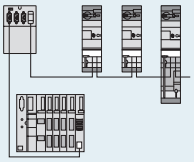
All-in-one motor starters: TeSys U

Presentation A3/2

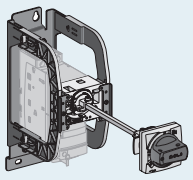
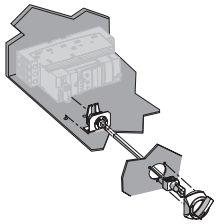
Power bases, control modules, connectors

Type of product	Range		Page
Standard power base, basic control functionalities Direct and reversing	Up to 15 kW		A3/10
Advance power base, control, alarm and communication possibilities Direct and reversing	Up to 15 kW		A3/12

Communication components

Parallel type cabling system Principle and components		A3/18
Bus type cabling systems Principle, panorama and components		A3/23
LUFP communication gateway		A3/32

Accessories

Short circuit current limiter		A3/33
Handles and accessories for rotary control		A3/34
Handles and accessories for integration into a MCC drawer		A3/35

Technical Data for Designers A3/37

TeSys U concept

From traditional solution to ...

Motor circuit breaker: TeSys GV2 L

Magnetic protection
> short-circuit protection

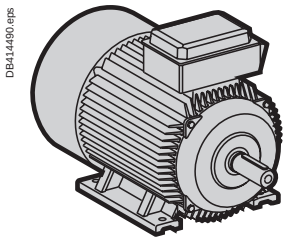
Contactor: TeSys D

Control
> Start /Stop

Status monitoring
> signaling
> alarm monitoring

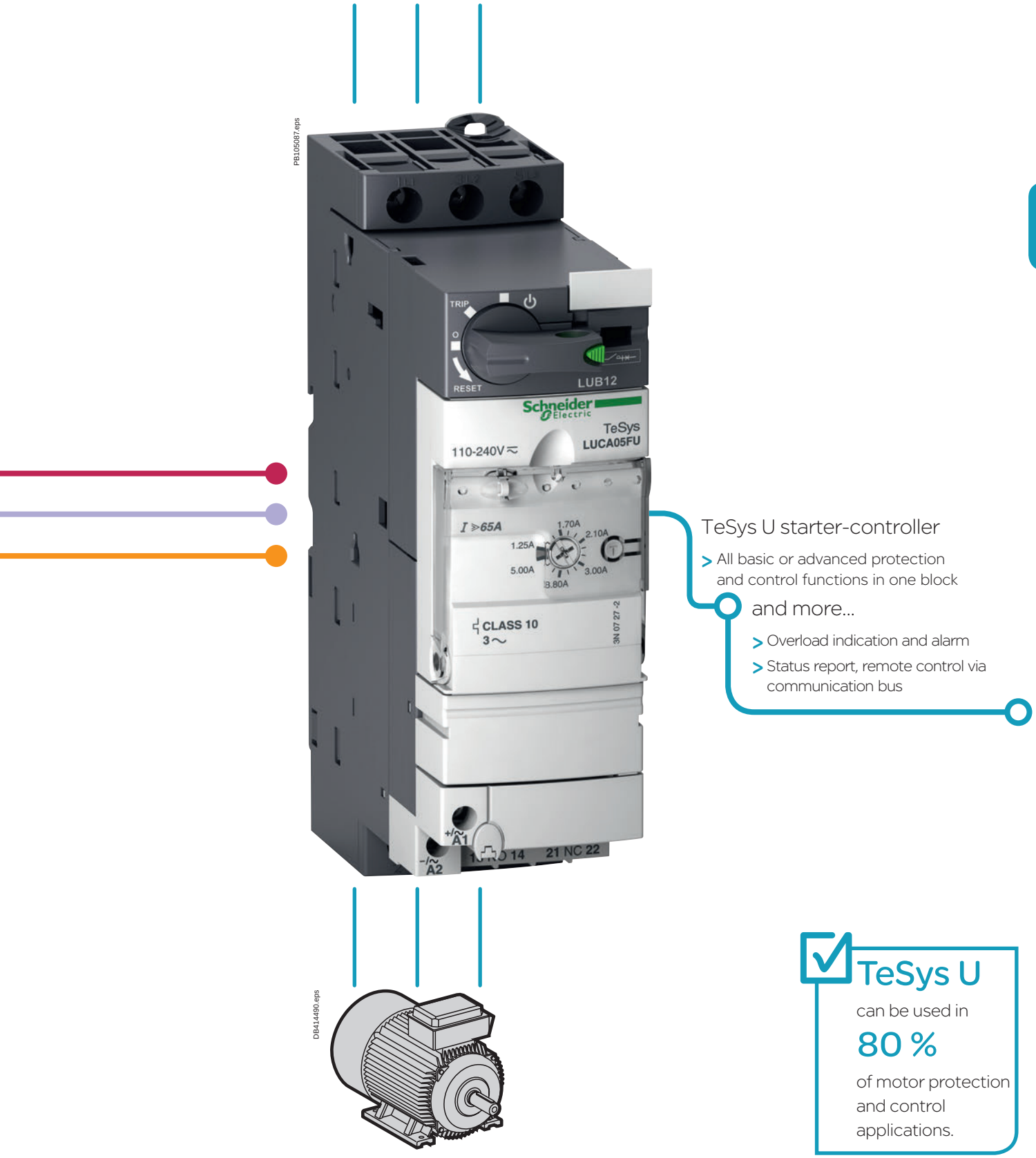
Protection relay: TeSys LRD

Thermal protection
> overload



TeSys U concept

...TeSys U starter-controller



TeSys U starter-controller

> All basic or advanced protection and control functions in one block

and more...

> Overload indication and alarm

> Status report, remote control via communication bus

TeSys U

can be used in

80 %

of motor protection and control applications.

Advantages

1 All in one

- Optimising space in enclosures.
- Total coordination (No contact welding on short circuit).
- Reduces installation times.

2 Simplicity of choice

- Controlled power.
- Protection functions ensured.
- Signaling functions, communication with PLC ensured.

3 Universal mounting

- On DIN rail or grid.

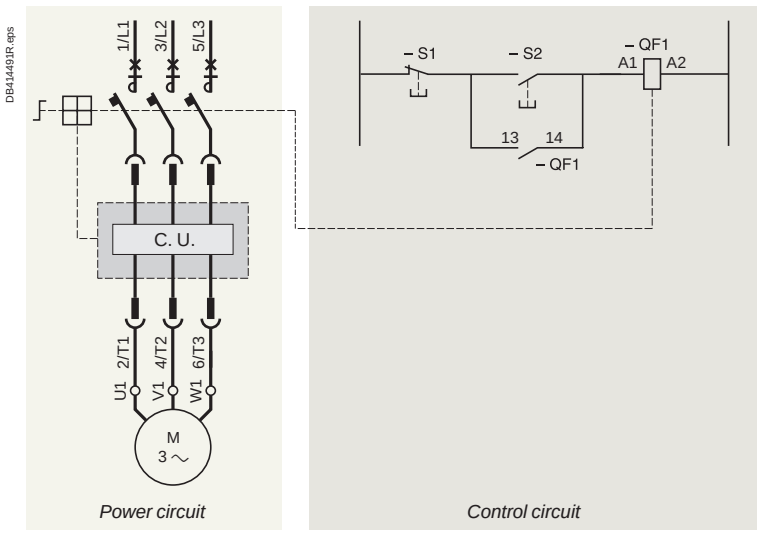
4 Conventional projet design

- Conventional control scheme with start , stop push buttons.

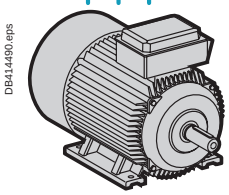
5 Electrically simple

Basic scheme of a TeSys U starter-controller

- Protection and power control functions acting on a single set of contact (QF1).
- The control unit (CU) monitors the voltage and current. In case of fault, it releases the coil, causing tripping.
- The coil is controlled by manual orders from an operator. Automatic control from a PLC is achieved with other diagrams.



Common characteristics



Motor up to

- 7.5 kW / 1-phase 230 V / 50-60 Hz.
- 15 kW / 3-phase 400-440 V / 50-60 Hz.
- 15 kW / 3-phase 500 V / 50-60 Hz.
- 18.5 kW / 3-phase 690 V / 50-60 Hz.
- Non-reversing or reversing.

Short-circuit protection

■ Isc:
□ 50 kA at ≤ 400 V
□ 10 kA at 500 V
□ 4 kA at 690 V.
■ Up to 690 V AC.

Overload protection

■ From 0.15 to 32 A, 6 setting ranges (tripping 14.2 x I setting).
■ Test button.
■ Adjustment lock.
■ Coil choice: 24 V, 48…72 V, 110...240 V DC/AC.

3 power contacts

■ For non-reversing (reversing with reverser block).
■ Imax, for 12 A power base (direct - reversing):
□ 12 A at up to 500 V / 50 Hz
□ 9 A > 500 V, up to 690 V.
■ Imax, for 32 A power base (direct - reversing):
□ 32 A at up to 500 V / 50 Hz
□ 21 A > 500 V, up to 690 V.

1 NO contact
1 NC contact

■ 5 A / max. 690 V AC or 250 V CC.

Other monitoring contacts

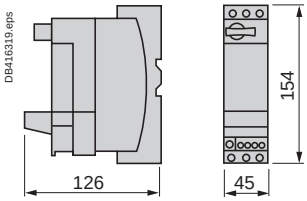
■ 5 A / max. 690 V AC or 250 V DC.

Communication modules

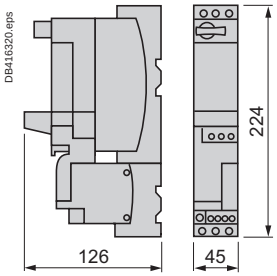
■ Modbus,
■ Ethernet,
■ CANopen,
■ DeviceNet,
■ Advantys stb,
■ Profibus DP,
■ Beckhoff,
■ AS-interface.

