#### Vertiv™ Knürr® PowerTrans2®

Power Distribution Rack

#### **Features**

- The Vertiv Knürr PowerTrans2 has a modular design with a versatile plug-in units that can be used as required.
- Plug and Play:
   Only the main feed must be installed by a qualified electrician.
- The plug-in units can be inserted during operation; there are no downtimes.
- Elementary model:
   Power distribution unit without metering.
- Metered version:
   Power distribution unit offers extensive metering functions with a high level of accuracy (up to ±1%).
- Highest power density: up to max. 346 kVA.

The Vertiv Knürr PowerTrans2 forms the interface between the low-voltage power supply and rack PDUs as well as further components for supplying servers and other IT devices.

Rack basics: connecting the Vertiv Knürr DCM rack and the existing PowerTrans2 19" plug-in units simply involves slotting the elements into a free slot and securing them. The rack is then immediately connected to the power supply. The power is distributed via the individual slot-in units, avoiding installation within the building.



PowerTrans2: 19" slot-in



#### Input Power

- Max. 250 A per phase.
- 1 ph. or 3 ph. feed.
- Max. 2 feeds per rack.



#### Modularity

 Output distributors can be installed as modules during running operation.



#### Output Distributor

- 230/400V 32A via IEC 60309 socket.
- 230/400V 16A via GST 18 socket.
- 230V 32A via IEC 60309 socket.
- 230V 16A via GST18 socket.

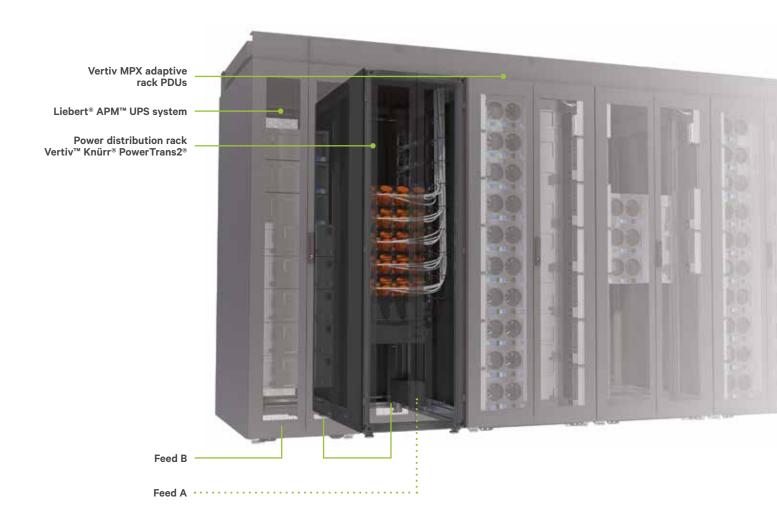


Monitoring
Input level.



# Vertiv™ Knürr® PowerTrans2®

Power distribution unit between Liebert® APM™ UPS system and MPX rack PDUs



#### **Benefits**

- Two feeds (A + B) available for each rack.
- Optimum power distribution from the Liebert APM UPS system to the MPX rack PDUs.
- Each phase input from the Vertiv Knürr PowerTrans2 is monitored and evaluated.
- The Vertiv Knürr PowerTrans2 Basic can be populated with a maximum of 9 plug-in units, while the metered version can be populated with a maximum of 8 plug-in units.
- Minimal footprint due to a rack width of 600 mm.



Vertiv Knürr PowerTrans2

#### Vertiv™ Knürr® PowerTrans2® 19" Power Distribution Rack

#### **Elementary and Monitored type**

- Feed of 2 separate 3-phase 400V mains, L1, L2, L3, N, PE.
- Each with a 250 A circuit breaker in the input.
- Distribution to the individual plugs via busbars and contact-safe plug-in connections.
- Up to 8 (Monitored) / 9 (Elementary) slot-in units where A feed and B feed are possible.

#### Monitored type

- Provides the following phase-input data: voltage, current, effective power, consumption and frequency.
- Power alarm functions for the individual phases and their operating status are also supported.

#### **Technical data Interfaces**

- RJ-45 LAN port (10/100 MBit) for connecting to local network (LAN) via an Ethernet cable.
- Serial interface: RS485.
- Remote management: Onboard Web Interface, SNMPv1,2,3, SSH and Syslog can be integrated into Vertiv Nform & Vertiv *Trellis* as well as Nagios or other management software programs.

#### Material / Finish

- Basic rack, extruded aluminum, polished.
- Corner piece, die-cast aluminum, polished.
- Perforated front door.
- Rear door, double, closed.
- Covers, zinc-passivated sheet steel, powder-coated texture.

#### Color

- RAL 7021 dark-gray.

#### Scope of delivery

- 1 x rack with covers, front door, rear door.
- 1 x set of safe-contact busbars, for A feed and B feed.
- 2 x circuit breakers, max. 250 A.
- 16 x (Monitored type) / 18 x (Elementary type) power supply plugs for the slot-in units wired on the busbars.
- 1 x 19" PowerTrans2 metering slot-in unit (Monitored type).
- 2 x 19" T-slot extrusions.
- 18 x chassis runners.
- 1 x complete earthing set.

W				Model	Cable entry	Order No.	
600	2000	1000	42	Elementary	Below	03.014.600.8.004	1
600	2000	1100	42	Elementary	Below	03.014.600.8.005	1
600	2000	1200	42	Elementary	Below	03.014.600.8.006	1
600	2200	1000	47	Elementary	Below	03.014.600.8.010	1
600	2200	1100	47	Elementary	Below	03.014.600.8.011	1
600	2200	1200	47	Elementary	Below	03.014.600.8.012	1
600	2000	1000	42	Monitored	Below	03.014.601.8.004	1
600	2000	1100	42	Monitored	Below	03.014.601.8.005	1
600	2000	1200	42	Monitored	Below	03.014.601.8.006	1
600	2200	1000	47	Monitored	Below	03.014.601.8.010	1
600	2200	1100	47	Monitored	Below	03.014.601.8.011	1
600	2200	1200	47	Monitored	Below	03.014.601.8.012	1
600	2000	1000	42	Elementary	Above	03.014.602.8.004	1
600	2000	1100	42	Elementary	Above	03.014.602.8.005	1
600	2000	1200	42	Elementary	Above	03.014.602.8.006	1
600	2200	1000	47	Elementary	Above	03.014.602.8.010	1
600	2200	1100	47	Elementary	Above	03.014.602.8.011	1
600	2200	1200	47	Elementary	Above	03.014.602.8.012	1
600	2000	1000	42	Monitored	Above	03.014.603.8.004	1
600	2000	1100	42	Monitored	Above	03.014.603.8.005	1
600	2000	1200	42	Monitored	Above	03.014.603.8.006	1
600	2200	1000	47	Monitored	Above	03.014.603.8.010	1
600	2200	1100	47	Monitored	Above	03.014.603.8.011	1
600	2200	1200	47	Monitored	Above	03.014.603.8.012	1





PowerTrans2

#### Vertiv™ Knürr® PowerTrans2® 19" Slot-in Power Distributor

- Power distributor slot-in for PowerTrans2 rack.
- Also functions without PowerTrans2 rack if used with a suitable connection cable.
- 19" slot-in housing.
- Width 19".
- Height: 3 U.
- Depth: 480 mm.

- Color: RAL 7021 dark-gray.
- 2 separate 3-phase inputs with max. 63 A phase current (feed A + feed B).
- Outputs are shown in the table below.
- Backups: 1-pole (for single-phase) or 3-pole (for 3-phase). 2-pole or 4-pole backups aviable upon request.

Inputs	Ou	Order No.	
Phase tap per feed	Feed A	Feed B	
L1-N, L2-N, L3-N	6 x 230Vac 16 A GST 18i3	6 x 230Vac 16 A GST 18i3	03.014.011.8.002
L1-N, L2-N	2 x 230Vac 32 A IEC60309 1ph/N/PE 6h	2 x 230Vac 32 A IEC60309 1ph/N/PE 6h	03.014.011.8.005
L2-N, L3-N	2 x 230Vac 32 A IEC60309 1ph/N/PE 6h	2 x 230Vac 32 A IEC60309 1ph/N/PE 6h	03.014.011.8.006
L3-N, L1-N	2 x 230Vac 32 A IEC60309 1ph/N/PE 6h	2 x 230Vac 32 A IEC60309 1ph/N/PE 6h	03.014.011.8.007
L1-N, L2-N, L3-N	3 x 230/400Vac 3 x16 A GST18i5	3 x 230/400Vac 3 x 16 A GST18i5	03.014.012.8.002
L1-N, L2-N, L3-N	2 x 230/400Vac 3 x 32 A IEC60309 3ph/N/ PE 6h	2 x 230/400Vac 3 x 32 A IEC60309 3ph/N/ PE 6h	03.014.012.8.003

#### Vertiv Knürr PowerTrans2 Connection Cable

Connection cable between
 19" power distributor slot-in and rack PDUs

Length	Input connector	Output socket	Order No.
5000	230Vac 16 A GST 18i3	230Vac 16 A IEC60320 C19	03.014.013.9.001
5000	230Vac 16 A GST 18i3	230Vac 16 A IEC60309 1ph/N/PE 6h	03.014.013.9.003
5000	230/400Vac 3 x 16 A GST 18i5	230/400Vac 3 x 16 A IEC60309 3ph/N/PE 6h	03.014.014.9,001
5000	230Vac 32 A IEC60309 1ph/N/PE 6h	230Vac 32 A IEC60309 1ph/N/PE 6h	On request
5000	230/400Vac 3 x 32 A IEC60309 3ph/N/PE 6h	230/400Vac 3 x 32 A IEC60309 3ph/N/PE 6h	03.014.014.9.003
10000	230VAc 16 A GST 18i3	230VAc 16 A IEC60320 C19	03.014.013.9.002
10000	230Vac 16 A GST 18i3	230Vac 16 A IEC60309 1ph/N/PE 6h	03.014.013.9.004
10000	230/400Vac 3 x 16 A GST 18i5	230/400Vac 3 x 16 A IEC60309 3ph/N/PE 6h	03.014.014.9.002
10000	230Vac 32 A IEC60309 1ph/N/PE 6h	230Vac 32 A IEC60309 1ph/N/PE 6h	On request
10000	230/400Vac 3 x 32 A IEC60309 3ph/N/PE 6h	230/400Vac 3 x 32 A IEC60309 3ph/N/PE 6h	03.014.014.9.004

# Rack PDUs Vertiv™ MPX™, Vertiv MPH2™ and Vertiv MPE

Your product range for the highest data center demands

#### The key aspects of this product range are:

- High availability for connected electrical loads.
- Optimized energy and capacity management.
- Simplified integration into management tools.
- Simplified physical and electrical installation.

#### **Overview: Vertiv Rack PDUs for Europe**



The range of Vertiv MPX and Vertiv MPH2 accessories is almost identical, which simplifies administration!

 $<sup>\</sup>ensuremath{^{*}}$  Only in conjunction with Vertiv MPX-PEM monitored.



# Vertiv™ Knürr® DIS Rack PDU® Socket System

Your product range to cover basic requirements in all areas

#### The key aspects of this product range are:

- Robust design with the highest level of quality.
- Cost effective thanks to flexible and simple assembly.
- Numerous designs for all application areas in IT, network technology, laboratories, and in the home.

#### Overview: Vertiv™ Knürr® DIS Rack PDU® for Europe

Features	Knürr DIS Rack PDU I	Knürr DIS Rack PDU D	Knürr DIS Rack PDU E
Local display		•	
Remote interface			
Measurement per phase			
Measurement parameters	A, V, W, kWh, VA, Hz, power factor	A, V, W, kWh, VA, Hz, power factor	
Input	1 ph + 3 ph max. 32 A	1 ph + 3 ph max. 32 A	1 ph + 3 ph max. 32 A
Outputs	IEC C13 & C19 Schuko, Frankreich, Schweiz	IEC C13 & C19 Schuko, Frankreich, Schweiz	IEC C13 & C19 Schuko, Frankreich, Schweiz

# Vertiv™ MPX™ - Adaptive Rack PDU

Respond to change and maximize profits

No-one can make definite predictions about the power-supply demands the future will bring. But one thing is certain: the versatile, adaptive Vertiv™ MPX™ rack PDUs equip you with the wherewithal to face all eventualities. They enable you to react quickly to changes in rack equipment and provide dynamic capacities, offering:

- Modular hot-swap-enabled output power
- Modular hot-swap-enabled communication
- Modular input power.





#### **Benefits of Vertiv MPX**

- Adaptive capacity, distribution, monitoring, control and administration of critical equipment.
- Flexibility in reacting to constant changes
   modules can be regrouped to
   accommodate altered requirements.
- Only purchase what you really need and utilize existing investments.
- Reliable communication.

# Flexible, configurable input and output distribution

The scalable design of the MPX rack PDU allows on-site configuration that meets the current requirements of the IT equipment. It is the perfect solution for coping with the ever increasing demands of expanding data centers. You can set up your IT equipment at another location or add new components to extend your environment. All you need to do in this case is simply reconfigure the power supply and the power distribution.

# Equipped to face the demands of today and tomorrow

The MPX rack PDU supports a variety of configurations for single-phase and three-phase power inputs enabling changes while retaining the distribution infrastructure.

#### **Developed for critical environments**

- Critical rack operating temperature of up to 60° C suitable for high temperatures inside racks
- Accurate voltage and current metering with tolerances of ±1% offer a comprehensive overview
- Energy and power metered with outstanding precision all the way through to output level.
- Extensive alert function; including notification before failure occurs.
- Monitoring of environment conditions including alerts and alarms.
- Notification upon failure or if individual components are removed.







#### The busbar (MPX™ PRC):

Serves as power and communication distribution for all supported modules. Available in two heights to accommodate different rack heights.

#### Output module (MPX™ BRM):

Provides overload protection by distributing power to individual servers. Available functions: Elementary, Branch Metering and Output Metering with switch function.

#### Power-rail spacer:

Reserves unused space until needed for an MPX™ module.



#### SN sensors:

Consolidates environmental monitoring of temperature, humidity



and potential-free input contacts with the power supply at rack



# BDM™ local display module

Extended diagnostic functionality; customerconvenient display. Features include detailed information about alerts and specific labeling for outputs.



#### Communication module (RPC2):

Installed in the power input module and offers an extendable interface for network commu nication, sensors and the local display.

#### Input module (MPX $^{\text{\tiny{M}}}$ PEM):

Routes the input power to the busbar system of the Elementary model (without  $\ensuremath{\mathsf{RPC2^{\textsc{tm}}}})$  and the version with input metering (includes pre-installed RPC2™).

