.1	55.1	21.5	32.0	NS	65.6	42.3
100	17.5	76.0	73.0	54.0	51.0	20.1	30.0	NS	62.5	38.2
200	25.3	71.5	68.5	48.0	45.0	18.0	27.0	NS	58.0	32.2
250	28.5	70.0	67.0	46.0	43.0	17.3	26.0	NS	56.5	30.2
300	31.5	68.8	65.8	44.5	41.5	17.3	NS	NS	55.3	28.7
400	36.9	67.0	64.0	42.0	39.0	17.3	NS	NS	53.5	26.2
500	41.8	65.5	62.5	40.0	37.0	17.3	NS	NS	52.0	24.2
600	46.3	64.3	61.3	38.4	35.4	17.3	NS	NS	50.8	22.6
800	54.5	62.5	59.5	35.9	32.9	16.1	NS	NS	49.0	20.1
1000	62.0	61.0	58.0	34.0	31.0	15.1	NS	NS	47.5	18.2
1200	69.0	59.8	56.8	32.4	29.4	14.3	NS	NS	46.3	16.6

Characteristic Impedance	100±5 Ohm @ 1-1200 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1200 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80%
Propagation Delay	500 + 36/f1/2 @ 1-1200 MHz.
Delay Skew	25 nS/100m max @ 1-1200 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-1200 MHz
Screening Attenuation	60 dB min @ 30-1200 MHz
Transfer Impedance	10 mOhm/m max @ 1-30 MHz 30 MOhm/m max @ 30-100 MHz.

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H7B-F0401-DP	4x2x22# S/FTP CAT 7B PVC Gray	8.1	68	670	500m Drum	
H7B-F0401-DM	4x2x22# S/FTP CAT 7B PVC Gray	8.1	68	670	1000m Drum	
H7B-F0402-DP	4x2x22# S/FTP CAT 7B LS0H Gray	8.1	68	670	500m Drum	
H7B-F0402-DM	4x2x22# S/FTP CAT 7B LS0H Gray	8.1	68	670	1000m Drum	
H7B-F0803-DP	2x(4x2x22#) CAT 7B S/FTP PVC Gray	8.1x16.4	138	1340	500m Drum	FIG-8
H7B-F0803-DM	2x(4x2x22#) CAT 7B S/FTP PVC Gray	8.1x16.4	138	1340	1000m Drum	FIG-8
H7B-F0804-DP	2x(4x2x22#) CAT 7B S/FTP LS0H Gray	8.1x16.4	138	1340	500m Drum	FIG-8
H7B-F0804-DM	2x(4x2x22#) CAT 7B S/FTP LS0H Gray	8.1x16.4	138	1340	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 1200

Category 7B+ S/FTP 100 Ohm Cables Tested to 1500MHz

HES Cabling Systems
Connecting Networks™

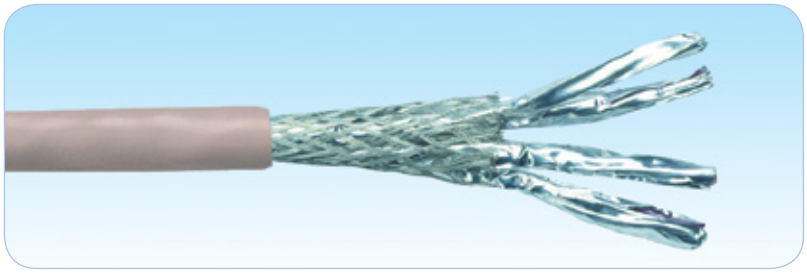
Description

HCS DataLink 1200 cable series consists of 100 Ohm impedance, 4-pair and 8-pair S/FTP cables. All cables fully conform to and provide a substantial margin above all transmission requirements of IEC 61156-7 (Symmetrical Pair/Quad cables for digital and analog communications with transmission characteristics up to 1200 MHz), tested up to 1500MHz..

Applications

HCS DataLink 1200 Horizontal cables support all presently available and future LAN applications, including the following:

- ☑ Broadband Digital and Analog CATV signals up to 1500 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs.
- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ ITU V.21 and X.11
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN



Qualifications and Approvals

HCS DataLink 1200 Cables are tested and verified for full compliance with the following standards:

- ➔ IEC 61156-7 Symmetrical Pair/Quad cables for digital and analog communications with transmission characteristics up to 1200 MHz.
- ➔ Category 7 according to IEC 61156-5 (for ISO/IEC-11801 2nd Edition).
- ➔ 600 MHz according to CENELEC EN 50288-4

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels.
- ➔ Testing every reel of cable prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - Providing fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - Providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/CE (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with two raised ribs on the jacket surface.

Basic Conductor	Solid, 22 AWG, bare annealed copper
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid, laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +60C
Operating Temperature	-20 to +60C
Installation Temperature	0 to +50C
Flame Test	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
Halogen Content in LS0H Cables	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	EL FEXT	PS EL FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min
1	NS	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
4	3.5	78.0	75.0	78.0	75.0	23.0	40.0	23.0	67.0	67.0
10	5.4	78.0	75.0	74.0	71.0	25.0	40.0	15.0	67.0	58.2
20	7.6	78.0	75.0	68.0	65.0	25.0	37.0	9.0	67.0	52.2
25	8.5	78.0	75.0	66.0	63.0	24.3	36.0	7.0	67.0	50.2
30	9.4	78.0	75.0	64.5	61.5	23.8	35.2	5.5	67.0	48.7
62.5	13.7	79.1	76.1	58.1	55.1	21.5	32.0	NS	65.6	42.3
100	17.5	76.0	73.0	54.0	51.0	20.1	30.0	NS	62.5	38.2
200	25.3	71.5	68.5	48.0	45.0	18.0	27.0	NS	58.0	32.2
250	28.5	70.0	67.0	46.0	43.0	17.3	26.0	NS	56.5	30.2
300	31.5	68.8	65.8	44.5	41.5	17.3	NS	NS	55.3	28.7
400	36.9	67.0	64.0	42.0	39.0	17.3	NS	NS	53.5	26.2
500	41.8	65.5	62.5	40.0	37.0	17.3	NS	NS	52.0	24.2
600	46.3	64.3	61.3	38.4	35.4	17.3	NS	NS	50.8	22.6
800	54.5	62.5	59.5	35.9	32.9	16.1	NS	NS	49.0	20.1
1000	62.0	61.0	58.0	34.0	31.0	15.1	NS	NS	47.5	18.2
1200	69.0	59.8	56.8	32.4	29.4	14.3	NS	NS	46.3	16.6
1400	75.6	58.8	55.8	31.1	28.1	13.6	NS	NS	45.3	15.3
1500	78.7	58.4	55.4	30.5	27.5	13.3	NS	NS	44.9	14.7

Note: Values above 1200Mhz are nominal, for reference only

Characteristic Impedance	100±5 Ohm @ 1-1500 MHz
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 KHz
Cap. Unbalance (Wire to Ground)	1200 pF/Km max. @ 1 KHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80%
Propagation Delay	500 + 36/f1/2 @ 1-1500 MHz.
Delay Skew	25 nS/100m max @ 1-1500 MHz.
Insulation Resistance	500 MegaOhm•Km min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20Log(f/100) @100-1200 MHz
Screening Attenuation	60 dB min @ 30-1200 MHz
Transfer Impedance	10 mOhm/m max @ 1-30 MHz 30 MOhm/m max @ 30-100 MHz.

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H7B-F0411-DP	4x2x22# S/FTP CAT 7B+ PVC Gray, Tested to 1500MHz	8.1	68	670	500m Drum	
H7B-F0411-DM	4x2x22# S/FTP CAT 7B+ PVC Gray, Tested to 1500MHz	8.1	68	670	1000m Drum	
H7B-F0412-DP	4x2x22# S/FTP CAT 7B+ LS0H Gray, Tested to 1500MHz	8.1	68	670	500m Drum	
H7B-F0412-DM	4x2x22# S/FTP CAT 7B+ LS0H Gray, Tested to 1500MHz	8.1	68	670	1000m Drum	
H7B-F0813-DP	2x(4x2x22#) S/FTP CAT 7B+ PVC Gray, Tested to 1500MHz	8.1x16.4	138	1340	500m Drum	FIG-8
H7B-F0813-DM	2x(4x2x22#) S/FTP CAT 7B+ PVC Gray, Tested to 1500MHz	8.1x16.4	138	1340	1000m Drum	FIG-8
H7B-F0814-DP	2x(4x2x22#) S/FTP CAT 7B+ LSOH Gray, Tested to 1500MHz	8.1x16.4	138	1340	500m Drum	FIG-8
H7B-F0814-DM	2x(4x2x22#) S/FTP CAT 7B+ LSOH Gray, Tested to 1500MHz	8.1x16.4	138	1340	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25**

Note: Standard Jacket Color: Light Gray RAL 7035. Other colors available upon request.

DataLink 2000

Category 8 S/FTP 100 Ohm Horizontal LAN Cables

HES Cabling Systems
Connecting Networks™

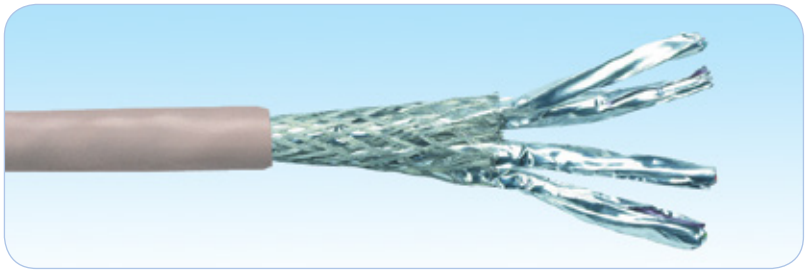
Description

HCS DataLink 2000 cable series consists of 100 Ohm impedance, 4-pair and 8-pair 23AWG or 22AWG S/FTP cables for horizontal installations in local area networks (LANs). All cables fully conform to and provide a substantial margin above all TIA-568-C.2-1 Category 8, IEC 61156-9 Category 8.1 and 8.2 requirements. All cables fully support IEEE 802.3at 2009 Part 3 Amendment 3 including PoE+.

Applications

HCS DataLink 2000 Horizontal cables support all presently available and future LAN applications, including the following protocols:

- ☑ IEEE 802.3bq-2016 25GBASE-T and 40GBASE-T
- ☑ Broadband Digital and Analog CATV signals up to 1000 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs
- ☑ IEEE 802.3an 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 2000 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 8 according to ANSI/TIA-568-C.2-1
- ➔ Category 8.1 according to IEC 61156-9 (FDIS)
- ➔ Category 8.2 according to IEC 61156-9 (FDIS)

Benefits & Features

- ➔ Exceptional transmission properties - support 25GBE and 40GBE on 30m channels.
- ➔ Testing every reel of cable prior to shipment - providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - providing a unique Century™ Lifetime Warranty.
- ➔ High ACR values - providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and double shield - providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation, maximizing noise immunity and preventing any alien-crosstalk (AXT).
- ➔ Revolutionary pair lay scheme - providing an extremely low delay skew.
- ➔ Descending sequential meter mark - providing easy stock and left-over handling.
- ➔ Smooth and rigid jacket - proving fast and easy cable pulling and installation.
- ➔ Batch number printed every meter - providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - providing all state-of-the-art cable constructions.
- ➔ Large variety of packaging options - providing minimum scrap and left-over cable sections.
- ➔ Unique DoubleSafe™ Quality Assurance Program providing lowest rejection rate available.
- ➔ Full compliance with EU Directive 2011/65/EU (RoHS-2).

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, overall shielded with a tin-coated copper braid and overall jacketed. Siamese (Figure-8) cables are made of two identical 4-pair cables connected in a zip-cord formation, one cable identified with a longitudinal rib.

Basic Conductor	Solid, 23AWG or 22AWG, bare annealed copper.
Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs. (8 pairs in FIG-8 cables)
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Shield	Tin coated copper braid, laid in close contact over the inner foils.
Outer Jacket	LS0H Halogen free flame retardant compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Pulling Force	50 N/mm^2 max.
Short Term Bend Radius	8xOD mm
Long Term Bend Radius	4xOD mm
Storage Temperature	-20 to +80C
Operating Temperature	-20 to +60C
Installation Temperature	0 to +50C
Optional Flame Tests	IEC 60332-1, IEC 60332-3-24 or IEC 60332-3-25.
Conductor Size Test	UL 444.
LS0H cables gas & smoke tests	IEC 60754 (gas) & IEC 61034 (smoke)

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	PS NEXT	ACR-F	PS ACR-F	RL	SKEW	Delay	TCL	EL-TCTL	PS ANEXT	PS AACRF
MHz	dB/100m	dB	dB	dB/100m	dB/100m	dB	nS/100m	nS/100m	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Max	Max	Min	Min	Min	Min
1	2.06	78.00	75.00	78.00	75.00	20.00	25.00	570.00	40.00	40.00	80.00	80.00
4	3.75	78.00	75.00	78.00	75.00	23.01	25.00	552.00	40.00	27.96	80.00	80.00
8	5.22	78.00	75.00	78.00	75.00	24.52	25.00	546.73	36.45	21.94	80.00	80.00
10	5.82	78.00	75.00	78.00	75.00	25.00	25.00	545.38	35.00	20.00	80.00	80.00
16	7.34	78.00	75.00	76.52	73.52	25.00	25.00	543.00	31.94	15.92	80.00	78.12
20	8.21	78.00	75.00	74.58	71.58	25.00	25.00	542.05	30.48	13.98	80.00	76.18
25	9.18	78.00	75.00	72.64	69.64	25.00	25.00	541.20	29.03	12.04	80.00	74.24
30	1005	78.00	75.00	71.06	68.06	25.00	25.00	540.57	27.84	10.46	80.00	72.66
31.25	10.26	78.00	75.00	70.70	67.70	25.00	25.00	540.44	27.58	10.10	80.00	72.30
40	11.62	78.00	75.00	68.56	65.56	25.00	25.00	539.69	25.97	7.96	80.00	70.16
62.5	14.57	78.00	75.00	64.68	61.68	23.64	25.00	538.55	23.06	5.00	80.00	66.28
100	18.53	75.40	72.40	60.60	57.60	22.21	25.00	537.60	20.00	5.00	80.00	62.20
200	26.47	70.88	67.88	54.58	51.58	20.11	25.00	536.55	15.48	5.00	80.00	56.18
250	29.73	69.43	66.43	52.64	49.64	19.43	25.00	536.38	14.03	5.00	80.00	54.24
300	32.69	68.24	65.24	51.06	48.06	18.87	25.00	536.08	12.84	5.00	80.00	52.66
400	38.01	66.37	63.37	48.56	45.56	18.00	25.00	535.80	10.97	5.00	78.47	50.16
500	42.76	64.92	61.92	46.62	43.62	17.32	25.00	535.61	9.52	5.00	77.02	48.22
600	47.10	63.73	60.73	45.04	42.04	16.77	25.00	535.47	8.33	5.00	75.83	46.64
1000	61.93	60.40	57.40	40.60	37.60	15.21	25.00	535.14	7.00	5.00	72.50	42.20
1500	77.22	57.76	54.76	37.08	34.08	13.98	25.00	534.93	7.00	5.00	69.86	38.68
2000	90.50	55.88	52.88	34.58	31.58	13.11	25.00	534.80	7.00	5.00	67.98	36.18

Characteristic Impedance	100±5 Ohm @ 1-2000 MHz
DC Resistance	62.0 Ohm/km max.
Resistance Unbalance	2% max.
Capacitance	45 pF/m nom. @ 1 kHz
Cap. Unbalance (Wire to Ground)	1500 pF/Km max. @ 1 kHz.
Voltage Rating	72 Vdc max.
Dielectric Strength	700 Volts/1 minute min rms
Velocity of Propagation (NVP)	77-80% @ 1-2000 MHz
Propagation Delay	$534+36/f^{1/2}$ nS/100m max. @ 1-2000 MHz
Delay Skew	15 nS/100m max @ 1-2000 MHz.
Insulation Resistance	500 MegaOhm•km min. @ 500 Vdc
Coupling Attenuation	IEC 61156-5 Type I
Transfer Impedance	IEC 61156-5 Grade I

ORDERING INFORMATION

HCS P/N	Description	OD mm	Weight kg/km	Cal. Value kj/m	Packaging	Notes
H08-F040K-DP	4x2x23# S/FTP CAT 8 LS0H Gray	7.5	65	600	500m Drum	
H08-F040K-DM	4x2x23# S/FTP CAT 8 LS0H Gray	7.5	65	600	1000m Drum	
H08-F0402-DP	4x2x22# S/FTP CAT 8 LS0H Gray	8.0	74	650	500m Drum	
H08-F0402-DM	4x2x22# S/FTP CAT 8 LS0H Gray	8.0	74	650	1000m Drum	
H08-F080K-DP	2x(4x2x23#) S/FTP CAT 8 LS0H Gray	7.5x15.0	130	1200	500m Drum	FIG-8
H08-F080K-DM	2x(4x2x23#) S/FTP CAT 8 LS0H Gray	7.5x15.0	130	1200	1000m Drum	FIG-8
H08-F0804-DP	2x(4x2x22#) S/FTP CAT 8 LS0H Gray	8.0x16.0	145	1300	500m Drum	FIG-8
H08-F0804-DM	2x(4x2x22#) S/FTP CAT 8 LS0H Gray	8.0x16.0	145	1300	1000m Drum	FIG-8

Flame Test Conformance **F=0: IEC 60332-1** **F=C: IEC 60332-3-24** **F=D: IEC 60332-3-25** **F=E: EU CPR**

DataLink 16

Category 3 Unshielded RJ-45 Patch Panels

HES Cabling Systems
Connecting Networks™

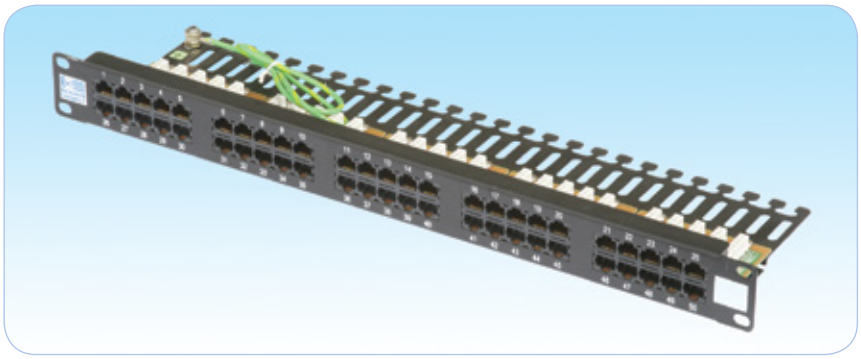
Description

HCS DataLink 16 unshielded copper 25 port and 50 port RJ-45 patch panel is a high performance Category 3 panel, made with 5 modules of fixed 5 or 10-port PCB units in 1U.The back interconnections are available in 110 IDC or LSA-Plus blocks with 6-3 and 4-5 pairs terminations.
The panel fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 Category 3 requirements.
The HCS Logo and the DataLink 16 Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 16 connectors support the following protocols:

- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 16 Panels are tested and verified for full compliance with the following standard:

- ➔ Category 3 according to ANSI/TIA/568-C.2

TRANSMISSION

- ☑ ANSI/TIA/EIA-568-C.2

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials

Benefits & Features

- ➔ Exceptional material properties and design - Providing a most reliable termination.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 3 performance - Providing full support of all DSL modems, ISDN and all voice applications.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 24-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Wire Size Range	22 to 26 AWG, Solid or stranded (7)
Material of Construction	Galvanized Steel.
Paint and Standard Color	Black, Powder paint finish or plastic front.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack Spring Contact Coating	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
IDC Terminations Cycles	200 min.
IDC Type	Gas tight
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS @ 20C

FREQ.	Insertion Loss	NEXT	Propagation Delay	2.5 nS max @ 1-16 MHz
MHz	dB/100m	dB	Propagation Delay Skew	1.25 nS max @ 1-16 MHz
	Max	Min	Current Rating	1.5 A max.
1.0	0.1	58.0	Contact Resistance	20 mOhm max (per contact)
2.0	0.1	52.0	Input/Output Resistance	200 mOhm max.
3.0	0.1	48.4	Input/Output Resistance Unbalance	50 mOhm max.
4.0	0.2	46.0	Voltage Rating	230 Vrms
8.0	0.3	39.9	Dielectric Strength	1000 Volts rms for 1 minute
10.0	0.3	38.0	Insulation Resistance	10 MegaOhm min @ 500 Vdc
12.0	0.3	36.4	DC Resistance	0.2 Ohm max.
14.0	0.3	35.1	LCL	66-20·Log(f) dB min @ 1-16 MHz
16.0	0.4	33.9	IDC Interface Resistance	0.5 mOhm max.

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size		Pairs Per Port
				mm	Inch	
P03-02503-1U	25 port RJ-45 Unshielded CAT 3 19'' Patch Panel	LSA-Plus	1u	44.5x483	1.75x19	2
P03-05003-1U	50 port RJ-45 Unshielded CAT 3 19'' Patch Panel	LSA-Plus	1u	44.5x483	1.75x19	2
P03-05004-1U	50 port RJ-45 Unshielded CAT 3 19'' Patch Panel	110 IDC	1u	44.5x483	1.75x19	2

DataLink 100e

Category 5E Unshielded RJ-45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 100E unshielded copper RJ-45 patch panel series includes a wide range of high performance Category 5E panels, ranging from 24 to 72 ports, specially designed for structured premise cabling in local area networks (LANs).
HCS DataLink 100E panels are available with fixed 6-port PCB units, providing 24 ,48 or 72 ports. HCS DataLink 100E panels are available with 110 back interconnection blocks. All panels fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements. The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E unshielded copper RJ-45 patch panels are used for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E panels comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/EIA-568-A-5
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories (supplied free of charge), including labels and icons, clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- ➔ Optional plastic front panels - Providing custom color selection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ High quality metal casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Modular and expandable comprehensive product range - Providing up to 72 ports in a single panel.
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Wire Size Range	22 to 26 AWG, Solid or stranded (7)
Material of Construction	Galvanized Steel.
Paint and Standard Color	Black, Powder paint finish or plastic front.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack Spring Contact Coating	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
IDC Terminations Cycles	200 min.
IDC Type	Gas tight
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20.Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	N/A

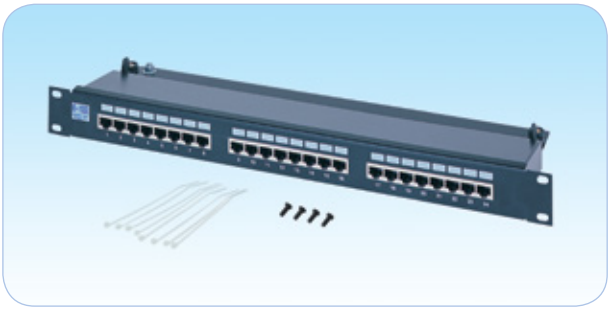
ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size		T568
				mm	Inch	
P5E-02401-1U	24 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	1u	44.5x483	1.75x19	B
P5E-02402-1U	24 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	1u	44.5x483	1.75x19	A
P5E-02403-1U	24 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	1u	44.5x483	1.75x19	UNI
P5E-04801-2U	48 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	2u	89x483	3.5x19	B
P5E-04802-2U	48 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	2u	89x483	3.5x19	A
P5E-04803-2U	48 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	2u	89x483	3.5x19	UNI
P5E-04805-1U	48 port RJ-45 Unshielded High-Density CAT5E 19" Patch Panel	110 IDC	1u	44.5x483	1.75x19	UNI
P5E-07201-3U	72 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	3u	133.5x483	5.25x19	B
P5E-07202-3U	72 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	3u	133.5x483	5.25x19	A
P5E-07203-3U	72 port RJ-45 Unshielded CAT5E 19" Patch Panel	110 IDC	3u	133.5x483	5.25x19	UNI

DataLink 100e

Category 5E Shielded RJ-45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™



Description

HCS DataLink 100E shielded copper RJ-45 patch panel series includes high performance Category 5E, 24-port panels, specially designed for structured premise cabling in local area networks (LANs).
HCS DataLink 100E shielded RJ-45 panels are available with a single Overall Shielded fixed PCB unit, providing 24 ports in a 1U construction with two optional back interconnection blocks: 110 IDC blocks or LSA-Plus blocks.
All panels fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements and outstanding EMC.
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E shielded copper RJ-45 patch panels are used for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points in noisy environments, and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E panels comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/EIA-568-A-5 (November 1999)
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories (supplied free of charge), including labels and icons, clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- ➔ Optional plastic front panels - Providing custom color selection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ High quality metal casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Wire Size Range	22 to 26 AWG, Solid or stranded (7)
Material of Construction	Galvanized Steel.
Paint and Standard Color	Black, Powder paint finish or plastic front.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack Spring Contact Coating	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
IDC Terminations Cycles	200 min.
IDC Type	Gas tight
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.2 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size		T568
				mm	Inch	
P5E-02407-1U	24 port RJ-45 Shielded CAT5E 19'' Patch Panel	110 IDC	1u	44.5x483	1.75x19	B
P5E-02408-1U	24 port RJ-45 Shielded CAT5E 19'' Patch Panel	110 IDC	1u	44.5x483	1.75x19	A
P5E-02409-1U	24 port RJ-45 Shielded CAT5E 19'' Patch Panel	110 IDC	1u	44.5x483	1.75x19	UNI
P5E-02410-1U	24 port RJ-45 Shielded CAT5E 19'' Patch Panel	LSA Plus	1u	44.5x483	1.75x19	B
P5E-02411-1U	24 port RJ-45 Shielded CAT5E 19'' Patch Panel	LSA Plus	1u	44.5x483	1.75x19	A
P5E-02412-1U	24 port RJ-45 Shielded CAT5E 19'' Patch Panel	LSA Plus	1u	44.5x483	1.75x19	UNI

DataLink 100e

Category 5E Unshielded Wall Mount & Rack Mount 110 Wiring Blocks

HES Cabling Systems
Connecting Networks™

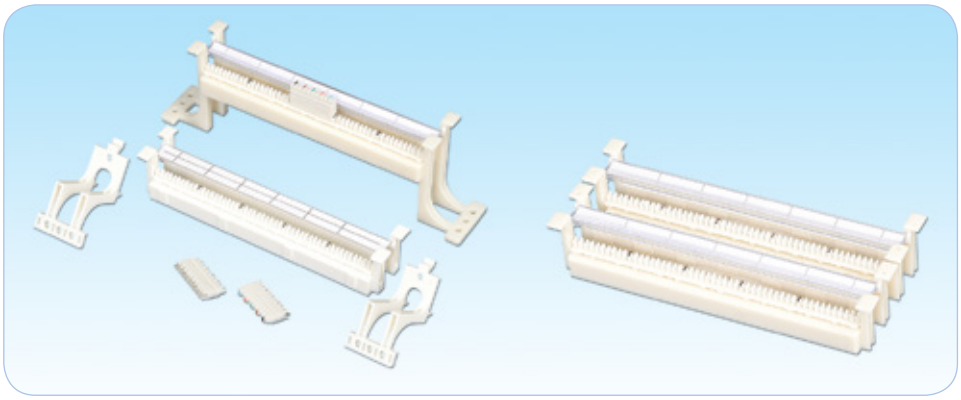
Description

HCS 110 Wiring Blocks provide a dependable, long term system to support data and voice applications.
HCS DataLink 100E Category 5E 110 blocks offer an easy-to-install and economical solution for network managers. They are available in a number of different configurations for specific connectivity applications. To run cable behind the blocks or for wall mounting, the 100 pair and 300 pair blocks are available with standoff legs while the 100 pair blocks are offered in a low profile style without legs.
Field installation kits are available to minimize labor and time. These kits include 110 wiring blocks with standoff legs, 4 or 5 pair clips, and identification label holders with white labels.
100 pair, 200 pair and 300 pair blocks are available in rack mountable versions, for applications that require fastening a 110 block to a 19" rack or cabinet.
All HCS DataLink 100E 110 Wiring Blocks fully conform to the transmission requirements of ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition).
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E 110 Wiring Blocks fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E 110 Wiring Blocks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E 110 Wiring Blocks comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Conductor Compatibility Range	22 to 26 AWG, 0.40-0.80 mm, solid or stranded
Insulation OD Compatibility	0.70-1.50 mm
Number of Re-terminations	50 min.
Contact Material	Brass alloy
Contact Coating	3-6µm Silver
Standard Color	White RAL 1013. Other colors available upon request.
Housing Material	PBT
Insulation Resistance	$5 \cdot 10^4$ MOhm min.
Volume Resistivity	10 MOhm min.
Dielectric Strength	2 Kv rms min.

ORDERING INFORMATION

HCS P/N	Description	Type	Notes
110 Wall Mount Wiring Blocks			
C5E-05001	50 Pair Category 5E Unshielded Wall Mount 110 Wiring Block Base	No legs	
C5E-05002	50 Pair Category 5E Unshielded Wall Mount 110 Wiring Block Base	With legs	
C5E-10001	100 Pair Category 5E Unshielded Wall Mount 110 Wiring Block Base	No legs	
C5E-10002	100 Pair Category 5E Unshielded Wall Mount 110 Wiring Block Base	With legs	
C5E-30001	300 Pair Category 5E Unshielded Wall Mount 110 Wiring Block Base	No legs	
C5E-30002	300 Pair Category 5E Unshielded Wall Mount 110 Wiring Block Base	With legs	
C00-05001	Legs for 50 Pair Wall Mount 110 Wiring Block Base P/N C5E-05001	-	
C00-10001	Legs for 100 Pair Wall Mount 110 Wiring Block Base P/N C5E-10001	-	
C00-30001	Legs for 300 Pair Wall Mount 110 Wiring Block Base P/N C5E-30001	-	
110 Wall Mount Wiring Blocks Kits			
C5E-05011	50 Pair Category 5E Unshielded Wall Mount 110 Wiring Block plus 10xC5E-00461 connectors and 2xC5E-00561 connectors	No legs	Includes labels strips & label strip holders
C5E-05012	50 Pair Category 5E Unshielded Wall Mount 110 Wiring Block plus 10xC5E-00461 connectors and 2xC5E-00561 connectors	With legs	Includes labels strips & label strip holders
C5E-10011	100 Pair Category 5E Unshielded Wall Mount 110 Wiring Block plus 20xC5E-00461 connectors and 4xC5E-00561 connectors	No legs	Includes labels strips & label strip holders
C5E-10012	100 Pair Category 5E Unshielded Wall Mount 110 Wiring Block plus 20xC5E-00461 connectors and 4xC5E-00561 connectors	With legs	Includes labels strips & label strip holders
C5E-30011	300 Pair Category 5E Unshielded Wall Mount 110 Wiring Block plus 60xC5E-00461 connectors and 12xC5E-00561 connectors	No legs	Includes labels strips & label strip holders
C5E-30012	300 Pair Category 5E Unshielded Wall Mount 110 Wiring Block plus 60xC5E-00461 connectors and 12xC5E-00561 connectors	With legs	Includes labels strips & label strip holders
110 Rack Mount Wiring Blocks			
C5E-10021	100 Pair Category 5E Unshielded Rack Mount 110 Wiring Block		
C5E-20021	200 Pair Category 5E Unshielded Rack Mount 110 Wiring Block		
C5E-30021	300 Pair Category 5E Unshielded Rack Mount 110 Wiring Block		
110 Rack Mount Wiring Blocks Kits			
C5E-10031	100 Pair Category 5E Unshielded Rack Mount 110 Wiring Block plus 20xC5E-00461 connectors and 4xC5E-00561 connectors		
C5E-20031	200 Pair Category 5E Unshielded Rack Mount 110 Wiring Block plus 40xC5E-00461 connectors and 8xC5E-00561 connectors		
C5E-30031	300 Pair Category 5E Unshielded Rack Mount 110 Wiring Block plus 60xC5E-00461 connectors and 12xC5E-00561 connectors		
110 Rack Mount Wiring Blocks with Wire Management			
C5E-10041	100 Pair Category 5E Unshielded Rack Mount 110 Wiring Block		
C5E-20041	200 Pair Category 5E Unshielded Rack Mount 110 Wiring Block		
C5E-30041	300 Pair Category 5E Unshielded Rack Mount 110 Wiring Block		
110 Rack Mount Wiring Blocks Kits with Wire Management			
C5E-10051	100 Pair Category 5E Unshielded Rack Mount 110 Wiring Block plus 20xC5E-00461 connectors and 4xC5E-00561 connectors		
C5E-20051	200 Pair Category 5E Unshielded Rack Mount 110 Wiring Block plus 40xC5E-00461 connectors and 8xC5E-00561 connectors		
C5E-30051	300 Pair Category 5E Unshielded Rack Mount 110 Wiring Block plus 60xC5E-00461 connectors and 12xC5E-00561 connectors		
110 IDC			
C5E-00461	4 Pair Category 5E IDC		
C5E-00561	5 Pair Category 5E IDC		
110 Connectors			
C5E-00171	1 Pair 110 Connector		
C5E-00271	2 Pair 110 Connector		
C5E-00371	3 Pair 110 Connector		
C5E-00471	4 Pair 110 Connector		
110 Standard Terminated Cords			
C5E-00180-XX	1 Pair 110 to 110 Connector		
C5E-00280-XX	2 Pair 110 to 110 Connector		
C5E-00380-XX	3 Pair 110 to 110 Connector		
C5E-00480-XX	4 Pair 110 to 110 Connector		
C5E-00190-XX	1 Pair 110 to RJ-45 Connector		
C5E-00290-XX	2 Pair 110 to RJ-45 Connector		
C5E-00390-XX	3 Pair 110 to RJ-45 Connector		
C5E-00490-XX	4 Pair 110 to RJ-45 Connector		

Standard Color (0): Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.
-XX designates the cord length in decimeters (10 -> 1m cord, 00 -> 10m cord).

DataLink 250E

Category 6E Unshielded RJ-45 Copper Straight Patch Panels (Modules)

HES Cabling Systems
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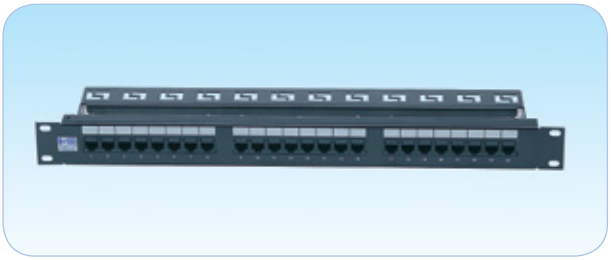
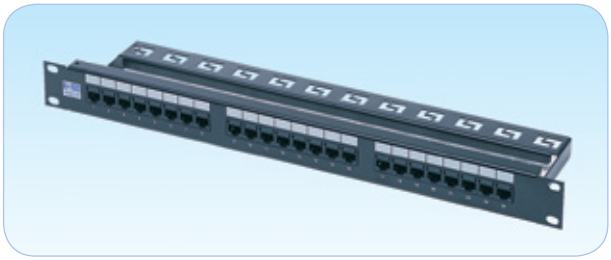




Description

HCS DataLink 250E unshielded copper RJ-45 patch panel series includes high performance Enhanced Category 6, 24 ports panels specially designed for structured premise cabling in local area networks (LANs).
HCS DataLink 250E panels are available with 3 fixed 8-port PCB units, providing 24, 48 or 96 ports with back interconnection of special LSA-Plus/110 IDC combination blocks. All panels fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements, tested as components and officially witnessed by ETL.
The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-TX (Gigabit-Ethernet over Category 6).

Applications

HCS DataLink 250E unshielded copper RJ-45 patch panels are used for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 250E panels comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.1
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (US)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories (supplied free of charge), including labels and icons, clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- ➔ Optional plastic front panels - Providing custom color selection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet over Category 5E and Category 6 cabling systems.
- ➔ High quality metal casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Modular and expandable comprehensive product range - Providing up to 48 ports in a single panel.
- ➔ Keystone Jack optional patch panels - Providing a custom design with total flexibility.
- ➔ Compatible with 24-22 AWG solid conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Wire Size Range	22 to 26 AWG, Solid or stranded (7)
Material of Construction	Galvanized Steel.
Paint and Standard Color	Black, Powder paint finish or plastic front.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack Spring Contact Coating	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
IDC Terminations Cycles	200 min.
IDC Type	Gas tight
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size		T568
				mm	Inch	
P6E-02401-1U	24 port RJ 45 Unshielded CAT 6E 19'' Patch Panel	110 IDC	1u	44.5x483	1.75x19	B
P6E-02402-1U	24 port RJ 45 Unshielded CAT 6E 19'' Patch Panel	110 IDC	1u	44.5x483	1.75x19	A
P6E-02403-1U	24 port RJ 45 Unshielded CAT 6E 19'' Patch Panel	110 IDC	1u	44.5x483	1.75x19	UNI
P6E-04801-2U	48 port RJ 45 Unshielded CAT 6E 19'' Patch Panel	110 IDC	2u	89.0x483	3.50x19	B
P6E-04802-2U	48 port RJ 45 Unshielded CAT 6E 19'' Patch Panel	110 IDC	2u	89.0x483	3.50x19	A
P6E-04803-2U	48 port RJ 45 Unshielded CAT 6E 19'' Patch Panel	110 IDC	2u	89.0x483	3.50x19	UNI

DataLink 250E

Category 6E Unshielded RJ-45 Copper Straight Patch Panels (Jacks)

HES Cabling Systems
Connecting Networks™

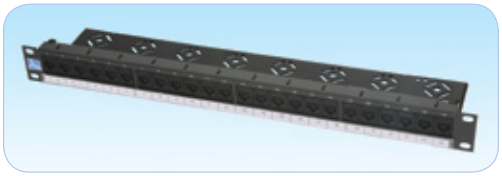
Description

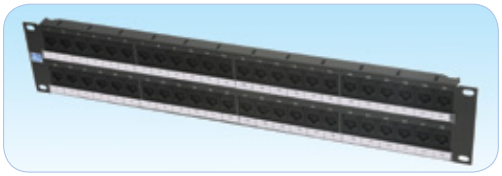
HCS DataLink 250E unshielded copper RJ-45 patch panel series includes high performance Enhanced Category 6 panels specially designed for structured premise cabling in local area networks (LANs).
HCS DataLink 250E straight patch panels are ideal for data-centers and installations of high density or which utilize extensive side and end-of-the-rack cable management. The IDC section consists of V-shaped contacts that flex (not fatigue) when terminated. Each RJ45 port features a patented spring loaded shutter and can be Color Coded to match jack outlets with the use of optional port icons. Offering both front and rear labeling options, the patch panel is constructed of cold-rolled steel for additional strength and durability. All panels fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements, tested at the component level.
The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 250E unshielded copper RJ-45 straight patch panels are mainly used for horizontal distribution or equipment terminations in data-centers, dense telecommunications rooms and for interconnection terminations in consolidation points, and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN
- ☑ ISALAN
- ☑ ITU V.21 and X.11
- ☑ 100BASE-TX





Qualifications and Approvals

HCS DataLink 250E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 250 panels are tested at the component level and they comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.1
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (US)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet over Category 5E and Category 6 cabling systems.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs.
- ➔ Compatible with 22-24 AWG solid conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Each port features the patented spring-loaded shutter prevents incomplete mating & protects from dust and contaminants.
- ➔ Patented IDC V-shaped contacts that flex (not fatigue) when terminated.
- ➔ Features pointed IDC towers to speed termination and enhance cable retention.
- ➔ Dual color-coding allows for 568 A/B wiring configuration.
- ➔ Front and rear port labeling (port sequence 1-48) as well as panel identification label.
- ➔ 4 x 6 ganged jack configuration.
- ➔ Individually removable patch panel ports.
- ➔ Removable cable management shelves ensure bend radius compliance.
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ RJ45 port which is RJ-11 compatible.
- ➔ Molded category identification on each port face as well as optional port identification icons.

GENERAL PROPERTIES

Wire Size Range	22 to 24 AWG, Solid conductors.
Material of Construction	CRS (Cold rolled steel), 1.5mm thickness.
Paint and Standard Color	Black or Gray.
Plastic parts	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack spring contact	Phosphor Bronze with 50G" hard Gold over 100G" Nickel plating
Plug Retention Force	50N min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
IDC Terminations Cycles	20 min.
IDC Type	Gas tight
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact) - Initial Contact Resistance: 2.5 mOhm.
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size		T568
				mm	Inch	
P6E-02405-1UC	24 port RJ-45 Unshielded Straight CAT 6E 19" Patch Panel	110 IDC	1U	44.5x483	1.75x19	UNI
P6E-04805-2UC	48 port RJ-45 Unshielded Straight CAT 6E 19" Patch Panel	110 IDC	2U	89x483	3.5x19	UNI

The letter **C** shall be replaced by a number or letter depicting the port color or color combination.
Please contact HCS sales rep for available options.

DataLink 250E

Category 6E Unshielded RJ-45 Copper Angled Patch Panels (Jacks)

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250E unshielded copper RJ-45 patch panel series includes high performance Enhanced Category 6 panels specially designed for structured premise cabling in local area networks (LANs).
HCS DataLink 250E Angled Patch Panels are ideal for data-centers and installations of high density or which utilize extensive side and end-of-the-rack cable management.The angled feature provides enhanced port access and minimizes patch cord bend radius to the rack. The IDC section consists of V-shaped contacts that flex (not fatigue) when terminated. Each RJ45 port features a patented spring-loaded shutter and can be Color Coded to match jack outlets with the use of optional port icons. Offering both front and rear labeling options, the patch panel is constructed of cold-rolled steel for additional strength and durability.
All panels fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements, tested at the component level.
The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 250E unshielded copper RJ-45 Angled patch panels are mainly used for horizontal distribution or equipment terminations in data-centers, dense telecommunications rooms and for interconnection terminations in consolidation points, and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband & Baseband Video
- ☑ ISALAN
- ☑ ITU V.21 and X.11
- ☑ 100BASE-TX

Qualifications and Approvals

HCS DataLink 250E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 250 panels are tested at the component level and they comply to the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.1	☑ EN-55022, Class B (Europa)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA/568-C.2	☑ FCC Part 15, Subpart J, Class A (US)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet over Category 5E and Category 6 cabling systems.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-24 AWG solid conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Each port features the patented spring-loaded shutter prevents incomplete mating & protects from dust and contaminants.
- ➔ Patented IDC V-shaped contacts that flex (not fatigue) when terminated.
- ➔ Features pointed IDC towers to speed termination and enhance cable retention.
- ➔ Dual color-coding allows for 568 A/B wiring configuration.
- ➔ Front and rear port labeling (port sequence 1-48) as well as panel identification label.
- ➔ 4 x 6 ganged jack configuration.
- ➔ Individually removable patch panel ports.
- ➔ Removable cable management shelves ensure bend radius compliance.
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ RJ45 port which is RJ-11 compatible.
- ➔ Molded category identification on each port face as well as optional port identification icons.

GENERAL PROPERTIES

Wire Size Range	22 to 24 AWG, Solid conductors.
Material of Construction	CRS (Cold rolled steel), 1.5mm thickness.
Paint and Standard Color	Black or Gray.
Plastic parts	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack spring contact	Phosphor Bronze with 50G" hard Gold over 100G" Nickel plating
Plug Retention Force	50N min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
IDC Terminations Cycles	200 min.
IDC Type	Gas tight
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact) Initial Contact Resistance: 2.5 mOhm.
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size		T568
				mm	Inch	
P6E-02404-1U	24 port RJ-45 Unshielded Angled CAT 6E 19" Patch Panel	110 IDC	1U	44.5x483	1.75x19	UNI
P6E-04804-2U	48 port RJ-45 Unshielded Angled CAT 6E 19" Patch Panel	110 IDC	2U	89x483	3.5x19	UNI

DataLink 250

Category 6 Unshielded Wall Mount & Rack Mount 110 Wiring Blocks

HES Cabling Systems
Connecting Networks™

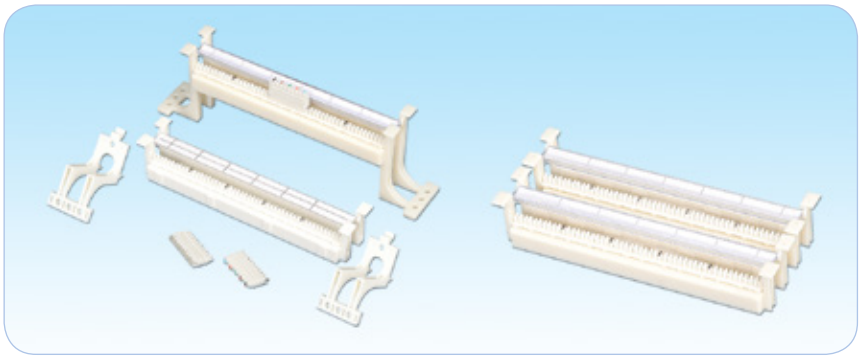
Description

HCS 110 Wiring Blocks provide a dependable, long term system to support data and voice applications. HCS DataLink 250 Category 6 110 blocks offer an easy-to-install and economical solution for network managers. They are available in a number of different configurations for specific connectivity applications. To run cable behind the blocks or for wall mounting, the 96 pair and 288 pair blocks are available with standoff legs while the 96 pair blocks are offered in a low profile style without legs. Field installation kits are available to minimize labor and time. These kits include 110 wiring blocks with standoff legs, 4 or 5 pair clips, and identification label holders with white labels. 96 pair, 192 pair and 288 pair blocks are available in rack mountable versions, for applications that require fastening a 110 block to a 19" rack or cabinet. All HCS DataLink 250 110 Wiring Blocks fully conform to the transmission requirements of ANSI/TIA/568-C.2 Category 6, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition). The HCS Logo and the DataLink 250 Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 250 110 Wiring Blocks fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 110 Wiring Blocks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 250 110 Wiring Blocks comply to the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.2	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ISO/IEC-11801	☑ FCC Part 68	☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

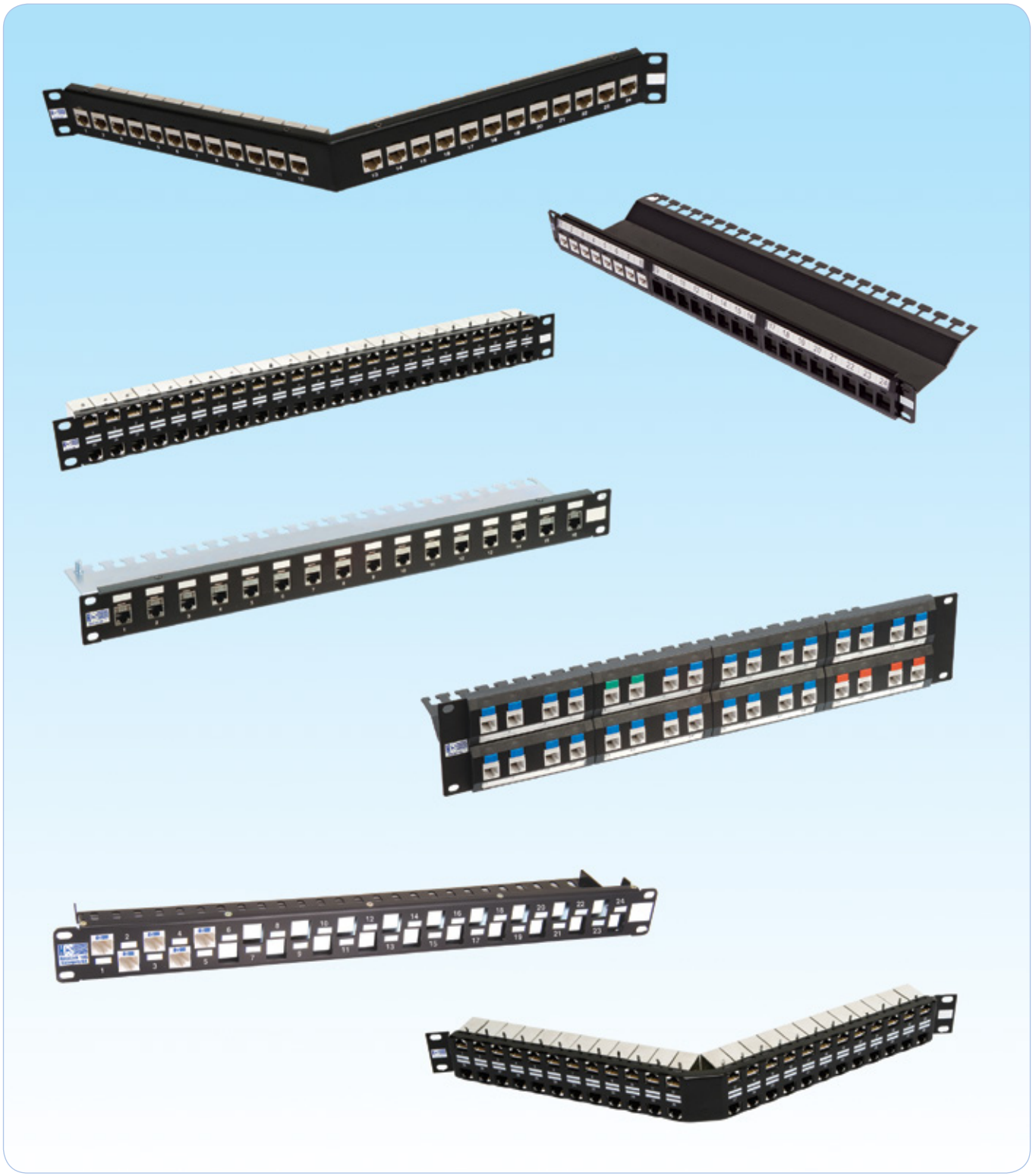
Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Conductor Compatibility Range	22 to 26 AWG, 0.40-0.80 mm, solid or stranded
Insulation OD Compatibility	0.70-1.50 mm
Number of Re-terminations	50 min.
Contact Material	Brass alloy
Contact Coating	3-6µm Silver
Standard Color	White RAL 1013. Other colors available upon request.
Housing Material	PBT
Insulation Resistance	$5 \cdot 10^4$ MOhm min.
Volume Resistivity	10 MOhm min.
Dielectric Strength	2 Kv rms min.

ORDERING INFORMATION

HCS P/N	Description	Type	Notes
110 Wall Mount Wiring Blocks			
C06-04801	48 Pair Category 6 Unshielded Wall Mount 110 Wiring Block Base	No legs	
C06-04802	48 Pair Category 6 Unshielded Wall Mount 110 Wiring Block Base	With legs	
C06-09601	96 Pair Category 6 Unshielded Wall Mount 110 Wiring Block Base	No legs	
C06-09602	96 Pair Category 6 Unshielded Wall Mount 110 Wiring Block Base	With legs	
C06-28801	288 Pair Category 6 Unshielded Wall Mount 110 Wiring Block Base	No legs	
C06-28802	288 Pair Category 6 Unshielded Wall Mount 110 Wiring Block Base	With legs	
C00-04801	Legs for 48 Pair Wall Mount 110 Wiring Block Base P/N C06-04801	-	
C00-09601	Legs for 96 Pair Wall Mount 110 Wiring Block Base P/N C06-09601	-	
C00-28801	Legs for 288 Pair Wall Mount 110 Wiring Block Base P/N C06-28801	-	
110 Wall Mount Wiring Blocks Kits			
C06-04811	48 Pair Category 6 Unshielded Wall Mount 110 Wiring Block plus 12 x C06-00461 connectors	No legs	Includes labels strips & label strip holders
C06-04812	48 Pair Category 6 Unshielded Wall Mount 110 Wiring Block plus 12 x C06-00461 connector	With legs	Includes labels strips & label strip holders
C06-09611	96 Pair Category 6 Unshielded Wall Mount 110 Wiring Block plus 24 x C06-00461 connectors	No legs	Includes labels strips & label strip holders
C06-09612	96 Pair Category 6 Unshielded Wall Mount 110 Wiring Block plus 24 x C06-00461 connectors	With legs	Includes labels strips & label strip holders
C06-28811	288 Pair Category 6 Unshielded Wall Mount 110 Wiring Block plus 72 x C06-00461 connectors	No legs	Includes labels strips & label strip holders
C06-28812	288 Pair Category 6 Unshielded Wall Mount 110 Wiring Block plus 72 x C06-00461 connectors	With legs	Includes labels strips & label strip holders
110 Rack Mount Wiring Blocks			
C06-09621	96 Pair Category 6 Unshielded Rack Mount 110 Wiring Block		
C06-19221	192 Pair Category 6 Unshielded Rack Mount 110 Wiring Block		
C06-28821	288 Pair Category 6 Unshielded Rack Mount 110 Wiring Block		
110 Rack Mount Wiring Blocks Kits			
C06-09631	96 Pair Category 6 Unshielded Rack Mount 110 Wiring Block plus 24 x C06-00461 connectors		
C06-19231	192 Pair Category 6 Unshielded Rack Mount 110 Wiring Block plus 48 x C06-00461 connectors		
C06-28831	288 Pair Category 6 Unshielded Rack Mount 110 Wiring Block plus 72 x C06-00461 connectors		
110 Rack Mount Wiring Blocks with Wire Management			
C06-09641	96 Pair Category 6 Unshielded Rack Mount 110 Wiring Block		
C06-19241	192 Pair Category 6 Unshielded Rack Mount 110 Wiring Block		
C06-28841	288 Pair Category 6 Unshielded Rack Mount 110 Wiring Block		
110 Rack Mount Wiring Blocks Kits with Wire Management			
C06-09651	96 Pair Category 6 Unshielded Rack Mount 110 Wiring Block plus 24 x C06-00461 connectors		
C06-19251	192 Pair Category 6 Unshielded Rack Mount 110 Wiring Block plus 48 x C06-00461 connectors		
C06-28851	288 Pair Category 6 Unshielded Rack Mount 110 Wiring Block plus 72 x C06-00461 connectors		
110 IDC			
C06-00461	4 Pair Category 6 IDC		
C06-00561	5 Pair Category 6 IDC		
110 Connectors			
C06-00171	1 Pair 110 Connector		
C06-00271	2 Pair 110 Connector		
C06-00371	3 Pair 110 Connector		
C06-00471	4 Pair 110 Connector		
110 Standard Terminated Cords			
C06-00180-XX	1 Pair 110 to 110 Connector		
C06-00280-XX	2 Pair 110 to 110 Connector		
C06-00380-XX	3 Pair 110 to 110 Connector		
C06-00480-XX	4 Pair 110 to 110 Connector		
C06-00190-XX	1 Pair 110 to RJ-45 Connector		
C06-00290-XX	2 Pair 110 to RJ-45 Connector		
C06-00390-XX	3 Pair 110 to RJ-45 Connector		
C06-00490-XX	4 Pair 110 to RJ-45 Connector		

Standard Color (0): Light Gray RAL 7035. Other colors available for selection from Color Table No.6.
-XX designates the cord length in decimeters (10 -> 1m cord, 00 -> 10m cord).

Blank Keystone-Jack Copper Patch Panels



Description

HCS DataLink Blank RJ-45 Keystone-Jack Copper Patch Panels series includes high quality empty multi-port panels specially designed for structured premise cabling in local area networks (LANs).
HCS DataLink blank panels are available with plastic or metal frames, up to 48 ports and with standard or staggered form.
The plastic-frame panels are recommended for use with unshielded jacks, while the metal-frame panels are recommended for use with shielded jacks, in order to provide continuous ground connection even when non-shielded cords are used.
The HCS Logo and the DataLink Trademark ensure long lasting high-performance and full compatibilty with all HCS components.

Applications

Installation of copper cabling systems in horizontal or vertical environments.

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Integrated full installation accessories (supplied free of charge), including labels and icons, clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- Optional plastic front panels - Providing custom color selection.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- High quality metal casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material of Construction - Metal Frame	Steel, Aluminum, Aluminum Alloy or Anodized Aluminum.
Paint and Color - Metal Frame	Powder paint finish, Black (Gray available upon request)
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Material of Construction - Plastic Frame	High impact, Flame-retardant plastic compound, UL 94 V-0.
Packaging	One unit per box.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Non Halogen Constructions	Available upon request.

ORDERING INFORMATION

HCS P/N	Description	Units	Jack Compatibilty		Size	
			Unshielded	Shielded	mm	Inch
P00-01610-1U	16 port Keystone Jack Blank 19" Plastic Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-01620-1U	16 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-02410-1U	24 port Keystone Jack Blank 19" Plastic Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02420-1U	24 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-02430-1U	24 port Keystone Jack Blank 19" Staggered Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02450-1U	24 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02460-1U	24 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02470-1U	24 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-03210-2U	32 port Keystone Jack Blank 19" Plastic Patch Panel	2u	Yes	No	89x483	3.5x19
P00-04810-2U	48 port Keystone Jack Blank 19" Plastic Patch Panel	2u	Yes	No	89x483	3.5x19
P00-04810-1U	48 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-04820-1U	48 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-04860-1U	48 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-04870-1U	48 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19

DL-1200 Blank Copper Patch Panels

HES Cabling Systems
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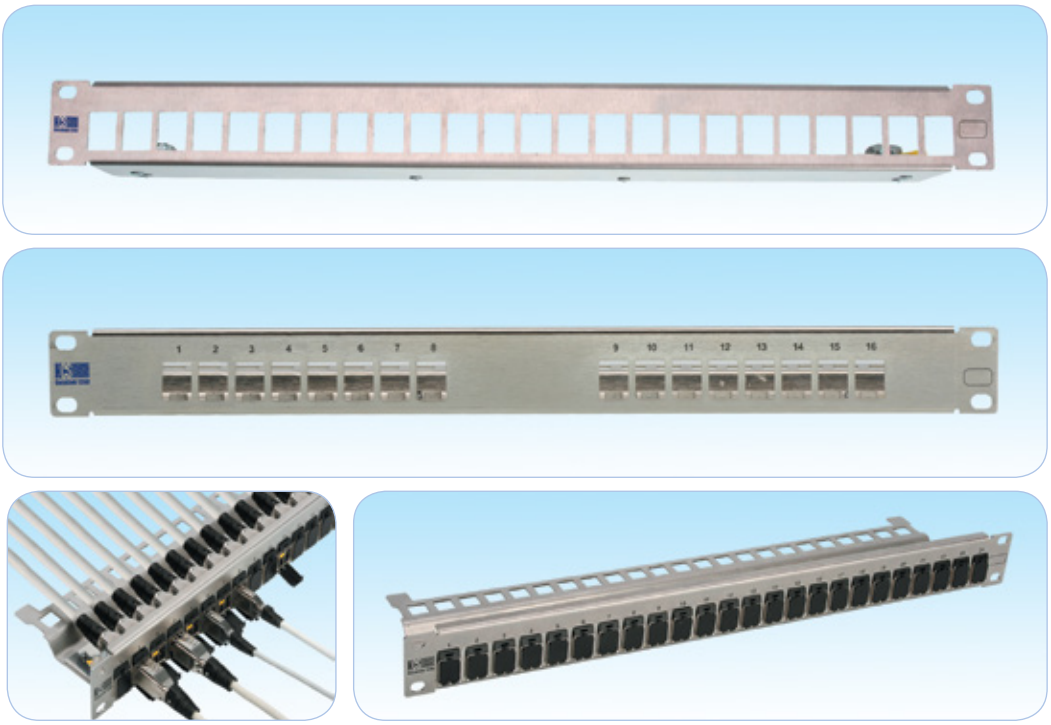

Description

HCS DataLink DL-1200 Blank Copper Patch Panels series includes high quality blank multi-port panels specially designed for structured premise cabling in local area networks (LANs) using HCS DL-1200 outlets for high-frequency applications.
HCS DataLink DL-1200 blank panels are available with metal frames with 16 or 24 ports.
The HCS Logo and the DataLink Trademark ensure long lasting high-performance and full compatibility with all HCS components.

Applications

HCS DataLink DL-1200 Blank Copper Patch Panels are used for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points where high frequency application are required

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Built-in cable management and strain relief features are integrated onto the rear of panel - Providing a simple and elegant cable termination and identification.
- When outlets are snapped into place, resilient ground tabs and ground lugs assure that each outlet and cable is properly grounded - Providing maximum protection against outside interference.
- No secondary grounding operations are required - reducing overall installation time.
- Optional use of 1-pair, 2-pair or 4-pair cords - enabling sharing multiple applications over each 4-pair cable/outlet, saving material and installation costs.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material of Construction	High-strength Aluminum - Painted or anodized. Painted steel or unpainted stainless-steel.
Paint and Color	Powder paint finish, Black (Gray available upon request)
Packaging	One unit per box.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Non Halogen Constructions	Available upon request.

ORDERING INFORMATION

HCS P/N	Description	Units	Size	
			mm	Inch
P7A-01610-1U	16 port DL-1200 Jack Blank 19" Metal Patch Panel	1u	44.2x483	1.74x19
P7A-02410-1U	24 port DL-1200 Jack Blank 19" Metal Patch Panel	1u	44.5x483	1.74x19

DataLink 100e

Category 5E U/UTP 100 Ohm Modular Cords

HES Cabling Systems
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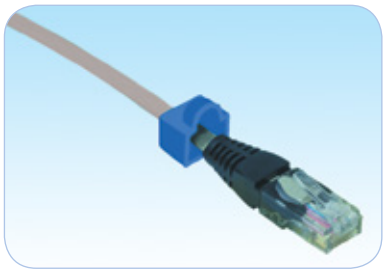

Description

HCS DataLink 100E modular cord series consists of 100 Ohm impedance, 4-pair U/UTP terminated cords for work area, jumper and patching in local area networks (LANs). HCS DataLink 100E modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations. HCS DataLink 100E modular cords exceed all ANSI/TIA/568-C.2 Category 5E and ISO/IEC-11801 (2nd Edition) requirements and are specially designed to be backward compatible with all Category 5 jacks.

The HCS DataLink 100E modular cords can be used with either T568A or T568B modular jacks. The standard color is Gray RAL 7035, but they are available in 10 different jacket colors and supplied with boots that match the color of the cord.

Applications

HCS DataLink 100E modular cords can be used for connections in telecommunications outlet, MUTO, consolidation point, patch panel and terminal equipment.
HCS DataLink 100E modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E modular cords are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and overall jacketed.
Both cable ends terminated with unshielded modular plug connectors conforming to IEC 60603-7-2.

Basic Cable Conductor	Stranded, 24 AWG, 7x0.20 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	5.3 mm nom.
Bend Radius	22 mm min.
Plug Housing Material	Polycarbonate.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	62.3	61.5	60.4	21.6
8.00	56.4	55.6	54.7	22.5
10.00	54.5	53.7	52.8	22.8
16.00	50.4	49.8	48.9	23.4
20.00	48.6	47.9	47.1	23.7
25.00	46.7	46.0	45.3	24.0
31.25	44.8	44.2	43.6	23.0
62.50	39.0	38.5	38.1	20.0
100.00	35.1	34.8	34.6	18.0

Characteristic Impedance	100±6 Ohm @ 1-100 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T5E-00410-05	4x2x24# U/UTP CAT 5E PVC Modular Cord Gray	0.5	-
T5E-00420-05	4x2x24# U/UTP CAT 5E LS0H Modular Cord Gray	0.5	-
T5E-00410-10	4x2x24# U/UTP CAT 5E PVC Modular Cord Gray	1.0	-
T5E-00420-10	4x2x24# U/UTP CAT 5E LS0H Modular Cord Gray	1.0	-
T5E-00410-20	4x2x24# U/UTP CAT 5E PVC Modular Cord Gray	2.0	-
T5E-00420-20	4x2x24# U/UTP CAT 5E LS0H Modular Cord Gray	2.0	-
T5E-00410-30	4x2x24# U/UTP CAT 5E PVC Modular Cord Gray	3.0	-
T5E-00420-30	4x2x24# U/UTP CAT 5E LS0H Modular Cord Gray	3.0	-
T5E-00410-50	4x2x24# U/UTP CAT 5E PVC Modular Cord Gray	5.0	-
T5E-00420-50	4x2x24# U/UTP CAT 5E LS0H Modular Cord Gray	5.0	-
T5E-00410-70	4x2x24# U/UTP CAT 5E PVC Modular Cord Gray	7.0	-
T5E-00420-70	4x2x24# U/UTP CAT 5E LS0H Modular Cord Gray	7.0	-
T5E-00410-00	4x2x24# U/UTP CAT 5E PVC Modular Cord Gray	10	-
T5E-00420-00	4x2x24# U/UTP CAT 5E LS0H Modular Cord Gray	10	-

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 100e

Category 5E F/UTP 100 Ohm Modular Cords

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Description

HCS DataLink 100E modular cord series consists of 100 Ohm impedance, 4-pair overall foil (F/UTP) shielded terminated cords for work area, jumper and patching in local area networks (LANs).
HCS DataLink 100E modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations.
HCS DataLink 100E modular cords exceed all ANSI/TIA/568-C.2 Category 5E and ISO/IEC-11801 (2nd Edition) requirements requirements in shielded cabling systems, and are specially designed to be backward compatible with all Category 5 jacks.
The HCS DataLink 100E modular cords can be used with either T568A or T568B modular jacks.
The standard color is Gray RAL 7035, but they are available in 10 different jacket colors and supplied with boots that match the color of the cord.

Applications

HCS DataLink 100E modular cords can be used for connections in telecommunications outlet, MUTO, consolidation point, patch panel and terminal equipment.
HCS DataLink 100E modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E modular cords are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ End-to-end shield continuity - Providing a low transfer impedance, a high coupling-attenuation and improved EMC.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, Overall Taped-wrapped with a polyester tape and an aluminum foil and overall jacketed. Both cable ends terminated with fully shielded modular plug connectors conforming to IEC 60603-7-3.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Polyester tape, providing 100% coverage.
Overall Shield	Polyester-aluminum foil (foil face in), providing 100% coverage.
Drain Wire	Stranded, 26 AWG, 7x0.16 mm, tinned-copper laid under the aluminum foil.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	5.5 mm nom.
Bend Radius	22 mm min.
Plug Housing Material	Polycarbonate.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	62.3	61.5	60.4	21.6
8.00	56.4	55.6	54.7	22.5
10.00	54.5	53.7	52.8	22.8
16.00	50.4	49.8	48.9	23.4
20.00	48.6	47.9	47.1	23.7
25.00	46.7	46.0	45.3	24.0
31.25	44.8	44.2	43.6	23.0
62.50	39.0	38.5	38.1	20.0
100.00	35.1	34.8	34.6	18.0

Characteristic Impedance	100±6 Ohm @ 1-100 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	0.5 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T5E-00430-05	4x2x26# F/UTP CAT 5E PVC Modular Cord Gray	0.5	
T5E-00440-05	4x2x26# F/UTP CAT 5E LS0H Modular Cord Gray	0.5	
T5E-00430-10	4x2x26# F/UTP CAT 5E PVC Modular Cord Gray	1.0	
T5E-00440-10	4x2x26# F/UTP CAT 5E LS0H Modular Cord Gray	1.0	
T5E-00430-20	4x2x26# F/UTP CAT 5E PVC Modular Cord Gray	2.0	
T5E-00440-20	4x2x26# F/UTP CAT 5E LS0H Modular Cord Gray	2.0	
T5E-00430-30	4x2x26# F/UTP CAT 5E PVC Modular Cord Gray	3.0	
T5E-00440-30	4x2x26# F/UTP CAT 5E LS0H Modular Cord Gray	3.0	
T5E-00430-50	4x2x26# F/UTP CAT 5E PVC Modular Cord Gray	5.0	
T5E-00440-50	4x2x26# F/UTP CAT 5E LS0H Modular Cord Gray	5.0	
T5E-00430-70	4x2x26# F/UTP CAT 5E PVC Modular Cord Gray	7.0	
T5E-00440-70	4x2x26# F/UTP CAT 5E LS0H Modular Cord Gray	7.0	
T5E-00430-00	4x2x26# F/UTP CAT 5E PVC Modular Cord Gray	10	
T5E-00440-00	4x2x26# F/UTP CAT 5E LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 100e

Category 5E SF/UTP 100 Ohm Modular Cords

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Description

HCS DataLink 100E modular cord series consists of 100 Ohm impedance, 4-pair overall foil + braid (SF/UTP) shielded terminated cords for work area, jumper and patching in local area networks (LANs).
HCS DataLink 100E modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations.
HCS DataLink 100E modular cords exceed all ANSI/TIA/568-C.2 Category 5E and ISO/IEC-11801 (2nd Edition) requirements in shielded cabling systems where improved noise immunity is required, and are specially designed to be backward compatible with all Category 5 jacks.
The HCS DataLink 100E modular cords can be used with either T568A or T568B modular jacks.
The standard color is Gray RAL 7035, but they are available in 10 different jacket colors and supplied with boots that match the color of the cord.

Applications

HCS DataLink 100E modular cords can be used for connections in telecommunications outlet, MUTO, consolidation point, patch panel and terminal equipment.
HCS DataLink 100E modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E modular cords are tested and verified for full compliance with the following standards:

- ➔ Category 5E according to ANSI/TIA/568-C.2
- ➔ Category 5E according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ End-to-end double-shield continuity - Providing a low transfer impedance, a high coupling-attenuation and improved EMC.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and Overall Taped-wrapped with a polyester tape, shielded with an aluminum foil plus a tin-coated copper braid and overall jacketed. Both cable ends terminated with fully shielded modular plug connectors conforming to IEC 60603-7-3.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	Polyester tape, providing 100% coverage.
Overall Inner Shield	Polyester-aluminum foil (foil face out), providing 100% coverage.
Overall Outer Shield	Tinned-copper braid, laid over the aluminum foil.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	5.7 mm nom.
Bend Radius	23 mm min.
Plug Housing Material	Polycarbonate.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	62.3	61.5	60.4	21.6
8.00	56.4	55.6	54.7	22.5
10.00	54.5	53.7	52.8	22.8
16.00	50.4	49.8	48.9	23.4
20.00	48.6	47.9	47.1	23.7
25.00	46.7	46.0	45.3	24.0
31.25	44.8	44.2	43.6	23.0
62.50	39.0	38.5	38.1	20.0
100.00	35.1	34.8	34.6	18.0

Characteristic Impedance	100±6 Ohm @ 1-100 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	0.5 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	65 dB min @ 30-100 MHz

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T5E-00450-05	4x2x26# SF/UTP CAT 5E PVC Modular Cord Gray	0.5	
T5E-00460-05	4x2x26# SF/UTP CAT 5E LS0H Modular Cord Gray	0.5	
T5E-00450-10	4x2x26# SF/UTP CAT 5E PVC Modular Cord Gray	1.0	
T5E-00460-10	4x2x26# SF/UTP CAT 5E LS0H Modular Cord Gray	1.0	
T5E-00450-20	4x2x26# SF/UTP CAT 5E PVC Modular Cord Gray	2.0	
T5E-00460-20	4x2x26# SF/UTP CAT 5E LS0H Modular Cord Gray	2.0	
T5E-00450-30	4x2x26# SF/UTP CAT 5E PVC Modular Cord Gray	3.0	
T5E-00460-30	4x2x26# SF/UTP CAT 5E LS0H Modular Cord Gray	3.0	
T5E-00450-50	4x2x26# SF/UTP CAT 5E PVC Modular Cord Gray	5.0	
T5E-00460-50	4x2x26# SF/UTP CAT 5E LS0H Modular Cord Gray	5.0	
T5E-00450-70	4x2x26# SF/UTP CAT 5E PVC Modular Cord Gray	7.0	
T5E-00460-70	4x2x26# SF/UTP CAT 5E LS0H Modular Cord Gray	7.0	
T5E-00450-00	4x2x26# SF/UTP CAT 5E PVC Modular Cord Gray	10	
T5E-00460-00	4x2x26# SF/UTP CAT 5E LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 U/UTP 100 Ohm Modular Cords

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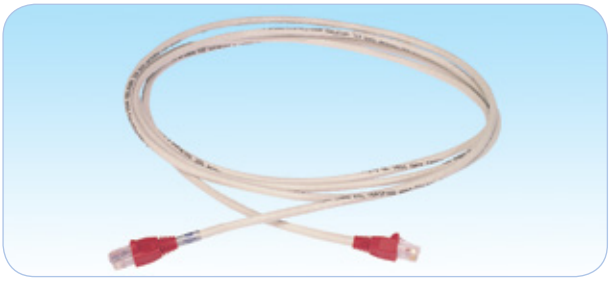

Description

HCS DataLink 250 modular cord series consists of 100 Ohm impedance, 4-pair U/UTP terminated cords for work area,jumper and patching in local area networks (LANs).HCS DataLink 250 modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations.HCS DataLink 250 modular cords exceed all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 requirements and are specially designed to be backward compatible with all Category 5 and Category 5E jacks.The HCS DataLink 250 modular cords can be used with either T568A or T568B modular jacks.The standard color is Gray RAL 7035,but they are available in 10 different jacket colors and supplied with boots that match the color of the cord.

Applications

HCS DataLink 250 modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and overall jacketed. Both cable ends terminated with unshielded modular plug connectors conforming to IEC 60603-7-4.

Basic Cable Conductor	Stranded, 24 AWG, 7x0.20 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket and Boots	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	5.7 mm nom.
Bend Radius	23 mm min.
Plug Housing Material	Polycarbonate, conforming to UL 94 V-0.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LSOH Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	65.0	65.0	65.0	21.6
8.00	65.0	65.0	65.0	22.5
10.00	65.0	65.0	62.9	22.8
16.00	62.0	60.5	59.0	23.4
20.00	60.1	58.6	57.2	23.7
25.00	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.50	50.4	49.2	48.1	20.0
100.00	46.4	45.3	44.4	18.0
125.00	44.5	43.5	42.7	17.0
150.00	43.0	42.1	41.4	16.2
200.00	40.6	39.8	39.3	15.0
250.00	38.8	38.1	37.6	14.0

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20log (f/100)@100-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T06-00410-05	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	0.5	
T06-00420-05	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	0.5	
T06-00410-10	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	1.0	
T06-00420-10	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	1.0	
T06-00410-20	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	2.0	
T06-00420-20	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	2.0	
T06-00410-30	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	3.0	
T06-00420-30	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	3.0	
T06-00410-50	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	5.0	
T06-00420-50	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	5.0	
T06-00410-70	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	7.0	
T06-00420-70	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	7.0	
T06-00410-00	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	10	
T06-00420-00	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 U/UTP 100 Ohm Modular Cords

HES Cabling Systems
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Description

HCS DataLink 250 modular cord series consists of 100 Ohm impedance, 4-pair U/UTP terminated cords for work area,jumper and patching in local area networks (LANs).HCS DataLink 250 modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations.HCS DataLink 250 modular cords exceed all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 requirements and are specially designed to be backward compatible with all Category 5 and Category 5E jacks.The HCS DataLink 250 modular cords can be used with either T568A or T568B modular jacks.The standard color is Gray RAL 7035,but they are available in 10 different jacket colors and supplied with boots that match the color of the cord.

Applications

HCS DataLink 250 modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and overall jacketed. Both cable ends terminated with unshielded modular plug connectors conforming to IEC 60603-7-4.

Basic Cable Conductor	Stranded, 24 AWG, 7x0.20 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket and Boots	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	5.7 mm nom.
Bend Radius	23 mm min.
Plug Housing Material	Polycarbonate, conforming to UL 94 V-0.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LSOH Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	65.0	65.0	65.0	21.6
8.00	65.0	65.0	65.0	22.5
10.00	65.0	65.0	62.9	22.8
16.00	62.0	60.5	59.0	23.4
20.00	60.1	58.6	57.2	23.7
25.00	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.50	50.4	49.2	48.1	20.0
100.00	46.4	45.3	44.4	18.0
125.00	44.5	43.5	42.7	17.0
150.00	43.0	42.1	41.4	16.2
200.00	40.6	39.8	39.3	15.0
250.00	38.8	38.1	37.6	14.0

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20log (f/100)@100-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T06-00410-056	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	0.5	
T06-00420-056	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	0.5	
T06-00410-106	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	1.0	
T06-00420-106	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	1.0	
T06-00410-206	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	2.0	
T06-00420-206	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	2.0	
T06-00410-306	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	3.0	
T06-00420-306	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	3.0	
T06-00410-506	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	5.0	
T06-00420-506	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	5.0	
T06-00410-706	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	7.0	
T06-00420-706	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	7.0	
T06-00410-006	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	10	
T06-00420-006	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 U/UTP 100 Ohm Slim Body Modular Cords

HES Cabling Systems
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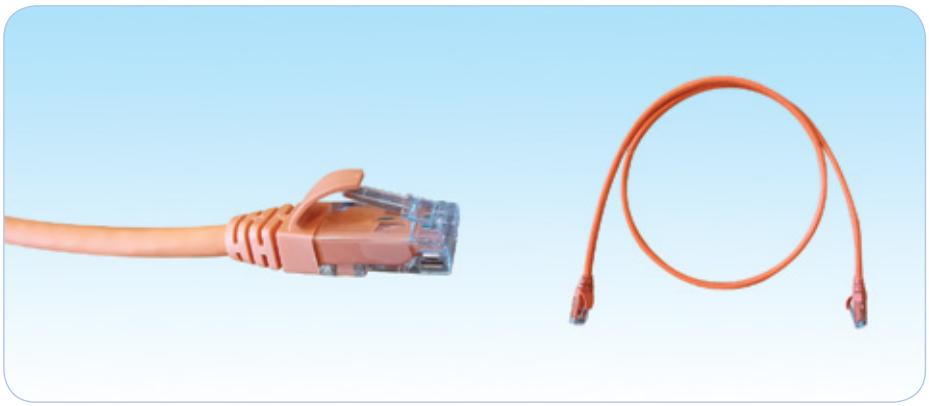
Description

HCS DataLink 250 modular cord series consists of 100 Ohm impedance, 4-pair U/UTP terminated cords for work area,jumper and patching in local area networks (LANs).HCS DataLink 250 modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations.HCS DataLink 250 modular cords exceed all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 requirements and are specially designed to be backward compatible with all Category 5 and Category 5E jacks.The HCS DataLink 250 modular cords can be used with either T568A or T568B modular jacks.The standard color is Gray RAL 7035,but they are available in 10 dierent jacket colors and supplied with boots that match the color of the cord.

Applications

HCS DataLink 250 modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 250 Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Slim body design.
- ➔ Supports high-density Applications.
- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together and overall jacketed. Both cable ends terminated with unshielded modular plug connectors conforming to IEC 60603-7-4.