Dimensions

■ Base:



■ Base + reverser block:



The modularity principle

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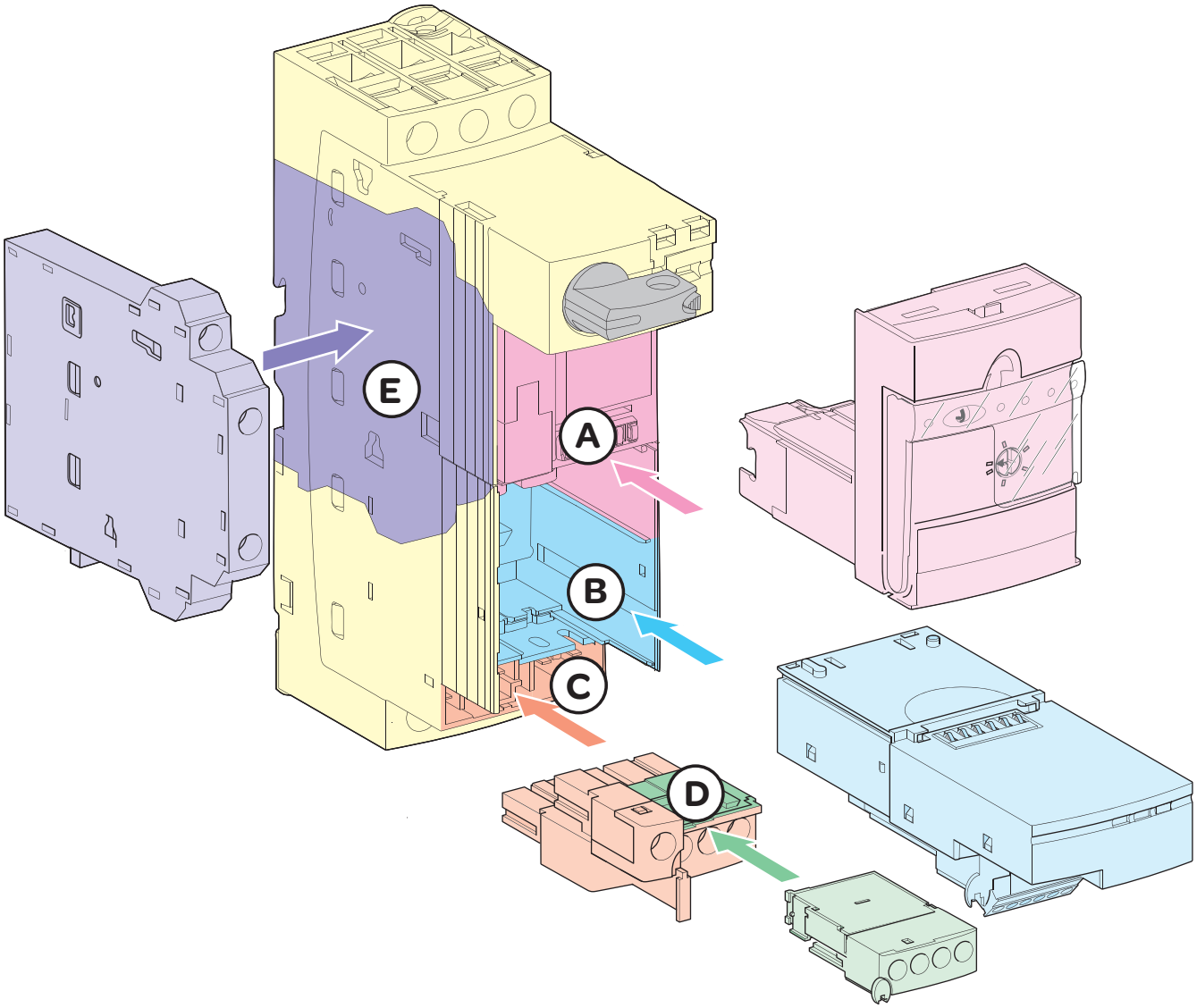
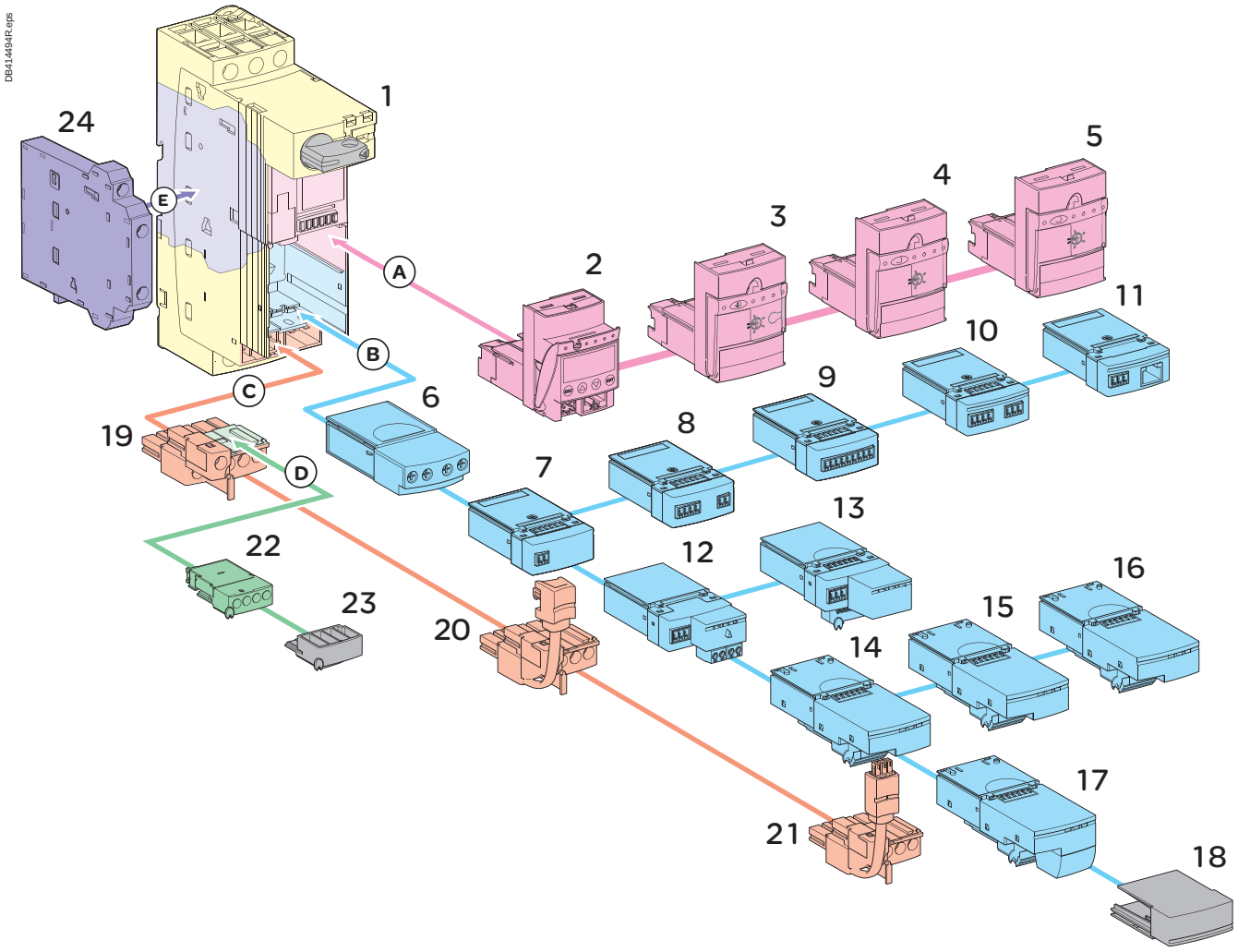


	Power base
A	Cavity for control unit
B	Cavity for auxiliary module
C	Cavity for control terminal block
D	Cavity for additional contact block or shutter
E	Space for additional block fastening

Power Base	Additional lateral block	Control unit	Auxiliary module	Control terminal block	Additional block
This is the basic constituent of the motor starter, it is composed of the power contacts, the control coil, the opening / closing mechanism of the protection device and the control pad.	Composed of the protection device signaling contacts.	Composed of the power base management processor and setting knobs.	Depending on its type, it integrates load status contacts or a communication processor or an alarm processor.	It is composed of two terminals "coil control", 1 NO auxiliary contact, 1 NC auxiliary contact. It can be eventually connected to an auxiliary communication module via a dedicated cable.	It includes protection device additional signaling contacts. By default, this is a simple shutter.

Control units and modules
On/off control, 1 direction of rotation

Components overview



Power base
1- LUB
Non reversing power base - 1 rotation direction

Control units
2- LUCM
Multifunctional control unit

3- LUCB/LUCC/LUCD
Advanced control units

4- LUCA
Standard control unit

5- LUCL
Magnetic protection control unit

Auxiliary module
6- LUFN
Auxiliary contacts module

Load monitoring auxiliary modules
7- LUFW10
Overload alarm module

8- LUFDH11
Overload alarm module with manual reset

9- LUFV2
Motor load indication module

10- LUFDA01/LUFAD10
Overload alarm module with automatic reset/remote reset

Communication auxiliary modules
11- LUFC00
Telefast parallel liaison module, with RJ45 connector

12- ASILUFC5/ASILUFC51
AS-Interface c. m.

13- LULC031/LULC033
Modbus c. m

14- LULC07 Profibus DP c. m

15- LULC08 CANopen c. m.

16- LULC09 DeviceNET c. m.

17 - LULC15 Advantys STB c. m.