#### **Vertiv™ MPX™**

#### Benefits of the modular Vertiv MPX rack PDU

#### **INPUT POWER**

- Configurable: 20 to 60 A (USA); 16 to 63 A (EU).
- Single-phase and three-phase.
- Cable routing possible from above and below.

#### **OUTPUT DISTRIBUTOR**

- Scalable, combination-compatible and can be replaced during operation
- Single-phase NEMA 5-20R, IEC-C13, IEC-C19, Schuko, Switzerland, GST18
- Load balance.

#### **MODULARITY**

- Input modules.
- Output modules.
- External display.
- External sensors.
- RPC2 communication card.

#### **MONITORING**

- Three levels: Input level, module level, output level.
- Temperature and humidity.
- Door contacts and floating break input contacts.

#### **REMOTE CONTROLLED SOCKETS**

Socket level

#### Featuring High Availability

- Heat resistant up to 60° C ensuring reliable operation in the warm aisle.
- Modular hot-swap-enabled output module, controller card and sensors; can be exchanged or updated during operation.
- Special switch relay (normally closed); connected servers have an uninterrupted power supply even in the event of failure.
- Redundant power supply for control electronics.
- Fixed databus on the busbar.
- Complete data tapping on the Power Entry Module (PEM) without any additional external monitoring devices.
- Proactive alert by additional metering of the neutral conductor and crest factor (assessment of network quality facilitating early detection of power-supply unit failures).

#### **Maximum Flexibility and Scalability**

- All modules configured in line with requirements (patented quick-mount fitting for safe installation).
- One busbar for different networks and power levels input module can be freely selected.

  All other components are "hot-swap-enabled" when running operation.
- Mobile display for reading all MPX data on the rack.
- Optical slot-space display (easy server slot-space identification at the push of a button).

#### Highest Possible Power Levels in all Areas

- Power feed of max. 3 x 63 A; optimal for Blade server applications.
- Only one IP address for up to 4 rails with 24 modules.
- Plug and Play for numerous sensors.
- Extensive monitoring with a metering accuracy of ±1% right through to output level.
- Module and sensor autodetect function with operating software.
- Minimal power loss for MPX systems.



#### **Vertiv™ MPX™**

Four equipment models for different requirements

The Vertiv™ MPX™ modular rack PDU consists of various components.

The basic element is a busbar, which is responsible for the power and communication distribution to the individual modules. The input power is routed via the MPX Power Entry Module (MPX PEM) to the MPX system.

Different output modules (MPX Branch Receptacle Modules, MPX BRM) are available depending on requirements. Four different variants can be set up depending on the component population of the busbars:

#### 1. Vertiv MPX Elementary

Modular basic power distribution without metering and control function. An upgrade to another equipment model is quick and easy.

# 2. Vertiv MPX Elementary Phase Monitored

Modular power distribution with metering on input. An upgrade to a superordinate line is possible by populating with appropriate output modules.

#### 3. Branch-Monitored Vertiv MPX

Modular power distribution with metering on input and each output module.

An upgrade or downgrade to another line is possible if installed with appropriate output modules.

#### 4. Receptacle Managed Vertiv MPX

Modular power distribution with input, metering, each output module and each output. Individual outputs can also be switched on and off remotely.

A downgrade to another line is possible if installed with the appropriate output modules.

A combination of the "Elementary Phase Monitored", "Branch-Monitored" and "Receptacle Managed" lines on a shared busbar is also possible and is one of the exceptional features of the MPX. Interfaces for the network communication, sensors and/or local display are provided by the Rack PDU Card (RPC)

in the MPX PEM. The RPC Card enables connection to an optional RPC Basic Display Module (RPC BDM) to display local status and alerts.



# $\mathsf{Vertiv}^{\mathsf{TM}} \; \mathsf{MPX}^{\mathsf{TM}} - \mathsf{Configuration} \; \mathsf{models} \; \mathsf{in} \; \mathsf{Europe}$

		0-4	M. at Asset	Four equipn		14 44 44
		Order number	<b>Vertiv MPX</b> Elementary	<b>Vertiv MPX</b> Elementary Phase monitored	<b>Vertiv MPX</b> Branch-monitored	Vertiv MPX Receptacle Managed
	Length 1035	MPXPRC-V1035XXX	•	•	•	
usbar	Length 1880	MPXPRC-V1880XXX	•	•	•	
	Length 2144	MPXPRC-V2146XXX	•		•	•
	1ph 16A fest	MPXPEM-EHABXS30		•	•	•
	1-1-00 A 61*	MPXPEM-EHAEXQ30	•			
	1ph 32A fixed* —	MPXPEM-EHABXQ30		•	•	
	0.1.40.4.0	MPXPEM-EHAEXT30	•			
nput Modules	3ph 16A fixed —	MPXPEM-EHABXT30		•	•	•
		MPXPEM-EHAEXR30	•			
	3ph 32A fixed —	MPXPEM-EHABXR30		•	•	
		MPXPEM-EHBEXZ30	•			
	3ph 63A fixed —	MPXPEM-EHBBXZ30		•	•	
	IEC-C13 L1	MPXBRM-EEBC7N1N		•		
	IEC-C13 L2	MPXBRM-EEBC7N2N				
	IEC-C13 L3	MPXBRM-EEBC7N3N				
	IEC-C19 L1	MPXBRM-EEBC4O1N				
	IEC-C19 L2	MPXBRM-EEBC4O2N				
	IEC-C19 L3	MPXBRM-EEBC403N				
	Schuko L1	MPXBRM-EEBC3P1N				
Elementary						
Output Modules	Schuko L2	MPXBRM-EEBC3P2N				
	Schuko L3	MPXBRM-EEBC3P3N	•	•		
	Switzerland T23	MPXBRM-EEBC4S1N	•	•		
	Switzerland T23	MPXBRM-EEBC4S2N	•	•		
	Switzerland T23	MPXBRM-EEBC4S3N	•	•		
	GST18	MPXBRM-EEBC9U1N	•	•		
	GST18	MPXBRM-EEBC9U2N	•	•		
	GST18	MPXBRM-EEBC9U3N	•	•		
	IEC-C13 L1	MPXBRM-EBBC6N1N	<b>^</b>		•	
	IEC-C13 L2	MPXBRM-EBBC6N2N			•	
	IEC-C13 L3	MPXBRM-EBBC6N3N			•	
	IEC-C19 L1	MPXBRM-EBBC401N			•	
Branch-Monitored Dutput Modules	IEC-C19 L2	MPXBRM-EBBC402N			•	
output Modules	IEC-C19 L3	MPXBRM-EBBC403N			•	
	Schuko L1	MPXBRM-EBBC3P1N			•	
	Schuko L2	MPXBRM-EBBC3P2N			•	
	Schuko L3	MPXBRM-EBBC3P3N			•	
	IEC-C13 L1	MPXBRM-ERBC6N1N				
	IEC-C13 L2	MPXBRM-ERBC6N2N				•
	IEC-C13 L3	MPXBRM-ERBC6N3N	Upgrade possible			
Pocontacle	IEC-C19 L1	MPXBRM-ERBC401N	ssoc			
Receptacle Managed	IEC-C19 L2	MPXBRM-ERBC402N	9 9			-
Output Modules	IEC-C19 L3	MPXBRM-ERBC4O3N	gra			-
	Schuko L1	MPXBRM-ERBC3P1N	Ď			
	Schuko L2	MPXBRM-ERBC3P2N	I			
	Schuko L3	MPXBRM-ERBC3P3N				
		SN-Z01				
	1xTemp.					
	3xTemp.	SN-Z02			•	•
	3xT. + 1xHum	SN-Z03			•	-
ensors	1xTemp. Mod.	SN-T			•	•
	Temp/Hum Mod.	SN-TH			•	•
	2xDoor Mod.	SN-2D			•	•
	3xInput Mod.	SN-3C				
External Display		RPCBDM-1000	<b>\</b>	•	•	•





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#### Vertiv™ MPX™ - Input Module/Power Supply

#### **Elementary and Monitored type**

- The MPX PEM is fixed on the MPX PRC and provides the connection to the power supply.
- Fixed-connection cable; 3 m long.
- With IEC60309 plug, 1Ph/N/PE 6h blue, 3Ph/N/PE 6h red.

#### Monitored type

- The MPX PEM provides connection to the databus for data communication.
- Integrated RPC2 communication card enables remote monitoring and maintenance of the MPX modules.
- Provides the following phase-input data: voltage, current, effective power, consumption and frequency.
- Power alarm functions for individual phases and their operating status are also supported.
- Further important features: Three displays inform the user on the current status of each individual input. An acoustic alarm is activated at certain overload conditions.
- The communication card centralizes the MPXs local and remote administration.
- Serves as the connection point for versatile support options and devices, such as the display module (RPC BDM), various sensors and connection to other MPX™ or MPH2™ systems, for example.
- Has RJ-45 ports for all connections (except USB port) and does not require any special cabling.

#### Technical Data Interfaces:

- RJ-45 LAN port (10/100 MBit) for local network (LAN) connection via an Ethernet cable.
- Expansion / administration port for local configuration using a computer / laptop, for creating a link-up of several PDUs (MPX or MPH).
- Serial interface RS232.
- Display port for connecting the RPC BDM (display module).
- External sensor port for connecting optional sensors.
- Remote management: Onboard Web interface, CLI, SNMPv1,2,3, SSH, Telnet Syslog, compatible with Avocent ACS, UMG & MPU, Vertiv SiteScan, DSView, Rack Power Manager, Vertiv Nform & Vertiv Trellis as well as Nagios or other management software

- program
- Authentication: local, remote: Active Directory, LDAP, TACACS, Radius, Kerberos.
- Encryption: MD5, AES, DES.

#### Material / Finish

- Enclosure: aluminum.
- Cover: sheet steel.
- Power contacts: silver-plated.
- Databus contacts: gold-plated (only Monitored type)

#### Dimensions

- Width: 75 mm.
- Height: 65 mm.
- Feed cable: 3 m.

#### Color

- Enclosure: aluminum/RAL7021 dark-gray

#### Certification

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Scope of delivery

- 1x MPX PEM power input module.
- Including connection cable.
- Including RPC2 communication card (only Monitored type).

L			Feed	Load rating	Туре	Order No.	
220	75	65	Fixed	230 VAC, max. 32 A	Elementary	MPXPEM-EHAEXQ30	1 unit
220	75	65	Fixed	230/400 VAC, max. 16 A	Elementary	MPXPEM-EHAEXT30	1 unit
220	75	65	Fixed	230/400 VAC, max. 32 A	Elementary	MPXPEM-EHAEXR30	1 unit
266	75	65	Fixed	230/400 VAC, max. 63 A	Elementary	MPXPEM-EHBEXZ30	1 unit
220	75	65	Fixed	230VAC,max.16A	Monitored	MPXPEM-EHABXS30	1 unit
220	75	65	Fixed	230 VAC, max. 32 A	Monitored	MPXPEM-EHABXQ30	1 unit
220	75	65	Fixed	230/400 VAC, max. 16 A	Monitored	MPXPEM-EHABXT30	1 unit
220	75	65	Fixed	230/400 VAC, max. 32 A	Monitored	MPXPEM-EHABXR30	1 unit
266	75	65	Fixed	230/400 VAC, max. 63 A	Monitored	MPXPEM-EHBBXZ30	1 unit

Dimensions in	n mm:			Conversion:
W = Width	h = Installation height	U = Standard rack unit	kg = Weight	1 mm = 0.03937 inch
H = Height	d = Insertion depth	(1 U = 44.45 mm)		1 kg = 2.2046 pounds
D = Depth	L = Length	UP = Packaging unit		



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#### Vertiv™ MPX™ BRM - Output Module

- The MPX BRM enables the distribution to the individual consumers.
- Each module taps a color-coded phase.
- All modules are protected against overload with a 20 A circuit breaker.
- Modules can be exchanged during operation thereby facilitating user-specific installation without having to shut down the MPX.
- Up to 3 BRM output modules can be installed on a 1,035 mm PRC busbar; up to 6 BRM output modules can be installed on a 1,880 mm PRC busbar.

#### Material / Finish

- Enclosure: aluminum.
- Cover: sheet steel.
- Power contacts: sliver-plated.
- Databus contacts: gold-plated (only type B and R).

#### Dimensions

- Width: 75 mm.
- Height: 65 mm.

#### Color

- Enclosure: aluminum/RAL7021 dark-gray

#### Certification

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2011/65/EG
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Scope of delivery

- 1 x MPX PEM power output module.
- 1x instruction manual.

#### Type E - Elementary

- Module for power distribution via respective outputs.

#### Type B - Branch-Monitored

- Module for power distribution via respective outputs with metering function on module level.
- The MPX BRMs have LED ID indicator which identifies every module with a number.
- Modules are administered in the software.
- Provides the following metered readings: voltage, current, power, apparent power, kWh and power factor.
- Power alarm functions and operating status are supported.

#### Type R - Receptacle Managed:

- Module for power distribution via respective outputs with metering function on module level and output level.
- The MPX BRMs have LED ID indicator which identifies every module with a number.
- Modules are administered in the software.
- Provides the following metered readings: voltage, current, power, apparent power, kWh, frequency, power factor and crest factor.
- Power alarm functions and operating status are supported.
- Individual outputs can be switched on and off remotely.