Basic Cable Conductor	Stranded, 24 AWG, 7x0.20 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	None.
Drain Wire	None.
Outer Jacket and Boots	LSOH Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	5.7 mm nom.
Bend Radius	23 mm min.
Plug Housing Material	Polycarbonate, conforming to UL 94 V-0.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LSOH Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	65.0	65.0	65.0	21.6
8.00	65.0	65.0	65.0	22.5
10.00	65.0	65.0	62.9	22.8
16.00	62.0	60.5	59.0	23.4
20.00	60.1	58.6	57.2	23.7
25.00	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.50	50.4	49.2	48.1	20.0
100.00	46.4	45.3	44.4	18.0
125.00	44.5	43.5	42.7	17.0
150.00	43.0	42.1	41.4	16.2
200.00	40.6	39.8	39.3	15.0
250.00	38.8	38.1	37.6	14.0

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz 40-20log (f/100)@100-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T06-0S410-05	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	0.5	
T06-0S420-05	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	0.5	
T06-0S410-10	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	1.0	
T06-0S420-10	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	1.0	
T06-0S410-20	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	2.0	
T06-0S420-20	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	2.0	
T06-0S410-30	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	3.0	
T06-0S420-30	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	3.0	
T06-0S410-50	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	5.0	
T06-0S420-50	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	5.0	
T06-0S410-70	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	7.0	
T06-0S420-70	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	7.0	
T06-0S410-A0	4x2x24# U/UTP CAT 6 PVC Modular Cord Gray	10	
T06-0S420-A0	4x2x24# U/UTP CAT 6 LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 F/UTP 100 Ohm Modular Cords

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Description

HCS DataLink 250 FTP modular cord series consists of 100 Ohm impedance, 4-pair F/UTP terminated cords for work area, jumper and patching in local area networks (LANs).
HCS DataLink 250 FTP modular cords feature a unique termination and shielding method, combining a full metal case with grip and a strain-relief with a removable boot.
HCS DataLink 250 modular cords exceed all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 requirements and are specially designed to be backward compatible with all Category 5 and Category 5E jacks.
The HCS DataLink 250 modular cords can be used with either T568A or T568B modular jacks.
The standard color is Gray RAL 7035. 10 different jacket & boot colors are available upon request.

Applications

HCS DataLink 250 F/UTP modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

All HCS DataLink 250 F/UTP terminated cords are tested at the component level and officially ETL verified for full compliance with ANSI/TIA/568-C.2 Category 6.

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ 50µ aluminum foil shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, overall foil shielded and jacketed.
Both cable ends terminated with fully shielded modular plug connectors conforming to IEC 60603-7-5.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Pair separator	Cross shaped spacer
Overall Shield	Polyester-aluminum foil, foil face out.
Drain Wire	Solid 26 AWG tin-coated annealed copper.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	0.7 Kgf (7N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.2 mm nom.
Bend Radius	50 mm min.
Plug Housing Material	Polycarbonate.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	65.0	65.0	65.0	21.6
8.00	65.0	65.0	65.0	22.5
10.00	65.0	65.0	62.9	22.8
16.00	62.0	60.5	59.0	23.4
20.00	60.1	58.6	57.2	23.7
25.00	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.50	50.4	49.2	48.1	20.0
100.00	46.4	45.3	44.4	18.0
125.00	44.5	43.5	42.7	17.0
150.00	43.0	42.1	41.4	16.2
200.00	40.6	39.8	39.3	15.0
250.00	38.8	38.1	37.6	14.0

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20log (f/100)@100-250 MHz
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHz

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T06-00430-05	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	0.5	
T06-00440-05	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	0.5	
T06-00430-10	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	1.0	
T06-00440-10	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	1.0	
T06-00430-20	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	2.0	
T06-00440-20	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	2.0	
T06-00430-30	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	3.0	
T06-00440-30	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	3.0	
T06-00430-50	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	5.0	
T06-00440-50	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	5.0	
T06-00430-70	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	7.0	
T06-00440-70	4x2x26# F/UTPCAT 6 LS0H Modular Cord Gray	7.0	
T06-00430-00	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	10	
T06-00440-00	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 F/UTP 100 Ohm Modular Cords

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250 FTP modular cord series consists of 100 Ohm impedance, 4-pair F/UTP terminated cords for work area, jumper and patching in local area networks (LANs).
HCS DataLink 250 FTP modular cords feature a unique termination and shielding method, combining a full metal case with grip and a strain-relief with a removable boot.
HCS DataLink 250 modular cords exceed all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 requirements and are specially designed to be backward compatible with all Category 5 and Category 5E jacks.
The HCS DataLink 250 modular cords can be used with either T568A or T568B modular jacks.
The standard color is Gray RAL 7035. 10 different jacket & boot colors are available upon request.

Applications

HCS DataLink 250 F/UTP modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

All HCS DataLink 250 F/UTP terminated cords are tested at the component level and officially ETL verified for full compliance with ANSI/TIA/568-C.2 Category 6.

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ 50µ aluminum foil shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together, overall foil shielded and jacketed.
Both cable ends terminated with fully shielded modular plug connectors conforming to IEC 60603-7-5.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Pair separator	Cross shaped spacer
Overall Shield	Polyester-aluminum foil, foil face out.
Drain Wire	Solid 26 AWG tin-coated annealed copper.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	0.7 Kgf (7N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.2 mm nom.
Bend Radius	50 mm min.
Plug Housing Material	Polycarbonate.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	65.0	65.0	65.0	21.6
8.00	65.0	65.0	65.0	22.5
10.00	65.0	65.0	62.9	22.8
16.00	62.0	60.5	59.0	23.4
20.00	60.1	58.6	57.2	23.7
25.00	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.50	50.4	49.2	48.1	20.0
100.00	46.4	45.3	44.4	18.0
125.00	44.5	43.5	42.7	17.0
150.00	43.0	42.1	41.4	16.2
200.00	40.6	39.8	39.3	15.0
250.00	38.8	38.1	37.6	14.0

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20log (f/100)@100-250 MHz
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHz

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T06-00430-056	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	0.5	
T06-00440-056	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	0.5	
T06-00430-106	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	1.0	
T06-00440-106	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	1.0	
T06-00430-206	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	2.0	
T06-00440-206	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	2.0	
T06-00430-306	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	3.0	
T06-00440-306	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	3.0	
T06-00430-506	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	5.0	
T06-00440-506	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	5.0	
T06-00430-706	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	7.0	
T06-00440-706	4x2x26# F/UTPCAT 6 LS0H Modular Cord Gray	7.0	
T06-00430-006	4x2x26# F/UTP CAT 6 PVC Modular Cord Gray	10	
T06-00440-006	4x2x26# F/UTP CAT 6 LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 S/FTP 100 Ohm Modular Cords

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250 S/FTP modular cord series consists of 100 Ohm impedance, 4-pair S/FTP terminated cords for work area, jumper and patching in local area networks (LANs) ETL Verified at the component level. HCS DataLink 250 S/FTP modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations.

HCS DataLink 250 S/FTP modular cords exceed all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 requirements and are specially designed to be backward compatible with all Category 5 and Category 5E jacks.

HCS DataLink 250 S/FTP modular cords can be used with either T568A or T568B modular jacks.

The standard jacket color is Gray RAL 7035. 10 different jacket & boot colors are available upon request.

Applications

HCS DataLink 250 S/FTP modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

All HCS DataLink 250 S/FTP terminated cords are tested at the component level and officially ETL verified for full compliance with ANSI/TIA/568-C.2 Category 6.

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Individual foil + overall copper braid - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with tin-coated copper braid and overall jacketed.
Both cable ends terminated with fully shielded modular plug connectors conforming to IEC 60603-7-5.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum, foil face out, providing 100% coverage.
Overall Shield	Tin-coated copper braid.
Drain Wire	None.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Boot Color	Red.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	0.7 Kgf (7N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.2±0.3 mm nom.
Bend Radius	25 mm min.
Plug Housing Material	Polycarbonate.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	65.0	65.0	65.0	21.6
8.00	65.0	65.0	65.0	22.5
10.00	65.0	65.0	62.9	22.8
16.00	62.0	60.5	59.0	23.4
20.00	60.1	58.6	57.2	23.7
25.00	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.50	50.4	49.2	48.1	20.0
100.00	46.4	45.3	44.4	18.0
125.00	44.5	43.5	42.7	17.0
150.00	43.0	42.1	41.4	16.2
200.00	40.6	39.8	39.3	15.0
250.00	38.8	38.1	37.6	14.0

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20log (f/100)@100-250 MHz
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHz

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T06-00470-05	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	0.5	
T06-00480-05	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	0.5	
T06-00470-10	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	1.0	
T06-00480-10	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	1.0	
T06-00470-20	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	2.0	
T06-00480-20	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	2.0	
T06-00470-30	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	3.0	
T06-00480-30	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	3.0	
T06-00470-50	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	5.0	
T06-00480-50	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	5.0	
T06-00470-70	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	7.0	
T06-00480-70	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	7.0	
T06-00470-00	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	10	
T06-00480-00	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 S/FTP 100 Ohm Modular Cords

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250 S/FTP modular cord series consists of 100 Ohm impedance, 4-pair S/FTP terminated cords for work area, jumper and patching in local area networks (LANs) ETL Verified at the component level. HCS DataLink 250 S/FTP modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations.
HCS DataLink 250 S/FTP modular cords exceed all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 requirements and are specially designed to be backward compatible with all Category 5 and Category 5E jacks.
HCS DataLink 250 S/FTP modular cords can be used with either T568A or T568B modular jacks.
The standard jacket color is Gray RAL 7035. 10 different jacket & boot colors are available upon request.

Applications

HCS DataLink 250 S/FTP modular cords support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

All HCS DataLink 250 S/FTP terminated cords are tested at the component level and officially ETL verified for full compliance with ANSI/TIA/568-C.2 Category 6.

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Individual foil + overall copper braid - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, Overall Shielded with tin-coated copper braid and overall jacketed.
Both cable ends terminated with fully shielded modular plug connectors conforming to IEC 60603-7-5.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-aluminum, foil face out, providing 100% coverage.
Overall Shield	Tin-coated copper braid.
Drain Wire	None.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Boot Color	Red.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	0.7 Kgf (7N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.2±0.3 mm nom.
Bend Radius	25 mm min.
Plug Housing Material	Polycarbonate.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	NEXT			RL
MHz	dB			dB
	Min			Min
	2 m Patch Cord	5 m Patch Cord	10 m Patch Cord	
1.00	65.0	65.0	65.0	19.8
4.00	65.0	65.0	65.0	21.6
8.00	65.0	65.0	65.0	22.5
10.00	65.0	65.0	62.9	22.8
16.00	62.0	60.5	59.0	23.4
20.00	60.1	58.6	57.2	23.7
25.00	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.50	50.4	49.2	48.1	20.0
100.00	46.4	45.3	44.4	18.0
125.00	44.5	43.5	42.7	17.0
150.00	43.0	42.1	41.4	16.2
200.00	40.6	39.8	39.3	15.0
250.00	38.8	38.1	37.6	14.0

Characteristic Impedance	100±6 Ohm @ 1-250 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20log (f/100)@100-250 MHz
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHz

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T06-00470-056	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	0.5	
T06-00480-056	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	0.5	
T06-00470-106	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	1.0	
T06-00480-106	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	1.0	
T06-00470-206	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	2.0	
T06-00480-206	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	2.0	
T06-00470-306	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	3.0	
T06-00480-306	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	3.0	
T06-00470-506	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	5.0	
T06-00480-506	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	5.0	
T06-00470-706	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	7.0	
T06-00480-706	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	7.0	
T06-00470-006	4x2x26# S/FTP CAT 6 PVC Modular Cord Gray	10	
T06-00480-006	4x2x26# S/FTP CAT 6 LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 250

Category 6 LAN Copper Connectivity Shielded & Unshielded RJ45 Industrial Modular Cords

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250 CAT6 Shielded F/UTP & Unshielded U/UTP RJ45/RJ45 IP67 industrial modular cords

Frequency range	1-250 MHz
Conductor - shielded cords	26 AWG 7x0.16mm stranded bare copper
Conductor - unshielded cords	24 AWG 7x0.20mm stranded bare copper
Insulation	PO
Color code	ANSI/TIA-568-C
Shielded cords shield	Aluminum foil
Jacket	FR Heavy-duty UV resistant PVC compound
Standard jacket color	Black
Standard boot color	Black (Other colors available)
Protective covers	FR UV-resistant heavy-duty plastic material

Qualifications and Approvals

HCS DataLink 250 RJ45 punch-down IP67 industrial jacks are tested and verified for full compliance with the following standards:

- Category 6 modular cords according to ISO/IEC 11801
- Category 6 modular cords according to EN 50173
- Category 6 modular cords according to ANSI/TIA-568-C.2
- IEC 60332-1 (cable) and UL94 V-0 flame test (plug)
- EU Directive 2011/65/EU (RoHS-2)
- IEC 60259 IP67
- UL 1863 Communications-Circuit Accessories Safety

Benefits & Features

Impedance	100 Ohm nom.
Pin-pair assignment	T568B
Plug contacts	50-Inch Gold plating
Shielded cords plug shield	Corrosion resistant metal
Plug housing	FR Polycarbonate
Operating temperature	-20 to +60C at 5-93% RH (Non condensing)
Voltage rating	75 Vdc max.
Ampacity	1.0 Ampere max.
Insulation resistance	500 MegaOhm min. @500 Vdc

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Jacket Color	Boot Color	Packaging
T06-P0410-05	4-Pair 24 AWG RJ45/RJ45 Unshielded U/UTP CAT6 Industrial Modular Cord	0.5	Black	Black	1/Bag
T06-P0410-10	4-Pair 24 AWG RJ45/RJ45 Unshielded U/UTP CAT6 Industrial Modular Cord	1.0	Black	Black	1/Bag
T06-P0410-20	4-Pair 24 AWG RJ45/RJ45 Unshielded U/UTP CAT6 Industrial Modular Cord	2.0	Black	Black	1/Bag
T06-P0410-30	4-Pair 24 AWG RJ45/RJ45 Unshielded U/UTP CAT6 Industrial Modular Cord	3.0	Black	Black	1/Bag
T06-P0410-50	4-Pair 24 AWG RJ45/RJ45 Unshielded U/UTP CAT6 Industrial Modular Cord	5.0	Black	Black	1/Bag
T06-P0410-A0	4-Pair 24 AWG RJ45/RJ45 Unshielded U/UTP CAT6 Industrial Modular Cord	10	Black	Black	1/Bag
T06-P0430-05	4-Pair 26 AWG RJ45/RJ45 Shielded F/UTP CAT6 Industrial Modular Cord	0.5	Black	Black	1/Bag
T06-P0430-10	4-Pair 26 AWG RJ45/RJ45 Shielded F/UTP CAT6 Industrial Modular Cord	1.0	Black	Black	1/Bag
T06-P0430-20	4-Pair 26 AWG RJ45/RJ45 Shielded F/UTP CAT6 Industrial Modular Cord	2.0	Black	Black	1/Bag
T06-P0430-30	4-Pair 26 AWG RJ45/RJ45 Shielded F/UTP CAT6 Industrial Modular Cord	3.0	Black	Black	1/Bag
T06-P0430-50	4-Pair 26 AWG RJ45/RJ45 Shielded F/UTP CAT6 Industrial Modular Cord	5.0	Black	Black	1/Bag
T06-P0430-A0	4-Pair 26 AWG RJ45/RJ45 Shielded F/UTP CAT6 Industrial Modular Cord	10	Black	Black	1/Bag

DataLink 500A

Category 6A Unshielded 100 Ohm Modular Cords

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 500A modular cord series consists of 100 Ohm impedance, 4-pair unshielded terminated cords for work area, jumper and patching in local area networks (LANs). HCS DataLink 500A modular cords feature a unique termination method, combining strength relief injection molding into the RJ45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations. HCS DataLink 500A modular cords exceed all ANSI/TIA-568-C.2 requirements for Category 6A needed to support 10GBASE-T and are specially designed to provide outstanding Alien Crosstalk Loss. HCS DataLink 500A modular cords can be used with either T568A or T568B modular jacks. The standard jacket color is gray RAL 7035 and they are available in 10 different jacket colors.

Applications

HCS DataLink 500A modular cords support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6A according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall cable shield - Providing excellent alien crosstalk loss and noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil-shielded twisted pairs cabled together, overall braid shielded and jacketed. Both cable ends terminated with unshielded modular plug connectors conforming to IEC 60603-7-4.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of insulated conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual pair shield	Polyester aluminum foil.
Overall shield	Tin-coated copper braid.
Drain wire	None.
Outer Jacket and boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, cable description, Meter mark and Batch Number.
Cable to plug tensile strength	9 Kgf (90N) min.
Pulling force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.2 mm nom.
Bend radius	25 mm min.
Plug housing material	Polycarbonate, conforming to UL 94 V-0.
Plug contact material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature operating range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen content in LS0H cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Min. NEXT				Min RL
MHz	dB				dB
	1 m cord	2 m cord	5 m cord	10 m cord	
1.0	65.0	65.0	65.0	65.0	19.8
4.0	65.0	65.0	65.0	65.0	21.6
8.0	65.0	65.0	65.0	64.8	22.5
10.0	65.0	65.0	64.5	63.0	22.8
16.0	62.7	62.0	60.5	59.1	23.4
20.0	60.7	60.1	58.7	57.3	23.7
25.0	58.8	58.2	56.8	55.4	24.0
31.25	56.9	56.3	54.9	53.6	23.0
62.5	51.0	50.4	49.2	48.1	20.0
100	47.0	46.4	45.4	44.5	18.0
200	41.1	40.7	39.9	39.3	15.0
250	39.3	38.9	38.1	37.7	14.0
300	36.4	36.2	35.9	35.8	12.8
400	31.8	31.9	32.1	32.5	10.9
500	28.2	28.4	29.0	29.8	9.5

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	40 dB min @ 30-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T6A-00410-051	4x2x26# Unshielded CAT 6A PVC Modular Cord Gray	0.5	
T6A-00420-051	4x2x26# Unshielded CAT 6A LS0H Modular Cord Gray	0.5	
T6A-00410-101	4x2x26# Unshielded CAT 6A PVC Modular Cord Gray	1.0	
T6A-00420-101	4x2x26# Unshielded CAT 6A LS0H Modular Cord Gray	1.0	
T6A-00410-201	4x2x26# Unshielded CAT 6A PVC Modular Cord Gray	2.0	
T6A-00420-201	4x2x26# Unshielded CAT 6A LS0H Modular Cord Gray	2.0	
T6A-00410-301	4x2x26# Unshielded CAT 6A PVC Modular Cord Gray	3.0	
T6A-00420-301	4x2x26# Unshielded CAT 6A LS0H Modular Cord Gray	3.0	
T6A-00410-501	4x2x26# Unshielded CAT 6A PVC Modular Cord Gray	5.0	
T6A-00420-501	4x2x26# Unshielded CAT 6A LS0H Modular Cord Gray	5.0	
T6A-00410-701	4x2x26# Unshielded CAT 6A PVC Modular Cord Gray	7.0	
T6A-00420-701	4x2x26# Unshielded CAT 6A LS0H Modular Cord Gray	7.0	
T6A-00410-A01	4x2x26# Unshielded CAT 6A PVC Modular Cord Gray	10	
T6A-00420-A01	4x2x26# Unshielded CAT 6A LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 500A

Category 6A F/UTP
100 Ohm Modular Cords

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 500A modular cord series consists of 100 Ohm impedance, 4-pair F/UTP terminated cords for work area, jumper and patching in local area networks (LANs). HCS DataLink 500A modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations. HCS DataLink 500A modular cords exceed all ANSI/TIA/568-C.2 requirements for Category 6A needed to support 10GBASE-T and are specially designed to provide outstanding Alien Crosstalk Loss. HCS DataLink 500A modular cords can be used with either T568A or T568B modular jacks. The standard jacket color is gray RAL 7035, but they are available in 10 different jacket colors.

Applications

HCS DataLink 500A modular cords support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6A according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall cable shield - Providing excellent alien crosstalk loss and noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a central cross-shaped filler, overall foil shielded and jacketed. Both cable ends terminated with shielded modular plug connectors conforming to IEC 60603-7-51.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	Polyester aluminum foil, 50µm aluminum. aluminum foil out.
Drain wire	26 AWG Tinned copper wire.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.2 mm nom.
Bend Radius	25 mm min.
Plug Housing Material	Polycarbonate, conforming to UL 94 V-0.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Min. NEXT				Min RL
MHz	dB				dB
	1 m cord	2 m cord	5 m cord	10 m cord	
1.0	65.0	65.0	65.0	65.0	19.8
4.0	65.0	65.0	65.0	65.0	21.6
8.0	65.0	65.0	65.0	64.8	22.5
10.0	65.0	65.0	64.5	63.0	22.8
16.0	62.7	62.0	60.5	59.1	23.4
20.0	60.7	60.1	58.7	57.3	23.7
25.0	58.8	58.2	56.8	55.4	24.0
31.25	56.9	56.3	54.9	53.6	23.0
62.5	51.0	50.4	49.2	48.1	20.0
100	47.0	46.4	45.4	44.5	18.0
200	41.1	40.7	39.9	39.3	15.0
250	39.3	38.9	38.1	37.7	14.0
300	36.4	36.2	35.9	35.8	12.8
400	31.8	31.9	32.1	32.5	10.9
500	28.2	28.4	29.0	29.8	9.5

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20log(f/100) @100-500 MHZ
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHZ

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T6A-00430-10	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	1.0	
T6A-00440-10	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	1.0	
T6A-00430-20	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	2.0	
T6A-00440-20	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	2.0	
T6A-00430-30	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	3.0	
T6A-00440-30	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	3.0	
T6A-00430-50	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	5.0	
T6A-00440-50	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	5.0	
T6A-00430-70	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	7.0	
T6A-00440-70	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	7.0	
T6A-00430-00	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	10	
T6A-00440-00	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 500A

Category 6A F/UTP
100 Ohm Modular Cords

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 500A modular cord series consists of 100 Ohm impedance, 4-pair F/UTP terminated cords for work area, jumper and patching in local area networks (LANs). HCS DataLink 500A modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations. HCS DataLink 500A modular cords exceed all ANSI/TIA/568-C.2 requirements for Category 6A needed to support 10GBASE-T and are specially designed to provide outstanding Alien Crosstalk Loss. HCS DataLink 500A modular cords can be used with either T568A or T568B modular jacks. The standard jacket color is gray RAL 7035, but they are available in 10 different jacket colors.

Applications

HCS DataLink 500A modular cords support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6A according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall cable shield - Providing excellent alien crosstalk loss and noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, unshielded twisted pairs cabled together around a central cross-shaped filler, overall foil shielded and jacketed. Both cable ends terminated with shielded modular plug connectors conforming to IEC 60603-7-51.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Overall Tape Wrap	None.
Overall Shield	Polyester aluminum foil, 50µm aluminum. aluminum foil out.
Drain wire	26 AWG Tinned copper wire.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.2 mm nom.
Bend Radius	25 mm min.
Plug Housing Material	Polycarbonate, conforming to UL 94 V-0.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Min. NEXT				Min RL
MHz	dB				dB
	1 m cord	2 m cord	5 m cord	10 m cord	
1.0	65.0	65.0	65.0	65.0	19.8
4.0	65.0	65.0	65.0	65.0	21.6
8.0	65.0	65.0	65.0	64.8	22.5
10.0	65.0	65.0	64.5	63.0	22.8
16.0	62.7	62.0	60.5	59.1	23.4
20.0	60.7	60.1	58.7	57.3	23.7
25.0	58.8	58.2	56.8	55.4	24.0
31.25	56.9	56.3	54.9	53.6	23.0
62.5	51.0	50.4	49.2	48.1	20.0
100	47.0	46.4	45.4	44.5	18.0
200	41.1	40.7	39.9	39.3	15.0
250	39.3	38.9	38.1	37.7	14.0
300	36.4	36.2	35.9	35.8	12.8
400	31.8	31.9	32.1	32.5	10.9
500	28.2	28.4	29.0	29.8	9.5

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	55 dB min @ 30-100 MHz 55-20log(f/100) @100-500 MHZ
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHZ

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T6A-00430-101	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	1.0	
T6A-00440-101	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	1.0	
T6A-00430-201	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	2.0	
T6A-00440-201	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	2.0	
T6A-00430-301	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	3.0	
T6A-00440-301	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	3.0	
T6A-00430-501	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	5.0	
T6A-00440-501	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	5.0	
T6A-00430-701	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	7.0	
T6A-00440-701	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	7.0	
T6A-00430-001	4x2x26# F/UTP CAT 6A PVC Modular Cord Gray	10	
T6A-00440-001	4x2x26# F/UTP CAT 6A LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 500A

Category 6A S/FTP 100 Ohm Modular Cords

HES Cabling Systems
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Description

HCS DataLink 500A modular cord series consists of 100 Ohm impedance, 4-pair S/FTP terminated cords for work area, jumper and patching in local area networks (LANs). HCS DataLink 500A modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations. HCS DataLink 500A modular cords exceed all ANSI/TIA/568-C.2 requirements for Category 6A needed to support 10GBASE-T and are specially designed to provide outstanding Alien Crosstalk Loss. HCS DataLink 500A modular cords can be used with either T568A or T568B modular jacks. The standard jacket color is gray RAL 7035, but they are available in 10 different jacket colors.

Applications

HCS DataLink 500A modular cords support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- Category 6A according to ANSI/TIA/568-C.2
- Category 6 according to ANSI/TIA/568-C.2
- Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- Exceptional material properties and cable design - Providing the highest degree of reliability.
- High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- Extremely high pair-balance and overall cable shield - Providing excellent alien crosstalk loss and noise immunity.
- Revolutionary pair lay scheme - Providing an extremely low delay skew.
- Smooth and limp jacket - Providing comfortable cord handling.
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, overall braid shielded and jacketed. Both cable ends terminated with shielded modular plug connectors conforming to IEC 60603-7-51.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-Aluminum foil, providing 100% coverage with 25% overlap, aluminum facing out.
Overall Shield	Tinned copper braid laid in close contact with the individual foil shields.
Drain wire	None.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.5 mm nom.
Bend Radius	25 mm min.
Plug Housing Material	Polycarbonate, conforming to UL 94 V-0.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Min. NEXT				Min RL
MHz	dB				dB
	1 m cord	2 m cord	5 m cord	10 m cord	
1.0	65.0	65.0	65.0	65.0	19.8
4.0	65.0	65.0	65.0	65.0	21.6
8.0	65.0	65.0	65.0	64.8	22.5
10.0	65.0	65.0	64.5	63.0	22.8
16.0	62.7	62.0	60.5	59.1	23.4
20.0	60.7	60.1	58.7	57.3	23.7
25.0	58.8	58.2	56.8	55.4	24.0
31.25	56.9	56.3	54.9	53.6	23.0
62.5	51.0	50.4	49.2	48.1	20.0
100	47.0	46.4	45.4	44.5	18.0
200	41.1	40.7	39.9	39.3	15.0
250	39.3	38.9	38.1	37.7	14.0
300	36.4	36.2	35.9	35.8	12.8
400	31.8	31.9	32.1	32.5	10.9
500	28.2	28.4	29.0	29.8	9.5

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20log(f/100) @100-500 MHZ
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHZ

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T6A-00470-10	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	1.0	
T6A-00480-10	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	1.0	
T6A-00470-20	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	2.0	
T6A-00480-20	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	2.0	
T6A-00470-30	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	3.0	
T6A-00480-30	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	3.0	
T6A-00470-50	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	5.0	
T6A-00480-50	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	5.0	
T6A-00470-70	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	7.0	
T6A-00480-70	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	7.0	
T6A-00470-00	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	10	
T6A-00480-00	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 500A

Category 6A S/FTP 100 Ohm Modular Cords

HES Cabling Systems
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Description

HCS DataLink 500A modular cord series consists of 100 Ohm impedance, 4-pair S/FTP terminated cords for work area, jumper and patching in local area networks (LANs). HCS DataLink 500A modular cords feature a unique termination method, combining strength relief injection molding into the RJ-45 plug with a removable boot. This design provides the advantages of both molded and non-molded terminations. HCS DataLink 500A modular cords exceed all ANSI/TIA/568-C.2 requirements for Category 6A needed to support 10GBASE-T and are specially designed to provide outstanding Alien Crosstalk Loss. HCS DataLink 500A modular cords can be used with either T568A or T568B modular jacks. The standard jacket color is gray RAL 7035, but they are available in 10 different jacket colors.

Applications

HCS DataLink 500A modular cords support all presently available and future LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A Cables are tested and verified for full compliance with the following standards:

- ➔ Category 6A according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6 according to ISO/IEC-11801 (2nd Edition)

Benefits & Features

- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique double termination method - Providing the advantages of both molded and non-molded terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall cable shield - Providing excellent alien crosstalk loss and noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, overall braid shielded and jacketed. Both cable ends terminated with shielded modular plug connectors conforming to IEC 60603-7-51.

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White, Orange x White, Green x White, Brown x White.
Individual Pair Shield	Polyester-Aluminum foil, providing 100% coverage with 25% overlap, aluminum facing out.
Overall Shield	Tinned copper braid laid in close contact with the individual foil shields.
Drain wire	None.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.5 mm nom.
Bend Radius	25 mm min.
Plug Housing Material	Polycarbonate, conforming to UL 94 V-0.
Plug Contact Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Min. NEXT				Min RL
MHz	dB				dB
	1 m cord	2 m cord	5 m cord	10 m cord	
1.0	65.0	65.0	65.0	65.0	19.8
4.0	65.0	65.0	65.0	65.0	21.6
8.0	65.0	65.0	65.0	64.8	22.5
10.0	65.0	65.0	64.5	63.0	22.8
16.0	62.7	62.0	60.5	59.1	23.4
20.0	60.7	60.1	58.7	57.3	23.7
25.0	58.8	58.2	56.8	55.4	24.0
31.25	56.9	56.3	54.9	53.6	23.0
62.5	51.0	50.4	49.2	48.1	20.0
100	47.0	46.4	45.4	44.5	18.0
200	41.1	40.7	39.9	39.3	15.0
250	39.3	38.9	38.1	37.7	14.0
300	36.4	36.2	35.9	35.8	12.8
400	31.8	31.9	32.1	32.5	10.9
500	28.2	28.4	29.0	29.8	9.5

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20log(f/100) @100-500 MHZ
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHZ

ORDERING INFORMATION

HCS P/N	Description	Length (m)	Notes
T6A-00470-101	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	1.0	
T6A-00480-101	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	1.0	
T6A-00470-201	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	2.0	
T6A-00480-201	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	2.0	
T6A-00470-301	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	3.0	
T6A-00480-301	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	3.0	
T6A-00470-501	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	5.0	
T6A-00480-501	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	5.0	
T6A-00470-701	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	7.0	
T6A-00480-701	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	7.0	
T6A-00470-001	4x2x26# S/FTP CAT 6A PVC Modular Cord Gray	10	
T6A-00480-001	4x2x26# S/FTP CAT 6A LS0H Modular Cord Gray	10	

Note: Standard Color: Light Gray RAL 7035. Other colors available for selection from Color Table No. 6.

DataLink 1200

Shielded DL-1200 Modular Cords

HES Cabling Systems
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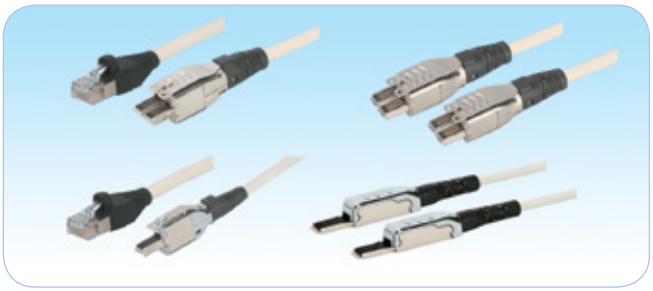
Description

HCS DataLink DL-1200 modular cord series consists of 100 Ohm impedance, 1 to 4-pair S/FTP terminated cords for work area, jumper and patching in local area networks (LANs). HCS DataLink DL-1200 modular cords exceed all present standards requirements and are specially designed to provide outstanding Alien Crosstalk Loss.
HCS DataLink DL-1200 modular cords are available in several different configurations.
The DL-1200 to DL-1200 patch cords deliver twice the bandwidth of category 7/class F specifications when combined with the DL-1200 outlet. While current specifications characterize connector performance up to 1000 MHz, DL-1200 delivers up to 1.2 GHz of bandwidth per pair. This extra bandwidth is critical for demanding applications like broadband video, with an upper frequency requirement of 862 MHz, or the convergence of video, voice and data onto a single 4-pair cable and outlet.
DL-1200 to RJ-45 plug cord options are available. 1- and 2-pair plug modularity allows multiple applications to be served from a single 4-pair outlet.

Applications

HCS DataLink 1200 Horizontal cables support all presently available and future LAN applications, including the following:

- ☑ 10 Gigabit Ethernet -10GBASE-T
- ☑ Broadband Digital and Analog CATV signals up to 1200 MHz
- ☑ SOHO and multiple simultaneous applications on all 4 pairs.
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink DL-1200 modular cords are tested and verified for full compliance with the following standards:

- ➔ Category 7A according to ISO/IEC-11801
- ➔ Category 6A according to ANSI/TIA/568-C.2
- ➔ Category 7 according to ISO/IEC-11801
- ➔ Category 6 according to ANSI/TIA/568-C.2
- ➔ Category 6A according to ISO/IEC-11801
- ➔ Category 5E according to ANSI/TIA/568-C.2

Benefits & Features

- ➔ DL-1200 cords deliver 1200 MHz bandwidth - supporting shared applications and broadband video.
- ➔ Testing every cord prior to shipment - Providing the highest degree of quality assurance.
- ➔ Unique termination method - suitable for field terminations.
- ➔ Exceptional material properties and cable design - Providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values - Providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall cable & connector shield - Providing excellent alien crosstalk loss and noise immunity.
- ➔ Revolutionary pair lay scheme - Providing an extremely low delay skew.
- ➔ Smooth and limp jacket - Providing comfortable cord handling.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

4 PAIR PATCH CORDS PHYSICAL AND MECHANICAL PROPERTIES

4 color-coded, individually foil shielded twisted pairs cabled together, overall braid shielded and jacketed.
Cable ends terminated with various types of modular plug connectors .

Basic Cable Conductor	Stranded, 26 AWG, 7x0.16 mm, bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs.
Color Code of Pairs	Blue x White/Blue, Orange x White/Orange, Green x White/Green, Brown x White/Brown.
Individual Pair Shield	Polyester-Aluminum foil, providing 100% coverage with 25% overlap, aluminum facing out.
Overall Shield	Tinned copper braid laid in close contact with the individual foil shields.
Drain wire	None.
Outer Jacket and Boots	LS0H Halogen free flame retardant or PVC compound.
Standard Jacket and Boot Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Cable OD	6.5 mm nom.
Bend Radius	25 mm min.
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1.
Halogen Content in LS0H Cables	Null.

ELECTRICAL SPECIFICATIONS

Characteristic Impedance	100±6 Ohm @ 1-500 MHz
Contact Resistance	20 mOhm max.
Resistance Unbalance	2% max.
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts/1 minute min rms
Ampacity	1.0 Amps max.
Insulation Resistance	500 MOhm min. @ 500 Vdc
Coupling Attenuation	85 dB min @ 30-100 MHz 85-20log(f/100) @100-500 MHZ
Transfer Impedance	10mOhm/m max @1-10 MHZ 30 mOhm/m max @30 MHZ

ORDERING INFORMATION

HCS P/N	Description	Pairs	Termination & Application
T7A-00110-XX	1x2x26# CAT 7A PVC Modular Cord Gray: 1P DL-1200 to 1P DL-1200	1	Standard, 1200 MHz
T7A-00120-XX	1x2x26# CAT 7A LS0H Modular Cord Gray: 1P DL-1200 to 1P DL-1200	1	Standard, 1200 MHz
T7A-00210-XX	2x2x26# CAT 7A PVC Modular Cord Gray: 2P DL-1200 to 2P DL-1200	2	Standard, 1200 MHz
T7A-00220-XX	2x2x26# CAT 7A LS0H Modular Cord Gray: 2P DL-1200 to 2P DL-1200	2	Standard, 1200 MHz
T7A-00410-XX	4x2x26# CAT 7A PVC Modular Cord Gray: 4P DL-1200 to 4P DL-1200	4	Standard, 1200 MHz
T7A-00420-XX	4x2x26# CAT 7A LS0H Modular Cord Gray: 4P DL-1200 to 4P DL-1200	4	Standard, 1200 MHz
T6A-A0410-XX	4x2x26# CAT 6A PVC Modular Cord Gray: 4P DL-1200 to Shielded RJ-45	4	T568A
T6A-A0420-XX	4x2x26# CAT 6A LS0H Modular Cord Gray: 4P DL-1200 to Shielded RJ-45	4	T568A
T6A-B0410-XX	4x2x26# CAT 6A PVC Modular Cord Gray: 4P DL-1200 to Shielded RJ-45	4	T568B
T6A-B0420-XX	4x2x26# CAT 6A LS0H Modular Cord Gray: 4P DL-1200 to Shielded RJ-45	4	T568B
T5E-E0210-XX	2x2x26# CAT 5E PVC Modular Cord Gray: 2P DL-1200 to Shielded RJ-45	2	10BASE-T & 100BASE-T
T5E-E0220-XX	2x2x26# CAT 5E LS0H Modular Cord Gray: 2P DL-1200 to Shielded RJ-45	2	10BASE-T & 100BASE-T
T5E-T0210-XX	2x2x26# CAT 5E PVC Modular Cord Gray: 2P DL-1200 Shielded to RJ-45	2	Token-Ring
T5E-T0220-XX	2x2x26# CAT 5E LS0H Modular Cord Gray: 2P DL-1200 Shielded to RJ-45	2	Token-Ring
T02-00110-XX	1x2x26# PVC Modular Cord Gray: 1P DL-1200 to Unshielded RJ-11	1	Voice Grade
T02-00120-XX	1x2x26# LS0H Modular Cord Gray: 1P DL-1200 to Unshielded RJ-11	1	Voice Grade
T08-T0120-XX	1x2x26# CAT 8 PVC Modular Cord Gray: 1P DL-1200 to PAL Video plug	1	Broadband
T08-T0110-XX	1x2x26# CAT 8 LS0H Modular Cord Gray: 1P DL-1200 to PAL Video plug	1	Broadband

Standard Color: Light Gray RAL 7035 (indicated by 0) Other colors available for selection from Color Table No. 6.
Length: Indicated by the XX. (-05= 0.5m cord. -10 = 1 m cord. -00=10m cord).Custom designs available upon request.

DataLink 16

Category 3 Shielded and Unshielded Jacks and Plugs

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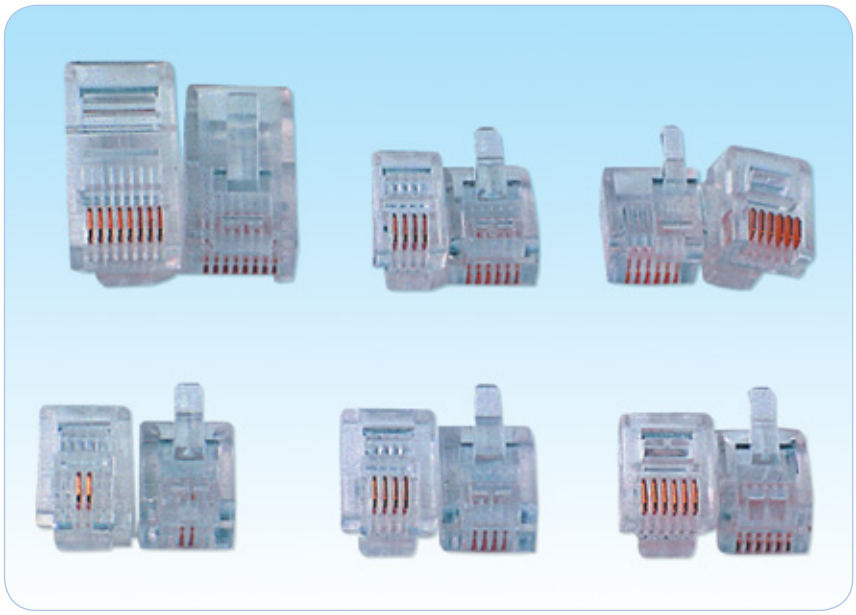


Description

HCS DataLink 16 connector series includes a wide range of shielded and unshielded copper modular plugs and jacks for low data rates and voice applications. The range of products includes plugs and jacks suitable for 2-5 pair, round or flat cables with stranded or solid conductors, 24 to 26 AWG.All plugs can be terminated with the HCS standard tools.When tested in mated position, the HCS DataLink 16 connectors fully conform to all Category 3 ANSI/TIA/568-C.2 requirements.
The HCS Logo and the DataLink 16 Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 16 connectors support the following protocols:

- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11
- ☑ Voice applications

Qualifications and Approvals

HCS DataLink 16 connectors are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 16 connectors comply to the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.2	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LSOH constructions	

Benefits & Features

- ➔ Exceptional material properties and design - Providing a most reliable termination.
- ➔ Available in many colors and shades - Providing custom color selection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 3 performance - Providing full support of all DSL modems, ISDN and all voice applications.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 24-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

Housing Material	Polycarbonate, rated UL 94 V-0.
Contacts	Gold plating over nickel plated metal.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50-100 units per bag.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Plug to Jack Contact Force	100 gr min. (using HCS approved jacks).
Operating Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Color	Transparent. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT
MHz	dB/100m	dB
	Max	Min
1.0	0.1	58.0
2.0	0.1	52.0
3.0	0.1	48.4
4.0	0.2	46.0
8.0	0.3	39.9
10.0	0.3	38.0
12.0	0.3	36.4
14.0	0.3	35.1
16.0	0.4	33.9

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.2 Ohm max @ 20C
LCL	66-20·Log(f) dB min @ 1-100 MHz
Transfer Impedance	N/A

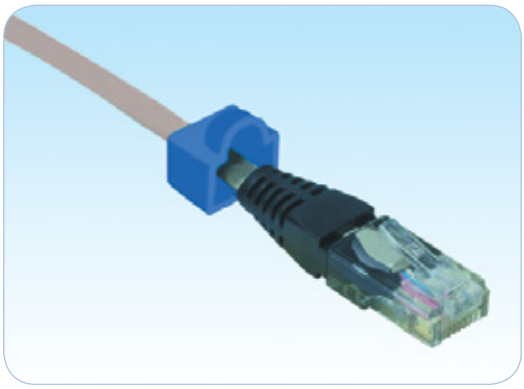
ORDERING INFORMATION

HCS P/N	Description	Shielded	Cable	Conductor	Notes
J03-00401	4P4C RJ-11 CAT 3 Plug	No	Flat	Stranded	-
J03-00402	4P4C RJ-11 CAT 3 Plug	No	Flat	Solid & Stranded	-
J03-00403	4P4C RJ-11 CAT 3 Plug	No	Round	Stranded	-
J03-00404	4P4C RJ-11 CAT 3 Plug	No	Round	Solid & Stranded	-
J03-00601	6P4C RJ-11 CAT 3 Plug	No	Flat	Stranded	-
J03-00602	6P4C RJ-11 CAT 3 Plug	No	Flat	Solid & Stranded	-
J03-00603	6P4C RJ-11 CAT 3 Plug	No	Round	Stranded	-
J03-00604	6P4C RJ-11 CAT 3 Plug	No	Round	Solid & Stranded	-
J03-00605	6P4C RJ-11 CAT 3 Plug	Yes	Round	Stranded	-
J03-00606	6P4C RJ-11 CAT 3 Plug	Yes	Round	Solid & Stranded	-
J03-00607	6P6C RJ-12 CAT 3 Plug	No	Flat	Stranded	-
J03-00608	6P6C RJ-12 CAT 3 Plug	No	Flat	Solid & Stranded	-
J03-00609	6P6C RJ-12 CAT 3 Plug	No	Round	Stranded	-
J03-00610	6P6C RJ-12 CAT 3 Plug	No	Round	Solid & Stranded	-
J03-00611	6P6C RJ-12 CAT 3 Plug	Yes	Round	Stranded	-
J03-00612	6P6C RJ-12 CAT 3 Plug	Yes	Round	Solid & Stranded	-
J03-00801	8P8C RJ-45 CAT 3 Plug	No	Flat	Stranded	-
J03-00802	8P8C RJ-45 CAT 3 Plug	No	Flat	Solid & Stranded	-
J03-00803	8P8C RJ-45 CAT 3 Plug	No	Round	Stranded	-
J03-00804	8P8C RJ-45 CAT 3 Plug	No	Round	Solid & Stranded	-
J03-00805	8P8C RJ-45 CAT 3 Plug	Yes	Round	Stranded	-
J03-00806	8P8C RJ-45 CAT 3 Plug	Yes	Round	Solid & Stranded	-
J03-01001	10P10C RJ-50 CAT 3 Plug	No	Flat	Stranded	-
J03-01002	10P10C RJ-50 CAT 3 Plug	No	Flat	Solid & Stranded	-
J03-01003	10P10C RJ-50 CAT 3 Plug	No	Round	Stranded	-
J03-01004	10P10C RJ-50 CAT 3 Plug	No	Round	Solid & Stranded	-
J03-01005	10P10C RJ-50 CAT 3 Plug	Yes	Round	Stranded	-
J03-01006	10P10C RJ-50 CAT 3 Plug	Yes	Round	Solid & Stranded	-
J03-00421	4P4C RJ-11 CAT 3 Jack	No	Flat & Round	Solid & Stranded	-
J03-00422	4P4C RJ-11 CAT 3 Jack	Yes	Flat & Round	Solid & Stranded	-
J03-00621	6P4C RJ-11 CAT 3 Jack	No	Flat & Round	Solid & Stranded	-
J03-00622	6P4C RJ-11 CAT 3 Jack	Yes	Flat & Round	Solid & Stranded	-
J03-00623	6P6C RJ-12 CAT 3 Jack	No	Flat & Round	Solid & Stranded	-
J03-00624	6P6C RJ-12 CAT 3 Jack	Yes	Flat & Round	Solid & Stranded	-
J03-00821	8P8C RJ-45 CAT 3 Jack	No	Flat & Round	Solid & Stranded	-
J03-00822	8P8C RJ-45 CAT 3 Jack	Yes	Flat & Round	Solid & Stranded	-
J03-01021	10P10C RJ-50 CAT 3 Jack	No	Flat & Round	Solid & Stranded	-
J03-01022	10P10C RJ-50 CAT 3 Jack	Yes	Flat & Round	Solid & Stranded	-

DataLink 100e

Category 5E Unshielded RJ-45 Modular Plugs

HES Cabling Systems
Connecting Networks™



Description

HCS DataLink 100E unshielded copper RJ-45 modular plugs series includes a range of high performance 8-position/ 8- contact (8P8C) plugs conforming to IEC 60603-7-2 (unshielded 100 MHz connectors). The range of products includes plugs suitable for round cables with stranded or solid conductors, 24 to 26 AWG. HCS DataLink 100E modular plugs are designed to provide exceptional performance in high-speed communication applications, having electro-polished, 50-microinch gold-plated contacts for the most reliable, long-lasting performance. All plugs can be terminated with the HCS standard tools. When tested in mated position with HCS DataLink 100E unshielded copper RJ-45 jacks, the HCS plugs fully conform to all Category 5E ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) requirements. The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E unshielded RJ-45 plugs are used for patch-cord termination, supporting all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E plugs are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E plugs comply to IEC 60603-7-2 (unshielded 100 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LSOH constructions

Benefits & Features

- ➔ Exceptional material properties and design - Providing a most reliable termination.
- ➔ Available in many colors and shades - Providing custom color selection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 24-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Plug Tolerances and Dimensions	Compliant with IEC-60603-7-2 and FCC requirements
Plug Housing Material	Polycarbonate, rated UL 94 V-0.
Plug Contacts	Selective gold plating over nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	100 units per bag.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Plug to Jack Contact Force	100 gr min. (using HCS approved jacks).
Operating Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Color	Transparent. Other colors available upon request.

TRANSMISSION PROP. & ELECTRICAL SPEC.

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	N/A

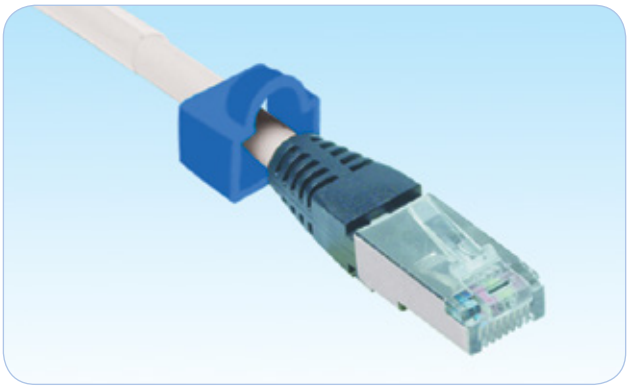
ORDERING INFORMATION

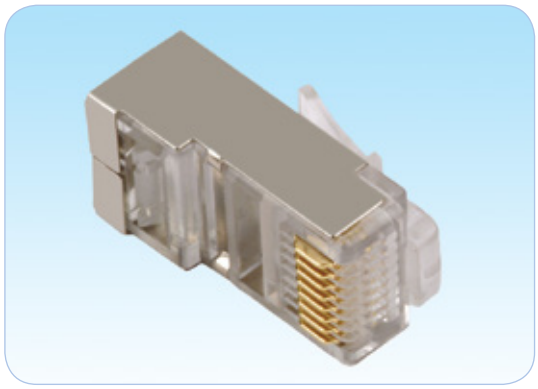
HCS P/N	Description	Conductor	Notes
J5E-00801	8P8C Unshielded RJ-45 CAT5E Plug for Round Cable	Solid	-
J5E-00802	8P8C Unshielded RJ-45 CAT5E Plug for Round Cable	Stranded	-
J5E-00803	8P8C Unshielded RJ-45 CAT5E Plug for Round Cable	Solid & Stranded	-

DataLink 100e

Category 5E Shielded RJ-45 Modular Plugs

HES Cabling Systems
Connecting Networks™





Description

HCS DataLink 100E shielded copper RJ-45 modular plugs series includes a range of high performance 8-position/8-contact (8P8C) plugs conforming to IEC 60603-7-3 (shielded 100 MHz connectors) .The range of products includes plugs suitable for round cables with stranded or solid conductors, 24 to 26 AWG. HCS DataLink 100E modular plugs are designed to provide exceptional performance in high-speed communication applications, having electro-polished, 50-microinch gold-plated contacts for the most reliable, long-lasting performance. All plugs can be terminated with the HCS standard tools. HCS DataLink 100E shielded copper RJ-45 modular plugs are fully shielded with corrosion resistant tin-plated brass casing, providing excellent EMC, minimizing radiation and maximizing noise immunity. When tested in mated position with HCS DataLink 100E shielded copper RJ-45 jacks, the HCS plugs fully conform to all Category 5E ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) requirements. The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E shielded RJ-45 plugs are used for patch-cord termination, supporting all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E plugs are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E plugs comply to IEC 60603-7-3 (shielded 100 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LSOH constructions

Benefits & Features

- ➔ Exceptional material properties and design - Providing a most reliable termination.
- ➔ Available in many colors and shades - Providing custom color selection.
- ➔ High quality Overall Shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 24-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Plug Tolerances and Dimensions	Compliant with IEC-60603-7-2 and FCC requirements
Plug Housing Material	Polycarbonate, rated UL 94 V-0.
Plug Contacts	Selective gold plating over nickel plated copper alloy.
Shield Construction	Overall.
Shield Material	Tin-plated brass
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	100 units per bag.
Cable to Plug Tensile Strength	9 Kgf (90N) min.
Plug to Jack Contact Force	100 gr min. (using HCS approved jacks).
Operating Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Color	Transparent. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.2 Ohm max @ 20C
LCL	66-20·Log(f) dB min @ 1-100 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

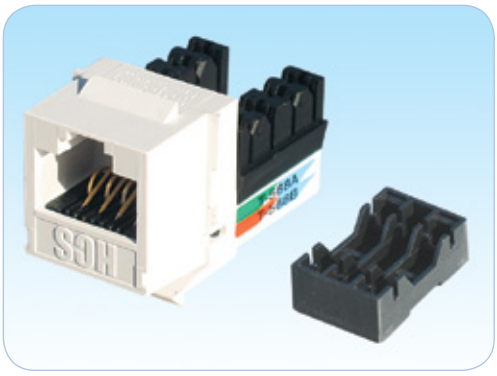
ORDERING INFORMATION

HCS P/N	Description	Conductor	Notes
J5E-00804	8P8C Shielded RJ-45 CAT5E Plug for Round Cable	Solid	-
J5E-00805	8P8C Shielded RJ-45 CAT5E Plug for Round Cable	Stranded	-
J5E-00806	8P8C Shielded RJ-45 CAT5E Plug for Round Cable	Solid & Stranded	-

DataLink 100e

Category 5E Unshielded RJ-45 Keystone Jacks

HES Cabling Systems
Connecting Networks™



Description

HCS DataLink 100E patented unshielded copper RJ-45 keystone jack series includes high performance Category 5E snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-2 (unshielded 100 MHz connectors).
HCS DataLink 100E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.
All HCS DataLink 100E jacks are designed in a 90° formation and are available with back interconnection of 110 IDC blocks or special LSA-Plus/110 IDC combination blocks in T568A, T568B or Universal pin/pair assignment.
All jacks fully conform to ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E unshielded copper RJ-45 keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E jacks comply to IEC 60603-7-2 (unshielded 100 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LSOH constructions

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° or 180° design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Termination Blocks	Punch-Down Tool	T568
J5E-00811	8P8C RJ-45 Unshielded Keystone Jack CAT 5E	110 IDC	110	B
J5E-00812	8P8C RJ-45 Unshielded Keystone Jack CAT 5E	110 IDC	110	A
J5E-00813	8P8C RJ-45 Unshielded Keystone Jack CAT 5E	110 IDC	110	UNI
J5E-00814	8P8C RJ-45 Unshielded Keystone Jack CAT 5E	110 IDC	LSA Plus & 110	B
J5E-00815	8P8C RJ-45 Unshielded Keystone Jack CAT 5E	110 IDC	LSA Plus & 110	A
J5E-00816	8P8C RJ-45 Unshielded Keystone Jack CAT 5E	110 IDC	LSA Plus & 110	UNI
J5E-00817	8P8C RJ-45 Unshielded Keystone Jack CAT 5E	110 IDC	LSA Plus & 110	UNI

DataLink 100e

Category 5E Unshielded RJ-45 Tool-Less Keystone Jacks

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 100E patented unshielded copper RJ-45 tool-less keystone jack series includes high performance Category 5E snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-2 (unshielded 100 MHz connectors).
These snap-fit keystone modular jacks have a tool-free design that does not require a punch-down tool during cable termination.
HCS DataLink 100E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.
HCS DataLink 100E tool-less jacks are designed in a 90° formation with 3 optional color-coding on the wire terminal for ease of installation.
All jacks fully conform to ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E unshielded copper RJ-45 tool-less keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E RJ-45 tool-less keystone jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E RJ-45 tool-less keystone jacks comply to IEC 60603-7-2 (unshielded 100 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 rated plastic material
- ☑ Zero-halogen in LSOH constructions.

Benefits & Features

- ➔ Tool-free design - Providing easy cable termination without any punch-down tool.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr. min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	T568
J5E-00851	8P8C RJ-45 Unshielded Tool-less Keystone Jack CAT 5E	B
J5E-00852	8P8C RJ-45 Unshielded Tool-less Keystone Jack CAT 5E	A
J5E-00853	8P8C RJ-45 Unshielded Tool-less Keystone Jack CAT 5E	Universal

DataLink 100e

Category 5E Shielded RJ-45 Keystone Jacks

HES Cabling Systems
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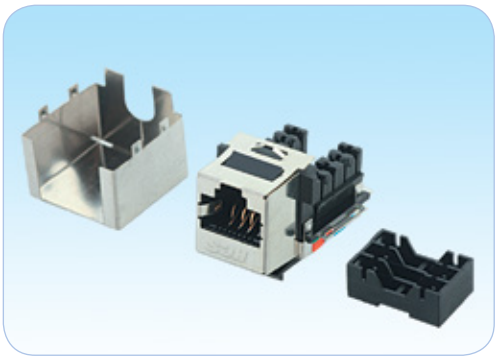

Description

HCS DataLink 100E patented shielded copper RJ-45 keystone jack series includes high performance Category 5E snap-in 8- position / 8-contact (8P8C) jacks conforming to IEC 60603-7-3 (shielded 100 MHz connectors).HCS DataLink 100E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets. All HCS DataLink 100E jacks are designed in a 90° formation and are available with back interconnection of 110 IDC blocks or special LSA-Plus/110 IDC combination blocks in T568A, T568B or Universal pin/pair assignment.All jacks fully conform to ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements and are fully shielded with high quality, corrosion resistant metal shield case.The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E shielded copper RJ-45 keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E jacks comply to IEC 60603-7-3 (shielded 100 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 plastic material
- ☑ Zero-halogen in LSOH constructions

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° design - Providing easier access, better and faster wire connection.
- ➔ High quality corrosion-resistant metal shield casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Overall Shield	Fully shielded corrosion-resistant metal casing.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

ORDERING INFORMATION

HCS P/N	Description	Termination Blocks	Punch-Down Tool	T568
J5E-00821	8P8C RJ-45 Shielded Keystone Jack CAT 5E	110 IDC	110 IDC	B
J5E-00822	8P8C RJ-45 Shielded Keystone Jack CAT 5E	110 IDC	110 IDC	A
J5E-00823	8P8C RJ-45 Shielded Keystone Jack CAT 5E	110 IDC	110 IDC	UNI
J5E-00824	8P8C RJ-45 Shielded Keystone Jack CAT 5E	110 IDC	LSA Plus/110 IDC	B
J5E-00825	8P8C RJ-45 Shielded Keystone Jack CAT 5E	110 IDC	LSA Plus/110 IDC	A
J5E-00826	8P8C RJ-45 Shielded Keystone Jack CAT 5E	110 IDC	LSA Plus/110 IDC	UNI

DataLink 100e

Category 5E Shielded RJ-45 Tool-Less Keystone Jacks

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 100E patented shielded copper RJ-45 tool-less keystone jack series includes high performance Category 5E snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-3 (shielded 100 MHz connectors).
These snap-fit keystone modular jacks have a tool-free design that does not require a punch-down tool during cable termination.
HCS DataLink 100E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.
HCS DataLink 100E tool-less jacks are designed in a 90° formation with 3 optional color-coding on the wire terminal for ease of installation.
All jacks fully conform to ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E shielded copper RJ-45 tool-less keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E shielded RJ-45 tool-less keystone jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E shielded RJ-45 tool-less keystone jacks comply to IEC 60603-7-3 (shielded 100 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 rated plastic material
- ☑ Zero-halogen in LSOH constructions.

Benefits & Features

- ➔ Tool-free design - Providing easy cable termination without any punch-down tool.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° design - Providing easier access, better and faster wire connection.
- ➔ High quality corrosion-resistant metal shield casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	1.27 µm (50 µ-inches) gold plating over 2.54 µm (100 µ-inches) nickel plated copper alloy.
Overall Shield	Fully shielded corrosion-resistant metal casing.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr. min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

ORDERING INFORMATION

HCS P/N	Description	T568
J5E-00861	8P8C RJ-45 Shielded Tool-less Keystone Jack CAT 5E	B
J5E-00862	8P8C RJ-45 Shielded Tool-less Keystone Jack CAT 5E	A
J5E-00863	8P8C RJ-45 Shielded Tool-less Keystone Jack CAT 5E	Universal

DataLink 100e

Category 5E RJ-45 Jack Adapters

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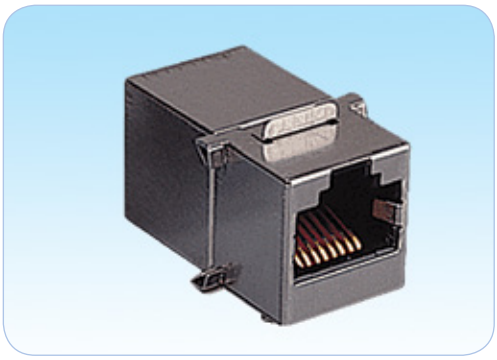

Description

HCS DataLink 100e RJ-45 jack adapters are high performance Category 5e 8-contact adapters enabling connection between two RJ-45 plugs. All adapters fully support the transmission properties of ANSI/TIA-568-C.2 Category 5e, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) when inserted into Category 5e channels. HCS DataLink 100e RJ-45 jack adapters are available in an unshielded version and in a fully shielded version, made with high quality, corrosion resistant metal shield case. The HCS Logo and the DataLink 100e Trademark ensure long lasting high-performance and full support of all present and emerging applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100e shielded copper RJ-45 tool-less keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all presently available LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100e RJ-45 jack adapters are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100e RJ-45 jack adapters comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 rated plastic material
- ☑ Zero-halogen in LSOH constructions.

Benefits & Features

- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ High quality corrosion-resistant metal shield casing - providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 5e performance - providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs
- ➔ Compatible with all CAT 5e plugs - providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Overall Shield	Fully shielded corrosion-resistant metal casing.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr. min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

ORDERING INFORMATION

HCS P/N	Description
J5E-00871	8P8C RJ-45 CAT 5e Unshielded Jack Adapter
J5E-00872	8P8C RJ-45 CAT 5e Shielded Jack Adapter

DataLink 250

Category 6 LAN Copper Connectivity Shielded & Unshielded RJ45 Industrial Plugs

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Description

HCS DataLink 250 CAT6 8P8C shielded & unshielded RJ45 IP67 industrial plugs.

Frequency range	1-250 MHz
Compatible conductors	24-26 AWG Solid or stranded
Contacts	Gold plating over nickel plated copper alloy
Shield (if present)	Corrosion resistant metal casing
Housing	FR Polycarbonate
Protective covers	FR UV-resistant heavy-duty plastic material

Qualifications and Approvals

HCS DataLink 250 RJ45 IP67 industrial plugs are tested and verified for full compliance with the following standards:

- 250MHz connectors according to IEC 60603-7-4&5
- 250MHz connectors according to EN 60603-7-4&5
- Category 6 connecting hardware acc. to ANSI/TIA-568-C.2
- UL94 V-0 flame test
- EU Directive 2011/65/EU (RoHS-2)
- IEC 60259 IP67
- UL 1863 Communications-Circuit Accessories Safety

Benefits & Features

Ampacity	1.5 A max.
Cable form compatibility	Flat or round
Insertion/withdrawal	750 cycles Level A durability
Cable re-termination	0 terminations
Operating temperature sing)	-25 to +70C at 5-93% RH (Non condensing)
Contact resistance	20 mOhm max.
DC resistance	0.1 Ohm max.
Voltage rating	75 Vdc max.
Insulation resistance	500 MegaOhm min. @500 Vdc

ORDERING INFORMATION

HCS P/N	Description	Plug Color	Cover Color	Conductor	Packaging
J06-P0801	8P8C RJ45 Unshielded CAT6 IP67 Industrial Plug	Transparent	Black	Solid	1/Bag
J06-P0802	8P8C RJ45 Unshielded CAT6 IP67 Industrial Plug	Transparent	Black	Stranded	1/Bag
J06-P0803	8P8C RJ45 Unshielded CAT6 IP67 Industrial Plug	Transparent	Black	Solid & Stranded	1/Bag
J06-P0804	8P8C RJ45 Shielded CAT6 IP67 Industrial Plug	Transparent	Black	Solid	1/Bag
J06-P0805	8P8C RJ45 Shielded CAT6 IP67 Industrial Plug	Transparent	Black	Stranded	1/Bag
J06-P0806	8P8C RJ45 Shielded CAT6 IP67 Industrial Plug	Transparent	Black	Solid & Stranded	1/Bag

DataLink 250E

Category 6E Unshielded RJ-45 Keystone Jacks

HES Cabling Systems
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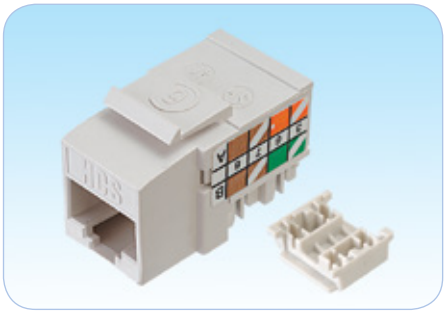

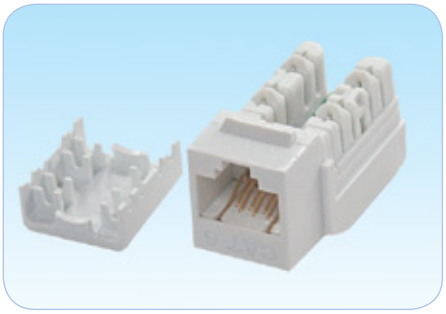

Description

HCS DataLink 250E patented unshielded copper RJ-45 keystone jack series includes high performance Category 6 snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-4 (unshielded 250 MHz connectors).
HCS DataLink 250E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.
All HCS DataLink 250E jacks are designed in a 90° or 180° formation and are available with back interconnection of 110 IDC blocks in T568A, T568B or Universal pin/pair assignment. All jacks fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements, tested at the component level and officially verified by ETL.
The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 250E unshielded copper RJ-45 keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250E jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 250E jacks are tested and verified as components and they comply to IEC 60603-7-4 (unshielded 250 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.1
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europa)
- ☑ FCC Part 15, Subpart J, Class A (US)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° or 180° design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet over Category 6.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90%RH (non condensing)
Packaging	50 or 100 units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100gr min. (Using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 24 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Orientation	Blocks	T568
J6E-00811	8P8C RJ-45 Unshielded Keystone Jack CAT 6E	90°	110 IDC	B
J6E-00812	8P8C RJ-45 Unshielded Keystone Jack CAT 6E	90°	110 IDC	A
J6E-00813	8P8C RJ-45 Unshielded Keystone Jack CAT 6E	90°	110 IDC	UNI
J6E-00871	8P8C RJ-45 Unshielded Keystone Jack CAT 6E	180°	110 IDC	B
J6E-00872	8P8C RJ-45 Unshielded Keystone Jack CAT 6E	180°	110 IDC	A
J6E-00873	8P8C RJ-45 Unshielded Keystone Jack CAT 6E	180°	110 IDC	UNI
J6E-00881	8P8C RJ-45 UTP Keystone Slim Jack CAT 6E	180°	110 IDC	B
J6E-00882	8P8C RJ-45 UTP Keystone Slim Jack CAT 6E	180°	110 IDC	A
J6E-00883	8P8C RJ-45 UTP Keystone Slim Jack CAT 6E	180°	110 IDC	UNI
J6E-00891	8P8C RJ-45 UTP Keystone Slim Jack CAT 6E	90°	110 IDC	B
J6E-00892	8P8C RJ-45 UTP Keystone Slim Jack CAT 6E	90°	110 IDC	A
J6E-00893	8P8C RJ-45 UTP Keystone Slim Jack CAT 6E	90°	110 IDC	UNI

DataLink 250E

Category 6E Unshielded RJ-45 Tool-Less Keystone Jacks

HES Cabling Systems
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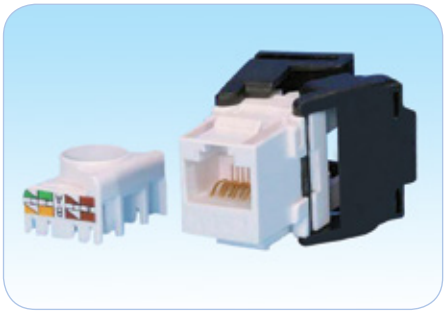


Description

HCS DataLink 250E patented unshielded copper RJ-45 tool-less keystone jack series includes high performance Category 6 snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-4 (unshielded 250 MHz connectors).
These snap-fit keystone modular jacks have a tool-free design that does not require a punch-down tool during cable termination.
HCS DataLink 250E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.
All HCS DataLink 250E jacks are designed in a 90° formation and are color-coded for T568B on the wire terminal for ease of installation.
All jacks conform to and provide a substantial margin above ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements.
The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 250E unshielded copper tool-less RJ-45 keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250E jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 250E jacks comply to IEC 60603-7-4 (unshielded 250 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.1
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (US)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Tool-free design - Providing easy cable termination without any punch-down tool.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 180° design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet over Category 6.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50µ-inches gold plating over 100µ-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr. min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

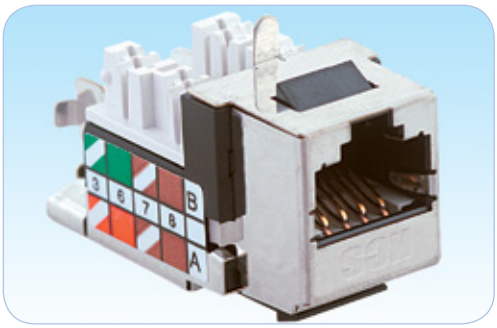
ORDERING INFORMATION

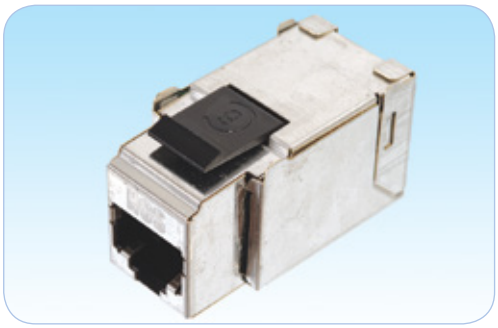
HCS P/N	Description	T568
J6E-00851	8P8C RJ-45 Unshielded Tool-less Keystone Jack CAT 6e	B
J6E-00852	8P8C RJ-45 Unshielded Tool-less Keystone Jack CAT 6e	A
J6E-00853	8P8C RJ-45 Unshielded Tool-less Keystone Jack CAT 6e	Universal

DataLink 250E

Category 6E Shielded RJ-45 Keystone Jacks

HES Cabling Systems
Connecting Networks™





Description

HCS DataLink 250E patented shielded copper RJ-45 keystone jack series includes high performance Category 6 snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-5 (shielded 250 MHz connectors). HCS DataLink 250E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.All HCS DataLink 250E jacks are designed in a 90° formation and are available with back interconnection of 110 IDC blocks in T568A, T568B or Universal pin/pair assignment.
All jacks fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements, tested at the component level and officially witnessed by ETL.
All jacks are fully shielded with high quality, corrosion resistant metal shield case. The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-TX (Gigabit-Ethernet over Categoriy 6).

Applications

HCS DataLink 250E shielded copper RJ-45 keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250E jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 250E jacks are tested and ETL verified as components and they comply to IEC 60603-7-5 (shielded 250 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.1
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europa)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° design - Providing easier access, better and faster wire connection.
- ➔ High quality corrosion-resistant metal shield casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet over Category 6.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Overall Shield	Fully shielded corrosion-resistant metal casing.
Jack Contacts Spring Material	High strength phosphor bronze or beryllium copper alloy.
Jack Contacts Plating	1.27 µm gold plating over 2.5 µm nickel or palladium nickel gold composite.
IDC Contacts Material	High strength phosphor bronze or beryllium copper alloy.
IDC Contacts Plating	Tin/lead composite, 5µm min. thickness.
Operating Environmental Conditions	0 to +60C at 5-95% RH (Non condensing)
Storage Environmental Conditions	-40 to +66C at 5-95% RH (Non condensing)
Packaging	50 or 100 units per box.
Plug to Jack Retention Force	49N min.
Plug to Jack Mating Force	9N max. for 8 wire jack.
Terminated Wire Retention Force	Axial pullout force: 9N min. Normal pullout force: 44N min
Insertion/Extraction Durability	750 mating cycles conforming to IEC 603-7 Level A durability.
IDC Termination Durability	200 terminations min. acc to TIA/EIA 568B.2 requirements.
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

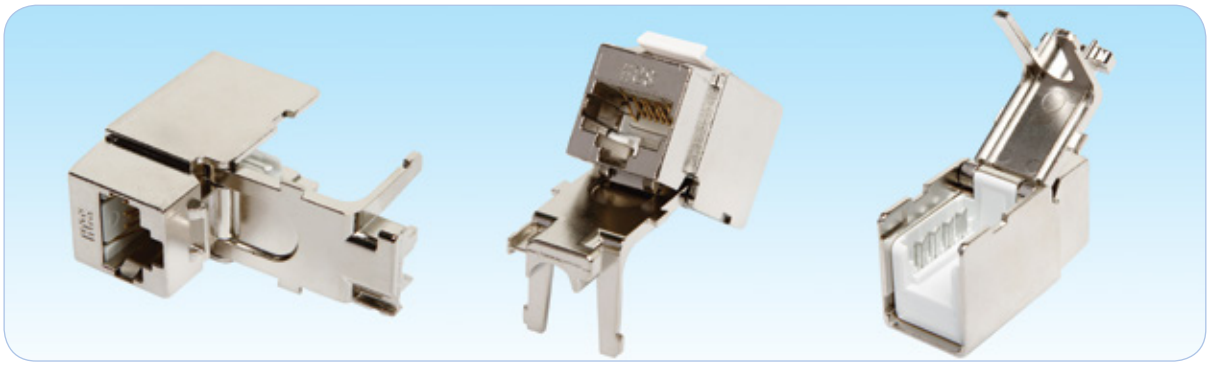
ORDERING INFORMATION

HCS P/N	Description	Blocks	Notes
J6E-00821	8P8C RJ-45 Shielded Keystone Jack CAT 6E	110 IDC	B
J6E-00822	8P8C RJ-45 Shielded Keystone Jack CAT 6E	110 IDC	A
J6E-00823	8P8C RJ-45 Shielded Keystone Jack CAT 6E	110 IDC	UNI

DataLink 250E

Category 6E Shielded Tool-Less RJ-45 Keystone Jacks

HES Cabling Systems
Connecting Networks™



Description

HCS DataLink 250E patented shielded copper RJ-45 tool-less keystone jack series includes high performance Category 6 snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-5 (shielded 250 MHz connectors).
These snap-fit keystone modular jacks have a tool-free design that does not require a punch-down tool during cable termination.
HCS DataLink 250E jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.
All HCS DataLink 250E jacks are designed in a 90° formation and are color-coded for both T568A and T568B on the wire terminal for ease of installation.
All jacks are fully shielded with high quality, corrosion resistant die-cast metal shield.
All jacks conform to and provide a substantial margin above ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements.
The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of most applications, including 1GBASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 250E shielded copper tool-less RJ-45 keystone jacks are used in wall plates, patch panels and surface box outlets and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250E jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 250E tool-less jacks comply to IEC 60603-7-5 (unshielded 250 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.1
- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europa)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Tool-free design - Providing easy cable termination without any punch-down tool.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ High quality corrosion-resistant metal shield casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Patented 90° design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet on Category 6.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-24 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Overall Shield	Fully shielded corrosion-resistant metal casing.
Jack Contacts Material	50µ-inches gold plating over 100µ-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr. min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 24 AWG, solid or stranded

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

ORDERING INFORMATION

HCS P/N	Description	Orientation	Notes
J6E-00861	8P8C RJ-45 Shielded Tool-less Keystone Jack CAT 6E	90°	B
J6E-00862	8P8C RJ-45 Shielded Tool-less Keystone Jack CAT 6E	90°	A
J6E-00863	8P8C RJ-45 Shielded Tool-less Keystone Jack CAT 6E	90°	Universal

DataLink 250

Category 6 LAN Copper Connectivity Shielded & Unshielded RJ45 Industrial Jacks

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250 CAT6 8P8C Shielded or Unshielded RJ45 punch-down IP67 industrial jacks.

Frequency range	1-250 MHz
Compatible conductors	22-24 AWG Solid or stranded
Pin-pair assignment	T568A & T568B (Universal)
Contacts	50-Inch Gold plating
Shield (if present)	Corrosion-resistant metal case
Housing	High impact FR compound
Protective covers	FR UV-resistant heavy-duty plastic material

Qualifications and Approvals

HCS DataLink 250 RJ45 punch-down IP67 industrial jacks are tested and verified for full compliance with the following standards:

- 250MHz connectors according to IEC 60603-7-4&5
- 250MHz connectors according to EN 60603-7-4&5
- Category 6 PL/Channel according to ANSI/TIA-568-C.2
- UL94 V-0 flame test
- EU Directive 2011/65/EU (RoHS-2)
- IEC 60259 IP67
- UL 1863 Communications-Circuit Accessories Safety

Benefits & Features

Orientation	180°
Termination blocks	LSA-Plus IDC
Insertion/withdrawal	750 cycles
Cable re-termination	20 terminations
Operating temperature	-25 to +70C at 5-93% RH (Non condensing)
Ampacity	1.5 A max. @ 35C.
Contact resistance	20 mOhm max.
DC resistance	0.1 Ohm max.
Voltage rating	75 Vdc max.
Insulation resistance	500 MegaOhm min. @100 Vdc
Recommended punch-down tool	LSA-Plus

ORDERING INFORMATION

HCS P/N	Description	Jack Color	Cover Color	Form	Packaging	T568
J06-P0813	8P8C RJ45 Unshielded CAT6 PD IP67 Industrial Keystone Jack	White	Black	Straight	1/Bag	UNI
J06-P0823	8P8C RJ45 Shielded CAT6 PD IP67 Industrial Keystone Jack	Metal	Black	Straight	1/Bag	UNI

DataLink 500A

Category 6A Unshielded RJ-45 Keystone Jacks

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 500A patented unshielded copper RJ-45 keystone jack series includes high performance Category 6A snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-41 (unshielded 500 MHz connectors).
HCS DataLink 500A jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.All HCS DataLink 500A jacks are designed in a 90° formation and are available with back interconnection of 110 IDC blocks in universal pin/pair assignment.
All jacks fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and IEC 60603-7-41 component requirements, tested at the component level.
The HCS Logo and the DataLink 500A Trademark ensure long lasting high-performance and full support of all present and emerging applications, including 10GBASE-T (10 Gigabit-Ethernet).