Shutters
18- LU9C 1
Shutter for module cavity

23- Shutter for contacts additional block cavity

Control terminal blocks
19- LU9BN11
Terminal block for imbedded auxiliary contacts

20- LU9BN11C
Coil terminal block with its connecting cable

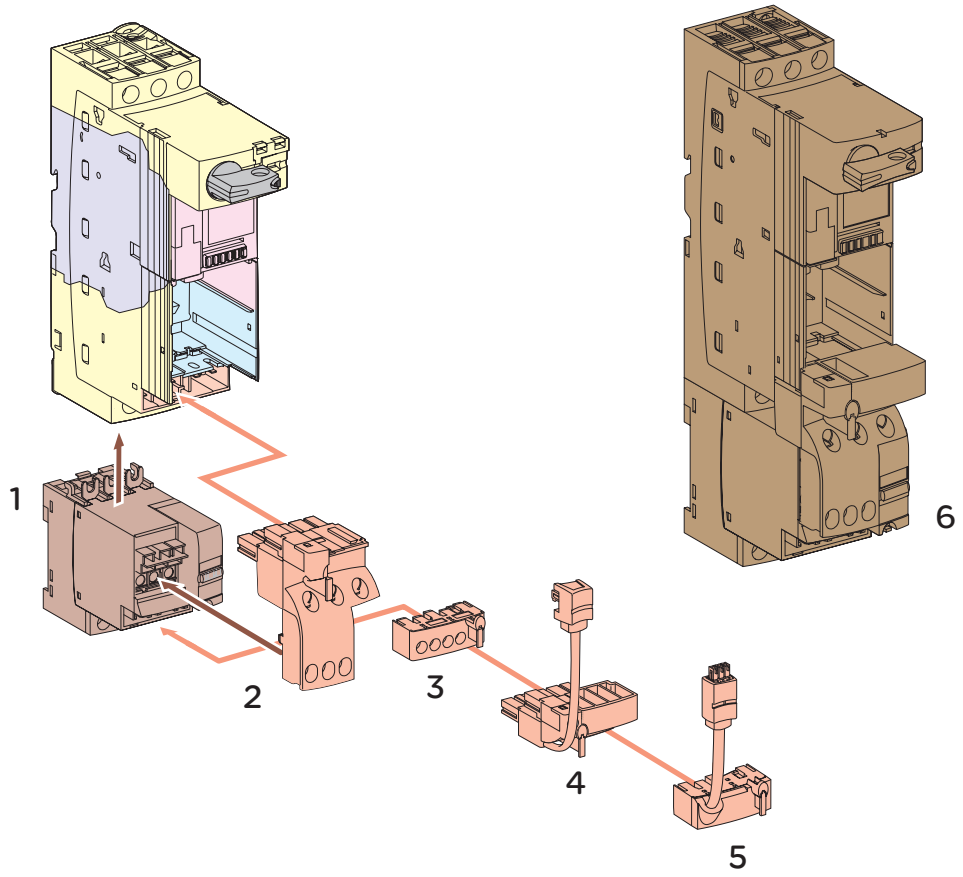
21- LU9BN11L
Coil terminal block with its connecting cable

Additional contacts blocks
22- LUA1
Additional contacts

24- LUA8
side-mounting additional contacts

Control units and modules
On/off control,
2 directions of rotation, vertical mounting

Additional components overview



Reverser block

1- LU2M B0●●
vertical-mounting reverser block

Evoluting reversing power base

6- Pre-assembled reversing power base **LU2B12**

Control terminal blocks

2- LU9MR1C
Base/block assembling connector, with terminal block for imbedded auxiliary contacts

3- LU9M1
Coil terminal block for wired control

4- LUMRC
Coil terminal block with its connecting cable for communicating control (only compatible with a selection of com. modules).

5-LUMRL
Coil terminal block with its connecting cable for communicating control (only compatible with a selection of com. modules).

Control units and modules
On/off control,
2 directions of rotation, side-mounting

Additional components overview

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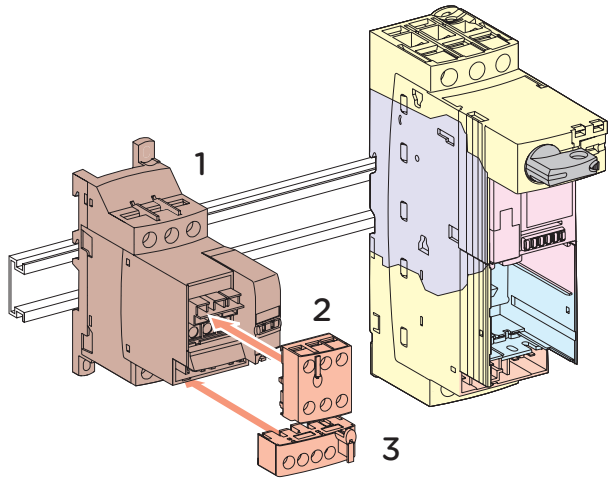


Reverser block

1- LU6M B0●●
Side-mounting reverser block

Terminal blocks for electrical remote control

2- LU9M1
Terminal block for power base coil interlocking. With direction of rotation monitoring contacts

3- LU9MR1
Terminal block for 2 direction control (pulse or maintained control)

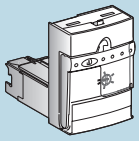
Components for "standard control"

- Rotation control: 1 direction - 2 directions.
- Protection: overload + short circuits + main power fault.
- Monitoring: by dry contacts.

1- selection of the standard power base

Rating / Ue AC	**12 A / 400 V 12 A / 500 V 9A / 690 V**		**32 A / 400 V 23 A / 500 V 21 A / 690 V**	
	1 direction	**2 directions**	**1 direction**	**2 directions**
Cial. ref.: replace dots by the coil code	Standard power base **LUB12**	Standard reversing power base **LU2B12●●**	Standard power base **LUB32**	Standard reversing power base **LU2B32●●**

2- selection of the control unit for standard power bases



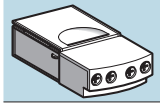
Maximum standardized power ratings of 3 phases motors 50/60 Hz						
400/440 V	500 V	600 V	Setting range	Lip_in mounting on the power base - Rating	Protection type	
kW	kW	kW	A	A	Thermal + magnetic	Magnetic
					LUCA	LUCL
0.09	-	-	0.15...0,6	12 and 32	**LUCAX6●●**	**LUCLX6●●**
0.25	-	-	0.35...1,4	12 and 32	**LUCA1X●●**	**LUCL1X●●**
1.5	2.2	3	1.25...5	12 and 32	**LUCA05●●**	**LUCL05●●**
5.5	5.5	9	3...12	12 and 32	**LUCA12●●**	**LUCL12●●**
7.5	9	15	4.5...18	32	**LUCA18●●**	**LUCL18●●**
15	15	18.5	8...32	32	**LUCA32●●**	**LUCL32●●**

Cial. ref. of the control unit: dots to be replaced by the coil code (see below).

Coil voltage (V)	**24 ⎓**	**24 ∿**	**48...72 ⎓ and 48 ∿**	**110...220 ⎓ and 110...240 ∿**
Coil code	**BL**	**B**	**ES**	**FU**

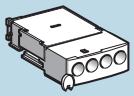
3- Selection of the modules (1) and signaling blocks (optional)

Auxiliary signaling contacts module



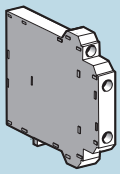
Function	Indicates the ON/OFF running status of the motor, whatever the direction of rotation		
Output	Change of the state of 2 contacts: 1NO + 1NC	Opening of 2 NC contacts	Closing of 2 NO contacts
Cial. reference	**LUFN11**	**LUFN02**	**LUFN20**

Auxiliary signaling contacts block



Function	Indicates the open/ closed status of the protection: by NO/NC contact Protection standby/tripped: by SD contact To be inserted below the auxiliary module cavity (B)	
Output	OF and SD contacts: NO type	OF contact: NC type SD contact: NO type
Cial. reference	**LUA1C20**	**LUA1C11**

Auxiliary signaling contacts block



Function	Indicates the open/closed status of the protection To be clamped on the left side of the power base.
Output	2 OF contacts: NO type
Cial. reference	**LUA8E20**

The power bases are delivered with the following items

> **LUB12, LUB32**
12 or 32 A power base with imbedded control terminal block and 3 blanking shutters

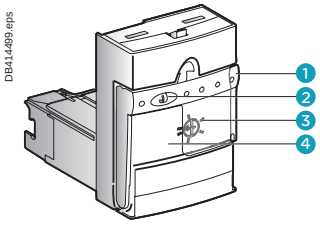
> **LU2B12, LU2B32**
12 A (LUB120) or 32 A (LUB320 (1) power base without imbedded control terminal block
+ 1 assembling connector **LU9MR1C**
+ 1 reverser block - vertical mounting **LU2MB0●●**
+ 1 control terminal block **LU9M1**

(1) see description next page.

Control terminal blocks - Characteristics

> **LU9BN11**
2 terminals ➡ for coil
2 terminals ➡ NO contact (24 ... 250 V DC/AC, 5 A max)
2 terminals ➡ NC contac (24 ... 250 V DC/AC, 5 A max)

> **LU9M1**
1 terminal ➡ common
1 terminal ➡ S1 coil
1 terminal ➡ S2 coil
2 terminals ➡ contact NF (24 ... 250 V DC/AC, 5 A max)



LUCA ●●●●

1. Extraction and locking handle.
2. Sealing of locking handle.
3. Ir adjustment dial.
4. Locking of settings by sealing the transparent cover.

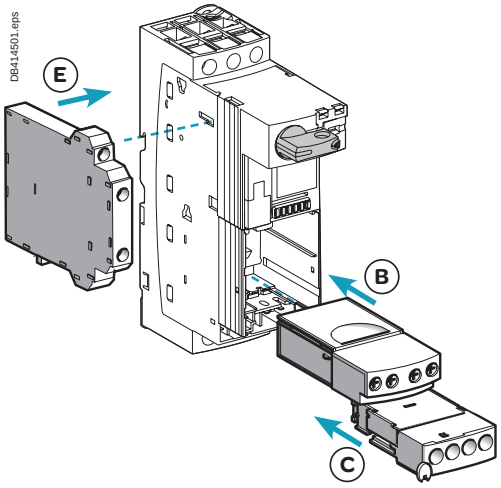
They provide the electrical protection settings

LUCA - standard units

- Protection against overload: 14.2 x Intensity setting.
- Protection against short circuit: 14.2 x I max.
- Protection against missing or unbalanced phases.
- Protection against insulation fault (protection of equipment only).
- Class 10 tripping.
- Frequency 50...60 Hz.

LUCL - magnetic units

- Protection against short circuits.
- To be used when a standard power base is connected to a motor drive or a soft starter, as they provide the overload protection.



Modules and blocks are compatible with all standard and standard inverting power bases

Common electrical characteristics

- Standard operating voltage: 24…250 V AC/DC.
- Maximum current: 5 A.