L	n	Outputs	Load rating per output	Phase tap	Туре	Order No.	UP
266	7	IEC320 C 13	10 A	L1	Е	MPXBRM-EEBC7N1N	1 unit
266	7	IEC320 C 13	10 A	L2	Е	MPXBRM-EEBC7N2N	1 unit
266	7	IEC320 C 13	10 A	L3	Е	MPXBRM-EEBC7N3N	1 unit
266	4	IEC320 C 19	16 A	L1	Е	MPXBRM-EEBC401N	1 unit
266	4	IEC320 C 19	16 A	L2	Е	MPXBRM-EEBC402N	1 unit
266	4	IEC320 C 19	16 A	L3	E	MPXBRM-EEBC403N	1 unit
266	3	Schuko CEE 7/4	16 A	L1	Е	MPXBRM-EEBC3P1N	1 unit
266	3	Schuko CEE 7/4	16 A	L2	Е	MPXBRM-EEBC3P2N	1 unit
266	3	Schuko CEE 7/4	16 A	L3	Е	MPXBRM-EEBC3P3N	1 unit
266	4	Switzerland T23	16 A	L1	Е	MPXBRM-EEBC4S1N	1 unit
266	4	Switzerland T23	16 A	L2	Е	MPXBRM-EEBC4S2N	1 unit
266	4	Switzerland T23	16 A	L3	Е	MPXBRM-EEBC4S3N	1 unit
266	9	GST18 3-pole	16 A	L1	Е	MPXBRM-EEBC9U1N	1 unit
266	9	GST18 3-pole	16 A	L2	Е	MPXBRM-EEBC9U2N	1 unit
266	9	GST18 3-pole	16 A	L3	Е	MPXBRM-EEBC9U3N	1 unit
266	6	IEC320 C 13	10 A	L1	В	MPXBRM-EBBC6N1N	1 unit
266	6	IEC320 C 13	10 A	L2	В	MPXBRM-EBBC6N2N	1 unit
266	6	IEC320 C 13	10 A	L3	В	MPXBRM-EBBC6N3N	1 unit
266	4	IEC320 C 19	16 A	L1	В	MPXBRM-EBBC401N	1 unit
266	4	IEC320 C 19	16 A	L2	В	MPXBRM-EBBC402N	1 unit
266	4	IEC320 C 19	16 A	L3	В	MPXBRM-EBBC403N	1 unit
266	3	Schuko CEE 7/4	16 A	L1	В	MPXBRM-EBBC3P1N	1 unit
266	3	Schuko CEE 7/4	16 A	L2	В	MPXBRM-EBBC3P2N	1 unit
266	3	Schuko CEE 7/4	16 A	L3	В	MPXBRM-EBBC3P3N	1 unit
266	6	IEC320 C 13	10 A	L1	R	MPXBRM-ERBC6N1N	1 unit
266	6	IEC320 C 13	10 A	L2	R	MPXBRM-ERBC6N2N	1 unit
266	6	IEC320 C 13	10 A	L3	R	MPXBRM-ERBC6N3N	1 unit
266	4	IEC320 C 19	16 A	L1	R	MPXBRM-ERBC401N	1 unit
266	4	IEC320 C 19	16 A	L2	R	MPXBRM-ERBC402N	1 unit
266	4	IEC320 C 19	16 A	L3	R	MPXBRM-ERBC403N	1 unit
266	3	Schuko CEE 7/4	16 A	L1	R	MPXBRM-ERBC3P1N	1 unit
266	3	Schuko CEE 7/4	16 A	L2	R	MPXBRM-ERBC3P2N	1 unit
266	3	Schuko CEE 7/4	16 A	L3	R	MPXBRM-ERBC3P3N	1 unit



#### Vertiv™ MPX™ PRC - Power Distribution Unit / Communication Bus

- The MPX PRC is the basic element of the MPX power distribution unit.
- Power and data transfer buses are integrated across the entire length of the MP PRC.
- The MPX BRMs (output modules) and the MPX PEM (power input module) are fixed on the MPX PRC and, depending on the type, facilitate the modules' power feed, output, monitoring and management.

#### Material / Finish

- Busbar housing: aluminum.
- Busbars: copper.
- Databus: gold-plated.

#### Dimensions

- Width: 68 mm.
- Height: 24 mm.

#### Color

- Enclosure: aluminum.

#### Approvals

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Load rating

- Max. current: 3 x 63 A.
- Nominal voltage (L-N / L-L): 230 / 400 VAC.

#### Scope of delivery

- 1 x MPX PRC power distribution unit / communication bus.
- 1x mounting kit.

DOS20153

L				Model	Order No.	
1035	68	24	23	1 PEM (220 mm) + 3 BRM	MPXPRC-V1035XXX	1 unit
1880	68	24	42	1 PEM (220/266 mm) + 6 BRM	MPXPRC-V1880XXX	1 unit
2144	68	24		1 PEM (220/266 mm) +7 BRM	MPXPRC-V2146XXX	1 unit

DOS20153

#### Vertiv MPX™/MPH™/MPH2™/IMS™ – Sensors

- These sensors are designed for tool-less installation in a Knürr Miracle / DCM rack, and is also compatible with all other rack types.
- "Fixed" type sensors are attached to a cable.
- "Modular" type sensors can be connected to the delivered cable.
- Plugged into the RPC-1000 or RPC2 communication card.
- Several sensors can be connected in rows.
- Automatically displayed in the MPX/MPH/MPH2/IMS software.
- Temperature measurement range: 5 60° C.
- Accuracy: ± 0.5° C.
- Humidity measurement range: 10 95%.
- Accuracy: ± 3.5 %.

#### Not

Sensors are not required for operating the MPX or MPH, MPH2, IMS. However, a communication card is needed.

#### Scope of delivery

- 1 x sensor with connection cable.
- 1 x instruction manual.

3660         Fixed         Temperature sensor, single         SN-Z01         1 unit           5180         Fixed         Temperature sensor, triple         SN-Z02         1 unit	
5180 Fixed Temperature sensor triple SN-702 1 unit	
Time Temperature sensor, triple	
5180 Fixed Temperature sensor, triple + humidity sensor, single <b>SN-Z03</b> 1 unit	
2000 Modular Temperature sensor, single SN-T 1 unit	
2000 Modular Temperature sensor, single + humidity sensor, single <b>SN-TH</b> 1 unit	
2000 Modular 2 x door contact - input module* SN-2D 1 unit	
2000         Modular         3 x digital input         SN-3C         1 unit	

<sup>\*</sup> Suitable door contact switch: Order no.: 06.108.115.9



DOS20153

#### **RPC BDM - 1000 Display Module**

- Provides the local display of the monitored data for all connected MPX/MPH/MPH2/IMS systems.
- Operated with a navigation switch.
- Connected via a cable with the RPC, enabling the user to place the displays where they can be easily read in the given local space conditions.
- An individual display can be used for up to four MPX/ MPH/MPH2/IMS PDUs, which are all connected in a PDU array.

#### Note

The display module is not required when operating the MPX or MPH, MPH2, IMS.

However, a communication card is needed.

#### Scope of delivery

- 1 x RPCBDM-1000 display module.
- 1 x connection cable 2 m.
- 1x mounting kit.

Order No.	
RPCBDM-1000	1 unit



DOS20444

#### **BRM Power-Distribution Cable-Holder Clip Set**

- Cable clips provide strain relief for the feed lines of the network equipment.
- Cable clips are suitable for most IEC-C13 socket plugs with a raised edge. (Must be checked for suitability).
- Cable clips are sold in sets of 18 units.
- Scope of delivery
  - 1 x cable holder set (18 units).

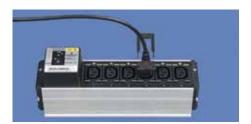
#### How supplied

- In sets.

#### Note

- Optimal function only with cable connector 04.000.051.9.
- Can only be used with MPXBRM-EBBC6NxN and MPXBRM-ERBC6NxN (x = 1,2,3).

Order No.	
03.910.216.9	1 unit



395

#### SafetySleeve™ Cable Protection IEC C19

- SafetySleeves protect the feed lines of the network equipment.
- They can be used on all C19 cables and fit onto all PDUs.

#### Material / Finish

– PVC, black.



DOS20493

Model	Order No.	
C20 plug in C19 socket	03.910.212.9 001	20 unit



DOS20494

#### SafetySleeve™ Kabelausziehschutz IEC C13

- SafetySleeves protect the feed lines of the network equipment.
- They can be used on all C13 cables and fit onto all PDUs.

#### Material / Finish

– PVC, black.

Model	Order No.	UP
C14 plug in C13 socket	03.910.213.9 001	50 unit





RPC2-KIT

#### RPC2 Communication Module for Vertiv™ MPX, MPH2 and IMS

- For retrofitting to existing MPX , MPH and IMS products.
- The communication card can be upgraded during operation.

#### **Technical Data Interfaces**

- RJ-45 LAN port (10/100 MBit) for local network (LAN) connection via an Ethernet cable.
- Expansion / administration port for local configuration using a computer / laptop, for creating a link-up of several PDUs (MPX, MPH2 or IMS).
- Serial interface RS232.
- Display port for connecting the RPC BDM (display module).

- External sensor port for connecting optional sensors.
- Remote management: Onboard Web interface, CLI, SNMPv1,2,3, SSH, Telnet Syslog, compatible with Avocent ACS, UMG & MPU, Vertiv SiteScan, DSView, Rack Power Manager, Vertiv Nform & Vertiv Trellis as well as Nagios or other management software programs.
- Authentication: local, remote: Active Directory, LDAP, TACACS, Radius, Kerberos.
- Encryption: MD5, AES, DES.

RPC2-KIT 1 unit	

#### Easy Integration into DCIM Systems

The rack PDUs Vertiv™ MPH2™ and MPX™ as well as the in-line metering system MPXIMS™ can be managed both locally and remotely.

- Power data and sensor data are recorded
- Conventional standardized protocols are used to ensure secure data transfer, management, and authentication.

As such, the products can be easily integrated into any existing network and any system architecture.

#### **Flexible Local or Remote Management**

Integrated standard displays on the DIS Rack PDU I and MPH2™ show all the key information required at the rack.

**The optional local display BDM** for the MPH2<sup>TM</sup> or MPX<sup>TM</sup> can be mounted in different locations depending on where it can be read most easily.

**Remote communication** thanks to the modular hotswappable **RPC2™ card** ensures seamless expansion options and easy servicing

- Support for up to four PDUs within a single rack PDU Array™: Minimizes the number of IP addresses required.
- Support for up to ten ambient sensors: Consolidates power and environment monitoring at rack level.
- Support for Web UI and CLI, with SSL and SSH: Windows, Linux, and network administrators can use their preferred form of communication with the rack PDU.
- Support for all conventional remote authentication and encryption protocols: Products can be seamlessly integrated into an existing security infrastructure.
- Support for SNMP v1, v2, and v3: Allows for secure communication via network management systems.
- Support for IPv4 and IPv6: Future-proof IP support for rack PDUs.
- Data logging: All data is saved automatically, ensuring easy troubleshooting without the need for additional external management software.
- "One-touch" configuration with USB stick directly on the device.

**Power management** with the following functions:

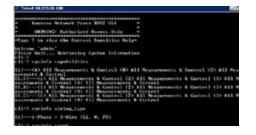
- Snapshot of all electrical parameters at output, group, phase, and general level.
- Snapshot of the status and the measured values from the ambient sensor.
- Threshold configuration, alerts, and messages.
- Control of individual outputs and groups.
- Status information and configuration of all outputs.
- Network management settings.

To enable **central management** of all rack PDUs within a data center, the following software packages are available:

- Vertiv Avocent Rack Power Manager, which includes access and control functions to easily manage and monitor your PDUs.
- Vertiv Trellis Express, which provides a comprehensive view of the devices in the data center.
- Vertiv Sitescan.
- Vertiv Nform, which provides an overview of the health status of relatively small to medium data centers.

**Rack Power Manager** boasts state-of-the-art monitoring functions and allows intelligent server grouping over multiple racks. You also benefit from customized reports and scheduled standard reports, and have the option to define thresholds for real-time alarms. As such, you obtain high-quality information about the power supply infrastructure of your data center, thereby allowing you to make full use of the investment in PDUs.

- Power costs are measured and monitored.
- Historical data is checked in capacity and consumption reports.









The Vertiv™ *Trellis*™ platform is a pioneering DCIM innovation from Vertiv. It not only reduces IT risks but also increases operational efficiency, meaning it solves current problems and prepares you for the future.

The real-time visualization, monitoring of the power supply, and mobile access provided by the Vertiv *Trellis* platform allow you to:

- reduce inefficiencies without interrupting current processes.
- postpone investments as you make better use of existing resources, thereby improving the operating profit.
- improve Service Level Agreements with complete transparency throughout the infrastructure.
- gain a better insight into the data center and thus improve overall efficiency.

Integration into the clear, easy-to-install Vertiv Nform™ status monitoring software ensures the following:

- Rack PDUs are part of a consolidated monitoring solution for data center infrastructure.
- Virtually any component in critical support equipment can be monitored.
- Alerts and automatic actions in the event of a fault.
- Event management.

Integration into the scalable Vertiv SiteScan® building

infrastructure management software ensures the following:

- Rack PDUs are part of a consolidated monitoring solution for data center infrastructure.
- Virtually any component in critical support equipment can be monitored and controlled.
- Data analysis and trend reports.
- Event management.

#### Make the Most of Your Rack PDU Investment

The rack PDUs MPX™, MPH2™, and MPXIMS™ can be fully integrated into the industry-leading KVM systems, serial consoles, and infrastructure management systems from Vertiv.

Integration into Avocent® Advanced Console Server,
MergePoint™ Unity KVM Switches and Universal
Management Gateway Appliances offers the following
advantages:

- Rack PDUs are integrated into the out-of-band management solution.
- Rack PDUs become part of a consolidated access and control solution.
- The number of IP addresses required for managing the rack PDUs is minimized.

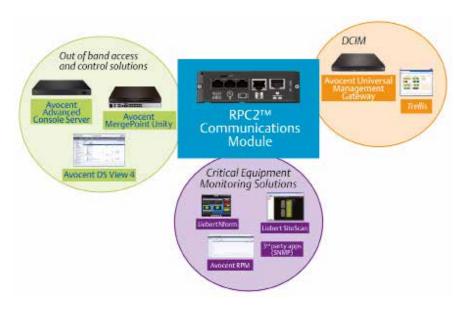
The software provides secure, centralized out-of-band management of all connected  $\ensuremath{\mathsf{IT}}$  and network

devices in complex and geographically dispersed data centers.

DSView4 and rack PDUs together ensure:

- Consolidated access to server control and the related access control.
- Easy assignment of IT equipment to the relevant rack PDU outputs.

Integration into the management software **Avocent DSView™ 4**, in which all data center management functions are compiled on a consolidated interface, allows for seamless control of the data center for 24/7 operation.



# Vertiv™ MPH2™ - Managed Rack PDU

#### Monitoring and Control

The Vertiv MPH2 Managed Rack PDU is a power supply system with monitoring and control functions. The Vertiv MPH2 offers outstanding features such as easy rack-integration and management architecture as well as optimum availability and energy efficiency.

Four Vertiv MPH2™ versions are available:

Model/functions	Vertiv MPHR	Vertiv MPHM	Vertiv MPHC	Vertiv MPHB
Input / Group measurement		•	•	•
Output measurement		•		
Output switching	•			

#### Benefits of Vertiv MPH2™

- Monitors several parameters with defined thresholds and alarm tools
- Monitors and controls individual outputs and/or load and appliance groups.
- A variety of measurements allow you to predict failing conditions before they occur and proactively manage connected equipment for maximum uptime.
- Energy and power metering maximize the data center power and cooling infrastructure.
- Lowest power consumption of all switched-rack PDUs lowers power costs and thermal load.
- Up to four rack Vertiv MPH2 PDUs can be connected in a Rack PDU Array™ thereby consolidating user-specific IP connections and equipment monitoring.