Applications

HCS DataLink 500A unshielded copper RJ-45 keystone jacks are used in wall outlets, standard 16 Port 1U or staggered 24 Port 1U blank patch panels and surface box outlets and they fully support all presently available LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet (IEEE 802.3an)
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 500A jacks are tested and verified at the component level. They comply to IEC 60603-7-41 (8-way, unshielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz) and to the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.2	☑ EN-55022, Class B (Europa)	☑ UL94 V-0 rated plastic materials
☑ ISO/IEC-11801	☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6A performance - Providing full support to 10 Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Spring Material	High strength phosphor bronze or beryllium copper alloy.
Jack Contacts Plating	1.27 µm gold plating over 2.5 µm nickel or palladium nickel gold composite.
IDC Contacts Material	High strength phosphor bronze or beryllium copper alloy.
IDC Contacts Plating	Tin/lead composite, 5µm min. thickness.
Operating Environmental Conditions	0 to +60C at 5-95% RH (Non condensing)
Storage Environmental Conditions	-40 to +66C at 5-95% RH (Non condensing)
Packaging	75 units per box.
Plug to Jack Retention Force	49N min.
Plug to Jack Mating Force	9N max. for 8 wire jack.
Terminated Wire Retention Force	Axial pullout force: 9N min. Normal pullout force: 44N min
Insertion/Extraction Durability	750 mating cycles conforming to IEC 60603-7 Level A durability.
IDC Termination Durability	200 terminations min. acc to TIA/EIA 568B.2 requirements.
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL	TCL	EL TCTL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

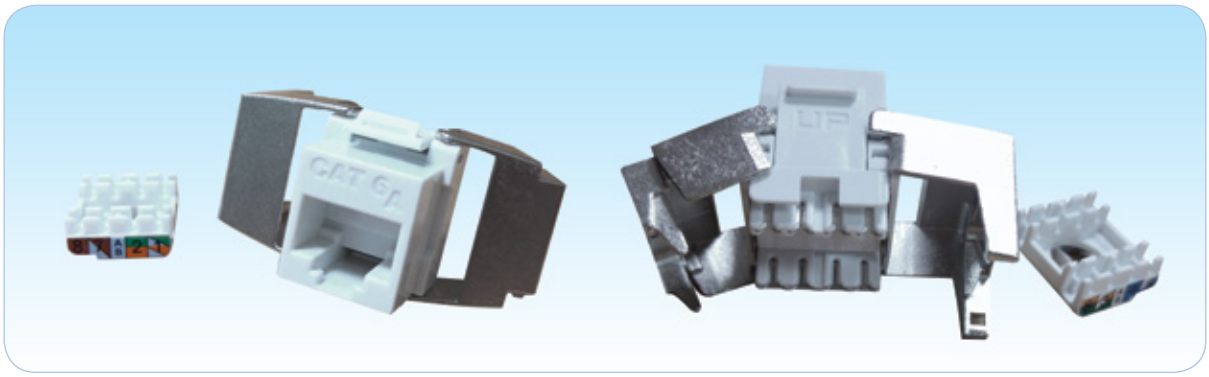
Propagation Delay	2.5 nS max @ 1-500 MHz
Propagation Delay Skew	1.25 nS max @ 1-500 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Coupling Attenuation	35 dB @ 30 - 100 MHz 35-20log(f/100) dB @ 100 - 1000 MHz

ORDERING INFORMATION

HCS P/N	Description	Blocks	T568
J6A-00811	8P8C RJ-45 Unshielded Category 6A Keystone Jack	110 IDC	B
J6A-00812	8P8C RJ-45 Unshielded Category 6A Keystone Jack	110 IDC	A
J6A-00813	8P8C RJ-45 Unshielded Category 6A Keystone Jack	110 IDC	UNI

DataLink 500A

Category 6A Unshielded RJ-45 Tool-Less Keystone Jacks



Description

HCS DataLink 500A tool-less unshielded RJ45 keystone jack series includes high performance Category 6A snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-41 (unshielded 500 MHz connectors).
HCS DataLink 500A jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface mount boxes.
HCS CAT6A tool-less jacks are designed in a 180° formation and are available with back interconnection in TIA-568A, TIA-568B and in universal pin/pair assignment.
All jacks fully conform to a ANSI/TIA-568-C.2 and IEC 60603-7-41 component requirements, tested at the component level, including alien crosstalk in panels and faceplate.
The HCS Logo and the DataLink 500A Trademark ensure long lasting high-performance and full support of all present applications, including 10GBASE-T (10 Gigabit-Ethernet), IEEE 802.3at (PoE+) and IEEE 802.3bt (4-Pair PoE).

Applications

HCS DataLink 500A CAT6A unshielded tool-less RJ45 keystone jacks are used in wall outlets, standard 16 Port 1U or staggered 24 Port 1U blank patch panels and surface box outlets and they fully support all presently available LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet (IEEE 802.3an)
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11
- ☑ IEEE 802.3at (PoE+)

Qualifications and Approvals

HCS DataLink 500A jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 500A jacks are tested and verified at the component level. They comply to IEC 60603-7-41 (8-way, unshielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA-568-C.2 CAT6A
- ☑ ISO/IEC-11801 CAT6A
- ☑ IEC 60603-7-41 500MHz connector

EMC

- ☑ EN-55022, Class B (Europa)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ UL listed as Communications-, Audio/Video-, Data- and Other Signaling-circuit Accessories
- ☑ EU RoHS Directive

Benefits & Features

- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Fully compliant with all relevant EU Directives - including 2011/65/EU (RoHS-2)
- ➔ Patented 180° tool-less design - providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 6A performance - providing full support to 10 Gigabit Ethernet.
- ➔ UL listed - providing additional safety
- ➔ Fully supports PoE+ and UPoE (4-pair PoE) - providing future-proof support.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs
- ➔ Compatible with 22-24 AWG conductors - providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Spring Material	High strength phosphor bronze alloy.
Jack Contacts Plating	1.27 µm (50µ") gold plating
IDC Contacts Material	High strength phosphor bronze alloy.
IDC Contacts Plating	2.3 µm (100µ") 100% Sn Alloy
Operating Environmental Conditions	0 to +60C at 5-95% RH (Non condensing)
Storage Environmental Conditions	-40 to +66C at 5-95% RH (Non condensing)
Packaging	50 or 100 units per box.
Plug to Jack Retention Force	49N min.
Plug to Jack Mating Force	9N max. for 8 wire jack.
Terminated Wire Retention Force	Axial pullout force: 9N min. Normal pullout force: 44N min
Insertion/Extraction Durability	750 mating cycles conforming to IEC 60603-7 Level A durability.
IDC Termination Durability	200 terminations min. acc to TIA/EIA 568B.2 requirements.
Conductor Compatibility Range	22 to 24 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL	TCL	EL TCTL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

Propagation Delay	2.5 nS max @ 1-500 MHz
Propagation Delay Skew	1.25 nS max @ 1-500 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 1000 Vdc/1 minute
DC Resistance	0.1 Ohm max @ 20C
Coupling Attenuation	35 dB @ 30 - 100 MHz 35-20log(f/100) dB @ 100 - 1000 MHz

ORDERING INFORMATION

HCS P/N	Description	Blocks	T568
J6A-00851	8P8C RJ45 Unshielded Tool-Less 180° Category 6A Keystone Jack	TL IDC	B
J6A-00852	8P8C RJ45 Unshielded Tool-Less 180° Category 6A Keystone Jack	TL IDC	A
J6A-00853	8P8C RJ45 Unshielded Tool-Less 180° Category 6A Keystone Jack	TL IDC	UNI

DataLink 500A

Category 6A Shielded RJ-45 Keystone Jacks

HES Cabling Systems
Connecting Networks™

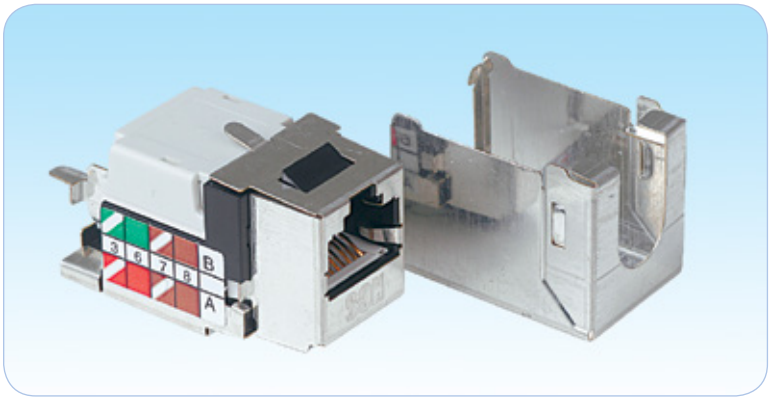
Description

HCS DataLink 500A patented shielded copper RJ-45 keystone jack series includes high performance fully shielded Category 6A snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-51 (shielded 500 MHz connectors).HCS DataLink 500A jacks are designed for fast and easy snap-in and out of wall plates, patch panels and surface box outlets.All HCS DataLink 500A jacks are designed in a 90° formation and are available with back interconnection of 110 IDC blocks in universal pin/pair assignment.All jacks fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and IEC 60603-7-51 component requirements, tested at the component level.The HCS Logo and the DataLink 500A Trademark ensure long lasting high-performance and full support of all present and emerging applications, including 10GBASE-T (10 Gigabit-Ethernet)

Applications

HCS DataLink 500A shielded copper RJ-45 keystone jacks are used in wall outlets, patch panels and surface box outlets and they fully support all presently available LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet (IEEE 802.3an)
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 500A jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 500A jacks are tested and verified at the component level. They comply to IEC 60603-7-51 (8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europa)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 90° design - Providing easier access, better and faster wire connection.
- ➔ High quality corrosion-resistant metal shield casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6A performance - Providing full support to 10 Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Overall Shield	Fully shielded corrosion-resistant metal casing.
Jack Contacts Spring Material	High strength phosphor bronze or beryllium copper alloy.
Jack Contacts Plating	1.27 µm gold plating over 2.5 µm nickel or palladium nickel gold composite.
IDC Contacts Material	High strength phosphor bronze or beryllium copper alloy.
IDC Contacts Plating	Tin/lead composite, 5µm min. thickness.
Operating Environmental Conditions	0 to +60C at 5-95% RH (Non condensing)
Storage Environmental Conditions	-40 to +66C at 5-95% RH (Non condensing)
Packaging	50 units per box.
Plug to Jack Retention Force	49N min.
Plug to Jack Mating Force	9N max. for 8 wire jack.
Terminated Wire Retention Force	Axial pullout force: 9N min. Normal pullout force: 44N min
Insertion/Extraction Durability	750 mating cycles conforming to IEC 60603-7 Level A durability.
IDC Termination Durability	200 terminations min. acc to TIA/EIA 568B.2 requirements.
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL	TCL	EL TCTL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

Propagation Delay	2.5 nS max @ 1-500 MHz
Propagation Delay Skew	1.25 nS max @ 1-500 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max.
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Coupling Attenuation	35-20log(f/100) dB @ 100 - 1000 MHz

ORDERING INFORMATION

HCS P/N	Description	Blocks	T568
J6A-00821	8P8C RJ-45 Shielded Category 6A Keystone Jack	110 IDC	B
J6A-00822	8P8C RJ-45 Shielded Category 6A Keystone Jack	110 IDC	A
J6A-00823	8P8C RJ-45 Shielded Category 6A Keystone Jack	110 IDC	UNI

DataLink 500A

Category 6A Shielded RJ-45 Tool-Less Keystone Jacks

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 500A Tool-Less shielded copper RJ-45 keystone jack series includes high performance fully shielded Category 6A snap-in 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-51 (shielded 500 MHz connectors).
HCS DataLink 500A tool-less jacks are designed for simple and reliable termination, fast and easy snap-in and out of wall plates, patch panels and surface box outlets.
HCS DataLink 500A tool-less jacks are designed in a 180° orientation and are available with back interconnection of 110 IDC blocks in universal pin/pair assignment. All jacks fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and IEC 60603-7-51 component requirements, tested at the component level.
The HCS Logo and the DataLink 500A Trademark ensure long lasting high-performance and full support of all present and emerging applications, including 10GBASE-T (10 Gigabit-Ethernet).

Applications

HCS DataLink 500A shielded tool-less copper RJ-45 keystone jacks are used in wall outlets, patch panels and surface box outlets and they fully support all presently available LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A tool-less jacks are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 500A jacks are tested and verified at the component level. They comply to IEC 60603-7-51 (8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2 CAT 6A
- ☑ ISO/IEC-11801 CAT 6A

EMC

- ☑ EN-55022, Class B (Europa)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Patented 180° design - Providing perfect termination with minimum distance to the IDC.
- ➔ High quality corrosion-resistant thick die-cast shield - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6A performance - Providing full support to 10 Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Overall Shield	Fully shielded corrosion-resistant die-cast zinc-alloy casing.
Jack Contacts Spring Material	High strength phosphor bronze alloy.
Jack Contacts Plating	1.27 µm gold plating over 5µm nickel.
IDC Contacts Material	High strength phosphor bronze alloy.
IDC Contacts Plating	Pure SN alloy, 5µm min. thickness.
Operating Environmental Conditions	-10 to +60C at 5-93% RH (Non condensing)
Storage Environmental Conditions	-40 to +70C at 5-93% RH (Non condensing)
Packaging	50 or 100 units per box.
Plug to Jack Retention Force	50N min for 60 sec..
Plug to Jack Mating Force	9N max. for 8 wire jack.
Terminated Wire Retention Force	Axial pullout force: 9N min. Normal pullout force: 44N min
Insertion/Extraction Durability	750 mating cycles conforming to IEC 60603-7 Level A durability
IDC Termination Durability	200 terminations min. acc to TIA/EIA 568B.2 requirements.
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL	TCL	EL TCTL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Coupling Attenuation	35-20Log(f/100) dB@ 100-1000 MHz

ORDERING INFORMATION

HCS P/N	Description	Blocks	T568
J6A-00824	8P8C RJ-45 Shielded Category 6A Tool-less 180° Keystone Jack	110 IDC	B
J6A-00825	8P8C RJ-45 Shielded Category 6A Tool-less 180° Keystone Jack	110 IDC	A
J6A-00826	8P8C RJ-45 Shielded Category 6A Tool-less 180° Keystone Jack	110 IDC	UNI

Shielded DL-1200 Outlets

HES Cabling Systems
Connecting Networks™

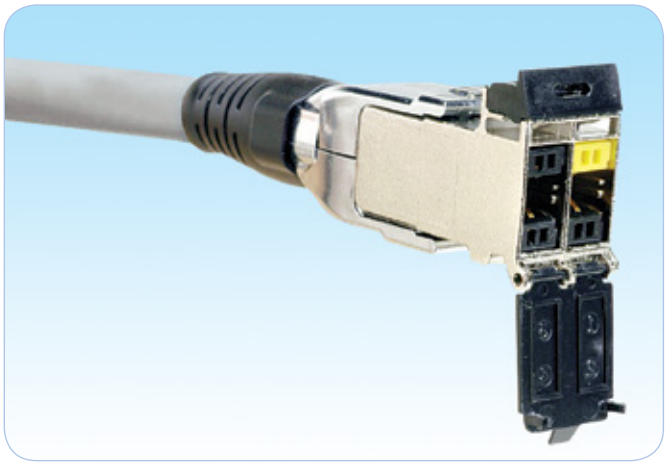
Description

HCS DataLink DL-1200 are high performance Category 7A 4-pair outlets conforming to IEC 61076-3-104 (shielded 1000 MHz connectors). HCS DataLink DL-1200 outlets are designed for fast and easy snap-in and out of wall-outlets, patch panels and surface box outlets.
HCS DataLink DL-1200 outlets support 1200 MHz applications and cable sharing in noisy and high-security environments. All outlets are fully shielded with high quality, corrosion resistant metal shield case. HCS DataLink DL-1200 outlets are ideal for data centers, healthcare imaging and financial applications.
The HCS Logo and the DataLink 1200 Trademark ensure long lasting high-performance and full support of all present and emerging applications.

Applications

HCS DataLink DL-1200 outlets are used in the horizontal link, supporting all presently available LAN applications, including the following:

- ☑ 10 Gigabit Ethernet - Type 10GBASE-T
- ☑ Broadband Digital and Analog CATV signals up to 1200 MHz
- ☑ ISO/IEC 15018: SOHO and multiple simultaneous applications on all 4 pairs.
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink DL-1200 outlets fully comply with the following standards:

- ➔ IEC 61076-3-104: 8-way, shielded free and fixed connectors for data transmissions with frequencies up to 1000 MHz.
- ➔ US TEMPEST (US National Communications Security Committee Directive 4, NACSIM 5100A).

Benefits & Features

- ➔ Exceptional transmission properties - suitable for 10GBE applications on 100m channels and much more.
- ➔ 1200 MHz bandwidth - Providing support to all present and future application.
- ➔ Conforming and validated to US TEMPEST - suitable for high-security applications.
- ➔ Total separation between all 4 pairs - Providing support for cable sharing with multiple applications.
- ➔ The best copper connector available - provide real future-proof performance.
- ➔ Heavy metal shield - Providing excellent EMC and minimum alien crosstalk (AXT).
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

PHYSICAL AND MECHANICAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Overall Shield	Fully shielded corrosion-resistant metal casing.
Jack Contacts Spring Material	High strength phosphor bronze or beryllium copper alloy.
Jack Contacts Plating	1.27 µm gold plating over 2.5 µm nickel or palladium nickel gold composite.
Operating Environmental Conditions	0 to +70C at 5-95% RH (Non condensing)
Storage Environmental Conditions	-40 to +70C at 5-95% RH (Non condensing)
Mechanical Operation	IEC 60512-5: PL1: 750 Operations PL1: 2500 Operations @ 10mm/s.
Effectiveness of Connector Coupling	IEC 60512-8: 50N for 60 sec min.
Insertion and Withdrawal Forces	IEC 60512-13-2: 20N max @ 10mm/s.
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Packaging	Per request

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	RL	NEXT	FEXT	LCL	Coupling Attenuation
MHz	dB/100m	dB	dB	dB/100m	dB	dB
	Max	Min	Min	Min	Min	Min
1	0.02	30.0	80.0	65.0	66.0	95.0
10	0.05	30.0	80.0	65.0	46.0	75.0
16	0.06	30.0	80.0	65.0	41.9	70.9
25	0.08	30.0	80.0	65.0	38.0	67.0
32.25	0.09	30.0	80.0	65.0	35.8	64.8
62.5	0.13	30.0	80.0	63.1	30.1	59.1
100	0.16	30.0	80.0	60.0	26.0	55.0
200	0.23	24.0	75.5	55.5	20.0	49.0
250	0.26	22.0	74.0	54.0	18.0	47.0
300	0.28	20.5	72.8	52.8	16.5	45.5
400	0.32	18.0	71.0	51.0	14.0	43.0
500	0.36	16.0	69.5	49.5	12.0	41.0
600	0.40	14.4	68.3	48.3	10.4	39.4
800	0.46	11.9	66.5	46.5	7.9	36.9
1000	0.51	10.0	65.0	45.0	6.0	35.0
1200	0.56	8.4	63.8	43.8	4.4	33.4

Voltage Rating	72 Vdc max.
Voltage Proof	1000Vdc contact to contact 1500 Vdc contact to panel
Propagation Delay	2.5 nS max @ 1-1200 MHz.
Delay Skew	1.25 nS max @ 1-1200 MHz.
Initial Contact to Shield Resistance	20 mOhm max. (mated connectors).
Input to Output Resistance	200 mOhm max. (mated connectors).
Input to Output Resistance Unbalance	50 mOhm max. (mated connectors).
Insulation Resistance	500 MOhm min. @ 100Vdc (mated connectors).
Ampacity	1A min. @ 20C.

ORDERING INFORMATION

HCS P/N	Description
J7A-00821	DL-1200 Fully Shielded 1200 MHz 4 Pair Outlet

DataLink 100e

Category 5E Unshielded RJ-45 Surface Mount Boxes (SMB)

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 100E patented unshielded copper RJ-45 Surface Mount Box (SMB) series includes pre-loaded boxes with high performance Category 5E 8-position/8-contact (8P8C) jacks conforming to IEC 60603-7-2 (unshielded 100 MHz connectors).HCS DataLink 100E SMB are available in simplex (single) or duplex (double) formations, with 110 IDC back interconnection blocks in T568A, T568B or Universal pin/pair assignment, with built-in shutters (dust cover) and with a range of attractive colors.All jacks fully conform to ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E unshielded copper RJ-45 SMBs fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E SMBs are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.HCS DataLink 100E SMBs comply to IEC 60603-7-2 (unshielded 100 MHz connectors) and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Box covers include covered labeling and snap-in colored icons - Providing elegant and professional outlet identification.
- ➔ All boxes equipped with 3-side knock-out entries - Providing easier cable access from any direction.
- ➔ All boxes supplied with built-in shutters - Providing efficient dust protection in harsh environments.
- ➔ Patented 90° design keystone jacks - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Box Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.10	65.0	65.0	30.0
4.00	0.10	65.0	63.1	30.0
8.00	0.11	64.9	57.0	30.0
10.00	0.13	63.0	55.1	30.0
16.00	0.16	58.9	51.0	30.0
25.00	0.20	55.0	47.1	30.0
31.25	0.22	53.1	45.2	30.0
62.50	0.32	47.1	39.1	24.1
100.00	0.40	43.0	35.1	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
LCL	66-20·Log(f) dB min @ 1-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Type	T568
W5E-00801	8P8C RJ-45 Unshielded Surface Mount Box CAT 5E 110 IDC Blocks	Simplex	B
W5E-00802	8P8C RJ-45 Unshielded Surface Mount Box CAT 5E 110 IDC Blocks	Simplex	A
W5E-00803	8P8C RJ-45 Unshielded Surface Mount Box CAT 5E 110 IDC Blocks	Simplex	UNI
W5E-00804	8P8C RJ-45 Unshielded Surface Mount Box CAT 5E 110 IDC Blocks	Duplex	B
W5E-00805	8P8C RJ-45 Unshielded Surface Mount Box CAT 5E 110 IDC Blocks	Duplex	A
W5E-00806	8P8C RJ-45 Unshielded Surface Mount Box CAT 5E 110 IDC Blocks	Duplex	UNI

DataLink 100e

Category 5E German Style Face Plates

HES Cabling Systems
Connecting Networks™

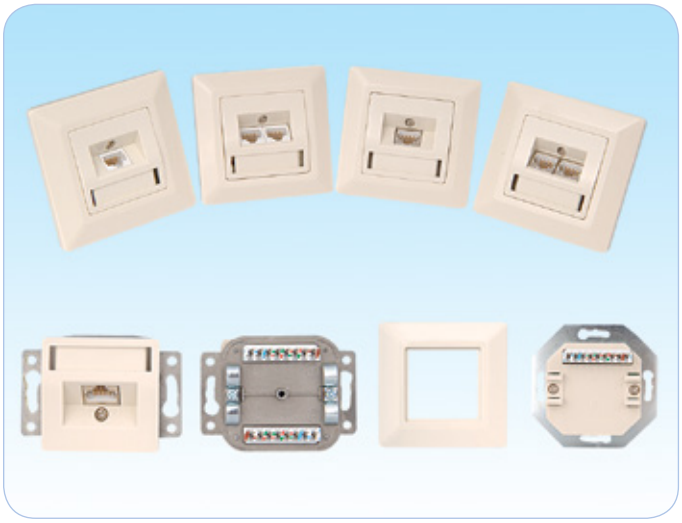
Description

HCS DataLink 100E German Style face plates series includes high quality, state-of-the-art faceplates for perfect and professional installations, needed to provide fully compliant copper cabling systems.
All jacks fully conform to ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).
Proper use of HCS DataLink 100E Face Plates and Outlets, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

HCS DataLink 100E German Style face plates series fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11



Qualifications and Approvals

HCS DataLink 100E German Style face plates series are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E German Style face plates series comply to IEC 60603 and to the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.2	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ISO/IEC-11801	☑ FCC Part 68	☑ Zero-halogen in LS0H constructions.

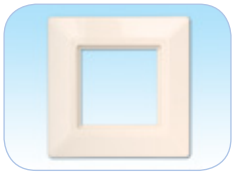
Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Angled design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr. min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimension mm		
			L	W	
W5E-30080	Empty German Style Faceplate	-	80	80	
W5E-30084	Empty German Style Faceplate	-	84	84	
W5E-30086	Empty German Style Faceplate	-	86	86	
W5E-30101	Angled 1-Port Bezel: Unshielded CAT 5E PCB module jack	1	50	50	
W5E-30202	Angled 2-Port Bezel: Unshielded CAT 5E PCB module jack	2	50	50	
W5E-30180	Angled 1-Port unshielded faceplate with CAT 5E PCB module jack	1	80	80	
W5E-30184	Angled 1-Port unshielded faceplate with CAT 5E PCB module jack	1	84	84	
W5E-30186	Angled 1-Port unshielded faceplate with CAT 5E PCB module jack	1	86	86	
W5E-30280	Angled 2-Port unshielded faceplate with CAT 5E PCB module jack	2	80	80	
W5E-30284	Angled 2-Port unshielded faceplate with CAT 5E PCB module jack	2	84	84	
W5E-30286	Angled 2-Port unshielded faceplate with CAT 5E PCB module jack	2	86	86	
W5E-30301	Angled 1-Port Bezel: Fully-shielded CAT 5E PCB module jack	1	50	50	
W5E-30402	Angled 2-Port Bezel: Fully-shielded CAT 5E PCB module jack	2	50	50	
W5E-30380	Angled 1-Port fully-shielded faceplate with CAT 5E PCB module jack	1	80	80	
W5E-30384	Angled 1-Port fully-shielded faceplate with CAT 5E PCB module jack	1	84	84	
W5E-30386	Angled 1-Port fully-shielded faceplate with CAT 5E PCB module jack	1	86	86	
W5E-30480	Angled 2-Port fully-shielded faceplate with CAT 5E PCB module jack	2	80	80	
W5E-30484	Angled 2-Port fully-shielded faceplate with CAT 5E PCB module jack	2	84	84	
W5E-30486	Angled 2-Port fully-shielded faceplate with CAT 5E PCB module jack	2	86	86	

DataLink 100e

Category 5E German Style Surface Mount Boxes

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 100E German Style Surface Mount Boxes series includes high quality, state-of-the-art boxes for perfect and professional installations, needed to provide fully compliant copper cabling systems.
All boxes fully conform to ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).
Proper use of HCS DataLink 100E German Style Surface Mount Boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

HCS DataLink 100E German Style Surface Mount Boxes fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E German Style Surface Mount Boxes are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E German Style Surface Mount Boxes comply to IEC 60603 and to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 68

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Angled design - Providing easier access, better and faster wire connection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-26 AWG solid or stranded conductors - Providing support to a wider range of cabling types.
- ➔ Available in T568A, T568B or Universal pin/pair assignment - Providing a wider product range.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Housing Material	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Contacts Material	50 micro-inches gold plating over 100 micro-inches nickel plated copper alloy.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	50 or 100 Units per box.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 gr. min. (using HCS approved plug).
Storage Temperature	-20 to +80C
Plug Insertion Durability	750 mating cycles
Conductor Compatibility Range	22 to 26 AWG, solid or stranded
Standard Color	White RAL 1013. Other colors available upon request.

TRANSMISSION PROPERTIES AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB/100m		dB	
	Max	Nom	Min	Nom	Min	Nom	Min	Nom
1.00	0.10	0.02	65.0	85	65.0	85	30.0	56
4.00	0.10	0.02	65.0	75	63.1	73	30.0	50
8.00	0.11	0.02	64.9	68	57.0	60	30.0	47
10.00	0.13	0.03	63.0	67	55.1	58	30.0	45
16.00	0.16	0.03	58.9	65	51.0	54	30.0	40
25.00	0.20	0.04	55.0	60	47.1	51	30.0	38
31.25	0.22	0.05	53.1	55	45.2	49	30.0	35
62.50	0.32	0.06	47.1	50	39.1	42	24.1	30
100.00	0.40	0.10	43.0	47	35.1	39	20.0	27

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	230 Vrms max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
LCL	66-20·Log(f) dB min @ 1-100 MHz
Transfer Impedance	N/A
Transfer Empedansı	N/A

ORDERING INFORMATION

HCS P/N	Description	Ports	
W5E-40101	Angled 1-port unshielded CAT 5E PCB module Surface Mount Box	1	
W5E-40201	Angled 2-port unshielded CAT 5E PCB module Surface Mount Box	2	
W5E-40111	Angled 1-port fully-shielded CAT 5E PCB module Surface Mount box	1	
W5E-40211	Angled 2-port fully-shielded CAT 5E PCB module Surface Mount Box	2	

DataLink 250E

Category 6E Unshielded French Style Modules

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 250E unshielded French style modules include fully assembled high performance Category 6 outlets with shuttered angled jacks conforming to IEC 60603-7-4 (unshielded 250 MHz connectors), compatible with French style 45x45mm bezels.
The angled design reduces patch cord bending and has a protected labeling feature. Individual ports may be Color Coded using a connector icon, for site-specific network administration.
This superior RJ45 IDC includes a unique integral shutter that not only protects the connector from dust and contaminants, but the ingenious spring-loaded design also ejects improperly seated patch cords. All jacks are dual Color Coded for either T568A or T568B wiring schedules and are RJ11 compatible.
All modules fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6E component requirements, tested at the component level and officially ETL verified.
The HCS Logo and the DataLink 250E Trademark ensure long lasting, trouble-free high-performance .

Applications

HCS DataLink 250E unshielded French style modules are used with French style 45x45mm bezels and they fully support the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250E French style modules are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 250E French style modules are tested and verified at the component level and they comply with IEC 60603-7-4 (unshielded 250 MHz connectors) and with the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.1	☑ EN-55022, Class B (Europa)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA/568-C.2	☑ FCC Part 15, Subpart J, Class A (US)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Angled design - Providing easier access, minimizing cords bending and abuse.
- ➔ Protected labeling facility - Providing neat and professional look.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing minimizing BER.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs.
- ➔ Shuttered ports - Providing clean and trouble free connections.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

JACK	
Plastic Housing	Polycarbonate, UL94V-0.
Operating Life	Minimum 750 insertion cycles.
Contact Material	Copper Alloy.
Contact Plating	50µ" Gold/100µ" Nickel.
Contact Force	1N min.
Plug Retention Force	70N min.
IDC	
Plastic Housing	Polycarbonate, UL94V-0.
Operating Life	200 re-terminations min.
Contact Material	Copper Alloy IDC.
Contact Plating	Tin/Lead RoHS compliant alloy.
Contact Force	1N min.
Wire Accommodation	22-24 AWG solid conductors.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Color	Blocks	T568
W6E-008D1	8P8C RJ-45 Unshielded CAT 6E 45x45mm French Style Angled Shuttered Module	White	110 IDC	UNI
W6E-008D2	8P8C RJ-45 Unshielded CAT 6E 22.5x45mm French Style Angled Shuttered Module	White	110 IDC	UNI

DataLink 500A

Category 6A Shielded French Style Modules

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 500A shielded French style modules include fully assembled high performance Category 6A outlets with shuttered angled jacks conforming to IEC 60603-7-51 (shielded 500 MHz connectors), compatible with French style 45x45mm bezels.
The angled design reduces patch cord bending and has a protected labeling feature. Individual ports may be Color Coded using a connector icon, for site-specific network administration.
This superior RJ45 IDC includes a unique integral shutter that not only protects the connector from dust and contaminants, but the ingenious spring-loaded design also ejects improperly seated patch cords. All jacks are dual Color Coded for either T568A or T568B wiring schedules and are RJ11 compatible.
All modules fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6A component requirements, tested at the component level.
The HCS Logo and the DataLink 500A Trademark ensure long lasting, trouble-free high-performance and fullsport of all present and emerging applications, including 10GBASE-T (10Gigabit-Ethernet).

Applications

HCS DataLink 500A unshielded French style modules are used with French style 45x45mm bezels and they fully support the following protocols:

- ☑ 10GBASE-T 10Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4Mbps and16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A Shielded French style modules are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system. HCS DataLink 500A Shielded French style modules are tested and verified as category 6A Channel.They comply with IEC 60603-7-51 (8-way-shielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz) and with the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.2 CAT6A	☑ EN-55022, Class B (Europa)	☑ UL94 V-0 rated plastic materials
☑ ISO/IEC-11801 CAT6A	☑ FCC Part 15, Subpart J, Class A (US)	☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ☑ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ☑ Angled design - Providing easier access, minimizing cords bending and abuse.
- ☑ Protected labeling facility - Providing neat and professional look.
- ☑ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ☑ Exceeding Category 6A performance - minimizing BER and problems
- ☑ Robust and installer-friendly design - Providing reduced installation and operating costs.
- ☑ Shuttered ports - Providing clean and trouble free connections.
- ☑ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

JACK	
Plastic Housing	Polycarbonate, UL94V-0.
Operating Life	Minimum 750 insertion cycles.
Contact Material	Copper Alloy.
Contact Plating	50µ" Gold/100µ" Nickel.
Contact Force	1N min.
Plug Retention Force	70N min.
IDC	
Plastic Housing	Polycarbonate, UL94V-0.
Operating Life	200 re-terminations min.
Contact Material	Copper Alloy IDC.
Contact Plating	Tin.
Contact Force	1N min.
Wire Accommodation	22-24 AWG solid conductors.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

Propagation Delay	2.5 nS max @ 1-500 MHz
Propagation Delay Skew	1.25 nS max @ 1-500 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Coupling Attenuation	35db@30-100 Mhz 35-20·Log(f/100) dB @ 100-1000 MHz

ORDERING INFORMATION

HCS P/N	Description	Color	Blocks	T568
W6A-008D1	8P8C RJ-45 Shielded CAT 6A 45x45mm French Style Angled Shuttered Module	White	110 IDC	UNI
W6A-008D2	8P8C RJ-45 Shielded CAT 6A 22.5x45mm French Style Angled Shuttered Module	White	110 IDC	UNI

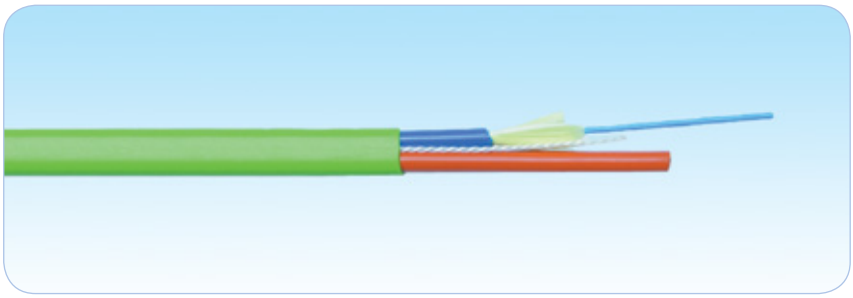
HES Cabling Systems
Connecting Networks™

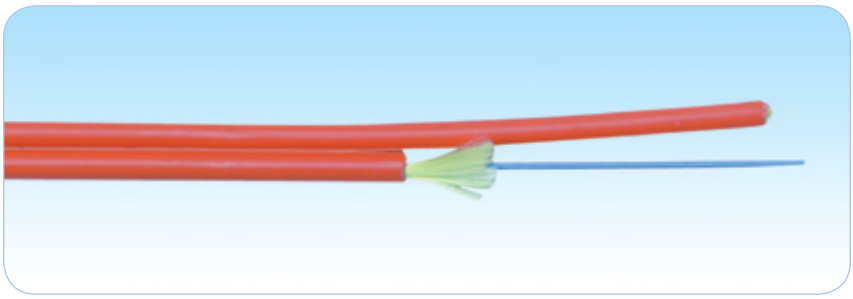
Structured Cabling Fiber Optic Products

DataLight SDP

Simplex and Duplex Fiber Optic Cables

HES Cabling Systems
Connecting Networks™





Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Simplex and Duplex (SDP) cable series consists of single fiber and double fiber cables in 3 optional outer diameters, jacketed with either PVC or LS0H compounds.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose indoor LAN cable
- ☑ Interconnections for patch panels and communication closets
- ☑ Jumper and pigtail cable
- ☑ Short distance distribution and direct termination
- ☑ Office wiring

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Tight 600 microns or 900 microns buffered fibers - Providing easy, fast and trouble-free termination and use of field-installable connectors.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth, limp and flexible jacket - Providing easy and comfortable cable handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

Simplex Cables consist of an optical fiber with a 0.6 or 0.9 mm buffer, reinforced with aramid and/or E-glass strength yarns and protected with a flame-retardant PVC or LS0H Jacket. Duplex (Figure-8) Zip cables are made with two identical simplex cables connected in a zip-cord formation, one cable identified with a longitudinal rib and/or with color-coded buffer.

Basic Fiber	As selected from the FIBER OPTIONS Section
Buffer Type	Tight.
Buffer Material	LS0H Halogen free or flame retardant PVC compound
Buffer OD	600 or 900 mμ nom.
Number Buffered Fibers	1 or 2
Buffer Colors	1. Blue 2. Orange
Strength Elements	Served aramid and/or E-glass yarns
Individual Jacket Material	LS0H halogen free or flame retardant PVC compound
Individual Jacket OD	1.6, 2.0 or 2.8 mm nom.
Overall Outer Jacket	None.
Standard Jacket Color	Multimode 50/125μm and 62.5/125μm Fibers: Orange RAL 2003 Laser Optimized (10GBE) 50/125μm Fibers: Purple RAL 4005 Singlemode Fibers: Yellow RAL 1021
Standard Surface Marking	Included HCS P/N, cable description, Meter mark and Batch Number
Repeated Bending	300 Cycles/100mm/4Kg (IEC 60794-2-E6)
Max. Impact Resistance	1.0 Joules/125 mm (IEC 60794-1-2-E4)
Max. Crush Resistance	100 N/100mm (IEC 60794-1-2-E3)
Max. Loading During Installation	100 N for Simplex cables. 200 N for Duplex cables.
Max. Loading During Operation	50 N for Simplex cables. 100 N for Duplex cables.
Short Term Bend Radius	15xOD mm min.
Long Term Bend Radius	10xOD mm min.
Storage Temperature	-20 to +60 C
Temperature Operating Range	-20 to +60C
Flame Test	IEC 60332-1
Halogen Content in LS0H Cables	Null

ORDERING INFORMATION

HCS P/N	Description	Tight Buffer OD μm	Simplex OD (mm)	Duplex OD (mm)	Weight kg/km	Cal. Value kj/m	Notes
LFO-00101	Simplex PVC	600±50	1.6	N/A	4.0	80	-
LFO-00102	Simplex PVC	600±50	2.0	N/A	5.0	115	-
LFO-00103	Simplex PVC	900±50	2.8	N/A	7.5	170	-
LFO-00104	Simplex LS0H	600±50	1.6	N/A	4.0	80	-
LFO-00105	Simplex LS0H	600±50	2.0	N/A	5.0	115	-
LFO-00106	Simplex LS0H	900±50	2.8	N/A	7.5	170	-
LFO-00201	Duplex Zip PVC	600±50	1.6	1.6 x 3.4	7.3	160	FIG-8
LFO-00202	Duplex Zip PVC	600±50	2.0	2.0 x 4.2	10.5	230	FIG-8
LFO-00203	Duplex Zip PVC	900±50	2.8	2.8 x 6.0	15.6	340	FIG-8
LFO-00204	Duplex Zip LS0H	600±50	1.6	1.6 x 3.4	7.3	160	FIG-8
LFO-00205	Duplex Zip LS0H	600±50	2.0	2.0 x 4.2	10.5	230	FIG-8
LFO-00206	Duplex Zip LS0H	900±50	2.8	2.8 x 6.0	15.6	340	FIG-8

Notes:

The "FO" in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The default jacket color depends on the fiber type: Orange (RAL 2003) for MM fibers. Yellow (RAL 1021) for SM fibers.Other colors available upon request.
The complete P/N, indicating the packaging type, length & jacket color is built according to the standard **HCS P/N System.**

DataLight BRK

Breakout
Fiber Optic Cables

HES Cabling Systems
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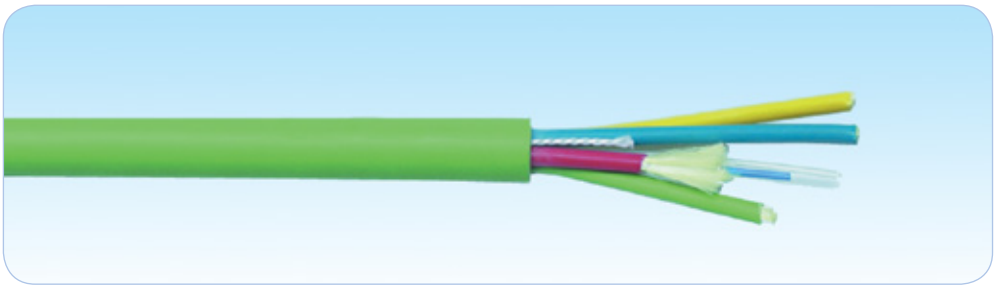


Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Breakout cable (BRK) series consists of 2-36 minicables, cabled and jacketed with either PVC or LS0H compounds.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose all-dielectric indoor LAN cable
- ☑ In-building backbone, riser or horizontal cabling
- ☑ Short distance distribution and direct termination
- ☑ Office wiring

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Tight or Semi-tight 900 microns buffered fibers - Providing easy, fast and trouble-free termination and use of field-installable connectors.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth, limp and flexible jacket - Providing easy and comfortable cable handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Breakout Cables contain up to 36 color-coded minicables, each minicable consists of one optical fiber with a 0.9 mm tight or semi-tight buffer, reinforced by aramid and E-glass strength yarns and protected with a flame-retardant PVC or LS0H Jacket.
The minicables are cabled together (with fillers in case of need) around a dielectric central strength member (except when noted otherwise), wrapped with a plastic binder and overall covered with a flame-retardant PVC or LS0H Jacket.

Basic Fiber	As selected from the FIBER OPTIONS Section
Buffer Type	Tight or Semi-tight
Buffer Material	LS0H Halogen free or flame retardant PVC compound
Buffer OD	900 microns nom
Strength Elements	Served aramid and E-glass yarns
Individual Jacket Material	LS0H Halogen free or flame retardant PVC compound
Individual Jacket OD	2.1 mm nom.
Number of Minicables	2-36
Color Code	HCS Color Table No. 3 up to 12 minicables. (Larger fiber count: Numbered minicables)
Outer Jacket	LS0H Halogen free or flame retardant PVC compound
Standard Outer Jacket Color	Light Gray RAL 7035. Other colors available upon request
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Max. Crush Resistance	2000 N in 2&4 fiber (no CSM) cables and 3000 N in 4-36 fiber cables with CSM
Short Term Bend Radius	15xOD mm min.
Long Term Bend Radius	10xOD mm min.
Storage Temperature	-25 to +75 oC
Temperature Operating Range	-25 to +75 oC
Flame Test	IEC 60332-1
Halogen Content in LS0H Cables	Null

ORDERING INFORMATION

HCS P/N	Description	Buffer	OD mm	Tensile Strength N, Max.		Weight kg/km	Cal. Value kj/m	Notes
				Short	Long			
RFO-00201	2 Fibers PVC gray	Tight	6.4	500	300	39	750	No CSM
RFO-00202	2 Fibers PVC gray	Semi-Tight	6.4	500	300	39	750	No CSM
RFO-00203	2 Fibers LS0H gray	Tight	6.4	500	300	39	750	No CSM
RFO-00204	2 Fibers LS0H gray	Semi-Tight	6.4	500	300	39	750	No CSM
RFO-00401	4 Fibers PVC gray	Tight	7.2	1000	700	53	1200	No CSM
RFO-00402	4 Fibers PVC gray	Semi-Tight	7.2	1000	700	53	1200	No CSM
RFO-00403	4 Fibers LS0H gray	Tight	7.2	1000	700	53	1200	No CSM
RFO-00404	4 Fibers LS0H gray	Semi-Tight	7.2	1000	700	53	1200	No CSM
RFO-00405	4 Fibers PVC gray	Tight	8.0	1300	1000	66	1500	
RFO-00406	4 Fibers PVC gray	Semi-Tight	8.0	1300	1000	66	1500	
RFO-00407	4 Fibers LS0H gray	Tight	8.0	1300	1000	67	1500	
RFO-00408	4 Fibers LS0H gray	Semi-Tight	8.0	1300	1000	67	1500	
RFO-00601	6 Fibers PVC gray	Tight	8.0	1300	1000	68	1500	
RFO-00602	6 Fibers PVC gray	Semi-Tight	8.0	1300	1000	68	1500	
RFO-00603	6 Fibers LS0H gray	Tight	8.0	1300	1000	68	1500	
RFO-00604	6 Fibers LS0H gray	Semi-Tight	8.0	1300	1000	68	1500	
RFO-00801	8 Fibers PVC gray	Tight	9.7	1500	1200	93	2000	
RFO-00802	8 Fibers PVC gray	Semi-Tight	9.7	1500	1200	93	2000	
RFO-00803	8 Fibers LS0H gray	Tight	9.7	1500	1200	93	2000	
RFO-00804	8 Fibers LS0H gray	Semi-Tight	9.7	1500	1200	93	2000	
RFO-01201	12 Fibers PVC gray	Tight	12.9	1900	1600	162	3500	
RFO-01202	12 Fibers PVC gray	Semi-Tight	12.9	1900	1600	162	3500	
RFO-01203	12 Fibers LS0H gray	Tight	12.9	1900	1600	162	3500	
RFO-01204	12 Fibers LS0H gray	Semi-Tight	12.9	1900	1600	162	3500	
RFO-02401	24 Fibers PVC gray	Tight	15.5	1900	1600	225	4800	
RFO-02402	24 Fibers PVC gray	Semi-Tight	15.5	1900	1600	225	4800	
RFO-02403	24 Fibers LS0H gray	Tight	15.5	1900	1600	225	4800	
RFO-02404	24 Fibers LS0H gray	Semi-Tight	15.5	1900	1600	225	4800	
RFO-03601	36 Fibers PVC gray	Tight	17.6	1900	1600	310	6600	
RFO-03602	36 Fibers PVC gray	Semi-Tight	17.6	1900	1600	310	6600	
RFO-03603	36 Fibers LS0H gray	Tight	17.6	1900	1600	310	6600	
RFO-03604	36 Fibers LS0H gray	Semi-Tight	17.6	1900	1600	310	6600	

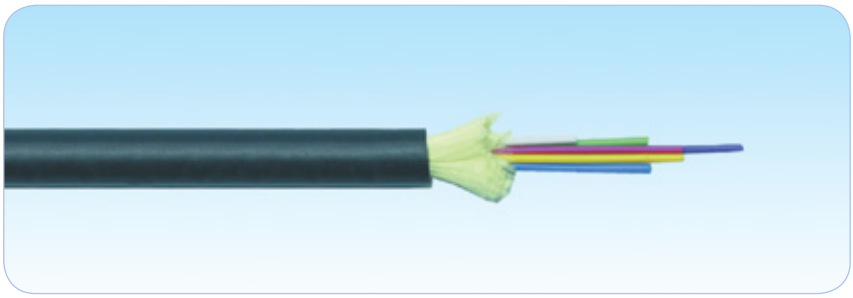
Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the FIBER OPTIONS Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Light Gray RAL 7035. Other colors available upon request.

DataLight MTD

Indoor
Multi-Tight Distribution
Fiber Optic Cables

HES Cabling Systems
Connecting Networks™



Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Indoor Multi-Tight-Distribution (MTD) cable series consists of 4-72 buffered fibers, cabled, served with aramid yarns and jacketed with either PVC or LS0H compounds.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose all-dielectric indoor LAN cable
- ☑ In-building backbone and riser, optimized for Centralized Cabling (TIA TSB-72)
- ☑ Short distance distribution and trunking
- ☑ Office wiring

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Tight or Semi-tight 900 microns buffered fibers - Providing easy, fast and trouble-free termination and use of field-installable connectors.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth, limp and flexible jacket - Providing easy and comfortable cable handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Indoor MTD Cables contain up to 72 color-coded, 0.9 mm tight or semi-tight buffer optical fibers.
In 4-24 fiber cables, all fibers are cabled together, reinforced by water-blocking swellable aramid strength yarns and protected with a flame-retardant, UV resistant LS0H Jacket.
36 and 72-fiber cables are made of 6-fiber sub units. 48 fiber cables are made of 4-fiber sub-units.

Basic Fiber	As selected from the FIBER OPTIONS Section
Buffer Type	Tight or Semi-tight
Buffer Material	LS0H Halogen free or flame retardant PVC compound or acrylic
Buffer OD	900 microns nom
Strength Elements	Served aramid yarns
Number of Fibers	4-72
Color Code	HCS Color Table No. 3 (IEC 60304 Color Code)
Outer Jacket	LS0H Halogen free or flame retardant PVC compound
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Max. Crush Resistance	1000 N in 4-12 fiber cables. 4400 N in 24-72 fiber cables
Short Term Bend Radius	15xOD mm min.
Long Term Bend Radius	10xOD mm min.
Storage Temperature	-25 to +75 oC
Temperature Operating Range	-25 to +75 oC
Flame Test	UL 1581 VW-1 and IEC 60332-1.
Halogen Content in LS0H Cables	Null

ORDERING INFORMATION

HCS P/N	Description	Buffer	OD mm	Tensile Strength N, Max.		Weight kg/km	Cal. Value kj/m	Notes
				Short	Long			
NFO-00401	4 Fibers PVC Black	Tight	4.9	750	375	24	460	-
NFO-00402	4 Fibers PVC Black	Semi-Tight	4.9	750	375	24	460	-
NFO-00403	4 Fibers LS0H Black	Tight	4.9	750	375	25	460	-
NFO-00404	4 Fibers LS0H Black	Semi-Tight	4.9	750	375	25	460	-
NFO-00601	6 Fibers PVC Black	Tight	5.8	750	375	32	650	-
NFO-00602	6 Fibers PVC Black	Semi-Tight	5.8	750	375	32	650	-
NFO-00603	6 Fibers LS0H Black	Tight	5.8	750	375	34	650	-
NFO-00604	6 Fibers LS0H Black	Semi-Tight	5.8	750	375	34	650	-
NFO-00801	8 Fibers PVC Black	Tight	6.2	1000	500	41	830	-
NFO-00802	8 Fibers PVC Black	Semi-Tight	6.2	1000	500	41	830	-
NFO-00803	8 Fibers LS0H Black	Tight	6.2	1000	500	43	830	-
NFO-00804	8 Fibers LS0H Black	Semi-Tight	6.2	1000	500	43	830	-
NFO-01201	12 Fibers PVC Black	Tight	7.4	1000	500	51	1000	-
NFO-01202	12 Fibers PVC Black	Semi-Tight	7.4	1000	500	51	1000	-
NFO-01203	12 Fibers LS0H Black	Tight	7.4	1000	500	52	1000	-
NFO-01204	12 Fibers LS0H Black	Semi-Tight	7.4	1000	500	52	1000	-
NFO-02401	24 Fibers PVC Black	Tight	10.3	1500	750	120	2000	-
NFO-02402	24 Fibers PVC Black	Semi-Tight	10.3	1500	750	120	2000	-
NFO-02403	24 Fibers LS0H Black	Tight	10.3	1500	750	120	2000	-
NFO-02404	24 Fibers LS0H Black	Semi-Tight	10.3	1500	750	120	2000	-
NFO-03601	36 Fibers PVC Black	Tight	19.7	1500	750	250	4000	-
NFO-03602	36 Fibers PVC Black	Semi-Tight	19.7	1500	750	250	4000	-
NFO-03603	36 Fibers LS0H Black	Tight	19.7	1500	750	250	4000	-
NFO-03604	36 Fibers LS0H Black	Semi-Tight	19.7	1500	750	250	4000	-
NFO-04801	48 Fibers PVC Black	Tight	18.9	1500	750	300	4800	-
NFO-04802	48 Fibers PVC Black	Semi-Tight	18.9	1500	750	300	4800	-
NFO-04803	48 Fibers LS0H Black	Tight	18.9	1500	750	300	4800	-
NFO-04804	48 Fibers LS0H Black	Semi-Tight	18.9	1500	750	300	4800	-
NFO-07201	72 Fibers PVC Black	Tight	26.3	1500	750	570	9000	-
NFO-07202	72 Fibers PVC Black	Semi-Tight	26.3	1500	750	570	9000	-
NFO-07203	72 Fibers LS0H Black	Tight	26.3	1500	750	570	9000	-
NFO-07204	72 Fibers LS0H Black	Semi-Tight	26.3	1500	750	570	9000	-

Notes:

The "FO" in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.

DataLight MTD

Indoor/Outdoor Multi-Tight Distribution Fiber Optic Cables

HES Cabling Systems
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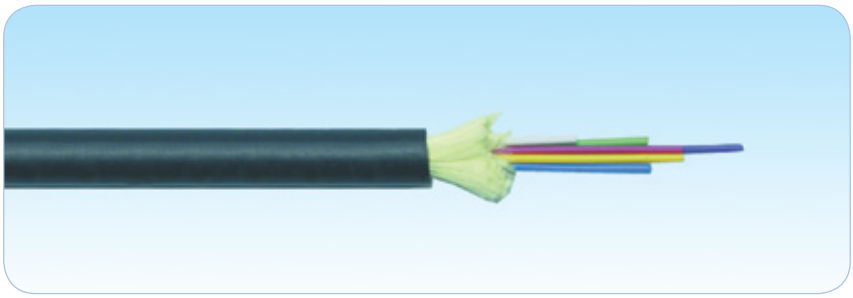

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiber-optic cables for high transmission rates including voice, data and video. All HCS DataLight cables are produced and rigorously tested to conform to most international standards. HCS DataLight Indoor/Outdoor Multi-Tight-Distribution (MTD) cable series provides the ultimate solution for all types of installations and application. These cables consist of up to 288 buffered fibers, cabled, served with water-blocking swellable aramid yarn and jacketed with black, UV resistant LSOH compound. HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards. Optional fibers available are detailed in the Fiber Options section.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose all-dielectric indoor LAN cable
- ☑ Distribution to Riser cabling - direct connectorization
- ☑ In-building backbone and riser, optimized for Centralized Cabling (TIA TSB-72)
- ☑ Short distance distribution and trunking
- ☑ Office wiring

HCS DataLight cables support all presently available LAN & long-haul applications.
Detailed lists of supported applications are fiber-specific hence they are listed in the relevant detailed technical specifications.

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Tight or Semi-tight 900 microns buffered fibers - Providing easy, fast and trouble-free termination and use of field-installable connectors.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Halogen-free, flame retardant, UV and water resistant construction - Providing a single cable suitable for all types of installations.
- ➔ Dry, jell-free longitudinal water blocking - Providing easy and clean cable and fiber termination.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Smooth, limp and flexible jacket - Providing easy and comfortable cable handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Indoor/Outdoor MTD Cables contain up to 288 color-coded, 0.9 mm tight buffered optical fibers.
In 4-12 fiber cables, all fibers are cabled together, served with water-blocking swellable aramid strength yarns and protected with a flame-retardant, UV resistant LS0H Jacket.
24 to 288-fiber cables are made of sub units which are cabled around a central strength member and overall jacketed with LS0H compound for indoor and outdoor use.

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer type	Tight
Buffer material	LS0H
Buffer OD	900 microns nom.
Strength elements	Served swellable aramid yarn, providing longitudinal water blocking.
Number of fibers	4 to 288.
Color Code	Color Table No. 4 (ANSI/TIA-598) or per request.
Outer Jacket	LS0H Halogen free and flame retardant compound for indoor & outdoor use.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Fiber type & count, cable type, Meter mark and Batch Number.
Water penetration test	Applicable to basic units and sub-units only.
Physical properties	Specified in the detailed technical specification
Test methods	IEC 60794-1-2
Installation guidelines	IEC 60794-1-1 Annex A
Flame Test	IEC 60332-1 or IEC 60332-3
Halogen content	Null

ORDERING INFORMATION

HCS P/N	Description	Flame Tests	OD mm	Tensile Strength N, Max.		Weight kg/km	Notes
				Short	Long		
MFO-00401	4 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	4.5	900	300	25	-
MFO-00402	4 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	4.5	900	300	25	-
MFO-00601	6 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	5.5	900	300	34	-
MFO-00602	6 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	5.5	900	300	34	-
MFO-00801	8 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	6.0	900	300	43	-
MFO-00802	8 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	6.0	900	300	43	-
MFO-01201	12 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	6.6	900	300	52	-
MFO-01202	12 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	6.6	900	300	52	-
MFO-02401	24 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	15.4	3560	1200	200	-
MFO-02402	24 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	15.4	3560	1200	200	-
MFO-03601	36 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	18.2	3560	1200	294	-
MFO-03602	36 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	18.2	3560	1200	294	-
MFO-04801	48 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	17.5	5900	2000	261	-
MFO-04802	48 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	17.5	5900	2000	261	-
MFO-07201	72 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	21.3	5900	2000	386	-
MFO-07202	72 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	21.3	5900	2000	386	-
MFO-09601	96 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	25.3	7900	2700	536	-
MFO-09602	96 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	25.3	7900	2700	536	-
MFO-14401	144 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	33.5	9500	3700	910	-
MFO-14402	144 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	33.5	9500	3700	910	-
MFO-28801	288 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-1	33.0	12000	7200	1035	-
MFO-28802	288 Fiber MTD Indoor/Outdoor LS0H Black FO Cable	IEC 60332-3	33.0	12000	7200	1035	-

Notes:

The "FO" in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
Sub-units are identified with printed numbers. Other options available.

DataLight MTD

Armored
Multi-Tight Distribution
Fiber Optic Cables

HES Cabling Systems
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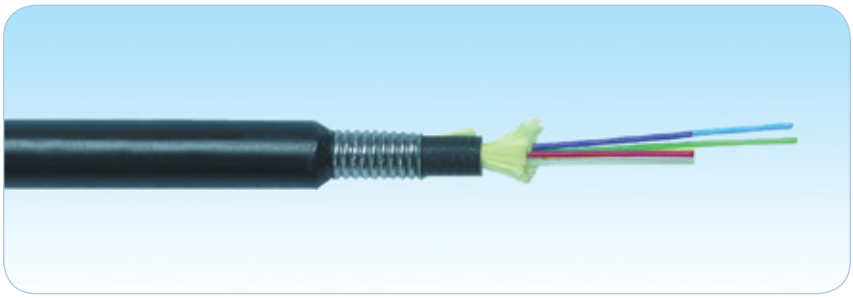

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Armored Multi-Tight-Distribution (MTD) cable series provides outstanding design for outdoor installations in harsh conditions.
These cables consist of 4-72 buffered fibers, cabled, served with water-blocking swellable aramid yarns and inner jacketed with black, UV resistant LS0H compound.
A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Heavy-duty armored indoor/outdoor LAN cable
- ☑ Direct burial campus backbone cable
- ☑ Outdoor plant duct installation cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ Tight or Semi-tight 900 microns buffered fibers - Providing easy, fast and trouble-free termination and use of field-installable connectors.
- ➔ Halogen-free, flame retardant, UV, rodent and water resistant construction - Providing a single cable suitable for most outdoor locations.
- ➔ Dry, jell-free longitudinal water blocking - Providing easy and clean cable and fiber termination.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Corrugated steel armor with a rip-cord - Providing easy and comfortable cable handling and jacket removal.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Armored MTD Cables contain up to 48 color-coded, 0.9 mm tight or semi-tight buffer optical fibers.
In 4-24 fiber cables, all fibers are cabled together, reinforced by water-blocking swellable aramid strength yarns and protected with a flame-retardant, UV resistant LS0H Jacket.
36 and 72-fiber cables are made of 6-fiber sub units. 48 fiber cables are made of 4-fiber sub-units.
A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
A rip-cord is located under the steel armor, for fast and easy armor and jacket removal.
The cables fully comply with the EIA/TIA FOTP 82B longitudinal water-blocking test.

Basic Fiber	As selected from the FIBER OPTIONS Section
Buffer Type	Tight or Semi-tight
Buffer Material	LS0H Halogen free compound
Buffer OD	900 microns nom
Strength Elements	Served swellable aramid yarns, providing longitudinal water blocking
Number of Fibers	4-72
Color Code	HCS Color Table No. 3 (IEC 60304 Color Code)
Inner Jacket	LS0H Halogen free and flame retardant compound
Armor	150 microns rodent resistant corrugated steel tape
Outer Jacket	Heavy duty, UV Resistant PE compound
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Max. Crush Resistance	4000 N
Short Term Bend Radius	20xOD mm min.
Long Term Bend Radius	20xOD mm min.
Storage Temperature	-40 to +70 oC
Temperature Operating Range	-40 to +70 oC
Halogen content	Null

ORDERING INFORMATION

HCS P/N	Description	Buffer	OD mm	Tensile Strength N, Max.		Weight kg/km	Cal. Value kj/m	Notes
				Short	Long			
GFO-00401	4 Fibers Black	Tight	9.1	960	550	90	920	
GFO-00402	4 Fibers Black	Semi-Tight	9.1	960	550	90	920	
GFO-00601	6 Fibers Black	Tight	10.0	960	550	100	1300	
GFO-00602	6 Fibers Black	Semi-Tight	10.0	960	550	100	1300	
GFO-00801	8 Fibers Black	Tight	10.8	1250	750	130	1650	
GFO-00802	8 Fibers Black	Semi-Tight	10.8	1250	750	130	1650	
GFO-01201	12 Fibers Black	Tight	11.6	1250	750	145	2000	
GFO-01202	12 Fibers Black	Semi-Tight	11.6	1250	750	145	2000	
GFO-02401	24 Fibers Black	Tight	14.5	1500	960	270	3700	
GFO-02402	24 Fibers Black	Semi-Tight	14.5	1500	960	270	3700	
GFO-03601	36 Fibers Black	Tight	23.9	1500	960	400	5500	
GFO-03602	36 Fibers Black	Semi-Tight	23.9	1500	960	400	5500	
GFO-04801	48 Fibers Black	Tight	23.1	1500	960	450	6200	
GFO-04802	48 Fibers Black	Semi-Tight	23.1	1500	960	450	6200	
GFO-07201	72 Fibers Black	Tight	30.0	1500	960	720	9900	
GFO-07202	72 Fibers Black	Semi-Tight	30.0	1500	960	720	9900	

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
Outer jacket is available LSOH. This option can be discussed with HCS Customer Service

DataLight SLT

Indoor/Outdoor Single Loose Tube Fiber Optic Cables

HES Cabling Systems
Connecting Networks™

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video. All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Indoor/Outdoor Single Loose Tube (SLT) cable series provides outstanding all-dielectric design for both indoor and outdoor installations in harsh conditions.
These cables consist of 2-24 color-coded bare fibers (250 microns OD), contained in a single jell-filled loose tube, overall served with water-blocking swellable aramid yarns or glass yarn and jacketed with black, UV resistant PE or LS0H compound.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose outdoor LAN cable
- ☑ Campus backbone cable
- ☑ Campus distribution cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV, LS0H and water resistant optional constructions - Providing a single cable suitable for indoor and outdoor locations.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Indoor/Outdoor SLT Cables contain up to 24 color-coded, 250 micron bare optical fibers.
All fibers are contained in a single jell-filled loose tube, overall served with water-blocking swellable aramid yarns and jacketed with black, UV resistant LS0H or PE compound.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 794-1-F5 longitudinal water-blocking tests.

Basic Fiber	As selected from the FIBER OPTIONS Section
Buffer Type	None. (Bare, color-coded fibers)
Fibers OD	250 microns nom
Loose Tube	Single, filled with a Thixotropic gel
Strength Elements Over the Loose Tube	Served swellable aramid or glass yarns, providing longitudinal water blocking
Number of Fibers	2-24
Color Code	HCS Color Table No. 3 (ANSI/TIA/EIA-598-A Color Code)
Outer Jacket	Heavy duty, UV Resistant LS0H or PE compound
Cable OD	7.0 mm nom.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Cable Weight	38 kg/km nom
Max. Tensile Load - Short Term	1000 N
Max. Tensile Load - Long Term	500 N
Min. Bending Radius - Short Term	140 mm
Min. Bending Radius - Long Term	70 mm
Max. Crush Resistance	2000 N
Water Penetration	3m max @ 24h
Storage Temperature	-40 to +70 oC
Temperature Operating Range	-40 to +70 oC
Caloric Value	800 kj/m nom.
Halogen Content	Null

ORDERING INFORMATION

HCS P/N	Description	Notes
SFO-00201	2 Fibers All Dielectric LS0H Indoor/Outdoor SLT Black	
SFO-00202	2 Fibers All Dielectric Indoor/Outdoor SLT Black	
SFO-00401	4 Fibers All Dielectric LS0H Indoor/Outdoor SLT Black	
SFO-00402	4 Fibers All Dielectric Indoor/Outdoor SLT Black	
SFO-00601	6 Fibers All Dielectric LS0H Indoor/Outdoor SLT Black	
SFO-00602	6 Fibers All Dielectric Indoor/Outdoor SLT Black	
SFO-00801	8 Fibers All Dielectric LS0H Indoor/Outdoor SLT Black	
SFO-00802	8 Fibers All Dielectric Indoor/Outdoor SLT Black	
SFO-01001	10 Fibers All Dielectric LS0H Indoor/Outdoor SLT Black	
SFO-01002	10 Fibers All Dielectric Indoor/Outdoor SLT Black	
SFO-01201	12 Fibers All Dielectric LS0H Indoor/Outdoor SLT Black	
SFO-01202	12 Fibers All Dielectric Indoor/Outdoor SLT Black	
SFO-02401	24 Fibers All Dielectric LS0H Indoor/Outdoor SLT Black	
SFO-02402	24 Fibers All Dielectric Indoor/Outdoor SLT Black	

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.

DataLight SLT

Non-Metallic Armored Outdoor Single Loose Tube FiberOptic Cables

HES Cabling Systems
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Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video. All HCS DataLight cables are produced and rigorously tested to conform to most international standards. HCS DataLight Outdoor Single Loose Tube (SLT) cable series provides outstanding all-dielectric design for outdoor installations in harsh conditions. These cables consist of 2-12 color-coded bare fibers (250 microns OD), contained in a single jell-filled loose tube, overall served with water-blocking swellable aramid yarns or glass yarn, a thick layer of glass yarn for rodent resistance and jacketed with black, UV resistant PE compound. HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose outdoor LAN cable
- ☑ Campus backbone cable
- ☑ Campus distribution cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA-568-C.3
- ☑ IEC 60332-1 (for LS0H constructions)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV, rodent and water resistant constructions - Providing a single cable suitable for many outdoor locations.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Outdoor SLT Cables contain up to 12 color-coded, 250 micron bare optical fibers.
All fibers are contained in a single jell-filled loose tube, overall served with water-blocking swellable aramid yarns and a thick layer of glass yarn armor for rodent protection, jacketed with black, UV resistant PE compound.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 60794-1-F5 longitudinal water-blocking tests.

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer Type	None. (Bare, color-coded fibers).
Fibers OD	250 microns nom.
Loose Tube	Single, filled with a Thixotropic gel.
Water Blocking Element Over the Loose Tube	Served swellable glass or aramid yarns, providing longitudinal water blocking.
Armor	Glass yarn.
Number of Fibers	2-12.
Color Code	HCS Color Table No. 3 (ANSI/TIA/EIA-598-A Color Code)
Outer Jacket	Heavy duty, UV Resistant PE compound.
Cable OD	7.3 mm max.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable Weight	58 kg/km nom.
Max. Tensile Load - Short Term	1900 N
Max. Tensile Load - Long Term	1000 N
Min. Bending Radius - Short Term	146 mm max
Min. Bending Radius - Long Term	73 mm max.
Max. Crush Resistance	2000 N
Water Penetration	3m max @ 24h
Storage Temperature	-40 to +70C
Temperature Operating Range	-40 to +70C
Caloric Value	800 kj/m nom.
Halogen Content	Null

ORDERING INFORMATION

HCS P/N	Description	Notes
SFO-00221	2 Fibers All Dielectric Rodent Resistant Outdoor SLT Black	
SFO-00421	4 Fibers All Dielectric Rodent Resistant Outdoor SLT Black	
SFO-00621	6 Fibers All Dielectric Rodent Resistant Outdoor SLT Black	
SFO-00821	8 Fibers All Dielectric Rodent Resistant Outdoor SLT Black	
SFO-01221	12 Fibers All Dielectric Rodent Resistant Outdoor SLT Black	
SFO-00222	2 Fibers All Dielectric Rodent Resistant Outdoor LS0H SLT Black	
SFO-00422	4 Fibers All Dielectric Rodent Resistant Outdoor LS0H SLT Black	
SFO-00622	6 Fibers All Dielectric Rodent Resistant Outdoor LS0H SLT Black	
SFO-00822	8 Fibers All Dielectric Rodent Resistant Outdoor LS0H SLT Black	
SFO-01222	12 Fibers All Dielectric Rodent Resistant Outdoor LS0H SLT Black	

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
LSOH outer jacket is available upon request.

DataLight SLT

Armored
Single Loose Tube SJ
Fiber Optic Cables

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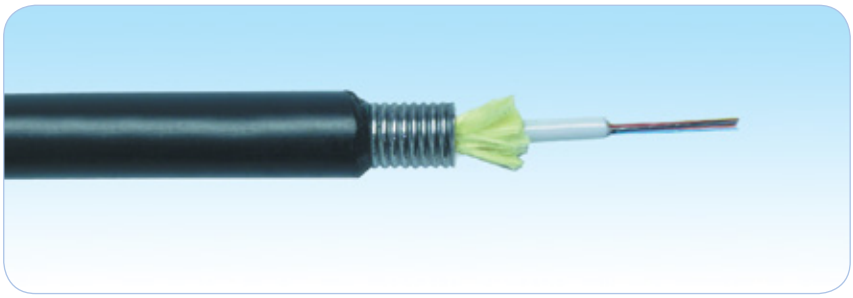

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video. All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Armored Single Loose Tube Single-Jacket (SLT-SJ) cable series provides outstanding design for outdoor installations in harsh conditions. These cables consist of 2-12 color-coded bare fibers (250 microns OD), contained in a single jell-filled loose tube and served with water-blocking swellable aramid yarns or glass yarn. A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose armored outdoor LAN cable
- ☑ Direct burial campus backbone distribution cable
- ☑ Outdoor plant duct installation cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ IEC 60332-1 (For LS0H constructions)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV, rodent and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Corrugated steel armor with a rip-cord - Providing easy and comfortable cable handling and jacket removal.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Armored SLT Cables contain up to 12 color-coded, 250 micron bare optical fibers.
All fibers are contained in a single jell-filled loose tube and overall served with water-blocking swellable aramid yarns or glass-yarn. A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
A rip-cord is located under the steel armor, for fast and easy armor and jacket removal.
Cables fully comply with the EIA/TIA FOTP 82B and IEC 794-1-F5 longitudinal water-blocking tests (with swellable aramid yarn).

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer Type	None. (Bare, color-coded fibers).
Fibers OD	250 microns nom.
Loose Tube	Single, 2.0/3.2 mm ID/OD nom. filled with a Thixotropic gel.
Strength Elements Over the Loose Tube	Served swellable aramid yarns, providing longitudinal water blocking, or served glass yarn.
Number of Fibers	2-12.
Color Code	HCS Color Table No. 3 (ANSI/TIA/EIA-598-A Color Code)
Inner Jacket	None.
Armor	150 microns rodent resistant corrugated steel tape.
Outer Jacket	Heavy duty, UV Resistant PE compound.
Jacket Thickness	1.5±0.1 mm
Rip Cord	Aramid yarn.
Cable OD	9.5±0.1 mm
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable Weight	90 kg/km nom.
Operation Temperature Range	-40 to +70C
Installation Temperature Range	-15 to +60C
Storage and Transportation Temperature Range	-20 to +70C
Caloric Value	1800 kj/m nom.

ORDERING INFORMATION

HCS P/N	Description	Notes
EFO-00203	2 Fibers Corrugated Steel Armored Outdoor, SLT-SJ, Black	-
EFO-00403	4 Fibers Corrugated Steel Armored Outdoor, SLT-SJ, Black	-
EFO-00603	6 Fibers Corrugated Steel Armored Outdoor, SLT-SJ, Black	-
EFO-00803	8 Fibers Corrugated Steel Armored Outdoor, SLT-SJ, Black	-
EFO-01003	10 Fibers Corrugated Steel Armored Outdoor, SLT-SJ, Black	-
EFO-01203	12 Fibers Corrugated Steel Armored Outdoor, SLT-SJ, Black	-

Notes:

The "FO" in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
LS0H outer jacket is available upon request.

DataLight SLT

Armored
Single Loose Tube
Fiber Optic Cables

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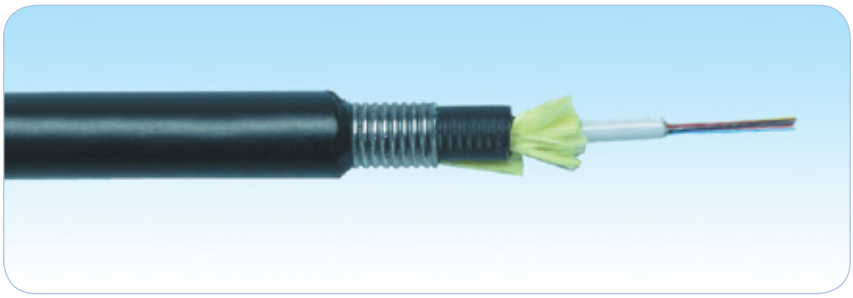

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Armored Single Loose Tube (SLT) cable series provides outstanding design for outdoor installations in harsh conditions.
These cables consist of 2-12 color-coded bare fibers (250 microns OD), contained in a single jell-filled loose tube, overall served with water-blocking swellable aramid yarns or glass yarn and inner jacketed with black, UV resistant PE compound.
A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ General purpose armored outdoor LAN cable
- ☑ Direct burial campus backbone distribution cable
- ☑ Outdoor plant duct installation cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1 (For LS0H constructions)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV, rodent and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Corrugated steel armor with a rip-cord - Providing easy and comfortable cable handling and jacket removal.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Armored SLT Cables contain up to 12 color-coded, 250 micron bare optical fibers.
All fibers are contained in a single jell-filled loose tube, overall served with water-blocking swellable aramid yarns or glass-yarn and inner jacketed with black, UV resistant PE compound.
A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
A rip-cord is located under the steel armor, for fast and easy armor and jacket removal.
Cables fully comply with the EIA/TIA FOTP 82B and IEC 794-1-F5 longitudinal water-blocking tests (with swellable aramid yarn).

Basic Fiber	As selected from the FIBER OPTIONS Section
Buffer Type	None. (Bare, color-coded fibers)
Fibers OD	250 microns nom
Loose Tube	Single, filled with a Thixotropic gel
Strength Elements Over the Loose Tube	Served swellable aramid yarns, providing longitudinal water blocking, or served glass yarn
Number of Fibers	2-12
Color Code	HCS Color Table No. 3 (ANSI/TIA/EIA-598-A Color Code)
Inner Jacket	Heavy duty, UV Resistant PE compound
Armor	150 microns rodent resistant corrugated steel tape
Outer Jacket	Heavy duty, UV Resistant PE compound
Cable OD	11.2 mm nom (Without messenger)
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Cable Weight	130 kg/km
Max. Tensile Strength - Short Term	1500 N
Max. Tensile Strength - Long Term	700 N
Min. Bending Radius - Short Term	224 mm
Min. Bending Radius - Long Term	224 mm
Max. Crush Resistance	3000 N
Storage Temperature	-40 to +70 oC
Temperature Operating Range	-40 to +70 oC
Caloric Value	2000 kj/m nom.

ORDERING INFORMATION

HCS P/N	Description	Notes
EFO-00201	2 Fibers Corrugated Steel Armored Outdoor, SLT, Black	-
EFO-00401	4 Fibers Corrugated Steel Armored Outdoor, SLT, Black	-
EFO-00601	6 Fibers Corrugated Steel Armored Outdoor, SLT, Black	-
EFO-00801	8 Fibers Corrugated Steel Armored Outdoor, SLT, Black	-
EFO-01001	10 Fibers Corrugated Steel Armored Outdoor, SLT, Black	-
EFO-01201	12 Fibers Corrugated Steel Armored Outdoor, SLT, Black	-

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
LS0H outer jacket is available upon request.

DataLight SLT

Aerial SLT Fig-8 Armored Fiber Optic Cables

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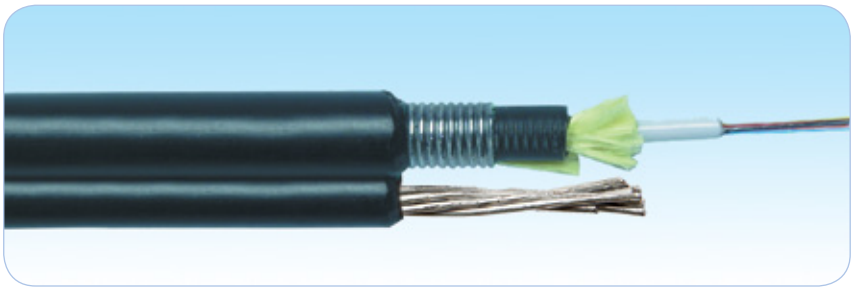

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Aerial Fig-8 Single Loose Tube (SLT) cable series provides outstanding design for aerial outdoor installations between poles.
These cables consist of 2-12 color-coded bare fibers (250 microns OD), contained in a single jell-filled loose tube, overall served with water-blocking swellable glass yarn. A layer of corrugated steel armor & 7x0.92 steel messenger wire covered with a black, UV resistant PE outer jacket render the cable suitable for aerial installations between poles.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Aerial long haul outside plant telephone, CATV and data-transmission cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ Steel messenger wire - robust cable design for aerial installations.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

CABLES OPTIONAL CONSTRUCTIONS

HCS DataLight Outdoor SLT Cables contain up to 12 color-coded, 250 micron bare optical fibers.
2-12 color-coded bare fibers are contained in each jell-filled loose tube.
These cables consist of 2-12 color-coded bare fibers (250 microns OD), contained in a single jell-filled loose tube, overall served with water-blocking swellable glass yarn. A layer of corrugated steel armor & 7x0.92 mm. steel messenger wire covered with a black, UV resistant PE outer jacket render the cable suitable for aerial installations between poles.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 60794-1-F5 longitudinal water-blocking tests

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer Type	None. (Bare, color-coded fibers).
Fibers OD	250 microns nom.
Loose Tube	Single, filled with a Thixotropic gel.
Strength Element Over the Loose Tube	Served swellable aramid yarns, providing longitudinal water blocking, or served glass yarn.
Number of Fibers	2-12.
Color Code Inside Each Tube	Color Table No. 4: ANSI/TIA/EIA-598-A Color Code)
Armor	150 microns rodent resistant corrugated steel tape.
Messenger Wire	7x0.92 mm steel wires.
Outer Jacket	Heavy-duty, UV resistant PE compound.
Web	Height: 2.5 ± 0.5 mm Width: 2.5 ± 0.5 mm
Cable OD	17+9 mm.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Max. Tensile Strength - Short Term	2500N
Max. Tensile Strength - Long Term	1500N
Min. Bending Radius - Short Term	20xCable OD
Min. Bending Radius - Long Term	15xCable OD
Repeated Bending	100 Cycles min.
Crush Resistance	3000 N
Storage Temperature	-50 to +70C
Temperature Operating Range	-40 to +70C

ORDERING INFORMATION

HCS P/N	Description	Tubes	Fibers/Tube	OD mm	Weight kg/km	Notes
XFO-00441	4 Fibers Aerial Fig-8 SLT armored Outdoor Black	1	4	17+9	146	-
XFO-00641	6 Fibers Aerial Fig-8 SLT armored Outdoor Black	1	6	17+9	146	-
XFO-00841	8 Fibers Aerial Fig-8 SLT armored Outdoor Black	1	8	17+9	146	-
XFO-01241	12 Fibers Aerial Fig-8 SLT armored Outdoor Black	1	12	17+9	146	-

Notes:

The "FO" in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
LSOH outer jacket is available upon request.