References

- Rotation control: 1 direction - 2 directions.
- Protection: overload + short circuit + main power fault.
- Signaling: by dry contacts.
- Digital display of electrical values.
- Overload alarms.
- Network/bus communication.

Components for "advanced control"

1- Selection of the advanced power base and reverser block

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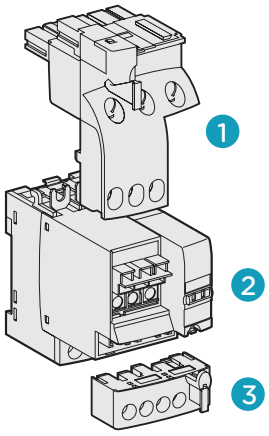

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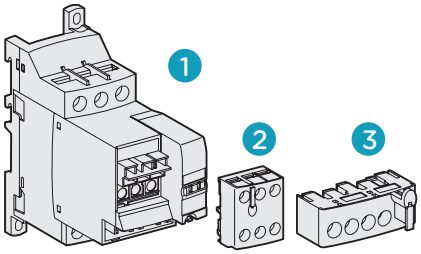
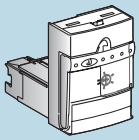
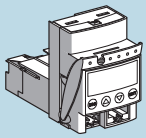


	Advanced power base	Reverser block - vertical mounting	Reverser block - side mounting
Rating / Ue AC			
12 A / 400 et 500 V 9 A / 690 V	**LUB120**	-	-
32 A / 400 V 23 A / 500 V 21 A / 690 V	**LUB320**	1 **LU9MR1C** 2 **LU2MB0●●** (1) 3 **LU9M1**	1 **LU6MB0●●** (1) 2 **LU9MR1** 3 **LU9M1**

(1) Terminal coil control A1-A2 and aux. NO + NC.

2- selection of the control unit

Maximum standardized power ratings of 3 phases motors 50/60 Hz						DB414499.eps  Protection type: - overload - short-circuit - Main power fault - alarm			DB414504.eps 
400/440 V		500 V	600 V	Setting range	Lip_in mounting on the power base - Rating				Multifunctional
kW		kW	kW	A	A	Class 10	Class 20	Class 10	Class 5...30
1P	3P	3P	3P			3P	3P	1P	1 - 3P
-	0.09	-	-	0.15...0,6	12 and 32	**LUCBX6●●**	**LUCCX6●●**	**LUCDX6●●**	**LUCMX6BL**
0.09	0.25	-	-	0.35...1,4	12 and 32	**LUCB1X●●**	**LUCC1X●●**	**LUCD1X●●**	**LUCM1XBL**
0.55	1.5	2.2	3	1.25...5	12 and 32	**LUCB05●●**	**LUCC05●●**	**LUCD05●●**	**LUCM05BL**
2.2	5.5	5.5	9	3...12	12 and 32	**LUCB12●●**	**LUCC12●●**	**LUCD12●●**	**LUCM12BL**
4	7.5	9	15	4.5...18	32	**LUCB18●●**	**LUCC18●●**	**LUCD18●●**	**LUCM18BL**
7.5	15	15	18.5	8...32	32	**LUCB32●●**	**LUCC32●●**	**LUCD32●●**	**LUCM32BL**

Cial. ref. of the control unit: replace dots by the coil code.

Coil voltage (V)	24 ⎓	24 ∿	48...72 ⎓ and 48 ∿	110...220 ⎓ and 110...240 ∿
Coil code	**BL**	**B**	**ES**	**FU**

> Selection of the modules and signaling blocks: see page A3/14

Magelis XBT NU HMI terminal (optional)

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XBT NU400

Provides display and modification of the LUCM multifunctional controller settings. Ready to ensure dialogue with up to 8 TeSys U starter-controller (Modbus protocol - Pre-loaded application and alarm pages).

Main characteristics

- Multi-language: French, English, German, Spanish, Italian.
- Display: 4 lines of 20 characters.
- Width 132 mm, heigth 74mm, depth 43 mm.
- Supply voltage 24 V DC.

Designation	Reference
Magelis TeSys U terminal	**XBTNU400**
Connecting cable XBTNU400 to LUCM ●●BL, L = 2,50 m (1)	**XBTZ938**

(1) A Modbus hub or - junction must be used when connecting several TeSys U.

LUB120, LUB320 - 12 or 32 A advanced power base equipped with:

One NO latching contact + one NC contact
Operation voltage 24 ... 250V AC/DC - I max 5 A
+ 2 blanking shutters

The cavity C is empty, ready for insertion of a terminal block:
- for local control **LU9BN11**
- for centralized control **LU9BN11C**, **LU9BN11L**
- or insertion of an assembling connector **LU9MR1C**, for reverser block - vertical mounting

Inverser block: its maximum controlled power might be limited by the power base capacity

Power base interlocking control:
- vertical mounting: by the assembling connector **LU9MR1C**
- side mounting: by a **LU9MR1** terminal block (to be linked to a **LU9B N11** terminal block in the advanced power base).

Reverse control:
- Local control, to be wired on a **LU9M1** terminal block
- centralized control, by a **LU9MRC** or **LU9MRL** terminal block; its connector must be plugged in a communication module, in the advanced power base.

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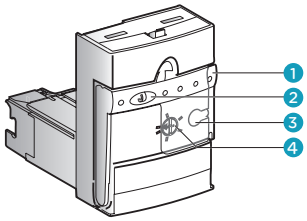

LUCB ●●●●, LUCC ●●●●, LUCD ●●●● control units

1. Extraction and locking handle.
2. Sealing of locking handle.
3. Ir adjustment dial.
4. Test push button.

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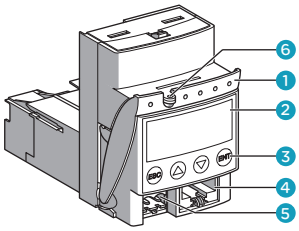


LUCM ●●BL control unit

1. Extraction and locking handle.
2. Built-in LCD display (2 lines, 12 characters).
3. 4 button keyboard.
4. RS485 Modbus communication port, with RJ45 connector.
5. Connector for external 24 V DC power supply.
6. Sealing of locking handle.

LUCB, LUCC, LUCD control and diagnostic units

■ Motor protection, fault diagnostic.
■ Protection against
□ overload: 14.2 x Intensity setting.
Simulation of an overload by depressing the test push button.
□ short circuit: 14.2 x Imax.
□ missing or unbalanced phases.
□ insulation fault (protection of equipment only).

■ Overload alarm management:
□ locally: with one of the LUF family module
□ Remotely: with LULC031, LULC033, LULC07, LULC08, LULC09 or LULC15 (thermal alarm only) communication module.

■ Reset:
□ manual
□ automatic, with a communication module.

LUCM multifunctional control unit

■ Motor protection, operational values display and diagnostic.
■ To be associated with 24 V DC coil only.
■ LUCM ●●BL: tripping class 5 to 30, single phase, three phase
■ Same functions as LUCB ●●●● with complementary functions:
□ in working mode: display of electrical values, setting parameters and events
□ in configuration mode: display of protection and alarm settings.
■ These functions are available for local display on a display panel, and for remote display via a RJ45 Modbus connector.
■ The Modbus - RS485 compatibility is ensured by the Magelis XBT display terminal or a PC with the PowerSuite software.

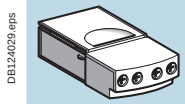
***Note**: a 24 V DC power supply is required during the configuration process.*

References

- Rotation control: 1 direction - 2 directions.
- Protection: overload + short circuits + main power fault.
- Signaling: by dry contacts.
- Digital display of electrical values.
- Overload alarms.
- Network/bus communication.

Components for "advanced control" (continued)

3a- Selection of the modules and signaling blocks (optional)

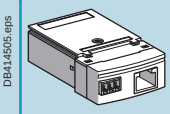
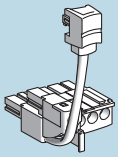
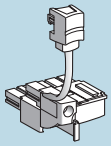


Function	Indicates the ON/OFF running status of the motor, whatever the direction of rotation		
Output	Change of the state of 2 contacts: 1NO + 1NC 5 A/ 24 ... 250V AC/DC	Opening of 2 NC contacts 5 A/ 24 ... 250V AC/DC	Closing of 2 NO contacts 5 A/ 24 ... 250V AC/DC
Cial. reference	**LUFN11**	**LUFN02**	**LUFN20**

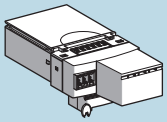
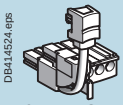
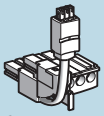
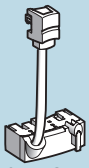
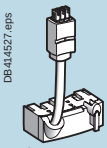
3b - Selection of additional function module (optional)

Function	Measure of average current in each phase	Alarm if average current in the phases = 105% of In	Indicates the overload tripping - manual reset	Indicates the overload tripping - reset with the power base control pad or remote reset	
Output	4-20 mA signal, image of the pourcentage of In	Closing of a NO contact	Change of state of 2 contacts: 1 NO + 1 NC	Opening of a NC contact	Closing of a NO contact
Référence	**LUFV2**	**LUFW10**	**LUFDH11**	**LUFDA01**	**LUFDA10**

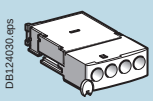
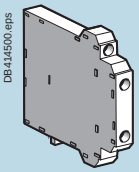
4a- Selection of the auxiliary module and terminal block for Modicon Telefast system

	Telefast system Module	**Terminal block / control cable 1 direction of rotation**	**2 directions of rotation**
			
Cial. reference	**LUFC00**	**LU9BN11C**	**LU9MRC**

4b- Selection of the communication auxiliary module

	Communication module	**Terminal block / control cable for LUB●● power base, 1 direction of rotation**		**Terminal blocks / control cables for LU2B●● ou LUB●● + LU2MB0●● power base, 2 directions of rotation**	
		 *LU9B N11C*	 *LU9B N11L*	 *LU9M RC*	 *LU9 MRL*
Modbus	**LUL C033**	**LU9BN11C**		**LU9MRC**	
Ethernet	**LUL C033 + TeSys port**				
AS-Interface	**ASILUF C51**				
Profibus DP	**LUL C07**	**LU9BN11L**		**LU9MRL**	
CANopen	**LUL C08**				
DeviceNet	**LUL C09**				
Advantys stb	**LUL C15**				
Beckhoff	**LUL C14**	contact us			

5- Selection of additional block signaling of protection status

	Auxiliary signaling contacts block		**Auxiliary signaling contacts block**
			
Function	Indicates the open/ closed status of the protection: by NO/NC contact Protection standby/tripped: by SD contact To be inserted below the auxiliary module cavity (B)		Indicates the open/closed status of the protection
Output	OF and SD contacts: NO type	OF contact: NC type SD contact: NO type	2 OF contacts: NO type
Cial. reference	**LUA1C20**	**LUA1C11**	**LUA8E20**

■ The signaling modules with dry contacts are directly wired on indicators and electrical warning devices.
■ Contacts rating: 5 A / 24...250 V AC/DC.
■ The **LUF V2** module is connected to a datalogger or any other indication device providing a 4-20 mA analog input.