#### **Developed for critical environments**

- Industry-leading operating temperature of up to 60° C suitable for high temperatures inside racks.
- Bistable relays ensure basic power supply even when shortfalls occur elsewhere.
- Accurate voltage and current metering up to outlet level with ±1 % tolerances deliver reliable results.
- Extensive alarm functions including notification when an overload occurs in individual groups.
- Monitoring of environment conditions (temperature, humidity and input contacts) with alerts and alarms.
- Notification upon failure or if loads are removed in individual racks.



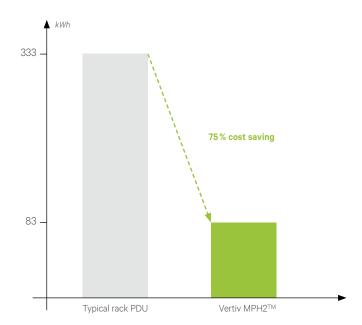


#### Vertiv MPH2 savings for a typical data center

	Typical rack PDU with 24 outputs	Vertiv MPH2
Power consumption of PDU (in Watt)	20	5
Annual energy consumption of PDU (kWh)	176	44
Total proportion of the data center's energy consumption (kWh)*	333	83
Energy saving	75%	

Compared with a Switched Rack-PDU model for a typical data center with a 19 PUE.

<sup>\*</sup> according to Energy Logic calculations





# 9. 5. 5. 5. 6. 6

#### **INPUT POWER**

- 16 to 32 A (EU).
- Single-phase and three-phase.

#### **OUTPUT DISTRIBUTOR**

- IEC C13 and IEC C19.
- Combination systems.

#### MODULARITY

- Communication card.
- External display.
- External sensors.

#### **MONITORING**

- Three various levels: Input level, group level, output level
- Temperature and humidity.
- Door contacts and potential-free input contacts.

#### **REMOTE CONTROLLED SOCKETS**

Socket level.

#### Vertiv™ MPH2™

#### Benefits

#### **Highest availability levels**

- Modular communications card; can be replaced during operation.
   This simplifies maintenance and increases the level of availability.
- Bistable relays in switchable designs; the server's power supply is ensured even during outages.
- Software-controlled overload protection affected outputs are switched off before the advance fuse is activated.
- Additional metering of the neutral conductor and of the crest factor; possible faults that cause switch-off are detected in advance.

#### Leading technology in many areas

- Operating temperatures of up to 60 °C allow secure operation in the warm aisle.
- Metering accuracy of ± 1% ensures reliable measurement results.
- Power losses of approx. 5 W, even in switchable models, reducing electricity costs and minimizing the thermal load.

#### **Industry-leading management properties**

- An integrated local display and an optional external display facilitates flexible local management.
- Onboard web interface and CLI/SSH interface; suitable for both Windows and Linux administration.
- A variety of authentication options and encrypted protocols ensure integration into Enterprise Security architectures.
- SNMPv3 and IPv6 support so that current requirements, particularly from the public sector, can be satisfied.

#### Simple integration into Vertiv solutions

- Can be delivered pre-installed in Knürr racks to save time and costs during installation in the data center.
- Serial integration into Avocent UMG, ACS and MPU guarantees redundant management access to the MPH2.
- Integration into Vertiv software solutions; the MPH2 is an integral part of a comprehensive DCIM solution with monitoring and control functions.



#### Colored clamps:

Colored labeling of supply.



#### Communications module (RPC2™):

Offers extendable interfaces for network communication, sensors and local display.



#### BDM™ local display module

Extended diagnostic functionality; user-friendly display. Features include detailed information about alerts and specific labeling for outputs.





#### Integrated display:

Provides easy access to important information on the rack

#### Ultra-flat circuit breakers:

Compact construction; minimizes space requirements in the rack.





#### Special tool-less Knürr DCM rack fixture:

Lowers installation costs and extra space in rack for cables and other components.



#### Connection cable with locking mechanism

 $\label{prevents} \mbox{ Prevents IT cables from being accidentally disconnected.}$ 



#### SN sensors:

Consolidates environmental monitoring of temperature, humidity and potential-free input contacts with the power supply at rack level.



#### Flexible network cable input:

Simplifies installation in the rack PDU.



#### Cable and fixed wiring options:

Flexible power distribution; input-cable can be connected locally.

#### Vertiv™ MPH2™

- The Vertiv MPH2 is a power distribution unit for IT racks which provides metering
  of electrical values. Depending on the model, individual outputs can also be remotecontrolled.
- The integrated RPC2 communications card allows you to connect up to 4 Vertiv MPH2 / MPX™ units as well as monitor and maintain all connected units remotely. Up to 10 sensors (temperature, air humidity, door contacts as well as potential-free input contacts) can be connected.
- The Vertiv MPH2 unit has an integrated display. In addition, the optional external RPCBDM-1000 display module can easily be connected and mounted on the rack.
- Special cables with locking mechanisms can be connected to the outputs.
- Depending on the model, the connecting cable for the MPH2 is attached to the housing (cable length 3 m), also permitting a connecting cable can be connected on site (model with connection unit).
- Remote management: Onboard Web Interface, CLI, SNMPv1,2,3, SSH,
   Telnet, integratable into Avocent ACS, UMG & MPU, DSView, Rack Power Manager, Vertiv Nform & Vertiv Trellis as well as Nagios or other management software programs.
- Authentication: local, remote: active directory, LDAP, TACACS, Radius, Kerberos. Encryption: MD5, AES, DES.
- Measurement parameters: Current (A), voltage (V), real power (W), apparent power (VA), consumption (kWh), power factor, frequency and crest factor (only tapes M and R).
   Accuracy: ±1% (V, A).

#### Vertiv MPH2™ models

- Vertiv MPH2™ B Metering per phase and per group (only models with >16 A input power).
- Vertiv MPH2™ C Metering per phase and per group (only models with >16 A input power). Each output can also be individually switched remotely.
- Vertiv MPH2™ M Metering per phase and per group (only models with >16 A input power) and per output.
- Vertiv MPH2™ R Metering per phase and per group (only models with >16 A input power) and per output. Each output can also be individually switched remotely.

#### Material / finish / color

Closed housing, aluminum profile, finely textured powder-coated top (RAL 7021),
 Vampamid 6 0024 V0 (UL94) recyclable plastic parts, finely textured and colored (RAL 9005).

#### Mechanical dimensions

- Vertical models:
- Width x Depth x Length (mm): 56 x 50 x (see table).
- Horizontal models:
- Width x Depth x Length (mm): 482,6 (440) x 250 x 44.

#### Certification

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Scope of delivery

- MPH2™ rack PDU.
- Standard mounting bracket.
- Safety instructions.
- Quickstart guide.



# Vertiv<sup>™</sup> MPH2<sup>™</sup> Types **for Europe**Vertical models

Model/functions	Vertiv MPHR	Vertiv MPHM	Vertiv MPHC	Vertiv MPHB
Input / Group measurement	•	•	•	•
Output measurement		•		
Output switching	•			

Туре	Input \	/alues	Input Connector	Οι	ıtputs	Length	Order Number
	Voltage	Current		C13	C19	(mm)	
3	230V	16A	C20 inlet	17	2	916.5	MPHB3241
	230V	16A	C20 inlet	21		916.5	MPHB3141
	230V	16A	C20 inlet	30	6	1736.5	MPHB1241
	230V	16A	IEC 60309 16A 1P+N+G	17	2	916.5	MPHB3242
	230V	16A	IEC 60309 16A 1P+N+G	21		916.5	MPHB3142
	230V	16A	IEC 60309 16A 1P+N+G	30	6	1736.5	MPHB1242
	230V	32A	IEC 60309 32A 1P+N+G	30	6	1736.5	MPHB1243
	230V	32A	Connection unit	30	6	1736.5	MPHB1260
	230/400V	3 x 16A	IEC 60309 16A 3P+N+G	30	6	1736.5	MPHB1244
	230/400V	3 x 32A	IEC 60309 32A 3P+N+G	42		1826.5	MPHB1545
	230/400V	3 x 32A	IEC 60309 32A 3P+N+G	18	12	1826.5	MPHB1345
	230/400V	3 x 32A	IEC 60309 32A 3P+N+G	30	6	1826.5	MPHB1245
	230/400V	3 x 32A	Connection unit	42		1826.5	MPHB1562
	230/400V	3 x 32A	Connection unit	18	12	1826.5	MPHB1362
	230/400V	3 x 32A	Connection unit	30	6	1826.5	MPHB1262
	230V	16A	C20 inlet	8		916.5	MPHC3341
	230V	16A	C20 inlet	16		1004	MPHC3141
	230V	16A	C20 inlet	18	6	1736.5	MPHC1141
	230V	16A	C20 inlet	24		1736.5	MPHC1241
	230V	16A	IEC 60309 16A 1P+N+G	18	6	1736.5	MPHC1142
	230V	16A	IEC 60309 16A 1P+N+G	24	0	1736.5	MPHC1242
	230V	16A	IEC 60309 16A 1P+N+G	16		1004	MPHC3142
	230V	32A	IEC 60309 32A 1P+N+G	18	6	1736.5	MPHC1143
	230V	32 A	IEC 60309 32 A 1P+N+G	24		1736.5	MPHC1243
	230V	32 A	Connection unit	18	6	1736.5	MPHC1160
	230V	32 A	Connection unit	24		1736.5	MPHC1260
	230/400V	3 x 16 A	IEC 60309 16 A 3P+N+G	18	6	1736.5	MPHC1144
	230/400V	3 x 16 A	IEC 60309 16 A 3P+N+G	24		1736.5	MPHC1244
	230/400V	3 x 16 A	Connection unit	18	6	1736.5	MPHC1161
	230/400V	3 x 16 A	Connection unit	24		1736.5	MPHC1261
	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	18	6	1736.5	MPHC1145
	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	24		1736.5	MPHC1245
	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	6	12	1736.5	MPHC1345
	230/400V	3 x 32 A	Connection unit	18	6	1736.5	MPHC1162
	230/400V	3 x 32 A	Connection unit	24		1736.5	MPHC1262
	230/400V	3 x 32 A	Connection unit	6	12	1736.5	MPHC1362
	230V	16 A	C20 inlet	8		916.5	MPHM3341
	230V	16 A	IEC 60309 16 A 1P+N+G	8		916.5	MPHM3342
	230V	16 A	C20 inlet	16		1004	MPHM3141
	230V	16 A	C20 inlet	18	6	1736.5	MPHM1141
	230V	16 A	C20 inlet	24		1736.5	MPHM1241
	230V	16 A	IEC 60309 16 A 1P+N+G	18	6	1736.5	MPHM1142
	230V	16 A	IEC 60309 16 A 1P+N+G	24		1736.5	MPHM1242
	230V	16 A	IEC 60309 16 A 1P+N+G	16		1004	MPHM3142
	230V	32 A	IEC 60309 32 A 1P+N+G	18	6	1736.5	MPHM1143
	230V	32 A	IEC 60309 32 A 1P+N+G	24	U	1736.5	MPHM1243
	230V	32 A	Connection unit	18	6	1736.5	MPHM1160
	230V	32 A	Connection unit	24		1736.5	MPHM1260
	230/400V	3 x 16 A	IEC 60309 16 A 3P+N+G	18	6	1736.5	MPHM1144
	230/400V	3 x 16 A	IEC 60309 16 A 3P+N+G	24		1736.5	MPHM1244

Туре	Input \	/alues	Input Connector	Outputs		Length	Order Number
	Voltage	Current		C13	C19	(mm)	
М	230/400V	3 x 16 A	Connection unit	24		1736.5	MPHM1261
М	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	18	6	1736.5	MPHM1145
М	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	24		1736.5	MPHM1245
М	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	6	12	1736.5	MPHM1345
М	230/400V	3 x 32 A	Connection unit	18	6	1736.5	MPHM1162
М	230/400V	3 x 32 A	Connection unit	24		1736.5	MPHM1262
М	230/400V	3 x 32 A	Connection unit	6	12	1736.5	MPHM1362
R	230V	16 A	C20 inlet	8		916.5	MPHR3341
?	230V	16 A	IEC 60309 16 A 1P+N+G	8		916.5	MPHR3342
R	230V	16 A	C20 inlet	16		1004	MPHR3141
R	230V	16 A	C20 inlet	18	6	1736.5	MPHR1141
R	230V	16 A	C20 inlet	24		1736.5	MPHR1241
?	230V	16 A	IEC 60309 16 A 1P+N+G	18	6	1736.5	MPHR1142
R	230V	16 A	IEC 60309 16 A 1P+N+G	24		1736.5	MPHR1242
R	230V	16 A	IEC 60309 16 A 1P+N+G	16		1004	MPHR3142
R	230V	32 A	IEC 60309 32 A 1P+N+G	18	6	1736.5	MPHR1143
₹	230V	32 A	IEC 60309 32 A 1P+N+G	24		1736.5	MPHR1243
₹	230V	32 A	Connection unit	18	6	1736.5	MPHR1160
₹	230V	32 A	Connection unit	24		1736.5	MPHR1260
?	230/400V	3 x 16 A	IEC 60309 16 A 3P+N+G	18	6	1736.5	MPHR1144
?	230/400V	3 x 16 A	IEC 60309 16 A 3P+N+G	24		1736.5	MPHR1244
?	230/400V	3 x 16 A	Connection unit	18	6	1736.5	MPHR1161
?	230/400V	3 x 16 A	Connection unit	24		1736.5	MPHR1261
?	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	18	6	1736.5	MPHR1145
?	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	24		1736.5	MPHR1245
?	230/400V	3 x 32 A	IEC 60309 32 A 3P+N+G	6	12	1736.5	MPHR1345
?	230/400V	3 x 32 A	Connection unit	18	6	1736.5	MPHR1162
?	230/400V	3 x 32 A	Connection unit	24		1736.5	MPHR1262
?	230/400V	3 x 32 A	Connection unit	6	12	1736.5	MPHR1362

# Hotizontal models

Туре	Input \	Values	Input Connector	Ou	tputs	Order Number
	Voltage	Current		C13	C19	
В	230V	16 A	C20 inlet	12		MPHB2141
В	230V	16 A	C20 inlet	8	2	MPHB2341
3	230V	32 A	IEC 60309 32A 1P+N+G	12		MPHB2143
3	230V	32 A	IEC 60309 32A 1P+N+G	8	2	MPHB2343
3	230/400V	3 x 16 A	IEC 60309 16A 3P+N+G	12		MPHB2144
3	230/400V	3 x 16 A	IEC 60309 16A 3P+N+G	2	6	MPHB2244
3	230/400V	3 x 32 A	IEC 60309 32A 3P+N+G	2	6	MPHB2245
Л	230V	16 A	C20 inlet	9		MPHM2141
И	230V	16 A	C20 inlet	6	2	MPHM2441
Л	230V	32 A	IEC 60309 32A 1P+N+G	9		MPHM2143
Л	230V	32 A	IEC 60309 32A 1P+N+G	6	2	MPHM2443
Л	230/400V	3 x 16 A	IEC 60309 16A 3P+N+G	9		MPHM2144
Л	230/400V	3 x 16 A	IEC 60309 16A 3P+N+G	2	6	MPHM2344
Л	230/400V	3 x 32 A	IEC 60309 32A 3P+N+G	2	6	MPHM2345
?	230V	16 A	C20 inlet	9		MPHR2141
?	230V	16 A	C20 inlet	6	2	MPHR2441
?	230V	32 A	IEC 60309 32A 1P+N+G	9		MPHR2143
?	230V	32 A	IEC 60309 32A 1P+N+G	6	2	MPHR2443
?	230/400V	3 x 16 A	IEC 60309 16A 3P+N+G	9		MPHR2144
	230/400V	3 x 16 A	IEC 60309 16A 3P+N+G	2	6	MPHR2344
	230/400V	3 x 32 A	IEC 60309 32A 3P+N+G	2	6	MPHR2345





DOS20153

#### Vertiv™ MPX™/Vertiv MPH™/Vertiv MPH2™/IMS™ - Sensors

- These sensors are designed for tool-less installation in a Knürr Miracle / DCM rack, but is also compatible with all other rack types.
- "Fixed" type sensors are attached to a cable.
- "Modular" type sensors can be connected to the delivered cable.
- Plugged into the RPC-1000 or RPC2 communication card.
- Several sensors can be connected in rows.
- Automatically displayed in the MPX/MPH/MPH2/IMS software.
- Temperature measurement range: 5  $55^{\circ}$  C.
- Accuracy: ± 0.5° C.
- Humidity measurement range: 10 95%.
- Accuracy: ± 3.5 %.