DataLight MLT

Indoor/Outdoor Dielectric Multi-Loose Tube Fiber Optic Cables

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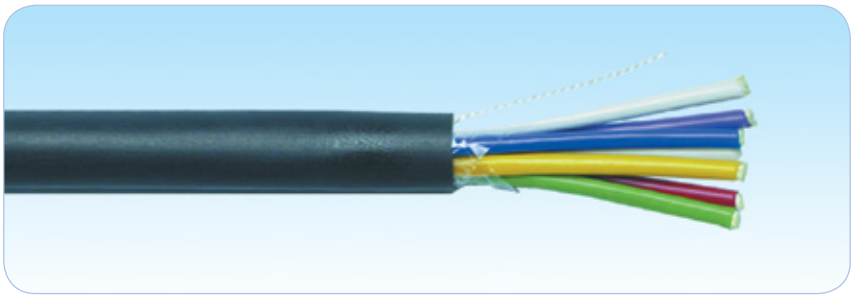

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Indoor/Outdoor Multi-Loose Tube (MLT) cable series provides outstanding all-dielectric design for indoor and outdoor installations in harsh conditions.
These cables consist of 4-288 color-coded bare fibers (250 microns) in up to 24 jell-filled loose tubes.
The loose tubes are cabled concentrically around an all dielectric central strength member and jacketed with black, UV resistant PE compound.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Long haul outside plant telephone, CATV and data-transmission cable
- ☑ Direct burial and duct installation cable
- ☑ Campus distribution cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1 (for LS0H constructions)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Outdoor MLT Cables contain up to 288 color-coded, 250 micron bare optical fibers.
4-12 color-coded bare fibers are contained in each jell-filled loose tube.
All loose tubes are cabled (with fillers as needed to preserve the cable geometry) around a solid, all dielectric central strength member and the interstices are filled with water-blocking gel.
The cable core is tape-wrapped and jacketed with black, UV resistant PE compound.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 60794-1-F5 longitudinal water-blocking tests.

Basic Fiber	As selected from the FIBER OPTIONS Section
Buffer Type	None. (Bare, color-coded fibers)
Fibers OD	250 microns nom
Loose Tubes	1-24, filled with a Thixotropic gel
Central Strength Member	Rigid, all-dielectric FRP
Number of Fibers	4-288
Color Code Inside Each Tube	Color Table No. 4: ANSI/TIA/EIA-598-A Color Code)
Color Code of Loose Tubes	Per request
Core Filling	Water blocking compound
Core Wrap	Polyester tape, providing 100% coverage
Outer Jacket	Heavy duty, UV Resistant PE compound
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Max. Vertical Rise	150 m
Max. Tensile Strength - Short Term	2500 N
Max. Tensile Strength - Long Term	1500 N
Min. Bending Radius - Short Term	20xD
Min. Bending Radius - Long Term	10xD
Repeated Bending	100 Cycles min
Crush Resistance	2200 N
Storage Temperature	-50 to +70 oC
Temperature Operating Range	-40 to +70 oC

ORDERING INFORMATION

HCS P/N	Description	Tubes	Fiber/Tube	OD mm	Weight kg/km	Caloric Value kj/m	Notes
QFO-00401	4 Fibers All Dielectric Indoor/Outdoor MLT Black	1	4	12	140	3000	-
QFO-00601	6 Fibers All Dielectric Indoor/Outdoor MLT Black	2	3	12	140	3000	-
QFO-00801	8 Fibers All Dielectric Indoor/Outdoor MLT Black	3	4	12	140	3000	-
QFO-01201	12 Fibers All Dielectric Indoor/Outdoor MLT Black	4	4	12	140	3000	-
QFO-01601	16 Fibers All Dielectric Indoor/Outdoor MLT Black	4	4	12	140	3000	-
QFO-02001	20 Fibers All Dielectric Indoor/Outdoor MLT Black	5	4	12	140	3000	-
QFO-02401	24 Fibers All Dielectric Indoor/Outdoor MLT Black	6	4	12	140	3000	-
QFO-03601	36 Fibers All Dielectric Indoor/Outdoor MLT Black	6	6	12	140	3000	-
QFO-04801	48 Fibers All Dielectric Indoor/Outdoor MLT Black	6	8	12	140	3000	-
QFO-06001	60 Fibers All Dielectric Indoor/Outdoor MLT Black	5	12	12	140	3000	-
QFO-07201	72 Fibers All Dielectric Indoor/Outdoor MLT Black	6	12	13	150	3200	-
QFO-09601	96 Fibers All Dielectric Indoor/Outdoor MLT Black	8	12	15	190	4000	-
QFO-12001	120 Fibers All Dielectric Indoor/Outdoor MLT Black	10	12	17	240	5000	-
QFO-14401	144 Fibers All Dielectric Indoor/Outdoor MLT Black	12	12	19	290	6000	-

Notes:

The "FO" in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
Outer jacket is available LS0H. This option can be discussed with HCS Customer Service.

DataLight MLT

Indoor/Outdoor Dielectric Dry-Core Multi-Loose Tube Fiber Optic Cables

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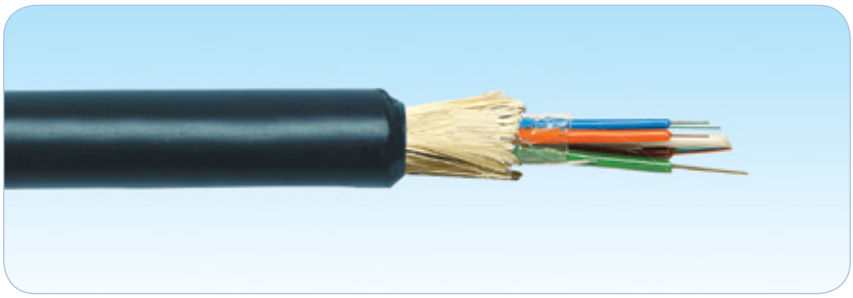

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video. All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Indoor/Outdoor Multi-Loose Tube (MLT) cable series provides outstanding all-dielectric design for indoor and outdoor installations in harsh conditions.These cables consist of 4-288 color-coded bare fibers (250 microns) in up to 24 jell-filled loose tubes.
The loose tubes are cabled concentrically around an all dielectric central strength member, water swellable yarns placed between tubes and tubes are wrapped with swellable tape and jacketed with black, UV resistant LS0H compound.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Long haul outside plant telephone, CATV and data-transmission cable
- ☑ Direct burial and duct installation cable
- ☑ Campus distribution cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) &IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

CABLES OPTIONAL CONSTRUCTIONS

HCS DataLight Outdoor MLT Cables contain up to 288 color-coded, 250 micron bare optical fibers.
4-12 color-coded bare fibers are contained in each jell-filled loose tube.
All loose tubes are cabled (with fillers as needed to preserve the cable geometry) around a solid, all dielectric central strength member and the water blocking yarns are placed between tubes.
The cable core is water blocking tape-wrapped and jacketed with black, UV resistant LS0H compound.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 60794-1-F5 longitudinal water-blocking tests.

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer Type	None. (Bare, color-coded fibers).
Fibers OD	250 microns nom.
Loose Tubes	1-24, filled with a Thixotropic gel.
Central Strength Member	Rigid, all-dielectric FRP.
Number of Fibers	4-288.
Color Code Inside Each Tube	Color Table No. 4: ANSI/TIA/EIA-598-A Color Code)
Color Code of Loose Tubes	Per request.
Core Filling	Dry, water blocking yarns.
Core Wrap	Water blocking tape, providing 100% coverage.
Outer Jacket	LS0H compound.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Max. Tensile Strength - Short Term	2500 N.
Max. Tensile Strength - Long Term	1300 N.
Min. Bending Radius - Short Term	20xCable OD
Min. Bending Radius - Long Term	10xCable OD
Repeated Bending	100 Cycles min.
Crush Resistance	2200 N
Storage Temperature	-50 to +70C
Temperature Operating Range	-40 to +70C

ORDERING INFORMATION

HCS P/N	Description	Tube	Fiber/Tube	OD mm	Weight kg/km	Notes
QFO-00411	4 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	1	4	11	115	
QFO-00611	6 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	3	2	11	115	
QFO-00811	8 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	2	4	11	115	
QFO-01211	12 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	3	4	11	115	
QFO-02411	24 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	6	4	11	118	
QFO-04811	48 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	4	12	11.6	130	
QFO-07211	72 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	6	12	11.6	132	
QFO-09611	96 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	8	12	13.5	160	
QFO-14411	144 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	12	12	17	255	
QFO-28811	288 Fibers All Dielectric Dry Core Indoor/Outdoor MLT Black	9+15	12	19.6	330	

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
Outer jacket is available LS0H. This option can be discussed with HCS Customer Service.

DataLight MLT

Outdoor Non-Metallic Armored Multi-Loose Tube Fiber Optic Cables

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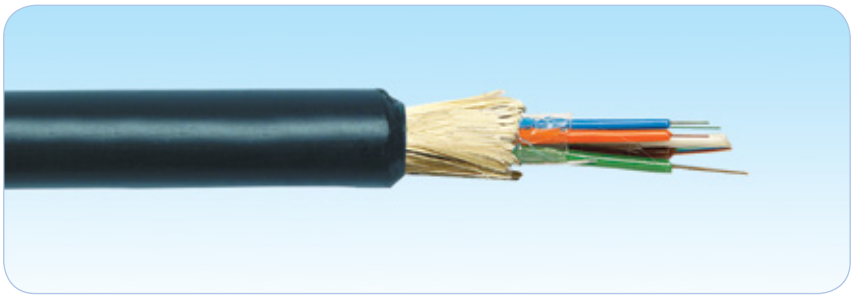

Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video. All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Indoor/Outdoor Multi-Loose Tube (MLT) cable series provides outstanding all-dielectric design for indoor and outdoor installations in harsh conditions. These cables consist of 4-288 color-coded bare fibers (250 microns) in up to 24 jell-filled loose tubes.
The loose tubes are cabled concentrically around an all dielectric central strength member, armored with a thick layer of glass yarn for rodent protection and jacketed with black, UV resistant PE compound.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Long haul outside plant telephone, CATV and data-transmission cable
- ☑ Direct burial and duct installation cable
- ☑ Campus distribution cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA-568-C.3
- ☑ IEC 60332-1 (for LS0H constructions)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV, rodent and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ All-dielectric construction - Providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

CABLES OPTIONAL CONSTRUCTIONS

HCS DataLight Outdoor MLT Cables contain up to 288 color-coded, 250 micron bare optical fibers.
4-12 color-coded bare fibers are contained in each jell-filled loose tube.
All loose tubes are cabled (with fillers as needed to preserve the cable geometry) around a solid, all dielectric central strength member and the interstices are filled with water-blocking gel.
The cable core is glass yarn armored and jacketed with black, UV resistant PE compound.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 60794-1-F5 longitudinal water-blocking tests.

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer Type	None. (Bare, color-coded fibers).
Fibers OD	250 microns nom.
Loose Tubes	1-24, filled with a Thixotropic gel.
Central Strength Member	Rigid, all-dielectric FRP.
Number of Fibers	4-288.
Color Code Inside Each Tube	Color Table No. 4: ANSI/TIA/EIA-598-A Color Code)
Color Code of Loose Tubes	Per request.
Core Filling	Water blocking compound.
Armor	Glass yarn.
Outer Jacket	Heavy duty, UV Resistant PE compound.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Max. Vertical Rise	150 m.
Max. Tensile Strength - Short Term	2700 N.
Max. Tensile Strength - Long Term	1700 N.
Min. Bending Radius - Short Term	20xD
Min. Bending Radius - Long Term	10xD
Repeated Bending	100 Cycles min.
Crush Resistance	3000 N
Storage Temperature	-50 to +70C
Temperature Operating Range	-40 to +70C

ORDERING INFORMATION

HCS P/N	Description	Tubes	Fiber/Tube	OD mm	Weight kg/km	Notes
QFO-00421	4 Fibers Non-Metallic Armored Outdoor MLT Black	1	4	12	110	
QFO-00821	8 Fibers Non-Metallic Armored Outdoor MLT Black	2	4	12	110	
QFO-01221	12 Fibers Non-Metallic Armored Outdoor MLT Black	3	4	12	112	
QFO-02421	24 Fibers Non-Metallic Armored Outdoor MLT Black	6	4	12	114	
QFO-03621	36 Fibers Non-Metallic Armored Outdoor MLT Black	6	6	13	133	
QFO-04821	48 Fibers Non-Metallic Armored Outdoor MLT Black	6	8	13	135	
QFO-07221	72 Fibers Non-Metallic Armored Outdoor MLT Black	6	12	13.5	150	
QFO-09621	96 Fibers Non-Metallic Armored Outdoor MLT Black	8	12	15.3	185	
QFO-14421	144 Fibers Non-Metallic Armored Outdoor MLT Black	12	12	18.8	270	
QFO-28821	288 Fibers Non-Metallic Armored Outdoor MLT Black	9+15	12	18.8	290	

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
LS0H outer jacket is available upon request.

DataLight MLT

Aerial Non-Metallic ADSS (All-Dielectric Self Supporting) Fiber Optic Cables

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Description

HCS DataLight series includes a complete line of Local Area Network (LAN) fiberoptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Aerial ADSS Multi-Loose Tube (MLT) cable series provides outstanding all-dielectric design for aerial outdoor installations between poles.
These cables consist of 4-144 color-coded bare fibers (250 microns) in up to 12 jell-filled loose tubes.
The loose tubes are cabled concentrically around an all dielectric central strength member, and jacketed with black, UV resistant PE compound.
A layer of aramid yarn placed on between inner jacket and outer jacket. Cabe covered with a black, UV resistant PE outer jacket render the cable uitable for aerial applications between poles.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Long haul outside plant telephone, CATV and data-transmission cable
- ☑ Direct burial and duct installation cable
- ☑ Campus distribution cable

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - providing a unique Century™ Lifetime Warranty.
- ➔ UV and water resistant construction - providing a single cable suitable for many outdoor locations.
- ➔ All-dielectric construction - providing perfect EMC (Electro Magnetic Compatibility) and total noise immunity.
- ➔ Aramid yarn served construction - robust and solid cable for non-mettallic aerial applications.
- ➔ Crisp and clear color coding - providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - providing easy stock and left-over handling.
- ➔ Batch number printed every meter - providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program providing lowest rejection rate available.

CABLES OPTIONAL CONSTRUCTIONS

HCS DataLight Outdoor MLT Cables contain up to 144 color-coded, 250 micron bare optical fibers.
4-12 color-coded bare fibers are contained in each jell-filled loose tube.
All loose tubes are cabled (with fillers as needed to preserve the cable geometry) around a solid, all dielectric central strength member and the water blocking compound placed between tubes.
The cable core is tape wrapped and jacketed with black, UV resistant PE compound. A layer of aramid yarn placed on between inner jacket and outer jacket.
Cabe covered with a black, UV resistant PE outer jacket render the cable suitable for aerial applications between poles.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 60794-1-F5 longitudinal water-blocking tests.

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer Type	None. (Bare, color-coded fibers).
Fibers OD	250 microns nom.
Loose Tubes	1-12, filled with a Thixotropic gel.
Central Strength Member	Rigid, all-dielectric FRP.
Number of Fibers	4-144.
Color Code Inside Each Tube	Color Table No. 4: ANSI/TIA/EIA-598-A Color Code)
Color Code of Loose Tubes	Per request.
Core Filling	Water blocking jelly compund.
Core Wrap	Polyester tape, providing 100% coverage.
Inner Jacket	Heavy-duty, UV resistant PE compound.
Strength Element	Aramid yarn.
Outer Jacket	Heavy-duty, UV resistant PE compound.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Max. Vertical Rise	150 m.
Min. Bending Radius - Short Term	20xD
Min. Bending Radius - Long Term	10xD
Repeated Bending	100 Cycles min.
Crush Resistance	2200 N
Storage Temperature	-50 to +70C
Temperature Operating Range	-40 to +70C

ORDERING INFORMATION

HCS P/N	Description	Tubes	Fibers/Tube	OD mm	Tensile Strength (KN)		Weight kg/km	Span (m)
					Inst.	Oper.		
QFO-01261	12 Fibers ADSS MLT Black	3	4	14.2	7	4.5	156	100
QFO-02461	24 Fibers ADSS MLT Black	6	4	14.2	7	4.5	158	100
QFO-04861	48 Fibers ADSS MLT Black	6	8	14.2	7.5	4.6	162	100
QFO-07261	72 Fibers ADSS MLT Black	6	12	14.8	8	4.8	178	100
QFO-09661	96 Fibers ADSS MLT Black	8	12	16.6	9	5	232	100
QFO-14461	144 Fibers ADSS MLT Black	12	12	20.1	11	6.5	352	100
QFO-01241	12 Fibers ADSS MLT Black	3	4	14.6	15	10	174	300
QFO-02441	24 Fibers ADSS MLT Black	6	4	14.6	15	10	178	300
QFO-04841	48 Fibers ADSS MLT Black	6	8	14.6	17	11	185	300
QFO-07241	72 Fibers ADSS MLT Black	6	12	15.2	18.5	11.5	205	300
QFO-09641	96 Fibers ADSS MLT Black	8	12	17.2	20	14	263	300
QFO-14441	144 Fibers ADSS MLT Black	12	12	20.7	25	18	392	300

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color is Black RAL 9005. Other colors available upon request.
Outer jacket is available LS0H. This option can be discussed with HCS Customer Service.

DataLight MLT

Armored
Multi-Loose Tube SJ
Fiber Optic Cables

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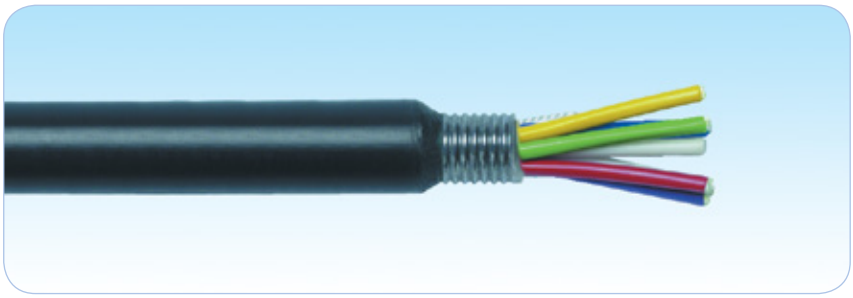

Description

HCS DataLight series includes a complete line of fiber optic cables for high transmission rates including voice, data and video. All HCS DataLight cables are produced and rigorously tested to conform to most international standards. HCS DataLight Armored Multi-Loose Tube (MLT) Single Jacket (SJ) cable series provides outstanding armored design for outdoor installations in harsh conditions. These cables consist of 4-288 color-coded bare fibers (250 microns) in up to 24 jell-filled loose tubes. The loose tubes are cabled concentrically around an all dielectric central strength member, gel-filled and served with glass yarn as strength elements. A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas. HCS DataLight cables fully conform to and provide a substantial margin above all relevant standard.
Optional fibers available are detailed in the Fiber Options section.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Long haul outside plant telephone, CATV and data-transmission cable
- ☑ Direct burial and duct installation cable
- ☑ Campus distribution cable
- ☑ Outdoor installations in rodent-infested areas.

HCS DataLight cables support all presently available LAN & long-haul applications.
Detailed lists of supported applications are fiber-specific hence they are listed in the relevant detailed technical specifications.

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ IEC 60332-1 (for LS0H constructions)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV, rodent and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ Corrugated steel armor with a rip-cord - Providing easy and comfortable cable handling and jacket removal.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

CABLES OPTIONAL CONSTRUCTIONS

HCS DataLight Outdoor MLT Cables contain up to 288 color-coded optical fibers.
The number of loose tubes and the number of fibers per tube is specified below.
All loose tubes are cabled (with fillers as needed to preserve the cable geometry) around a solid, all dielectric central strength member and the interstices are filled with water-blocking gel.
The cable core is armored with 150µ bonded corrugated steel tape (CSA) and jacketed with black, UV resistant PE compound for outdoor use.

Basic Fiber	As selected from the FIBER OPTIONS Section.
Buffer type	None. (Bare, color-coded fibers).
Fibers OD	250µ nom.
Loose tubes	PBT (Polybutylene Terephthalate) filled with Thixotropic jelly.
Central strength member	Rigid, all-dielectric FRP.
Number of fibers	4-288.
Color Code inside each tube	Color Table No. 4 (ANSI/TIA-598) or per request.
Color Code of loose tubes	Color Table No. 4 (ANSI/TIA-598) or per request.
Core filling	Water blocking compound.
Strength elements	Glass yarn.
Outer Jacket	Heavy duty, UV Resistant PE compound.
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Fiber type & count, cable type, Meter mark and Batch Number.
Physical properties	Specified in the detailed technical specification
Test methods	IEC 60794-1-2
Installation guidelines	IEC 60794-1-1 Annex A

ORDERING INFORMATION

HCS P/N	Description	Tubes	Fibers Per Tube	OD mm	Weight kg/km	Notes
UFO-00441	4 Fibers MLT CSA SJ Outdoor Black FO Cable	1	4	12.9	165	
UFO-00641	6 Fibers MLT CSA SJ Outdoor Black FO Cable	1	6	12.9	165	
UFO-01241	12 Fibers MLT CSA SJ Outdoor Black FO Cable	1	12	13.3	174	
UFO-02441	24 Fibers MLT CSA SJ Outdoor Black FO Cable	2	12	13.3	175	
UFO-03641	36 Fibers MLT CSA SJ Outdoor Black FO Cable	3	12	13.3	176	
UFO-04841	48 Fibers MLT CSA SJ Outdoor Black FO Cable	4	12	13.3	177	
UFO-07241	72 Fibers MLT CSA SJ Outdoor Black FO Cable	6	12	13.3	180	
UFO-09641	96 Fibers MLT CSA SJ Outdoor Black FO Cable	8	12	14.9	220	
UFO-14441	144 Fibers MLT CSA SJ Outdoor Black FO Cable	12	12	17.8	300	
UFO-28841	288 Fibers MLT CSA SJ Outdoor Black FO Cable	24	12	20.1	385	

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color of HCS standard cables is Black RAL 9005. Other colors available upon request.
Outer jacket is available LS0H. This option can be discussed with HCS Customer Service.

DataLight MLT

Armored Multi-Loose Tube Fiber Optic Cables

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Description

HCS DataLight series includes a complete line of Local Area Network (LAN) FiberOptic cables for high transmission rates including voice, data and video.
All HCS DataLight cables are produced and rigorously tested to conform to most international standards.
HCS DataLight Armored Multi-Loose Tube (MLT) cable series provides outstanding armored design for outdoor installations in harsh conditions.
These cables consist of 4-288 color-coded bare fibers (250 microns) in up to 24 jell-filled loose tubes.
The loose tubes are cabled concentrically around an all dielectric central strength member and jacketed with black, UV resistant PE compound.
A layer of corrugated steel armor covered with a black, UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
HCS DataLight cables fully conform to and provide a substantial margin above all relevant TIA/EIA and IEC standards.
Optional constructions, jacketed with Orange RAL 2008 color are available with full conformance & official verification to Turkish Telecom TRFO 10 spec.
Optional fibers available: Multimode 50/125 microns (OM2, OM3 & OM4), 62.5/125 microns and Singlemode fibers.

Applications

HCS DataLight cables can be used for various application including the following:

- ☑ Long haul outside plant telephone, CATV and data-transmission cable
- ☑ Direct burial and duct installation cable
- ☑ Campus distribution cable
- ☑ Outdoor installations in rodent-infested areas.

HCS DataLight cables support all presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS DataLight Cables are tested and verified for full compliance with the following standards:

- ☑ ANSI/TIA/568-C.3
- ☑ ISO/IEC 11801 (2nd Edition)
- ☑ CENELEC EN50173
- ☑ EIA/TIA-455
- ☑ IEC 60332-1 (for LS0H constructions)
- ☑ IEC 60754
- ☑ IEC 60793
- ☑ IEC 60794

Benefits & Features

- ➔ Exceptional material properties and cable design - Providing a unique Century™ Lifetime Warranty.
- ➔ UV, rodent and water resistant construction - Providing a single cable suitable for many outdoor locations.
- ➔ Corrugated steel armor with a rip-cord - Providing easy and comfortable cable handling and jacket removal.
- ➔ Crisp and clear color coding - Providing positive fiber identification and ease of termination.
- ➔ Descending sequential meter mark - Providing easy stock and left-over handling.
- ➔ Batch number printed every meter - Providing fast retrieval of test results from data-base.
- ➔ A comprehensive product range - Providing all state-of-the-art cable constructions.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

OPTIONAL CONSTRUCTIONS

HCS DataLight Armored MLT Cables contain up to 288 color-coded, 250 micron bare optical fibers.
4-12 color-coded bare fibers are contained in each jell-filled loose tube.
All loose tubes are cabled (with fillers as needed to preserve the cable geometry) around a solid, all dielectric central strength member and the interstices are filled with water-blocking gel.
The cable core is tape-wrapped and inner jacketed with black UV resistant PE compound.
A layer of corrugated steel armor covered with a black or orange UV resistant PE outer jacket render the cable suitable for harsh environments and rodent-infested areas.
The cables fully comply with the EIA/TIA FOTP 82B and IEC 60794-1-F5 longitudinal water-blocking tests.
Optional constructions are available with full conformance & official verification to Turkish Telecon TRFO 10 spec.

Item	HCS Standard Cables	Cables conforming to TT TRFO 10
Basic Fiber	As selected from the FIBER OPTIONS Section	As selected from the FIBER OPTIONS Section
Buffer Type	None. (Bare, color-coded fibers)	None. (Bare, color-coded fibers)
Fibers OD	250 microns nom	250 microns nom
Loose Tubes	1-24, filled with a Thixotropic gel	1-24, filled with a Thixotropic gel
Central Strength Member	Rigid, all-dielectric FRP	Rigid, all-dielectric FRP
Number of Fibers	4-288	4-288
Color Code Inside Each Tube	Color Table No. 4: ANSI/TIA/EIA-598-A Color Code	Color Table No. 5: Turk Telecom TRFO-10 Color Code
Color Code of Loose Tubes	Per request	Color Table No. 5: Turk Telecom TRFO-10 Color Code
Core Filling	Water blocking compound	Water blocking compound
Core Wrap	Polyester tape, providing 100% coverage	None
Inner Jacket	Heavy duty, UV Resistant PE compound	Heavy duty, UV Resistant PE compound
Armor	150 microns rodent resistant corrugated steel tape	150 microns rodent resistant corrugated steel tape
Rip Cord	Laid under the armor	Laid under the armor
Outer Jacket	Heavy duty, UV Resistant PE compound	Heavy duty, UV Resistant PE compound
Standard Outer Jacket Color	Black RAL 9005. Other colors available upon request	Orange RAL 2008
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number	Includes HCS P/N, Cable Description, Meter Mark and Batch Number
Max. Vertical Rise	150 m	150 m
Max. Tensile Strength - Short Term	Up to 72-fiber cables :2700 N. Over 72-fiber cables: 5000 N	Up to 48-fiber cables :8000 N. Over 48-fiber cables: 14000 N
Max. Tensile Strength - Long Term	1700 N	Up to 48-fiber cables :5000 N. Over 48-fiber cables: 8000 N
Min. Bending Radius - Short Term	20xD	20xD
Min. Bending Radius - Long Term	20xD	20xD
Repeated Bending	25 Cycles min.	10 Cycles min.
Crush Resistance	5000 N.	2000 N.
Storage Temperature	-50 to +70C	-50 to +70C
Temperature Operating Range	-40 to +70C	-40 to +70C

ORDERING INFORMATION

HCS P/N	Description	Tubes	Fiber/Tube	OD mm	Weight kg/km	Caloric Value kj/m	Notes
UFO-00401	4 Fibers Armored Outdoor MLT Black	1	4	15	210	3500	NA
UFO-00421	4 Fibers Armored Outdoor TRFO 10 MLT Orange	2	2	16	220	3500	4FO-Y
UFO-00621	6 Fibers Armored Outdoor TRFO 10 MLT Orange	3	2	16	220	3500	6FO-Y
UFO-00801	8 Fibers Armored Outdoor MLT Black	2	4	15	210	3500	NA
UFO-01221	12 Fibers Armored Outdoor TRFO 10 MLT Orange	6	2	16	225	3500	12FO-Y
UFO-02401	24 Fibers Armored Outdoor MLT Black	6	4	15	210	3500	NA
UFO-02421	24 Fibers Armored Outdoor TRFO 10 MLT Orange	6	4	16	225	3500	24FO-Y
UFO-03621	36 Fibers Armored Outdoor TRFO 10 MLT Orange	6	6	17	270	3500	36FO-Y
UFO-04821	48 Fibers Armored Outdoor TRFO 10 MLT Orange	6	8	17	270	3500	48FO-Y
UFO-06001	60 Fibers Armored Outdoor MLT Black	5	12	15	210	3500	NA
UFO-06021	60 Fibers Armored Outdoor TRFO 10 MLT Orange	5	12	18	295	3500	60FO-Y
UFO-07201	72 Fibers Armored Outdoor MLT Black	6	12	16	260	3700	NA
UFO-09601	96 Fibers Armored Outdoor MLT Black	8	12	18	320	4600	NA
UFO-09621	96 Fibers Armored Outdoor TRFO 10 MLT Orange	8	12	20	350	4600	96FO-Y
UFO-12001	120 Fibers Armored Outdoor MLT Black	10	12	20	390	5700	NA
UFO-14401	144 Fibers Armored Outdoor MLT Black	12	12	22	450	7000	NA
UFO-14421	144 Fibers Armored Outdoor TRFO 10 MLT Orange	12	12	24	480	7000	144FO-Y
UFO-19221	192 Fibers Armored Outdoor TRFO 10 MLT Orange	16	12	24	480	7000	192FO-Y

Notes:

The "FO" in the P/N is replaced by the fiber designation selected from the **FIBER OPTIONS** Table.
Packaging options to be discussed with HCS Customer Service.
The standard jacket color of HCS standard cables is Black RAL 9005. Other colors available upon request.
P/Ns UFO-xxx21 are officially verified according to Turkish Telecom Spec TRFO 10, jacket color Orange.
Outer jacket is available LSOH. This option can be discussed with HCS Customer Service.

DataLight Fiber Options

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Fiber P/N	Fiber Type	Multimode Fiber Grade & Standard	Attenuation (dB/Km)				Min. Bandwidth (MHz•Km)				Numerical Aperture
			850nm		1300nm		850nm		1300nm		
			Nom	Max	Nom	Max	OFL[3]	EMB[4]	OFL[3]	EMB[4]	
52	50/125µm Graded Index Multimode Optical Fiber	**Standard Grade** OM2 - ISO/IEC 11801 EIA/TIA 492 AAAB A1a.1 - IEC 60793-2-10 TIA-568-C.3	2.8	3.0	0.8	1.0	500	NS	500	NS	0.200±0.02
54		**10G Grade** OM3 - ISO/IEC 11801 EIA/TIA 492AAAC-A A1a.2 - IEC 60793-2-10 TIA-568-C.3	2.8	3.0	0.8	1.0	1500	2000	500	500	0.200±0.02
55		**10G Grade NEW** **Bend Insensitive** OM3 - ISO/IEC 11801 EIA/TIA-492 AAAC-A A1a.2 - IEC 60793-2-10 TIA-568-C.3	2.8	3.0	0.8	1.0	1500	2000	500	500	0.200±0.02
56		**10G Grade** OM4 - EIA/TIA 492AAAD OM4 - ISO/IEC 11801 A1a.3 - IEC 60793-2-10	2.3	2.5	0.6	0.8	3500	4700	500	500	0.200±0.015
57		**10G Grade NEW** **Bend Insensitive** OM4 - EIA/TIA-492 AAAD OM4 - ISO/IEC 11801 A1a.3 - IEC 60793-2-10	2.3	2.5	0.6	0.8	3500	4700	500	500	0.200±0.015
61	62.5/125µm Graded Index Multimode Optical Fiber	**Standard Grade** OM1 - ISO/IEC 11801 EIA/TIA-492 AAAA TIA-568-C.3	3.0	3.5	0.7	1.0	200	NS	600	NS	0.275±0.015

Fiber P/N	Fiber Type	Singlemode Fiber Grade & Standard	1310nm		1383nm		1550nm		MFD
			Nom	Max	Nom	Max	Nom	Max	
91	9.3/125µm Single Mode Optical Fiber	**Standard Grade** OS1 - ISO/IEC 11801 TIA-568-C.3 Inside Plant	0.4	1.0	NS	NS	0.4	1.0	9.3±0.5 µm@1310nm
92		**Premium Grade** OS2 - ISO/IEC 11801 TIA-568-C.3 Outside Plant	0.33	0.40	0.30	0.4	0.22	0.4	9.3±0.5 µm@1310nm
93		**ITU-T G.652**	0.33	0.35	NS	NS	0.20	0.22	9.2±0.5 µm@1310nm
94		**ITU-T G.652.D** no water peak	0.33	0.35	0.31	0.35	0.20	0.22	9.2±0.5 µm@1310nm
95		**ITU-T G.655** Non-zero dispersion shifted	0.33	0.35	NS	NS	0.20	0.22	9.6±0.5 µm@1550nm
96		**ITU-T G.656** No water peak non-zero dispersion shifted	0.33	0.35	0.35	0.40	0.20	0.22	9.6±0.5 µm@1550nm
A1		ITU-T G.657.A1 Bend-insensitive Category A1 MBR: 10mm	0.33	0.40	0.35	0.40	0.20	0.30	8.6-9.5±0.4 µm@1310nm
A2		ITU-T G.657.A2 Bend-insensitive Category A2 MBR: 7.5mm	0.33	0.40	0.35	0.40	0.20	0.30	8.6-9.5±0.4 µm@1310nm
B2		ITU-T G.657.B2 Bend-insensitive Category B2 MBR: 7.5mm	0.40	0.50	0.4 max. @1625nm		0.20	0.30	6.3-9.5±0.4 µm@1310nm
B3		ITU-T G.657.B3 Bend-insensitive Category B3 MBR:5.0mm	0.40	0.50	0.4 max. @1625nm		0.20	0.30	6.3-9.5±0.4 µm@1310nm

Notes:

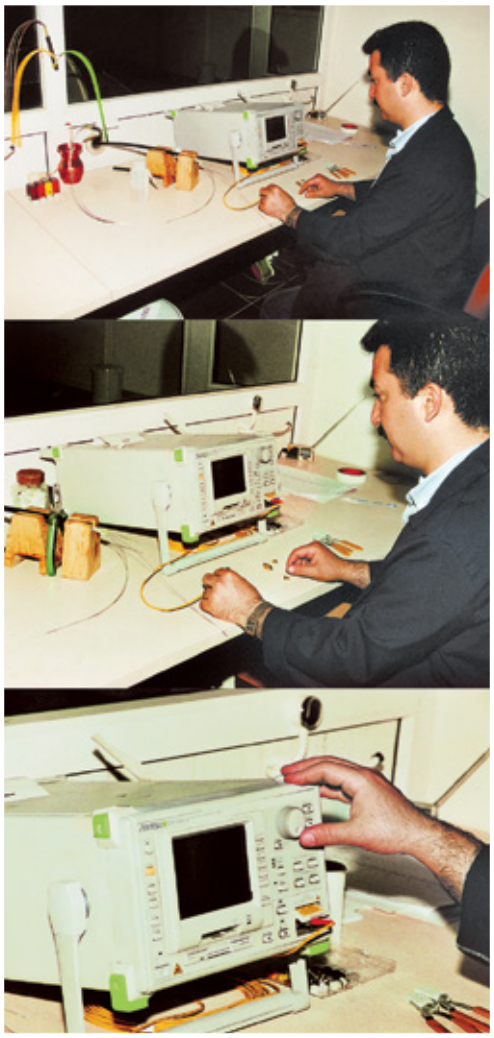
The Fiber two-digit P/N should replace the "FO" letters in the selected HCS P/N
All transmission values are for cabled fibers
OFL => Overfilled Bandwidth per TIA/EIA 455-204 & IEC 60793-1-41 for legacy and LED based systems, typically up to 100Mbps.
EMB=> Effective Modal Bandwidth per TIA/EIA 455-220A and IEC 60793-1-49 for laser based systems up to 10Gbps.

OPTICAL AND GEOMETRICAL FIBER PROPERTIES

Tested Property	Test Method	ITU-T Test Methods	EIA/TIA-455 FOTP No.	IEC 60793-1 Test Methods
Fiber Geometry	Transmitted Near Field	SM: G.650 Method 2.2.1 MM: G.651 Sec. 1 Method B.3	MM: 58	A2
Spectral Attenuation	Cut-Back	SM: G.650 Method 2.4.1 MM: G.651 Sec 2,1 Method B.2	SM: 78 MM: 46	C1A
Attenuation and Attenuation Uniformity at Specified wavelengths	Backscattering (OTDR)	SM: G.650 Method 2.4.2 MM: G.651 Sec 2 Method B.4	61 59	C1C
Numerical Aperture	Far-Field Light Distribution	MM: G.651 Sec. 1 Method B.4	47	C6
Cutoff Wavelength	Transmitted Power	SM: G.650 Method 2.3.1, 2.3.3	80, 170.	C7A
Mode Field Diameter	Variable Aperture	SM: G.650 Method 2.1.2	167	
Bandwidth	Frequency Domain	MM: G.651 Sec 3 Method B.2	30	C2B
Chromatic Dispersion	Phase Shift	SM: G.650 Method 2.5.1	169	C5A

MECHANICAL AND ENVIRONMENTAL FO CABLE PROPERTIES

Tested Property	EIA/TIA-455 FOTP Number	IEC 60794-1 Test Methods	CENELEC EN 18700 Test Methods
Operating and Pulling Load	33	E1	501
Minimum Bending Radius	33	E1	501
Crush Resistance (Compression)	41	E3	504
Repeated Bending	104	E6	509



DataLight

Fiber Optic & Copper Modular 19” Patch Panels

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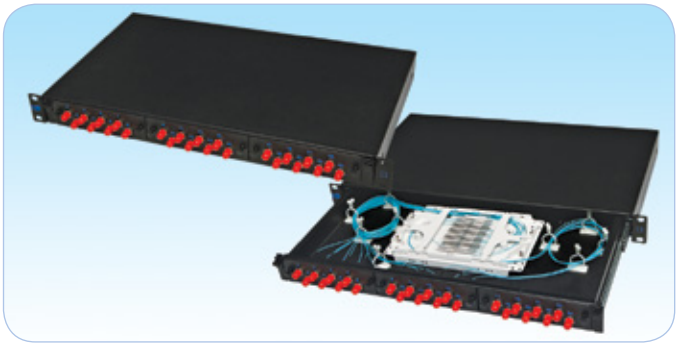
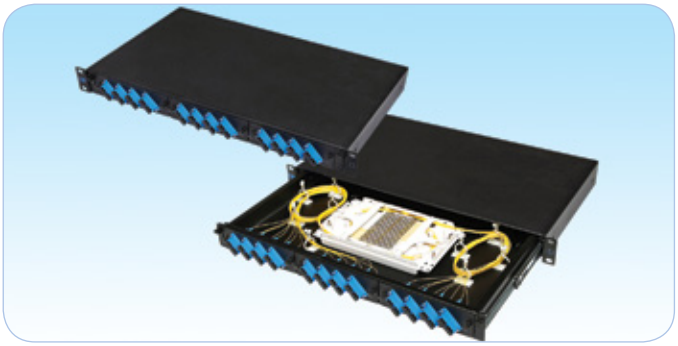




Description

HCS DataLight Modular Patch Panel series provides a full range of modular fiber optic & copper hybrid patch panels and fiber optic distribution points.
HCS DataLight Modular Patch Panels have 3 positions for the different modular front units. The 19” rack-mount panels are equipped with telescobic side rails, providing easy and fast access inside panel.
HCS DataLight panels basic construction provides highest flexibility and lowest stock, by enabling the use of an all-option organizer, and selecting different connector interfaces by replacing the modules in the front section of panel. Optional connector interfaces include ST simplex, SC duplex, LC duplex, MT-RJ and RJ-45 (CAT 3 to CAT 6A), enabling hybrid cabling.
HCS 19” FO panels are available with a large variety of pre-terminated MPO multi-fiber ribbon-cables, specially designed for Data-Centers.
HCS DataLight patch panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
The HCS Logo and the DataLight Trademark ensure long lasting high-performance and full support of all present and emerging applications

Applications

- ☑ Fiberoptic & copper backbone termination in data closets
- ☑ FiberOptic & copper distribution
- ☑ FiberOptic & copper horizontal termination
- ☑ Fiber to desk applications
- ☑ Central Office equipment
- ☑ Data-Centers

Qualifications and Approvals

HCS DataLight panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to the following standards:

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Interchangeable modular design for both fiber & copper connectors - Providing ultimate flexibility.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories (supplied free of charge), including clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- ➔ High density 1U 48 port design - Providing a compact panel and economical space use.
- ➔ One basic unit fits all types of connectors - Providing high flexibility, low cost and easy to handle stock.
- ➔ Easy access into the panel via side telescobic rais - Providing easy and comfortable cable management.
- ➔ Most panels are expandable up to 48 ports - Providing a fast and low-cost method to double the panel’s capacity.
- ➔ All panels available with optional direct splice termination or FastLight™ termination - Providing a larger product range and flexibility.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs.
- ➔ Modular and expandable comprehensive product range - Providing up to 48 ports in a single panel.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

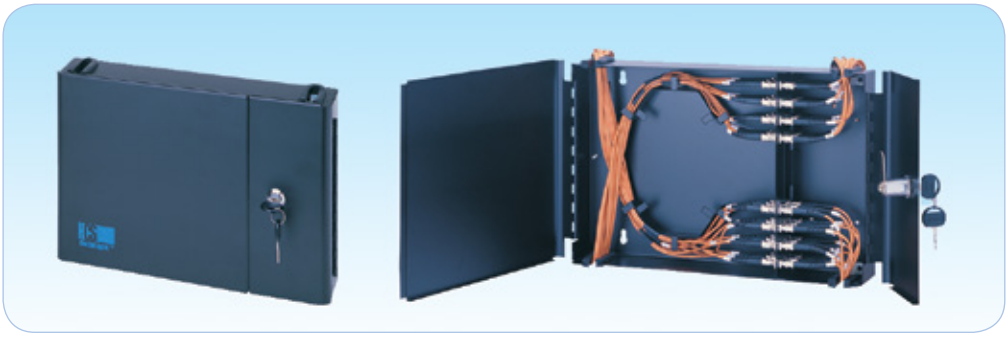
GENERAL PROPERTIES

Material of Construction	Steel, Aluminum, Aluminum Alloy or Anodized Aluminum.
Paint and Color	Powder paint finish, Black (Gray available upon request)
Connector Capacity	12-48 ports
Pre-terminated Panel Back Connection	12-fiber ribbon cable terminated with MPO connector
Splice tray Capacity	2-4
Modular Front Plates	3
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.
Storage Temperature	-20 to +80C
Non Halogen Constructions	Available upon request.

ORDERING INFORMATION

HCS P/N	Description	Connectors	Ports	Units	Size mm	Notes
PFO-10001-1U	DataLight Fiberoptic Blank Modular Panel, 19"	N/A	N/A	1u	44.4x480x265	
PFO-10001-2U	DataLight Fiberoptic Blank Modular Panel, 19"	N/A	N/A	2u	88.8x480x265	
PFO-A0001-1U	DataLight Fiberoptic Blank Angled Modular Panel, 19"	N/A	N/A	1u	44.4x480x265	
PFO-A0001-2U	DataLight Fiberoptic Blank Angled Modular Panel, 19"	N/A	N/A	2u	88.8x480x265	
PFO-10002-1U	Blank module	N/A	N/A	1u	38.0x135	
PFO-10811-1U	8 x ST Simplex adapter Module	ST Simplex	8	1u	38.0x135	
PFO-10422-1U	4 x SC Duplex adapter Module	SC Duplex	4	1u	38.0x135	
PFO-10622-1U	6 x SC Dupleks adapter Module	SC Duplex	6	1u	38.0x135	
PFO-10813-1U	8 x FC Simpleks adapter Module	FC Simplex	8	1u	38.0x135	
PFO-10424-1U	4 x MT-RJ Duplex adapter Module	MT-RJ Duplex	4	1u	38.0x135	
PFO-10824-1U	8 x MT-RJ Duplex adapter Module	MT-RJ Duplex	8	1u	38.0x135	
PFO-10425-1U	4 x LC Duplex adapter Module	LC Duplex	4	1u	38.0x135	
PFO-10625-1U	6 x LC Dupleks adapter Module	LC Duplex	6	1u	38.0x135	
PFO-10825-1U	8 x LC Duplex adapter Module	LC Duplex	8	1u	38.0x135	
PMC-10401-1U	4 x RJ-45 Module	RJ-45	4	1u	38.0x135	
PFO-12411-1U	24 x ST Simplex adapter Module Kit for 1U patch panel	ST Simplex	24	1u	N/A	
PFO-11222-1U	12 x SC Duplex adapter Module Kit for 1U patch panel	SC Duplex	12	1u	N/A	
PFO-11822-1U	18 x SC Duplex adapter Module Kit for 1U patch panel	SC Duplex	18	1u	N/A	
PFO-12422-2U	24 x SC Duplex adapter Module Kit for 2U patch panel	SC Duplex	24	2u	N/A	Black
PFO-12413-1U	24 x FC Simplex adapter Module Kit for 1U patch panel	FC Simplex	24	1u	N/A	
PFO-11224-1U	12 x MT-RJ Duplex adapter Module Kit for 1U patch panel	MT-RJ Duplex	12	1u	N/A	
PFO-12424-1U	24 x MT-RJ Duplex adapter Module Kit for 1U patch panel	MT-RJ Duplex	24	1u	N/A	
PFO-11225-1U	12 x LC Duplex adapter Module Kit for 1U patch panel	LC Duplex	12	1u	N/A	
PFO-11825-1U	18 x LC Duplex adapter Module Kit for 1U patch panel	LC Duplex	18	1u	N/A	
PFO-12425-1U	24 x LC Duplex adapter Module Kit for 1U patch panel	LC Duplex	24	1u	N/A	
PFO-14825-2U	48 x LC Duplex adapter Module Kit for 2U patch panel	LC Duplex	48	2u	N/A	
PFO-A2411-1U	24 x ST Simplex adapter Module Kit for 1U patch panel	ST Simplex	24	1u	N/A	For Angled Panel
PFO-A1222-1U	12 x SC Duplex adapter Module Kit for 1U patch panel	SC Duplex	12	1u	N/A	For Angled Panel
PFO-A1822-1U	18 x SC Duplex adapter Module Kit for 1U patch panel	SC Duplex	18	1u	N/A	For Angled Panel
PFO-A2413-1U	24 x FC Simplex adapter Module Kit for 1U patch panel	FC Simplex	24	1u	N/A	For Angled Panel
PFO-A1224-1U	12 x MT-RJ Duplex adapter Module Kit for 1U patch panel	MT-RJ Duplex	12	1u	N/A	For Angled Panel
PFO-A2424-1U	24 x MT-RJ Duplex adapter Module Kit for 1U patch panel	MT-RJ Duplex	24	1u	N/A	For Angled Panel
PFO-A1225-1U	12 x LC Duplex adapter Module Kit for 1U patch panel	LC Duplex	12	1u	N/A	For Angled Panel
PFO-A1825-1U	18 x LC Duplex adapter Module Kit for 1U patch panel	LC Duplex	18	1u	N/A	For Angled Panel
PFO-A2425-1U	24 x LC Duplex adapter Module Kit for 1U patch panel	LC Duplex	24	1u	N/A	For Angled Panel
PFO-A4825-2U	48 x LC Duplex adapter Module Kit for 2U patch panel	LC Duplex	48	2u	N/A	For Angled Panel
KFO-00011	DataLight 19" Panel Termination Kit	N/A	N/A	N/A	N/A	
KFO-00021	DataLight 19" Panel Termination & Splice Kit, 12 Fibers	N/A	N/A	N/A	N/A	
KFO-00022	DataLight 19" Panel Termination & Splice Kit, 24 Fibers	N/A	N/A	N/A	N/A	

Fiber Optic Wall Mount Patch Panels



Description

HCS DataLight Wall Mount Patch FiberOptic Panel series provides an established and economic solution for fiber optic cable termination and distribution point ranging from 4 to 96 ports.
Selected panels are designed with two separate zones: Splice zone and Jumper zone - ensuring minimum disturbance to the sensitive splices.
Optional connector interfaces include ST, LC, SC, SC duplex, FC or MT-RJ and also hybrid solutions, with different types of connectors in a single unit.
The DataLight Wall Mount patch panels are upgradeable, allowing to add connector panels at a later stage.
The HCS DataLight Wall Mount patch panels have an ergonomic, easy to use design, combined with strong construction and full environmental protection and they are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
The HCS Logo and the DataLight Trademark ensure long lasting high-performance and full support of all present and emerging applications.

Applications

- ☑ Fiber Optic backbone termination
- ☑ Fiber Optic distribution point
- ☑ Fiber Optic horizontal and vertical termination
- ☑ Fiber cross-connections

Qualifications and Approvals

HCS DataLight panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to the following standards:

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ High density up to 96 port design - Providing a compact panel and economical space use.
- ➔ Dust-proof doors in selected models - Providing clean and trouble-free connections.
- ➔ One basic unit fits all types of connectors - Providing high flexibility, low cost and easy to handle stock.
- ➔ Easy access by double door construction - Providing maximum protection to the splices.
- ➔ Locking mechanism available upon request - Providing high security and system protection.
- ➔ All panels available with optional direct splice termination or FastLight™ termination - Providing a larger product range and flexibility.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Stand-alone unit, with no need of cabinets - Providing low cost and compact solution.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Modular and expandable comprehensive product range - Providing up to 96 ports.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material of Construction	Epoxy coated aluminum housing.
Color and Paint	Black, optional powder paint finish.
Port Capacity Range	4-96 ports
Coupler per Panel Capacity	4, 6 or 8.
Splice per Tray Capacity	6, 8, 12 or 24.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.
Storage Temperature	-20 to +80C
Non Halogen Constructions	Available upon request

ORDERING INFORMATION

HCS P/N	Description	Panel Port Cap.	Connector Type	No. of Splice Tray	Splices per tray	No of Splice Protections	Weight Kg
PFO-50411	DataLight Wall-Mount Panel, Black, Dust-Proof	4	FC Square Flange	1	12	4	1.0
PFO-50412	DataLight Wall-Mount Panel, Black, Dust-Proof	4	FC D-Mount	1	12	4	1.0
PFO-50421	DataLight Wall-Mount Panel, Black, Dust-Proof	4	SC Simplex	1	12	4	1.0
PFO-50422	DataLight Wall-Mount Panel, Black, Dust-Proof	4	SC Duplex	1	12	4	1.0
PFO-50431	DataLight Wall-Mount Panel, Black, Dust-Proof	4	ST Simplex	1	12	4	1.0
PFO-50451	DataLight Wall-Mount Panel, Black, Dust-Proof	4	LC Duplex	1	12	4	1.0
PFO-50442	DataLight Wall-Mount Panel, Black, Dust-Proof	4	MT-RJ Duplex	1	12	4	1.0
PFO-50611	DataLight Wall-Mount Panel, black, Camlock	6	FC Square Flange	1	12	6	0.9
PFO-50612	DataLight Wall-Mount Panel, black, Camlock	6	FC D-Mount	1	12	6	0.9
PFO-50621	DataLight Wall-Mount Panel, black, Camlock	6	SC Simplex	1	12	6	0.9
PFO-50622	DataLight Wall-Mount Panel, black, Camlock	6	SC Duplex	1	12	6	0.9
PFO-50631	DataLight Wall-Mount Panel, black, Camlock	6	ST Simplex	1	12	6	0.9
PFO-50651	DataLight Wall-Mount Panel, black, Camlock	6	LC Duplex	1	12	6	0.9
PFO-50642	DataLight Wall-Mount Panel, black, Camlock	6	MT-RJ Duplex	1	12	6	0.9
PFO-51211	DataLight Wall-Mount Panel, black, Dual, Camlock	12	FC Square Flange	1	12	12	1.5
PFO-51212	DataLight Wall-Mount Panel, black, Dual, Camlock	12	FC D-Mount	1	12	12	1.5
PFO-51221	DataLight Wall-Mount Panel, black, Dual, Camlock	12	SC Simplex	1	12	12	1.5
PFO-51222	DataLight Wall-Mount Panel, black, Dual, Camlock	12	SC Duplex	1	12	12	1.5
PFO-51231	DataLight Wall-Mount Panel, black, Dual, Camlock	12	ST Simplex	1	12	12	1.5
PFO-51251	DataLight Wall-Mount Panel, black, Dual, Camlock	12	LC Duplex	1	12	12	1.5
PFO-51242	DataLight Wall-Mount Panel, black, Dual, Camlock	12	MT-RJ Duplex	1	12	12	1.5
PFO-51611	DataLight Wall-Mount Panel, black, Dual, Camlock	16	FC Square Flange	2	12	16	1.8
PFO-51612	DataLight Wall-Mount Panel, black, Dual, Camlock	16	FC D-Mount	2	12	16	1.8
PFO-51621	DataLight Wall-Mount Panel, black, Dual, Camlock	16	SC Simplex	2	12	16	1.8
PFO-51622	DataLight Wall-Mount Panel, black, Dual, Camlock	16	SC Duplex	2	12	16	1.8
PFO-51631	DataLight Wall-Mount Panel, black, Dual, Camlock	16	ST Simplex	2	12	16	1.8
PFO-51651	DataLight Wall-Mount Panel, black, Dual, Camlock	16	LC Duplex	2	12	16	1.8
PFO-51642	DataLight Wall-Mount Panel, black, Dual, Camlock	16	MT-RJ Duplex	2	12	16	1.8
PFO-52411	DataLight Wall-Mount Panel, black, Dual, Camlock	24	FC Square Flange	2	12	24	2.2
PFO-52412	DataLight Wall-Mount Panel, black, Dual, Camlock	24	FC D-Mount	2	12	24	2.2
PFO-52421	DataLight Wall-Mount Panel, black, Dual, Camlock	24	SC Simplex	2	12	24	2.2
PFO-52422	DataLight Wall-Mount Panel, black, Dual, Camlock	24	SC Duplex	2	12	24	2.2
PFO-52431	DataLight Wall-Mount Panel, black, Dual, Camlock	24	ST Simplex	2	12	24	2.2
PFO-52451	DataLight Wall-Mount Panel, black, Dual, Camlock	24	LC Duplex	2	12	24	2.2
PFO-52442	DataLight Wall-Mount Panel, black, Dual, Camlock	24	MT-RJ Duplex	2	12	24	2.2
PFO-53611	DataLight Wall-Mount Panel, black, Dual, Camlock	36	FC Square Flange	3	12	36	3.0
PFO-53612	DataLight Wall-Mount Panel, black, Dual, Camlock	36	FC D-Mount	3	12	36	3.0
PFO-53621	DataLight Wall-Mount Panel, black, Dual, Camlock	36	SC Simplex	3	12	36	3.0
PFO-53622	DataLight Wall-Mount Panel, black, Dual, Camlock	36	SC Duplex	3	12	36	3.0
PFO-53631	DataLight Wall-Mount Panel, black, Dual, Camlock	36	ST Simplex	3	12	36	3.0
PFO-53651	DataLight Wall-Mount Panel, black, Dual, Camlock	36	LC Duplex	3	12	36	3.0
PFO-53642	DataLight Wall-Mount Panel, black, Dual, Camlock	36	MT-RJ Duplex	3	12	36	3.0
PFO-54811	DataLight Wall-Mount Panel, black, Dual, Camlock	48	FC Square Flange	4	12	48	5.5
PFO-54812	DataLight Wall-Mount Panel, black, Dual, Camlock	48	FC D-Mount	4	12	48	5.5
PFO-54821	DataLight Wall-Mount Panel, black, Dual, Camlock	48	SC Simplex	4	12	48	5.5
PFO-54822	DataLight Wall-Mount Panel, black, Dual, Camlock	48	SC Duplex	4	12	48	5.5
PFO-54831	DataLight Wall-Mount Panel, black, Dual, Camlock	48	ST Simplex	4	12	48	5.5
PFO-54851	DataLight Wall-Mount Panel, black, Dual, Camlock	48	LC Duplex	4	12	48	5.5
PFO-54842	DataLight Wall-Mount Panel, black, Dual, Camlock	48	MT-RJ Duplex	4	12	48	5.5
PFO-59611	DataLight Wall-Mount Panel, black, Dual, Camlock	96	FC Square Flange	8	12	96	7.2
PFO-59612	DataLight Wall-Mount Panel, black, Dual, Camlock	96	FC D-Mount	8	12	96	7.2
PFO-59621	DataLight Wall-Mount Panel, black, Dual, Camlock	96	SC Simplex	8	12	96	7.2
PFO-59622	DataLight Wall-Mount Panel, black, Dual, Camlock	96	SC Duplex	8	12	96	7.2
PFO-59631	DataLight Wall-Mount Panel, black, Dual, Camlock	96	ST Simplex	8	12	96	7.2
PFO-59651	DataLight Wall-Mount Panel, black, Dual, Camlock	96	LC Duplex	8	12	96	7.2
PFO-59642	DataLight Wall-Mount Panel, black, Dual, Camlock	96	MT-RJ Duplex	8	12	96	7.2

DataLight Fiber Optic Distribution Box

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Description

HCS DataLight FiberOptic Distribution Box series provides an established and economic solution for fiber optic cable termination and distribution point ranging from 12 to 96 ports, including both round and flat ribbon constructions..
Optional connector interfaces include ST, LC, SC, SC duplex, FC or MT-RJ and also hybrid solutions, with different types of connectors in a single unit.
The splicing trays are designed with two separate zones: Splice zone and Jumper zone - ensuring minimum disturbance to the sensitive splices.
HCS DataLight FiberOptic Distribution Box have an ergonomic, easy to use design, combined with strong construction and full environmental protection and they are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
The HCS Logo and the DataLight Trademark ensure long lasting high-performance and full support of all present and emerging applications.

Applications

- ☑ Fiber Optic backbone termination
- ☑ Fiber Optic distribution point
- ☑ Fiber Optic horizontal and vertical termination
- ☑ Fiber cross-connections

Qualifications and Approvals

HCS DataLight FiberOptic Distribution Box are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to the following standards:

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a stainless and robust construction.
- ➔ High density up to 96 port design - Providing a compact and economical space use.
- ➔ Dust-proof doors in all models - Providing clean and trouble-free connections.
- ➔ One basic unit fits all types of connectors - Providing high flexibility, low cost and easy to handle stock.
- ➔ Easy access by pivoting tray unit - Providing fast and efficient splicing & termination.
- ➔ Locking mechanism available upon request - Providing high security and system protection.
- ➔ All panels available with optional direct splice termination or FastLight™ termination - Providing a larger product range and flexibility.
  Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Stand-alone unit, with no need of cabinets - Providing low cost and compact solution.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Modular and expandable comprehensive product range - Providing up to 96 ports.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material of Construction	Nickel-filled , zinc-plated steel.
Color and Paint	Gray electro-static spray.
Port Capacity Range	12-96 ports
Storage Conditions	-25 to +55C at 0-85% RH (Non condensing)
Operational Conditions	-5 to +40C at 0-85% RH (Non condensing)
Operational Atmospheric Pressure Range	70-106 Kpa.
Packaging	One unit per box.
Insulation Resistance of all plastic parts	1GOhm min. @ 500Vdc
Dielectric Strength Between Frame & Ground	3KVdc min @ 5 min.
Adapters Insertion Life Cycle	1000 insertions min.

ORDERING INFORMATION

HCS P/N	Description	Port Capacity	Dimensions			Weight Kg
			Lenght	Width	Depth	
PFO-60112	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	Up to 12 fibers	460	380	95	9.5
PFO-60148	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	Up to 48 fibers	460	380	132	10
PFO-60172	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	Up to 72 fibers	460	380	177	11
PFO-60196	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	Up to 96 fibers	460	380	230	13

High-Capacity Fiber-Optic Rack-Mount Cabinets

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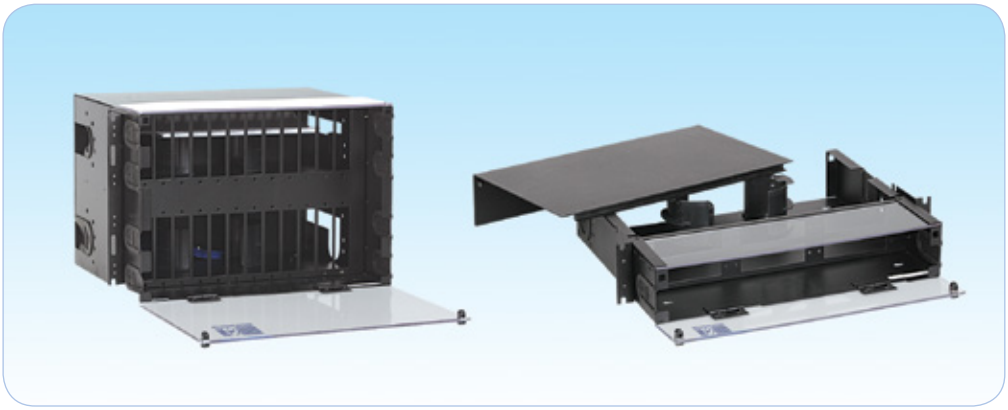

Description

HCS DataLight High-Capacity Fiber-Optic Rack-Mount Cabinets series provides a full range of universal line of fiber optic patch panels and fiber optic distribution points.
HCS DataLight High-Capacity Fiber-Optic Rack-Mount Cabinets are available in 4 major constructions supporting 36,48,72,96,144 192 or 288 ports.
The 19" or 23" rack-mount panels are equipped with removable upper cover, providing easy and fast access inside panel.
HCS DataLight High-Capacity Fiber-Optic Rack-Mount Cabinets basic construction provides highest flexibility and lowest stock, by enabling the use of an all-option organizer, and selecting different connector interfaces by replacing only the front section of panel. Optional connector interfaces include ST, SC simplex, SC duplex, FC, LC or MT-RJ.
HCS DataLight High-Capacity Fiber-Optic Rack-Mount Cabinets are supplied with all expanding accessories and are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
The HCS Logo and the DataLight Trademark ensure long lasting high-performance and full support of all applications.

Applications

- ☑ FiberOptic backbone termination in data closet
- ☑ Fiber-Optic distribution
- ☑ Fiber-Optic horizontal termination
- ☑ Fiber to desk applications
- ☑ Central Office equipment

Qualifications and Approvals

HCS DataLight panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to the following standards:

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories including clip organizers and T-raps - providing a simple and elegant cable termination and identification.
- ➔ High density design - providing a compact panel and economical space use.
- ➔ One basic unit fits all types of connectors - providing high flexibility, low cost and easy to handle stock.
- ➔ Top access into the panel - providing easy and comfortable cable management.
- ➔ All panels available with optional direct splice termination or FastLight™ termination - providing a larger product range and flexibility.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Optional back-side cable management with clip organizer and trap connection - providing simple and easy cable handling.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs
- ➔ Modular and expandable comprehensive product range - providing up to 288 ports in a single panel.
- ➔ Unique DoubleSafe™ Quality Assurance Program - providing lowest rejection rate available.

GENERAL PROPERTIES

Material of construction	16-gauge steel with powder-coat finish.
Paint and Color	Powder paint finish, Black (Ivory available upon request)
Connector Capacity	36, 48, 72, 96, 144, 192 or 288 ports.
Splice tray capacity	12-36
Environmental conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.
Storage Temperature	-20 to +80C
Non Halogen constructions	Available upon request.

ORDERING INFORMATION

HCS P/N	Description	Adapters per Plate	Size mm H x W x D	Units
PFO-07P11-1U	High capacity FO Rack Mount 19" Panel 12/24/36/48/72 fiber	3	40x435x420	1U
PFO-07P12-1U	High capacity FO Rack Mount 23" Panel 12/24/36/48/72 fiber	3	40x435x420	1U
PFO-07P01-2U	High capacity FO Rack Mount 19" Panel 36/48/72 fiber	6	82.5x431.8x355.6	2U
PFO-07P02-2U	High capacity FO Rack Mount 23" Panel 36/48/72 fiber	6	82.5x431.8x355.6	2U
PFO-07P03-3U	High capacity FO Rack Mount 19" Panel 72/96/144 fiber	12	131.8x431.8x355.6	3U
PFO-07P04-3U	High capacity FO Rack Mount 23" Panel 72/96/144 fiber	12	131.8x431.8x355.6	3U
PFO-07P13-4U	High capacity FO Rack Mount 19" Panel 72/96/144/192/288 fiber	12	180x435x420	4U
PFO-07P11-4U	High capacity FO Rack Mount 23" Panel 72/96/144/192/288 fiber	12	180x435x420	4U
PFO-07P05-7U	High capacity FO Rack Mount 19" Panel 144/192/288 fiber	24	293.7x431.8x355.6	7U
PFO-07P06-7U	High capacity FO Rack Mount 23" Panel 144/192/288 fiber	24	293.7x431.8x355.6	7U

ORDERING INFORMATION

HCS P/N	Description	Adapters per Plate	Ports Per Plate	Size mm
PFO-07000	Adapter Plate - Blank	N/A	N/A	125x30
PFO-07010	Adapter Plate for ST/FC Simplex Adapters	6	6	125x30
PFO-07011	Adapter Plate for ST/FC Simplex Adapters	8	8	125x30
PFO-07021	Adapter Plate for SC Simplex Adapters	6	6	125x30
PFO-07022	Adapter Plate for SC Simplex Adapters	8	8	125x30
PFO-07023	Adapter Plate for SC Duplex / LC Quad Adapters	3	6/12	125x30
PFO-07024	Adapter Plate for SC Duplex / LC Quad Adapters	4	8/16	125x30
PFO-07025	Adapter Plate for SC Duplex / LC Quad Adapters	6	12/24	125x30
PFO-07031	Adapter Plate for LC Simplex Adapters	6	6	125x30
PFO-07032	Adapter Plate for LC Simplex Adapters	8	8	125x30
PFO-07033	Adapter Plate for LC Simplex Adapters	12	12	125x30
PFO-07034	Adapter Plate for LC Duplex Adapters	3	6	125x30
PFO-07035	Adapter Plate for LC Duplex Adapters	4	12	125x30
PFO-07036	Adapter Plate for LC Duplex Adapters	6	24	125x30
PFO-07041	Adapter Plate for MT-RJ Duplex Adapters	3	6	125x30
PFO-07042	Adapter Plate for MT-RJ Duplex Adapters	4	8	125x30
PFO-07043	Adapter Plate for MT-RJ Duplex Adapters	6	12	125x30
KFO-07012	Splicing Kit for Rack Mount Panel - 12 Fibers	N/A	N/A	N/A
KFO-07024	Splicing Kit for Rack Mount Panel - 24 Fibers	N/A	N/A	N/A
KFO-07036	Splicing Kit for Rack Mount Panel - 36 Fibers	N/A	N/A	N/A
KFO-07048	Splicing Kit for Rack Mount Panel - 48 Fibers	N/A	N/A	N/A
KFO-07072	Splicing Kit for Rack Mount Panel - 72 Fibers	N/A	N/A	N/A
KFO-07096	Splicing Kit for Rack Mount Panel - 96 Fibers	N/A	N/A	N/A
KFO-07144	Splicing Kit for Rack Mount Panel - 144 Fibers	N/A	N/A	N/A
KFO-07192	Splicing Kit for Rack Mount Panel - 192 Fibers	N/A	N/A	N/A
KFO-07288	Splicing Kit for Rack Mount Panel - 288 Fibers	N/A	N/A	N/A
KFO-00830	Splice Protector 60mm	N/A	N/A	N/A

Blade Splicing Tray For Field Termination

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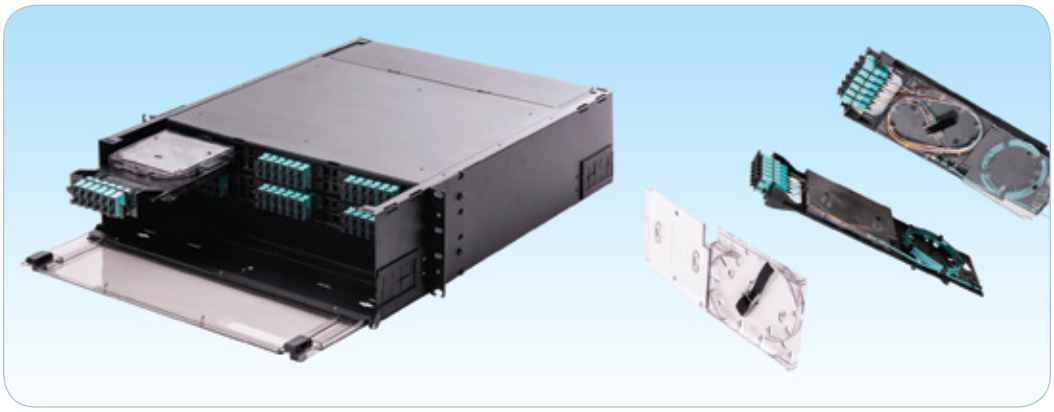

Description

HCS DataLight Blade Splicing Tray for Field Termination is the newest addition to the HCS DataLight Product family of high-density network solutions. Designed to provide superior organization, accessibility, and density, the Blade system enclosures and in-line splice modules maintain the highest optical performance over the longest runs, making it ideal for multiple building network configurations. This reliable and reconfigurable system is inherently suited for multi-building complexes such as hospitals, corporate centers, government facilities and universities and supports the increasing growth for future applications.

Applications

- ☑ Healthcare and Hospitals
- ☑ Colleges and Universities
- ☑ Data Center and Processing Networks
- ☑ Corporate Campuses
- ☑ Any high-density splicing application

Qualifications and Approvals

HCS DataLight Blade Splicity Tray for Terminations are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to the following standards:

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories including clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- ➔ High density design - Providing a compact panel and economical space use.
- ➔ One basic unit fits all types of connectors - Providing high flexibility, low cost and easy to handle stock.
- ➔ All Blades are available with optional direct splice termination or FastLight™ termination - Providing a larger product range and flexibility.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Providing simple and easy cable handling.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Maintains superior connections for inter- and intra-building cable runs.
- ➔ Simple access for easy installations. Blade enclosures are designed for easy access to subgroup cables with Blade in-line splice modules.
- ➔ Versatile configurations for maximum density.
- ➔ A singular source for a full solution. Combined with HCS DataLight Series cables, the Blade solution can provide a complete connectivity and cabling infrastructure for campus and multi-building networks

GENERAL PROPERTIES

Material of construction	Rugged 16-gauge steel with powder-coat finish.
Paint and Color	Powder paint finish, Black
Blade Rack Mount Enclosures Fiber Capacity	Max. 144 (SC) or 288 (LC) Fibers.
Blade Rack Mount Enclosures Splice Module Capacity	3, 6 or 12 Splice Modules
Blade Splice Module Fiber Capacity	12 (SC), 12 (LC) or 24 (LC)
Environmental conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.
Storage Temperature	-20 to +80C

ORDERING INFORMATION

HCS P/N	Description	Blade Splicing Modules Acceptance	Ports Capacity	Size mm H x W x D	Units
PFO-R03FT	HCS DataLight Blade FO Rack Mount Enclosure	3	36 SC or 72 LC	88 x 436 x 556	2U
PFO-R06FT	HCS DataLight Blade FO Rack Mount Enclosure	6	72 SC or 144 LC	132 x 436 x 556	3U
PFO-R12FT	HCS DataLight Blade FO Rack Mount Enclosure	12	144 SC or 288 LC	176 x 436 x 556	4U

ORDERING INFORMATION

HCS P/N	Description	Splicing Tray	Fiber Capacity	Adapter Plate	Size mm H x W x D
PFO-M00FT	HCS DataLight Blade Splice Module - Blank	1	-	-	31 x 127 x 397
PFO-M12SC	HCS DataLight Blade Splice Module - 12 SC	1	12	Duplex SC	31 x 127 x 397
PFO-M12LC	HCS DataLight Blade Splice Module - 12 LC	1	12	Duplex LC	31 x 127 x 397
PFO-M24LC	HCS DataLight Blade Splice Module - 24 LC	2	24	Quad LC	31 x 127 x 397

Notes:

The “FO” in the P/N is replaced by the fiber designation selected from the FIBER OPTIONS Table.
Packaging options to be discussed with HCS Customer Service.

Fiber Optic Patch Cords and Pigtails

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Description

HCS DataLight Patch Cords and Pigtails series provides a full range of high quality assemblies, supporting all state-of-the-art connectors types, including ST, SC, SC/APC FC, FC/APC, LC and MT-RJ, MPO and MTP. Other types, such as SMA, FDDI, and VF-45 are available upon request. HCS DataLight Patch Cords and Pigtails are available with all fiber types including Singlemode 9/125 microns, Multimode 50/125 microns and Multimode 62.5/125 microns fibers in any length required.
HCS DataLight Patch Cords and Pigtails are available with different buffer and jacket types and colors, including bare fibers (250 microns), tight buffers (900 microns) or jacketed minicables in Simplex or Duplex (Zip-cord) constructions.
HCS DataLight Patch Cords and Pigtails can be custom-made with breakout or MTD cables in multi-fiber constructions.
HCS DataLight Patch Cords and Pigtails comply with both major industry standards, ANSI/TIA-568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables) and they are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

- ☑ FiberOptic cross connect, patch panels, and distribution point connection.
- ☑ ODF connections.
- ☑ Fiber to the desk connection.
- ☑ Active FiberOptic equipment connection.

Qualifications and Approvals

HCS DataLight components are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to ANSI/TIA/EIA-568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables).

Benefits & Features

- ➔ Full compliance to industry standards - Providing high quality components.
- ➔ Available with all major fiber types - Providing a wide range of products.
- ➔ Available with all major connector types, including hybrid constructions - Providing a wide range of products.
- ➔ Available in 12 different colors - Providing a better compatibility and a wider selection range.
- ➔ Robust design - Providing low rejection and replacement rates.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

TECHNICAL SPECIFICATIONS - CONNECTORS

Connector Type / Connector Part	SC	SC/APC	ST	FC	FC/APC	MT-RJ	LC	MPO/MTP
Connector Housing	Thermoplastic	Thermoplastic	Thermoplastic Nickel Plated Zinc	Nickel Plated Zinc	Nickel Plated Zinc	Thermoplastic	Thermoplastic	Polybutylene Terephthalate
Connector Ferrule	Zirconia Ceramic	8° Zirconia Ceramic	Zirconia Ceramic	Zirconia Ceramic	8° Zirconia Ceramic	Thermoplastic	Ceramic	PPS
SM Alignment Sleeve	Zirconia Ceramic	Zirconia Ceramic	Zirconia Ceramic	Zirconia Ceramic	Zirconia Ceramic	-	Ceramic	NS
MM Alignment Sleeve	Zirconia Ceramic	-	Metal	Zirconia Ceramic	-	-	Ceramic	NS
Boot	Polyester	Polyester	Polyester	Polyester	Polyester	Polyester	Polyester	Silicone
SM Backbone	Aluminum	Aluminum	Zinc Alloy	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
MM Backbone	Aluminum	-	Zinc Alloy	Aluminum	-	Aluminum	Aluminum	Aluminum
Flame Test	UL-94 V-0	UL-94 V-0	UL-94 V-0	UL-94 V-0	UL-94 V-0	UL-94 V-0	UL-94 V-0	UL-94 V-0

Note: MM=Multimode, 50/125 and 62.5/125 microns fibers. SM=Singlemode 9/125 microns fibers.