■ Module **LUF C00**:
□ indicates the position of the control pad and the state of the poles,
□ collects the FWD, REV commands from an automation process.

■ **Inputs**: P24 V power base coil control, from a 24 V DC PLC output
■ **Outputs**: OF / SD contacts from protection device, OF contact from the poles (to a 24 V PLC input)

■ RJ45 connector for Telefast PLC pre-wiring system:
□ Modicon TM3 (map I/O controllers for RJ45 M221, M241, M25)
□ Modicon STB modules (I/O for automation island)
□ Modicon Telefast (interfaces RJ45/HE10).
■ Must be connected to a **LU9 G02** or **LU9 G03** Telefast distribution box

■ **Compatible exclusively with LUC●●● control unit with coil code B**

■ The terminal blocks + control cables provide the connection to the coil of the power base and the signal contacts.

■ Communication modules:
□ indicates the position of the control pad and the state of the poles,
□ collects the FWD, REV commands from an automation process.

■ The states and the control orders are coded according to the selected communication protocol.

■ Screw clamp terminals to the bus cable.

■ The terminal blocks + control cables provide the connection to the coil of the power base and the signal contacts.

■ Additional blocks:
□ used for wiring indicator lights or controllers.

■ Advantage:
□ the locations for these blocks are always available, regardless of the configuration of the power base.

■ Contact rating: 5 A / 24...250 V AC/DC.

***Note**: the indication the direction of rotation is available on the reverser block unit:*
- On a LU9M R1C assembling connector
- On a LU9M R1 terminal block.

Typical wiring diagrams

Standard or advanced power base

ON/OFF control (1 direction of rotation)

Push buttons wiring

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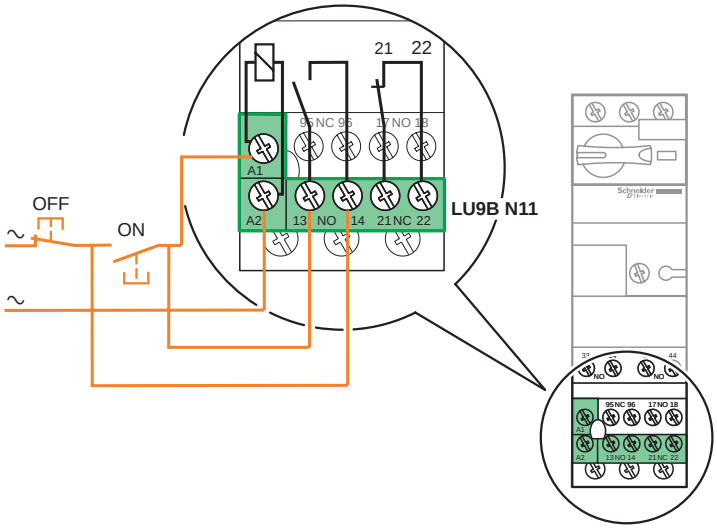

ON indication

"Motor RUN" indicator wiring

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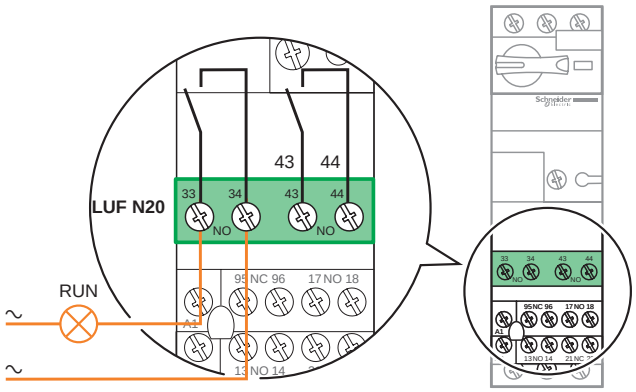

"Motor starter READY" indicator wiring

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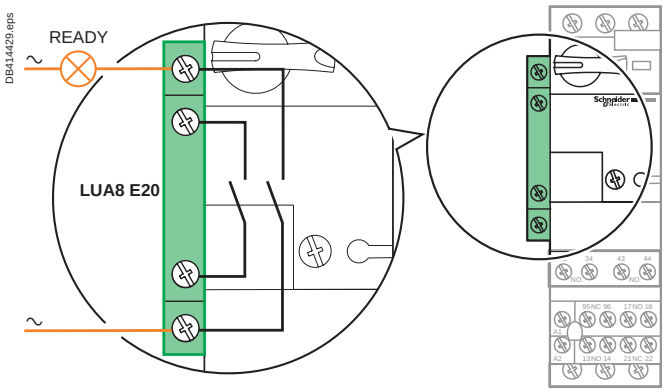

ALARM indication

Protection device status indicator wiring

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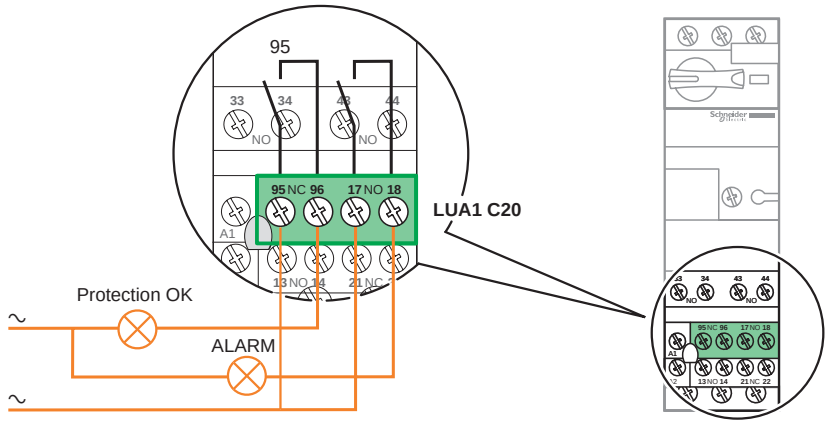
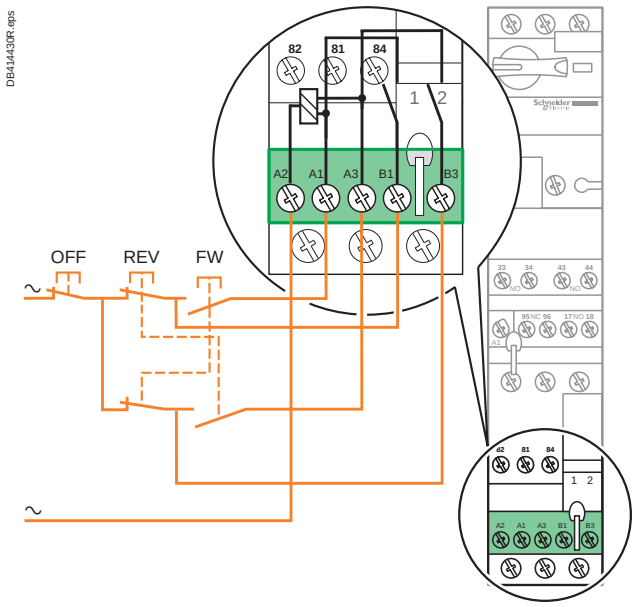


Typical wiring diagrams and contacts status

Power base with vertical mounting reverser block

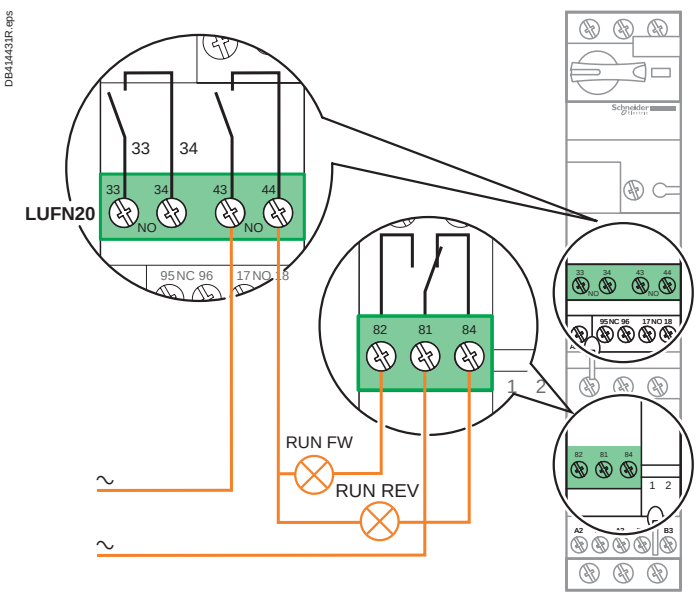
FW/REV/OFF control (2 directions of rotation)