#### Note

The sensors are not required for operating the MPX or MPH, MPH2, IMS. However, a communication card is needed

#### Scope of delivery

- 1 x sensor with connection cable.
- 1 x instruction manual.

Cable length	Туре	Model	Order No.	UP
3660	Fixed	Temperature sensor, single	SN-Z01	1 unit
5180	Fixed	Temperature sensor, triple	SN-Z02	1 unit
5180	Fixed	Temperature sensor, triple + humidity sensor, single	SN-Z03	1 unit
2000	Modular	Temperature sensor, single	SN-T	1 unit
2000	Modular	Temperature sensor, single + humidity sensor, single	SN-TH	1 unit
2000	Modular	2 x door contact - input module*	SN-2D	1 unit
2000	Modular	3 x digital input	SN-3C	1 unit

<sup>\*</sup> Suitable door contact switch: Order no.: 06.108.115.9

# 12.34 19.3A 12.34 19.3A

DOS20153

#### **Liebert RPC BDM - 1000 Display Module**

- Provides the local display of the monitored data for all connected MPX/MPH/MPH2/IMS systems.
- Operated with a navigation switch.
- Connected via a cable with the RPC, enabling the user to place the displays where needed in the given local space conditions.
- An individual display can be used for up to four MPX/MPH/MPH2/IMS PDUs, which are all connected in a PDU array.

#### Note

The display module is not required for operating the MPX or MPH, MPH2, IMS. However, a communication card is needed.

#### Scope of delivery

- 1 x RPCBDM-1000 display module.
- 1 x connection cable 2 m.
- -1x mounting kit.

Order No.	
RPCBDM-1000	1 unit



DOS20495



# SafetyLock™ Connection Cable IEC C13 EU

- Connection cables have integrated protection against accidental disconnection.
- For straight locking from C14 to C13.
- Locking cables are sold in sets of 9 units.

#### Technical data

- Standard: IEC 60320.
- Load rating: 250 Vac/10 A.
- Operating temperature: -25° C  $\sim$  +70° C.
- Extraction force with locking function: up to 120 N.
- Electric power cable: H05VV-F 3G 1.0 mm2.
- Flame retardance: Plug: UL 94V-2 or better; cable: UL VW-1, IEC60332-1. Cat F2.

#### Certification

- ENEC.
- VDE.
- CB scheme.
- RoHS compliant.

#### Color

- Black/white.
- Other colors available upon request.

#### Scope of delivery

- 9 x locking cables.

#### How supplied

- In sets.



DOS20497

#### 0.5 m Black 03.951.450.0,001 9 unit Black 03.951.450.0,002 1.5 m Black 03.951.450.0,003 9 unit White 0.5 m 03.951.451.0,001 9 unit 1.0 m White 03.951.451.0,002 9 unit 1.5 m White 03.951.451.0,003 9 unit



DOS20498

Technical data

- Standard: IEC 60320.

accidental disconnection.

- For straight locking from C20 to C19.

- Locking cables are sold in sets of 6 units.

- Load rating: 250 Vac/16 A.
- Operating temperature: -25° C  $\sim$  +70° C.
- Extraction force with locking function: up to 120 N.

- Connection cables have integrated protection against

SafetyLock Connection Cable IEC C19 EU

- Electric power cable: H05VV-F 3G 1.5 mm2.
- Flame retardance: Plug: UL 94V-2 or better; cable: UL VW-1, IEC60332-1. Cat F2.

#### Approvals

- ENEC.
- VDE.
- CB scheme.
- RoHS compliant.

#### Color

- Black/white.
- Other colors available upon request.

#### Scope of delivery

- 6 x locking cables.

#### How supplied

- In sets.



DOS20499



L	Model	Order No.	UP
0.5 m	Black	03.951.455.0,001	6 unit
1.0 m	Black	03.951.455.0,002	6 unit
1.5 m	Black	03.951.455.0,003	6 unit
0.5 m	White	03.951.456.0,001	6 unit
1.0 m	White	03.951.456.0,002	6 unit
1.5 m	White	03.951.456.0,003	6 unit



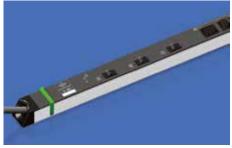


DSC00236

#### SpeedMountKit Vertiv™ MPH2™, Vertiv MPE

- Installation of the rack PDUs MPH2 and MPE without tools in Knürr DCM, Miracle 2 and InstaRack.

Rack type	Rack height	Order No.	UP
DCM / Miracle 2	H2000	039514050001	1 unit
DCM / Miracle 2	H2200	039514050003	1 unit
InstaRack	H2000	039514050002	1 unit
InstaRack	H2200	039514050004	1 unit



Vertiv MPH2 / Vertiv MPE - Color Coding

### Vertiv MPH2 / Vertiv MPE - Color Coding

- Option for color coding power supply A or B.
- Option for color coding the individual phases /groups.
- Installation without tools on MPH2 and MPE.

Design/Color	Order No.	UP
Blue	03.951.476.0.001	20 unit
Red	03.951.476.0.002	20 unit
Yellow	03.951.476.0.003	20 unit
Green	03.951.476.0.004	20 unit
Orange	03.951.476.0.005	20 unit

### Vertiv™ MPE - Rack PDU

Reliable power distribution for data centers

The Vertiv MPE Rack PDU is a power distribution unit for data center applications. It provides all the necessary functions of a rack-based power distribution unit and guarantees reliable power distribution. A broad range of IT devices and other sensitive electrical loads can be connected to it.

# The MPE offers you the highest level of availability for your critical loads.

- Its high operating temperature of up to 60°C makes it suitable for installation in hot aisles (area at the back of the rack).
   20 A overload switch for many 32 A models that prevents the overload switch from triggering prematurely at high temperatures and during start-up peaks.
- Output cable with disconnection protection to prevent the IEC60320 connection cable from being unintentionally disconnected.
- Stable aluminum housing supports the mechanical stability of the housing.
- Extra-large wire cross-sectional area of the input cable; in threephase models, this makes it possible to subject the neutral wire to greater loads in the event that the loads are unbalanced.

# Simple physical and electrical installation helps to keep costs down.

- Vertiv supplies the PDUs preinstalled in racks which saves extra work on-site.
- Flexible cable entry facilitates installation in the rack.
- Very low unit profile even in the overload switch area leaves maximum installation space for other components as well as more space for air supply in the rack.
- Models with fixed connection facilitate customer-side connection of the input cable for special requirements.
   "SpeedMount" function for installation in Vertiv Knürr DCM / InstaRack saves time and money in on-site installation.
- Great model variety with power supply from up to three-phase 32 A and a number of different outputs – including countryspecific with Schuko plug, UK or Switzerland.



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#### **INPUT POWER**

- 16 to 63A (EU).
- Single-phase and three-phase.

#### **OUTPUT DISTRIBUTOR**

- IEC-C13 and IEC-C19, Schuko, UK.
- Combination systems

#### **MODULARITY**

Input cable.





Vertiv MPE1345

#### Vertiv™ MPE - Rack PDU

- The MPE Rack PDU is a power distribution unit for data center applications. It provides all the necessary functions of a rack-based power distribution unit and guarantees reliable power distribution. A broad range of IT devices and other sensitive electrical loads can be connected to it.
- Special cables with a locking function can be connected to the outputs.
- Depending on the model, the connecting cable of the MPH2 is securely attached to the housing (length of input lead: 3 m) or a connection cable can be connected directly on site (models with connection block).
- The PDU can be installed without any tools in Vertiv Knürr racks or other housing systems with the corresponding mountings.
- For 32 A models, the individual groups are protected by a 20 A circuit breaker (hydraulic, magnetic).
- The maximum operating temperature is 60°C (not for MPE-3345-002, this type has 6 x 16A miniature circuit breaker).

#### Material / Surface / Color

 Closed housing, aluminum profile, upper section powder-coated in RAL 7021 fine structure, plastic parts Vampamid 60024 V0 (UL94) recyclable, dyed fine structure RAL 9005.

#### Mechanical dimensions

– Width x depth x length (mm) 56 x 50 x (see table).

#### Standards

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- RoHS Directive 2011/65/EG
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

Input	values	Input plug		Outputs		Lengths	Order No.
Voltage	Current		C13	C19	Schuko	(mm)	
100-240V	16A	C20 inlet	18	3		826,5	MPE-3141
100-240V	16A	C20 inlet	24			826,5	MPE-3241
230V	16A	IEC 60309 16A 1P+N+G	18	3		826,5	MPE-3142
230V	16A	IEC 60309 16A 1P+N+G	24			826,5	MPE-3242
230V	32A	IEC 60309 32 A 1P+N+G	36	6		1736,5	MPE-1243
230V	32A	IEC 60309 32 A 1P+N+G	24	6	3	1736,5	MPE-1543
230V	32A	IEC 60309 32 A 1P+N+G			18	1736,5	MPE-1643
230V	32A	Hardwired	36	6		1736,5	MPE-1260
230V	32A	Hardwired	24	6	3	1736,5	MPE-1560
230V	32A	Hardwired			18	1736,5	MPE-1660
230/400V	3 x 16A	IEC 60309 16 A 3P+N+G	36	12		1736,5	MPE-1144
230/400V	3 x 16A	IEC 60309 16 A 3P+N+G	36	6	3	1736,5	MPE-1444
230/400V	3 x 16A	IEC 60309 16 A 3P+N+G			18	1736,5	MPE-1644
230/400V	3 x 16A	Hardwired	36	12		1736,5	MPE-1161
230/400V	3 x 16A	Hardwired	36	6	3	1736,5	MPE-1461
230/400V	3 x 16A	Hardwired			18	1736,5	MPE-1661
230/400V	3 x 32A	IEC 60309 32A 3P+N+G		6		826,5	MPE-3345-002
230/400V	3 x 32A	IEC 60309 32A 3P+N+G	36	6		1736,5	MPE-1245
230/400V	3 x 32A	IEC 60309 32A 3P+N+G	24	12		1736,5	MPE-1345
230/400V	3 x 32A	IEC 60309 32A 3P+N+G	24	6	3	1736,5	MPE-1545
230/400V	3 x 32A	IEC 60309 32A 3P+N+G			18	1736,5	MPE-1645
230/400V	3 x 32A	IEC 60309 32A 3P+N+G	48			1736,5	MPE-1745
230/400V	3 x 32A	Hardwired	36	6		1736,5	MPE-1262
230/400V	3 x 32A	Hardwired	24	12		1736,5	MPE-1362
230/400V	3 x 32A	Hardwired	24	6	3	1736,5	MPE-1562
230/400V	3 x 32A	Hardwired			18	1736,5	MPE-1662
230/400V	3 x 32A	Hardwired	48			1736,5	MPE-1762





DOS20495



DOS204

#### SafetyLock™ Connection Cable IEC C13 EU

- Connection cables have integrated protection against accidental disconnection.
- For straight locking from C14 to C13.
- Locking cables are sold in sets of 9 units.

#### Technical data

- Standard: IEC 60320.
- Load rating: 250 Vac/10 A.
- Operating temperature: -25° C  $\sim$  +70° C.
- Extraction force with locking function: up to 120 N.
- Electric power cable: H05VV-F 3G 0.75 mm².
- Flame retardance: Plug: UL 94V-2 or better; cable: UL VW-1, IEC60332-1. Cat F2.

#### Certification

- ENEC.
- VDE.
- CB scheme.
- RoHS compliant.

#### Color

- Black/white.
- Other colors available upon request.

#### Scope of delivery

- 9 x locking cables.

#### How supplied

- In sets.



DOS20497

L	Model	Order No.	
0.5 m	Black	03.951.450.0,001	9 unit
1.0 m	Black	03.951.450.0,002	9 unit
1.5 m	Black	03.951.450.0,003	9 unit
0.5 m	White	03.951.451.0,001	9 unit
1.0 m	White	03.951.451.0,002	9 unit
1.5 m	White	03.951.451.0,003	9 unit



DOS20498

#### SafetyLock Connection Cable IEC C19 EU

- Connection cables have integrated protection against
- accidental disconnection.
- For straight locking from C20 to C19.
- Locking cables are sold in sets of 6 units.

#### Technical data

- Standard: IEC 60320.
- Load rating: 250 Vac/16 A.
- Operating temperature: -25° C  $\sim$  +70° C.
- Extraction force with locking function: up to 120 N.
- Electric power cable: H05VV-F 3G 1.5 mm2.
- Flame retardance: Plug: UL 94V-2 or better; cable: UL VW-1, IEC60332-1. Cat F2.

#### Approvals

- ENEC.
- VDE.
- CB scheme.
- RoHS compliant.

#### Color

- Black/white.
- Other colors available upon request.

#### Scope of delivery

– 6 x locking cables.