TECHNICAL SPECIFICATIONS - TRANSMISSION PROPERTIES

Connector Type / Properties	SC	SC/APC	ST	FC	FC/APC	MT-RJ	LC	MPO/MTP
SM Attenuation @ 1300nm	Mean: 0.2 dB Sigma: 0.1 dB	Mean: 0.2 dB Sigma: 0.1 dB	Mean: 0.2 dB Sigma: 0.1 dB	Mean: 0.2 dB Sigma: 0.1 dB	Mean: 0.2 dB Sigma: 0.1 dB	Mean: 0.2 dB Sigma: 0.1 dB	Mean: 0.2 dB Sigma: 0.1 dB	Mean:0.35 dB Sigma: 0.12dB
MM Attenuation @ 1300nm	Mean: 0.15 dB Sigma: 0.05 dB	-	Mean: 0.15 dB Sigma: 0.05 dB	Mean: 0.15 dB Sigma: 0.05 dB	-	Mean: 0.15 dB Sigma: 0.05 dB	Mean: 0.15 dB Sigma: 0.05 dB	Mean:0.35 dB Sigma: 0.12 dB
SM Return Loss	Min: 50 dB Mean: 58 dB	Min: 65 dB Mean: 80 dB	Min: 50 dB Mean: 58 dB	Min: 50 dB Mean: 58 dB	Min: 65 dB Mean: 80 dB	Min: 50 dB Mean: 58 dB	Min: 50 dB Mean: 58 dB	Min:55 dB Mean: 60dB
MM Return Loss	Min: 25 dB D Max: 0.2 dB	-	Min: 25 dB Mean: 27 dB	Min: 25 dB Mean: 27 dB	-	Min: 25 dB D Max: 0.2 dB	Min: 25 dB D Max: 0.2 dB	Min:25 dB D Max:0.2dB
SM Connection Dur.	D Max: 0.2 dB	D Max: 0.2 dB	D Max: 0.1 dB	D Max: 0.2 dB	D Max: 0.2 dB	D Max: 0.2 dB	D Max: 0.2 dB	D Max:0.2dB
MM Connection Dur.	D Max: 0.2 dB	-	D Max: 0.2 dB	D Max: 0.2 dB	-	D Max: 0.2 dB	D Max: 0.2 dB	D Max:0.2 dB
SM Mating Cycles	500	500	500	500	500	500	500	500
MM Mating Cycles	500	-	500	500	-	500	500	500
Temp. Range	-40 to +85C	-40 to +85C	-40 to +85C	-40 to +85C	-40 to +85C	-40 to +85C	-40 to +85C	-40 to +85C

DURABILITY TESTS - MAXIMUM ATTENUATION INCREASE AFTER TEST

Connector Type / Test	SC	SC/APC	ST	FC	FC/APC	MT-RJ	LC	MPO/MTP	Notes
Temperature Cycling: -40 to +85C	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	10 cycles
High Temp. Endurance: +85˚C	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	96 hours
Low Temp. Endurance: -40˚C	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	96 hours
High Humidity Endurance: %95 RH @ +40˚C	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	96 hours
Vibration Endurance: 10-55 Hz, 1.5 mm.	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	P to P
Tensile Endurance: 0-10 Kgf @ 1 min.	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	
Connection Durability: 1000 cycles	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	0.2 dB	

P/N SYSTEM - TERMINATED MODULAR FIBER OPTIC CORDS

Basic Product Code						Length	
T	NN	X		NN	AB	-	XX
T	Fiber Type	Cable Type & OD		Color	Connectors	-	dm

Select from HCS Fiber Option Table

#	Cable	OD (mm)
A	Bare fiber	0.25
B	Tight-Buffered Fiber	0.9
C	Simplex PVC	1.6
E	Simplex LS0H	1.6
G	Simplex PVC	2.0
K	Simplex LS0H	2.0
M	Duplex zip PVC	1.6x3.3
P	Duplex zip LS0H	1.6x3.3
R	Duplex zip PVC	2.0x4.1
T	Duplexs zip LS0H	2.0x4.1
V	Duplex zip LS0H	2.0x4.1
	2x28AWG TC Wires	
U	Duplex Uniboot LS0H (Round cable)	2.0
Y	Duplex Uniboot LS0H (Round cable)	3.0

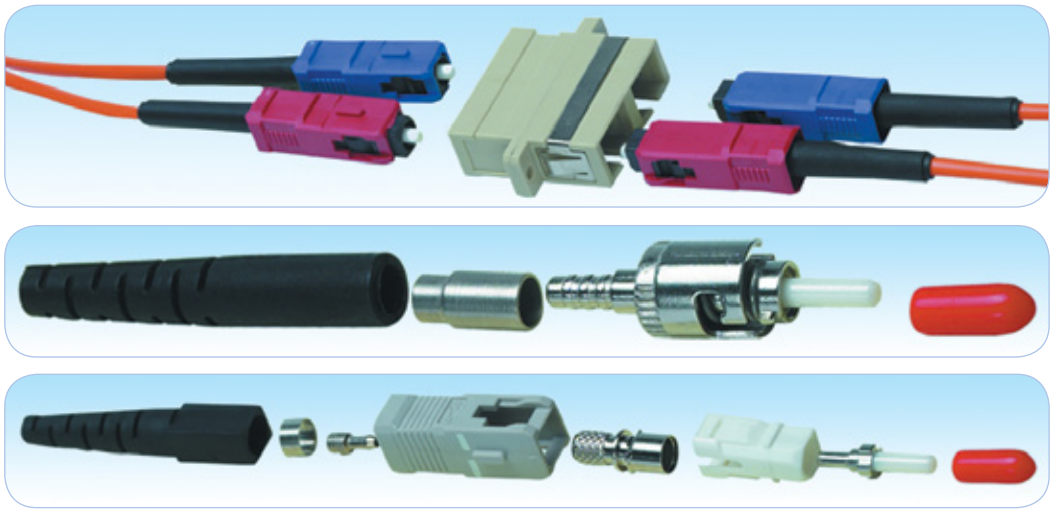
Cable Type	NN
Cable	Fiber Count
D Bare Ribbon LS0H cable	NN
F Jacketed Ribbon LS0H cable	NN
H Ruggedized (Trunk) LS0H Ribbon cable	NN
N Indoor LS0H MTD cable	NN

Color	Connectors	Length
00= Natural	1= ST	nn= dm
01= Blue	2= SC	An= 10m+
02= Orange	3= SC/APC	Bn= 20m+
03= Green	4= FC	Cn= 30m+
04= Brown	5= FC/APC	Dn= 40m+
05= Gray	6= MT-RJ - Female	En= 50m+
06= White	7= MTP 24F - Female	Fn= 60m+
07= Red	8= LC	Gn= 70m+
08= Black	9= MPO 24F - Female	Hn= 80m+
09= Yellow	A= MPO 4F - Female	Kn= 90m+
10= Violet	B= MPO 6F - Female	
11= Aqua	C= MPO 8F - Female	
	D= MPO 12F - Female	
	E= MPO 4F - Male	
	F= MPO 6F - Male	
	G= MPO 8F - Male	
	H= MPO 12F - Male	
	J= MT-RJ -Male	
	K= LC-Duplex + Comm.Pin	
	L= SC-Duplex + Comm.Pin	
	M= LC/APC	
	N= Mini-LC	
	P= MTP 4F - Female	
	Q= MTP 6F - Female	
	R= MTP 8F - Female	
	S= MTP 12F - Female	
	T= MTP 4F - Male	
	U= MTP 6F - Male	
	V= MTP 8F - Male	
	W= MTP 12F - Male	

Example 1: T63-M0512-30 =>3 meters cord made of a 3.0 mm OD Duplex gray PVC Zip-minicable with tight coated 62.5/125 microns Patch Cord Grade fibers terminated on side A with ST connectors and on side B with SC connectors.
Example 2: T91-A0040-15 =>1.5 meters pigtail made of a 250 microns OD bare 9/125 microns Standard Grade fiber (not colored) terminated on one side with FC connector.
Example 3: T54-F12HH-B6 => 26 meters cord made of a 12x50/125µ OM3 fibers Ribbon LS0H cable terminated on both sides with Male MPO connectors.

Notes:

Detailed cable specs can be found in the relevant catalog pages.
Detailed connector specs can be found in the relevant catalog pages.



Description

HCS DataLight components series provides a full range of high quality connectors and adapters, supporting all state-of-the-art connectors types, including ST, SC (Simplex and Duplex) LC, FC, MT-RJ and HCS FastLightTM. Other types, such SMA, FDDI, and VF-45 can be also supplied upon demand. HCS DataLight connectors and adapters are compatible with all fiber types including Singlemode 9/125 microns, Multimode 50/125 microns and Multimode 62.5/125 microns fibers.
HCS DataLight components comply with both major industry standards, ANSI/TIA-568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables) providing a full range of connectors and adapters, offering a user-friendly solution in the vertical and horizontal environment.
HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

- ☑ Patch panels
- ☑ Patch cords
- ☑ Desktop outlets
- ☑ Distribution frames
- ☑ Direct termination to cables

Qualifications and Approvals

HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to ANSI/TIA/568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables).

Benefits & Features

- ➔ Full compliance to industry standards - Providing high quality components.
- ➔ Full compliance to all major fiber types - Providing a reliable and low-loss fiber termination
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Optional plastic front panels - Providing custom color selection.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

TECHNICAL SPECIFICATIONS - CONNECTORS

Connector Style & Fiber Type	Insertion Loss dB	Operating Temp. C	Storage Temp. C	Reflection Field Mount dB	Ferrule Material	Housing Material	Boot Material	Durability dB
ST Epoxy MM	0.3	-40+80	-40+85	25	Zirconia	Nickel Plate	Polyester	0.2
ST Epoxy SM	0.3	-40+80	-40+85	50	Zirconia	Nickel Plate	Polyester	0.2
SC Epoxy MM	0.2	-40+85	-40+85	25	Ceramic	Thermoplastic	Polyester	0.2
SC Epoxy SM	0.3	-40+85	-40+85	50	Ceramic	Thermoplastic	Polyester	0.2
SC/APC Epoxy SM	0.3	-40+85	-40+85	65	Ceramic	Thermoplastic	Polyester	0.2
FC Epoxy MM	0.2	-40+85	-40+85	25	Ceramic	Thermoplastic	Polyester	0.2
FC Epoxy SM	0.3	-40+85	-40+85	50	Ceramic	Thermoplastic	Polyester	0.2
FC/APC Epoxy SM	0.3	-40+85	-40+85	65	Ceramic	Thermoplastic	Polyester	0.2
MT-RJ MM	0.2	-40+85	-40+85	20	Thermoplastic	Thermoplastic	Elastomer	0.2
MT-RJ SM	0.3	-40+85	-40+85	50	Thermoplastic	Thermoplastic	Elastomer	0.2
LC MM	0.2	-40+85	-40+85	20	Ceramic	Thermoplastic	Elastomer	0.2
LC SM	0.3	-40+85	-40+85	50	Ceramic	Thermoplastic	Elastomer	0.2
MPO MM	0.5	-40+85	-40+85	50	MT	Thermoplastic	Elastomer	0.2
MPO SM	0.35	-40+85	-40+85	50	MT	Thermoplastic	Elastomer	0.2

TECHNICAL SPECIFICATIONS - ADAPTERS

Adapters Type & Fiber Type	Type	Operating Temp. C	Storage Temp. C	Sleeve Material	Housing Material	Connector Color
ST Coupler MM	NA	-40+85	-40+85	Phosphor Bronze	Nickel Plate	Metal
ST Coupler SM	NA	-40+85	-40+85	Ceramic	Nickel Plate	Metal
SC Coupler MM	Simplex	-40+85	-40+85	Phosphor Bronze	Thermoplastic	Beige
SC Coupler SM	Simplex	-40+85	-40+85	Zirconia	Thermoplastic	Blue
SC/APC Coupler SM	Simplex	-40+85	-40+85	Zirconia	Thermoplastic	Green
SC Coupler MM	Duplex	-40+85	-40+85	Phosphor Bronze	Thermoplastic	Beige
SC Coupler SM	Duplex	-40+85	-40+85	Zirconia	Thermoplastic	Blue
SC/APC Coupler SM	Duplex	-40+85	-40+85	Zirconia	Thermoplastic	Green
FC Coupler MM	D-Mount	-40+85	-40+85	Phosphor Bronze	Metal	Metal
FC Coupler SM	D-Mount	-40+85	-40+85	Ceramic	Metal	Metal
FC Coupler MM	Square Flange	-40+85	-40+85	Phosphor Bronze	Metal	Metal
FC Coupler SM	Square Flange	-40+85	-40+85	Ceramic	Metal	Metal
FC/APC Coupler SM	D-Mount	-40+85	-40+85	Ceramic	Metal	Metal
FC/APC Coupler SM	Square Flange	-40+85	-40+85	Ceramic	Metal	Metal
MT-RJ Coupler MM	Duplex	-40+85	-40+85	-	Thermoplastic	Beige
MT-RJ Coupler SM	Duplex	-40+85	-40+85	-	Thermoplastic	Blue
LC Coupler MM	Simplex	-40+85	-40+85	-	Thermoplastic	Beige
LC Coupler SM	Simplex	-40+85	-40+85	-	Thermoplastic	Blue
LC Coupler MM	Duplex	-40+85	-40+85	-	Thermoplastic	Beige
LC Coupler SM	Duplex	-40+85	-40+85	-	Thermoplastic	Blue
MPO Coupler MM & SM	NA	-40+85	-40+85	-	Thermoplastic	Black

Note: MM=Multimode, 50/125 and 62.5/125 microns fibers. SM=9/125 microns Singlemode fibers.

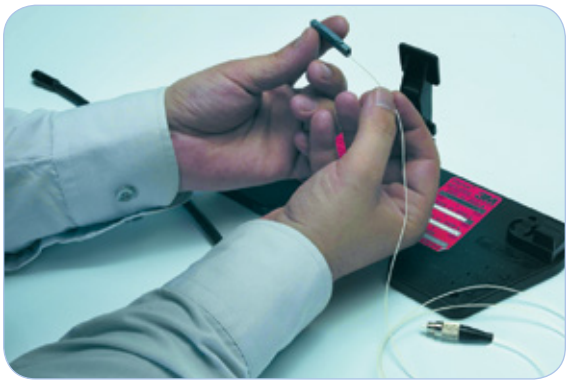
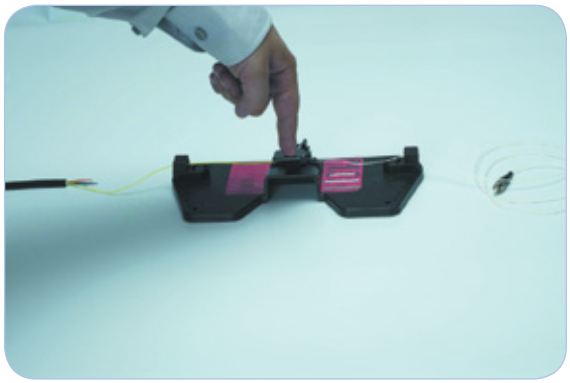
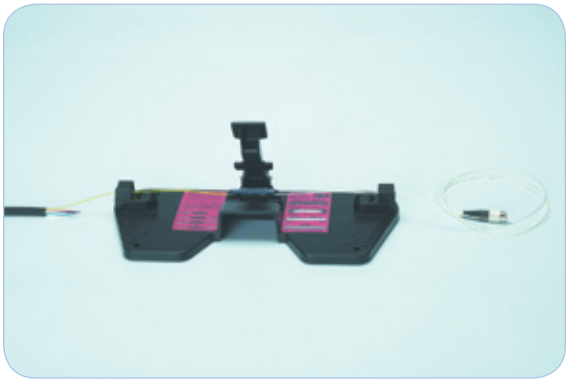
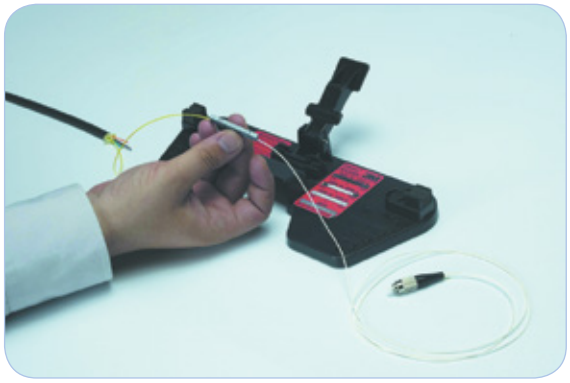
ORDERING INFORMATION

HCSP/N	Description	Color	Fiber Type	Packaging	MOQ	Notes
VFO-11001	DataLight ST Epoxy Connector	Metal	MM	25/Box	1 Box	
VFO-11002	DataLight ST Epoxy Connector	Metal	SM	25/Box	1 Box	
VFO-12001	DataLight SC Epoxy Connector	Beige	MM	25/Box	1 Box	
VFO-12002	DataLight SC Epoxy Connector	Blue	SM	25/Box	1 Box	
VFO-13002	DataLight SC/APC Epoxy Connector	Green	SM	25/Box	1 Box	
VFO-14001	DataLight FC Epoxy Connector	Metal	MM	25/Box	1 Box	
VFO-14002	DataLight FC Epoxy Connector	Metal	SM	25/Box	1 Box	
VFO-15002	DataLight FC/APC Epoxy Connector	Metal	SM	25/Box	1 Box	
VFO-16001	DataLight MT-RJ Epoxy Connector	Beige	MM	25/Box	1 Box	
VFO-16002	DataLight MT-RJ Epoxy Connector	Beige	SM	25/Box	1 Box	
VFO-17001	DataLight LC Simplex Connector	Beige	MM	25/Box	1 Box	
VFO-17002	DataLight LC Simplex Connector	Beige	SM	25/Box	1 Box	
VFO-17M01	DataLight Mini-LC Simplex Connector	Beige	MM	25/Box	1 Box	
VFO-17M02	DataLight Mini-LC Simplex Connector	Beige	SM	25/Box	1 Box	
VFO-21101	DataLight ST Simplex Metallic Coupler	Metal	MM	25/Box	1 Box	
VFO-21102	DataLight ST Simplex Metallic Coupler	Metal	SM	25/Box	1 Box	
VFO-21111	DataLight ST Simplex plastic Coupler	Blue	MM	25/Box	1 Box	
VFO-22111	DataLight SC Simplex Plastic Coupler	Beige	MM	25/Box	1 Box	
VFO-22112	DataLight SC Simplex Plastic Coupler	Blue	SM	25/Box	1 Box	
VFO-23112	DataLight SC/APC Simplex Plastic Coupler	Green	SM	25/Box	1 Box	
VFO-23212	DataLight SC/APC Duplex Plastic Coupler	Green	SM	25/Box	1 Box	
VFO-22211	DataLight SC Duplex Plastic Coupler	Beige	MM	25/Box	1 Box	
VFO-22213	DataLight SC Duplex Plastic Coupler	Aqua	MM	25/Box	1 Box	
VFO-22214	DataLight SC Duplex Plastic Coupler	Violet	MM	25/Box	1 Box	
VFO-22212	DataLight SC Duplex Plastic Coupler	Blue	SM	25/Box	1 Box	
VFO-24131	DataLight FC Simplex Metallic Coupler Square-Flange	Metal	MM	25/Box	1 Box	
VFO-24132	DataLight FC Simplex Metallic Coupler Square-Flange	Metal	SM	25/Box	1 Box	
VFO-25132	DataLight FC/APC Simplex Metallic Coupler Square-Flange	Metal	SM	25/Box	1 Box	
VFO-24141	DataLight FC Simplex Metallic Coupler D-mount	Metal	MM	25/Box	1 Box	
VFO-24142	DataLight FC Simplex Metallic Coupler D-mount	Metal	SM	25/Box	1 Box	
VFO-25142	DataLight FC/APC Simplex Metallic Coupler D-mount	Metal	SM	25/Box	1 Box	
VFO-26211	DataLight MT-RJ Duplex Plastic Coupler	Beige	MM	25/Box	1 Box	
VFO-26212	DataLight MT/RJ Duplex Plastic Coupler	Blue	SM	25/Box	1 Box	
VFO-27101	DataLight LC Simplex Plastic Coupler	Beige	MM	25/Box	1 Box	
VFO-27102	DataLight LC Simplex Plastic Coupler	Blue	SM	25/Box	1 Box	
VFO-27201	DataLight LC Duplex Plastic Coupler	Beige	MM	25/Box	1 Box	
VFO-27203	DataLight LC Simplex Plastic Coupler	Aqua	MM	25/Box	1 Box	
VFO-27204	DataLight LC Duplex Plastic Coupler	Violet	MM	25/Box	1 Box	
VFO-27202	DataLight LC Duplex Plastic Coupler	Blue	SM	25/Box	1 Box	
VFO-27401	DataLight LC Quad Plastic Coupler	Beige	MM	25/Box	1 Box	
VFO-27403	DataLight LC Quad Plastic Coupler	Aqua	MM	25/Box	1 Box	
VFO-27404	DataLight LC Quad Plastic Coupler	Violet	MM	25/Box	1 Box	
VFO-27402	DataLight LC Quad Plastic Coupler	Blue	SM	25/Box	1 Box	
VFO-272S1	DataLight LC Duplex Plastic Coupler Shuttered	Beige	MM	25/Box	1 Box	
VFO-272S3	DataLight LC Duplex Plastic Coupler Shuttered	Aqua	MM	25/Box	1 Box	
VFO-272S4	DataLight LC Duplex Plastic Coupler Shuttered	Violet	MM	25/Box	1 Box	
VFO-272S2	DataLight LC Duplex Plastic Coupler Shuttered	Blue	SM	25/Box	1 Box	
VFO-274S1	DataLight LC Quad Plastic Coupler Shuttered	Beige	MM	25/Box	1 Box	
VFO-274S3	DataLight LC Quad Plastic Coupler Shuttered	Aqua	MM	25/Box	1 Box	
VFO-274S4	DataLight LC Quad Plastic Coupler Shuttered	Violet	MM	25/Box	1 Box	
VFO-274S2	DataLight LC Quad Plastic Coupler Shuttered	Blue	SM	25/Box	1 Box	
VFO-28001	DataLight MPO Coupler	Black	MM & SM	25/Box	1 Box	

Note: MM=Multimode, 50/125 and 62.5/125 microns fibers. SM=9/125 microns Singlemode fibers.

Fiber Optic FastLight™ Connecting Kit & Accessories

HES Cabling Systems
Connecting Networks™

Description

HCS DataLight FastLight™ Connecting Kit is a unique tool for field installation, supporting all state-of-the-art connectors types, including ST, SC (Simplex and Duplex) FC and MT-RJ and all fiber types, including singlemode and multimode fibers with various buffer diameters.
HCS DataLight FastLight™ Connecting Kit can be also used to terminate fibers with mixed buffer diameters, splicing 250 micron bare fibers to 900 micron buffered fibers etc.
HCS DataLight FastLight™ Connecting Kit contains 6 pieces of FastLight™ splices and 6 factory terminated pigtails, enabling termination of any fiber in field conditions with no epoxy, no microscope and within 30 seconds per connection.
HCS DataLight FastLight™ Connecting Kit is a breakthrough in fiber termination, making fiber connection easy and simple to anyone - not only to specialists.
HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

- ☑ Loose Tube Cable field termination
- ☑ Tight-Buffer / semi-tight buffer cable field termination
- ☑ Patch panel termination
- ☑ Distribution Frame termination

Qualifications and Approvals

HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to ANSI/TIA/568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables).

Benefits & Features

- ➔ 30-seconds termination time - Providing the fastest termination method available.
- ➔ No polish, no epoxy no microscope needed - Providing fiber termination anywhere and anytime.
- ➔ No splicing machine nor special now-how needed - Providing a low cost solution for fiber termination on site.
- ➔ Full compliance to industry standards - Providing high quality components.
- ➔ Full compliance to all major types of fiber and connector - Providing a flexible, reliable and low-loss fiber termination.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

TECHNICAL SPECIFICATIONS

Supported Fiber Types	Singlemode 9/125 mic, Multimode 50/125 & 62.5/125 mic.
Materials of Construction	Thermoplastic and Aluminum alloy.
Operating and Storage Conditions	-40 to +80C at 0-90% RH (Non condensing)
Reflection	60 dB max. at room temperature.
Typical Insertion Loss	0.1 dB
Packaging	One unit per box.

ORDERING INFORMATION

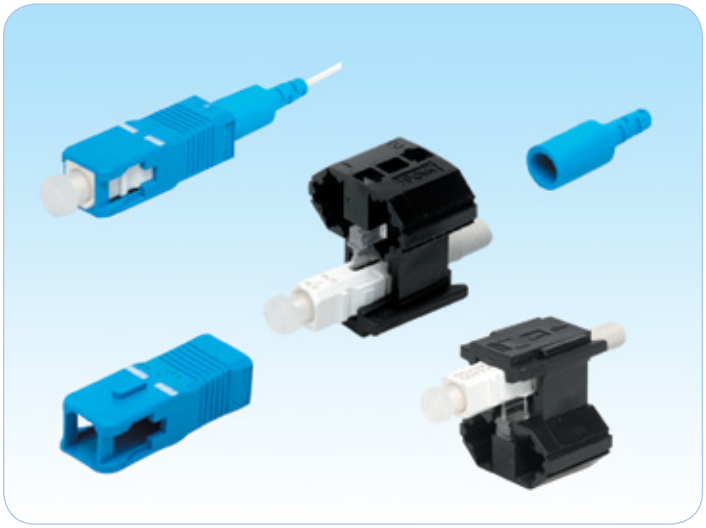
HCS P/N	Description	Connector Type	Pigtail	
			Fiber Type	Length
KFO-00601-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	ST	MM 62.5/125/900 mic	1m
KFO-00602-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	ST	MM 50/125/900 mic	1m
KFO-00603-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	ST	SM 9/125/900 mic	1m
KFO-00604-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	SC	MM 62.5/125/900 mic	1m
KFO-00605-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	SC	MM 50/125/900 mic	1m
KFO-00606-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	SC	SM 9/125/900 mic	1m
KFO-00607-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	FC	MM 62.5/125/900 mic	1m
KFO-00608-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	FC	MM 50/125/900 mic	1m
KFO-00609-10	FastLight™ Connecting Kit: 6 Universal Splices + 6 Pigtails	FC	SM 9/125/900 mic	1m
KFO-00001	FastLight™ Connecting Kit Accessories	NA	NA	NA
KFO-00002	FastLight™ Connecting Kit Assembly Tools	NA	NA	NA
KFO-00003	FastLight™ Connecting Kit Universal Cleaving Tool	NA	NA	NA
K00-00830	DataLight FO Heat-shrink Splice Protection Tube, 60mm.	NA	NA	NA
K00-00810	DataLight FO Splice Cassette - 6 Ports	NA	NA	NA
K00-00811	DataLight FO Splice Cassette - 12 Ports	NA	NA	NA

Description

HCS DataLight Fast™ connectors provides the quickest, simplest, and cleanest dual terminating solution for 250µm and 900µm diameter fibers.This cost effective two for one solution is achieved through a "staggered" clamping method to the outer-coating of the fiber. With a connectorization time of less than 30 seconds, including preparation, this field installable connector makes other connector termination methods appear cumbersome, time consuming and expensive.HCS DataLight Fast™ Connectors are pre-polished, field installable connectors that eliminate the need for hand polishing in the field, providing an immediate termination to either single-mode or multimode fibers.HCS DataLight Fast™ Connectors feature a pre-stubbed factory-polished ferrule that couples to the fiber being terminated by precision mechanical alignment, insuring low loss with a proprietary gel. Each DataLight Fast™ Connector comes with a factory-installed wedge clip that holds the clamping device open while the fiber is inserted. Once the fiber is in place, the wedge clip is removed and discarded.HCS DataLight Fast™ connectors are available in SC, ST and LC options supporting both singlemode and multimode fibers with either 250µm or 900µm diameters.HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of the complete HCS cabling system.

Applications

- ☑ Premise environments
- ☑ Connections at the desk for LAN environments
- ☑ Patch panels
- ☑ Direct equipment termination
- ☑ Fiber to the Subscriber (FTTx) applications
- ☑ Repair/replacement requirements
- ☑ Equipment test leads



Qualifications and Approvals

HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to ANSI/TIA/568-C.3 (Optical Fiber Cabling Components Standard) and TIA/EIA-604 (FOCIS, Fiber Optic Connector Intermateability Standards).

Benefits & Features

- ➔ 30-seconds termination time - Providing the fastest termination method available.
- ➔ No polish, no epoxy no microscope needed - Providing fiber termination anywhere and anytime.
- ➔ No splicing machine nor special now-how needed - Providing a low cost solution for fiber termination on site.
- ➔ Full compliance to industry standards - Providing high quality components.
- ➔ Full compliance to all major types of fiber and connector - Providing a flexible, reliable and low-loss fiber termination.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

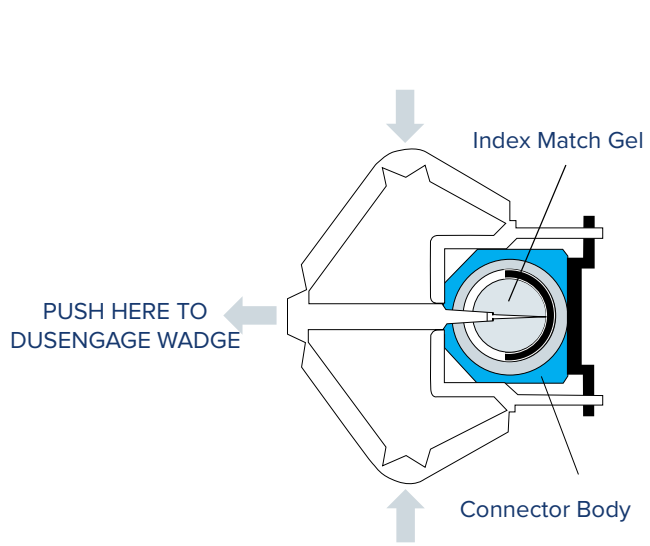
TRANSMISSION PARAMETERS

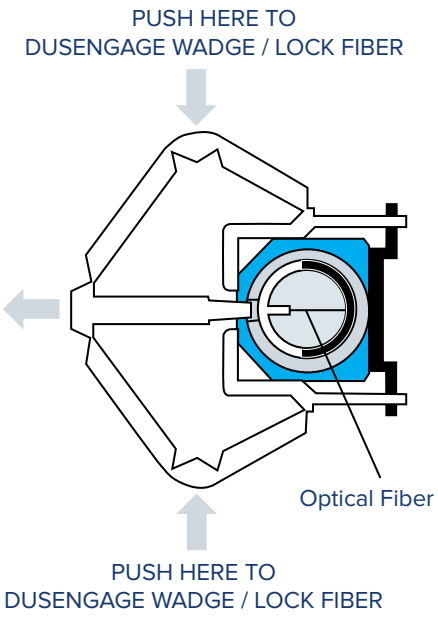
Fiber Type	Insertion Loss dB		Return Loss dB	
	Average	Maximum	Average	Maximum
Single-mode 9/125µm	0.2	0.5	56.4	45.0
Multimode 62.5/125µm	0.1	0.5	-	-
Multimode 50/125µm	0.1	0.5	-	-
Laser-Optimized 10G 50/125µm	0.1	0.5	-	-

GENERAL SPECIFICATIONS

Materials of Construction	Thermoplastic.
Operating and Storage Conditions	-40 to +75C at 0-90% RH (Non condensing)
Packaging	Per request.

OPERATION METHOD





ORDERING INFORMATION

HCS P/N	Description	Fiber Type	Housing Color	Buffer OD mm	Notes
V91-11F01	Fast™ ST SM connector	Single-mode 9/125µm (#91)	Blue	250µm or 900µm	
V51-11F01	Fast™ ST MM 50/125 connector	Multi-mode 50/125µm (#51)	Black	250µm or 900µm	
V54-11F01	Fast™ ST MM LO 50/125 connector	Multi-mode LO 50/125µm (#54)	Turquoise	250µm or 900µm	
V61-11F01	Fast™ ST MM 62.5/125 connector	Multi-mode 62.5/125µm (#61)	Beige	250µm or 900µm	

HCS P/N	Description	Fiber Type	Housing Color	Buffer OD mm	Notes
V91-12F01	Fast™ SC SM connector	Single-mode 9/125µm (#91)	Blue	250µm or 900µm	
V51-12F01	Fast™ SC MM 50/125 connector	Multi-mode 50/125µm (#51)	Black	250µm or 900µm	
V54-12F01	Fast™ SC MM LO 50/125 connector	Multi-mode LO 50/125µm (#54)	Turquoise	250µm or 900µm	
V61-12F01	Fast™ SC MM 62.5/125 connector	Multi-mode 62.5/125µm (#61)	Beige	250µm or 900µm	

HCS P/N	Description	Fiber Type	Housing Color	Buffer OD mm	Notes
V91-17F01	Fast™ LC SM connector	Single-mode 9/125µm (#91)	Blue	250µm or 900µm	
V51-17F01	Fast™ LC MM 50/125 connector	Multi-mode 50/125µm (#51)	Black	250µm or 900µm	
V54-17F01	Fast™ LC MM LO 50/125 connector	Multi-mode LO 50/125µm (#54)	Turquoise	250µm or 900µm	
V61-17F01	Fast™ LC MM 62.5/125 connector	Multi-mode 62.5/125µm (#61)	Beige	250µm or 900µm	

Butt Style Splice Case Enclosures

Description

HCS Butt Style Splice Case Enclosures Type VFO-51000 Series accommodate up to 144 fibers, utilizing one or two of the compact universal 12-fiber splice tray cassettes. Designed for ease of installation and excellent cable management, the VFO-51500 Series products are the most economical low count fiber splice cases in the industry. HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of the complete HCS cabling system.

Applications

- ☑ Premise environments
- ☑ Direct equipment termination
- ☑ Low fiber counts such as HFC nodes & FTTC ONU's.
- ☑ Building interface and Campus/LAN applications

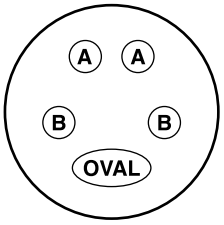
Qualifications and Approvals

HCS DataLight components are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.

Benefits & Features

- ➔ Pole/wall mount bracket included
- ➔ Built-in integral fiber management
- ➔ Unique modular splice tray cassette design
- ➔ Heat-shrink ports
- ➔ Open-able for re-entry
- ➔ Complete installation kit factory provisioned
- ➔ Universal splice holder clip for fusion or mechanical splices
- ➔ IP 68 Rating
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL SPECIFICATIONS

Parameter	Part Number VFO-51548	Part Number VFO-51596	PORT Configuration
Overall Length	430mm	500mm	
Clamp Diameter	128mm	158mm	
Max. Size B Port	24mm dia.	29mm dia.	
Min. Size B Port	6mm dia.	8mm dia.	
Max. Size A Port	24mm dia.	29mm dia.	
Min. Size A Port	6mm dia.	8mm dia.	
Max. Size Oval Port	2 x 24mm dia.	2 x 34.7mm dia.	
Min Size Oval Port	1 x 19.2mm dia.	1 x21.3mm dia.	

ORDERING INFORMATION

HCS P/N	Description	Max. Fiber Capacity	Diameter	Length mm	Splice trays	Notes
VFO-51524	Standard Tray Splice Case Enclosure	24	128	430	2	
VFO-51536	Standard Tray Splice Case Enclosure	36	128	430	3	
VFO-51548	Standard Tray Splice Case Enclosure	48	128	430	6	
VFO-51560	Standard Tray Splice Case Enclosure	60	128	430	6	
VFO-51572	Standard Tray Splice Case Enclosure	72	128	430	6	
VFO-51596	Standard Tray Splice Case Enclosure	90	158	500	8	
VFO-51A44	Standard Tray Splice Case Enclosure	144	158	500	12	

HES Cabling Systems
Connecting Networks™

Face Plates and Accessories





Description

HCS DataLink & DataLight Installations Accessories Series contain a full range of high quality, state-of-the-art tools and kits enabling perfect workmanship and professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
Proper use of HCS DataLink & DataLight Installations Accessories, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Installation of copper and fiberoptic cabling systems in horizontal or vertical environments.

ORDERING INFORMATION

HCS P/N	Description	Notes
K00-00111	Epoxy Termination Kit for SC Connector, 110 Volts	
K00-00112	Epoxy Termination Kit for SC Connector, 220 Volts	
K00-00121	Epoxy Termination Kit for ST Connector, 110 Volts	
K00-00122	Epoxy Termination Kit for ST Connector, 220 Volts	
K00-00211	Accessories for HCS FastLight™ Connecting Kit	
K00-00212	Assembly tools for HCS FastLight™ Connecting Kit	
K00-00213	Universal FiberOptic Cleaving tool for HCS FastLight™ Connecting Kit	
K00-00311	Crimping tool for RJ-45 8P8C Connector	
K00-00312	Crimping tool for RJ-11 4P6C Connector	
K00-00313	Crimping tool for RJ-45 8P8C and RJ-11 4P6C Connectors	
K00-00321	Crimping tool for BNC Connectors	
K00-00411	Punch down tool for LSA+ (Krone) Type blocks	
K00-00412	Punch down tool for 110 Type blocks	
K00-00511	Plastic Punch down tool and stripper for LSA+ (Krone) Type blocks	
K00-00512	Plastic Punch down tool and stripper for 110 Type blocks	
K00-00611	Fiber coat and buffer stripping tool	
K00-00711	FiberOptic Cable organizer for 1u patch panels	
K00-00712	FiberOptic Cable organizer for 2u patch panels	
K00-011XX	Colored Icons for Patch Panels (XX to be replaced with the color number in Color Table No. 4)	
K5E-00601	CAT 5E 6 ports UTP IDC blocks	
K5E-02402	CAT 5E 24 ports UTP patch panel metal frame	
K5E-04802	CAT 5E 48 ports Cat5E UTP patch panel frame	
K5E-02403	CAT 5E UTP 24 ports patch panel accessories	
K5E-04803	CAT 5E UTP 48 ports patch panel accessories	
K6E-00801	CAT 6e 8 ports UTP IDC blocks	
K6E-02402	CAT 6e 24 ports UTP patch panel metal frame	
K6E-04802	CAT 6e 48 ports UTP patch panel frame	
K6E-02403	CAT 6e UTP 24 ports patch panel accessories	
K6E-04803	CAT 6e UTP 48 ports patch panel accessories	

Description

HCS offers a full range of high quality, state of the art Face plates, Outlets and Surface-mount boxes for professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
HCS US Style Station face plates series includes a full range of high quality, state-of-the-art plates and boxes for perfect and professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
The range of products includes face plates, wall outlets, colored icons and station ID, all fitting into a single back box and compatible with a range of inserts for RJ-45 jacks, BNC, ST (fiberoptic connector), F-Type (TV) connectors and more.
Proper use of HCS DataLink & DataLight Face Plates, Outlets and Back-boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Termination of twisted pair LAN and telephone cables, coaxial cables and fiberoptic cables.

GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimensions mm			Notes
			L	W	H	
W00-20001	US Style Mount Back Box	-	115	72	38	-
W00-20101	US Style Face Plate with Station ID	1	113	70	-	-
W00-20102	US Style Face Plate with Station ID	2	113	70	-	-
W00-20103	US Style Face Plate with Station ID	3	113	70	-	-
W00-20104	US Style Face Plate with Station ID	4	113	70	-	-
W00-20106	US Style Face Plate with Station ID	6	113	70	-	-
W00-20201	US Style Face Plate with Shutter (Dust Cover)	1	114	70	-	-
W00-20202	US Style Face Plate with Shutter (Dust Cover)	2	114	70	-	-
W00-20204	US Style Face Plate with Shutter (Dust Cover)	4	114	70	-	-
W00-20301	US Style TV Coupler Insert	1	-	-	-	-
W00-20302	US Style ST Coupler Insert	1	-	-	-	-
W00-20303	US Style TNC Coupler Insert	1	-	-	-	-
W00-20304	US Style BNC Coupler Insert	1	-	-	-	-
W00-20305	US Style Blanc Coupler Insert	0	-	-	-	-
W00-204XX	US Style Color Icons (XX to be replaced with color number in table 4)	0	-	-	-	-
W00-20501	US Style Dust Cover for RJ-12 socket	0	-	-	-	-
W00-20502	US Style Dust Cover for RJ-45 socket	0	-	-	-	-

French (Legrand) Style Face Plates

HES Cabling Systems
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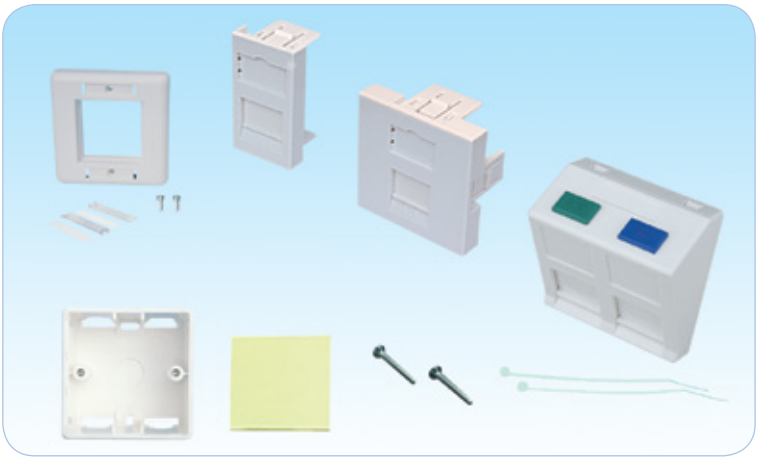


Description

HCS offers a full range of high quality, state of the art Face plates, Outlets and Surface-mount boxes for professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
HCS French (Legrand) Style face plates series includes a full range of high quality, state-of-the-art plates and boxes for perfect and professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
The range of products includes face plates, wall outlets, colored icons and station ID, all fitting into a single back box and compatible with a range of inserts for RJ-45 jacks, BNC, ST (fiberoptic connector), F-Type (TV) connectors and more.
Proper use of HCS DataLink & DataLight Face Plates, Outlets and Back-boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Termination of twisted pair LAN and telephone cables, coaxial cables and fiberoptic cables.

Benefits & Features

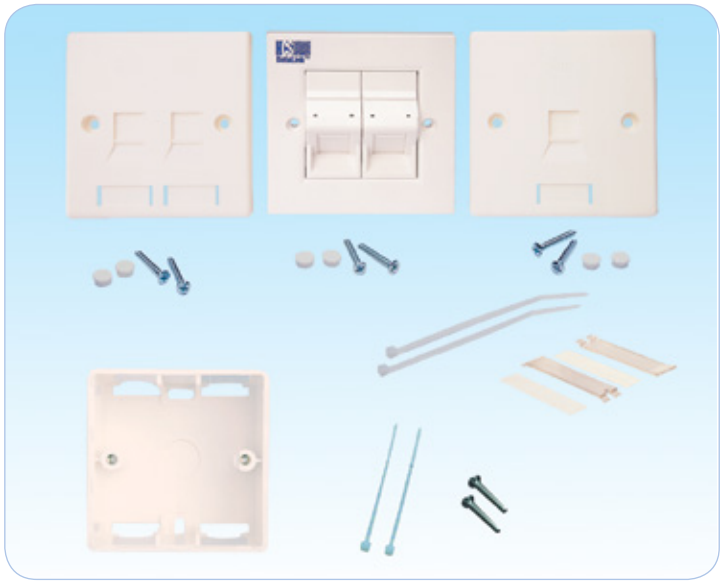
- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Box covers include covered labeling and snap-in colored icons - Providing elegant and professional outlet identification.
- Back-boxes include screws, cable ties and double-sides adhesive tape - Providing fast and easy termination.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimensions mm			Notes
			L	W	H	
W00-30001	French Style Mount Back Box	-	81	81	45	-
W00-30101	French Style Face Plate with Station ID (45x45mm space)	-	80	80	15	-
W00-30201	French Style 1/2 Insert with Shutter and Color Icon (New French Standard)	1	45	22.5	-	-
W00-302C1	French Style 1/2 Insert with Station ID (No shutter) for LC DX and SC SX Couplers)	1	45	22.5	-	-
W00-30301	French Style 1/1 Insert with Shutter and Color Icon (New French Standard)	1	45	45	-	-
W00-30303	French Style Angled 1/1 Insert with Shutter and Color Icon (New French Standard)	1	45	45	-	-
W00-30304	French Style Angled 1/1 Insert with Shutter and Color Icon (New French Standard)	2	45	45	-	-
W00-30411	French Style TV Coupler Assembly	1	45	22.5	-	-
W00-30421	French Style BNC Coupler Assembly	1	45	22.5	-	-
W00-30422	French Style BNC Coupler Assembly	2	45	22.5	-	-
W00-30431	French Style ST Coupler Assembly	1	45	22.5	-	-
W00-30432	French Style ST Coupler Assembly	2	45	22.5	-	-
W00-30441	French Style TNC Coupler Assembly	1	45	22.5	-	-
W00-30442	French Style TNC Coupler Assembly	2	45	22.5	-	-
W00-30451	French Style SC Duplex Coupler Assembly	1	45	45	-	-
W00-30452	French Style SC Duplex Coupler Assembly	1	45	22.5	-	-
W00-30552	French Style MT-RJ Coupler Assembly	2	45	45	-	-
W00-30652	French Style LC Duplex Coupler Assembly	2	45	45	-	-
W00-30400	French Style Blank Insert	0	45	22.5	-	-
W00-30501	French Style 1/2 Color Insert	0	45	22.5	-	-
W00-30502	French Style 1/1 Color Insert	0	45	45	-	-



Description

HCS offers a full range of high quality, state of the art Face plates, Outlets and Surface-mount boxes for professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
HCS UK Style face plates series includes high quality, state-of-the-art plates and boxes for perfect and professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
The range of products includes two optional plates with station ID, fitting into a single back box.
Proper use of HCS DataLink & DataLight Face Plates, Outlets and Back-boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Termination of twisted pair LAN and telephone cables.

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Box covers include covered labeling and snap-in colored icons - Providing elegant and professional outlet identification.
- Back-boxes include screws, cable ties and double-sides adhesive tape - Providing fast and easy termination.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimensions mm			
			L	W	H	Notes
W00-40001	UK Style Mount Back Box	-	87	87	38	-
W00-40101	UK Style Face Plate Single Port	1	86	86	-	-
W00-40102	UK Style Face Plate Double Port	2	86	86	-	-
W00-40103	UK Style Face Plate 45 degree Single Port	1	86	86	-	-
W00-40104	UK Style Face Plate 45 degree Double Port	2	86	86	-	-
W00-40105	UK Style Face Plate with station ID Single Port	1	86	86	-	-
W00-40106	UK Style Face Plate with station ID Double Port	2	86	86	-	-

LJ6C Face Plates

Description

HCS LJ6C Style face plates series includes high quality, state-of-the-art faceplates, mount-boxes, inserts and adapters for perfect and professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
Proper use of HCS DataLink & DataLight Face Plates, Outlets and Back-boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Termination of copper and fiberoptic LAN and telephone cables.

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Mount-boxes include screws, cable ties and double-sides adhesive tape - Providing fast and easy termination.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimension mm			Notes
			L	W	H	
W00-60001	LJ6C Style Standard Mount Box	-	87	87	28	-
W00-60002	LJ6C Style Deep Mount Box	-	87	87	42	-
W00-60003	LJ6C Style Standard Wide Mount Box	-	87	147	28	-
W00-60101	LJ6C Style Single Port Faceplate	1	86	86	9	-
W00-60202	LJ6C Style Dual Port Faceplate	2	86	86	9	-
W00-60403	LJ6C Style Quad Port Faceplate	4	86	86	9	-
W00-60011	LJ6C Style Blank Narrow Insert	0	38	12.5	9	-
W00-60012	LJ6C Style Blank Standard Insert	0	38	25	9	-
W00-60111	LJ6C Style Universal RJ-45 Adapter with Shutter	1	38	25	14	-
W00-60112	LJ6C Style Angled RJ-45 Adapter with Shutter	1	38	25	35	-
W00-60113	LJ6C Style MT-RJ Duplex Adapter	1	38	25	9	-
W00-60114	LJ6C Style LC Duplex Adapter	1	38	25	9	-
W00-60115	LJ6C Style MT-RJ Duplex Adapter	1	38	25	9	-
W00-60116	LJ6C Style ST-compatible Single Port Adapter	1	38	25	9	-
W00-60216	LJ6C Style ST-compatible Dual Port Adapter	2	38	25	9	-
W00-60117	LJ6C Style SC Simplex Single Port Adapter	1	38	25	9	-
W00-60217	LJ6C Style SC Simplex Dual Port Adapter	2	38	25	9	-
W00-60118	LJ6C Style SC Duplex Adapter	1	38	25	9	-

Description

HCS offers a full range of high quality, state of the art Face plates, Outlets and Surface-mount boxes for professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
HCS Japanese Style Station face plates series includes a full range of high quality, state-of-the-art plates and boxes for perfect and professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
The range of products includes different face plates fitting into a single back box and compatible with a range of inserts for RJ-45 jacks, BNC, ST & SC (fiberoptic connector), F-Type (TV) connectors and more.
Proper use of HCS DataLink & DataLight Face Plates, Outlets and Back-boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Termination of twisted pair LAN and telephone cables, coaxial cables and fiberoptic cables.

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Box covers include covered labeling and snap-in colored icons - Providing elegant and professional outlet identification.
- Back-boxes include screws, cable ties and double-sides adhesive tape - Providing fast and easy termination.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

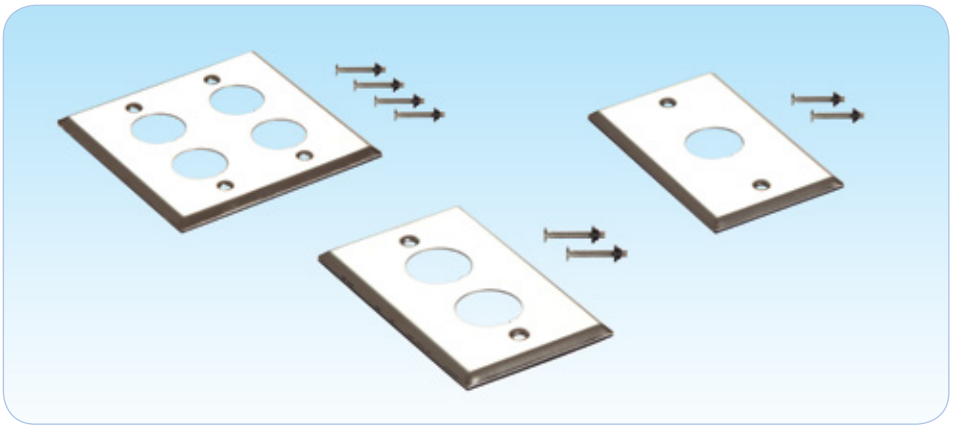
GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimension mm			
			L	W	H	Notes
W00-50001	Japanese Style Mount Back Box	-	115	72	38	-
W00-50101	Japanese Style Face Plate	1	113	70	-	-
W00-50102	Japanese Style Face Plate	2	113	70	-	-
W00-50103	Japanese Style Face Plate	3	113	70	-	-
W00-50201	Japanese Style Keystone Jack Insert	1	-	-	-	-
W00-50211	Japanese Style RJ-45 Assembly without dust cover	1	-	-	-	-
W00-50221	Japanese Style RJ-45 Assembly with dust cover	1	-	-	-	-
W00-50311	Japanese Style TV Coupler Insert	1	-	-	-	-
W00-50321	Japanese Style BNC Coupler Insert	1	-	-	-	-
W00-50331	Japanese Style TNC Coupler Insert1	-	-	-	-	-
W00-50341	Japanese Style ST Coupler Insert	1	-	-	-	-
W00-50351	Japanese Style SC Coupler Insert	1	-	-	-	-
W00-50301	Japanese Style Blank Insert	1	-	-	-	-

LAN Copper Connectivity
Industrial Faceplates



Description

HCS DataLink 1-4 port stainless-steel IP67 industrial outdoor faceplates

Jack compatibility	Shielded & Unshielded RJ45 Industrial Jacks
Category compatibility	CAT5e or CAT6
Mount type	Wall or duct
Color	Metal
KSJ insertion method	Back loading
Accessories	2 Screws

Qualifications and Approvals

HCS DataLink IP67 industrial outdoor connection boxes are tested and verified for full compliance with the following standards:

- UL94 V-0 flame test
- EU Directive 2011/65/EU (RoHS-2)
- IEC 60259 IP67
- UL 1863 Communications-Circuit Accessories Safety

Benefits & Features

Material of construction	Stainless steel with rubber seal
Operating temperature	-25 to +70C at 5-95% RH (Non condensing)
Storage temperature	-25 to +80C

ORDERING INFORMATION

HCS P/N	Description	Color	Ports	Size mm	Labeling	Packaging
WSS-P0167	Industrial IP67 Stainless Steel faceplate	Metal	1	70x115x4.4	None	1/Bag
WSS-P0267	Industrial IP67 Stainless Steel faceplate	Metal	2	70x115x4.4	None	1/Bag
WSS-P0367	Industrial IP67 Stainless Steel faceplate	Metal	4	116.5x115x4.4	None	1/Bag

Description

HCS offers a full range of high quality, state of the art Face plates, Outlets and Surface-mount boxes for professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
HCS DL-1200 face plates are specifically designed for HCS Category 7A DL-1200 4-pair outlet, providing a secure mounting solution for use in trunking systems and floor boxes . The flat or angled designs provide sufficient space for larger diameter cables to bend properly within pathways. The latching fingers allow the faceplates to be positioned in all four orientations, allowing the cable to be routed properly and providing flexibility in outlet positioning. Proper use of HCS DataLink & DataLight Face Plates, Outlets and Back-boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

HCS DataLink DL-1200 Faceplate are used for horizontal distribution with DL-1200 4-Pair outlets.

Benefits & Features

- 1 or 2 port opening for DL-1200 4-Pair outlets.
- Flat or Angled design to maintain proper cable bend radius.
- Adapter snaps into 45mm x 45mm or 50mm x 50mm openings.
- Robust mounting fingers allow positioning in any orientation.
- Flat designation area for application of adhesive-backed labels.
- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other color available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Size	
			mm	Inch
W00-70101	1-Port DL-1200 Angled Faceplate	1	45x45	1.77x1.77
W00-70102	1-Port DL-1200 Flat Faceplate	1	45x45	1.77x1.77
W00-70202	2-Port DL-1200 Flat Faceplate	2	45x45	1.77x1.77
W00-70203	2-Port DL-1200 Angled Faceplate	2	50x50	1.97x1.97

Multimedia Communications Boxes

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Description

HCS Multimedia Communication Boxes series includes a wide range of high quality, state-of-the-art boxes for professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
The range of products includes 2-12 port multimedia boxes, compatible with a range of inserts for RJ-45 jacks, ST, SC & MT-RJ (fiberoptic connector) and more.
Proper use of HCS DataLink & DataLight Multimedia boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Termination of twisted pair LAN, telephone and fiberoptic cables in a single box.

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- All boxes include covered labeling and snap-in colored icons - Providing elegant and professional outlet identification.
- All boxes include screws, cable ties and double-sides adhesive tape - Providing fast and easy termination.
- Multimedia Box includes internal fiber management - Providing a safe and simple fiber termination.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimension mm			Notes
			L	W	H	
WMM-00201	2-Port Surface Mount Box	2	89	75.3	36.6	-
WMM-00401	4-Port Surface Mount Box	4	139	75.3	36.6	-
WMM-00601	6-Port Surface Mount Box	6	189	75.3	36.6	-
WMM-00001	Blank insert for Surface Mount Box	0	26	22	11.3	-
WMM-00111	RJ-45 insert assembly for Surface Mount Box	1	26	22	11.3	-
WMM-00121	Single ST insert assembly for Surface Mount Box	1	26	22	11.3	-
WMM-00141	Simplex SC insert assembly for Surface Mount Box	1	26	22	11.3	-
WMM-00151	Simplex FC insert assembly for Surface Mount Box	1	26	22	11.3	-
WMM-00161	MT-RJ insert assembly for Surface Mount Box	1	26	22	11.3	-
WMM-00171	Duplex LC insert assembly for Surface Mount Box	1	26	22	11.3	-
WMM-01202	12-Port Multimedia Communications Box with fiber management	12	205	171	57.5	-
WMM-00012	Blank insert for Multimedia Communications Box	0	50	25	12.0	-
WMM-00122	Single RJ-45 Keystone Jack insert for Multimedia Communications Box	1	50	25	11.5	-
WMM-00222	Double RJ-45 Keystone Jack insert for Multimedia Communications Box	2	50	25	11.5	-
WMM-00132	Duplex MT-RJ insert assembly for Multimedia Communications Box	1	50	25	12.0	-
WMM-00142	Single ST insert assembly for Multimedia Communications Box	1	50	25	12.0	-
WMM-00242	Double ST insert assembly for Multimedia Communications Box	2	50	25	12.0	-
WMM-00152	Simplex SC insert assembly for Multimedia Communications Box	1	50	25	12.0	-
WMM-00252	Duplex SC insert assembly for Multimedia Communications Box	1	50	25	12.0	-

Description

HCS Surface Mount Boxes series includes a wide range of high quality, state-of-the-art boxes for professional installations, needed to provide fully compliant copper and fiber-optic cabling systems.
The range of products includes 1-6 ports multimedia boxes, compatible with a range of inserts for RJ-45 jacks, ST, SC & MT-RJ (fiberoptic connector) and more.
Proper use of HCS DataLink & DataLight Surface Mount Boxes, along with all HCS cabling components provide high-quality cabling systems which are supported by the Century™ Lifetime Warranty and the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

Termination of twisted pair LAN, telephone and fiberoptic cables in a single box.

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- All boxes include covered labeling and snap-in colored icons - Providing elegant and professional outlet identification.
- All boxes include screws, cable ties and double-sides adhesive tape - Providing fast and easy termination.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Construction Materials	High impact, Flame-retardant plastic compound, UL 94 V-0.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Standard Color	White RAL 1013. Other colors available upon request.

ORDERING INFORMATION

HCS P/N	Description	Ports	Dimension mm			Color
			L	W	H	
WMM-00103	1 Port Blank Shuttered Surface Mount Box	1	46	65	30.5	White
WMM-00203	2 Port Blank Shuttered Surface Mount Box	2	68	65	30.5	White
WMM-00403	4 Port Blank Shuttered Surface Mount Box	4	118	85.2	30.5	White
WMM-00603	6 Port Blank Shuttered Surface Mount Box	6	172.1	85.2	30.5	White
WMM-00486	2 Port Fiber Termination Surface Mount Box	2	86	86	10	White

LAN Copper Connectivity
Industrial Connection Boxes

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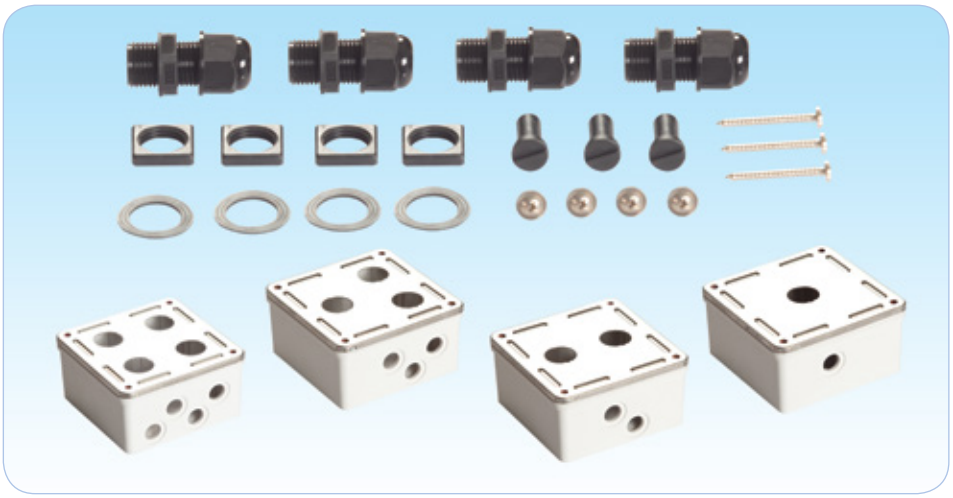

Description

HCS DataLink 1-4 port stainless-steel IP67 industrial outdoor connection boxes

Jack compatibility	Shielded & unshielded RJ45 industrial Jacks
Category compatibility	CAT5e or CAT6
Mount type	Wall
Box color	White
Faceplate color	Metal
KSJ insertion method	Internal
Accessories	Cable glands, sealing inserts, screws
Gland cable OD limitation	11.0 mm max

Qualifications and Approvals

HCS DataLink IP67 industrial outdoor connection boxes are tested and verified for full compliance with the following standards:

- UL94 V-0 flame test
- EU Directive 2011/65/EU (RoHS-2)
- IEC 60259 IP67
- UL 1863 Communications-Circuit Accessories Safety

Benefits & Features

Material of construction - box	High-impact FR UV-resistant plastic
Material of construction - cover	Stainless steel with rubber seal
Operating temperature sing)	-25 to +70C at 5-95% RH (Non condensing)
Storage temperature	-25 to +80C

ORDERING INFORMATION

HCS P/N	Description	Box Color	Faceplate Color	Ports	Glands	Seals	Size mm	Labeling	Packaging
WMM-P0167	Industrial IP67 Outdoor Connection Box	White	Metal	1	1	0	128x128x60	None	1/Bag 1/Box
WMM-P0267	Industrial IP67 Outdoor Connection Box	White	Metal	2	2	1	128x128x60	None	1/Bag 1/Box
WMM-P0367	Industrial IP67 Outdoor Connection Box	White	Metal	3	3	2	128x128x60	None	1/Bag 1/Box
WMM-P0467	Industrial IP67 Outdoor Connection Box	White	Metal	4	4	3	128x128x60	None	1/Bag 1/Box

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HCS Data Center Copper & Fiber Cabling Solutions

DataLink 100e

4-Pair and 2-Pair Category 5E Unshielded RJ-45 to TELCO Copper Patch Panels

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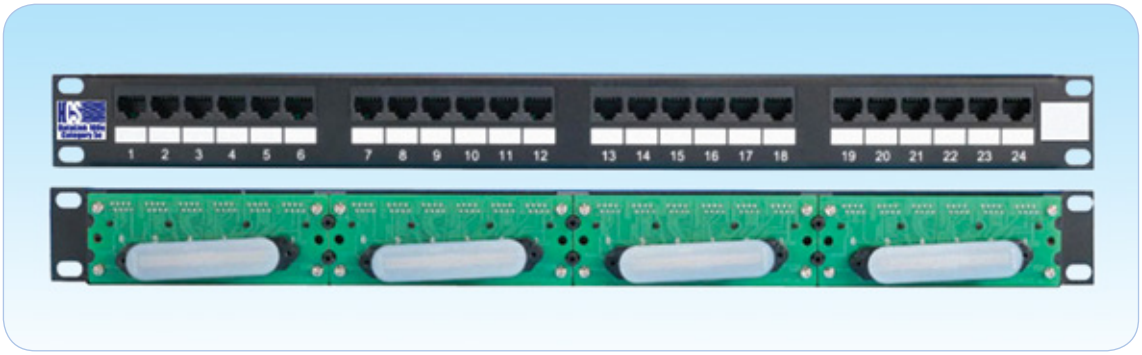

Description

HCS DataLink unshielded copper RJ-45 to TELCO patch panel series includes high performance 24-Port and 48-Port Category 5E panels specially designed for data-centers for structured premise cabling in local area networks (LANs).
HCS RJ-45 to TELCO patch panels are available in two optional configurations:
- 4-Pair CAT 5E RJ-45 to TELCO panels provide one TELCO back interconnection 25 Pair block for each module of 6 RJ-45 ports, ready for 25 Pair TELCO patch-cords (RJ-21). This configuration supports all CAT 5E applications, including 1GBASE-T.
- 2-Pair CAT 5E RJ-45 to TELCO panels provide one TELCO back interconnection 25 Pair block for each two modules of 6 RJ-45 ports, ready for 25 Pair TELCO patch-cords (RJ-21). In this configuration, only two pairs in each RJ-45 port are terminated:
Pins 1-2 and 3-6, providing 10BASE-T and 100BASE-TX support only.All panels fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.
The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications, including 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E unshielded copper RJ-45 to TELCO patch panels are used mainly in data-centers and telecommunications rooms and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E panels comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA/568-C.2
- ☑ ISO/IEC-11801 (2nd Edition)

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ High quality metal casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Robust and installer-friendly design and Printed labels for port identification - Providing reduced installation and operating costs.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material of Construction	Galvanized Steel.
Paint and Standard Color	Black, Powder paint finish or plastic front.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack Spring Contact Coating	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating.
Plug Retention Force	14 Kgf (140N) min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	TELCO Blocks	Units	Size		Notes
				mm	Inch	
P5E-T2401-1U	24 port RJ-45 to TELCO Unshielded CAT5E 19" Panel	4	1u	43.7x482.6	1.75x19	-
P5E-T4801-2U	48 port RJ-45 to TELCO Unshielded CAT5E 19" Panel	8	2u	87.4x482.6	3.44x19	-
P5E-T2402-2U	24 port RJ-45 to TELCO Unshielded 2P 19" Panel	2	2u	43.7x482.6	3.44x19	-
P5E-T4802-2U	48 port RJ-45 to TELCO Unshielded 2P 19" Panel	4	2u	87.4x482.6	3.44x19	-

HCS P/N	Modular Cords Description	Plugs	Length		Notes
T5E-T02510-XX	25x2x24# UTP CAT 5E PVC RJ21 modular Cord Gray	TELCO 180° to 180°	XXm		-
T5E-T02520-XX	25x2x24# UTP CAT 5E LS0H RJ21 modular Cord Gray	TELCO 180° to 180°	XXm		-
T5E-T02530-XX	25x2x24# UTP CAT 5E PVC RJ21 modular Cord Gray	TELCO 110° to 180°	XXm		-
T5E-T02540-XX	25x2x24# UTP CAT 5E LS0H RJ21 modular Cord Gray	TELCO 110° to 180°	XXm		-
T5E-T02550-XX	25x2x24# UTP CAT 5E PVC RJ21 modular Cord Gray	TELCO 110° to 110°	XXm		-
T5E-T02560-XX	25x2x24# UTP CAT 5E LS0H RJ21 modular Cord Gray	TELCO 110° to 110°	XXm		-

DataLink 100e

Category 5E Unshielded RJ-45 to iPass Pre-Terminated Copper Patch Panels

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Description

HCS DataLink unshielded copper RJ-45 to iPass patch panel series includes high performance 24-Port and 48-Port Category 5E panels specially designed for data-centers and structured premise cabling in local area networks (LANs). HCS iPass to RJ-45 patch panels consist of 12-port (4 x 6) or 12-port preterminated cassettes loaded into a 1U Rack Mount Enclosure. The cassettes slide easily in and out of the panels, allowing fast installation. The Simple cassette design allows for fast upgrades or expansion of systems with minimum installation time. All cassettes are 100% factory tested, enabling flexible configuration and cost effective installation, while minimizing the need for on-site testing. 6-port cassettes have one iPass port, 12-port cassettes have two iPass Ports. Pre-terminated iPass to iPass 25 pair Category 5E cables (1-90 meter length) can be connected to iPass ports at the back side of cassettes. All panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 Category 5E, CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements. The HCS Logo and the DataLink 100E Trademark ensure long lasting high-performance and full support of all relevant applications up to 1000BASE-T (Gigabit-Ethernet).

Applications

HCS DataLink 100E unshielded copper RJ-45 to iPass patch panels are used mainly in data-centers and telecommunications rooms and they fully support the following protocols

- ☑ 1000BASE-T (Gigabit-Ethernet)
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 100E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 100E panels comply to the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA-568-C.2	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 plastic materials
☑ ISO/IEC-11801 (2nd Edition)	☑ FCC Part 15, Class A (USA)	☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 5E performance - Providing full support to Gigabit Ethernet.
- ➔ High quality metal casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

General Properties : Panel & Cassettes	
Material of Construction	Cold rolled steel, 1.5 mm thickness
Paint and Standard Color	Black, Powder paint finish or plastic front.
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.
General Properties: Cassettes RJ-45 receptables	
Housing Material	Thermoplastic Rated UL94 V-0.
Jack spring contact coating	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating
Plug Retention Force	49N minimum.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
Plug Insertion Durability	750 mating cycles
General Properties: Cassettes iPass receptables	
Housing Material	Zinc Alloy
Contact Material	Copper Alloy
Contact Plating	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating
Insertion Force	60 N
General Properties - Distribution Cable Assembly	
Conductor Size	24AWG solid bare copper
MAX OD	12.7mm
Jacket	PVC or LS0H
Temperature Range	-20 to +60C at 0-90% RH (Non condensing)
Flame Performance	Conforming to IEC 60332-1
General Properties - iPass Plug Connector	
Housing	Zinc Alloy
Contact Material	FR4 PCB
Contact Pad Plating	PVC or LS0H
Insertion Force	1.27µm (50µ-Inch) hard Gold over 2.54µm (100µ-Inch) Nickel plating
Flame Performance	60 N

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss		NEXT		FEXT		RL	
MHz	dB/100m		dB		dB		dB	
	Nom	Max	Nom	Min	Nom	Min	Nom	Min
1.00	0.02	0.10	85.0	65.0	77.0	65.0	55.0	30.0
4.00	0.03	0.10	75.0	65.0	65.0	63.1	50.0	30.0
8.00	0.04	0.11	70.0	64.9	60.0	57.0	48.0	30.0
10.00	0.04	0.13	68.0	63.0	58.0	55.1	42.0	30.0
16.00	0.05	0.16	64.0	58.9	54.0	51.0	40.0	30.0
25.00	0.06	0.20	60.0	55.0	50.0	47.1	35.0	30.0
31.25	0.07	0.22	58.0	53.1	48.0	45.2	33.0	30.0
62.50	0.11	0.32	52.0	47.1	42.0	39.1	28.1	24.1
100.00	0.15	0.40	45.0	43.0	38.0	35.1	24.0	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20.Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Panels Description	TELCO Blocks	Units	Notes
P00-P0401-1U	Unshielded empty patch panel, 19", 1U, for 4xiPass cassettes insert	-	1u	-
P5E-P0602-1U	6 port RJ-45 to iPass Unshielded 1000BASE-T 19" cassette	1	1u	-
P5E-P1202-1U	12 port RJ-45 to iPass Unshielded 1000BASE-T 19" cassette	2	1u	-

HCS P/N	Modular Cords Description	Plug	Length	Notes
T5E-P02510-XX	25x2x24# UTP CAT 5E PVC iPass modular Cord Gray	iPass	XX m	-
T5E-P02520-XX	25x2x24# UTP CAT 5E LS0H iPass modular Cord Gray	iPass	XX m	-

DataLink 250E

Category 6E Unshielded RJ-45 Copper Angled Patch Panels (Jacks)

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Description

HCS DataLink 250E unshielded copper RJ-45 patch panel series includes high performance Enhanced Category 6 panels specially designed for structured premise cabling in local area networks (LANs).

HCS DataLink 250E Angled Patch Panels are ideal for data-centers and installations of high density or which utilize extensive side and end-of-the-rack cable management.The angled feature provides enhanced port access and minimizes patch cord bend radius to the rack. The IDC section consists of V-shaped contacts that flex (not fatigue) when terminated. Each RJ45 port features a patented spring-loaded shutter and can be Color Coded to match jack outlets with the use of optional port icons. Offering both front and rear labeling options, the patch panel is constructed of cold-rolled steel for additional strength and durability.

All panels fully conform to and provide a substantial margin above all ANSI/TIA/568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements, tested at the component level.

The HCS Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of all relevant applications.

Applications

HCS DataLink 250E unshielded copper RJ-45 Angled patch panels are mainly used for horizontal distribution or equipment terminations in data-centers, dense telecommunications rooms and for interconnection terminations in consolidation points, and they fully support all relevant LAN applications, including the following protocols:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T Fast Ethernet
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 250E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS DataLink 250 panels are tested at the component level and they comply to the following standards:

TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA/568-C.2	☑ EN-55022, Class B (Europa)	☑ UL94 V-0 rated plastic materials
☑ ISO/IEC-11801	☑ FCC Part 15, Subpart J, Class A (US)	☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - Providing full support to Gigabit Ethernet over Category 5E and Category 6 cabling systems.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Compatible with 22-24 AWG solid conductors - Providing support to a wider range of cabling types.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Each port features the patented spring-loaded shutter prevents incomplete mating & protects from dust and contaminants.
- ➔ Patented IDC V-shaped contacts that flex (not fatigue) when terminated.
- ➔ Features pointed IDC towers to speed termination and enhance cable retention.
- ➔ Dual color-coding allows for 568 A/B wiring configuration.
- ➔ Front and rear port labeling (port sequence 1-48) as well as panel identification label.
- ➔ 4 x 6 ganged jack configuration.
- ➔ Individually removable patch panel ports.
- ➔ Removable cable management shelves ensure bend radius compliance.
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ RJ45 port which is RJ-11 compatible.
- ➔ Molded category identification on each port face as well as optional port identification icons.

GENERAL PROPERTIES

Wire Size Range	22 to 24 AWG, Solid conductors.
Material of Construction	CRS (Cold rolled steel), 1.5mm thickness.
Paint and Standard Color	Black or Gray.
Plastic Parts	High impact, Flame-retardant plastic compound, UL 94 V-0.
Housing Material - Jack & IDC	High impact FR plastic rated UL 94 V-0.
Jack Spring Contact	Phosphor Bronze with 50G" hard Gold over 100G" Nickel plating
Plug Retention Force	50N min.
Plug to Jack Contact Force	100 grams min. (using HCS approved plug).
IDC Terminations Cycles	200 min.
IDC Type	Gas tight
Plug Insertion Durability	750 mating cycles
Storage Temperature Range	-40 to +70C
Operation Conditions	-20 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact) Initial Contact Resistance: 2.5 mOhm.
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size		T568
				mm	Inch	
P6E-02404-1U	24 port RJ-45 Unshielded Angled CAT 6E 19" Patch Panel	110 IDC	1U	44.5x483	1.75x19	UNI
P6E-04804-2U	48 port RJ-45 Unshielded Angled CAT 6E 19" Patch Panel	110 IDC	2U	89x483	3.5x19	UNI

Blank Keystone-Jack Copper Patch Panels

HES Cabling Systems
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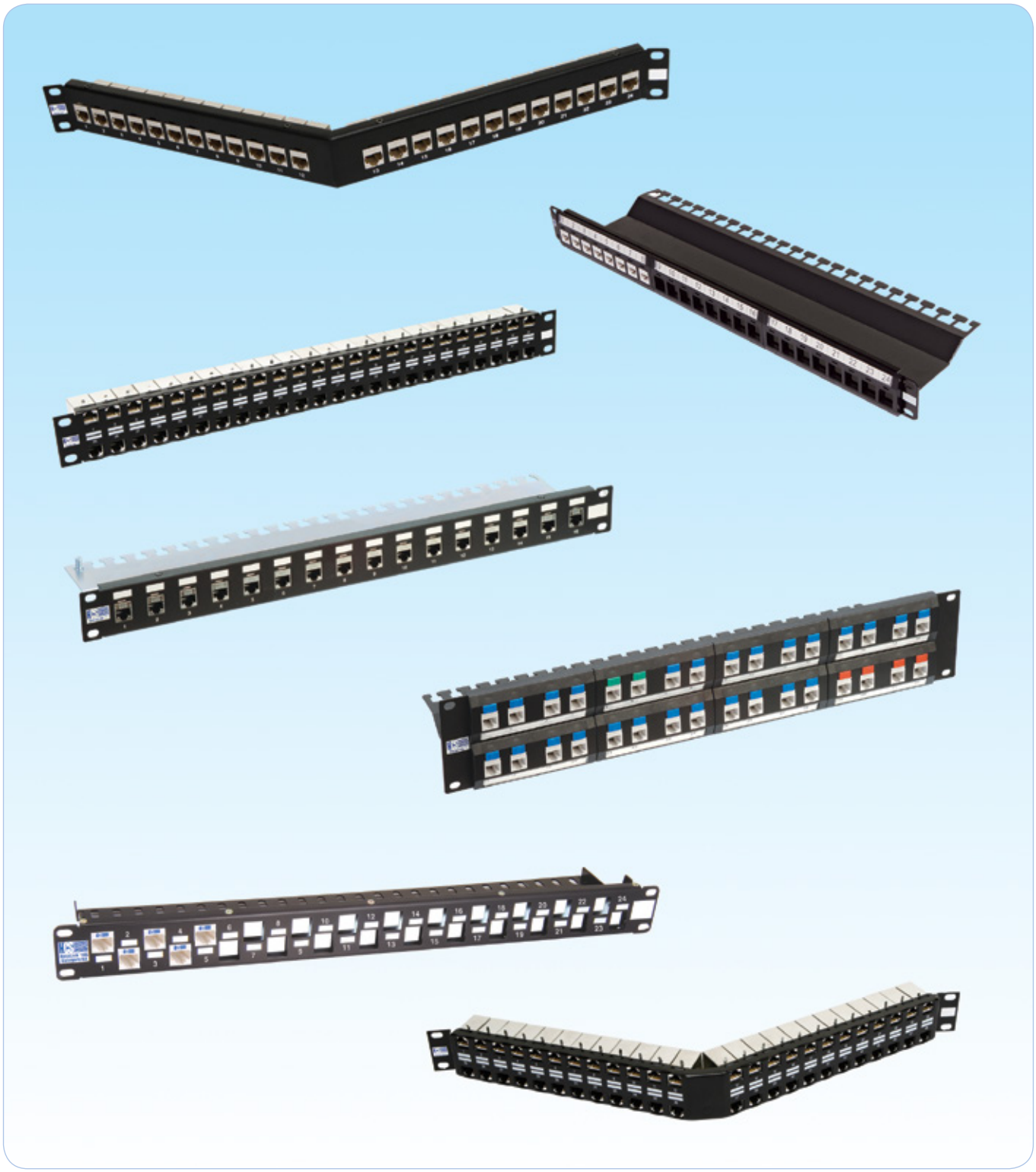

Description

HCS DataLink Blank RJ-45 Keystone-Jack Copper Patch Panels series includes high quality empty multi-port panels specially designed for structured premise cabling in local area networks (LANs).
HCS DataLink blank panels are available with plastic or metal frames, with up to 48 ports and with standard or staggered form.
The plastic-frame panels are recommended for use with unshielded jacks, while the metal-frame panels are recommended for use with shielded jacks, in order to provide continuous ground connection even when non-shielded cords are used.
The HCS Logo and the DataLink Trademark ensure long lasting high-performance and full compatibilty with all HCS components.

Applications

Installation of copper cabling systems in horizontal or vertical environments.

Benefits & Features

- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Integrated full installation accessories (supplied free of charge), including labels and icons, clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- Optional plastic front panels - Providing custom color selection.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- High quality metal casing - Providing excellent EMC (Electro Magnetic Compatibility), minimizing radiation and maximizing noise immunity.
- Robust and installer-friendly design - Providing reduced installation and operating costs
- Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material of Construction - Metal Frame	Steel, Aluminum, Aluminum Alloy or Anodized Aluminum.
Paint and Color - Metal Frame	Powder paint finish, Black (Gray available upon request)
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Material of Construction - Plastic Frame	High impact, Flame-retardant plastic compound, UL 94 V-0.
Packaging	One unit per box.
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Storage Temperature	-20 to +80C
Non Halogen Constructions	Available upon request.