Push buttons wiring



FW/REV control

FW, REV indicators wiring



Contact states depending on the product status

		Position of rotary knob	Indication on front panel	N/O pole contact	N/C pole contact	N/O contact any fault	N/C ontact any fault	⏱ N/O contact product ready	N/C contact Rotary knob on OFF position
References of add-on contact blocks and auxiliary contact modules Terminal referencing		–	–	–	**LUF N11** 31-32	**LUA1 C20** 97-98	**LUA1 C11** 95-96	**LUA1 C20** 17-18	–
	or	–	–	–	**LUF N02** 31-32 41-42	**LUA1 C200** No terminal block	**LUA1 C110** No terminal block	**LUA1 C200** No terminal block	**LUA8 E20** 57/58 67/68
	or	–	–	**LUF N20** 33-34 43-44	**LUB9 N11** 21-22	–	–	**LUA1 C11** 17-18	–
	or	–	–	**LUF N11** 43-44	–	–	–	**LUA1 C110** No terminal block	–
	or	–	–	**LUB9 N11** 13-14	–	–	–	–	–
Off		OFF	**0**						
Ready to operate			**0**						
Start			**1**						
Tripped on short-circuit		TRIP	**I>>**						
Tripped on thermal overload	Manual reset mode	TRIP	**0**						
	Automatic reset on thermal overload fault mode		**0**						
	Remote reset mode		**0**						

N/O contact —◺— *in closed position.*

N/C contact —◹— *in open position.*

Parallel-type cabling systems
Principle

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Point-to-point wiring

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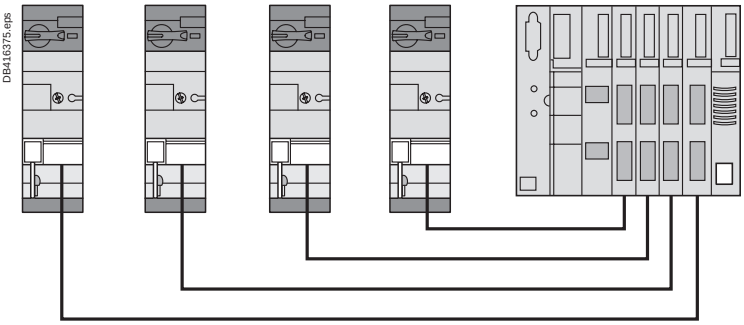

■ The control inputs and signaling outputs of the starter are grouped in a single socket, usually RJ45.
They are individually connected to PLC outputs and inputs.
■ The wires run in parallel in a multicore cable equipped with a multipin connectors, RJ45 in the case of Telefast type system.
■ 3 parallel wiring systems are available:
□ Modicon TM3, based on a RJ45 I/O module for M221, M241, M25 PLC
□ Modicon STB, based on I/O modules for automation island
□ Modicon Telefast: RJ45 / HE10 interfaces.
■ Simple way of proximity wiring. Quick cabling.
It is suitable for machine control panels when a large number of TeSys U starter-controller are installed.

informations

■ The control and signaling terminals of the starters are connected to the output and input terminals of a PLC. No specific connectors or cables are required.
■ Conventional wiring mode, without optimization of the cabling time.
May be suitable when a very small number of starters is used, with a very small number of links.

Parallel cabling systems

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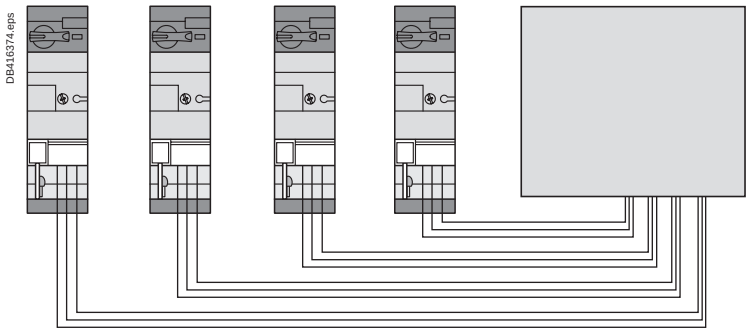
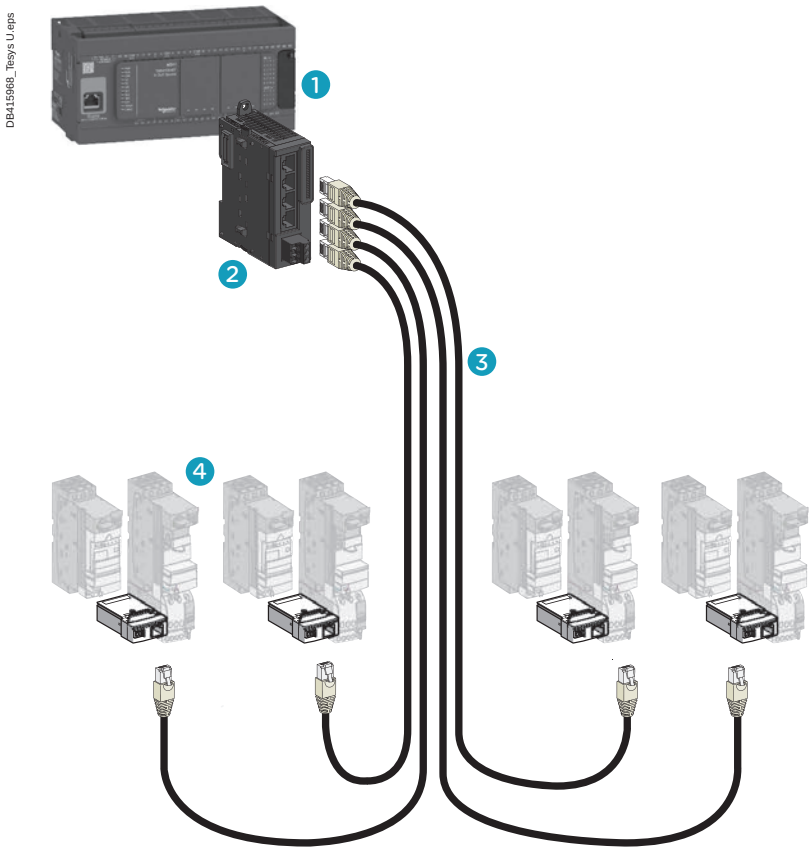


Parallel-type cabling systems
Modicon TM3

Integration in the Modicon TM3 wiring system

The TeSys U starter-controller are directly connected to a I/O module equipped with RJ45 connectors.

1. Modicon M221, M241, M251 PLC's
2. TM3XTY I/O module for 4 starters
3. LU9R●● cables with RJ45 connectors,
4. LUFC00 module for TeSys parallel connection (1 or 2 direction of rotation).



Parallel-type cabling systems
Modicon Advantys STB

Integration in the Modicon Advantys STB system

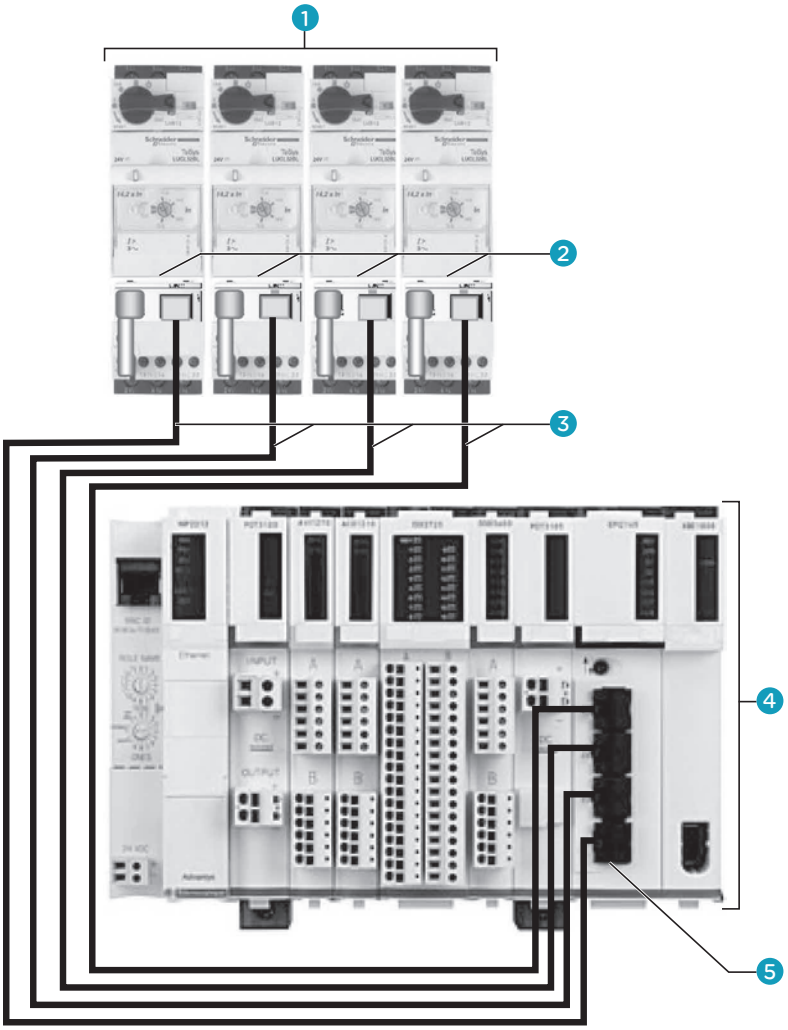
Advantys STB is a solution for remote I/O modules.

These communicate with the Modicon PLCs range thanks to a serial liaison, using the Advantys STB protocol.

In this example an Advantys I/O module is used to facilitate wiring.

Each of its four terminals receives a preassembled RJ45 cable connected to a TeSys U starter-controller.