#### How supplied

– In sets.



DOS20499



DOS2050

L	Model	Order No.	
0.5 m	Black	03.951.455.0,001	6 unit
1.0 m	Black	03.951.455.0,002	6 unit
1.5 m	Black	03.951.455.0,003	6 unit
0.5 m	White	03.951.456.0,001	6 unit
1.0 m	White	03.951.456.0,002	6 unit
1.5 m	White	03.951.456.0,003	6 unit

# Vertiv™ Knürr® DIS Rack PDU® - Basic Rack-PDU

Robust PDUs with useful equipment features

#### **Features**

- Closed sheet-steel extrusions and ideal integration into Knürr rack systems deliver high stability and torsional strength.
- Best possible conductivity: Full-length brass busbar provided with many models
- Double spring contacts for reliable and low contact resistance.

The Vertiv™ Knürr® DIS Rack PDU® product family meets a broad range of data center power distribution requirements for IT applications, computer networking, laboratories and home sector.

Specially configured for the growing number of electronic components in network switching racks or server racks. Available with different accessories, such as circuit breakers, overvoltage protection, mains filter, master-slave function, emergency stop switch, fault-current circuit-breaker, local and remote power metering.





#### INPUT POWER

- Single-phase or three-phase.

  Up to 22 kVA.
- Simple input supply.



#### OUTPUT DISTRIBUTOR

- NEMA 5-20R single-phase, IEC C13 and C19,
- Schuko, France, Switzerland.



#### MODULARITY

More connectivity with expansion



#### FORM FACTOR

- Vertical mounting (0 U).
- Rack installation.
- Workstation mounting.



#### LOCAL MONITORING

Fixed display.



#### REMOTE MONITORING

■ Secure Web and SNMP interfaces with Vertiv Nform.



#### OVERLOAD PROTECTION

SCircuit breakers/fuses per branching cable/ output as required.



#### Benefits

- Optimal phase distribution across the entire rack with color-coded identification of the individual phases.
- Up to 48 different plug options per PDU: shortens the cable distance between the PDU and the consumer
- One of the most compact PDUs on the market: measures only 44.4 x 45.5 mm which saves space even on a 600 mmwide rack.
- Simple and quick installation on the rack extrusion: reduces installation and wiring costs.





#### Highest possible security and availability with:

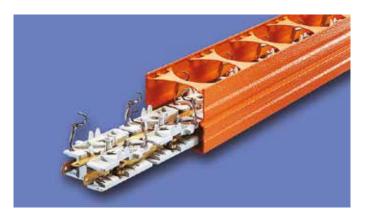
- Closed sheet-steel extrusions that deliver high stability and torsional flexibility.
- Extensive certification compliant with the international Standard.
- Double spring contacts for reliable and low contact resistance.
- Unbalanced load monitoring prevents feed-cable overload of 3-phase feed (only DIS Rack PDU® versions M and RM).
- Optimal load monitoring for server installation (only DIS Rack PDU versions D and I).

#### Maximum flexibility attained due to:

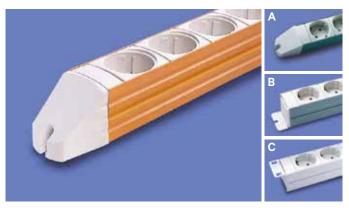
- Internationally compatible configurations and options.
- Power cable lengths of 2.5 m or 4 m for more spatial flexibility.
- Rotating current indicator in 90° steps (only D and I DIS Rack PDU versions).

#### **Extremely low operating costs:**

- Installation in the rack is rapid and easy requiring minimal space and reduced installation time.
- Automatic background-light reduction reduces the rack PDU power loss (only with D and I DIS Rack PDU versions).
- Especially flat housing extrusion, providing full accessibility to the 19" level on 600 mm wide server racks.



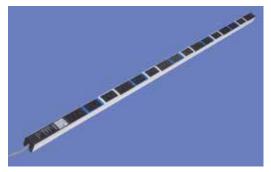
Reliable power distribution at full power delivered by full-length brass busbars.



Can be fitted to a rack or workstation



Highly compact construction; minimizes space requirements in the rack



Color-coded phase allocation (L1, L2, L3).

# Vertiv™ Knürr® DIS Rack PDU®

# European Equipment Models

VERTIV KNÜRR DIS Rack PDU models	Functions	Input power	Outputs
Euro socket system IEC 320	Basic power distribution	16 A - 32 A / 1 ph 3.68 kVA - 7 kVA	IEC60320 C13 & C19
TriplePower	Basic power distribution	16 A - 32 A / 1 ph and 3 ph 3.68 kVA - 22 kVA	IEC60320 C13 & C19 & Schuko
Classic	Basic power distribution/extra large distance between the sockets	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Compact	Basic power distribution	16 A - 32 A / 1 ph 3.68 kVA - 7 kVA	Schuko, France, Switzerland
Protector FI	Fault-current circuit-breaker FI	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Protector LS	Circuit breaker (LS) FI	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Protector FI/LS	Combination FI + LS	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Protector Emergency Stop	Emergency stop switch	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Protector Emergency Stop FI/LS	Combination emergency stop + FI + LS	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Power Cleaner	Mains filter	1 x 16 A 3.68 kVA	Schuko, France
Safety Basic	Overvoltage protection	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Safety Standard	Mains filter + overvoltage protection	1 x 16 A 3.68 kVA	Schuko, France, Switzerland
Master Slave	Master Slave	1 x 16 A 3.68 kVA	Schuko, France
Combi	Combination Master Slave + overvoltage protection + mains filter	1 x 16 A 3.68 kVA	Schuko, France
D	Input measurement, local	16 A - 32 A / 1 ph and 3 ph 3.68 kVA - 22 kVA	IEC60320 C13 & C19 & Schuko
1	Input measurement, local + remote	16 A - 32 A / 1 ph and 3 ph 3.68 kVA - 22 kVA	IEC60320 C13 & C19 & Schuko







DOS00458



DOS00460



DOS20102

# Vertiv™ Knürr® DIS Rack PDU® Euro Socket System, IEC 320

Models on page 204

- Optionally with illuminated switch; 2-pole switching.
- 19" installation option.
- Euro socket combinations of IEC 320 C13 and C19 sockets.
- Feed cable:
  - H05VV-F 3G 1,5 mm<sup>2</sup> (16 A types) H05VV-F 3G 4 mm<sup>2</sup> (32 A types).
- Feed cable: 2.5 m / 5 m.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.

#### Abmessungen

- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).

#### Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.
- CSA (only models with IEAC60320 input).

#### Color

- Enclosure: RAL 7035, light-gray.
- Plastic parts: RAL 7021 dark-gray.

#### Scope of delivery

- 1 x socket strip.
- 2 x mounting brackets.

DOS20126

# Vertiv Knürr DIS Rack PDU TriplePower® Euro Socket System

Socket System Models on page 204

- Feed cable:
  - H05VV-F 5G 2,5 mm2 (3 x 16 A types) H05VV-F 5G 4 mm2 (3 x 32 A types).
- Feed cable: 2.5 m (optional with IEC60309 plug, 3Ph/N/ PE 6h).
- Easy mounting on the rack extrusion.
- Standard feed 3 x 16 A.
- Ideal for implementing redundancy (e.g. 96 A with redundant feed).
- Color-coded phase allocation.
- Optimum distribution across the entire rack height (23 U and 41 U).
- Alternative to 3-phase GST18 system.

### Material/ Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.

# Dimensions

- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).

#### Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color

- Enclosure: RAL 7035, light-gray.
- Plastic parts: RAL 7021 dark-gray.

#### Load rating

- 100-240/173-415 Vac.
- Input: 3 x 16 A.
- Output: 10 A (C13).
- Output: 16 A (C19 / Schuko).

- 1 x socket strip.
- 2 x mounting brackets.



## Vertiv™ Knürr® DIS Rack PDU® Classic

page 204

Models on

page 205

- Optionally with illuminated switch; 2-pole switching.
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm<sup>2</sup>.
- Optionally with Euro plug, IEC320 for UPS application.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94).
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 100 mm.
- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

#### Approvals/certificates

- CF label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.
- VDE-GS Certificate.

#### Color

- RAL 7035, light-gray.

#### Load rating

- 100-240 Vac/16 A (output Schuko and UTE).
- 100-240 Vac/10A (outputs Switzerland).

#### Scope of delivery

- 1 x socket strip.
- 2 x mounting brackets.

# **一角角角角角角** DOS00401

with switch.

# Vertiv Knürr DIS Rack PDU Compact

Color combination

- Optionally with illuminated switch; 2-pole switching.
- 19" installation option (for length 483 mm).
- 2 versions: standard side panel or design side panel.
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm2.
- Molded right angle plug.
- Optionally with Euro plug, IEC320 for UPS applications.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated,
- Plastic parts: Vampamid 6 0024 VO (UL94), recy-
- Internal conductor: full-length busbars, brass.

- Final digit of order number .1: RAL 7035, light-gray.
- Final digit of order number .6: housing RAL 2003 pastel orange.
- Plastic parts: RAL 7035, light-gray.
- powder-coated texture.

# Load rating

- 100-240 Vac/16 A (output Schuko and UTE).
- 100-240 Vac/10 A (outputs Switzerland).

- Distance between sockets: 50 mm.
- Height: 455 mm
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

# Dimensions

- Approvals/certificates - CE label in accordance with:
  - Low Voltage Directive 2014/35/EU
  - EMC Directive 2014/30/EU
  - RoHS Directive 2011/65/EG.
  - Bureau-Veritas BG Certificate (Factory Inspection).
  - Bureau-Veritas CB Certificate.
  - VDE-GS Certificate.

- 1 x socket strip.
- 2 x mounting brackets.





with FI circuit breaker

## Vertiv™ Knürr® DIS Rack PDU® Protector FI

Models on page 205

#### Protector FI

- Fault-current circuit breaker for user protection.
- Protection against indirect contact by disconnection of the circuit when inadmissibly high contact voltage occurs through bodily contact with electrical equip-
- Additional protection against direct contact.
- Residual operating current Ig = 10 mA for alternating and pulsating direct fault currents.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm2.
- Molded right angle plug.

#### Material/ Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 50 mm.
- Height: 78 mm.
- Width of housing: 44.4 mm (= 1 U).

- Feed cable: 2.5 m.

#### Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combination

- Final digit of order number .1: RAL 7035, light-gray.
- Plastic parts: RAL 7035, light gray.

#### Load rating

- 100-240 Vac/16 A.

#### Scope of delivery

- 1 x socket strip.
- 2 x mounting brackets.



with circuit breaker.

### Vertiv Knürr DIS Rack PDU Protector LS

page 205

#### Protector LS

- Circuit breaker for overload and short circuit.
- Protects cables and lines by switching off rapidly in the event of a short circuit and defined delayed switch-off when overloads occur.
- Circuit breaker: 16 A.
- Trip characteristics: type B, 2-pole.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm2.
- Molded right angle plug.

# Material/ Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recy-
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 50 mm.
- Height: 78 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

#### Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/FG
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.
- VDE-GS Certificate.

#### Color combination

- Final digit of order number .1: RAL 7035, light-gray.
- Plastic parts: RAL 7035, light gray.

### Load rating

- 100-240 Vac/16 A.

- 1 x socket strip.
- 2 x mounting brackets.



## Vertiv™ Knürr® DIS Rack PDU® Protector FI / LS

Models on page 206

#### Protector FI / LS

- Fault current switch and circuit breaker.
- Provides a combination of user, overload and short circuit protection.
- Residual operating current Ig = 30 mA for alternating and pulsating direct fault currents.
- Circuit breaker 16 A (Schuko and France) / 10A (Switzerland).
- Trip characteristics, type B, 2-pole.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm2.
- Molded right angle plug.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 50 mm.
- Height: 78 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

#### Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combination

- Final digit of order number .1:
   RAL 7035, light-gray.
- Plastic parts: RAL 7035, light-gray.

#### Load rating

- 100-240 Vac/16 A (Schuko and France).
- 100-240 Vac/10 A (Switzerland).

#### Scope of delivery

- 1 x socket strip.
- 2 x mounting brackets.



DOS20059

# Vertiv Knürr DIS Rack PDU Protector Emergency Stop

Models on page 206

- With 2-pole emergency stop switch for user protection.
- For manually disconnecting consumers in an emergency.
- Phase and neutral conductors are separated safely.
- Switch must be intentionally unlocked to restart.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°
- Feed cable: H05VV-F 3G 1.5 mm<sup>2</sup>.
- Molded right angle plug.

## Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: Classic: 100 mm, Compact: 50 mm.
- Height: 101 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

#### Approvals/certificates

- CE label in accordance with:
  - Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combinations

- Final digit of order number .1: RAL 7035, light gray.
- Plastic parts: RAL 7035, light gray.

# Load rating

- 100-240 Vac/16 A.

- 1 x socket strip.
- 2 x mounting brackets.





# Vertiv™ Knürr® DIS Rack PDU® Protector Emergency Stop FI /L Spage 206

- With 2-pole emergency stop switch for user protection.
- For protecting operating personnel.
- For manually disconnecting consumers in an emergency.
- Phase and neutral conductors are separated safely.
- Switch must be intentionally unlocked to restart.
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm<sup>2</sup>.
- Molded right angle plug.

#### Material/ Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- plastic parts: Vampamid 6 0024 VO (UL94), recyclable.
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: Compact: 50 mm.
- Height: 101 mm.
- Width of housing: 44.4 mm (= 1 U)
- Feed cable: 2.5 m.

## Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combinations

- Final digit of order number .1:
   RAL 7035, light-gray.
- Plastic parts: RAL 7035, light-gray.

#### Additionally:

- With 2-pole fault-current switch and circuit breaker
- Provides a combination of user, overload and short circuit protection.

#### Load rating

- 100-240 Vac/16 A.

#### Scope of delivery

- 1 x socket strip.
- 2 x mounting brackets.



DOS20061

# Vertiv Knürr DIS Rack PDU Power Cleaner

Models or page 206

- High-frequency glitches generally occur in switching processes ranging from 100 kHz to 5 MHz.
   This high-frequency rate overloads the mains frequency and affects adjacent electronic equipment. The mains filter attenuates this high-frequency rate.
- The attenuation behavior is harmonized with the typical interference spectrum.
- The mains filter works in both directions: where glitches from the equipment to the socket strip are also filtered from the mains.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm².
- Molded right angle plug.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 50 mm.
- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

# Approvals/certificates

- CE label in accordance with:
  - Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combination

- Final digit of order number .1:
   RAL 7035, light-gray.
- Final digit of order number .6: housing RAL 2003 pastel orange.
- Plastic parts: RAL 7035, light-gray.