ORDERING INFORMATION

HCS P/N	Description	Units	Jack Compatibilty		Size	
			Unshielded	Shielded	mm	Inch
P00-01610-1U	16 port Keystone Jack Blank 19" Plastic Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-01620-1U	16 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-02410-1U	24 port Keystone Jack Blank 19" Plastic Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02420-1U	24 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-02430-1U	24 port Keystone Jack Blank 19" Staggered Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02450-1U	24 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02460-1U	24 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-02470-1U	24 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-03210-2U	32 port Keystone Jack Blank 19" Plastic Patch Panel	2u	Yes	No	89x483	3.5x19
P00-04810-2U	48 port Keystone Jack Blank 19" Plastic Patch Panel	2u	Yes	No	89x483	3.5x19
P00-04810-1U	48 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-04820-1U	48 port Keystone Jack Blank 19" Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19
P00-04860-1U	48 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	No	44.5x483	1.75x19
P00-04870-1U	48 port Keystone Jack Blank 19" Angled Metal Patch Panel	1u	Yes	Yes	44.5x483	1.75x19

DataLink 500A

Category 6A Cable Assemblies

HES Cabling Systems
Connecting Networks™

Description

HCS DataLink 500A cable assemblies consist of custom-made LS0H pre-terminated 100 Ohm 4-pair LAN cables bundled together, designed for fast and easy installation in data-centers and other high-density locations.Full conformance to TIA-568-C Category 6A and ISO/IEC 11801 Class EA is guaranteed by the selection of Category 6A officially verified components and by 100% testing of each permanent link inside the bundle prior to shipment. HCS DataLink 500A cable assemblies are bundled with special halogen-free and flame-retardant semi-loose sleeves providing limp and easy-tobend, re-shapeable bundles, which are ideal for tight places and high-density locations. The bundles are marked on both sides with numbered labels for fast and easy identification. HCS DataLink 500A cable assemblies are available in shielded or unshielded versions, in lengths ranging from 5 to 90 meters and with Category 6A, Category 7 or Category 7A cables and are in full compliance with TIA-942, ISO/IEC 24764 and EN 50173-5. The standard cable jacket color is gray (RAL 7035) but other colors available upon request.

Applications

HCS DataLink 500A cable assemblies support all presently available LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet“
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A Cable assemblies are 100% tested and verified for full compliance with the following standards:

- ➔ Category 6A Permanent Link according to ANSI/TIA-568-C.2
- ➔ Class EA Permanent Link according to ISO/IEC-11801 (2nd Edition)
- ➔ Class EA Permanent Link according to CENELEC EN 50173.

Benefits & Features

- ➔ Testing every assembly prior to shipment -providing the highest degree of quality assurance.
- ➔ Custom-made designs -providing the exact assembly needed for every job and location.
- ➔ Unique LS0H sleeves -providing limp, easy to re-shape and install assemblies, ideal for data-centers.
- ➔ Exceptional material properties and cable design -providing the highest degree of reliability.
- ➔ High Return Loss and NEXT Loss values -providing low BER (Bit-Error-Rate) in all applications.
- ➔ Extremely high pair-balance and overall cable shield -providing excellent alien crosstalk loss and noise immunity.
- ➔ Revolutionary pair lay scheme -providing an extremely low delay skew.
- ➔ All Category 6A verified components -providing full backward compatibility and interoperability.
- ➔ 100% LS0H assemblies -providing safe usage in high-density and closed location.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Horizontal CAT 6A, CAT 7 or CAT 7A cables terminated with shielded or unshielded keystone jacks conforming to IEC 60603-7-5.

Basic Cable Conductor	Solid bare annealed copper
Wire Insulation	Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs
Outer Jacket	LS0H Halogen free flame retardant compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, Cable Description, Meter Mark and Batch Number.
Cable to jack tensile strength	1 Kgf (10N) min.
Pulling Force	1 Kgf (10N) max.
Storage Temperature	-20 to +80C
Durability	750 mating cycles
Bend Radius	8xD.
Temperature Operating Range	-20 to +60C
Flame Tests	IEC 60332-1 or IEC 60332-3-24 (flame), IEC 60754 (gas) & IEC 61034 (smoke)

ORDERING INFORMATION

HCS P/N	Basic Cables	FR	Number of Cables	Length (m)	Shield
T6A-HNN3C-LLX	Pre-terminated 4x2x23# U/FTP or U/MRTP CAT 6A LSOH cables	A	NN	LL	S/U
T6A-HNN4C-LLX	Pre-terminated 4x2x23# S/FTP CAT 7 LSOH cables	A	NN	LL	S
T6A-HNN5C-LLX	Pre-terminated 4x2x22# S/FTP CAT 7A LSOH cables	A	NN	LL	S
T6A-HNN6C-LLX	Pre-terminated 4x2x23# U/FTP or U/MRTP CAT 6A LSOH cables	B	NN	LL	S/U
T6A-HNN7C-LLX	Pre-terminated 4x2x23# S/FTP CAT 7 LSOH cables	B	NN	LL	S
T6A-HNN8C-LLX	Pre-terminated 4x2x22# S/FTP CAT 7A LSOH cables	B	NN	LL	S
	Examples				
T6A-HO63O-5OS	Pre-terminated 4x2x23# U/FTP CAT 6A LSOH, Gray cables	A	6	5	Yes
T6A-H126O-KOU	Pre-terminated 4x2x23# U/MRTP CAT 6A LSOH, Gray cables	B	12	9O	No
T6A-HO241-A5S	Pre-terminated 4x2x23# S/FTP CAT 7 LSOH, Blue cables	A	2	15	Yes
T6A-HO478-B8S	Pre-terminated 4x2x23# S/FTP CAT 7 LSOH, Yellow cables	B	4	28	Yes
T6A-H1253-C5S	Pre-terminated 4x2x22# S/FTP CAT 7A LSOH, Green cables	A	12	35	Yes
T6A-HO689-D8S	Pre-terminated 4x2x22# S/FTP CAT 7A LSOH, Purple cables	B	6	48	Yes

Standard Color: Light Gray RAL 7035. To define other colors and constructions use the Modular Cords P/N System Table
A=IEC 60332-1 B=IEC 60332-3-24

DataLink 500A

Category 6A Shielded RJ45 Plug & Play Pre-Terminated Cassettes

HES Cabling Systems
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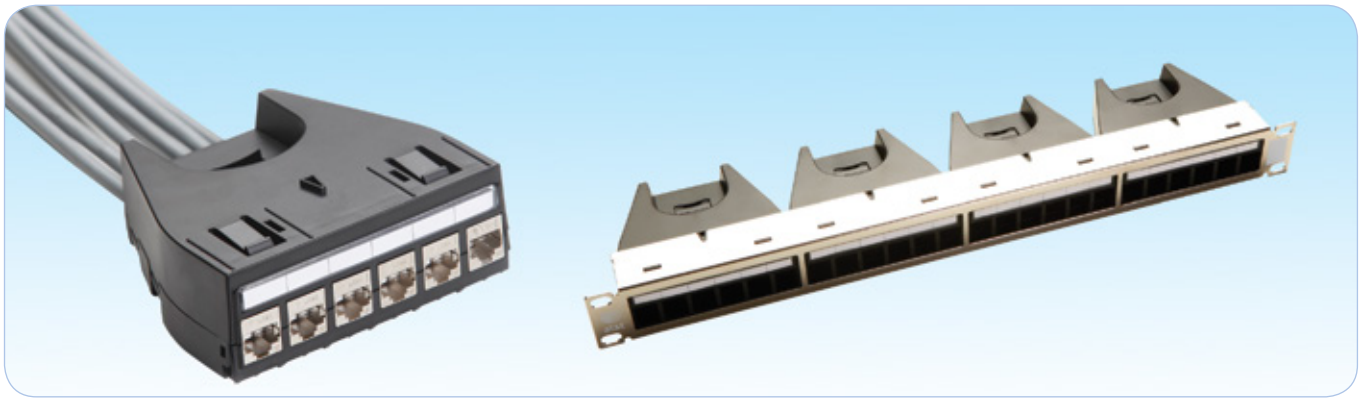


Description

HCS DataLink 500A pre-terminated shielded cassette assemblies consist of six LS0H 4-pair S/FTP horizontal LAN cables bundled together, designed for fast and easy installation in data-centers and other high-density locations.
Full conformance to TIA-568-C Category 6A and ISO/IEC 11801 Class EA is guaranteed by the selection of Category 6A, Category 7 or Category 7A ETL verified components and by 100% testing of each assembly prior to shipment.
HCS DataLink 500A cable assemblies are bundled with special halogen-free and flame-retardant semi-loose sleeves providing limp and easy-to-bend, re-shapeable bundles, which are ideal for tight places and high-density locations.
The bundles are marked on both sides with numbered labels for fast and easy identification.
HCS DataLink 500A pre-terminated shielded cassette assemblies are in full compliance with TIA-942, ISO/IEC 24764 and EN 50173-5. The standard cable jacket color is gray (RAL 7035). Other colors available upon request. The standard flame test is IEC 60332-1.
IEC 60332-3-24 is available upon request.

Applications

HCS DataLink 500A cable assemblies support all presently available LAN applications, including the following protocols:

- ☑ 10GBASE-T 10 Gigabit Ethernet
- ☑ 1000BASE-T 1 Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS DataLink 500A pre-terminated shielded cassette assemblies are 100% tested and verified for full compliance with the following standards:

- Category 6A Permanent Link according to ANSI/TIA-568-C.2
- Class EA Permanent Link according to ISO/IEC-11801 (2nd Edition)
- Class EA Permanent Link according to CENELEC EN 50173.

Benefits & Features

- Testing every assembly prior to shipment - providing the highest degree of quality assurance.
- Custom-made designs - providing the exact assembly needed for every job and location.
- Unique LS0H sleeves - providing limp, easy to re-shape and install assemblies, ideal for data-centers.
- Exceptional material properties and cable design - providing the highest degree of reliability.
- High Return Loss and NEXT Loss values - providing low BER (Bit-Error-Rate) in all applications.
- Extremely high pair-balance and shield - providing excellent alien crosstalk loss and noise immunity.
- Revolutionary pair lay scheme - providing an extremely low delay skew.
- All Category 6 verified components - providing full backward compatibility and interoperability.
- 100% LS0H assemblies - providing safe usage in high-density and closed location.
- Unique DoubleSafe™ Quality Assurance Program providing lowest rejection rate available.

GENERAL PROPERTIES

Horizontal CAT 6A, CAT 7 or CAT 7A S/FTP LS0H cables terminated with shielded CAT 6A components

Basic Cable Conductor	Solid bare annealed copper
Wire Insulation	SFS Polyolefin
Number of Insulated Conductors	8, twisted in 4 pairs
Individual pair shield	Aluminum foil
Overall shield	Tin-coated copper braid
Outer Jacket	LS0H Halogen free flame retardant compound.
Standard Jacket Color	Light Gray RAL 7035. Other colors available upon request.
Standard Surface Marking	Includes HCS P/N, cable description, Meter mark and Batch Number.
Cable to jack/plug tensile strength	1 Kgf (10N) min.
Pulling Force	1 Kgf (10N) max.
Storage & Operating Temperature	-20 to +80C
Durability	750 mating cycles
Flame Tests	IEC 60332-1 or IEC 60332-3-24 (flame), IEC 60754 (gas) & IEC 61034 (smoke)

ORDERING INFORMATION

HCS P/N	Description	Remote Termination	Length (m)
P00-K2420-1U	24-Port Shielded Blank 19" Panel for 4 Pre-Terminated Cassettes	N/A	N/A
T6A-K0640-A0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6-Port Cassette	10
T6A-K0640-B0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6-Port Cassette	20
T6A-K0640-C0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6-Port Cassette	30
T6A-K0640-D0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6-Port Cassette	40
T6A-K0640-E0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6-Port Cassette	50
T6A-J0640-A0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Jacks	10
T6A-J0640-B0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Jacks	20
T6A-J0640-C0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Jacks	30
T6A-J0640-D0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Jacks	40
T6A-J0640-E0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Jacks	50
T6A-M0640-50	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Plugs	5
T6A-M0640-A0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Plugs	10
T6A-M0640-A5	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Plugs	15
T6A-M0640-B0	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Plugs	20
T6A-M0640-B5	6-Port CAT6 RJ45 Shielded Assembly Cassette	6 RJ45 Plugs	25
T6A-N0640-A0	6-Port CAT6 RJ45 Shielded Assembly Cassette	Open	10
T6A-N0640-B0	6-Port CAT6 RJ45 Shielded Assembly Cassette	Open	20
T6A-N0640-C0	6-Port CAT6 RJ45 Shielded Assembly Cassette	Open	30
T6A-N0640-D0	6-Port CAT6 RJ45 Shielded Assembly Cassette	Open	40
T6A-N0640-E0	6-Port CAT6 RJ45 Shielded Assembly Cassette	Open	50

Standard Color: Light Gray RAL 7035. Standard flame test: IEC 60332-1.
To define other colors and constructions use the Modular Cords P/N System Table.

Fiber Optic Pre-Terminated 19” Patch Panels

HES Cabling Systems
Connecting Networks™

Description

HCS DataLight Pre-Terminated Fiberoptic Patch Panel series provides a full range of pre-terminated fiber optic patch panels and fiber optic distribution points. HCS DataLight Pre-Terminated Fiber Optic Patch Panels accept 4 or 5 cassettes for the different front units. Each cassette consists of factory-terminated fiber optic patching in order to convert the MTP/MPO interface to a standard ST/FC/LC/SC/MT-RJ coupler. HCS DataLight Pre-Terminated Fiber Optic Patch Panels are ideal for mission-critical applications such as Data Centers and Storage Area Networks, where fast installation is a must and MACs are frequent. Factory-terminated optical cassettes ensure the best performance, promising true plug&play application. The robust cable management of the 1U Patch Panel enables up to 5 meters of extra cable to be stored within the panel for future move and change requirements. HCS DataLight patch panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling systems. The HCS Logo and the DataLight Trademark ensure long lasting high-performance and full support of all present and emerging applications

Applications

- ☑ Fiberoptic & copper distribution
- ☑ Fiber to desk applications
- ☑ Central Office equipment
- ☑ Data - Centers

Qualifications and Approvals

HCS DataLight panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling systems and comply with the following safety standards:

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- ➔ Interchangeable modular design for fiber connectors - Providing ultimate flexibility.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories (supplied free of charge), including clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- ➔ High density 1U 120 port design - Providing a compact panel and economical space use.
- ➔ Pre-terminated cassettes - enables true plug&play performance.
- ➔ Top access into the panel - Providing easy and comfortable cable management.
- ➔ Easy snap-in removable slack management accessories - Providing simple and easy cable handling & storing up to 5 meters of ruggedized trunk ribbon Fiber Optic cable.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Optional back-side cable management with clip organizer and trap connection - Providing simple and easy cable handling.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs.
- ➔ Modular and expandable comprehensive product range - Providing up to 120 ports in a single panel.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

GENERAL PROPERTIES

Material of Construction	Steel, Aluminum, Aluminum Alloy or Anodized Aluminum.
Paint and Color	Powder paint finish, Black (Gray available upon request)
Connector Capacity	12-24-48-60 and 120 ports
Pre-terminated Panel Back Connection	12/24 fiber terminated with MPO connector
Cassette capacity	4 or 5
Modular Front Plates	4 or 5
Insertion loss (max)	0.50 dB/cassette (Regular). 0.35 dB/cassette (low-loss)
Environmental Conditions	-40 to +60C at 0-90% RH (Non condensing)
Packaging	One unit per box.
Storage Temperature	-20 to +80C
Non Halogen Constructions	Available upon request.

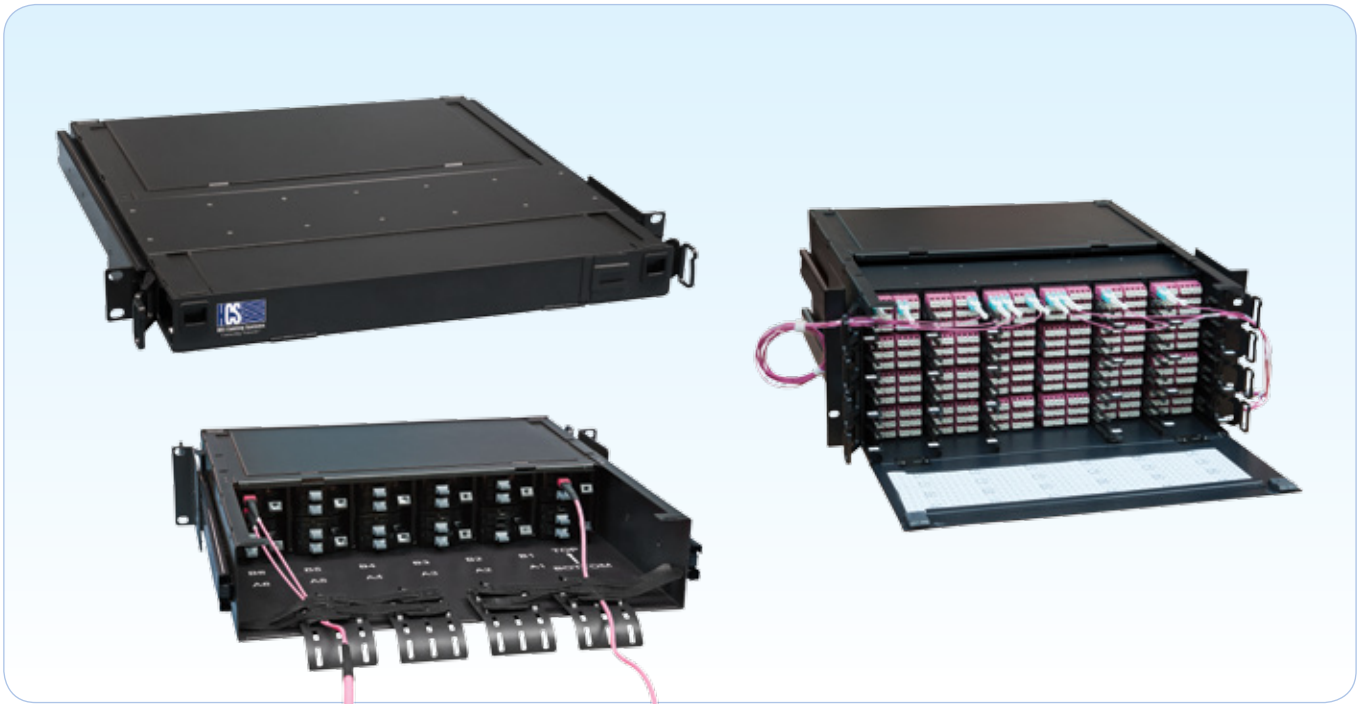
ORDERING INFORMATION

HCS P/N	Description	Connectors	Ports	Units	Size mm	Cassette Capacity
PFO-2000P-1U	DataLight Fiberoptic Blank Pre-terminated Panel, 19"	N/A	N/A	1u	44.4x480x400	4
PFO-2000A-1U	DataLight Fiberoptic Blank Angled Pre-terminated Panel, 19"	N/A	N/A	1u	44.4x480x400	4
PFO-200HP-1U	DataLight FiberOptic Blank HD Cassette Panel, 19”	N/A	N/A	1u	44.5x483x501	5
PFO-2M121-1U	DataLight Pre-Terminated cassette, 12 ST to 1 MPO	ST & MPO	12	1u	34x111x88	-
PFO-2M122-1U	DataLight Pre-Terminated cassette, 12 SC to 1 MPO	SC & MPO	12	1u	34x111x88	-
PFO-2M123-1U	DataLight Pre-Terminated cassette, 12 FC to 1 MPO	FC & MPO	12	1u	34x111x88	-
PFO-2M124-1U	DataLight Pre-Terminated cassette, 12 MT-RJ to 1 MPO	MT-RJ & MPO	12	1u	34x111x88	-
PFO-2M125-1U	DataLight Pre-Terminated cassette, 12 LC to 1 MPO	LC & MPO	12	1u	34x111x88	-
PFO-2M245-1U	DataLight Pre-Terminated cassette, 24 LC to 2 MPO	LC & MPO	24	1u	34x111x88	-
PFO-2M246-1U	DataLight Pre-Terminated cassette, 24 LC to 1 MPO	LC & MPO	24	1u	34x111x88	-
PFO-2L125-1U	DataLight Pre-Terminated low-loss cassette, 12 LC to 1 MPO	LC & MPO	12	1u	34x111x88	-
PFO-2L245-1U	DataLight Pre-Terminated low-loss cassette, 24 LC to 2 MPO	LC & MPO	24	1u	34x111x88	-
PFO-2L246-1U	DataLight Pre-Terminated low-loss cassette, 24 LC to 1 MPO	LC & MPO	24	1u	34x111x88	-
VFO-2M002-1U	Two-Port HD MTP & MPO Coupler	MTP & MPO	-	1u	34x88	-
VFO-2M003-1U	Three-Port HD MTP & MPO Coupler	MTP & MPO	-	1u	34x88	-
VFO-2M004-1U	Four-Port HD MTP & MPO Coupler	MTP & MPO	-	1u	34x88	-
VFO-2M005-1U	Five-Port HD MTP & MPO Coupler	MTP & MPO	-	1u	34x88	-
PFO-20002-1U	Blank module for Pre-terminated Cassette	-	-	1u	34x88	-

The required fiber type (FO) may be selected from HCS Fiber Options table.

Note: Please contact HCS Customer Service for polarity TYPE (A,B or C)

HCS DataLight
Brilliant Modular Enclosures



Description

HCS DataLight Brilliant Modular Enclosures is the newest addition to the HCS DataLight Product family of high-density network solutions. Designed to provide superior organization, accessibility and density.
This reliable and reconfigurable system is inherently suited for multi-building complexes such as hospitals, corporate centers, government facilities, universities and supports the increasing growth for future applications.

Applications

- ☑ Healthcare and Hospitals
- ☑ Colleges and Universities
- ☑ Data Center and Processing Networks
- ☑ Corporate Campuses
- ☑ Any high-density splicing application

Standard & EU Directives Conformance

- ☑ Relevant sections of ANSI/TIA/EIA-604 (FOCIS)
- ☑ Relevant sections of IEC 60874
- ☑ Relevant sections of IEC 61753
- ☑ Relevant sections of IEC 61754
- ☑ Plastic parts: UL94 V-0 flame test
- ☑ EU Directive 2011/65/EU (RoHS-2)

Qualifications & Approvals

HCS DataLight Brilliant Modular Enclosures are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HES Cabling System and comply to the following standards:

EMC:

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

Safety:

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LSOH constructions.

Benefits & Features

- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Integrated full installation accessories including clip organizers and T-raps - Providing a simple and elegant cable termination and identification.
- ➔ High density design - Providing a compact panel and economical space use.
- ➔ One basic unit fits all types of connectors - Providing high flexibility, low cost and easy to handle stock.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Providing simple and easy cable handling.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.
- ➔ Maintains superior connections for inter- and intra-building cable runs.
- ➔ Simple access for easy installations.
- ➔ Versatile configurations for maximum density.
- ➔ A singular source for a full solution. Combined with HCS DataLight Series cables, the HCS DataLight Brilliant Modular Enclosure solution can provide a complete connectivity and cabling infrastructure or campus and multi-building networks

GENERAL PROPERTIES

1-2304 fiber 19" ultra high-density LC/MTP cassette-based FO enclosures

Front-end options	Up to 576 LC or 144 MTP Connectors
Back-end options	Up to 96 MTP connectors
Standard fiber types	OM3, OM4 & ITU-T G.652.D
Optional fiber capacity	144 LC/MTP or 576 MTP/MTP in 1U 288 LC/MTP or 1152 MTP/MTP in 2U 576 LC/MTP or 2304 MTP/MTP in 4U
Panel access	Top and front slide rail
Back Cable Management	Removable tray with strain relief
Front cord Management	Integrated

MECHANICAL PROPERTIES

Frame	Aluminum, colored black
Front cover	Removable
Operating temperature	-10 to +60C at 5-85% RH
Storage temperature	-40 to +70C
Plastic parts	High-impact flame retardant Polycarbonate
Port identification	Numbers and stickers

TRANSMISSION PROPERTIES

Multimode

Code	Cassette Type MTP-LC	Max. Total Cassette IL @850/1300nm (OM3/OM4)
1	Loss Level 1	0.75 dB
2	Loss Level 2	0.50 dB
3	Loss Level 3	0.35 dB
4	Loss Level 4	0.30 dB

Code	Cassette Type MTP-MTP	Max. Total Cassette IL @850/1300nm (OM3/OM4)
1	Loss Level 1	1.00 dB
2	Loss Level 2	0.70 dB
3	Loss Level 3	0.50 dB
4	Loss Level 4	0.40 dB

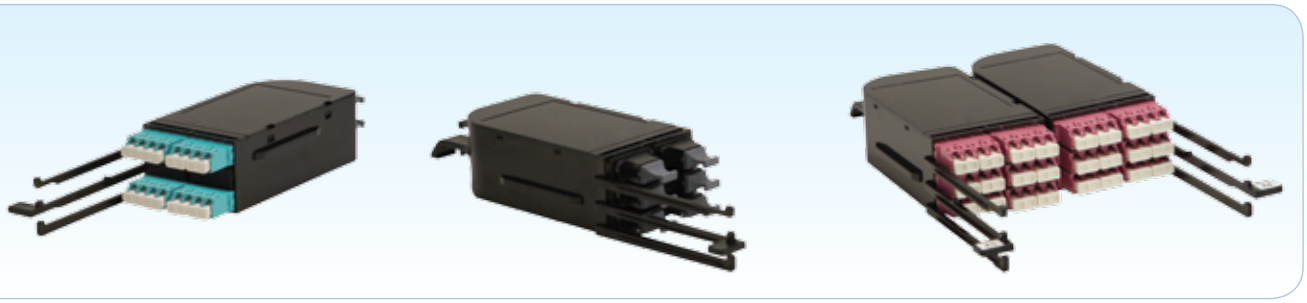
Singlemode

Code	Cassette Type MTP/APC-LC/UPC/APC	Max. Total Cassette IL @1310/1550nm	Min. RL @1310/1550nm
1	Loss Level 1	1.00 dB	MTP/APC: 65 dB LC/UPC: 55 dB LC/APC: 65 dB
2	Loss Level 2	0.65 dB	
3	Loss Level 3	0.45 dB	
4	Loss Level 4	0.35 dB	

ORDERING INFORMATION

HCS P/N	Description	Cassette Capacity	Max. Front-End Capacity	Back-End Capacity	Size mm	Units
PFO-K3624-1U	High capacity FO Blank Enclosure Frame	6	144 LC or 36 MTP	24 MTP	44x425x482	1U
PFO-K7248-2U	High capacity FO Blank Enclosure Frame	12	288 LC or 72 MTP	48 MTP	88x425x482	2U
PFO-K1496-4U	High capacity FO Blank Enclosure Frame	24	576 LC or 144 MTP	96 MTP	177x425x482	4U

HCS DataLight
Brilliant Modular Enclosures - Modules



HCS DATALIGHT BRILLIANT MODULAR ENCLOSURES - MODULES P/N SYSTEMS

P	FO	-	1	2	3	4	5	-	x	y
Product	**Fiber/Adapter Type**		**Back side Connector/Adapter**	**No. of Back side Connectors/Adapters**	**Front side Connector/Adapters**	**No. of FRONT side Connectors/Adapter**	**RIGHT or LEFT**		**POLARITY**	**LOSS**
P	OM3=54		A=MTP12M - NO SHUTTER	0-9 Natural Numbers	A=MTP12M - NO SHUTTER	0-9 Natural Numbers	R=RIGHT		A=TYPE A	1 - Loss Level 1
	OM4=56		B=MTP24M - NO SHUTTER		B=MTP24M - NO SHUTTER	S=2x8	L=LEFT		B=TYPE B	2 - Loss Level 2
	SM=94		C=MTP8M - NO SHUTTER		C=MTP8M - NO SHUTTER	T=3x8	N=N/A		C=TYPE C	3 - Loss Level 3
	00=N/A		H=MTP16M - NO SHUTTER		H=MTP16M - NO SHUTTER	V=2x12			N=N/A	4 - Loss Level 4
			D=MTP Adapter - NO SHUTTER		D=MTP Adapter - NO SHUTTER	Z=1x12				N - N/A
			E=EMPTY		E=EMPTY					
					F=LC - NO SHUTTER					
			G=MTP12M + SHUTTER		G=MTP12M + SHUTTER					
			Y=MTP24M + SHUTTER		Y=MTP24M + SHUTTER					
			N=MTP8M + SHUTTER		N=MTP8M + SHUTTER					
			P=MTP Adapter + SHUTTER		P=MTP Adapter + SHUTTER					
			J=MTP16M + SHUTTER		Q=LC + SHUTTER					
					J=MTP16M + SHUTTER					

ORDERING INFORMATION

HCS P/N	Description	Back side Connector/Adapter Type	Number of Back side Connectors/Adapters	Front side Connector/ Adapter Type	Number of Front side Connectors/Adapters	Right/Left	Polarity	Loss
PFO-E0E0N-NN	Blank Module	-	-	-	-	-	-	-

Example with fiber type (OM3)

HCS P/N	Description	Back side Connector/Adapter Type	Number of Back side Connectors/Adapters	Front side Connector/ Adapter Type	Number of Front side Connectors/Adapters	Right/Left	Polarity	Loss
P54-C3QTR-A3	HCS DataLight Brilliant Module	MTP Adapter – No shutter	3	LC with shutter	24 – 3x8	Right	Type A	Loss Level 3

Example without fiber type

HCS P/N	Description	Back side Connector/Adapter Type	Number of Back side Connectors/Adapters	Front side Connector/ Adapter Type	Number of Front side Connectors/Adapters	Right/Left	Polarity	Loss
PFO-C3QTR-A3	HCS DataLight Brilliant Module	MTP Adapter – No shutter	3	LC with shutter	24 – 3x8	Right	Type A	Loss Level 3

The fiber type "FO" can be selected from **HCS Fiber Options table**

ORDERING INFORMATION

HCS P/N	Description	Back side Connector/Adapter Type	Number of Back side Connectors/Adapters	Front side Connector/Adapter Type	Number of Front side Connectors/Adapters	Right/Left	Select Polarity (x)	Select Loss (y)
PFO-C1Q8R-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	1	LC + SHUTTER	1x8	Right	A= Type A	1= Loss Level 1
PFO-C1Q8L-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	1	LC + SHUTTER	1x8	Left	B= Type B	2= Loss Level 2
PFO-C1F8R-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	1	LC - NO SHUTTER	1x8	Right	C= Type C	3= Loss Level 3
PFO-C1F8L-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	1	LC - NO SHUTTER	1x8	Left	N= N/A	4= Loss Level 4
PFO-N1Q8R-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	1	LC + SHUTTER	1x8	Right		
PFO-N1Q8L-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	1	LC + SHUTTER	1x8	Left		
PFO-N1F8R-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	1	LC - NO SHUTTER	1x8	Right		
PFO-N1F8L-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	1	LC - NO SHUTTER	1x8	Left		
PFO-A1QZR-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	1	LC + SHUTTER	1x12	Right		
PFO-A1QZL-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	1	LC + SHUTTER	1x12	Left		
PFO-A1FZR-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	1	LC - NO SHUTTER	1x12	Right		
PFO-A1FZL-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	1	LC - NO SHUTTER	1x12	Left		
PFO-G1QZR-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	1	LC + SHUTTER	1x12	Right		
PFO-G1QZL-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	1	LC + SHUTTER	1x12	Left		
PFO-G1FZR-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	1	LC - NO SHUTTER	1x12	Right		
PFO-G1FZL-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	1	LC - NO SHUTTER	1x12	Left		
PFO-A2QVR-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC + SHUTTER	2x12	Right		
PFO-A2QVL-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC + SHUTTER	2x12	Left		
PFO-A2FVR-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC - NO SHUTTER	2x12	Right		
PFO-A2FVL-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC - NO SHUTTER	2x12	Left		
PFO-G2QVR-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC + SHUTTER	2x12	Right		
PFO-G2QVL-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC + SHUTTER	2x12	Left		
PFO-G2FVR-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC - NO SHUTTER	2x12	Right		
PFO-G2FVL-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC - NO SHUTTER	2x12	Left		
PFO-C2QSR-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	2	LC + SHUTTER	2x8	Right		
PFO-C2QSL-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	2	LC + SHUTTER	2x8	Left		
PFO-C2FSR-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	2	LC - NO SHUTTER	2x8	Right		
PFO-C2FSL-xy	HCS DataLight Brilliant Module	MTP 8F Male - NO SHUTTER	2	LC - NO SHUTTER	2x8	Left		
PFO-N2QSR-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	2	LC + SHUTTER	2x8	Right		
PFO-N2QSL-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	2	LC + SHUTTER	2x8	Left		
PFO-N2FSR-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	2	LC - NO SHUTTER	2x8	Right		
PFO-N2FSL-xy	HCS DataLight Brilliant Module	MTP 8F Male + SHUTTER	2	LC - NO SHUTTER	2x8	Left		
PFO-A2QTR-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC + SHUTTER	3x8	Right		
PFO-A2QTL-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC + SHUTTER	3x8	Left		
PFO-A2FTR-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC - NO SHUTTER	3x8	Right		
PFO-A2FTL-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	LC - NO SHUTTER	3x8	Left		
PFO-G2QTR-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC + SHUTTER	3x8	Right		
PFO-G2QTL-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC + SHUTTER	3x8	Left		
PFO-G2FTR-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC - NO SHUTTER	3x8	Right		
PFO-G2FTL-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	LC - NO SHUTTER	3x8	Left		
PFO-A2N3R-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	MTP 8F Male + SHUTTER	3	Right		
PFO-A2N3L-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	MTP 8F Male + SHUTTER	3	Left		
PFO-A2C3R-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	MTP 8F Male - NO SHUTTER	3	Right		
PFO-A2C3L-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	2	MTP 8F Male - NO SHUTTER	3	Left		
PFO-G2N3R-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	MTP 8F Male + SHUTTER	3	Right		
PFO-G2N3L-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	MTP 8F Male + SHUTTER	3	Left		
PFO-G2C3R-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	MTP 8F Male - NO SHUTTER	3	Right		
PFO-G2C3L-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	2	MTP 8F Male - NO SHUTTER	3	Left		
PFO-A4N6R-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	4	MTP 8F Male + SHUTTER	6	Right		
PFO-A4N6L-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	4	MTP 8F Male + SHUTTER	6	Left		
PFO-A4C6R-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	4	MTP 8F Male - NO SHUTTER	6	Right		
PFO-A4C6L-xy	HCS DataLight Brilliant Module	MTP 12F Male - NO SHUTTER	4	MTP 8F Male - NO SHUTTER	6	Left		
PFO-G4N6R-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	4	MTP 8F Male + SHUTTER	6	Right		
PFO-G4N6L-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	4	MTP 8F Male + SHUTTER	6	Left		
PFO-G4C6R-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	4	MTP 8F Male - NO SHUTTER	6	Right		
PFO-G4C6L-xy	HCS DataLight Brilliant Module	MTP 12F Male + SHUTTER	4	MTP 8F Male - NO SHUTTER	6	Left		

The fiber type "FO" can be selected from **HCS Fiber Options table**

HCS DataLight
Brilliant Modular Enclosures - Modules

HES Cabling Systems
Connecting Networks™

HCS P/N	Description	Back side Connector/Adapter Type	Number of Back side Connectors/Adapters	Front side Connector/Adapter Type	Number of Front side Connectors/Adapters	Right/Left	Select Polarity (x)	Select Loss (y)
PFO-B1QVR-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC + Shutter	2x12	Right	A= Type A B= Type B C= Type C N= N/A	1= Loss Level 1 2= Loss Level 2 3= Loss Level 3 4= Loss Level 4
PFO-B1QVL-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC + Shutter	2x12	Left		
PFO-B1FVR-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC - NO Shutter	2x12	Right		
PFO-B1FVL-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC - NO Shutter	2x12	Left		
PFO-Y1QVR-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC + Shutter	2x12	Right		
PFO-Y1QVL-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC + Shutter	2x12	Left		
PFO-Y1FVR-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC - NO Shutter	2x12	Right		
PFO-Y1FVL-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC - NO Shutter	2x12	Left		
PFO-H1QSR-xy	HCS DataLight Brilliant Module	MTP 16F Male - No Shuter	1	LC + Shutter	2x8	Right		
PFO-H1QSL-xy	HCS DataLight Brilliant Module	MTP 16F Male - No Shuter	1	LC + Shutter	2x8	Left		
PFO-H1FSR-xy	HCS DataLight Brilliant Module	MTP 16F Male - No Shuter	1	LC - NO Shutter	2x8	Right		
PFO-H1FSL-xy	HCS DataLight Brilliant Module	MTP 16F Male - No Shuter	1	LC - NO Shutter	2x8	Left		
PFO-J1QSR-xy	HCS DataLight Brilliant Module	MTP 16F Male + Shuter	1	LC + Shutter	2x8	Right		
PFO-J1QSL-xy	HCS DataLight Brilliant Module	MTP 16F Male + Shuter	1	LC + Shutter	2x8	Left		
PFO-J1FSR-xy	HCS DataLight Brilliant Module	MTP 16F Male + Shuter	1	LC - NO Shutter	2x8	Right		
PFO-J1FSL-xy	HCS DataLight Brilliant Module	MTP 16F Male + Shuter	1	LC - NO Shutter	2x8	Left		
PFO-B1QTR-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC + Shutter	3x8	Right		
PFO-B1QTL-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC + Shutter	3x8	Left		
PFO-B1FTR-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC - NO Shutter	3x8	Right		
PFO-B1FTL-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	LC - NO Shutter	3x8	Left		
PFO-Y1QTR-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC + Shutter	3x8	Right		
PFO-Y1QTL-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC + Shutter	3x8	Left		
PFO-Y1FTR-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC - NO Shutter	3x8	Right		
PFO-Y1FTL-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	LC - NO Shutter	3x8	Left		
PFO-B1N3R-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	MTP 8F Male + Shutter	3	Right		
PFO-B1N3L-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	MTP 8F Male + Shutter	3	Left		
PFO-B1C3R-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	MTP 8F Male - NO Shutter	3	Right		
PFO-B1C3L-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	1	MTP 8F Male - NO Shutter	3	Left		
PFO-Y1N3R-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	MTP 8F Male + Shutter	3	Right		
PFO-Y1N3L-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	MTP 8F Male + Shutter	3	Left		
PFO-Y1C3R-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	MTP 8F Male - NO Shutter	3	Right		
PFO-Y1C3L-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	1	MTP 8F Male - NO Shutter	3	Left		
PFO-B2N6R-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	2	MTP 8F Male + Shutter	6	Right		
PFO-B2N6L-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	2	MTP 8F Male + Shutter	6	Left		
PFO-B2C6R-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	2	MTP 8F Male - NO Shutter	6	Right		
PFO-B2C6L-xy	HCS DataLight Brilliant Module	MTP 24F Male - No Shuter	2	MTP 8F Male - NO Shutter	6	Left		
PFO-Y2N6R-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	2	MTP 8F Male + Shutter	6	Right		
PFO-Y2N6L-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	2	MTP 8F Male + Shutter	6	Left		
PFO-Y2C6R-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	2	MTP 8F Male - NO Shutter	6	Right		
PFO-Y2C6L-xy	HCS DataLight Brilliant Module	MTP 24F Male + Shuter	2	MTP 8F Male - NO Shutter	6	Left		

The fiber type "FO" can be selected from **HCS Fiber Options table**

HCS P/N	Description	Back side Connector/Adapter Type	Number of Back side Connectors/Adapters	Front side Connector/Adapter Type	Number of Front side Connectors/Adapters	Right/Left	Select Polarity (x)	Select Loss (y)
PFO-E0QVR-xy	HCS DataLight Brilliant Module	Empty	0	LC + Shutter	2x12	Right	A= Type A B= Type B C= Type C N= N/A	1= Loss Level 1 2= Loss Level 2 3= Loss Level 3 4= Loss Level 4
PFO-E0QVL-xy	HCS DataLight Brilliant Module	Empty	0	LC + Shutter	2x12	Left		
PFO-E0FVR-xy	HCS DataLight Brilliant Module	Empty	0	LC - NO Shutter	2x12	Right		
PFO-E0FVL-xy	HCS DataLight Brilliant Module	Empty	0	LC - NO Shutter	2x12	Left		
PFO-E0QSR-xy	HCS DataLight Brilliant Module	Empty	0	LC + Shutter	2x8	Right		
PFO-E0QSL-xy	HCS DataLight Brilliant Module	Empty	0	LC + Shutter	2x8	Left		
PFO-E0FSR-xy	HCS DataLight Brilliant Module	Empty	0	LC - NO Shutter	2x8	Right		
PFO-E0FSL-xy	HCS DataLight Brilliant Module	Empty	0	LC - NO Shutter	2x8	Left		
PFO-E0QTR-xy	HCS DataLight Brilliant Module	Empty	0	LC + Shutter	3x8	Right		
PFO-E0QTL-xy	HCS DataLight Brilliant Module	Empty	0	LC + Shutter	3x8	Left		
PFO-E0FTR-xy	HCS DataLight Brilliant Module	Empty	0	LC - NO Shutter	3x8	Right		
PFO-E0FTL-xy	HCS DataLight Brilliant Module	Empty	0	LC - NO Shutter	3x8	Left		
PFO-E0P3R-xy	HCS DataLight Brilliant Module	Empty	0	MTP + Shutter	3	Right		
PFO-E0P3L-xy	HCS DataLight Brilliant Module	Empty	0	MTP + Shutter	3	Left		
PFO-E0D3R-xy	HCS DataLight Brilliant Module	Empty	0	MTP - NO Shutter	3	Right		
PFO-E0D3L-xy	HCS DataLight Brilliant Module	Empty	0	MTP - NO Shutter	3	Left		
PFO-E0P6R-xy	HCS DataLight Brilliant Module	Empty	0	MTP + Shutter	6	Right		
PFO-E0P6L-xy	HCS DataLight Brilliant Module	Empty	0	MTP + Shutter	6	Left		
PFO-E0D6R-xy	HCS DataLight Brilliant Module	Empty	0	MTP - NO Shutter	6	Right		
PFO-E0D6L-xy	HCS DataLight Brilliant Module	Empty	0	MTP - NO Shutter	6	Left		

Description

HCS DataLight MPO Assemblies series contain a full range of high quality assemblies factory terminated with MPO connectors.
HCS DataLight MPO Assemblies are available with most fiber types including Singlemode 9/125 microns, Multimode 50/125 microns (OM2, OM3 and OM4) and Multimode 62.5/125 microns fibers in any length required.
The assemblies are available with different cable types and colors, including bare ribbon cables, jacketed ribbon cables, ruggedized (trunk) ribbon cables and indoor MTD cables, with 12 fibers.
HCS DataLight Patch Cords and Pigtails comply with both major industry standards, ANSI/TIA-568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables) and they are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

- ☑ Mission critical applications such as Data Centers and Storage Area Networks
- ☑ Applications where fast installation is paramount
- ☑ Environments where moves adds and changes are frequent or managed in-house
- ☑ FiberOptic cross connect, patch panels, and distribution point connection
- ☑ ODF connections
- ☑ Fiber to the desk connection
- ☑ Active FiberOptic equipment connection

Qualifications and Protocol Support

HCS DataLight components are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to ANSI/TIA-568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables).
HCS DataLight MPO Assemblies are designed to support a variety of high-speed network topologies including:

- ☑ IEEE 802.3 10GBase-SR/SW 10Gbps
- ☑ IEEE 802.3 10GBase-LX4 10Gbps
- ☑ Fiber Channel 400-M5-SN-1 4Gbps
- ☑ Fiber Channel 1200-M5E-SN1 10Gbps
- ☑ Fiber Channel FC-PH 1Gbps
- ☑ IEEE 802.3 1000Base-SX/LX 1Gbps
- ☑ FDDI 100Mbps
- ☑ IEEE 802.3 FOIRL 10Mbps
- ☑ IEEE 802.3 10Base-F 10Mbps
- ☑ ATM 155 Mbps, 622 Mbps, 1.2 Gbps & 2.4 Gbps

Benefits & Features

- ➔ Premium factory-controlled optical performance - enables flexible system configuration and fast installation.
- ➔ Low Smoke Zero Halogen allows for routing cables in any indoor environment
- ➔ Industry-leading low insertion loss (0.30dB max.)
- ➔ Each and every assembly pre-tested before shipment.
- ➔ Round, flexible outer jacket is easy to bend, route and install.
- ➔ Full compliance to industry standards - Providing high quality components.
- ➔ Available with all major fiber types - Providing a wide range of products.
- ➔ Robust design - ensuring long life and short replacement rates.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

TECHNICAL SPECIFICATIONS - MPO CONNECTORS

Connector Housing	PET
Connector Ferrule	PPS
Boot	Silicone
SM Backbone	Aluminum
MM Backbone	Aluminum
Flame Test	UL-94 V-0
Max.Insertion Loss	0.3dB

TECHNICAL SPECIFICATIONS - COMPLETE ASSEMBLIES

SM Attenuation @ 1300nm	Mean:0.35 dB Sigma: 0.12dB
MM Attenuation @ 1300nm	Mean:0.35 dB Sigma: 0.12dB
SM Return Loss	Min:55 dB Mean: 60dB
MM Return Loss	Min:25 dB D Max:0.2dB
SM Connection Durability	D Max:0.2dB
MM Connection Durability	D Max:0.2 dB
SM Mating Cycles	500
MM Mating Cycles	500
Operating Temp.	-0 to +70C
Installation Temp.	-0 to +70C
Storage Temp.	-40 to +70C

DURABILITY TESTS - MAXIMUM ATTENUATION INCREASE AFTER TEST

Test	Max. Increase	Notes
Temperature Cycling: -40 to +85C	0.2 dB	10 Cycles
High Temp. Endurance: +85C	0.2 dB	96 Hours
Low Temp. Endurance: -40C	0.2 dB	96 Hours
High Humidity Endurance: 95% RH @ +40C	0.2 dB	96 Hours
Vibration Endurance: 10-55 Hz, 1.5 mm	0.2 dB	P to P
Tensile Endurance: 0-10 Kgf @ 1 minute	0.2 dB	-
Connection Durability: 1000 cycles	0.2 dB	-

ORDERING INFORMATION

HCS P/N	Description	Length mm	Notes
TFO-X12DD-50C	1xMPO-1xMPO (Female-Female) 12F LS0H FO Assembly	5	-
TFO-X12DD-A0C	1xMPO-1xMPO (Female-Female) 12F LS0H FO Assembly	10	-
TFO-X12DD-A5C	1xMPO-1xMPO (Female-Female) 12F LS0H FO Assembly	15	-
TFO-X12DD-C0C	1xMPO-1xMPO (Female-Female) 12F LS0H FO Assembly	30	-
TFO-X12DD-E5C	1xMPO-1xMPO (Female-Female) 12F LS0H FO Assembly	55	-
TFO-X12DD-H0C	1xMPO-1xMPO (Female-Female) 12F LS0H FO Assembly	80	-
TFO-X24DD-50C	2xMPO-2xMPO (Female-Female) 24F LS0H FO Assembly	5	-
TFO-X24DD-A0C	2xMPO-2xMPO (Female-Female) 24F LS0H FO Assembly	10	-
TFO-X24DD-A5C	2xMPO-2xMPO (Female-Female) 24F LS0H FO Assembly	15	-
TFO-X24DD-C0C	2xMPO-2xMPO (Female-Female) 24F LS0H FO Assembly	30	-
TFO-X24DD-E5C	2xMPO-2xMPO (Female-Female) 24F LS0H FO Assembly	55	-
TFO-X24DD-H0C	2xMPO-2xMPO (Female-Female) 24F LS0H FO Assembly	80	-
TFO-X12EE-50C	1xMPO-1xMPO (Female-Female) 24F LS0H FO Assembly	5	-
TFO-X12EE-A0C	1xMPO-1xMPO (Female-Female) 24F LS0H FO Assembly	10	-
TFO-X12EE-A5C	1xMPO-1xMPO (Female-Female) 24F LS0H FO Assembly	15	-
TFO-X12EE-C0C	1xMPO-1xMPO (Female-Female) 24F LS0H FO Assembly	30	-
TFO-X12EE-E5C	1xMPO-1xMPO (Female-Female) 24F LS0H FO Assembly	55	-
TFO-X12EE-H0C	1xMPO-1xMPO (Female-Female) 24F LS0H FO Assembly	80	-

"FO" shall be replaced by the relevant Fiber P/N.
"X" shall be replaced by the relevant Cable Type.
"C" shall be replaced by the Jacket Color.

Note: Please contact HCS Customer Service for polarity TYPE (A,B or C)

Description

HCS DataLight MTP® Assemblies series contain a full range of high quality assemblies factory terminated with MTP® connectors. HCS DataLight MTP® Assemblies are available with most fiber types including Singlemode 9/125 microns, Multimode 50/125 microns (OM2, OM3 and OM4) and Multimode 62.5/125 microns fibers in any length required. The assemblies are available with different cable types and colors, including bare ribbon cables, jacketed ribbon cables, ruggedized (trunk) ribbon cables and indoor MTD cables, with 12 fibers. HCS DataLight Patch Cords and Pigtails comply with both major industry standards, ANSI/TIA-568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables) and they are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system.

Applications

- ☑ Mission critical applications such as Data Centers and Storage Area Networks
- ☑ Applications where fast installation is paramount
- ☑ Environments where moves adds and changes are frequent or managed in-house
- ☑ FiberOptic cross connect, patch panels, and distribution point connection
- ☑ ODF connections
- ☑ Fiber to the desk connection
- ☑ Active FiberOptic equipment connection

Qualifications and Protocol Support

HCS DataLight components are supported by the DoubleSafe™ QA program as a part of complete HCS cabling system and comply to ANSI/TIA-568-C.3 (Optical Fiber Cabling Components Standard) and IEC 60874 (Connectors for optical fibers and cables).HCS DataLight MTP® Assemblies are designed to support a variety of high-speed network topologies including:

- ☑ IEEE 802.3 10GBase-SR/SW 10Gbps
- ☑ IEEE 802.3 10GBase-LX4 10Gbps
- ☑ Fiber Channel 400-M5-SN-1 4Gbps
- ☑ Fiber Channel 1200-M5E-SN1 10Gbps
- ☑ Fiber Channel FC-PH 1Gbps
- ☑ IEEE 802.3 1000Base-SX/LX 1Gbps
- ☑ FDDI 100Mbps
- ☑ IEEE 802.3 FOIRL 10Mbps
- ☑ IEEE 802.3 10Base-F 10Mbps
- ☑ ATM 155 Mbps, 622 Mbps, 1.2 Gbps & 2.4 Gbps

Benefits & Features

- ➔ Premium factory-controlled optical performance - enables flexible system configuration and fast installation.
- ➔ Low Smoke Zero Halogen allows for routing cables in any indoor environment
- ➔ Industry-leading low insertion loss (0.50dB max.)
- ➔ Each and every assembly pre-tested before shipment.
- ➔ Round, flexible outer jacket is easy to bend, route and install.
- ➔ Full compliance to industry standards - providing high quality components.
- ➔ Available with all major fiber types - providing a wide range of products.
- ➔ Robust design - ensuring long life and short replacement rates.
- ➔ Unique DoubleSafe™ Quality Assurance Program - providing lowest rejection rate available.

TECHNICAL SPECIFICATIONS - MTP® CONNECTORS

Connector Housing	PET
Connector Ferrule	PPS
Boot	Silicone
SM Backbone	Aluminum
MM Backbone	Aluminum
Flame Test	UL-94 V-0
Max.Insertion Loss	0.5dB

TECHNICAL SPECIFICATIONS - COMPLETE ASSEMBLIES

SM Attenuation @ 1300nm	Mean:0.35 dB Sigma: 0.12dB
MM Attenuation @ 1300nm	Mean:0.35 dB Sigma: 0.12dB
SM Return Loss	Min:55 dB Mean: 60dB
MM Return Loss	Min:25 dB D Max:0.2dB
SM Connection Durability	D Max:0.2dB
MM Connection Durability	D Max:0.2 dB
SM Mating Cycles	500
MM Mating Cycles	500
Operating Temp.	-0 to +70C
Installation Temp.	-0 to +70C
Storage Temp.	-40 to +70C

DURABILITY TESTS - MAXIMUM ATTENUATION INCREASE AFTER TEST

Test	Max. Increase	Notes
Temperature Cycling: -40 to +85C	0.2 dB	10 Cycles
High Temp. Endurance: +85C	0.2 dB	96 Hours
Low Temp. Endurance: -40C	0.2 dB	96 Hours
High Humidity Endurance: 95% RH @ +40C	0.2 dB	96 Hours
Vibration Endurance: 10-55 Hz, 1.5 mm	0.2 dB	P to P
Tensile Endurance: 0-10 Kgf @ 1 minute	0.2 dB	-
Connection Durability: 1000 cycles	0.2 dB	-

ORDERING INFORMATION

HCS P/N	Description	Length mm	Notes
TFO-X12SS-10C	1xMTP-1xMTP (Female-Female) 12F LS0H FO Assembly	1.0	-
TFO-X12SS-30C	1xMTP-1xMTP (Female-Female) 12F LS0H FO Assembly	3.0	-
TFO-X12SS-50C	1xMTP-1xMTP (Female-Female) 12F LS0H FO Assembly	5.0	-
TFO-X12SS-A0C	1xMTP-1xMTP (Female-Female) 12F LS0H FO Assembly	10	-
TFO-X12SS-A5C	1xMTP-1xMTP (Female-Female) 12F LS0H FO Assembly	15	-
TFO-X12SS-C0C	1xMTP-1xMTP (Female-Female) 12F LS0H FO Assembly	30	-
TFO-X24SS-10C	2xMTP-2xMTP (Female-Female) 24F LS0H FO Assembly	1.0	-
TFO-X24SS-30C	2xMTP-2xMTP (Female-Female) 24F LS0H FO Assembly	3.0	-
TFO-X24SS-50C	2xMTP-2xMTP (Female-Female) 24F LS0H FO Assembly	5.0	-
TFO-X24SS-A0C	2xMTP-2xMTP (Female-Female) 24F LS0H FO Assembly	10	-
TFO-X24SS-A5C	2xMTP-2xMTP (Female-Female) 24F LS0H FO Assembly	15	-
TFO-X24SS-C0C	2xMTP-2xMTP (Female-Female) 24F LS0H FO Assembly	30	-
TFO-X2477-10C	1xMTP-1xMTP (Female-Female) 24F LS0H FO Assembly	1.0	-
TFO-X2477-30C	1xMTP-1xMTP (Female-Female) 24F LS0H FO Assembly	3.0	-
TFO-X2477-50C	1xMTP-1xMTP (Female-Female) 24F LS0H FO Assembly	5.0	-
TFO-X2477-A0C	1xMTP-1xMTP (Female-Female) 24F LS0H FO Assembly	10	-
TFO-X2477-A5C	1xMTP-1xMTP (Female-Female) 24F LS0H FO Assembly	15	-
TFO-X2477-C0C	1xMTP-1xMTP (Female-Female) 24F LS0H FO Assembly	30	-

"FO" shall be replaced by the relevant Fiber P/N.
"X" shall be replaced by the relevant Cable Type.
"C" shall be replaced by the Jacket Color.

Note: Please contact HCS Customer Service for polarity TYPE (A,B or C)
MTP® is a registered trademark of US Conec, Ltd

HES Cabling Systems
Connecting Networks™

HCS Phy-FiXX™ Copper & Fiber Optic Managed Cabling Solutions

HCS Phy-FiXX™ Copper Producs

- Managed Category 6 Unshielded RJ-45 Copper Patch Panels
- Managed Category 6A Shielded RJ-45 Copper Patch Panels
- Category 6 Unshielded RJ-45 Outlet Terminator
- Category 6A Shielded RJ-45 Outlet Terminator
- Modular Managed Category 5e Unshielded RJ45 Copper Patch Panels
- Modular Managed Category 5e Shielded RJ45 Copper Patch Panels
- Modular Managed Category 6 Unshielded RJ45 Copper Patch Panels
- Modular Managed Category 6 Shielded RJ45 Copper Patch Panels
- Modular Managed Category 6A Unshielded RJ45 Copper Patch Panels
- Modular Managed Category 6A Shielded RJ45 Copper Patch Panels

HCS Phy-FiXX™ FO Producs

- Modular Managed Pre-Terminated FO Patch Panels
- Managed 24-Port Duplex LC FO Patch Panels
- FO LC Patch Cords

HCS Phy-FiXX™ Channel Scanner

- 96 Channel Scanner
- 576 Channel Scanner

HCS Phy-FiXX™ Application Software & License

- Application Software
- Application Software - Offline
- Dashboard Software

HCS PRODUCT CATALOG

Phy-FiXX™

HCS Phy-FiXX™ Managed Category 6 Unshielded RJ-45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 6 unshielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The IDC section of the Phy-FiXX™ Patch Panels consist of V-shaped contacts that flex not fatigue when terminated. Each port features a patented spring-loaded shutter. The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system.
All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements.
The HCS Phy-FiXX™ Logo and the DataLink 250E Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 250E unshielded copper RJ-45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 250E panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 250E panels are tested at the component level and they comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA-568-C.1
- ☑ ANSI/TIA-568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Subpart J, Class A (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- Two power status indicators to ensure proper connection of power supply from the scanner.
- Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord.
- Category 6 field configurable for T568A or T568B wiring options.
- Integral cable management shelf ensures bend radius compliance.
- International hardware kit contains both ANSI and metric hardware.
- Can be terminated using industry standard punch-down tools.
- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Supplied with front labeling card index strip - Providing simple and elegant port identification.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Exceeding Category 6 performance - Providing full support to Gigabit Ethernet.
- Robust and installer-friendly design - Providing reduced installation and operating costs.
- Compatible with 22-24 AWG solid conductors - Providing support to a wider range of cabling types.

Connectivity Features

- LED status indicators on both the panel sides show status of connectivity between the panel and the scanner.
- LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- LED status indicators can be activated and deactivated from a remote location by the network supervisor.

GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Zinc.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to 50°C, 15-90% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	560 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	Insertion Loss	NEXT	FEXT	RL
MHz	dB/100m	dB	dB	dB
	Max	Min	Min	Min
1.00	0.02	85.0	84.0	53.0
4.00	0.02	81.0	75.0	54.0
8.00	0.02	78.0	70.0	56.0
10.00	0.03	77.0	68.0	57.0
16.00	0.03	73.0	58.0	58.0
25.00	0.04	70.0	60.1	60.0
31.25	0.04	68.0	59.0	57.0
62.50	0.05	64.0	53.0	44.0
100.00	0.06	60.0	49.0	34.0
200.00	0.06	55.0	43.0	23.0
250.00	0.08	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Initial Contact Resistance	2.5 mOhm
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size: Hx/Wx/D		T568
				mm	Inch	
P6E-02409-1U	24 port RJ-45 Unshielded CAT 6E 19" Phy-FiXX™ Patch Panel	110 IDC	1u	44x483x92	1.75x19x4.25	UNI

HCS Phy-FiXX™ Managed Category 6A Shielded RJ-45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 6A shielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The IDC section of the Phy-FiXX™ Patch Panels consist of V-shaped contacts that flex not fatigue when terminated. Each port features a patented spring-loaded shutter. The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system.
All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6A component requirements.The HCS
Phy-FiXX™ Logo and the DataLink 500A Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 500A shielded copper RJ-45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 10GBASE-T Gigabit Ethernet
- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 500A panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 500A panels are tested as CAT6A/Class EA Channel and they comply to the following standards:

TRANSMISSION

- ☑ ANSI/TIA-568-C.1
- ☑ ANSI/TIA-568-C.2
- ☑ ISO/IEC-11801

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Subpart F 68.5 (USA)

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ Zero-halogen in LS0H constructions.

Benefits & Features

- Two power status indicators to ensure proper connection of power supply from the scanner.
- Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord.
- Category 6A field configurable for T568A or T568B wiring options.
- Integral cable management shelf ensures bend radius compliance.
- International hardware kit contains both ANSI and metric hardware.
- Can be terminated using industry standard punch-down tools.
- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Supplied with front labeling card index strip - Providing simple and elegant port identification.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Exceeding Category 6A performance - Providing full support to Gigabit Ethernet.
- Robust and installer-friendly design - Providing reduced installation and operating costs.
- Compatible with 22-24 AWG solid conductors - Providing support to a wider range of cabling types.

Connectivity Features

- LED status indicators on both the panel sides show status of connectivity between the panel and the scanner.
- LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- LED status indicators can be activated and deactivated from a remote location by the network supervisor.

GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Powdercoat.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to 50°C, 15-90% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	840 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

Propagation Delay	2.5 nS max @ 1-500 MHz
Propagation Delay Skew	1.25 nS max @ 1-500 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Initial Contact Resistance	2.5 mOhm
TCL	28-20·Log(f/100) dB min @ 1-500 MHz

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size: Hx/Wx/D		T568
				mm	Inch	
P6A-02409-1U	24 port RJ-45 Shielded CAT 6A 19" Phy-FiXX™ Patch Panel	110 IDC	1u	44x483x92	1.75x19x4.25	UNI

Phy-FiXX™

HCS Phy-FiXX™ Category 6 Unshielded RJ-45 Outlet Terminator

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
The Phy-FiXX™ Outlet Terminator is used at the work area outlet to allow the Phy-FiXX™ system to monitor the connection of the horizontal cable to the work area outlet. The Phy-FiXX™ Outlet Terminator is effectively a stuffer cap with in-built components that work exclusively in the HCS Phy-FiXX™ solution. It enables the Phy-FiXX™ system to determine circuit integrity to the work area outlet. Communications between the Phy-FiXX™ Outlet Terminator and the Phy-FiXX™ Scanner are transparent to the data channel and operate outside the Ethernet bandwidth. The Phy-FiXX™ system can function independently of the Phy-FiXX™ outlet terminator. However, the terminator provides enhanced functionality in terms of monitoring spare or unused channels.

Applications

HCS DataLink 250E Phy-FiXX™ terminator is entirely transparent to the data channels hence it supports all applications supported by HCS CAT 6 unshielded copper RJ-45 keystone jacks:

- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T "Fast Ethernet"
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Benefits & Features

- ➔ Confirms circuit integrity between the Phy-FiXX™ patch panel and the work area outlet.
- ➔ Enables monitoring of changes and detects the presence of devices at the outlet.
- ➔ Transparent to the Data Channel.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

ELECTRICAL PROPERTIES

Contact Resistance	2.5 mOhm Insulation
Interface Resistance	20 mOhm Initial
Voltage Rating	72 Vdc max.
Insulation Resistance	100 MegaOhm min @ 500 Vdc

GENERAL PROPERTIES

Housing Material	Flame-retardant thermoplastic compound, UL 94 V-0.
Contacts Material	Phosphor Bronze plated with Tin matte with Nickel.
Contact Force	60 gr min.
Operating Life	Min. 20 re-terminations.
Environmental Conditions	-20 to +50C at 0-90%RH (non condensing)
Standard Color	Transparent.

ORDERING INFORMATION

HCS P/N	Description	Compatible with	Packaging	T568
K6E-008TR	8P8C RJ-45 Unshielded CAT 6 Outlet Terminator	HCS P/N J6E-00873 HCS P/N W6E-008D1 HCS P/N W6E-008D2	24	A&B

HCS Phy-FiXX™ Category 6A Shielded RJ-45 Outlet Terminator

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
The Phy-FiXX™ Outlet Terminator is used at the work area outlet to allow the Phy-FiXX™ system to monitor the connection of the horizontal cable to the work area outlet. The Phy-FiXX™ Outlet Terminator is effectively a stuffer cap with in-built components that work exclusively in the HCS Phy-FiXX™ solution. It enables the Phy-FiXX™ system to determine circuit integrity to the work area outlet. Communications between the Phy-FiXX™ Outlet Terminator and the Phy-FiXX™ Scanner are transparent to the data channel and operate outside the Ethernet bandwidth. The Phy-FiXX™ system can function independently of the Phy-FiXX™ outlet terminator. However, the terminator provides enhanced functionality in terms of monitoring spare or unused channels.

Applications

HCS DataLink 500A Phy-FiXX™ terminator is entirely transparent to the data channels hence it supports all applications supported by HCS CAT 6A shielded copper RJ-45 keystone jacks:

- ☑ 10GBASE-T Gigabit Ethernet
- ☑ 1000BASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic and Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN
- ☑ ITU V.21 and X.11

Benefits & Features

- ➔ Confirms circuit integrity between the Phy-FiXX™ patch panel and the work area outlet.
- ➔ Enables monitoring of changes and detects the presence of devices at the outlet.
- ➔ Transparent to the Data Channel.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Unique DoubleSafe™ Quality Assurance Program - Providing lowest rejection rate available.

ELECTRICAL PROPERTIES

Contact Resistance	2.5 mOhm Insulation
Interface Resistance	20 mOhm Initial
Voltage Rating	72 Vdc max.
Insulation Resistance	100 MegaOhm min @ 500 Vdc

GENERAL PROPERTIES

Housing Material	Flame-retardant thermoplastic compound, UL 94 V-0.
Contacts Material	Phosphor Bronze plated with Tin matte with Nickel.
Contact Force	60 gr min.
Operating Life	Min. 20 re-terminations.
Environmental Conditions	-20 to +50C at 0-90%RH (non condensing)
Standard Color	Transparent.

ORDERING INFORMATION

HCS P/N	Description	Compatible with	Packaging	T568
K6A-008TR	8P8C RJ-45 Shielded CAT 6A Outlet Terminator	HCS P/N W6A-008D1 HCS P/N W6A-008D2	24	A&B

Phy-FiXX™

HCS Phy-FiXX™ Modular Managed Category 5e Unshielded RJ45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 5e Unshielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system. All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 5e component requirements. The HCS Phy-FiXX™ Logo and the DataLink 100e Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 100e Copper RJ45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ ITU V.21 and X.11
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 100e panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 100e panels are tested at the component level and they comply to the following standards:

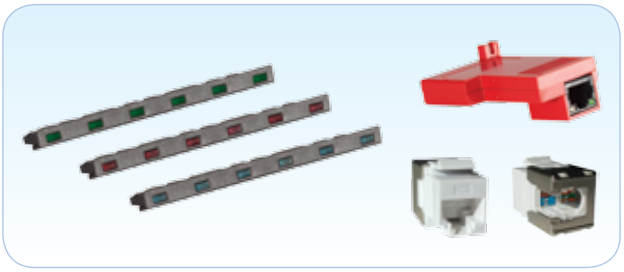
TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA-568-C.1	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA-568-C.2	☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Two power status indicators to ensure proper connection of power supply from the scanner.
- ➔ Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord
- ➔ Category 5e field configurable for T568A or T568B wiring options.
- ➔ Integral cable management shelf ensures bend radius compliance.
- ➔ International hardware kit contains both ANSI and metric hardware
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Supplied with front labeling card index strip - providing simple and elegant port identification.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 5e performance - providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs.
- ➔ Compatible with 22-24 AWG solid conductors - providing support to a wider range of cabling types.
- ➔ Support both Smart and Smart Ready modes of operations.
- ➔ Upgradable to Smart patch panel by simply plugging Smart Control Module.

Connectivity Features

- ➔ LED status indicators show status of connectivity between the panel and the scanner.
- ➔ LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- ➔ Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).



GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Powdercoat.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to 50°C, 15-90% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	560 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL
MHz	dB	dB	dB	dB
	Max	Min	Min	Min
1.00	0.10	65.0	65.0	30.0
4.00	0.10	65.0	63.1	30.0
8.00	0.11	64.9	57.0	30.0
10.00	0.13	63.0	55.1	30.0
16.00	0.16	58.9	51.0	30.0
25.00	0.20	55.0	47.1	30.0
31.25	0.22	53.1	45.2	30.0
62.50	0.32	47.1	39.1	24.1
100.00	0.40	43.0	35.1	20.0

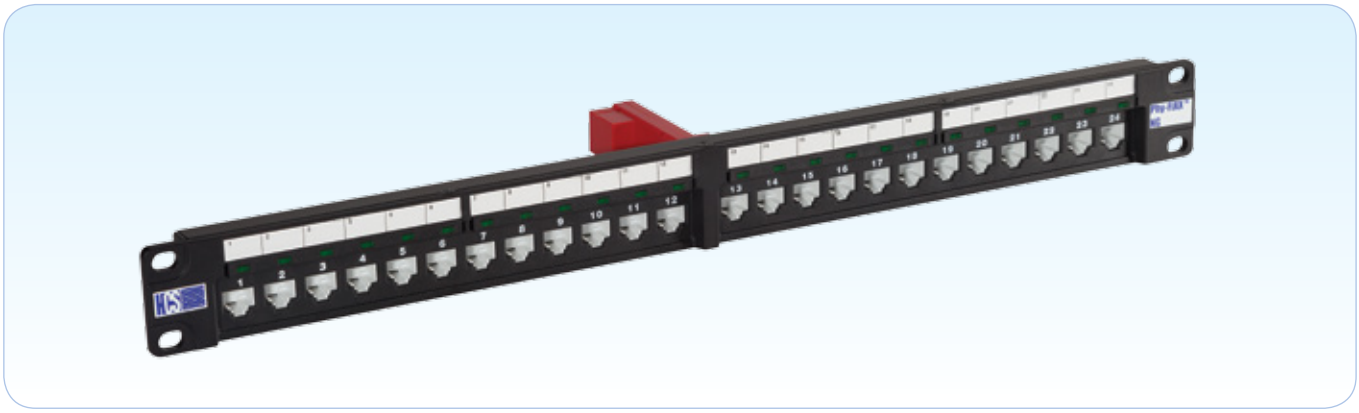
Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	N/A

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size mm Hx/Wx/D	T568
P5E-F2401-1U	24 port RJ45 Unshielded CAT 5e 19" Phy-FiXX™ Patch Panel	110 IDC	1U	44.45x482.6x28.4	UNI
PCU-F00C1-1U	Control Unit for Phy-FiXX Copper Panels	-	1U	-	-

HCS Phy-FiXX™ Modular Managed Category 5e Shielded RJ45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™



Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 5e Shielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system. All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 5e component requirements. The HCS Phy-FiXX™ Logo and the DataLink 100e Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 100e Copper RJ45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ ITU V.21 and X.11
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 100e panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 100e panels are tested at the component level and they comply to the following standards:

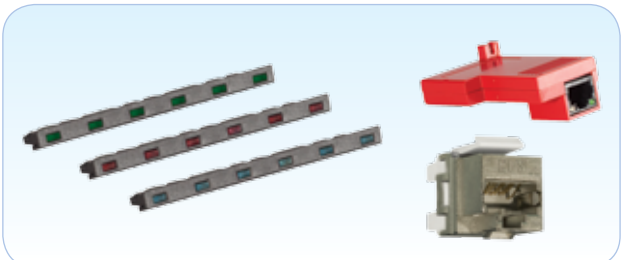
TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA-568-C.1	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA-568-C.2	☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Two power status indicators to ensure proper connection of power supply from the scanner.
- ➔ Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord
- ➔ Category 5e field configurable for T568A or T568B wiring options.
- ➔ Integral cable management shelf ensures bend radius compliance.
- ➔ International hardware kit contains both ANSI and metric hardware
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Supplied with front labeling card index strip - providing simple and elegant port identification.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 5e performance - providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs.
- ➔ Compatible with 22-24 AWG solid conductors - providing support to a wider range of cabling types.
- ➔ Support both Smart and Smart Ready modes of operations.
- ➔ Upgradable to Smart patch panel by simply plugging Smart Control Module.

Connectivity Features

- ➔ LED status indicators show status of connectivity between the panel and the scanner.
- ➔ LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- ➔ Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).



GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Zinc.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to 50°C, 15-90% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	840 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL
MHz	dB	dB	dB	dB
	Max	Min	Min	Min
1.00	0.10	65.0	65.0	30.0
4.00	0.10	65.0	63.1	30.0
8.00	0.11	64.9	57.0	30.0
10.00	0.13	63.0	55.1	30.0
16.00	0.16	58.9	51.0	30.0
25.00	0.20	55.0	47.1	30.0
31.25	0.22	53.1	45.2	30.0
62.50	0.32	47.1	39.1	24.1
100.00	0.40	43.0	35.1	20.0

Propagation Delay	2.5 nS max @ 1-100 MHz
Propagation Delay Skew	1.25 nS max @ 1-100 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	500 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
TCL	28-20·Log(f/100) dB min @ 1-100 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size mm Hx/Wx/D	T568
P5E-F2402-1U	24 port RJ45 Shielded CAT 5e 19" Phy-FiXX™ Patch Panel	110 IDC	1U	44.45x482.6x28.4	UNI
PCU-F00C1-1U	Control Unit for Phy-FiXX Copper Panels	-	1U	-	-

Phy-FiXX™

HCS Phy-FiXX™ Modular Managed Category 6 Unshielded RJ45 Copper Patch Panels

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 6 Unshielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system. All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements. The HCS Phy-FiXX™ Logo and the DataLink 250 Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 250 Copper RJ45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ ITU V.21 and X.11
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 250 panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 250 panels are tested at the component level and they comply to the following standards:

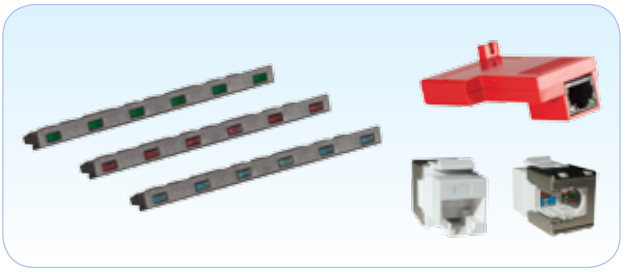
TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA-568-C.1	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA-568-C.2	☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Two power status indicators to ensure proper connection of power supply from the scanner.
- ➔ Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord
- ➔ Category 6 field configurable for T568A or T568B wiring options.
- ➔ Integral cable management shelf ensures bend radius compliance.
- ➔ International hardware kit contains both ANSI and metric hardware
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Supplied with front labeling card index strip - providing simple and elegant port identification.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs.
- ➔ Compatible with 22-24 AWG solid conductors - providing support to a wider range of cabling types.
- ➔ Support both Smart and Smart Ready modes of operations.
- ➔ Upgradable to Smart patch panel by simply plugging Smart Control Module.

Connectivity Features

- ➔ LED status indicators show status of connectivity between the panel and the scanner.
- ➔ LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- ➔ Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).



GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Zinc.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to 50°C, 15-90% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	560 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL
MHz	dB	dB	dB	dB
	Max	Min	Min	Min
1.00	0.2	85.0	84.0	53.0
4.00	0.2	81.0	75.0	54.0
8.00	0.2	78.0	70.0	56.0
10.00	0.3	77.0	68.0	57.0
16.00	0.3	73.0	58.0	58.0
25.00	0.4	70.0	60.1	60.0
31.25	0.4	68.0	59.0	57.0
62.50	0.5	64.0	53.0	44.0
100.00	0.6	60.0	49.0	34.0
200.00	0.6	55.0	43.0	23.0
250.00	0.8	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Initial Contact Resistance	2.5 mOhm
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	N/A

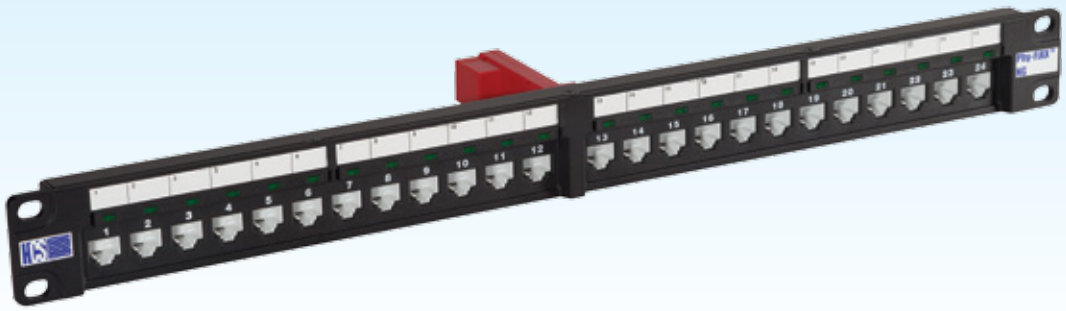
ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size mm Hx/Wx/D	T568
P06-F2401-1U	24 port RJ45 Unshielded CAT 6 19" Phy-FiXX™ Patch Panel	110 IDC	1U	44.45x482.6x28.4	UNI
PCU-F00C1-1U	Control Unit for Phy-FiXX Copper Panels	-	1U	-	-

Phy-FiXX™

HCS Phy-FiXX™ Modular Managed Category 6 Shielded RJ45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™



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Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 6 Shielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system. All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6 component requirements. The HCS Phy-FiXX™ Logo and the DataLink 250 Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 250 Copper RJ45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ ITU V.21 and X.11
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 250 panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 250 panels are tested at the component level and they comply to the following standards:

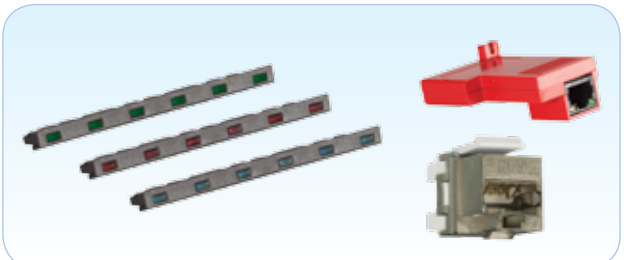
TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA-568-C.1	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA-568-C.2	☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Two power status indicators to ensure proper connection of power supply from the scanner.
- ➔ Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord
- ➔ Category 6 field configurable for T568A or T568B wiring options.
- ➔ Integral cable management shelf ensures bend radius compliance.
- ➔ International hardware kit contains both ANSI and metric hardware
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Supplied with front labeling card index strip - providing simple and elegant port identification.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 6 performance - providing full support to Gigabit Ethernet.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs.
- ➔ Compatible with 22-24 AWG solid conductors - providing support to a wider range of cabling types.
- ➔ Support both Smart and Smart Ready modes of operations.
- ➔ Upgradable to Smart patch panel by simply plugging Smart Control Module.