1. TeSys U starter-controller (equipped with 24 V DC LUC ●●●● BL control modules)
2. TeSys module for parallel RJ45 wiring: LUFC00 + LU9B N11C (one direction) or LU9MRC (2 directions)
3. RJ45 cables (2 connectors):
   ⩽ 3 m: LU9 R●●
   > 3 m: 490 NTW 000●● (5, 12, 40 or 80 m)
4. PLC: Modicon range
5. I/O Modicon Advantys module: STB EPI 2145K

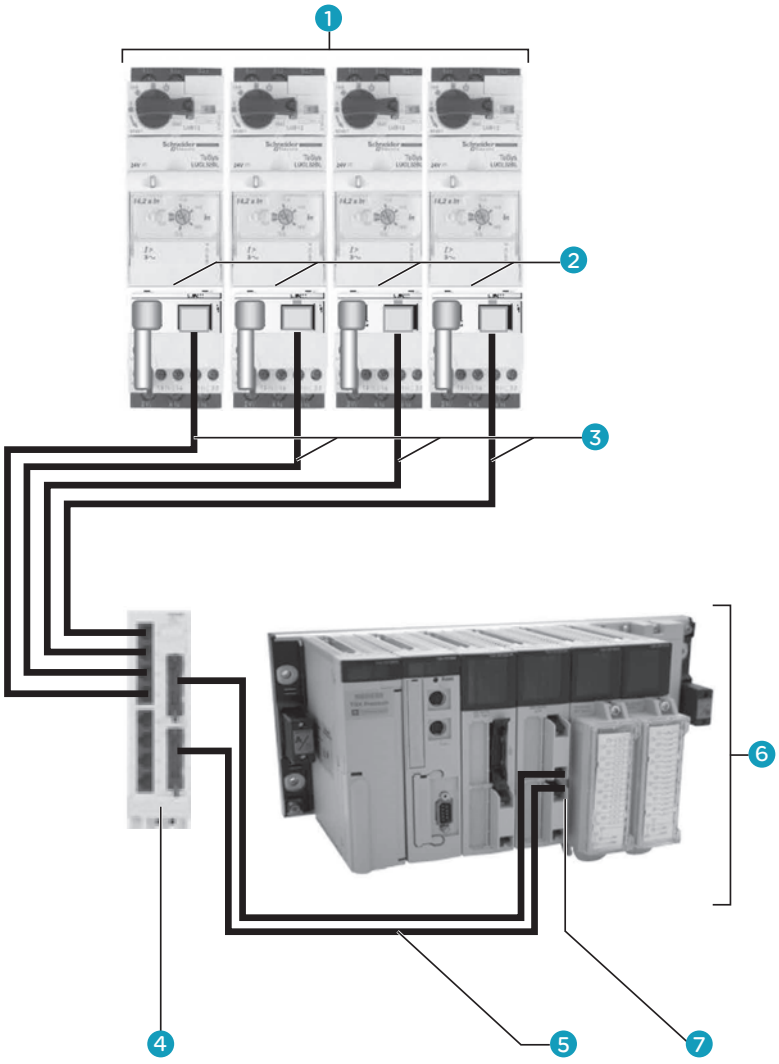


Parallel-type cabling systems
Modicon Telefast

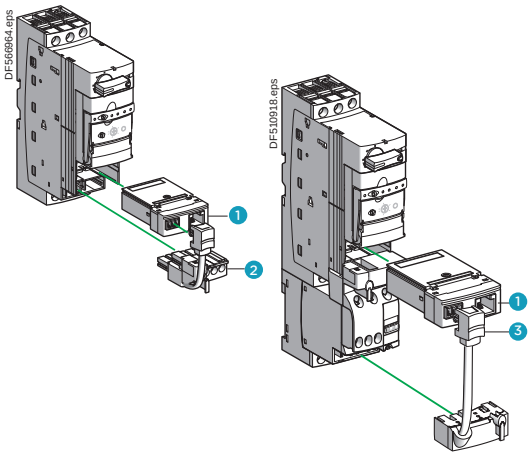
Integration in the Modicon Telefast system

The wiring hubb **LU9G0●** facilitates the connection to Modicon Premium PLCs.
It adapts RJ45 connectors to HE10 available on the Telefast I/O modules.
Connection: up to 8 TeSys U per hubb.

1. TeSys U starter-controllers (equipped with 24 V DC LUC ●●●●BL control units)
2. TeSys Module for parallel wiring RJ45: LUF C00 + LU9B N11C (one direction) or LU9MRC (2 directions)
3. RJ45 cables (2 connectors):
⩽ 3 m: LU9R●●
> 3 m: 490 NTW 000●● (5, 12, 40 or 80 m)
4. Telefast RJ45 / HE10 splitter box: LU9G02 or LU9G03 (different TeSys U connection capacities)
5. HE10 cables (2 connectors): TSX CDP ●●●
6. PLC: Modicon Premium range
7. I/O module: TSX DMY 28FK

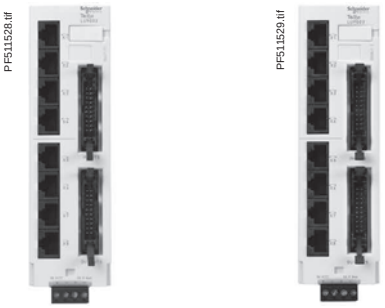


Parallel-type cabling systems
Components TeSys U



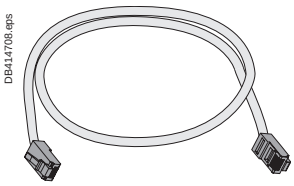
Components for connection of a starter - 1 direction of rotation	
Designation	**Reference**
1 Parallel connection module, RJ45 output 2 coil control inputs, 3 signal outputs	**LUFC00**
2 Pre wired connector, one direction of rotation, for coil connection and one contact for emergency stop	**LU9BN11C**

Components for connection of a starter - 2 directions of rotation	
Designation	**Reference**
1 Parallel connection module, RJ45 output	**LUFC00**
3 Pre wired connector, 2 directions of rotation, for coil connection and one contact for emergency stop	**LU9MRC**

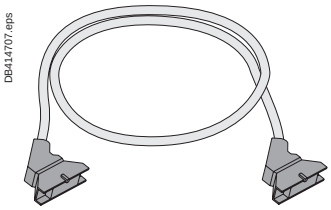


LU9 G02 *LU9 G03*

Telefast RJ45/ HE10 splitter box	
Designation	**Reference**
Splitter box Connection to TeSys U: 4 RJ45 connectors: for 1 to 4 TeSys U, 1 or 2 directions 4 RJ45 connectors: for 1 to 4 TeSys U, 1 direction Connection to PLC: 1 x HE10 connector - 20 chanels, for pole status, alarms 1 x HE10 connector - 20 chanels, for control. 24 V DC auxiliary power supply required	**LU9G02**
Splitter box Connection to TeSys U: 8 RJ45 connectors: for 1 to 8 TeSys U, 1 or 2 directions Connection to PLC: 1 x HE10 connector - 20 chanels, for pole status, alarms 1 x HE10 connector - 20 chanels, for control. 24 V DC auxiliary power supply required.	**LU9G03**



RJ45 cables.



HE10 cables.

RJ45 connection cables, with 2 RJ45 connectors	
0.3 m	**LU9R03**
1 m	**LU9R10**
3 m	**LU9R30**

HE10 connection cables, with 2 HE10/20 way connectors	
Section: AWG 22 / 0.324 mm²	
0.5 m	**TSXCDP053**
1 m	**TSXCDP103**
2 m	**TSXCDP203**
3 m	**TSXCDP303**
5 m	**TSXCDP503**
Section: AWG 28 / 0.080 mm² (flat cable)	
1 m	**ABFH20H100**
2 m	**ABFH20H200**
3 m	**ABFH20H300**

HE10 connection cables, with 1 x HE10/40 way connector (PLC side) and 1x HE10/20 way connector (Splitter box side)	
Section: 0.324 mm²	
0,5 m	**BMXFCC053**
1 m	**BMXFCC103**
2 m	**BMXFCC203**
3 m	**BMXFCC303**
5 m	**BMXFCC503**
10 m	**BMXFCC1003**

Cable with stripped wires (PLC side) 1 x HE10/20 ways connector (Splitter box side)	
Section: AWG 22 / 0.324 mm²	
3 m	**TSXCDP301**
5 m	**TSXCDP501**

Bus-type cabling systems
Principle

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Application functionality, topology

1 Geographically expanded process

Many motors are scattered on the site, the process control requires individual control to ensure safety and proper operation.
TeSys U is a suitable communicating actuator. The integration of a bus communication module in the starter-controller saves space in the control board and simplifies wiring, compared to solutions based on conventional components (circuit breaker + contactor).

2 Application: automatic motor control / monitoring

Thanks to a communication bus, starter-controllers are part of an automation system controlled by a PLC and (or) various communicating controllers.
These equipment can then share the status and alarm information related to each motor control and perform specific treatments.

3 Bus- type connection

This type of connection allows different topologies (star, ring ...) and supports various protocols dialogue. It is therefore recommended for geographically expanded process, in order to to simplify wiring and ensure multiple-controller management.

- The bus wiring interconnects TeSys U starters controllers and components of the installation via a single the cable.
- Commands and status are coded according to the selected protocol and transmitted on the communication bus.
- This wiring is simple, usually a shielded (or not) pair of wires, suitable for monitored automation, regardless of the number of TeSys U and their locations.