#### Technical data

- Nominal voltage: max. 250 Vac, 50 Hz.
- Nominal current, max. 16 A.
- Filter compliant with VDE 0565-3 (EN 60939-1).

- 1 x socket strip.
- 2 x mounting brackets.
- 2 x 19" mounting brackets (additionally with 19" installation option).



with overvoltage protection

## Vertiv™ Knürr® DIS Rack PDU® Safety Basic

Models on page 206

- For protection against transient overvoltage from the mains, which, for example, are caused by switching machines on and off.
- When critical overvoltages occur, the connection to the mains is cut off.
- Once the protective conductor has been triggered, the green function display light is not illuminated. Thus, the socket strip can no longer be used.\*
- Basic equipment protection is classified as class 3 (category D).
- For optimal protection, class 1 and 2 (categories B and C) protective equipment must be installed in the building.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°.
- Feed cable: H05VV-F 3G 1.5 mm<sup>2</sup>.
- Molded right angle plug.

#### Material / Finish

- Housing: closed sheet steel extrusion, zincpassivated, powder-coated texture.
- plastic parts: Vampamid 6 0024 VO (UL94), recyclable.
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 50 mm.
- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).

#### Approvals/certificates

- CE label in accordance with:
  - Low Voltage Directive 2014/35/EU
  - EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combination

- Final digit of order number .1:
   RAL 7035, light-gray.
- Final digit of order number .6: housing RAL 2003 pastel orange.
- Plastic parts: RAL 7035, light-gray.

#### Technical data

- Appliance class: Type 3 as per DIN EN 61643-11.
- Requirement class: category D as per VDE 0675-6.
- Mains voltage: 230 VAC.
- Nominal current, max. 16 A.
- Discharge surge current (8/20  $\mu$ s): 10 kA.
- Reaction time: < 25 ns.
- Safety level (at 100 A varistor peak current): L with respect to N: < 800 V, L / N with respect to PE: < 1500V.</li>

- 1 x socket strip.
- 2 x mounting brackets.





# Vertiv™ Knürr® DIS Rack PDU® Safety Standard

Models on page 206

- Standard safety models consist of a combined overvoltage protection/mains filter element.
- Protects against transient overvoltages from the mains, which, for example, are caused by switching machines on and off.
- When critical overvoltages occur, connection to the mains is cut off.
- Once the protective conductor has been triggered, the green function display light is not illuminated. The socket strip can thus no longer be used.\*
- Basic equipment protection is classified as class 3 (category D).
- For optimal protection, class 1 and 2 (categories B and C) protective equipment must be

#### installed in the building.

- High-frequency glitches are generally caused by switching processes in an operation from 100 kHz to 5MHz
- This high-frequency rate overloads the mains frequency and affects adjacent electronic equipment.
   The mains filter attenuates this high-frequency rate.
- The attenuation behavior is harmonized with the typical interference spectrum.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°.
- Feed cable: HO5VV-F 3G 1.5 mm<sup>2</sup>.
- Molded right angle plug.

#### Material/Finish

- Housing: closed sheet steel extrusion, zincpassivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 50 mm.
- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

# Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combination

- Final digit of order number .1:
   RAL 7035, light-gray.
- Final digit of order number .6: housing RAL 2003 pastel orange.
- Plastic parts: RAL 7035, light-gray.

#### Technical data

- Mains voltage: 230 VAC.
- Nominal current: max. 16 A / 10 A.
- Discharge surge current (8/20  $\mu$ s): 10 kA.
- Reaction time: < 25 ns.
- Safety level (at100 A varistor peak current): L with respect to N:  $\!\!\!<\!\!$  800 V, L / N with respect to PE:  $\!\!\!<\!\!$  1500V.
- Overvoltage protection
- Appliance class: Class 3 as per DIN EN 61643-11.
- Requirement class: Category D as per VDE 0675-6.
- Mains filter: as per VDE 0565 (EN 60939).

- 1 x socket strip.
- 2 x mounting brackets.

<sup>\*</sup> Send the socket strip to the manufacturer for the safety arrester to be replaced!



DOS20070

# Vertiv™ Knürr® DIS Rack PDU® Master-Slave

Models on page 206

- Slave plugs will switch on if master switches on.
- - The master consumer's power intake must always exceed the switch-on threshold. When switching off the master consumer, the power intake must fall below the switch-off threshold.
- 19" installation option (for length 483 mm).
- Socket rotation: 45°
- Feed cable: H05VV-F 3G 1.5 mm<sup>2</sup>.
- Molded right angle plug.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recy-
- Internal conductor: full-length busbars, brass.

#### Dimensions

- Distance between sockets: 50 mm.
- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

#### Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- FMC Directive 2014/30/FU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.
- VDF GS Certificate

#### Color combination

- Final digit of order number .1: RAL 7035, light-gray.
- Plastic parts: RAL 7035, light-gray.

#### Load rating

- Max. 250 Vac/16 A.

### Technical data

- Switching-threshold setting range
- On: 20 200 mA (approx. 55 mA on delivery).
- Off: 16 160 mA (approx. 44 mA on delivery).
- Switching delay: 550 ms, ± 20 %.
- Electronic module: 2-pole switching.

#### Scope of delivery

- 1 x socket strip.
- 2 x mounting brackets.



with master-slave overvoltage protection and mains filter

# Vertiv Knürr DIS Rack PDU Combi

Models on page 206

- Master-slave with overvoltage protection and mains filter.
- Automatic consumer switching.
- Combines Master-Slave and Safety Standard functions.
- Socket rotation: 45°
- Feed cable: H05VV-F 3G 1.5 mm².
- Molded right angle plug.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recy-
- Internal conductor: full-length busbars, brass.

### Dimensions

- Distance between sockets: 50 mm.
- Height: 45.5 mm.
- Width of housing: 44.4 mm (= 1 U).
- Feed cable: 2.5 m.

#### Approvals/certificates

- CE label in accordance with:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

#### Color combination

- Final digit of order number .1: RAL 7035, light-gray.
- Plastic parts: RAL 7035, light-gray.

### Technical data

- With overvoltage protection and mains filter.
- Mains voltage: max. 250 VAC.
- Nominal current: 16 A.
- Requirement class: D (protection as per VDE 0675).
- Surge current resistance (8/20 s wave): Max. 10 kA.
- Protection level (1.5/50 µs wave): < 1500 V (L + N against PE).
- Master-slave function:
- Switching-threshold setting range
- On: 20 200 mA (approx. 55 mA on delivery).
- Off: 16 160 mA (approx. 44 mA on delivery).
- Switching delay: 550 ms ± 20 %.
- Electronic module: 2-pole switching.

- 1 x socket strip.
- 2 x mounting brackets.



Models on



DOS80002b

# Vertiv™ Knürr® DIS Rack PDU® D

- Metering electrical values per phase.
- Metering values are clearly displayed on a LCD display.
- LCD display rotation in 90° steps.
- Display contrast can be adjusted.
- Unbalanced-load warning display with 3-phase model.
- Three color LED shows status of PDU.
- Automatic reduction of background light.
- Metering values: Voltage, phase and neutral current, frequency, real power apparent power, energy, power factor.
- Input cable:

H05VV -F 5 G 4 mm2 (3 x 32 A types)

H05VV -F 3 G 4 mm2 (1 x 32 A types)

H05VV -F 5G 2,5 mm2 (3 x 16 A types)

H05VV -F 3G 1,5 mm2 (1 x 16 A types)

Length: 2,5 m (16 A types); 3 m (32 A types).

#### Material/ Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recy-

# page 207 Approvals/certificates

- CE label in accordance with:
- Low voltage directive 2014/35/EU
- EMC-directive 2014/30/EU
- RoHS-directive 2011/65/EG.
- Bureau-Veritas BG Certificate (Factory Inspection).
- Bureau-Veritas CB Certificate.

- Housing: RAL 7035 light gray.
- lastic parts: RAL 7021 dark-gray.

#### Scope of delivery

- 1 socket strip.
- 2 mounting brackets.

DOS80002

# Vertiv Knürr DIS Rack PDU I

- Metering electrical values per phase.
- Metering values are clearly displayed on a LCD display.
- LCD display rotation in 90° steps.
- Display contrast can be adjusted.
- Unbalanced-load warning display with 3-phase model.
- Remote interface to get metering values and alarm.s
- Automatic reduction of background light.
- Metering values: Voltage, phase and neutral current, frequency, real power apparent power, energy, power fac-
- Input cable:

H05VV -F 5 G 4 mm2 (3 x 32 A types)

H05VV -F 3 G 4 mm2 (1 x 32 A types)

H05VV -F 5G 2,5 mm2 (3 x 16 A types)

H05VV -F 3G 1,5 mm2 (1 x 16 A types)

Length: 2,5 m (16 A types); 3 m (32 A types).

#### Data interface:

- RJ45 LAN-Port (10/100) for connection to network (IAN)
- Remote Management: Onboard Web Interface, http/s, CLI, SNMPv1,2,3, SSH, Syslog, IPv4, IPv6, DNS.

#### Material / Finish

- Housing: closed sheet steel extrusion, zinc-passivated, powder-coated texture.
- Plastic parts: Vampamid 6 0024 VO (UL94), recyclable.

# page 207

- Bureau-Veritas BG - Certificate (Factory Inspection).

Models on

- Approvals/certificates

# Color

- Housing: RAL 7035 light gray.

- CE label in accordance with:

- EMC-directive 2014/30/EU

- RoHS-directive 2011/65/EG

- Bureau-Veritas CB - Certificate.

- Low voltage directive 2014/35/EU

- Plastic parts: RAL 7021 dark-gray.

- 1 socket strip.
- 2 mounting brackets.

VERTIV KNÜRR	Input '	Values	Input Connector			Outp	uts				F1	F2	19"	Safe	Order No.
VERTIV KNÜRR DIS Rack PDU Model	Voltage	Current		C13	C19	Schuko	UTE	Type 13 Type 23							
								n n							
uro plug IEC320	system														
	230V	16 A	Schuko CEE7/7	6					333						03.600.006.1
	230V	16 A	Schuko CEE7/7	9					483						03.602.009.1
ith feed cable	230V	10 A	IEC60320 C13	12					483						03.600.312.1
	230V	16 A	IEC60320 C19	15	3				783						03.600.418.1
	230V	16 A	IEC60309 1ph/N/PE 6h	15	3				783						03.600.518.1
uro input	230V	10 A	IEC60320 C14 inlet	6					383						03.622.006.1
plug panel	230V	10 A	IEC60320 C14 inlet	9					483						03.622.009.1
	230V	10 A	IEC60320 C14 inlet	6					333						03.622.706.1
uro input on	230V	10 A	IEC60320 C14 inlet	9					433						03.622.709.1
de panel	230V	10 A	IEC60320 C14 inlet	6					383						03.624.706.1
	230V	10 A	IEC60320 C14 inlet	9					483						03.624.709.1
	2001	1071	12000020 01111100						100						00.02 1.7 00.1
/ith overload rotection 10 A	230V	10 A	Schuko CEE7/7	10					483	•	•		-		03.632.010.1
ST18 input in ide panel	230V	16 A	GST18	6					383						03.600.206.1
riplePower															
	230/400V	3 x 16 A	none	24					1033						03.600.024.1
	230/400V	3 x 16 A	none	48					1833						03.600.048.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	24					1033						03.600.824.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	48					1833						03.600.848.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	18	6				1133						03.600.524.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	36	6				1733						03.600.542.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h		6				483						03.600.506.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h			12			833						03.300.812.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	18	3				833						03.600.521.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	18		3			833						03.300.521.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	21		o o			833						03.600.821.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	45					1733						03.600.845.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	36		6			1733						03.300.542.1
	230/400V 230/400V	3 x 16 A		30		6			483						03.300.506.1
	230/400V 230/400V		IEC60309 3ph/N/PE 6h		6	O			483						03.600.806.1
loogie	230/4000	3 x 16 A	IEC60309 3ph/N/PE 6h		6				403						03.600.806.1
lassic	2201/	16 A	Cabulta CEE7/7			17			1700						022000677
	230V	16 A	Schuko CEE7/7			17			1783						03.300.067.X
	230V	16 A	Schuko CEE7/7			13			1383						03.300.063.X
	230V	16 A	Schuko CEE7/7			9			983						03.300.059.X
	230V	16 A	Schuko CEE7/7			5			583						03.300.055.X
	230V	16 A	Schuko CEE7/7			16			1733	-					03.302.066.X
	230V	16 A	Schuko CEE7/7			12			1333						03.302.062.X
	230V	16 A	Schuko CEE7/7			8			933						03.302.058.X
	230V	16 A	Schuko CEE7/7			4			533						03.302.054.X
	230V	16 A	Schuko CEE7/7				13		1383						03.400.063.X
	230V	16 A	Schuko CEE7/7				9		983					•	03.400.059.X
	230V	16 A	Schuko CEE7/7				5		583					•	03.400.055.X
	230V	16 A	Schuko CEE7/7				8		933						03.402.058.X
	230V	10 A	SEV 1011 T12					13	1383						03.701.063.1
	230V	10 A	SEV 1011 T12					9	983						03.701.059.1
	230V	10 A	SEV 1011 T12					5	583						03.701.055.1
	230V	10 A	SEV 1011 T12					16	1733						03.703.066.1
	230V	10 A	SEV 1011 T12					8	933						03.703.058.1