Connectivity Features

- ➔ LED status indicators show status of connectivity between the panel and the scanner.
- ➔ LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- ➔ Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).



GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Powdercoat.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to 50°C, 15-90% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	840 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL
MHz	dB	dB	dB	dB
	Max	Min	Min	Min
1.00	0.2	85.0	84.0	53.0
4.00	0.2	81.0	75.0	54.0
8.00	0.2	78.0	70.0	56.0
10.00	0.3	77.0	68.0	57.0
16.00	0.3	73.0	58.0	58.0
25.00	0.4	70.0	60.1	60.0
31.25	0.4	68.0	59.0	57.0
62.50	0.5	64.0	53.0	44.0
100.00	0.6	60.0	49.0	34.0
200.00	0.6	55.0	43.0	23.0
250.00	0.8	52.0	41.0	20.0
300.00	0.6	60.0	49.0	34.0
400.00	0.6	55.0	43.0	23.0
500.00	0.8	52.0	41.0	20.0

Propagation Delay	2.5 nS max @ 1-250 MHz
Propagation Delay Skew	1.25 nS max @ 1-250 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Initial Contact Resistance	2.5 mOhm
TCL	28-20·Log(f/100) dB min @ 1-250 MHz
Transfer Impedance	0.1 Ohm @ 1 MHz, 0.2 Ohm @ 10 MHz, 1.6 Ohm @ 80 MHz max.

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size mm Hx/Wx/D	T568
P06-F2402-1U	24 port RJ45 Shielded CAT 6 19" Phy-FiXX™ Patch Panel	110 IDC	1U	44.45x482.6x28.4	UNI
PCU-F00C1-1U	Control Unit for Phy-FiXX Copper Panels	-	1U	-	-

Phy-FiXX™

HCS Phy-FiXX™ Modular Managed Category 6A Unshielded RJ45 Copper Patch Panels

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structuredcabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 6A Unshielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port locatedon the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system. All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6A component requirements. The HCS Phy-FiXX™ Logo and the DataLink 500A Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 500A Unshielded copper RJ45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 10GBASE-T Gigabit Ethernet
- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ ITU V.21 and X.11
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 500A panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 500A panels are tested as CAT6A/Class EA Channel and they comply to the following standards:

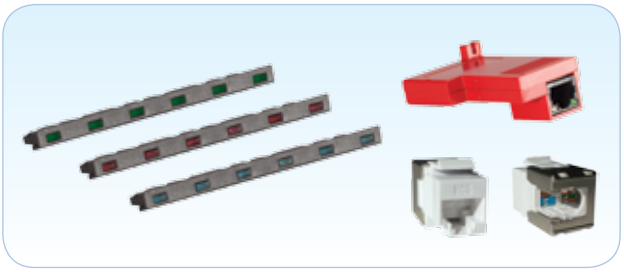
TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA-568-C.1	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA-568-C.2	☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Two power status indicators to ensure proper connection of power supply from the scanner.
- ➔ Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord
- ➔ Category 6A field configurable for T568A or T568B wiring options.
- ➔ Integral cable management shelf ensures bend radius compliance.
- ➔ International hardware kit contains both ANSI and metric hardware
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Supplied with front labeling card index strip - providing simple and elegant port identification.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 6A performance - providing full support to 10 Gigabit Ethernet.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs.
- ➔ Compatible with 22-24 AWG solid conductors - providing support to a wider range of cabling types.
- ➔ Support both Smart and Smart Ready modes of operations.
- ➔ Upgradable to Smart patch panel by simply plugging Smart Control Module.

Connectivity Features

- ➔ LED status indicators show status of connectivity between the panel and the scanner.
- ➔ LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- ➔ Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).



HCS Phy-FiXX™ Modular Managed Category 6A Unshielded RJ45 Copper Patch Panels

GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Powdercoat.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to +50C at 0-90% RH (Non condensing)
Packaging	One unit per box.
Shipping Weight	560 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

Propagation Delay	2.5 nS max @ 1-500 MHz
Propagation Delay Skew	1.25 nS max @ 1-500 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Initial Contact Resistance	2.5 mOhm
TCL	28-20·Log(f/100) dB min @ 1-250 MHz

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size mm Hx/Wx/D	T568
P6A-F2401-1U	24 port RJ45 Unshielded CAT 6A 19" Phy-FiXX™ Patch Panel	110 IDC	1U	44.45x482.6x28.4	UNI
PCU-F00C1-1U	Control Unit for Phy-FiXX Copper Panels	-	1U	-	-

HCS Phy-FiXX™ Modular Managed Category 6A Shielded RJ45 Copper Patch Panels

HES Cabling Systems
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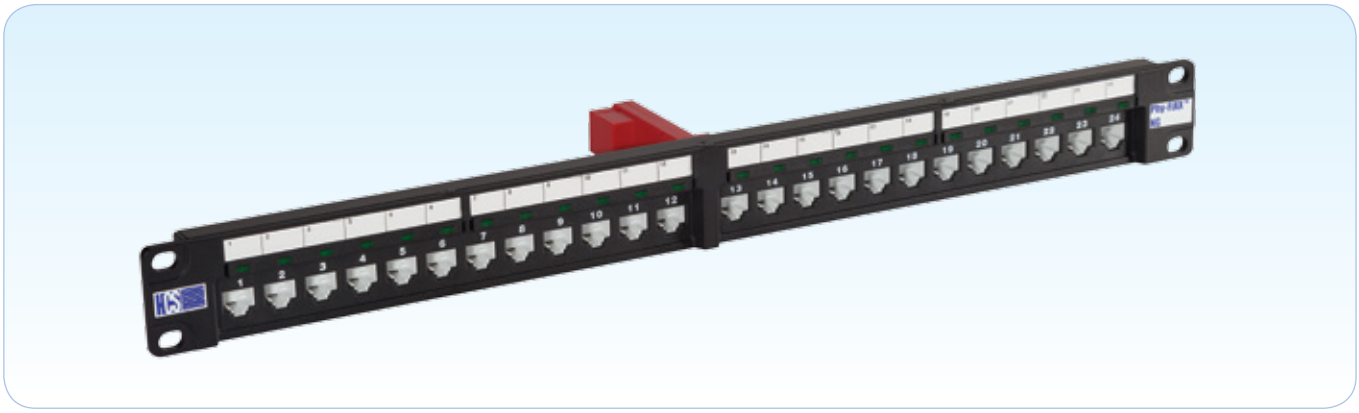


Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layerinfrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Category 6A Shielded Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port locatedon the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system. All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.2 and ISO/IEC-11801 (2nd Edition) Category 6A component requirements. The HCS Phy-FiXX™ Logo and the DataLink 500A Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLink 500A shielded copper RJ45 patch panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support the following protocols:

- ☑ 10GBASE-T Gigabit Ethernet
- ☑ 1GBASE-T Gigabit Ethernet
- ☑ ATM 155
- ☑ TP-PMD
- ☑ 100BASE-T “Fast Ethernet”
- ☑ ITU V.21 and X.11
- ☑ 100BASE-T2
- ☑ 100BASE-T4
- ☑ 100BASE-TX
- ☑ Token Ring 100 Mbps
- ☑ ATM 52
- ☑ ATM 25
- ☑ 10BASE-T Ethernet
- ☑ Token Ring 4 Mbps and 16 Mbps
- ☑ Broadband and Baseband Video
- ☑ ISDN Basic Primary Access
- ☑ 1BASE-5 Starlan
- ☑ ISALAN

Qualifications and Approvals

HCS Phy-FiXX™ DataLink 500A panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLink 500A panels are tested as CAT6A/Class EA Channel and they comply to the following standards:

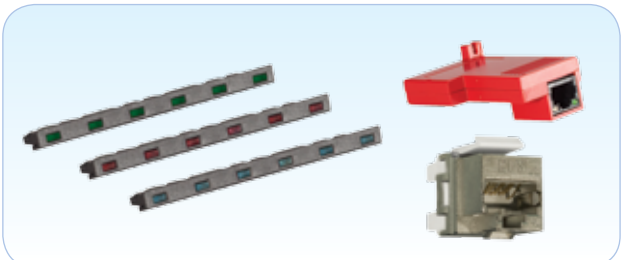
TRANSMISSION	EMC	SAFETY
☑ ANSI/TIA-568-C.1	☑ EN-55022, Class B (Europe)	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA-568-C.2	☑ FCC Part 15, Subpart J, Class A (USA)	☑ Zero-halogen in LS0H constructions.
☑ ISO/IEC-11801		

Benefits & Features

- ➔ Two power status indicators to ensure proper connection of power supply from the scanner.
- ➔ Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord
- ➔ Category 6A field configurable for T568A or T568B wiring options.
- ➔ Integral cable management shelf ensures bend radius compliance.
- ➔ International hardware kit contains both ANSI and metric hardware
- ➔ Can be terminated using industry standard punch-down tools.
- ➔ Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- ➔ Supplied with front labeling card index strip - providing simple and elegant port identification.
- ➔ Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- ➔ Exceeding Category 6A performance - providing full support to 10 Gigabit Ethernet.
- ➔ Robust and installer-friendly design - providing reduced installation and operating costs.
- ➔ Compatible with 22-24 AWG solid conductors - providing support to a wider range of cabling types.
- ➔ Support both Smart and Smart Ready modes of operations.
- ➔ Upgradable to Smart patch panel by simply plugging Smart Control Module.

Connectivity Features

- ➔ LED status indicators show status of connectivity between the panel and the scanner.
- ➔ LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- ➔ Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).



HCS Phy-FiXX™ Modular Managed Category 6A Shielded RJ45 Copper Patch Panels

GENERAL PROPERTIES

Wire Size Range	22-24 AWG, Solid.
Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black Powdercoat.
Connector Module Holder	High impact, Flame-retardant plastic compound, UL 94 V-0.
Jack Housing Material	Zinc Alloy plated bright Ni/Cu
IDC Plastic Housing	Polycarbonate UL94 V-0.
Jack Contact Material	Copper alloy plated with 1.25µm Gold over Nickel.
IDC Contact Material	Copper alloy plated with Matte Tin.
Plug Retention Force	6.8 Kgf (66 N) min.
Jack Contact Force	100 grams min.
IDC Terminations Cycles	20 min. using same-gauge wires.
IDC Type	Gas tight
Jack Insertion Durability	750 mating cycles
Storage Temperature Range	-10 to 60°C, 10-95% RH (non-condensing)
Installation and Operation Conditions	0 to 50°C, 15-90% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	840 gr.

TRANSMISSION AND ELECTRICAL SPECIFICATIONS

FREQ.	IL	NEXT	FEXT	RL	TCL	EL TCL	PS ANEXT	PS AFEXT
MHz	dB	dB	dB	dB	dB	dB	dB	dB
	Max	Min	Min	Min	Min	Min	Min	Min
1.00	0.1	75.0	75.0	30.0	40.0	40.0	67.0	67.0
4.00	0.1	75.0	71.1	30.0	40.0	40.0	67.0	67.0
8.00	0.1	75.0	65.0	30.0	40.0	40.0	67.0	67.0
10.00	0.1	74.0	63.1	30.0	40.0	40.0	67.0	67.0
16.00	0.1	69.9	59.0	30.0	40.0	40.0	67.0	67.0
25.00	0.1	66.0	55.1	30.0	40.0	40.0	67.0	67.0
31.25	0.1	64.1	53.2	30.0	38.1	38.1	67.0	67.0
62.50	0.16	58.1	47.2	30.0	32.1	32.1	67.0	67.0
100.00	0.20	54.0	43.1	28.0	28.0	28.0	67.0	67.0
200.00	0.28	48.0	37.1	22.0	22.0	22.0	64.5	61.0
250.00	0.32	46.0	35.1	20.0	20.0	20.0	62.5	59.0
300.00	0.35	42.9	33.6	18.5	18.5	18.5	61.0	57.5
400.00	0.40	37.9	31.1	16.0	16.0	16.0	58.5	55.0
500.00	0.45	34.0	29.1	14.0	14.0	14.0	56.5	53.0

Propagation Delay	2.5 nS max @ 1-500 MHz
Propagation Delay Skew	1.25 nS max @ 1-500 MHz
Current Rating	1.5 A max.
Contact Resistance	20 mOhm max (per contact)
Input/Output Resistance	200 mOhm max
Input/Output Resistance Unbalance	50 mOhm max
Voltage Rating	72 Vdc max
Dielectric Strength	1000 Volts rms for 1 minute
Insulation Resistance	100 MegaOhm min @ 500 Vdc
DC Resistance	0.1 Ohm max @ 20C
Initial Contact Resistance	2.5 mOhm
TCL	28-20·Log(f/100) dB min @ 1-250 MHz

ORDERING INFORMATION

HCS P/N	Description	Blocks	Units	Size mm Hx/Wx/D	T568
P6A-F2402-1U	24 port RJ45 Shielded CAT 6A 19" Phy-FiXX™ Patch Panel	110 IDC	1U	44.45x482.6x28.4	UNI
PCU-F00C1-1U	Control Unit for Phy-FiXX Copper Panels	-	1U	-	-

Phy-FiXX™

HCS Phy-FiXX™ Managed 24-Port Duplex LC Fiber Patch Panels

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ 24-Port Duplex LC FO Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The adapter interface contains 24 duplex LC ports with Single Mode or Multimode options. The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system.
All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.3 and ISO/IEC-11801 (2nd Edition) FO component requirements.
The HCS Phy-FiXX™ Logo and the DataLight Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLight Duplex LC FO panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support most presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS Phy-FiXX™ DataLight Duplex LC FO panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLight Duplex LC FO panels are tested at the component level and they comply to the following standards:

TRANSMISSION

- ☑ UL94 V-0 rated plastic materials
- ☑ ANSI/TIA-568-C
- ☑ ISO/IEC-11801

EMC

- ☑ FCC Subpart F 68.5

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ UL 1863 & CSA 22.2 (Pending)

Benefits & Features

- ➔ Two power status indicators to ensure proper connection of power supply from the scanner.
- ➔ Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord.
- ➔ Panel options for Single Mode and Multimode fibers, including OS1, OS2, OM1, OM2, OM3 & OM4
- ➔ Integral slide-out cable management shelf ensures bend radius compliance.
- ➔ International hardware kit contains both ANSI and metric hardware.
- ➔ Recessed mounting provides adequate space for routing patch cords, even in free standing enclosures with the front door closed.
- ➔ Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- ➔ Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- ➔ Robust and installer-friendly design - Providing reduced installation and operating costs.

Connectivity Features

- ➔ LED status indicators on both the panel sides show status of connectivity between the panel and the scanner.
- ➔ LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- ➔ LED status indicators can be activated and deactivated from a remote location by the network supervisor.

GENERAL PROPERTIES

Fiber Options	Single Mode: OS1 & OS2. Multimode: OM1, OM2, OM3 & OM4
Material of Construction	16 AWG cold rolled steel
Coating and Color	Powder coating, black
Adapter Shell Material	Crastin SK602 NC010 (PBT 15% G.F.)
Adapter Shell Color	Natural
Alignment Sleeve	SM: Zirconia MM: Phosphor-Bronze
Number of Terminated Fibers	48 (24 Duplex LC)
Installation Temperature	0 to 50°C, 15-90% RH (non-condensing)
Operating Temperature	0 to 50°C, 15-90% RH (non-condensing)
Storage Temperature	-10 to 60°C, 10-95% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	650 gr.

Parts List (Each assembled panel includes the following)

- ☑ 1 x Cable gland 4-8mm M20
- ☑ 4 x Blanking grommet 20mm
- ☑ 1 x Aramid retention post
- ☑ 1 x Open grommet
- ☑ 2 x Fiber support base and clips
- ☑ International hardware kit
- ☑ Laser hazard warning label
- ☑ Instruction sheet

ORDERING INFORMATION

HCS P/N	Description	Units	Size: Hx/Wx/D		T568
			mm	Inch	
PFO-F2401-1U	24 port Single Mode Duplex LC Phy-FiXX™ FO Patch Panel	1u	44.2x484.6x336.6	1.74x19.1x13.25	-
PFO-F2402-1U	24 port Multimode Duplex LC Phy-FiXX™ FO Patch Panel	1u	44.2x484.6x336.6	1.74x19.1x13.25	-

"FO" shall be replaced with the relevant Fiber P/N.

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ DataLight FO Patch Cords are used to connect Phy-FiXX™ FO panels within the Phy-FiXX™ System.
HCS Phy-FiXX™ FO Patch Cords incorporate a monitoring cable along with contact points on the cord connectors that activate the detection mechanism in the Phy-FiXX™ patch panel. When used with the rest of the Phy-FiXX™ system, these patch cords will provide connectivity information to the Phy-FiXX™ system.
All Phy-FiXX™ patch cords fully conform to and provide a substantial margin above all ANSI/TIA-568-C.3 and ISO/IEC-11801 (2nd Edition) FO component requirements.
The HCS Phy-FiXX™ Logo and the DataLight Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLight FO Patch Cords are used to connect Phy-FiXX FO panels within the Phy-FiXX™ System and they fully support most presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS Phy-FiXX™ DataLight FO Patch Cords are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLight FO Patch Cords are tested at the component level and they comply to the following standards:

TRANSMISSION

☑ ANSI/TIA-568-C.3 ☑ ICEA 596 ☑ ISO/IEC-11801

SAFETY

☑ UL 1863 (Pending)

Benefits & Features

- Robust duplex housings protect fibers.
- Monitoring contact interfaces with Phy-FiXX™ FO Patch panel.
- All cords available with Single Mode and Multimode fibers, including OS1, OS2, OM1, OM2 & OM3
- All cords available with two fibers contained in a single outer jacket.
- All cords are jacketed with LS0H (Low Smoke Zero Halogen) flexible compound.
- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.

GENERAL PROPERTIES

Fiber Options	Single Mode: OS1,OS2. Multimode: OM1, OM2, OM3 & OM4
Connector Type	Duplex LC
Durability	200 Insertions min.
Cable OD	2.76 x 6.0 mm
Min. Bend Radius	2.8 mm
Cable Tensile Strength	300N
Number of Terminated Fibers	2
Installation Temperature	-20 to +50C
Operating Temperature	-20 to +50C
Storage Temperature	-50 to +80C
Packaging	One unit per box.

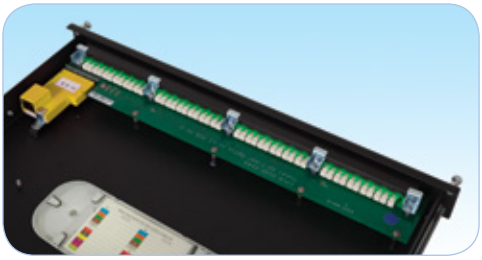
OPTICAL CHARACTERISTICS

Fiber Type	ISO Class	BW (OFL)		Max. Att. dB/Km		Max. Mated IL dB	Min. RL dB (UPC)	Jacket Color
		@850nm	@1300nm	@850nm	@1300nm			
MM 62.5/125µ	OM1	200	500	3.75	1.2	0.3	-	Orange
MM 50/125µ	OM2	500	500	3.5	1.2	0.3	-	Gray
MM 50/125µ	OM3	2500	500	3.0	1.0	0.3	-	Aqua
MM 50/125µ	OM4	3500	500	2.6	0.8	0.3	-	Aqua
SM 9/125µ	OS1	NA	NA	0.5	0.5	0.3	50	Yellow
SM 9/125µ	OS2	NA	NA	0.5	0.5	0.3	50	Yellow

ORDERING INFORMATION

HCS P/N	Description	Length m	Tolerance	Weight grams	Notes
TFO-VccKK-10	Phy-FiXX™ LC-LC Duplex LS0H FO Cord	1.0	-0+0.1m	18	-
TFO-VccKK-20	Phy-FiXX™ LC-LC Duplex LS0H FO Cord	2.0	-0+0.1m	34	-
TFO-VccKK-30	Phy-FiXX™ LC-LC Duplex LS0H FO Cord	3.0	-0+0.1m	49	-
TFO-VccKK-50	Phy-FiXX™ LC-LC Duplex LS0H FO Cord	5.0	-0+0.1m	83	-
TFO-VccKK-A0	Phy-FiXX™ LC-LC Duplex LS0H FO Cord	10.0	-0+0.1m	157	-
TFO-VccKK-A5	Phy-FiXX™ LC-LC Duplex LS0H FO Cord	15.0	-0+1.5m	230	-

HCS Phy-FiXX™ Modular Managed 24-Port Duplex LC Fiber Patch Panels



Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.
HCS Phy-FiXX™ Modular Managed 24-Port Duplex LC FO Patch Panels are used within the Phy-FiXX™ System. Each 1U 24 Port Patch Panel has one data bus connection port located inside of the panel.
The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The adapter interface contains 24 duplex LC ports with Singlemode or Multimode options. The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system.
All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.3 and ISO/IEC-11801 (2nd Edition) FO component requirements.
The HCS Phy-FiXX™ Logo and the DataLight Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ Modular Managed DataLight Duplex LC FO panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support most presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX
(Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASE-SR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

Qualifications and Approvals

HCS Phy-FiXX™ DataLight Modular Managed Duplex LC FO panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HES cabling system.
HCS Phy-FiXX™ DataLight Modular Managed Duplex LC FO panels are tested at the component level and they comply to the following standards:

TRANSMISSION	EMC	SAFETY
☑ UL94 V-0 rated plastic materials	☑ FCC Subpart F 68.5	☑ UL94 V-0 rated plastic materials
☑ ANSI/TIA-568-C		☑ UL 1863 & CSA 22.2 (Pending)
☑ ISO/IEC-11801		

Benefits & Features

- Two power status indicators to ensure proper connection of power supply from the Infrastructure Analyzer.
- Data bus connection to the Phy-FiXX™ Infrastructure Analyzer done with an industry standard RJ45 patch cord.
- Panel options for Singlemode and Multimode fibers, including OS1, OS2 and OM1, OM2, OM3 or OM4
- International hardware kit contains both ANSI and metric hardware.
- Exceptional material properties and design - Providing a unique Century™ Lifetime Warranty.
- Detailed installation manual in English and Turkish - Providing clear and comprehensive instructions.
- Robust and installer-friendly design - Providing reduced installation and operating costs.

Connectivity Features

- LED status indicators show status of connectivity between the panel and the Infrastructure Analyzer.
- LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).

GENERAL PROPERTIES

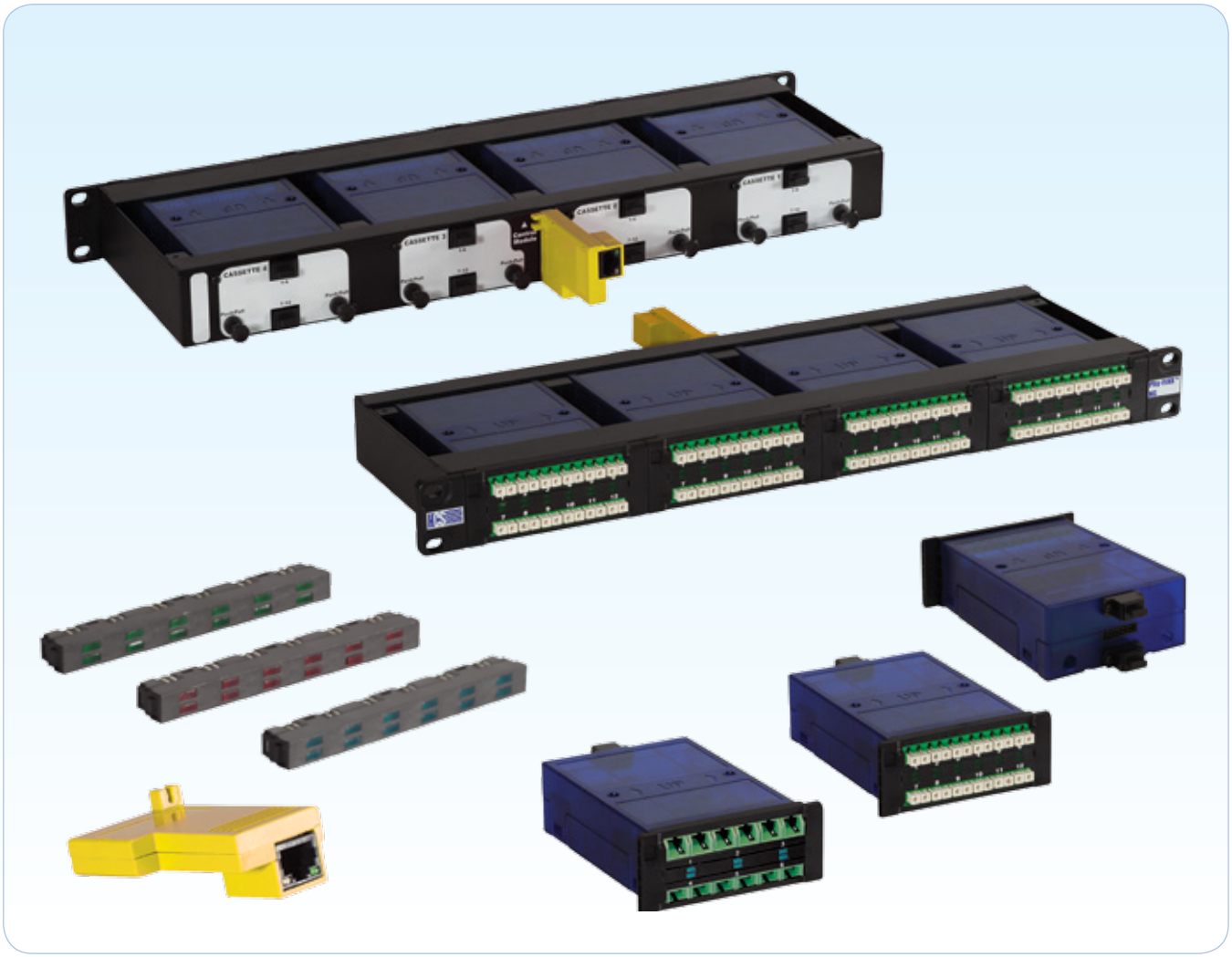
Fiber Options	Single Mode: OS1 & OS2. Multimode: OM1, OM2, OM3 & OM4
Material of Construction	16 AWG cold rolled steel
Coating and Color	Powder coating, black
Adapter Shell Material	Crastin SK602 NC010 (PBT 15% G.F.)
Adapter Shell Color	Natural
Alignment Sleeve	SM: Zirconia MM: Phosphor-Bronze
Number of Terminated Fibers	48 (24 Duplex LC)
Installation Temperature	0 to 50°C, 15-90% RH (non-condensing)
Operating Temperature	0 to 50°C, 15-90% RH (non-condensing)
Storage Temperature	-10 to 60°C, 10-95% RH (non-condensing)
Packaging	One unit per box.
Shipping Weight	4 kg.

ORDERING INFORMATION

HCS P/N	Description	Units	Size: Hx/Wx/D	Notes
			mm	
PFO-F24UM-1U	24 port Duplex LC/UPC MM Phy-FiXX™ Modular Managed FO Patch Panel	1u	482.6x44x280	
PFO-F24US-1U	24 port Duplex LC/UPC SM Phy-FiXX™ Modular Managed FO Patch Panel	1u	482.6x44x280	
PFO-F24AS-1U	24 port Duplex LC/APC SM Phy-FiXX™ Modular Managed FO Patch Panel	1u	482.6x44x280	
PCU-F00F1-1U	Control Unit for Phy-FiXX™ Fiber Optic Panel	N/A	42x62x22	

HCS Phy-FiXX™ Modular Managed Pre-Terminated Fiber Optic Patch Panels

HES Cabling Systems
Connecting Networks™



Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.

HCS Phy-FiXX™ FO Patch Panels are used within the Phy-FiXX™ System. Each 1U Patch Panel has one data bus connection port located on the rear of the panel. The data bus connection port connects the panel to the Phy-FiXX™ scanner via a standard RJ45 patch cord. The patch panel is used by the Phy-FiXX™ system to track connectivity in the patch zone and work area. LED status indicators on the panel show status of connectivity between the panel and the scanner and also provide panel guidance for work orders.
The adapter interface can contains 48 duplex LC ports (12 Duplex - 4 Cassette), 48 Simplex SC ports (12 SC x 4 Cassette) or MTP-MTP Cassettes terminations with Singlemode or Multimode options. The patch panel works as a conventional patch panel when not connected to the Phy-FiXX™ system.
All Phy-FiXX™ patch panels fully conform to and provide a substantial margin above all ANSI/TIA-568-C.3 and ISO/IEC-11801 (2nd Edition) FO component requirements.
The HCS Phy-FiXX™ Logo and the DataLight Trademark ensure long lasting high-performance and full support of most present applications.

Applications

HCS Phy-FiXX™ DataLight FO panels are used within the Phy-FiXX™ System for horizontal distribution or equipment terminations in telecommunications rooms and for interconnection terminations in consolidation points, and they fully support most presently available LAN applications, including the IEEE802.3z protocols for Gigabit Ethernet, 1000BASE-SX (Short wavelength Gigabit Ethernet) 1000BASE-LX (Long wavelength Gigabit Ethernet) & IEEE 802.3ae 10GBASESR/SW 10GBASE-LX4 (10 Gigabit Ethernet).

HCS Phy-FiXX™ Modular Managed Pre-Terminated Fiber Optic Patch Panels

Qualifications and Approvals

HCS Phy-FiXX™ DataLight FO panels are supported by the Century™ Lifetime Warranty and by the DoubleSafe™ QA program as a part of complete HCS cabling system.
HCS Phy-FiXX™ DataLight FO panels are tested at the component level and they comply to the following standards:

TRANSMISSION

- ☑ UL94 V-0 rated plastic materials
- ☑ ANSI/TIA-568-C
- ☑ ISO/IEC-11801

EMC

- ☑ FCC Part F.68.5

SAFETY

- ☑ UL94 V-0 rated plastic materials
- ☑ UL 1863 & CSA 22.2 (Pending)

Benefits & Features

- Two power status indicators to ensure proper connection of power supply from the scanner.
- Data bus connection to the Phy-FiXX™ Scanner done with an industry standard RJ45 patch cord
- Panel options for Singlemode and Multimode fibers, including OS1, OS2, OM1, OM2, OM3 & OM4
- Integral cable management shelf ensures bend radius compliance.
- International hardware kit contains both ANSI and metric hardware
- Recessed mounting provides adequate space for routing patch cords, even in free standing enclosures with the front door closed.
- Exceptional material properties and design - providing a unique Century™ Lifetime Warranty.
- Detailed installation manual in English and Turkish - providing clear and comprehensive instructions.
- Exceeding Category 5e performance - providing full support to Gigabit Ethernet.
- Robust and installer-friendly design - providing reduced installation and operating costs.
- Support both Smart and Smart Ready modes of operations.
- Upgradable to Smart patch panel by simply plugging Smart Control Module.

Connectivity Features

- LED status indicators show status of connectivity between the panel and the scanner.
- LED status indicator on the panel calls for operator action (connect/disconnect patch-cord).
- LED status indicators on each port calls for operator action (connect/disconnect patch-cord).
- LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- Port use indication on each port calls for monitoring connectivity (connect/disconnect patch-cord).

GENERAL PROPERTIES

Fiber options	Single Mode: OS1 & OS2. Multimode: OM1, OM2, OM3 & OM4
Material of Construction	16 AWG cold rolled steel
Coating and Color	Powder coating, black
Cassette Capacity	4 Cassette
Fiber Capacity	96 (12 Duplex LC x 4 Cassettes) or 48 (12 Simplex SC x 4 Cassettes) or MTP-MTP 4 Cassettes
Insertion Loss	0.50 dB/cassette (Standard). 0.35 dB/cassette (low-loss)
Installation temperature	0 to 50°C, 15-90% RH (non-condensing)
Operating temperature	0 to 50°C, 15-90% RH (non-condensing)
Storage temperature	-10 to 60°C, 10-95% RH (non-condensing)
Packaging	One unit per box.

ORDERING INFORMATION

HCS P/N	Description	Connectors	Units	Size mm Hx/Wx/D	Notes
P00-F0001-1U	Phy-FiXX™ FO Blank Panel, 19", 1U, 4 Cassette Capacity	N/A	1U	31.8x482.6x162	-
PCU-F00F1-1U	Control Unit for Phy-FiXX Fiber Optic Panels	-	1U	-	-
PFO-F1201-1U	Phy-FiXX™ 1x12 MTP - 12xLC Cassette, 1U	MTP-LC	1U	-	-
PFO-F2402-1U	Phy-FiXX™ 2x12 MTP - 24xLC Cassette, 1U	MTP-LC	1U	-	-
PFO-F1203-1U	Phy-FiXX™ 1x12 MTP - 12xSC Cassette, 1U	MTP-SC	1U	-	-
PFO-F1211-1U	Phy-FiXX™ 1xMTP - 1xMTP Cassette, 1U	MTP-MTP	1U	-	-
PFO-F1212-1U	Phy-FiXX™ 1xMTP - 2xMTP Cassette, 1U	MTP-MTP	1U	-	-
PFO-F1213-1U	Phy-FiXX™ 1xMTP - 3xMTP Cassette, 1U	MTP-MTP	1U	-	-
PFO-F2422-1U	Phy-FiXX™ 2xMTP - 2xMTP Cassette, 1U	MTP-MTP	1U	-	-
PFO-F2423-1U	Phy-FiXX™ 2xMTP - 3xMTP Cassette, 1U	MTP-MTP	1U	-	-

"FO" shall be replaced with the relevant Fiber P/N.
Note: Please contact HCS Customer Service for polarity method (A,B or C)

Phy-FiXX™

HCS Phy-FiXX™ 96 Channel Scanner

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ Scanners monitor activity on a Phy-FiXX™ enabled system. Each 1U Scanner can be connected to up to 8 patch panels providing monitoring of up to 96 separate physical channels. Standard RJ45 patch cords are used as the data bus connection between Scanners and smart patch panels Phy-FiXX™ Scanners can be configured and activated independently of the software. When the Phy-FiXX™ application software is connected to the Scanner, the Scanner "discovers" active hardware and devices on the network and uploads this information onto the Phy-FiXX™ application software.

Scanners monitor the connection state of Phy-FiXX™ channels and pass state change data to the Phy-FiXX™ application software. This triggers Phy-FiXX™'s smart polling function which queries the specific outlet and updates the software. In the event that the Phy-FiXX™ application cannot communicate with a Scanner, the Scanner records transactions in a queue for later delivery to the Phy-FiXX™ Application Software.
Scanners recover from power outages without requiring reconfiguration. Phy-FiXX™ Scanners consume little power, which can be critical in power-hungry environments such as Data Centers.

Accessories

- A standard IEC 60320 power cord (comprising a power plug and C13 Plug/outlet) is required but not included.

MANAGEMENT

- ☑ HTTP
- ☑ SNMP (read-only)

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Class B (USA)

SAFETY

- ☑ UL 60950-1
- ☑ IEC 60950-1
- ☑ CSA 60950-1

Benefits & Features

- Support up to 8 patch panels, 96 cross-connect or 192 interconnect separate physical channels.
- Front panel LCD with five navigation buttons displays the Scanner statuses of operations.
- Power status LED on each panel port indicates connection and communication with the Phy-FiXX™ patch panel.
- LED status indicators on each panel port calls for operator action (connect/disconnect patch panel).
- LED status indicators can be activated and deactivated from a remote location by the network supervisor.
- Smart polling enables continuous updating of Phy-FiXX™ with minimal impact to the network.
- Simple Scanner configuration.
- Auto discovery of active hardware/devices & automatic database population.
- Mission critical port disconnection alerts.
- Trace to device location.
- High density Scanner enables rack space to be maximized.
- Low power consumption with no specific fans or cooling required.
- Automatic Rediscovery/Re-synchronization after power outage or system failure.
- Transaction queues record events for later delivery if the Scanner is disconnected from the Phy-FiXX™ application.
- Scanner can be tested and activated independently of software activation.
- Data bus connection between the Scanner and patch panel is via an industry standard RJ45 patch cord.

ELECTRICAL & POWER PROPERTIES

Max. Power Consumption	10 Watts
Universal AC Input	110-240VAC, 50-60Hz
Heat Generated	34 BTU/Hour
Insulation Resistance	100 MegaOhm min @ 500 Vdc

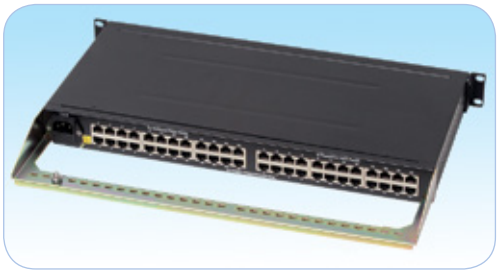
GENERAL PROPERTIES

Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black powder coated finish
Storage Conditions	-10 to 60°C, 10 to 95% Relative Humidity non-condensing
Installation and Operation Conditions	0 to 50°C, 15-90% Relative Humidity non-condensing
Packaging	One unit per box.
Shipping Weight	2 Kg

ORDERING INFORMATION

HCS P/N	Description	Color	Size
PB-PF08-0900	Phy-FiXX™ 96 Channel Scanner	Black	1U

HCS Phy-FiXX™ 576 Channel Scanner



Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX™ enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.

Phy-FiXX™ scanners monitor activity on a Phy-FiXX™ enabled system. Each 1U scanner can be connected to up to 48 patch panels providing monitoring of up to 576 separate physical channels. Standard RJ45 patch cords are used as the data bus connection between scanners and patch cords.

Phy-FiXX™ scanners can be configured and activated independently of the software. When the Phy-FiXX™ application software is connected to the scanner, the scanner "discovers" active hardware and devices on the network and uploads this information onto the Phy-FiXX™ application software. Scanners monitor the connection state of Phy-FiXX™ channels and pass state change data to the Phy-FiXX™ application software. This triggers Phy-FiXX™'s smart polling function which queries the specific outlet and updates the software. In the event that the Phy-FiXX™ application cannot communicate with a scanner, the scanner records transactions in a queue for later delivery to the Phy-FiXX™ software. Scanners recover from power outages without requiring reconfiguration. Phy-FiXX™ scanners consume little power, which can be critical in power-hungry environments such as Data Centers.

Accessories

- Each scanner is supplied with one International 19-inch mounting kit.
- A standard IEC 60320 power cord (comprising a power plug and C13 Plug/outlet) is required but not included.

MANAGEMENT

- ☑ HTTP
- ☑ SNMP (read-only)

EMC

- ☑ EN-55022, Class B (Europe)
- ☑ FCC Part 15, Class B (USA)

SAFETY

- ☑ UL 60950-1
- ☑ IEC 60950-1
- ☑ CSA 60950-1

Benefits & Features

- Support up to 48 patch panels, 576 cross-connect or 1152 interconnect separate physical channels.
- Smart polling enables continuous updating of Phy-FiXX™ with minimal impact to the network.
- Simple scanner configuration.
- Auto discovery of active hardware/devices & automatic database population.
- Mission critical port disconnection alerts.
- Trace to device location.
- High density scanner enables rack space to be maximized.
- Low power consumption with no specific fans or cooling required.
- Automatic Rediscovery/Re-synchronization after outage or system failure.
- Transaction queues record events for later delivery if the scanner is disconnected from the Phy-FiXX application.
- Scanner can be tested and activated independently of software activation.
- Data bus connection between the scanner and patch panel is via an industry standard RJ45 patch cord.

ELECTRICAL & POWER PROPERTIES

Max. Power Consumption	30 Watts
Universal AC Input	110-240VAC, 50-60Hz
Heat Generated	12 BTU/Hour
Insulation Resistance	100 MegaOhm min @ 500 Vdc

GENERAL PROPERTIES

Material of Construction	CRS (cold rolled steel) 1.52 mm thickness.
Coating and Color	Black powder coated finish
Storage Conditions	-10 to 60°C, 10 to 95% Relative Humidity non-condensing
Installation and Operation Conditions	0 to 50°C, 15-90% Relative Humidity non-condensing
Packaging	One unit per box.
Shipping Weight	4 Kg

ORDERING INFORMATION

HCS P/N	Description	Dimensions mm			Shipping Weight Kg	Units
		H	W	D		
PB-PF48-0800	Phy-FiXX™ 576 Channel Scanner	44	483	216	4.0	1U

HCS Phy-FiXX™ Application Software & License

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.

Phy-FiXX™ **Application Software** is the central data manager for the Phy-FiXX system. It manages OSI Layer 1 infrastructure elements and provides instantaneous information to the IT Manager about connectivity on Phy-FiXX enabled channels. The software documents planned work orders and detects unplanned (ad hoc) changes to the network. It allows continuous monitoring of the complete physical channel from work area outlet to the active network device.
Phy-FiXX™ Application Software automatically monitors all connections and disconnections, identifies and confirms port availability and notifies the IT Manager of all unscheduled or unauthorized network cabling changes. All moves, adds, and changes (MACs) detected on the network are automatically updated in the database.
Phy-FiXX™ Application Software is a web based application that enables global network access by an unlimited number of users and provides cost effective and accurate network management.
Phy-FiXX Reports allow the IT team to extract information contained in the Phy-FiXX system about the Layer 1 infrastructure and the assets connected to the infrastructure. Reports include information about assets, work orders, logs, MACs, and connectivity status of Phy-FiXX enabled channels.

Phy-FiXX™ **application software** support two modes of operations, Online mode and Offline mode. In Online mode the Phy-FiXX™ application software communicates with the Phy-FiXX™ hardware system, communicates with the Phy-FiXX™ Scanner and communicates with the Phy-FiXX™ smart panels. In Offline mode the Phy-FiXX™ application software works as a standalone software free of the Phy-FiXX™ hardware system.

Phy-FiXX 48 Managed Ports Software Licenses are used to enable activation of Phy-FiXX panels on Phy-FiXX scanners. Managed Ports Licenses are installed on the Phy-FiXX server. Each 48 Managed Ports License activates four scanner ports which is ideal for low density environments where the entire channel capacity of a scanner is not required. Multiple 48 Managed Ports Licenses may be installed on a scanner to provide a solution matching the number of channels served by a scanner. 48 Managed Ports licenses can be added incrementally as additional channels are connected to the scanner. Each scanner may have up to twelve 48 Managed Ports Licenses installed on it. 48 Managed Ports Licenses may be added to a scanner at any time.

Technical Information

Phy-FiXX™ Application Software is designed for Windows 32 bit and 64 bit environments and requires a TCP/IP network.
The following system requirements are recommended:

Server*:
Supported Operating Systems:
- *Windows Server 2008*
- *Windows Server 2008 R2*

Server should meet Microsoft's recommended requirements

Database*:
- *Microsoft SQL Server Express 2008*
- *Microsoft SQL Server Express 2008 R2*

Browser Support*:
- Microsoft Internet Explorer Version 7.0 or higher
- Firefox Version 3.2 or higher
- Recommended screen resolution of 1200 x 800 or better
- Microsoft Silverlight is required on the web browsing device.
- One year technical support provided with initial software purchase (can be renewed on an annual basis).

* HCS recommends Windows Server 2008 R2 and SQL Server Express 2008 R2.

Benefits & Features

- Hierarchal view of entire enterprise layer 1 infrastructure.
- Monitoring of all connections/disconnections.
- Drag and drop work orders.
- Work orders for end devices and wire closet patches.
- Guided patching.
- Search feature to easily locate assets and information.
- Event logs for audit trails.
- Assets linkage to building maps.
- Enhanced graphics and mapping features, including Zoom, Pan, Scaling & Mini-map.
- Tracing feature across all channel elements.
- Unrestricted number of users per license.
- Data import and export capability.
- Support both online and offline modes of operation.
- Multi language support.
- HTML Help File (EN and TR).

ORDERING INFORMATION

HCS P/N	Description	Notes
KSW-A5760	HCS Phy-FiXX™ Application Software	
KSW-A576M	HCS Phy-FiXX™ Application Software - 1 Year Maintenance	
KSW-L0480	HCS Phy-FiXX™ 48 Managed Ports Software License	
KSW-L048M	HCS Phy-FiXX™ 48 Managed Ports Software License - 1 Year Maintenance	
KSW-L0UL0	HCS Phy-FiXX™ Unlimited Managed Ports Software License	
KSW-L0UL1	HCS Phy-FiXX™ Unlimited Managed Ports Software License - 1 Year Maintenance	

HCS Phy-FiXX™ Application Software & License - Offline

Description

Phy-FiXX™ is a revolutionary and advanced physical layer management suit providing enterprises with the ability to manage their Physical Layer infrastructure with a level of visibility & integration unique in the structured cabling industry. Using a combination of software, electronics and structured cabling products, Phy-FiXX enables users to track and manage their investment from planning through to design, procurement, installation, moves, adds and changes (MACs) and the eventual upgrade of the infrastructure, thereby spanning its entire lifecycle.

Phy-FiXX™ **Application Software** is the central data manager for the Phy-FiXX system. It manages OSI Layer 1 infrastructure elements and provides instantaneous information to the IT Manager about connectivity on Phy-FiXX enabled channels. The software documents planned work orders and detects unplanned (ad hoc) changes to the network. It allows continuous monitoring of the complete physical channel from work area outlet to the active network device.
Phy-FiXX™ Application Software automatically monitors all connections and disconnections, identifies and confirms port availability and notifies the IT Manager of all unscheduled or unauthorized network cabling changes. All moves, adds, and changes (MACs) detected on the network are automatically updated in the database.
Phy-FiXX™ Application Software is a web based application that enables global network access by an unlimited number of users and provides cost effective and accurate network management.
Phy-FiXX Reports allow the IT team to extract information contained in the Phy-FiXX system about the Layer 1 infrastructure and the assets connected to the infrastructure. Reports include information about assets, work orders, logs, MACs, and connectivity status of Phy-FiXX enabled channels.

Phy-FiXX™ **application software** support two modes of operations, Online mode and Offline mode. In Online mode the Phy-FiXX™ application software communicates with the Phy-FiXX™ hardware system, communicates with the Phy-FiXX™ Scanner and communicates with the Phy-FiXX™ smart panels. In Offline mode the Phy-FiXX™ application software works as a standalone software free of the Phy-FiXX™ hardware system.

Phy-FiXX 48 Managed Ports Software Licenses are used to enable activation of Phy-FiXX panels on Phy-FiXX scanners. Managed Ports Licenses are installed on the Phy-FiXX server. Each 48 Managed Ports License activates four scanner ports which is ideal for low density environments where the entire channel capacity of a scanner is not required. Multiple 48 Managed Ports Licenses may be installed on a scanner to provide a solution matching the number of channels served by a scanner. 48 Managed Ports licenses can be added incrementally as additional channels are connected to the scanner. Each scanner may have up to twelve 48 Managed Ports Licenses installed on it. 48 Managed Ports Licenses may be added to a scanner at any time.

Technical Information

Phy-FiXX™ Application Software is designed for Windows 32 bit and 64 bit environments and requires a TCP/IP network.
The following system requirements are recommended:

Server*:
Supported Operating Systems:
- *Windows Server 2008*
- *Windows Server 2008 R2*
Server should meet Microsoft's recommended requirements

Database*:
- *Microsoft SQL Server Express 2008*
- *Microsoft SQL Server Express 2008 R2*

Browser Support*:
- Microsoft Internet Explorer Version 7.0 or higher
- Firefox Version 3.2 or higher
- Recommended screen resolution of 1200 x 800 or better
- Microsoft Silverlight is required on the web browsing device.
- One year technical support provided with initial software purchase (can be renewed on an annual basis).
* HCS recommends Windows Server 2008 R2 and SQL Server Express 2008 R2.

Benefits & Features

- Hierarchal view of entire enterprise layer 1 infrastructure.
- Monitoring of all connections/disconnections.
- Drag and drop work orders.
- Work orders for end devices and wire closet patches.
- Guided patching.
- Search feature to easily locate assets and information.
- Event logs for audit trails.
- Assets linkage to building maps.
- Enhanced graphics and mapping features, including Zoom, Pan, Scaling & Mini-map.
- Tracing feature across all channel elements.
- Unrestricted number of users per license.
- Data import and export capability.
- Layer 2 and layer 3 assets Auto Discovery.
- Support Online and Offline modes of operation.
- Multi language support.
- HTML Help File.

ORDERING INFORMATION

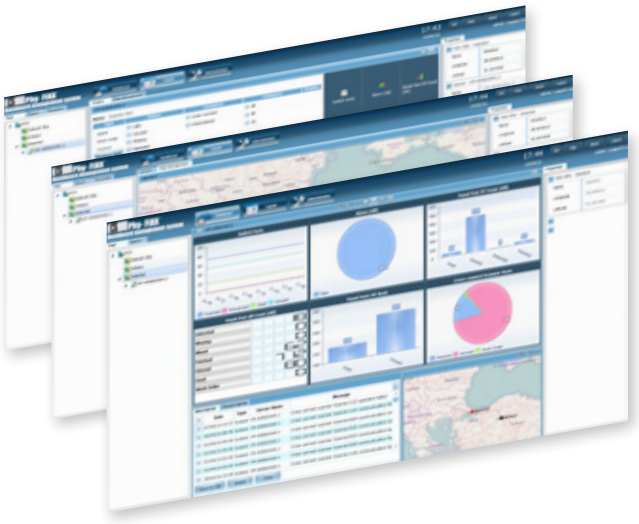
HCS P/N	Description	Notes
KSW-A57F0	HCS Phy-FiXX™ Application Software - Offline	
KSW-A57F1	HCS Phy-FiXX™ Application Software - 1 Year Maintenance - Offline	
KSW-L04F0	HCS Phy-FiXX™ 48 Managed Ports Software License - Offline	
KSW-L04F1	HCS Phy-FiXX™ 48 Managed Ports Software License - 1 Year Maintenance - Offline	
KSW-L0UF0	HCS Phy-FiXX™ Unlimited Managed Ports Software License – Offline	
KSW-L0UF1	HCS Phy-FiXX™ Unlimited Managed Ports Software License - 1 Year Maintenance - Offline	

HCS Phy-FiXX™ Dashboard Software

HES Cabling Systems
Connecting Networks™

Description

Phy-FiXX™ Dashboard Software is the central data manager for the Phy-FiXX™ Server Application Software. The Phy-FiXX™ Dashboard Software manages several Phy-FiXX™ Server Application Software and provides instantaneous information to the IT Manager about connectivity on Phy-FiXX™ enabled channels. It allows continuous monitoring of the Phy-FiXX™ Server Application Software in the Phy-FiXX™ Dashboard Software. Phy-FiXX™ Dashboard Software data is automatically updated in the database. The Phy-FiXX™ Dashboard Software is a web based application that enables global network access by an unlimited number of users and provides cost effective and accurate network management. Phy-FiXX™ Dashboard Software graphs allow the IT team to extract information contained in the Phy-FiXX™ system about the Layer 1 infrastructure and the assets connected to the infrastructure. The Graphs include information about assets, work orders, logs, MACs, and connectivity status of Phy-FiXX™ enabled channels.



Phy-FiXX™ 48 Managed Ports Software Licences are used to enable activation of Phy-FiXX™ panels on Phy-FiXX™ Scanner. Managed Ports licenses are installed on the Phy-FiXX™ server. Each 48 Managed Ports licence activates four Scanner ports. 48 Managed Ports licences are ideal for low density environments where the entire channel capacity of a Scanner is not required. Multiple 48 Managed Ports licences may be installed on a Scanner to provide a solution matching the number of channels served by a Scanner. 48 Managed Ports licenses can be added incrementally as additional channels are connected to the Scanner. Each Scanner may have up to twelve 48 Managed Ports licenses installed on it. 48 Managed Ports licences may be added to a Scanner at any time.

Technical Information

The Phy-FiXX™ Dashboard Software is a manager application. The Phy-FiXX™ Dashboard Software presents data from a single or multiple Phy-FiXX™ Applications. The Phy-FiXX™ Dashboard Software is designed for Windows 32 bit and 64 bit environments and requires a TCP/IP network.

Server*:
Supported Operating Systems:
- *Windows Server 2008*
- *Windows Server 2008 R2*

Server should meet Microsoft's recommended requirements

Browser Support*:
- *Microsoft Internet Explorer Version 7.0 or higher*
- *Firefox Version 3.2 or higher*
- *Recommended screen resolution of 1200 x 800 or better*
- *Microsoft Silverlight is required on the web browsing device.*
- One year technical support provided with initial software purchase (can be renewed on an annual basis).

* HES Cabling Systems recommends Windows Server 2008 R2

Benefits & Features

- Single and Multiple servers support.
- Multiple layout options for graph view.
- Hierarchal view of servers and graphs.
- Single and Double servers graph view.
- Configurable Toggling view.
- Server/Site alarm view.
- Enhanced graph view, including Zoom, Pan, Scaling.
- Enhanced map view, including Zoom, Pan, Scaling.
- Search feature to easily locate assets and information.
- Pie/Line/Counter/Bar graph view.
- Drag and drop graphs template.
- Table view of graphs template.
- Support Line graph threshold for alarm generation.
- Graph linkage to server/site.
- Unrestricted number of users per license.
- Multi language support.
- HTML Help File

ORDERING INFORMATION

HCS P/N	Description	Notes
KSW-DB1S0	HCS Phy-FiXX™ Dashboard Application Software 1 Server Support	
KSW-DB1S1	HCS Phy-FiXX™ Dashboard Application Software 1 Server Support - 1 Year Maintenance	

HES Cabling Systems
Connecting Networks™

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A

A	Ampere.
Absorption	That portion of fiber optic attenuation resulting of conversion of optical power to heat.
Abrasion Resistance	Ability of a wire, cable or material to resist surface wear.
AC	Alternating current.
Accelerated Aging	A test that simulates long time environmental conditions in a relatively short time.
ACR	The difference between attenuation and crosstalk, measured in dB, at a given frequency (acronym for
Attenuation Crosstalk Ratio).	Important characteristic in networking transmission to assure that signal sent down a twisted pair is stronger at the receiving end of the cable than are any interference signals imposed on that same pair by crosstalk from other pairs.
Acknowledgement (ACK)	A character that is used as a reply in communications protocols. An ACK is sent from the receiving device in response to the successful transmission of another character.
Active/Passive Device	In current loop applications, a device capable of supplying the current for the loop (active) and a device that must draw its current from connected equipment (passive).
Active Terminator	In SCSI, a terminator that can compensate for variations in the terminator power supplied by the host adapter through means of a built-in voltage regulator. A type of terminator containing a sophisticated circuit that can compensate for variations in the power supplied by the host adapter, as well as variations in bus impedance of complex SCSI systems. Active terminators works to control the impedance using a voltage regulator. Fast & Wide SCSI and beyond can do better with active termination on both ends of the bus. It cost a little more but will provide more stability and less problems on your part.
Adapter	The device that connects a piece of equipment to the network and controls the electrical protocol for communication with that network; also called network interface card, or NIC.
Adaptive Technology	An Intel technology (supported in adapters and switches) that automatically and dynamically customizes product performance to match network operating conditions, thus helping to optimize network performance.
Advanced Paketized Voice (APV)	Low overhead voice digitizing technique. Will produce acceptable voice signals while only requiring a bandwidth of 9.6 Kbps.
AF	Audio frequency.
Aggregate Input Rate	Aggregate input rates measure the total data rate of all terminals connected to a multiplexer. Burst aggregate input rate refers to the maximum data rate accepted by the multiplexer at any given instant.
Air Core	Cables that are not gel filled.
Air-Gap Dielectric	A coaxial design in which a monofilament of plastic holds the center conductor in place allowing the remainder of the dielectric to be air. Typical velocities of up to 84% can be achieved in this design.
Alloy	A combination of two or more different polymers/metals. Usually combined to make use of different properties of each polymer metal.
Alternating Current (AC)	Electric Current that alternates or reverses polarity continuously. The number of alternations per second are described as cycles, (hertz or Hz).
AM	Amplitude modulation. A means of signal transmission whereby transmitter (light source) signal intensity is varied in relation to the amplitude of the input signal.
Ambient	Conditions existing at a test or operating location prior to energizing equipment (e.g.: ambient temperature).
Ampacity	Current handling capability. The maximum current a conductor can carry without being heated beyond a safe limit.
Ampere	A standard unit of current. Defined as the amount of current that flows when one volt of emf is applied across one ohm of resistance. An ampere of current is produced by one coulomb of charge passing a point in one second.
Amplitude	The maximum value of a varying wave form.
Analog	Representation of data by continuously variable quantities.
Analog Signal	An electrical signal which varies continuously, not having discrete values. Analog signals are copies or representations of other waves in nature. An analog audio signal, for instance, is a representation of the pressure waves which make up audible sound.
Anneal	To soften and relieve strains in any solid material, such as metal or glass, by heating to just below its melting point and then slowly cooling it. Annealing generally lowers the tensile strength of the material, while improving its flex life and flexibility.
ANSI	American National Standards Institute.
Aramid Yarn	Strength element used in Siecor cable to provide support and additional protection of the fiber bundles. Kevlar is a particular brand of aramid yarn.
Asynchronous (async) Transmission	A transmission method in which time intervals between transmitted characters may be of unequal length. Transmission is controlled by start and stop bits on each character, rather than by clocking as in synchronous transmission.
ASTM	The American Society for Testing and Materials, a standards organization which suggests test methods, definitions and practices

ATM	Asynchronous Transfer Mode. The SONET standard for a packet switching technique which uses packets of a fixed length.
American Standard Code for Information Interchange (ASCII)	(Pronounced "ASK key"} A 7-bit binary data code used in communications with most minicomputers and personal computers to achieve compatibility between data services.
Attenuation	The decrease in magnitude of a signal as it travels through any transmitting medium, such as a cable or circuitry. Attenuation is measured as the logarithm of a ratio. It is expressed in decibels or dB.
Attenuator	A passive optical component that intentionally reduces the optical power propagating in a fiber.
Audio	A term used to describe sounds within the range of human hearing. Also used to describe devices which are designed to operate within this range (20 Hz to 20 kHz).
Audio Frequency	Frequencies within the range of human hearing: approximately 20 to 20,000 Hz.
AutoBaud Rate Detection (ABR)	With autobaud rate detection a receiving device can determine the data rate, code level, and stop bits of incoming data by examining the first character received, usually a pre-selected sign-on character. ABR was designed to allow a receiving device to accept transmissions from multiple sending devices all at different speeds without having to be configured for each speed in advance.
Automatic Dial Backup (ADB)	A feature of many modern modems that allows them to automatically switch from lease lines to dial lines when impairments on lease lines reach critical levels. The modems will also return to the use of the lease lines when conditions improve.
Automatic Request for Retransmission (ARQ)	A form of data transmission error correction. A receiving device will inform the transmitting device which blocks of data were received correctly and the transmitting device will retransmit any that were not received correctly.
Average Power	The average over time of a modulated signal.
Attachment User Interface (AUI)	Most commonly used with reference to the 15 pin AD type connector and the cables used to connect single and multiple channel equipment to an Ethernet transceiver. The interface between a transceiver and a NIC or other network node in a 10 BASE5 Ethernet network.
AWG	American Wire Gage. A wire diameter specification. The smaller the AWG number, the larger the wire diameter.
AWM	Appliance Wiring Material (UL Term).

B

Backbone	The cable used to connect all systems of a multi-level distributed system to an intermediate system.
Back Reflection, Optical Return Loss	Light reflected from the cleaved or polished end of a fiber caused by the difference of refractive indices of air and glass. Typically 4% of the incident light. Expressed in dB relative to incident power.
Backscattering	The scattering of light in a fiber back toward the source, used to make OTDR measurements. Bandwidth: The range of signal frequencies or bit rate within which a fiber optic component, link or network will operate.
Balanced Line	A cable having two identical conductors which carry voltages opposite in polarity and equal in magnitude with respect to ground, suitable for differential signal transmission.
Balun	A device for matching an unbalanced coaxial transmission line to a balanced two-wire system. Can also provide impedance transformation, as 300 ohm balanced to 75 ohm unbalanced.
Bandwidth	The difference between the upper and lower limits of a given band of frequencies. Expressed in Hertz.
Baud	Unit of data transmission speed meaning bits per second (500 baud=500 bits per second).
Baseband	A network transmission technique that uses voltage to represent data; similar to turning a light switch on and off.
Baud	Unit of signaling speed. The speed in baud is the number of line changes (in frequency, amplitude, etc.) or events per second. At low speeds, each event represents only one bit condition, and baud rate equals bps. As speed increases, each event represents more than one bit, and baud rate does not truly equal bps. But, in common usage, baud rate and bps are often used interchangeably. Unit of signaling speed. The speed in baud is the number of discrete conditions or events per second. If each event represents only one bit condition , baud rate equals BPS. When each event represents more than one bit (e.g. dibit), baud rate does not equal BPD.
Bayonet Coupling	A quick coupling device for plug and receptacle connectors. Pins projecting from the outside of the cylindrical receptacle engage with corresponding cam slots in the bayonet plug.
Bayonet-Neil-Councelman (BNC)	A bayonet-locking connector for miniature coax. Contrast with TNC
Bel	A unit that represents the logarithm of the ratio of two levels. See dB.
BER	Bit Error Rate. The number of errors occurring in a system per second. The lower the better.
Bend Loss	A form of increased attenuation caused by (a) having an optical fiber curved around a restrictive radius of curvature or (b) microbends caused by minute distortions in the fiber imposed by externally induced perturbations.
Bend Radius	Radius of curvature that a flat, round, fiber optic or metallic cable can bend without any adverse effects.
Binder	A tape or thread used for holding assembled cable components in place.
Bit	One binary digit.
BNC	Abbreviation for "Bayonet Neil Councelman". A coaxial cable connector used extensively in video and R. F. applications and named for its inventor.

Bonding	The method used to produce good electrical contact between metallic parts of any device. Used extensively in automobiles and aircraft to prevent static buildup. Also refers to the connectors and straps used to bond equipment.
BPS	Bits Per Second. The number of binary bits that can be transmitted per second - I.e. Mbps (Mega - millions), Gbps (Giga - billions).
Braid	A group of textile or metallic filaments interwoven to form a tubular flexible structure which may be applied over one or more wires, or flattened to form a strap.
Braid Angle	The angle between a strand of wire in a braid shield and the axis of the cable it is wound around.
Breakdown Voltage	The voltage at which the insulation between two conductors will fail and allow electricity to conduct or 'arc'.
Breakout	The point at which a conductor or conductors are separated from a multi-conductor cable to complete circuits at various points along the main cable.
Bridge	A device that connects LANs running the same protocols and cabling. Compare router, gateway.
Broadcast	The transmission of data over a network for general reception rather than a specific terminal.
Broadband	The technique used to multiplex multiple networks on a single cable without interfering with each other.
Buffer	A protective coating over an optical fiber.
Bulkhead	A term used to define a mounting style of connectors. Bulkhead connectors are designed to inserted into a panel cutout from the rear (component side) of the panel.
Bunch Strand	Conductors twisted together with the same lay and direction without regard to geometric pattern.
Bus	A collection of wires in a cable (or copper traces on a circuit board) used to transmit data, status, and control signals. ISA, EISA, VL-Bus, and PCI are examples of PC buses. SCSI is also a bus. Also, a LAN topology in which all workstations are connected to a single cable. On a bus network, all workstations hear all transmissions on the cable. Each workstation then selects those transmissions addressed to it based upon address information contained in the transmission. 1) A transmission path of channel; an electrical connection, with one or more conductors, by which all attached devices receive all transmissions at the same time. 2) A linear LAN topology, used by Ethernet, in which every network node listens to all transmissions, selecting certain ones based on address identification. 3) In computer architecture, a data path shared by devices within a system; for example, a computer's input/output bus. A data path shared by many devices (e.g. multiprint line) with one or more conductors for transmission.
Bus Topology	The physical layout of a network in which all systems connect to a main cable; also known as linear bus.
Byte	A group of adjacent binary digits (8 bits).

C

C	Symbol designation for capacitance, and Celsius.
Cable	Either a standard conductor, with or without insulation and other coverings, or a combination of conductors insulated from each other.
Cable Assembly	A completed cable and its associated hardware.
Call Inhibit	A configuration option that does not allow a voice/fax channel to call another voice/fax channel.
Capacitance	The ability of a dielectric material between conductors to store energy when a difference of potential exists between the conductors. The unit of measurement is the farad. Cable capacitance is usually measured in picofarads (pF).
Capacitive Crosstalk	Cable crosstalk or interference resulting from the coupling of the electrostatic field of one conductor upon one or more others.
Capacitive Reactance	The opposition to alternating current due to the capacitance of a capacitor, cable, or circuit. It is measured in ohms and is equal to 1/6.28fC where f is the frequency in Hz and C is the capacitance in farads.
Capacitor	Two conducting surfaces separated by a dielectric material. The capacitance is determined by the area of the surfaces, type of dielectric, and spacing between the conducting surfaces.
Carrier	A continuous signal that is coupled with a second, information-carrying signal.
Carrier Detect (CD)	A control signal that indicates that a local modem is receiving a signal from a remote modem.
Carrier Sense Multiple Access with Collision Detection (CSMA/CD)	A LAN transmission technique implemented in Layer 2 of the OSI model and employed by 10Mbps Ethernet and Fast Ethernet.
Cascade	To connect a multiple-port device to an identical device, increasing the total number of ports available.
Category	Rating of a cable established by TIA/EIA to indicate the level of transmission performance.
CATV	Community Antenna Television.
Cavity	A metallic enclosure in some types of tubes and circuits within which resonant fields may be excited at the microwave frequency to which the cavity is tuned. Usually referred to as resonant cavity. A defined hole in the connector insert or housing into which the contact must fit.

Comité Consultatif Internationale de Télégraphique et Téléphonique (CCITT)	An international consultative committee that set worldwide communications standards such as V.32, V.34, and X.25. Replaced by the ITU-TSS.
CCTV	Closed-circuit television.
Cellular Polyethylene	Expanded or "foam" polyethylene, consists of individual closed cells of inert gas suspended in a polyethylene medium, resulting in a desirable reduction of the dielectric constant.
Central Office	The building where common carriers terminate customer circuits and the switching equipment that connects those circuits is located.
Central Processing Unit (CPU)	The main processing chip or chips of a computer system. Often refers to the computer system in its entirety.
Centronics Parallel	A de-facto standard 36-pin interface for connecting parallel printers to PCs.
Channel	The horizontal cable including the workstation outlet and patch panel in the telecommunications closet plus a patch cord at each end, with maximum total length of 100 meter.
Channel Loopback	A diagnostic test that performs the loop at a multiplexer's channel interface.
Channel Service Unit (CSU)	A digital DCE used to terminate digital circuits (such as DDS or T1 lines) at the customer site. It conditions the line, ensures network compliance with FCC rules, and responds to loopback commands from the central office.
Characteristic Impedance	In a transmission line of infinite length, the ratio of the applied voltage to the resultant current at the point the voltage is applied, or the impedance which makes a transmission cable seem infinitely long, when connected across the cable's output terminals.
Chromatic Dispersion	The temporal spreading of a pulse in an optical waveguide caused by the wavelength dependence of the velocities of light.
Circuit	A system of conducting media designed to pass an electric current.
Cladding	A low refractive index material that surrounds the core of an optical fiber causing the transmitted light to travel down the core and protects against surface contaminant scattering. A layer of metal applied over another. Cladding is often chosen to improve conductivity or to resist corrosion.
Clock	Timing signal used in synchronous transmission. Also the source of timing signals.
Closed Entry Contact	A female contact designed to prevent the entry of a pin or probing device having a cross-sectional dimension (diameter) greater then the mating pin.
Coaxial Cable	A cylindrical transmission line comprised of a conductor centered inside a metallic tube or shield, separated by a dielectric material, and usually covered by an insulating jacket.
Coil Effect	The inductive effect exhibited by a spiral-wrapped shield, especially above audio frequencies.
Color Code	A system of different colors or stripes used to identify components of cables such as individual conductors or groups of conductors.
Collision	1) In LAN technology, two stations attempting to use the same transmission medium at the same time. 2) In a half-duplex system, the result of both ends trying to transmit at the same time.
Collision Domain	The maximum length of the wiring media that allows collision detection. For example, the collision domain in Fast Ethernet using 100BASE-TX is 205 meters
Communications Protocol	The means of communications amongst items on a data link to ensure orderly exchange of information.
Composite	The signal of a multiplexer on the line side that includes all data for the multiplexer including synchronous, asynchronous, and voice.
Composite Loopback	A diagnostic test that performs the loop at the line side of the multiplexer.
Compression	A method for reducing bandwidth requirements by reducing the number of data and voice bits across a channel.
Concentrator	A device used to divide a data into two or more channels of lower average speed, dynamically allocating channel space according to demand in order to maximize throughput.
Concentric Stranding	A group of uninsulated wires twisted together and containing a center core with subsequent layers spirally wrapped around the core with alternating lay directions to form a single conductor.
Conductivity	The ability of a material to allow electrons to flow, measured by the current per unit of voltage applied. It is the reciprocal of resistivity.
Conductor	A substance, usually metal, used to transfer electrical energy from point to point.
Conduit	A tube of metal or plastic through which wire or cable can be run. Used to protect the wire or cable and, in the case of metal conduit, make it fireproof.
Conditioning	An addition of equipment to improve the quality of a leased voice-grade line so that it will reach the specifications for data transmission.
Connectivity	The components and technology that enable devices to exchange data across electronic links.
Connection	A data communications path, the process of establishing this path, or the point of attachment for this path.
Connector	A device designed to allow electrical flow from one wire or cable to a device on another cable. A connector will allow interruption of the circuit or the transfer to another circuit without any cutting of wire or cable or other preparation.

Connector Assembly	Includes housing and contact plus additional components such as hardware used to hold the assembly together and/or make the assembly a functional connector.
Contact	An electrically conductive component designed for use in a multi-circuit connector.
Contact Cavity	A defined hole in the connector insert or housing into which the contact must fit. A metallic enclosure in some types of tubes and circuits within which resonant fields may be excited at the microwave frequency to which the cavity is tuned. Usually referred to as resonant cavity.
Contact Durability	The number of insertion and withdrawal cycles that a connector must be capable of withstanding while remaining within the performance levels of the applicable specification.
Contact Engaging and Separating Force	Force required to either engage or separate contacts. Values are generally established for maximum and minimum and forces.
Contact Inspection Hole	A hole, perpendicular to the cylindrical rear portion of screw machined contacts, used to check the depth to which wire has been inserted into the barrel.
Contact Resistance	Measurement of electrical resistance of mated contacts when assembled in a connector under typical service use. Electrical resistance is determined by measuring from the rear of the electrical area of one contact to the rear of the contact area of the mating contact (excluding both crimps) while carrying a specified test current.
Contention	A first-come, first-served method of access used in public telecommunication or PBX systems in which multiple devices must access a limited number of communication ports.
Control Character	A character used to start, stop, or modify a function.
Copper Distributed	Another name for ANSI X3T9.5 Committee's proposed 100 Mbps over UTP standard, TP-PMD Data Interface
(CDDI)	(Twisted Pair Physical Media Dependent). CCDI is a trademark of Crescendo Communications/CISCO.
Cord	A flexible insulated cable or a terminated cable.
Core	The light conducting central portion of an optical fiber with a refractive index higher than that of the cladding. The center of a cable construction. Most often applies to a coaxial cable, where the core is the center conductor and the dielectric material applied to it.
Corona	The ionization of gasses about a conductor that results when the potential gradient reaches a certain value.
Coupler	An optical device that splits or combines light from more than one fiber.
Coupling	The transfer of energy (without direct electrical contact) between two or more cables or components of a circuit.
Coverage	How well a metal shield covers the underlying surface. Measured in percent.
CPS	Abbreviation for cycles per second or Hertz.
CPU	Central Processing Unit.
Crimp	The final configuration of a terminal barrel after the necessary compression forces have been applied to cause a functional union between the terminal barrel and the wire.
Crimp Height	A top to bottom measurement of the crimped barrel, using a crimp height comparator in the prescribed manner.
Crimping Dies	A term used to identify the shaping tools that, when moved toward each other, produce a certain desirable shape to the barrel of the terminal or contact that has been placed between them. Crimping dies are often referred to as die sets or as die inserts.
Crimping Head	Tooling containing jaws and linkage for use in pneumatic or hydraulic powered units to crimp loose-piece contacts/terminals that may be too large for hand tool applications.
Crimping Tool	A term commonly used to identify a hand held mechanical device that is used to crimp a contact, terminal or splice.
Cross-pinned Cable, Crossover Cable	A cable configured to allow two DTE devices or two DCE devices to communicate. Also called a "null-modern cable" or "modern-eliminator cable."
Crossed Pinning	Configuration that allows two DTE devices or two DCE devices to communicate.
Crossover	Conductor which runs through the cable and connects to a different pin number at each end.
Crosstalk	Interference from one pair being coupled into adjacent pairs.
CSA	Canadian Standards Association, the Canadian version of the Underwriters Laboratories.
Current Rating	The maximum continuous electrical flow of current recommended for a given situation. It is expressed in amperes.
Cutback Method	A technique for measuring the loss of bare fiber by measuring the optical power transmitted through a long length then cutting back to the source and measuring the initial coupled power.
Cutoff Wavelength	The wavelength beyond which singlemode fiber only supports one mode of propagation.
Cycle	One complete sequence of values of an alternating quantity, including a rise to maximum in one direction and return to zero; a rise to maximum in the opposite direction and return to zero. The number of cycles occurring in one second is called the frequency.
Cyclic Redundancy Check (CRC)	A form of error correction in which the block check character is the remainder after dividing the serialized bits in a transmission block by a predetermined binary number.

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D

D-sub Connector	A widely used family of connectors probably deriving its name from its "D" shape. Specific connectors are denoted by a letter for its size and a number for its pin configuration. For example, a DB-15 connector is a D-sub connector of size B, with a pin configuration number 15.
D-TYPE	The standard connector used for RS232-C, RS423 and RS422 communication. It is commonly used in 9, 15, and 25 configurations.
Daisy Chain	A cable assembly with three or more termination areas.
Data	Any number, text, fact, instruction, etc. that can be manipulated and transmitted by machines.
Data Communications Equipment (DCE)	Devices that provide the functions required to establish, maintain and terminate a data transmission connection; e.g. a modem. Devices such as modems that enable DTEs to communicate over phone lines or data circuits. They establish, maintain, and terminate connections, and perform the conversions necessary for communication. In RS-232, designation as either DCE or DTE determines the signaling role in handshaking. Data Circuit-terminating Equipment. The designation given to equipment such as modems and multiplexers by the Electronic Industry of America (EIA). Differs from DTE (Data Terminal Equipment) in that it transmits data on pin 3 and receives data on pin 2. See DTE for further details.
Data Link Control (DLC)	A protocol that sets up, controls, monitors, and terminates information transfer between two terminals on a data link.
Dataphone Digital Services (DDS)	A private-line digital service with typical data rates of 2.4, 4.8, 9.6, and 56 Kbps.
Data Pump	The main part of a modem that includes the functions to convert analog to digital and back and to perform modulation an demodulation. Also interfaces with digital and voice lines.
Data Rate, Data-Signaling Rate	A measure of how quickly data is transmitted, expressed in bps. Also commonly, but often incorrectly, expressed in baud. Synonymous with "speed."
Data Service Unit (DSU)	A DCE that replaces a modem in a connection to a DDS. A baseband device often sold with DDS circuits is a good example.
Data Set Ready (DSR)	An RS-232 control signal that indicates that a modem is attached to a telephone line.
Data Terminal Ready (DTR)	Modern interface signal which alerts the modem that the DTE device is ready for transmission.
Data Terminal Equipment (DTE)	Equipment serving as a data source and/or destination. Computer ports, terminals, and printers are all types of DTE's.
Data Transfer Rate	Generally associated with high speed serial data transfer systems and measured in gigabits per second (Gbit/sec).
DB9, DB15, DB15HD, DB25, DB37, DB50	Common names for D-shaped connectors used in data communications. The number indicates the number of possible pins in sockets in the connector.
dB	Decibel. A decibel is one-tenth of a bel and is equal to 10 times the logarithm of the power ratio, 20 times the log of the voltage ratio, or 20 times the log of the current ratio. Decibels are also used to express acoustic power, such as the apparent level of a sound. The decibel can express an actual level only when comparing with some definite reference level that is assumed to be zero dB.
dBm (Decibles referenced to milliwatt)	An absolute measure of signal power, where 0 dBm is equal to one milliwatt. Contrast with dB.
dB(mu)	An absolute measure of signal power, where 0 dBm is equal to one microwatt. Contrast with dB.
DC	Direct current.
DC Resistance	See resistance.
Dedicated Line	A nonswitched channel or circuit dedicated to a single communication link. A telephone line reserved for the exclusive use of a leasing customer without interexchange switching arrangements. A leased line may be point-to-point or multipoint. (Also called a "private line.")
Dialup Line, Dial-in Line, Dial Line	A temporary data connection activated by establishing a direct-dialed telephone link between two modems on the public telephone network. Compare with leased line.
Die Closure	Term used to designate a crimping area (crimping chamber) when the dies are fully closed or bottomed. Die closure is checked with go/no go plug gage to insure that the crimp produced by the tooling satisfies the crimp height specification.
Delay Line	A transmission line or equivalent device designed to delay a wave or signal for a specific length of time.
Differential	A SCSI bus configuration in which each signal is sent on two wires. The signal is derived by taking the difference in voltage between the two wires, effectively eliminating unwanted noise in the wire. Differential terminators are used exclusively for differential types of SCSI.