VERTIV KNÜRR DIS Rack PDU Model	Input	Values	Input Connector			Outp	outs				F1	F2	19"	Safe	Order No.
Model	Voltage	Current		C13	C19	Schuko	UTE	Type 13	Type 23						
ompact															
	230V	16 A	Schuko CEE7/7			15				883					03.300.015.X
	230V	16 A	Schuko CEE7/7			11				732					03.300.111.X
	230V	16 A	Schuko CEE7/7			11				683					03.300.011.X
	230V	16 A	Schuko CEE7/7			7				532					03.300.107.X
	230V	16 A	Schuko CEE7/7			7				483					03.300.007.X
	230V	16 A	Schuko CEE7/7			8				483					03.300.008.1
	230V	16 A	Schuko CEE7/7			4				382					03.300.104.X
	230V	16 A	Schuko CEE7/7			4				333					03.300.004.X
	230V	16 A	Schuko CEE7/7			14				883					03.302.014.X
	230V	16 A	Schuko CEE7/7			10				732					03.302.110.X
	230V	16 A	Schuko CEE7/7			10				683					03.302.010.X
	230V	16 A	Schuko CEE7/7			6				532					03.303.106.X
	230V	16 A	Schuko CEE7/7			6				532					03.302.106.X
	230V	16 A	Schuko CEE7/7			6				483					03.302.006.X
	230V	16 A	Schuko CEE7/7			7				483					03.302.007.1
	230V	16 A	Schuko CEE7/7			3				382					03.302.103.X
	230V	16 A	Schuko CEE7/7			3				333					03.302.003.X
	230V	10 A	IEC60320 Sheet E			8				483					03.300.308.1
PS application	230V	16 A	IEC60320 Sheet I			8				483					03.300.408.1
	230V	16 A	GST18			6				583					03.302.206.1
	230V	16 A	GST18			3				433					03.302.203.1
	230V	16 A	GST18			7				533					03.300.207.1
	230V	16 A	GST18			4				383					03.300.204.1
	230V	16 A	Schuko CEE7/7			•	11			683					
	230V	16 A	Schuko CEE7/7				7			532					
	230V	16 A	Schuko CEE7/7				7			483					
	230V	16 A	Schuko CEE7/7				4			333			_		
	230V	16 A	Schuko CEE7/7				10			683					
	230V	16 A	Schuko CEE7/7				6			483					
	230V	16 A	Schuko CEE7/7				3			333			•		
	230V	16 A	GST18				7			533					
	230V	16 A	GST18				4			383					
	230V	10 A					4	11		683					03.701.011.1
			SEV 1011 T12					7					_		03.701.011.1
	230V 230V	10 A 10 A	SEV 1011 T12 SEV 1011 T12					4		483 333					03.701.007.1
											_				
	230V	10 A	SEV 1011 T12 SEV 1011 T12					10		732					03.703.110.1
	230V	10 A						6		483					03.703.006.1
	230V	10 A	SEV 1011 T12					3		382					03.703.103.1
rotoctor El	230V	10 A	SEV 1011 T12					3		333					03.703.003.1
rotector FI	2201/	16. ^	Schules CEE7/7			10				000					02207.0121
	230V	16 A	Schuko CEE7/7			13				883					03.304.013.1
	230V	16 A	Schuko CEE7/7			9				683					03.304.009.1
	230V	16 A	Schuko CEE7/7			5	-			483					03.304.005.1
wataataw I C	230V	16 A	Schuko CEE7/7				5			483					03.404.005.1
rotector LS	2201/	16. ^	Cabulta OFF7/7			10				000					00.000.0101
	230V	16 A	Schuko CEE7/7			13				883					03.308.013.1
	230V	16 A	Schuko CEE7/7			9				683					03.308.009.1
	230V	16 A	Schuko CEE7/7			5				483			•		03.308.005.1
	230V	16 A	Schuko CEE7/7				5			483					03.408.005.1

# VERTIV™ KNÜRR® DIS RACK PDU®

VERTIV KNÜRR DIS Rack PDU Model	Input	Values	Input Connector			Outp	uts			F1	F2	19"	Safe	Order No.
Model	Voltage	Current		C13	C19	Schuko	UTE	Type 13 Type 23						
					·									
Protector FI/LS														
	230V	16 A	Schuko CEE7/7			13			883					03.310.013.1
	230V	16 A	Schuko CEE7/7			9			683					03.310.009.1
	230V	16 A	Schuko CEE7/7			5			483					03.310.005.1
	230V	16 A	Schuko CEE7/7				9		683				-	03.410.009.1
	230V	16 A	Schuko CEE7/7				5		483					03.410.005.1
	230V	10 A	SEV 1011 T12					5	483					03.711.005.1
Protector emerger	ncy stop swite	ch												
`amnaat	230V	16 A	Schuko CEE7/7			6			483					03.326.006.1
Compact	230V	16 A	Schuko CEE7/7				10		683					03.426.010.1
Protector emerger	ncy stop swite	ch FI/LS												
	230V	16 A	Schuko CEE7/7			8			683					03.328.008.1
Power Cleaner														
	230V	16 A	Schuko CEE7/7			13			883					03.312.013.X
	230V	16 A	Schuko CEE7/7			9			683					03.312.009.X
	230V	16 A	Schuko CEE7/7			5			483					03.312.005.X
	230V	16 A	GST18	6					483					03.612.206.1
afety Basic														
	230V	16 A	Schuko CEE7/7			10			732					03.316.110.1
	230V	16 A	Schuko CEE7/7			10			683					03.316.010.X
	230V	16 A	Schuko CEE7/7			6			483					03.316.006.X
	230V	16 A	Schuko CEE7/7			4			383					03.316.004.1
	230V	16 A	GST18			4			433					03.316.204.1
	230V	16 A	GST18	6					483					03.616.206.1
	230V	16 A	Schuko CEE7/7				6		483					03.416.006.1
afety Standard														
	230V	16 A	Schuko CEE7/7			13			883					03.318.013.X
	230V	16 A	Schuko CEE7/7			9			732					03.318.109.X
	230V	16 A	Schuko CEE7/7			9			683					03.318.009.X
	230V	16 A	Schuko CEE7/7			5			532					03.318.105.X
	230V	16 A	Schuko CEE7/7			5			483					03.318.005.X
	230V	16 A	GST18	6					483					03.618.206.1
	230V	16 A	Schuko CEE7/7				5		483					03.418.005.X
	230V	10 A	SEV 1011 T12					5	483					03.719.005.1
laster-Slave														
	230V	16 A	Schuko CEE7/7			9			683					03.314.009.1
	230V	16 A	Schuko CEE7/7			5			483					03.314.005.1
	230V	16 A	Schuko CEE7/7			_	5		483					03.414.005.1
Combi														
	230V	16 A	Schuko CEE7/7			9			733					03.320.009.1
	230V	16 A	Schuko CEE7/7			5			533					03.320.005.1
	200 V	10 A	OGHUNO OLLI//			J			000	_				00.020.000.1



VERTIV KNÜRR DIS Rack PDU	Input \	/alues	Input Connector			Outp	uts			L	S	F1	F2	19"	Safe	Order No.
Model	Voltage	Current		C13	C19	Schuko	UTE	Type 13	Туре 23							
	230V	16 A	Schuko CEE7/7			6				483						03.306.005.1
	230V	16 A	IEC60309 1ph/N/PE 6h			6				483						03.306.805.1
	230V	16 A	Schuko CEE7/7			14				933						03.306.014.1
	230V	16 A	IEC60309 1ph/N/PE 6h			14				933						03.306.814.1
	230V	16 A	Schuko CEE7/7	9						483						03.606.008.1
	230V	16 A	IEC60309 1ph/N/PE 6h	9						483						03.606.808.1
	230V	16 A	Schuko CEE7/7				6			483						03.406.006.1
	230V	10 A	SEV 1011 T12					5		483						03.706.005.1
	230V	16 A	SEV 1011 T23						6	483						03.706.006.1
	230V	16 A	IEC60309 1ph/N/PE 6h	18	2					933						03.606.820.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h			18				1283						03.306.518.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h			6				683						03.306.506.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	27	6					1433						03.606.533.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h		6					483						03.606.533.1
	230V	16 A	IEC60309 1ph/N/PE 6h	18	2					1033						03.607.820.1
	230V	16 A	Schuko CEE7/7			6				633						03.307.006.1
	230V	16 A	IEC60309 1ph/N/PE 6h			6				633						03.307.806.1
	230V	16 A	Schuko CEE7/7			12				933						03.307.012.1
	230V	16 A	IEC60309 1ph/N/PE 6h			12				933						03.307.812.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h			18				1383						03.307.518.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h			6				783						03.307.506.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h	27	6					1533						03.607.533.1
	230/400V	3 x 16 A	IEC60309 3ph/N/PE 6h		6					633						03.607.506.1

Outputs: C13 = IEC60320 C13 C19 = IEC60320 C19

Schuko = Protective contact plug DIN 49440
UTE = France Standard CEE 7-V

Type 13 = Switzerland, type 13

L = Length in mm
S = Switch
F1 = Standard side pane (for rack mounting)

F2 = Design side panel (for installing at workstation)

19" = Suitable for 19' installation

safe = Child-proof

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1. DOS20147

# 3-Phase in Rack with GST18 Features



2. DOS20132

# Requirement

Constant energy increase requirements in the rack caused by high packing densities (e.g. 1 U Pizza servers, blade servers, etc.) (1)

#### Solution

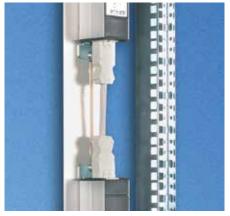
3-phase distributor with GST18 plug system, e.g. 96 A with redundant feed. (2)

### Benefits (3, 4)

- Modularity.
- Plug-in capability (no wiring required).
- Can be expanded.
- Cascadable.
- Easy implementation of redundancies/ UPS-secured circuits.
- Combination of DIN Schuko / IEC320 Euro systems.
- Any installation position can be selected.
- Good alternative to 3-phase Vertiv<sup>™</sup>
   Knürr<sup>®</sup> DIS Rack PDU Triple Power.



3. DOS20142



3. DOS20135



DOS20104

# Power Supply Cable, 3-Phase Accessories for GST 18 Plug System

- GST 18 socket for connecting GST18i5 distributor block with 3 phases.
- 5-pole (L1, L2, L3, N, PE) 250/400 V ~.
- Cable: H05VV-F 5G 2.5 mm<sup>2</sup>.

#### Color

- Black

L	Order No.	UP
2000	04.000.048.0	1 unit



DOS20103

# **GST18i5 Distributor Block, 3-Phase**

- For individual connection at the customer.
- Modular plug-in connection.
- 3-phase distribution on various socket strips.
- Including mounting panel.

#### Color

- Black

Order No.	UP
04.000.038.9	1 unit





DOS00467

# Power Supply Cable, Single Phase Accessories for GST 18 Plug System

- Mains plug CEE/VII: GST18 socket (Wieland).
- Cable: H05VV-F3G 1.5 mm².

Color
- White.

L	Order No.	UP
2000	04.000.040.0	1 unit
5000	04.000.041.0	1 unit

# **Connection Cable**Accessories for GST 18 Plug System

- GST 18 plug.
- GST 18 socket.
- Cable: H05VV-F3G 1.5 mm<sup>2</sup>.

- Color
  - For color coding circuits (e.g. UPS).





DOS00469



DOS20105



DOS00471

# **GST18 Socket**

- With threaded connection for cross-section
   1.5 2.5 mm<sup>2</sup> with cable strain relief.
- For individual connection.

ColorWhite.

Order No.	UP
04.000.046.0	1 unit



DOS00470

# **GST18 Plug**

- With threaded connection for cross-section
   1.5 2.5 mm<sup>2</sup> with cable strain relief.
- For individual, further cabling.

- Color
- White.

Or	rder No.	UP
04	4.000.047.0	1 unit



DOS00076

# Mains Cable for Euro Socket Strip For DIN 49 440 and French/Belgian Standard

- Mains plug CEE/VII: Euro socket IEC 320.
- Cable: H05VV-F 3G 1 mm<sup>2</sup>.

- Mains voltage
  - 250 VAC.
- Nominal current
  - 10 A.

L	Order No.	UP
2000	04.000.054.9	1 unit
6000	04.000.053.9	1 unit



# Mains Cable for Euro Socket Strip For Swiss Standard

- Mains plug: Type 12 Euro socket IEC 320.
- Cable: H05VV-F 3G 1 mm<sup>2</sup>.

- Mains voltage
  - 250 VAC.
- Nominal current
  - 10 A.

L	Order No.	UP
2000	04.000.055.9	1 unit



DOS00078

# Mains Cable for Euro Socket Strip For British Standard

- Mains plug: Type BS 1363 -IFC320 Furo socket.
- Cable: H05VV-F 3G 1 mm<sup>2</sup>.

- Mains voltage
  - 250 VAC.
- Nominal current
  - 10 A.

L	Order No.	UP
2000	04.000.056.9	1 unit



DOS00519

# **Euro Connection Cable**

- Mains plug: IEC 320.
- Euro socket IEC 320.
- Cable: H05VV-F 3G 1 mm².
- USA: SJT AWG18 with USA approval.
- Mains voltage
  - 250 VAC.
- Nominal current
  - 10 A

	Model	Order No.	UP
900	EU	04.000.051.9	1 unit
900	USA	04.000.052.9	1 unit

Dimensions in mr	n:		Conversion:
L = Length	n = Number of sockets	U = Standard rack unit	1 mm = 0.03937 inch
S = Switch	F1 = Standard side panel	UP = Packaging unit	1 kg = 2.2046 pounds
	F2 = Design side panel	Safe = child-proof	
	19" = ideal for 19" components		





DOS20493

# SafetySleeve™ Cable Protection IEC C19

- SafetySleeves protect the feed lines of the network equipment.
- Compatible with all C19 cables and fit onto all PDUs.

### Material / Finish

– PVC, black.

Model	Order No.	UP
C20 plug in C19 socket	03.910.212.9 001	20 unit



DOS20494

# SafetySleeve™ Cable Protection IEC C13

- SafetySleeves protect the feed lines of the network equipment.
- Compatible with all C13 cables and fit onto all PDUs.

# Material / Finish

– PVC, black.

Model	Order No.	UP
C14 plug in C13 socket	03.910.213.9 001	50 unit

Dimensions in mm:				Conversion:
L = Length	n	= Number of sockets	U = Standard rack unit	1 mm = 0.03937 inch
S = Switch	F1	= Standard side panel	UP = Packaging unit	1 kg = 2.2046 pounds
	F2	= Design side panel	Safe = child-proof	
	19"	= ideal for 19" components		

# **Rack PDU Support and Warranty Options**

Vertiv™ offers you various options to ensure that you get the support you need in the event of a fault. You can get in touch with your usual contact person directly or contact us by phone or e-mail.

### **Technical Support**

- Website: www.VertivCo.eu
- Telephone: +800 1155 4499
- E-Mail: eoc@VertivCo.com

#### **Warranty Extension**

When you purchase PDUs from us, you also have the option of ordering warranty extensions for certain models. The following overview shows you the various options available for increasing your service level.

	Order No.		
Warranty term (months)	24	36	60
MPH2 B Version (all B models vertical)	free of charge	WE1Y-MPH2VB	WE3Y-MPH2VB
MPH2 R, C, M Versions (all R, C, M models vertical)	free of charge	WE1Y-MPH2VRCM	WE3Y-MPH2VRCM
MPH2 B Version (all B models horizontal)	free of charge	WE1Y-MPH2HB	WE3Y-MPH2HB
MPH2 R, C, M Versions (all R, C, M models horizontal)	free of charge	WE1Y-MPH2HRCM	WE3Y-MPH2HRCM
MPX Components (excluding sensors and display)	free of charge	WE1Y-MPX	WE3Y-MPX

If a warranty case should unfortunately arise for your product, we will decide whether to repair or replace the defective product based on the type of defect in question. Please contact your usual sales contact in such cases.