Dielectric	An insulating medium when used in a signal-carrying design.
Dielectric Constant	That property of a dielectric which determines the amount of electrostatic energy that can be stored by the material when a given voltage is applied to it. Actually, the ratio of the capacitance of a capacitor using the dielectric to the capacitance of an identical capacitor using a vacuum (which has a Dielectric Constant of 1) as a dielectric. A number which indicates the quality of a material to resist holding an electrical charge when placed between two conductors.
Dielectric Loss	The power dissipated in a dielectric as the result of the friction produced by molecular motion when an alternating electric field is applied.
Dielectric Strength	The voltage an insulation can withstand before it breaks down. Usually expressed as volts per mm.
Digital Signal	An electrical signal which possesses two distinct states (on/off, positive/negative).
Digital Loopback	A diagnostic test that performs a loop at a modem's DTE interface.
Digital Signal Processor (DSP)	A microprocessor used in voice compression and fax demodulation.
DIN	The Deutsches Institut fur Normung (German Institute for Standardization). 2) A type of rounded connector standardized by this organization.
Direct In Termination (DIT)	A service that allows incoming calls to a PBX to be routed directly to a selected telephone or set of telephones without operator intervention.
Direct Inward Dialing (DID)	A service that allows an outside caller to dial an internal extension without passing through an operator.
Direct Inward System Access (DISA)	A service that allows incoming calls into a PBX to have dialing access within the private network. This access is often restricted by a dialed password.
Disconnect Supervision	A protocol that indicates to the local user that the remote end has been disconnected.
Discontinuity	Rated interconnection; a broken connection (open circuit) or the loss of a specified connection characteristic. Transient phenomena: Short term (temporary) interruption or unacceptable variation in current or voltage.
Diskless Workstation	A system on the network that boots up its operating system from a remote boot server, rather than locally.
Dissipation	Unusable or lost energy, such as the production of unused heat in a circuit.
Dispersion	The cause of bandwidth limitations in an optical fiber. Dispersion causes a broadening of input pulses along the length of the fiber. Two major types are (a) mode dispersion caused by differential optical path lengths in a multimode fiber, and (b) material dispersion caused by a differential delay of various wavelengths of light in a wave guide material.
Dispersion-Shifted Fiber	A single-mode optical fiber that has its minimum-dispersion wavelength shifted, by the addition of dopants, toward its minimum-loss wavelength. Synonym: EIA Class IVb fiber.
Distortion	Any undesired change in a wave form or signal.
Distribution Cables	In a CATV system, the transmission cable between the distribution amplifier and the drop cable.
Disturbed Conductor	A conductor that receives energy generated by the field of another conductor or an external source. e.g. the quiet line.
Downline Loading	Sending configuration parameters or operating software from a controlling device to another device.
Drain Wire	A non-insulated wire in contact with parts of a cable, usually the shield, and used in the termination to that shield and as a ground connection.
Driver	A software module that, under control of the processor, manages peripheral I/0.
Drop	Single channel attachment to the horizontal wiring grid (wall plate, coupling, MOD-MOD adapter).
Drop Cable	In a CATV system, the transmission cable from the distribution cable to a dwelling.
Dual Inline Package (DIP)	A switch for opening and closing leads between two points. Often used to configure devices.
Dual Tone Multifrequency (DTMF)	Used for call addressing on pushbutton telephones. Also known as multifrequency Pushbutton (MFPB) in Europe.
Dumb Terminal	Both hard-copy and VDT-type ASCII asynchronous terminals that do not use a data transmission protocol and usually send data one character at a time. A monitor and keyboard that displays information only (as opposed to the processing capability of a PC); usually connected to a mainframe.
Dummy Load	A dissipative device used at the end of a transmission line or waveguide to convert transmitted energy into heat, so essentially no energy is radiated outward or reflected back to its source.
Dust Cap	A device attached to a connector to provide protection against dust and foreign debris.

E

E1	A European standard for digital transmission at 2.048 Mbps. It has 31 64-KB channels available for traffic.
ECHO	When transmitted data is returned to its origin.
EIA	Electronic Industries Association. standards organization in the U.S. specializing in the electrical and functional characteristics of interface equipment. It used to designate its recommended standards with the "RS"-prefix ("RS-232, " "RS-485," etc.); now it designates them with the "FIA-" or "EIA/TIA-" prefix.
EIA/TIA T568A	One of two similar but noninteroperable ways to attach the wires in twisted-pair cable to RJ45 connectors, specified in the EIA/TIA-568 standard. Used for ISDN, 568A assigns Pair 2 to Pins 3 and 6 and Pair 3 to Pins 1 and 2. Not as popular as its counterpart EIA/TIA-568B. EIA 568A- This is the newest of the sequence options as published in the EIA Commercial Building Cabling Specification Draft 9.0 as the preferred sequence for termination of UTP data cabling (this is the international ISDN standard). This is similar to the 568B sequence except that pairs #2 and #3 are transposed. This provides backward compatibility to the USOC sequence for the two pairs instead of the single pair of 568B. EIA/TIA 568A-uses pins 1 and 2, 3 and 6, in an RJ (Registered Jack)- plug/receptacle in both EIA/TIA 568A and 568B.
EIA/TIA T568B	One of two similar but noninteroperable ways to attach the wires in twisted-pair cable to RJ-45 connectors, specified in the EIA/TIA-568 standard. In EIA/TIA 568A and 568B, pins 1 and 2 are paired, pins 3 and 6 are paired, pins 4 and 5 are paired, and pins 7 and 8 are paired. Used for 10BASE-T, 568B assigns Pair 2 to Pins 1 and 2 and Pair 3 to Pins 3 and 6. More popular than its counterpart EIA/TIA-568A. EIA 568B-This has become the most widely specified sequence worldwide for new data installations. It is also a subset specified by the IEEE 802.3 10Base-T Ethernet over twisted pair standard. This sequence is only applicable to eight wire polarizations (WE8W and WE8K). In the 568B sequence, pair #1, and pair #3 correspond to pair #1 and pair #2 of the USOC sequence, providing backward compatibility with 2-pair systems (such as analog voice). EIA/TIA 568B-uses pins 1 and 2, 3 and 6. In EIA/TIA 568A and 568B, pins 1 and 2 are paired, pins 3 and 6 are paired, pins 4 and 5 are paired, and pins 7 and 8 are
Environmentally Sealed	A unit is provided with gaskets, seals, grommets, potting or other means to keep out moisture, dust,, air or dirt which might reduce or impair its performance.
Elastomer	Any material that will return to its original dimensions after being stretched or distorted.
Electromagnetic	Referring to the combined electric and magnetic fields caused by electron motion through conductors.
Electromagnetic Coupling	The transfer of energy by means of a varying magnetic field. Inductive coupling.
ELFEXT	Equal level Far End Crosstalk (dB) - A subtraction of attenuation from FEXT. (ACR at the far end)
Elongation	The increase in length of a wire or cable cause by longitudinal tension.
Electromagnetic Compatibility (EMC)	The ability of an electronic device to operate in its intended environment without its performance being affected by EMI and without generating EMI that will affect other equipment.
EMF	Electromotive force (voltage). The term most often used to designate electrical pressure that exists between two points and is capable of producing a flow of current when a closed circuit is connected between the two points. Voltage is measured in volts, millivolts, microvolts and kilovolts. The terms electromotive force (emf), potential, potential difference and voltage drop are often referred to as voltage.
EMI	Electromagnetic interference. Filtering protection from "background noise" that could alter or destroy data transmission. Energy generated by outside sources, such as lighting systems and electric motors, which is received by copper data/voice cable and interfere with transmission.
Equalizer	A device used by modems to compensate for distortions caused by telephone line conditions.
Ethernet	A network standard first developed by Xerox, refined by DEC and Intel, and codified as the IEEE 802.3 standard. It interconnects up to 1,024 personal computers in a bus topology on each network. In its original form, it supports a 10-Mbps data rate.
ETP	Abbreviation for a copper refining process called Electrolytic Tough Pitch. This process produces a conductor that is 99.95% pure copper resulting in high conductivity.
Extended Binary Coded Decimal Code (EBCDIC)	(Pronounced "EBB-see-dick") An 8-bit character code used primarily in IBM equipment; the code provides Interchange for 256 different bit patterns. Compare with ASCII.
Extended Capabilities Port (ECP)	EPP with daisy chain capability. ECP utilizes a new high-speed signaling method.
Expanded Polyethylene	Expanded or "foam" polyethylene, consists of individual closed cells of inert gas suspended in a polyethylene medium, resulting in a desirable reduction of the dielectric constant.

F

F	Frequency.
Farad	A unit of capacity that will store one coulomb of electrical charge when one volt of electrical pressure is applied.
Fast Ethernet	Any 100-Mbps Ethernet-based networking scheme.
Fast Packet Multiplexing	A technique that dynamically combines signals from voice, fax, async, sync, video, and LAN into one communications channel with a 95% or better efficiency on a remote network.
Fax Demodulation	A technique that detects a Group 3 fax signal on a voice line and reduces its speed from 64 Kbps to 9.6 Kbps for transmission across the data link. On the other end, the fax will be reorganized and transmitted to the appropriate device.
Fax Sharing Device	A device that allows a fax machine to be shared between the Public Switched Telephone Network (PSTN) and a multiserver network.
Federal Communications Commission (FCC)	The branch of the United States government that has the power to regulate all interstate communications systems within the United States as well as all international communications systems that originat or terminate in the United States.
Feeder Cable	In a CATV system, the transmission cable from the head end (signal pickup) to the trunk amplifier. Also called a trunk cable.
FEP	Fluorinated ethylene-propylene. A thermo-plastic material with good electrical insulating properties and chemical and heat resistance.
Ferrous	Composed of and/or containing iron. A ferrous metal exhibits magnetic characteristics.
Ferrule	A precision tube which holds a fiber for alignment for interconnection or termination. A ferrule may be part of a connector or mechanical splice.
FEXT	Far End Crosstalk (dB) - Crosstalk induced on the pairs, measured at the far end of the cable.
Fiber Channel	A scalable, high speed, serial data transfer interface standard (ANSI X3TII)
Fiber Distributed Data Interface (FDDI)	An ANSI standard for fiberoptic links with data rates up to 100 Mbps. A standard for a 100 megabit-per-second local area network.
Fiber Optics	Light transmission through optical fibers for communication and signaling.
Fillers	Non-conducting components cabled with the insulated conductors or optical fibers to impart roundness, flexibility, tensile strength, or a combination of all three, to the cable.
File Transfer Protocol (FTP)	An upper-level TCP/IP service that allows copying of files across a network.
Filtering	In LAN technology, discarding packets that do not meet the criteria for forwarding.
Firmware	Operating instructions stored for the long term in a device's read-only memory.
Firewire	IEEE 1394 (also known as "FireWire") is a new technology. FireWire, with its transfer rate ranging from 100MBps to 400MBps, will target applications that require high-bandwidth devices like digital camcorders, cameras, and networks with video conferencing. It supports up to 63 devices and allows peer-to-peer device communication without using system memory or CPU time. It supports "true" Plug & Play, "Tree-Like" structure for daisy chaining, and devices can be connected and disconnected without interrupting system operation.
Flame Resistance	The ability of a material not to fuel a flame once the source of heat is removed.
Flange	A projection extending from or around the periphery of a connector and having holes that provide for mounting the connector to a panel or to a mating connector.
Flow Control	A method of regulating the flow of data between two devices; prevents the loss of data once a device's buffer has reached its capacity.
FM	Frequency modulation.
Foam Polyethylene	Expanded or "foam" polyethylene, consists of individual closed cells of inert gas suspended in a polyethylene medium, resulting in a desirable reduction of the dielectric constant.
Forced Connection	A dedicated connection between two network channels.
Forced Perfect Terminator (FPT)	A type of terminator containing a sophisticated circuit that can compensate for variations in the power supplied by the host adapter as well as variations in bus impedance of complex SCSI systems. Forced Perfect Terminators are most recommended specially for high speed system. It alters its impedance to compensate for variations among many different cables, by means of diode switching and biasing. Plus, it has LEDs for troubleshooting.
Form Feed (FF)	A control character that tells a terminal device to go to the top of the next page.
Fox Message	THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG. 1234567890. A test message that is produced in the fox message generator within a multiplexer unit.
Frame Relay	A high-speed, low-latency packet switching technology, based on a switched virtual network topology, used for WANs; popular for LAN-to-LAN connections. A packet network service, relying on the data integrity inherent in digital transmissions to speed up transmission. Unlike old X.25 networks, Frame Relay "assumes" the data is correct and starts error checking as soon as it received the header. Frame Relay services are offered with T1 and DDS connections.
Frequency	The number of times a periodic action occurs in one second. Measured in Hertz.
Frequency Modulation (FM)	A scheme for modulating a carrier frequency in which the amplitude remains constant but the carrier frequency is displaced in frequency proportionally to the amplitude of the modulating signal. An fm broadcast is practically immune to atmospheric and man-made interference.
Frequency Response	The characteristic of a device denoting the range of frequencies over which it may be used effectively.
Fresnel Reflection	Back reflection, optical return loss: Light reflected from the cleaved or polished end of a fiber caused by the difference of refractive indices of air and glass. Typically 4% of the incident light.
Front Mounted	A connector is said to be front mounted when it is attached to the outside of the mating side of a panel. A front mounted connector can only be installed or removed from the outside of the equipment.
Front-End processor (FEP)	A dedicated computer linked to one or more host computers or multi-user minicomputers; performs data-communications and network-processing functions for the attached computers; in IBM SNA networks, an IBM 3704, 3725, or 3745 communications controller.
Full Duplex (FDX)	Simultaneous, two-way, independent transmission in both directions. Transmission in either direction, but not both simultaneously.
Fusion Splicer	An instrument that splices fibers by fusing or welding them, typically by electrical arc.

G/H

G.703	The general standard for interfacing to digital high-speed circuits. It now includes specifications for both 1.544 Mbps and 2.048 Mbps data rates; however, G.703 is normally referred to for 2.048-Mbps applications.
Gateway	A hardware-software combination that connects two LANs (or a LAN and a host computer) that run different protocols-for example, a TCP/IP LAN and an SNA mainframe. The gateway provides the protocol conversion. Compare with bridge, router.
Gigabit Ethernet Gigahertz (GHz)	High speed network data transfer protocol standard (IEEE 802.3z). A unit of frequency equal to one billion hertz.
Graded-Index Fiber	A type of multi-mode optical fiber in which the refractive index of the core is in the form of a parabolic curve, decreasing toward the cladding. This type of fiber provides high bandwidth capabilities.
Ground	An electrical connection between a circuit and the earth. Also refers to a conductor connected to earth. In some instances, can refer to a central metallic point designated as having "zero" potential.
Ground Conductor	A conductor in a transmission cable or line that is grounded.
Ground Loop	A completed circuit between shielded pairs of a multiple pair created by random contact between shields. An undesirable circuit condition in which interference is created by ground currents when grounds are connected at more than one point.
Ground Potential	The potential of the earth. A circuit, terminal, or chassis is said to be at ground potential when it is used as a reference point for other potentials in the system.
Half-Duplex (HDX)	Transmission in either direction, but not both simultaneously. Allows packets to be either transmitted or received, but not both at the same time. Compare with full duplex.
Handshaking	Exchange of predetermined signals between two devices, establishing a connection or providing flow control. Usually part of a communications protocol.
Hardware Reset	Resetting the date and time without losing the current configuration.
Harmonica	A device that is attached to the end of the connectorized feeder cable that converts the 25-pair into individual 4, 6, or 8-wire modular channels.
Header	Pins on a circuit board that allows for cable or jumper attachment.
Heat-Shrinkable	A type of plastic material that has been cross-linked. A term describing tubes, sleeves, caps, boots, films or other forms of plastic which shrink to encapsulate, protect or insulate connections, splices, terminations and other configurations.
Hermetic	Airtight, impervious to external influence, as in a hermetic package. Often used to describe metal-to-metal solder or weld-sealed packages.
Hermetic Seal	Hermetically sealed connectors are usually multiple contact connectors where the contacts are bonded to the connector by glass or other materials and permits maximum leakage rate of gas through the connector of 1.0 micro ft./hr, at one atmosphere pressure for special applications.
Henry	A practical unit of inductance that will produce a voltage drop of one volt when the current changes at the rate of one ampere per second (abbreviated H).
Hertz (Hz)	The number of changes in polarity which a signal makes in one second. An indication of frequency. Replaces cycles-per-second.
High-Level Data-Link Control (HDLC)	An international standard communication protocol defined by the ISO.
High Speed Serial Data Connector (HSSDC)	High speed Serial Data Connector and cable assemblies are a fully shielded, controlled impedance interconnect system approved for Fiber Channel and SSA applications and under consideration for other standards.
HF	High frequency. The band from 3 to 30 MHz in the radio spectrum, as designated by the Federal Communications Commission.
Horizontal Cable	Cable used to go between the workstation outlet and the telecommunications closet.
Home page	The main page of a Web site and the first screen that a visitor sees displayed when connecting to that site; usually has links to other pages, both within that site and to other sites.
Home Run	A cable run usually consisting of two, three, or four pair cable from a wall plate in a fixed wall office to a termination point at the distribution frame.
Host Computer	The central computer (or one of a collection of computers) in a data-communications system. It handles the system's primary data-processing functions such as computing, mediating database access, and running special system-specific programs; often shortened to "host".
Hub	The core of a star-topology network or cabling system.
Hum	A term used to describe the 60- or 120 cycle per second noise present in the sound of some communications equipment. Usually hum is the result of undesired coupling to a 60 cycle source or to the defective filtering of 120 cycle ripple output of a rectifier.
Hybrid Cable	A fiber optic cable containing two or more different types of fiber, such as 62.5 µm multimode and single-mode.
Hypertext Markup Language (HTML)	The standard set of codes that allows documents on the World Wide Web to be read by any system.
Hypertext Transfer Protocol (HTTP)	The protocol used to transfer documents on the World Wide Web.

I

I	Symbol used to designate current.
I/O Interconnection	Input/Output interface to the "outside world."
ICEA	Insulated Cable Engineers Association.
IDC	Abbreviation for Insulation Displacement Contact.
International Electrotechnical Commission (IEC)	An organization that cooperated with the ISO in setting technology standards.
IEEE	Institute of Electrical and Electronic Engineers.
IEEE 1284	The Standard Signaling Method for a Bi-directional Enhanced Parallel Interface for Personal Computers provides high-speed bi-directional communication between a PC and an external peripheral that transmits 10 to 50 times faster than the original parallel port. ECP-(Extended Capabilities Port)-EPP with daisy chain capability. ECP utilizes a new high-speed signaling method. EPP-(Enhanced Parallel Port)-is used by a new generation of fast bi-directional printers (HP LaserJet IV & V, Tektronix Phasers, Lexmark Optra, IBM 4029 or 4039, Texas Instruments MicroLaser Pro 600) & peripherals (CD-ROMs, tape & hard drives).
IEEE 1394	IEEE 1394 (also known as "FireWire") is a new technology. FireWire, with its transfer rate ranging from 100MBps to 400MBps, will target applications that require high-bandwidth devices like digital camcorders, cameras, and networks with video conferencing. It supports up to 63 devices and allows peer-to-peer device communication without using system memory or CPU time. It supports "true" Plug & Play, "Tree-Like" structure for daisy chaining, and devices can be connected and disconnected without interrupting system operation.
IEEE 802.3	The IEEE standard for Ethernet; a physical-layer standard that uses the CSMA/CD access method on a bus-topology LAN. A physical layer standard for 10 Base T, 100 Base T, Ethernet, and Starlan.
IEEE 802.5	A physical layer standard for Token Ring; a physical-layer standard that uses the token-passing access method on a ring-topology LAN.
IEEE 802.12	A physical layer standard for 100 VG.
Impedance	The total opposition that a circuit offers to the flow of alternating current or any other varying current at a particular frequency. It indicates the ideal transfer of signal from one piece of equipment to another. It is measured in ohms.
Impedance Match	A condition whereby the impedance of a particular circuit cable or component is the same as the impedance of the circuit, cable, or device to which it is connected.
Impedance Matching Transformer	A transformer designed to match the impedance of one circuit to that of another.
Inductance	The property of wire which stores electrical current in a magnetic field around the wire. By coiling wire, the effect can be intensified. It is measured in Henrys.
Induction	The phenomenon of a voltage, magnetic field, or electrostatic charge being produced in an object by lines of force from the source of such fields.
Inductive Crosstalk	Crosstalk resulting from the coupling of the electromagnetic field of one conductor upon another.
Input Impedance	The impedance that exists between the input terminals of an amplifier or transmission line when the source is disconnected. The circuit, signal level and frequency must be specified.
Input Level	The level of relative analog signal strength obtained from attached telephone equipment.
Insertion Loss	A measure of the attenuation of a cable or component by determining the output of a system before and after the device is inserted into the system.
Insulation	A material having good dielectric properties which is used to separate close electrical components, such as cable conductors and circuit components.
Insulation Crimp	The area of a terminal splice or contact that has been formed around the insulation of a wire.
Insulation Displacement (IDC)	A mass termination connector for flat cable with contacts that displace the conductor insulation Connector to complete termination.
Insulation Resistance	The electrical resistance between two conductors separated by an insulating material.
Interface	The region where two systems or a major and a minor system meet and interact with each other.
Interface Converter	A device that allows communication between two systems with incompatible electrical signals, connectors, and/or handshaking.
Interference	Disturbances of an electrical or electromagnetic nature that introduce undesirable responses into other electronic equipment.
Intermediate Frequency	A frequency to which a signal is converted for ease of handling. Receives its name from the fact that it is an intermediate step between the initial and final conversion or detection stages.
Integrated Services Digital Networking (ISDN)	A CCITT defined standard for a public-switched service that allows the digital transmission of voice, data, and video over one network. Being touted as "the next big thing" in voice, data, and video integration. A CCITT standard for a network that accommodates a variety of mixed digital-transmission services at 144 Kbps and 1.544 Mbps. A telecommunications standard for sending digitized voice, video and data signals over the existing public switched telephone network.
Integrated Service Unit (ISU)	A device that combines both the functions of a CSU and DSU.
ISO	International Standards Organization. A body that promotes computer standards and developed the OSI's model for network communication. The international "master organization" responsible for developing and maintaining worldwide standards for computers, data communications, and many other fields.
International Telecommunications Union (ITU)	The United Nations organization responsible for setting telecommunications standards. Replaced the CCITT.
Internet	1) Any large network made up of several smaller networks. 2) Capitalized, the international network of networks that connects educational, scientific, and commercial institutions.
Internet Service Provider (ISP)	A company or organization that provides dialup Internet access.
ISO 9000	An umbrella group of international standards (including ISO-9001, -9002, -9004, etc.) for quality assurance in business practices, ratified by the ISO beginning in 1987. Certification of ISO 9000 compliance is rapidly becoming a prerequisite for selling many types of goods and services (including data-communications equipment and services), especially to government bodies. Black Box Corporation and many of its subsidiaries are ISO-9001 certified.

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J/K

Jack	A connecting device into which a plug can be inserted to make circuit connections. The jack may also have contacts which open or close to perform switching functions when the plug is inserted or removed. See also: receptacle.
Jacket	The outside covering of a cable. Not part of the fiber or the fiber buffer.
Jumper	A short length of conductor or flat cable used to make a connection between terminals or around a break in a circuit, or between circuit boards.
Kbps	Kilobits per second. One thousand bits per second.
Kevlar™	See Aramid Yarn
Key Telephone System (KTS)	A telephone system that allows its users to select outgoing or incoming calls with pushbuttons without having to dial an access number such as 9.
KEV	1000 electron volts.
KV	Kilovolt (1000 volts).

L

L	Symbol for inductance.
LAN	Local Area Network. A data network connecting any number of users, intended to serve a small area.
Laser	A coherent source of light with a narrow beam and a narrow spectral bandwidth (about 2nm).
Laser Diode, ILD	A semiconductor device that emits high powered, coherent light when stimulated by an electrical current. Used in transmitters for singlemode fiber links.
Lay	The length measured along the axis of a wire or cable required for a single strand (in stranded wire) or conductor (in cable) to make one complete turn about the axis of the conductor or cable. In a twisted pair cable, the lay length is the distance it takes for the two wires to completely twist around each other.
Lay Direction	The direction of the progressing spiral twist in a cable while looking along the axis of the cable away from the observer. The lay direction can be either "left" or "right".
LCL	Longitudinal conversion loss = Unbalance attenuation at the near end: Power fed at the near end into the common mode and coupled power measured at the near end in the differential mode.
LCTL	Longitudinal conversion transfer loss = Unbalance attenuation at the far end: Power fed at the near end gnto the common mode and coupled power measured at the far end in the differential mode.
Leased Line	A telephone line reserved for the exclusive use of a leasing customer without interexchange switching arrangements. A leased line may be point-to-point or multipoint. (Also called a "private line.")
LF	Low frequency. A band of frequencies extending form 30 to 300 kHz in the radio spectrum, designated by the Federal Communications Commission.
Light Emitting Diode (LED Source)	A semiconductor device that emits incoherent light formed by the P-N junction. Light intensity is roughly proportional to electrical current flow.
Line Cord	The connecting cord between the terminal device and the drop.
Line Driver	A DCE device that amplifies a data signal for transmission over lengths of cable beyond the RS-232 limit of 50 feet (15.2 m)-even up to several miles. It also conditions the signal by reshaping distorted pulses. Also called a "limited-distance modem (LDM)" or "short-haul modem (SHM)." A signal converter that conditions a digital signal to ensure reliable transmission over an extended distance.
Line Feed (LF)	A control character used to tell the terminal to go the next line.
Line Impedance	Impedance as measured across the terminals of a transmission line; frequently the characteristic impedance of the line.
Link	The horizontal cable including the workstation outlet and patch panel in the telecommunications closet plus two meters of cable at each end for testing.
Local Area Network (LAN)	A data communications system confined to a limited geographic area (up to six miles or about 10 kilometers) with moderate to high data rates (100 Kbps to 155 Mbps). The area served may consist of a single building, a cluster of buildings or a campus-type arrangement. The network uses some type of switching technology, and does not use common carrier circuits although it may have gateways or bridges to other public or private networks.
Local Talk	Apple Computer's proprietary LAN, based on the Apple Talk architecture.
Loopback	Type of diagnostic test in which the transmitted signal is returned to the sending device after passing through all, or a portion of, a data communications link or network. A loopback test permits the comparison of a returned signal with the transmitted signal. A test messages is sent to a device being tested. The message is then sent back to the originator and compared with the original transmission. Loopback testing may be performed with a locally attached device or conducted remotely over a communications circuit.
Loose Tube	A protective tube loosely surrounding a cabled fiber, often filled with a water blocking gel.
Loose Tube Cable	Type of cable design, primarily for outdoor use, where one or more fibers are enclosed in hard plastic tubes. Fibers are usually buffered to 250 microns.
Loss, Optical	The amount of optical power lost as light is transmitted through fiber, splices, couplers, etc.
Loss Budget	The amount of power lost in the link. Often used in terms of the maximum amount of loss that can be tolerated by a given link.
Low Voltage Differential Signals (LVDS)	Low Voltage Differential Signals reduce on-chip power consumption.

M

mA	milliampere (one-thousandth of an ampere).
MAC Address	Unique address assigned to each active infrastructure end station (including adapters, LAN on motherboard, switch ports and router ports) The IEEE specification for the lower sublayer of the OSI Data Link layer; CSMA/CD and Token Ring are types of MACs.
Macrobending	Macroscopic axial deviations of a fiber from a straight line, in contrast to microbending
Mainframe	A large-scale computer system that can house comprehensive software and several peripherals.
MAN	Metropolitan Area Network. A data network intended to serve the area of a city or an area of similar size.
Management Information Base (MIB)	A database of objects that stores information used by SNMP-enabled management devices.
MATV	Abbreviation for Master Antenna Television.
Mark	A binary 1 state which signifies that there is no traffic for asynchronous transmission.
Matched Impedance	The coupling of two circuits in such a way that the impedance of one circuit equals the impedance of the other.
Mate	To join two connectors in a normal engaging mode.
MB	Moisture Barrier. Aluminum or steel tape bonded to itself and to the outer polyethylene jacket, providing a vapor-tight moisture barrier.
Mbps	Mega bits per second - the number of bits, in millions, transmitted per second.
Mechanical Splicing	Joining two fibers together by mechanical means to enable a continuous signal. Elastomeric splicing is one example of mechanical splicing.
Medium Dependent Interface (MDI)	The mechanical and electrical interface between the segment and the MAU.
Megahertz (MHz)	Unit of frequency equal to one million hertz (one million hertz per second).
Micron	Millionth of a meter.
Microwave	That portion of the electromagnetic spectrum lying between the far infrared and conventional radio frequency range. The microwave frequency range extends from 1 GHz to 300 GHz. Microwaves are usually used in point to-point communications because they are easily concentrated into a beam.
Microbending	Curvatures of the fiber which involve axial displacements of a few micrometers and spatial wavelengths of a few millimeters. Microbends cause loss of light and consequently increase the attenuation of the fiber.
Military Specification	Military requirements. The demand imposed upon a system to meet a military operational need.
Millisecond (ms)	One-thousandth of a second.
Mini-DIN	A small type of DIN connector most often used for keyboard and mouse connections.
Mode	A single electromagnetic wave traveling in an optical fiber.
Modem	Device that converts signals in one form to another form compatible with another kind of equipment.
Modal Dispersion	Pulse spreading due to multiple light rays traveling different distances and speeds through an optical fiber.
Mode Field Diameter (MFD)	The diameter of optical energy in a singlemode fiber. Because the MFD is greater than the core diameter, MFD replaces core diameter as a practical parameter.
Mode Mixing	The numerous modes of a multi?mode fiber differ in their propagation velocities. As long as they propagate independently of each other, the fiber bandwidth varies inversely with the fiber length due to multi?mode distortion. As a result of inhomogenejties of the fjber geometry and of the index profile, a gradual energy exchange occurs between modes with differing velocities. Due to this mode mixing, the bandwidth of long multimode fibers is greater than the value obtained by linear extrapolation from measurements on shod fibers.
Modem Eliminator	A device used to connect a pair of DTEs in lieu of the pair of modems that would otherwise be necessary. See SME.
Modified Modular Jack (MMJ)	A six-wire modular jack with the locking tab shifted off to the right side. Used in the DEC wiring systems.
Modulation	Altering the characteristics of a carrier wave to convey information. Modulation techniques include amplitude frequency, phase, plus many other forms of on-off digital coding.
Mono Filament	A single strand filament as opposed to a braided or twisted filament.
Mono-Mode Fiber	See Single-mode fiber
Monochromatic	Consisting of a single wavelength. In practice, radiation is never perfectly monochromatic but, at best, displays a narrow band of wavelengths.
MT-RJ	The MT-RJ fiber optic connector has been developed by the MT-RJ Alliance (AMP, Siecor, HP, Fujikura, US Conec).
Multimode	A device that emits or a fiber that carries multiple modes of light.
Multiplex	A technique for putting two or more signals into a single channel.
Multiplexor (MUX)	A device that uses any of several methods to transmit and receive multiple signals across a single communication channel at the same time. Often shortened to "MUX." A device used for division of a transmission facility into two or more sub-channels, either by splitting the frequency band into narrower bands (frequency division) or by allotting a common channel to several different transmitting devices one at at a time (time division).
Multipoint	Describes communications lines or circuits that connect more than two stations, thus supporting terminals in several different locations. Compare with point-to-point.
Multi Station Access Unit (MAU)	A wiring concentrator used to form a star-wired ring configuration. A wiring concentrator used in Token Ring LANs.
Mutual Capacitance	Capacitance between two conductors when all other conductors are connected together and grounded.
mV	Millivolt (one-thousandth of a volt).

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N

N Connector	A large radio frequency connector covered by Military Specification. It has an impedance of 50 ohms and is designed to operate in the 0 to 11 GHz, frequency range. It has a threaded coupling and is physically larger than a TNC connector.
Nanometer (nm)	One billionth of a meter.
Nanosecond	One billionth of a second.
Narrow Band	EMI generated from a device operating at a specific and limited range of frequencies. See also: electromagnetic interference (EMI).
National Electrical Code (NEC)	A publication of the National Fire Protection Association (NFPA) which outlines requirements for electrical wiring and building construction.
NEC	National Electrical Code. Defines building flammatory requirements for indoor cables.
NEMA	National Electrical Manufacturers Association.
Network	A network is a method of data communications between computers.
Network Interface	The physical point where the building or equipment wiring interconnects with the local exchange carriers.
Network Interface Card (NIC)	The circuit board within a terminal that connects it to the network.
Network Operating System (NOS)	Master software installed on a network to control all network functions, such as connecting devices, sharing resources, and transferring files.
NEXT	Near end Crosstalk (dB) - Crosstalk induced on the pairs, measured at the near end.
NFPA	National Fire Protection Association.
Nibble	One half byte (4 bits).
Node	A point of interconnection to a network. Normally, a point at which a number of terminals or tail circuits attach to the network. On a network, a terminal point at which data is transmitted, received, or repeated. Usually corresponds to an attached device such as a computer, network modem, or router.
Node Reset	Resets a node to either the current configuration (warm start) or factory defaults (cold start).
Noise	In a cable or circuit, any extraneous signal which tends to interfere with the signal normally present in or passing through the system.
Non-Plenum	Area that a cable can be installed in a building that is not used for air return.
Nonvolatile	A description of memory storage that doesn't lose its contents when power is lost.
Notch	The removal of the web section between conductors of a flat cable to aid in stripping, slitting, and termination.
Null Character	A character that is used to give a printer time for its mechanical actions to take place so that it will be ready for the next piece of data. Also called idle character.
Null Modem	A device that connects two DTE devices directly by emulating the physical connections of a DCE device. The Null Modem cable is used to fool the computer that there is actually a modem attached to its serial port and it is used to connect 2 computers through their serial ports. On the pin out for DB9/DB25, pins 2 and 34 are reversed.
Numerical Aperture (NA)	A measure of the angular acceptance for a fiber. It is approximately the sine of the half-angle of the acceptance cone.

O

"O" Crimp	An insulation support crimp for open barrel terminals and contacts. In its crimped form it resembles an "O" and conforms to the shape of the round wire insulation. "O" crimp is also used to describe the crimps used on COAXICON females.
Octopus	A device that is attached to the end of a connectorized feeder cable that converts the 25-pair to individual 2-, 4-, 6-, and 8-wire channels.
OTDR	Optical Time Domain Reflectometer A method for characterizing a fiber wherein an optical pulse is transmitted through the fiber and the resulting backscatter and reflections to the input are measured as a function of time. Useful in estimating attenuation coefficient as a function of distance and identifying defects and other localized losses.
Off-Hook	Taking a telephone off its cradle when attached to an active dial-up line.
Off-Premises Extension (OPX)	An off-premise telephone extension.
OFHC	Abbreviation for oxygen-free, high conductivity copper. It has 99.95% minimum copper content and an average annealed conductivity of 101% compared to standard copper.
Ohm	The unit of electrical resistance. The value of resistance through which a potential difference of one volt will maintain a current of one ampere.
Ohm's Law	Stated E=IR, I=E/R or R=E/I, the current I in a circuit is directly proportional to the voltage E, and inversely proportional to the resistance R.
On-Hook	Leaving the handset resting in its cradle when attached to an active dial-up line.
Optical Fiber	Thin filament of glass. An optical waveguide consisting of a core and a cladding which is capable of carrying information in the form of light.
Optical Waveguide	Dielectric waveguide with a core consisting of optically transparent material of low attenuation (usually silica glass) and with cladding consisting of optically transparent material of lower refractive index than that of the core. It is used for the transmission of signals with lightwaves and is frequently referred to as fiber. In addition, there are planar dielectric waveguide structures in some optical components, such as laser diodes, which are also referred to as optical waveguides.
OSI	Open System interconnection, a LAN communication model developed by ISO.

P

P-Cable	A 68-wire cable used for 16-bit SCSI-3 buses, P-cables can be used with Q-cables for 32-bit SCSI-3 buses.
Packet	A sequence of data, with associated control information, that is switched and transmitted as a whole; refers mainly to the field structure and format defined with the CCITT X.25 recommendation. A chunk of data bits and associated information, including source address and destination address, formatted for transmitting from one node to another.
Packet Analyzer	A network diagnostic tool that hooks into a LAN and analyzes its traffic; capable of capturing a packet, examining it and breaking it down into its component parts of destination, origin, protocol, data, etc.
Packet-Switched network	A data-communications network such as X.25 that takes packets from different sources, routes them according to addresses, interleaves them, and sends them to their destinations.
Pad Character	A character inserted to fill a blank time slot in synchronous transmissions or to fulfill a character count requirement in fixed block length transmissions. Leading pad characters help establish synchronization and trailing pad characters prevent the dropping of RLSD/RTS signal too soon after the end of the frame.
Panel Mount	A method of fixing a connector to a board, panel or frame. The mounted connector is usually the receptacle or female connector. The plug or male connector is usually the removable portion.
Parallel Transmission	Transmitting a number of bits of data simultaneously over separate lines (for example, eight bits over eight lines); usually unidirectional. Compare with serial transmission.
Parity Bit	A bit added to a character to make sure that the total number of 1's in a group is either even, for even parity, or odd, for odd parity, allowing for error detection.
Part 15, FCC	A part of the FCC regulations that defines the amount of electro-magnetic emissions an electronic device can have.
Part 68, FCC	A part of the FCC regulations that defines the technical requirements that a device must meet to be connected to a telephone network.
Passive Terminator	Passive terminators are comprised only of resistors and are susceptible to variations in the power supplied by the host adapter. Passive Terminators sit on the bus to minimize reflections at the end of the cable and simply provides an impedance that's close to the impedance of the cable. Reflected signals interfere with accurate data transmission. Maximum reach is 20ft. For SCSI chain less than 16ft and with less than four SCSI peripherals, passive terminator can probably do the job.
Patchcord	A flexible piece of cable terminated at both ends with plugs.
Patch Panel	A centralized location for cross-connecting, monitoring and testing telecommunications cabling.
PC Card	A credit-card-sized device that can be easily plugged into and removed from portable or laptop computers to provide temporary memory enhancements, modem or LAN capability, or even disk storage. Originally called "PCMCIA cards."
PCM	Pulse Coded Modulation.
PCS	Plastic Clad Silica
Permeability	(Chemical)-The passage or diffusion (or rate of passage) of a gas, vapor, liquid or solid through a barrier without physically or chemically affecting it.
Permeability	(Magnetic)-The measure of how much better a material is than air as a path for magnetic lines of force. Air is assumed to have a permeability of 1.
Personal Computer Memory Card International Association (PCMCIA)	A credit-card-sized device that can be easily plugged into and removed from portable or laptop computers to provide temporary memory enhancements, modem or LAN capability, or even disk storage. Now called PC Cards.
Phase	An angular relationship between waves.
Phase Shift	A change in the phase relationship between two alternating quantities.
Physical Layer	The actual portion of a network that is used to physically connect computers of a network and over which the data is transmitted - the cable.
Picofarad (pF)	One billionth of a farad. A micro-microfarad.
Pigtail	Fiber optic cable that has connectors installed on one end. See also Cable Assembly.
Pixel	(Picture element)-The smallest indivisible part of a video image.
Plenum	A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.
Plastic Optical Fiber (POF)	Because plastic optical fiber is less expensive than glass optical fiber, it is being designed to support fiber to the desktop.
Plug	A male housing with male or female contacts.
Point-to-Point Wiring	Wiring that consists of continuous conductors terminated at each end to circuit destination.
Polarization Stability	The variation in insertion loss as the polarization state of the input light is varied.
Polyethylene (PE)	A thermoplastic material having excellent electrical properties. Low dielectric constant, a stable dielectric constant over all frequencies, very high insulation resistance. In terms of flexibility, polyethylene can be rated stiff to very hard, depending on molecular weight and density - low density being the most flexible and the high-density, high molecular weight formulation being very hard. Moisture resistance is rated excellent.
Polymer	A substance made of many repeating chemical units or molecules. The term polymer is often used in place of plastic, rubber, or elastomer.
Polyolefin (PO)	Any of the polymers and copolymers of the ethylene family of hydrocarbons, such as polyethylene and polypropylene.
Polypropylene (PP)	A thermoplastic similar to polyethylene but stiffer and having a higher softening point (temperature). This material is primarily used as an insulation material. Typically, it is harder than polyethylene. This makes it suitable for thin wall insulations. The dielectric constant is 2.25 for solid and 1.55 for cellular designs.
Polyurethane (PU, PUR)	Broad class of polymers noted for good abrasion and solvent resistance. Can be in solid or cellular form. This thermoplastic material is used primarily as a cable jacket material. It has excellent oxidation, oil, and ozone resistance. Some formulations also have good flame resistance. It is a hard material with excellent abrasion resistance. It has outstanding "memory" properties, making it an ideal jacket material for retractile cords.
Polyvinyl chloride (PVC)	A general purpose thermoplastic compound used for wire and cable insulation and jackets. Has inherent flame retardancy. Emits toxic fumes (HCl) during fire.

Port	A physical connector on the back of an electronic device.
Post, Telephone, and Telegraph Authority (PTT)	A government agency that acts as a common carrier in many areas of the world.
Preform	A glass structure from which an optical fiber waveguide may be drawn.
Primary Coating	The plastic coating applied directly to the cladding surface of the fiber during manufacture to preserve the integrity of the surface.
Printed Circuit Board (PCB)	An insulating board serving as a base for a printed circuit. When the printing process is completed, the board may include printed components, as well as printed wiring.
Private Branch Exchange (PBX)	A privately owned telephone system installed within the organization that allows users to call within the organization as well as the outside world. The only difference between a PBX and a key telephone system, is that PBX users have to dial a 9 to reach an outside line.
Propagation Delay	Time required for a signal to pass from the input to the output of a device.
Protocol	The procedures used to control the orderly exchange of information between stations on a data link or on a data communications network or system. Any defined set of procedures, conventions or methods that, when adhered to, allow two devices to interoperate; used to implement LAN services.
Protocol Converter	A device that translates from one communications protocol into another, such as IBM SNA/SDLC to ASCII; compare with gateway.
Prototype	A model suitable for use in the complete evaluation of form, design and performance.
Pseudo Random NRZ	A wave form of binary signals that may be used in a computer system. It is called NRZ, Non-Return to Zero, because the voltage does not return to zero.
Pulse	A current or voltage which changes abruptly from one value to another and back to the original value in a finite length of time. Used to describe one particular variation in a series of wave motions.
Pulse Width	The length of time that the pulse voltage is at the transient level. Electronic pulse widths are usually in the millisecond, microsecond, or nanosecond range.
PVDF	Poly-Vinylidene Fluoride.

Q

Quad	A four conductor cable. Also called "star quad".
Quadrature Amplitude Modulation (QAM)	A modulation technique that combines phase and amplitude modulation in order to increase number of bits per baud in a transmission.

R

R	Symbol for resistance.
RAID	(Redundant Array of Inexpensive Disks)-A method of storing data on multiple hard-disk drives, for faster access, greater reliability, or both. There are six officially defined "levels," each designed for a specific kind of application.
Random Access Memory (RAM)	Type of data storage that is usually volatile.
Rapid Relay Technology	Data compression, speech compression, fast-packet multiplexing, and automatic fax demodulation combined and used in multiserver products.
Read Only Memory (ROM)	Nonvolatile type of data storage that is manufactured with predefined contents.
Received Data (RD)	RS-232 signal sent from a DCE to a DTE.
Receive Inhibit	A configuration option that prevents the voice/fax channel from taking calls.
Rated Temperature	The temperature range at which an electric component can operate for extended periods without loss of its basic properties.
Rated Voltage	The maximum voltage at which an electric component can operate for extended periods without undue degradation or safety hazard.
Reactance	A measure of the combined effects of capacitance and inductance on an alternating current. The amount of such opposition varies with the frequency of the current. The reactance of a capacitor decreases with an increase in frequency; the opposite occurs with an inductance.
Receiver	An electronic package that converts light energy to electrical energy in a fiber optic system.
Receptacle	Jack. A female housing with male or female contacts.
Reflection	The change in direction (or return) of waves striking a surface. For example, electromagnetic energy reflections can occur at an impedance mismatch in a transmission line, causing standing waves.
Reflection Loss	The part of a signal which is lost due to reflection of power at a line discontinuity.
Refractive Index	The ratio of light velocity in a vacuum to its velocity in the transmitting medium.
Remote Analog Loopback	A diagnostic test that forms a loop at the analog side (output) of the remote modem.
Remote Channel Loopback	A diagnostic test that forms a loop at the channel side (input) of the remote multiplexer.
Remote Composite Loopback	A diagnostic test that forms a loop at the composite side (output) of the remote multiplexer.
Remote Digital Loopback	A diagnostic test that forms a loop at the the digital side (input) of the remote modem.
Reorder	In a switching mode, reorders are a response to most unsuccessful call attempts.
Repeater	A receiver and transmitter combination used to regenerate an attenuated signal.
Request to Send (RTS)	An RS-232 modem interface signal (sent from the DTE to the modem on pin 4) which indicates that the DTE has data to transmit.
Resistance	In dc circuits, the opposition a material offers to current flow, measured in ohms. In ac circuits, resistance is the real component of impedance, and may be higher than the value measured at dc.
Resonance	An ac circuit condition in which inductive and capacitive reactance interact to cause a minimum or maximum circuit impedance.
Response Time	The elapsed time between the generation of the last character of a message at a terminal and the receipt of the first character of the reply. It includes terminal delay and network delay.
Return Loss (RL)	The ratio between the outgoing signal and the reflected signal strength, expressed in dB. It is an indication of the "roughness" of the input impedance and the proximity of the characteristic impedance to nominal impedance.

RF	Radio-frequency. Usually considered to be frequencies ranging from 1 MHz to 3GHz.
RFI	Ratio Frequency Interference.
RG/U	"RG" is the abbreviation for "radio guide," a military designation for a coaxial cable, and "U" stands for "utility."
RGB	Abbreviation for the three parts of color video signal: red, green and blue, and also refers to multi-coaxial cables carrying these signals.
Ribbon Cable	A flat cable made with parallel round conductors in the same plane. Also referred to as planar and/or flat cable. Any cable with two or more parallel conductors in the same plane encapsulated by insulating material.
Ring	A Local Area Network topology in which data is sent from workstations via a loop or ring. One conductor of a pair (vs. tip).
Ring Indicator (RI)	RS-232 interface signal, sent from the DCE to DTE which indicates that a call is coming in.
Rise Time	The time required for a component or logic circuit to change from the quiescent to the transient state when an input is applied. (i.e., elapsed time between application of input and attainment of full output level).
RJ	Registered jack.
RJ-11	Wiring with 4- or 6-wire modular connectors; commonly used for standard telephone lines. Uses 1 pair of pins: 1 and 2.
RJ-14	Uses 2 pairs of pins: 1 and 4, and 2 and 3.
RJ-25	Uses 3 pairs of pins: 1 and 6, 2 and 5, and 3 and 4.
RJ-45	Modular telecommunications connector (IEC 60603-7).
RJ48	Has four voice circuits, T1 voice and/or data 2-pair connection, frame relay voice and/or data 2-pair connection and switched 56 (2-pair) I.e. to ATM machines.
RJ48C	Uses 4 pairs of pins: 1 and 8, 2 and 7, 3 and 6, and 4 and 5.
RJ48S	FRAME RELAY-uses 2 pairs of pins: 1 and 2, 7 and 8, on an RJ (Registered Jack) plug/receptacle in USOC.
RJ48X-T1/DS1/DSX	(EIA/TIA 568A Compatible)-T1 uses 2 pair of pins: 1 and 2, and 4 and 5.
RMS	Root-mean-square. The effective value of an alternating current, corresponding to the direct current value that will produce the same heating effect.
Router	A network device that examines the network addresses within a given protocol, determines the most efficient pathway to the destination, and routes the data accordingly. Compare with bridge, gateway.
Routing	The process of selecting the correct circuit path for a message.
RS-232	The industry's most common serial interface standard; an EIA-recommended standard for the interface between computer devices. It is identical in function to the combined CCITT standards V.24 and V.28. Interface between data terminal equipment and data communication equipment employing serial binary data interchange.
RS-422, RS-423	EIA serial transmission standard that extends transmission speeds and distances beyond those of RS-232, RS-423 is an unbalanced system; RS-422 is a balanced system with a higher level of noise immunity. (RS-422)-Electrical characteristics of balanced-voltage digital interface circuits. (RS-423)-Electrical characteristics of unbalanced-voltage digital interface circuits.
RS-449	EIA standard specifying the pinning for RS-422 and RS-423 when a DB37 or DB9 connector is used. General purpose 37-pin and 9-pin interface for data terminal equipment and data circuit-terminating equipment employing serial binary data interchange.
RS-485	EIA serial interface standard for multipoint lines.
RS-530	EIA standard specifying the pinning for RS-422 when a DB25 connector is used.

S

SAE	Society of Automotive Engineers.
SC	A type of optical fiber connector. The SC utilizes the same 2.5mm ferrule as the ST, held in a housing that allows for "push-pull" insertion and removal of the connector form the adapter. Rapidly becoming the connector of choice for data networks.
Scalable Coherent Interface (SCI)	Scalable Coherent Interface is a point-to-point, unidirectional link for handling large amounts of data in scalable, massively parallel processors.
Screw Machine Contact	A contact which is machined from solid bar stock.
Self-Extinguishing	The characteristic of a material that extinguishes its own flame after the igniting flame is removed.
Self Test	A diagnostic feature that tests the voice/fax channel locally that does not include the link.
Semi-Rigid	A cable containing a flexible inner core and a relatively inflexible sheathing.
Serial Storage Architecture (SSA)	Serial Storage Architecture is a serial data transfer standard (ANSI X3710.1).
Serial Transmission	Transmitting data one bit at a time. Contrast with parallel transmission. The most common transmission mode; in serial, information bits are sent sequentially on a single data channel.
Serve Shield	A metallic shield consisting of several strands of wire, helically wound around a cable core.
Server	A network node that provides services to client PCs, for example, file access, print spooling or remote execution.
Session	1) A connection between two stations that allows them to communicate. 2) The time period during which a user engages in a dialogue with an interactive computer. 3) In the IBM SNA, the logical connection between two network-addressable units.
Sheath	The outer covering of a jacket over the insulated conductors to provide mechanical protection for the conductors. Also known as the external conduction surface of a shielded transmission line.
Shield	A tape, serve or braid (usually copper, aluminum, or other conductive material) placed around or between electric circuits or cables or their components, to prevent signal leakage or interference.

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Shield Coverage	The optical percentage of a cable actually covered by shielding material.
Shield Effectiveness	The relative ability of a shield to screen out undesirable interference. Frequently confused with the term shield coverage.
Shield Percentage	The percentage of physical area of a circuit or cable actually covered by shielding material.
Shielded Twisted Pair	Twisted-pair cable that has a foil and/or braided shield to minimize interference. A thin-diameter network wire, wrapped with a metal sheath for extra protection against electrical interference.
Shock	(Mechanical)-(1) An abrupt impact applied to a stationary object. (2) An abrupt or nonperiodic change in position, characterized by suddenness, and by the development of substantial internal forces.
Short Hand Mode	A single converter which conditions a digital signal to ensure reliable transmission over DE continuous private line metallic circuits without interfering with adjacent pairs in the same telephone cable.
Short-Haul Modem	See line driver. (Line driver-A DCE device that amplifies a data signal for transmission over lengths of cable beyond the RS-232 limit of 50 feet (15.2m)-even up to several miles. It also conditions the signal by reshaping distorted pulses. Also called a "limited-distance modem (LDM)" or "short-haul modem (SHM)."
Signaling	Handshaking used between telephone equipment. Provides supervising (on/off hook status), alerting (ringing), and call addressing (dialing) for switched services.
Sign-On Character	The first character sent on an ABR circuit. It is used to determine data rate.
Simple Network Management Protocol (SNMP)	A de facto standard for managing network devices, including adapters, switches, routers, servers and workstations; garners information from various agents.
Sine Wave	A wave which can be expressed as the sine of a linear function of time, space or both. A waveform, often viewed on an oscilloscope, of a pure alternating current or voltage.
Single-Ended Mode (SEM)	Single-Ended Mode is a method for defining and/or measuring impedance.
Single Mode Fiber	A fiber wave guide in which only one mode will propagate. The fiber has a very small core diameter of approximately 8 micro meters. It permits signal transmission at extremely high bandwidths and is generally used with laser diodes.
Sinusoidal	Varying in proportion to the sine of an angle or time function. Ordinary alternating current is sinusoidal.
Skew	A measurement of the difference in the electrical length of two conductors or pairs of conductors and generally measured in picoseconds.
Skin Effect	The tendency of alternating current to travel only on the surface of a conductor as its frequency increases.
Sleeve	The insulated or metallic covering over the barrel of a terminal.
Slow Busy Signal	In a switching mode, the response to a call attempt when the called extension is busy. In a force-connect mode, the signal heard when a sync loss occurs, or when the link goes down.
Small Computer System Interface (SCSI)	An intelligent bus for transmitting data and commands between a variety of devices. There are many implementations (Pronounced "scuzzy")-of SCSI, including Fast SCSI, Wide SCSI, Fast Wide SCSI, Fast-20, and Fast 40. An interface that provides high-speed bus connections between small computers and intelligent peripherals such as hard disks, printers, and optical disks.
SCSI-2	The second generation of SCSI; includes many improvements to SCSI-1, including Fast SCSI, Wide SCSI, and mandatory parity checking.
SCSI-3	The third generation of SCSI; Introduces Fast-20 and Fast-40 as improvements to the parallel bus. The standard also includes a number of specifications for high-speed serial bus architectures such as SSA, Fiber Channel, and IEEE 1394. SCSI Terminators SCSI termination is required on all SCSI systems. There are two categories of terminators: Internal & External. External terminators have 4 different types: Passive (good), Active (better), FPT (best), and Differential. Is there a way to daisy chain an external SCSI device without installing a SCSI card? Yes, if you already have an internal hard drive SCSI controller. A SCSI port adaptor will allow you to add external SCSI port using the same internal hard drive SCSI controller. Its easy to install and inexpensive. The maximum number of devices for SCSI 1 chain is still seven.
SNR	Signal to Noise Ratio. Commonly used interchangeably with ACR - the difference between attenuation and crosstalk, measured in dB, at a given frequency (acronym for Attenuation Crosstalk Ratio). Important characteristic in networking transmission to assure that signal sent down a twisted pair is stronger at the receiving end of the cable than are any interference signals imposed on that same pair by crosstalk from other pairs.
Spacer	A piece of equipment that separates two other pieces of equipment from eachother.
Spectral Bandwidth	The difference between wavelengths at which the radiant intensity of illumination is half its peak intensity.
Spectrum	Frequencies that exist in a continuous range and have a common characteristic. A spectrum may be inclusive of many spectrums (e.g., the electromagnetic radiation spectrum includes the light spectrum, radio spectrum, infrared spectrum, etc.).
Speed of Light (c)	2.998 x 10 (to the power of 8) meters per second.
Splitter	A device that multiplies one input into a number of identical outputs.
Spool	(Simultaneous Peripheral Operation On Line)-A program or device, usually with a large buffer, that controls data going to an output device; also called "spooler".
Spread Spectrum	The process of modulating a signal over a significantly larger bandwidth than is necessary for the given data rate, in order to reduce the number of errors caused by interference.
ST	A registered trademark of AT&T for their fiber optic connector. Originally, an acronym for "Straight Tip."
Standing Wave Ratio (SWR)	A ratio of the maximum amplitude to the minimum amplitude of a standing wave stated in current or voltage amplitudes.

Star Quad	Term given to 4-conductor microphone cables where the conductors are spiraled together. Which, when connected in an "x" configuration, greatly increases common mode noise rejection.
Star Topology	A network cabling configuration that uses a central connection point (called a hub), through which all communication must pass.
Step-Index Fiber	An optical fiber in which the core is of a uniform refractive index with a sharp decrease in the index of refraction at the core/cladding interface.
STP	Shielded Twisted Pair(s).
Stranded Conductor	A conductor composed of groups of uninsulated wires.
Structural Return Loss (SRL)	The ratio between the outgoing signal and the reflected signal strength, expressed in dB. It is an indication of the "roughness" of the input impedance and its proximity to the characteristic impedance of the cable.
Super High Frequency (SHF)	The Federal Communications Commission designation for the band from 3,000 to 30,000 MHz in the radio spectrum.
Super VGA (SVGA)	Refinement of VGA that offers higher resolution, at least 800 x 600 pixels.
Surge	A temporary and relatively large increase in the voltage or current in an electric circuit or cable. Also called transient.
Sweep-Test	Testing the frequency response, or attenuation over frequency, of a cable by generating a voltage whose frequency is varied through a given frequency range and observing or graphing the results.
Switching	The process by which packets are received, stored and transmitted to the appropriate destination port.
Sync	Short for synchronous, synchronous transmission, or synchronization. In video, a means of synchronizing signals with timing pulses so that each step in a process occurs at exactly the right time.
Synchronous Idle (SYN)	A control character for synchronous transmission used to maintain synchronization and fill in time when data is absent.
Synchronous Transmission	Data transmission in which characters and bits are transmitted at a fixed rate, with the transmitter and receiver synchronized by a clock source. This eliminates the need for individual start bits and stop bits surrounding each byte, thus providing greater efficiency than asynchronous transmission.
Synchronous Modem	Modem that carries timing information with data.
Synchronous Modem Eliminator (SME)	A modem eliminator that operates synchronously rather that asynchronously; that is, it uses clocking rather than start and stop bits.
Synchronous Terminal	A data terminal that operates at a fixed rate with transmitter and receiver in synchronization.
Synchronous Transmission	Transmission in which data bits are sent at a fixed rate, with the transmitter and receiver synchronized.
Systems Network Architecture (SNA)	The total description of the logical structure, formats, protocols, and operating sequences for transmitting formation between IBM software and hardware devices.

T

T1	Often referred to as DS1 (Digital Signals), T1 is a term that is often applied to a digital carrier facility used to transmit a formatted digital signal at an aggregate data rate of 1.544 Mbps. A T1 carrier uses multiplexing to transmit large volumes of information across great distances at high speeds at a (potentially) lower cost than that provided by traditional analog service. It consists of one 4-wire circuit providing 24 separate 64-Kbps logical channels.
Tail Circuit	A channel to a network node, typically a leased line.
TCP/IP	(Transmission Control Protocol/Internet Protocol)-A layered set of protocols that allows sharing of applications among PCs, hosts, or workstations in a high-speed communications environment; it governs data communication on the Internet.
TCL	Transverse conversion loss = Unbalance attenuation at the near end: Power fed at the near end into the differential mode and coupled power measured at the near end in the common mode.
TCTL	Transverse conversion transfer loss = Unbalance attenuation at the far end: Power fed at the near end into the differential mode and coupled power measured at the far end in the common mode.
Telecommunication Industries Association	Sister organization to the EIA that collaborates with it in setting standards for data communication (EIA/TIA-568, for example).
Telephone Interface	The analog side of a voice or fax channel.
Telephone Interface Connector	Either a 6-pin RJ-11 for KTS and OPX type telephone interface equipment, which requires a modular cable, or a 8-pin terminal block for KTS, OPX, and E&M type telephone equipment, which requires a cable made of 8 Color Coded wires.
Telnet	A virtual terminal service available through the TCP/IP protocol suite.
Tensile Strength	The pull stress required to break the tested element.
Terminal	Any device capable of sending and receiving data over a data communications channel.
Terminator	An electrical circuit attached to each end of a SCSI bus to minimize signal reflections and extraneous noise. SCSI defines passive, active, and forced-perfect termination schemes.
Termination	Placement of a connector on a cable.
Thermal Shock	The effect of heat or cold applied at such a rate that non-uniform thermal expansion or contraction occurs within a given material or combination materials. The effect can cause inserts and other insulation materials to pull away from metal parts.
TFE	Tetra-fluoro-ethylene. A thermoplastic material with good electrical insulating properties and chemical and heat resistance.
Thermoplastic	A material which will soften, flow, or distort appreciably when subjected to sufficient heat and pressure. Examples are polyvinyl chloride and polyethylene.

Thermosetting	A material which will not soften, flow, or distort appreciably when subjected to heat and pressure. Examples are rubber and neoprene.
Thick Ethernet, Thicknet	See 10BASE5. (10BASW5-The original 10-Mbps Ethernet network standard defined by DEC, Xerox, and Intel, and implemented on thick, yellow-jacketed cable). Thick Ethernet-The original Ethernet cable specification, requiring an AUI connector; noise-resistant, but expensive and difficult to install. Thinnet: (Thin Ethernet)-A CSMA/CD network based on thin coaxial cable (also called thin Ethernet) that requires a BNC connector; based on the 10BASE-2 IEEE standard.
Thin Ethernet, ThinNet	See 10BASW2. (10BASE2-A 10-Mbps Ethernet network implemented on thin RG58 coaxial cable).
TIA	Telecommunications Industry Association.
Time-Delay	A Circuit that delays the transmission of an impulse for a definite and desired period of time.
Timeout	The expiration of a predefined interval which triggers an action.
TNC	(Threaded Neill-Concelman)-A threaded connector for miniature coax. Contrast with BNC.
TNC Connector	A radio frequency connector covered by Military Specification. It has an impedance of 50 ohms and is designed to operate in a 0 to 11 GHz frequency range. Reliability is assured by a threaded coupling that can be safely wired to prevent accidental disconnect.
Token	A continuously repeating frame, transmitted onto the network by the controlling computer, the frame that polls for network transmissions. See Token Ring.
Token passing	A network transmission method that requires a node to have control of a "token" before it can send messages; typically fairer than CSMA/CD on busy networks, but more complicated to implement.
Token Ring	A LAN-access mechanism and topology, developed by IBM and standardized as IEEE 802.5, in which a supervisory frame or token is passed from station to station in sequential order. Stations wishing to gain access to the network must wait for the token to arrive before transmitting data. IBM's implementation of token passing, governed by the IEEE 802.5 standard; second most popular network topology after Ethernet. Token ring uses pins 3, 6, 4 and 5, in an RJ (Registered Jack) plug/receptacle in EIA/TIA 568A and 568SB and in USOC.
TP-PMD	Twisted Pair-Physical Medium Dependent.
Topology	The architecture of a network, or the way circuits are connected to link the network nodes together.
Transducer	A device for converting mechanical energy to electrical energy.
Transceiver	A device used in contention networks for sending data over the network and receiving data from the network. A device that links a node to a network cable, functioning as both a transmitter and receiver.
Transient	An abrupt change in voltage, or shut duration (e.g. a brief pulse caused by the operation of a switch).
Transmit (TX)	Abbreviation for transmitted or transmitting.
Transmitted Data (TD)	RS-232 signal where data is sent from the DTE to the DCE.
Transfer Impedance	For a specified cable length, transfer impedance relates to a current on one surface of a shield to the voltage drop generated by this current on the opposite surface of the shield. Transfer impedance is used to determine shield effectiveness against both ingress and egress of interfering signals. Cable shields are normally designed to reduce the transfer of interference - hence, shields with lower transfer impedance are more effective than shields with higher transfer impedance.
Transmission Line	An arrangement of two or more conductors, a coaxial cable, or a waveguide used to transfer signal energy from one location to another.
Transmitter	The electronic package that converts electrical energy to light energy in a fiber optic system.
Triaxial Cable	A cable construction having a conductor, and two isolated braid shields, all insulated from each other.
Trunk Cable	In a CATV system, the transmission cable from the head end (signal pickup) to the trunk amplifier. Also called a feeder cable.
Twinaxial cable	A cable that is similar to coaxial cable, but has two inner conductors instead of one. Used in IBM minicomputer and midrange systems such as Systems 34, 36, and 38, and AS/400.
Twisted Pair	Two lengths of insulated conductors twisted together.
Twisted-Pair cable	Cable made up of one or more twisted pairs.

U

UHF	Ultra high frequency, 300 to 3,000 MHz.
UL	Abbreviation for Underwriters Laboratories, a nonprofit organization which tests and verifies construction and performance of electronic parts and equipment, including wire and cable.
Unbalanced Line	A transmission line in which voltages on the two conductors are unequal with respect to ground. A coaxial cable is a common type of unbalanced line.
URL	(Uniform Resource Locator)-A standard Internet location address; for example, "http://www.mycompany.com."
USB	(Universal Serial Bus)-Serial 4-wire bus architecture for peripheral I/O developed by Compaq, Intel, and Microsoft. It autosenses up to 128 peripherals and supports a maximum distance of 5m (16.4 ft.) and a maximum data rate of 12Mbps. USB was designed to collect all of PC's I/O port into one serial interface, and provide enough bandwidth (data transfer rate) to support multiple peripherals. With its 12MBps transfer rate, it is more than adequate to handle traditional PC peripherals such as keyboards, mice, joystick, scanners, printers, and advanced computer game devices. With USB hub, it can support up to 127 devices. USB supports "true" Plug & Play, "Tree-Like" structure for daisy chaining, and devices can be connected and disconnected without interrupting system operation. The series "A" connectors is a flattend rectangle. The series "B" connector is roughly square with beveled corners. The two connector series are different to prevent connections that violate the USB architecture topology.
UTP	Unshielded Twisted Pairs(s). Twisted pair cable without either individual or Overall Shielding. Twisted-pair cabling without EMI/RFI shielding. Compare STP. A thin-diameter network wire that is very popular in network cabling installations.

V

V	Volt.
V.24	A CCITT interface recommendation defining interchange circuits; similar to and compatible with RS-232.B392+B392
V.28	A CCITT interface recommendation defining electrical characteristics for V.24 interchange circuits; similar to and compatible with RS-232.
V.32	A CCITT 9600-bps dial- or 2-wire leased-line modem recommendation.
V.32 bis	A CCITT 14.4-Kbps dial- or 2-wire leased-line modem recommendation.
V.34	An ITU-TSS modem standard for data transmission at 28.8 Kbps.
V.34 bis	(V.34+)-An ITU-TSS modem standard for data transmission at 33.6 Kbps.
V.35	A CCITT interface standard for high-speed communication. V.35 specifies a 34-pin connector and can transmit at speeds into the millions of bits per second. It can't connect, physically or electrically, to any other interface without the aid of a converter. CCITT Standard governing data transmission at 48 Kbps using 60-108 KHz group band circuits.
V.42	A CCITT standard for error correction by modems.
V.42 bis	A CCITT standard for data compression by modems.
Velocity of Propagation (VP)	The transmission speed of electrical energy in a length of cable compared to speed of light in free space. Usually expressed as a percentage.
Video Graphics Array (VGA)	A video standard for IBM PC and compatible computers. Standard VGA has a resolution of 640 x 480 and supports 16 colors.
VHF	Very high frequency, 30 to 300 HMz as designated by the Federal Communications Commission.
Virtual Terminal	A terminal emulation program that makes a workstation appear to be a dumb terminal connected to some remote system, such as a mainframe.
Virtual LANs	A switching technology that enables logical segmentation of switched networks, independent of physical grouping or collision domains.
VLF	Very low frequency, 10 to 30 kHz.
Voice-Frequency (VF)	Any frequency within that part of the radio frequency range essential to speech transmission of a commercial quality (I.e., 300 to 3400 Hz). Also referred to as telephone frequency.
Volt	A unit of electromotive force.
Voltage	Electrical potential of electromotive force expressed in volts.
Voltage Drop	The voltage developed across a component or conductor by the current flow through the resistance or impedance of the component or conductor.
Voltage Standing Wave Ratio (VSWR)	The ratio of the transferring signal voltage as compared to reflected signal voltage measured along the length of a transmission line.
VSWR	Voltage standing wave ratio.
VW-1	A flammability rating established by Underwriters Laboratories 1581 for wires and cables that pass a specially designed vertical flame test, formerly designed FR-1.

W

WAN	(Wide-Area Network)-A network that serves an area of anywhere from several to thousands of miles, using common-carrier-provided lines; contrast with LAN.
Wavelength	The distance between positive peaks of a signal. As the frequency increases, and waves get closer together, the wavelength decreases.
Workgroup	(Also called segment)-A grouping of workstations, server(s) and any network devices dedicated to similar functions, using similar applications and/or sharing common resources, and serving as a subnetwork entity; members may have a common geography or function, e.g., engineering, marketing, manufacturing and administration.
Workstation	For the purposes of this guide, a personal computer in a network; also called a client.

X

X.25	A WAN standard for protocols and message formats; used to access public packet-switching networks.
X-ON/X-OFF	(Transmitter On/Transmitter Off)-Special characters used for flow control; they signal a device to start transmission (X-ON) and stop transmission (X-OFF). Control characters used for flow control, instructing a terminal to start transmission (X-ON and end transmission (X-OFF).
XLPE	Crosslinked polyethylene is a thermoset and is crosslinked by radiation, thermally, or by moisture.

Z

Z	Symbol for impedance
Zero-Dispersion Wavelength	1. In a single-mode optical fiber, the wavelength or wavelengths at which material dispersion and waveguide dispersion cancel one another. Note: In all silica-based optical fibers, minimum material dispersion occurs naturally at a wavelength of approximately 1.3 microns. Single-mode fibers may be made of silica-based glasses containing dopants that shift the material-dispersion wavelength, and thus, the zero-dispersion wavelength, toward the minimum-loss window at approximately 1.55 microns. The engineering tradeoff is a slight increase in the minimum attenuation coefficient. 2. Loosely, in a multimode optical fiber, the wavelength at which material dispersion is minimum, i.e., essentially zero. Synonym minimum-dispersion wavelength.

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COLOR TABLE NO. 1: ANSI/ICEA S-80-576 COLOR CODE FOR TWISTED PAIRS

Wire Color Inside Each 25-Pair Group			
Pair No.	**Color Code**	**Pair No.**	**Color Code**
1	White/Blue x Orange	13	Black/Green x Green/Black
2	White/Orange x Orange	14	Black/Brown x Brown/Black
3	White/Green x Green	15	Black/Gray x Gray/Black
4	White/Brown x Brown	16	Yellow/Blue x Blue/Yellow
5	White/Gray x Gray	17	Yellow/Orange x Orange/Yellow
6	Red/Blue x Blue/Red	18	Yellow/Green x Green/Yellow
7	Red/Orange x Orange/Red	19	Yellow/Brown x Brown/Yellow
8	Red/Green x Green/Red	20	Yellow/Gray x Gray/Yellow
9	Red/Brown x Brown/Red	21	Violet/Blue x Blue/Violet
10	Red/Gray x Gray/Red	22	Violet/Orange x Orange/Violet
11	Black/Blue x Blue/Black	23	Violet/Green x Green/Violet
12	Black/Orange x Orange/Black	24	Violet/Brown x Brown/Violet
		25	Violet/Gray x Gray/Violet

Binder Color Over Each 25-Pair Group			
Group No.	**Binder Color Code**	**Group No.**	**Binder Color Code**
1	White/Blue	13	Black/Green
2	White/Orange	14	Black/Brown
3	White/Green	15	Black/Gray
4	White/Brown	16	Yellow/Blue
5	White/Gray	17	Yellow/Orange
6	Red/Blue	18	Yellow/Green
7	Red/Orange	19	Yellow/Brown
8	Red/Green	20	Yellow/Gray
9	Red/Brown	21	Violet/Blue
10	Red/Gray	22	Violet/Orange
11	Black/Blue	23	Violet/Green
12	Black/Orange	24	Violet/Brown
		25	Violet/Gray

Color Table No 2: Color Code for Multicore Cables			
Wire No.	**Color**	**Wire No.**	**Color**
1	Black	6	Blue
2	Red	7	Orange
3	Green	8	Yellow
4	White	9	Purple
5	Brown	10	Gray

COLOR TABLE NO. 3: ANSI/TIA/EIA-598-A COLOR CODE FOR TIGHT COATED FIBERS AND MINICABLES

Fiber/Minicable No.	Color	Fiber/Minicable No.	Color
1	Blue	13	Blue/Black
2	Orange	14	Orange/Black
3	Green	15	Green/Black
4	Brown	16	Brown/Black
5	Gray	17	Gray/Black
6	White	18	White/Black
7	Red	19	Red/Black
8	Black	20	Black/White
9	Yellow	21	Yellow/Black
10	Violet	22	Violet/Black
11	Pink	23	Pink/Black
12	Turquoise (Aqua)	24	Turquoise/Black

Color Table No. 4: ANSI/TIA/EIA-598-A Bare Fibers		Color Table No. 5: Turk Telecom TRFO-8 Color Code	
Fiber No.	Color	Element No.	Color
1	Blue	1	Red RAL 3000
2	Orange	2	Yellow RAL 1021
3	Green	3	Green RAL 6018
4	Brown	4	Blue RAL 5015
5	Gray	5	Violet RAL 4005
6	White	6	Brown RAL 8003
7	Red	7	Black RAL 9004
8	Black	8	Orange RAL 2008
9	Yellow	9	Pink RAL 3015
10	Violet	10	Gray RAL 7035
11	Pink	11	Turquoise RAL 6027
12	Turquoise	12	White RAL9001 or Natural

Color Table No. 6: Color Code Terminated Cords Jacket		
Color No. (Note below)	Color	RAL Numbers
0	Gray	7035 or 9002
1	Blue	5015
2	Orange	2003 or 2000
3	Green	6024
4	Brown	8011
5	White	9003
6	Red	3000
7	Black	9004
8	Yellow	1021
9	Purple or Lilac-Blue	4005
V	Ivory	1014
D	Dust - Gray	7037
T	Turquoise	5018

The color number should be inserted in the designated place in the HCS P/N.
Examples: T06-00410: Gray cable T06-00411: Blue cable T06-00412: Orange cable
When the boot color is different from the jacket color, the color of the boot will appear as an additional digit after the digits indicating the cord length.
Examples:
T06-00410-201: 2m Gray CAT 6 U/UTP PVC cord with Blue boot.
T06-00421-308: 3m Blue CAT 6 U/UTP LS0H cord with Yellow boot.
T06-00478-502: 5m Yellow CAT 6 S/FTP PVC cord with Orange boot.

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HCS P/N	Description	Packaging/Type	Page No.
PFO-52412	DataLight Wall-Mount Panel, black, Dual, Camlock	FC D-Mount	253
PFO-52421	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Simplex	253
PFO-52422	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Duplex	253
PFO-52431	DataLight Wall-Mount Panel, black, Dual, Camlock	ST Simplex	253
PFO-52451	DataLight Wall-Mount Panel, black, Dual, Camlock	LC Duplex	253
PFO-52442	DataLight Wall-Mount Panel, black, Dual, Camlock	MT-RJ Duplex	253
PFO-53611	DataLight Wall-Mount Panel, black, Dual, Camlock	FC Square Flange	253
PFO-53612	DataLight Wall-Mount Panel, black, Dual, Camlock	FC D-Mount	253
PFO-53621	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Simplex	253
PFO-53622	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Duplex	253
PFO-53631	DataLight Wall-Mount Panel, black, Dual, Camlock	ST Simplex	253
PFO-53651	DataLight Wall-Mount Panel, black, Dual, Camlock	LC Duplex	253
PFO-53642	DataLight Wall-Mount Panel, black, Dual, Camlock	MT-RJ Duplex	253
PFO-54811	DataLight Wall-Mount Panel, black, Dual, Camlock	FC Square Flange	253
PFO-54812	DataLight Wall-Mount Panel, black, Dual, Camlock	FC D-Mount	253
PFO-54821	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Simplex	253
PFO-54822	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Duplex	253
PFO-54831	DataLight Wall-Mount Panel, black, Dual, Camlock	ST Simplex	253
PFO-54851	DataLight Wall-Mount Panel, black, Dual, Camlock	LC Duplex	253
PFO-54842	DataLight Wall-Mount Panel, black, Dual, Camlock	MT-RJ Duplex	253
PFO-59611	DataLight Wall-Mount Panel, black, Dual, Camlock	FC Square Flange	253
PFO-59612	DataLight Wall-Mount Panel, black, Dual, Camlock	FC D-Mount	253
PFO-59621	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Simplex	253
PFO-59622	DataLight Wall-Mount Panel, black, Dual, Camlock	SC Duplex	253
PFO-59631	DataLight Wall-Mount Panel, black, Dual, Camlock	ST Simplex	253
PFO-59651	DataLight Wall-Mount Panel, black, Dual, Camlock	LC Duplex	253
PFO-59642	DataLight Wall-Mount Panel, black, Dual, Camlock	MT-RJ Duplex	253
PFO-60112	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	-	257
PFO-60148	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	-	257
PFO-60172	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	-	257
PFO-60196	DataLight Fiberoptic Distribution Box, Gray, Dust-Proof	-	257
PFO-07P11-1U	High capacity FO Rack Mount 19" Panel 12/24/36/48/72 fiber	-	257
PFO-07P12-1U	High capacity FO Rack Mount 23" Panel 12/24/36/48/72 fiber	-	257
PFO-07P01-2U	High capacity FO Rack Mount 19" Panel 36/48/72 fiber	-	257
PFO-07P02-2U	High capacity FO Rack Mount 23" Panel 36/48/72 fiber	-	257
PFO-07P03-3U	High capacity FO Rack Mount 19" Panel 72/96/144 fiber	-	257
PFO-07P04-3U	High capacity FO Rack Mount 23" Panel 72/96/144 fiber	-	257
PFO-07P13-4U	High capacity FO Rack Mount 19" Panel 72/96/144/192/288 fiber	-	257
PFO-07P11-4U	High capacity FO Rack Mount 23" Panel 72/96/144/192/288 fiber	-	257
PFO-07P05-7U	High capacity FO Rack Mount 19" Panel 144/192/288 fiber	-	257
PFO-07P06-7U	High capacity FO Rack Mount 23" Panel 144/192/288 fiber	-	257
PFO-07000	Adapter Plate - Blank	-	257
PFO-07010	Adapter Plate for ST/FC Simplex Adapters	-	257
PFO-07011	Adapter Plate for ST/FC Simplex Adapters	-	257
PFO-07021	Adapter Plate for SC Simplex Adapters	-	257
PFO-07022	Adapter Plate for SC Simplex Adapters	-	257
PFO-07023	Adapter Plate for SC Duplex / LC Quad Adapters	-	257
PFO-07024	Adapter Plate for SC Duplex / LC Quad Adapters	-	257
PFO-07025	Adapter Plate for SC Duplex / LC Quad Adapters	-	257
PFO-07031	Adapter Plate for LC Simplex Adapters	-	257
PFO-07032	Adapter Plate for LC Simplex Adapters	-	257
PFO-07033	Adapter Plate for LC Simplex Adapters	-	257
PFO-07034	Adapter Plate for LC Duplex Adapters	-	257
PFO-07035	Adapter Plate for LC Duplex Adapters	-	257
PFO-07036	Adapter Plate for LC Duplex Adapters	-	257
PFO-07041	Adapter Plate for MT-RJ Duplex Adapters	-	257
PFO-07042	Adapter Plate for MT-RJ Duplex Adapters	-	257
PFO-07043	Adapter Plate for MT-RJ Duplex Adapters	-	257
KFO-07012	Splicing Kit for Rack Mount Panel - 12 Fibers	-	257
KFO-07024	Splicing Kit for Rack Mount Panel - 24 Fibers	-	257

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