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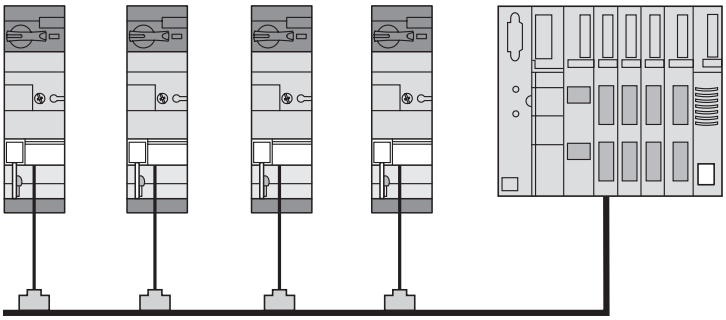
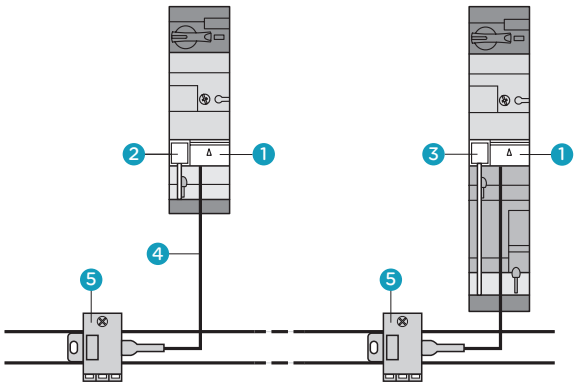
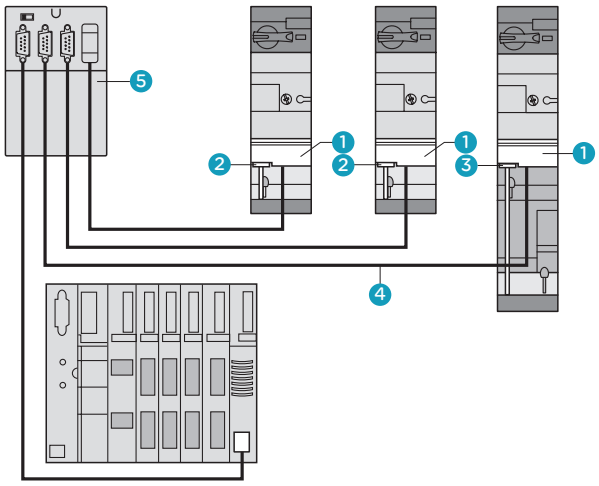
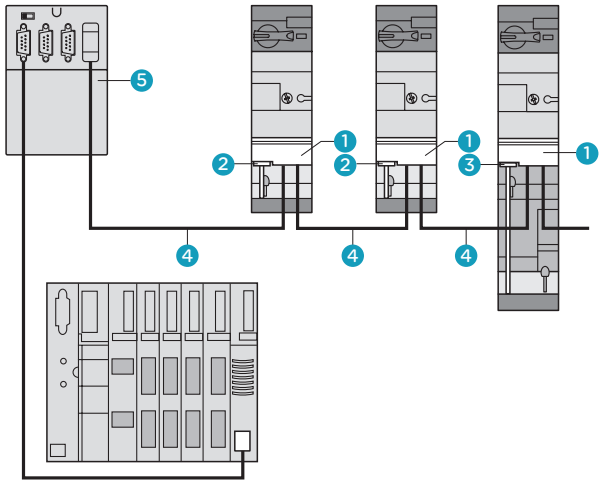
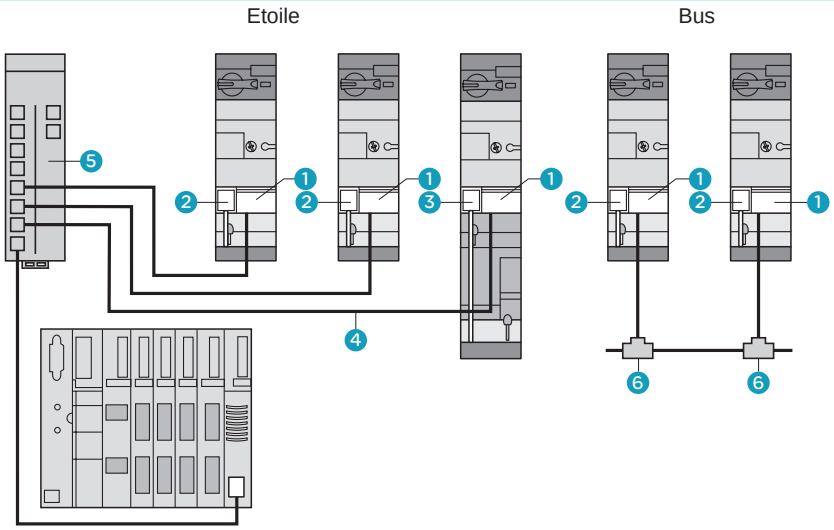
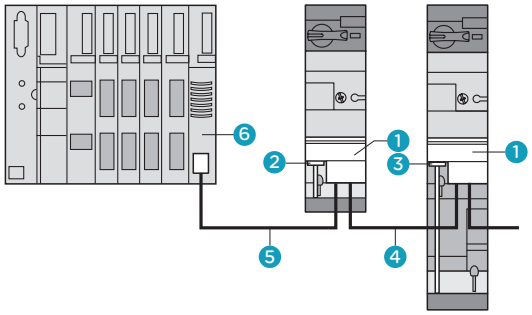
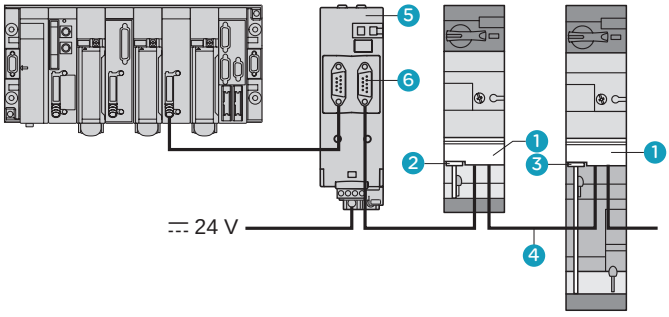
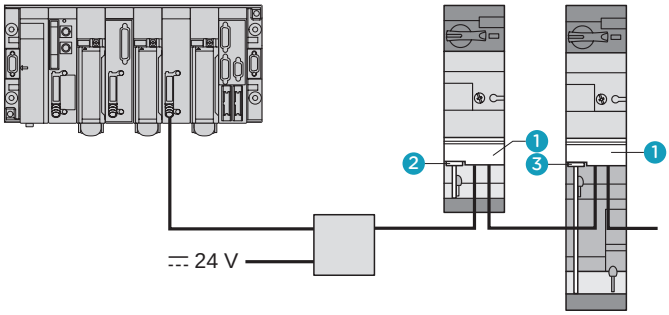


Available TeSys U status and controls via a communication module

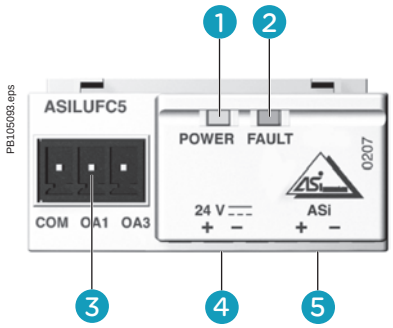
Control unit	LUCA	LUCB LUCC LUCD	LUCM
Starter status (ready, running, fault)	■	■	■
Start and Stop commands	■	■	■
Thermal overload alarm		■	■
Remote reset via the bus		■	■
Indication of motor load		■	■
Fault signalling and differentiation		■	■
Remote programming and monitoring of all functions			■
“Log” function			■
“Monitoring” function			■
Alarms (overcurrent, ...)			■

Bus-type cabling systems
View

Network	Architecture	Component references
AS Interface		
Cabling system for rapidly connecting sensors and actuators to the controller. A single cable provides both data transmission and power to sensors. Details page **A3/26**		1 ASI LUF C5 or ASI LUF C51 2 LU9B N11C 3 LU9M RC 4 XZ CG0142 5 TC SAT V01 N2
CANopen		
Etoile		1 LUL C08 2 LU9B N11C 3 LU9M RC 4 TSX CAN C●●● 5 TSX CAN TDM4 6 TSX CPP 110
Bus Details page **A3/27**		

Network	Architecture	Component references
Modbus		
Details page **A3/28**		1 LUL C031 or LUL C033 2 LU9B N11C 3 LU9M RC 4 VW3 A8 306R●●● 5 LU9 GC3 6 VW3 A8 306TF
Advantys STB		
Starter-controllers communicate using ADVANTYS STB protocol to fit into a remote I/O architecture. Details page **A3/29**		1 LUL C15 2 LU9B N11C 3 LU9M RC 4 LU9 RDD●●● 5 LU9 RCD 6 STB XBE1100
Profibus-DP (Decentralized Peripherals)		
is used for connecting actuators and sensors to a central controller for applications in industrial production. The standard bus provides a number of diagnostic means Details page **A3/30**		1 LUL C07 2 LU9B N11C 3 LU9M RC 4 LU9 RPB010 LU9 RPB100 LU9 RPB400 5 LU9 AD7 6 LU9 GC7
DeviceNet		
Details page **A3/31**		1 LUL C09 2 LU9B N11C 3 LU9M RC

Bus-type cabling systems
TeSys U components for AS-Interface bus



1. Green LED: AS-Interface voltage present
2. Red LED: AS-Interface or module fault
3. Outputs for starter commands
4. Black connector for connection to ⎓ 24 V auxiliary power supply
5. Yellow connector for connection to the AS-Interface system

The LULC09 communication module, combined with the power base and control unit is used to control TeSys U starters-controllers via DeviceNet bus.
The LULC09 communication module is slave type.

Module Specifications

I/O terminal block

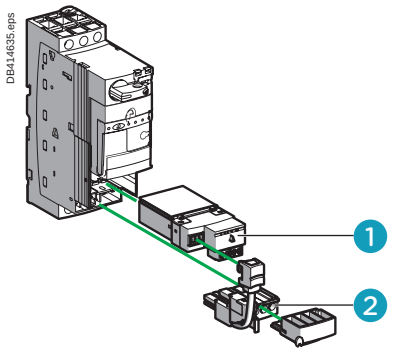
- Powered by external 24 V DC (power supply not included):
  - 2 x configurable inputs for binary sensors
  - 1 x 24 V DC output - 0.5 A local auxiliary command.

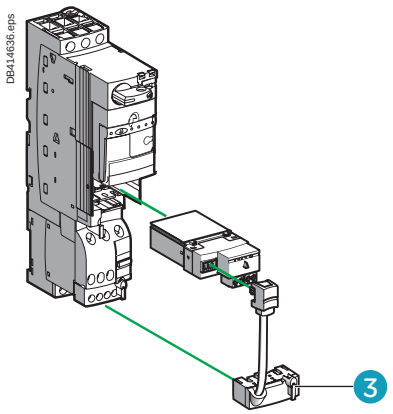
Connectors

- For TeSys U 24 V DC coil (common, direction 1, direction 2).
- For AS-Interface bus.

Signaling

- Module Status - Error - 24 V, by LED.





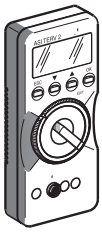
Tesys components			
Description	**Mark**	**Max number of slaves**	**References**
AS-Interface communication module	1	31	**ASILUFC5**
		62	**ASILUFC51**
Pre-wired connector: coil - LUB powerbase	2	-	**LU9BN11C**
Pre-wired connector: coil - LUB2B powerbase	3	-	**LU9MRC**

Connection of the communication module

By a "Y" cable with:
- TeSys U side, 2 connectors (bus + power),
- Bus side, one connector to be connected to the AS-Interface TCSATV01N2 tap-off.

Description	References
AS-Interface / TeSys U branch cable, L = 2 m	**XZCG0142**
AS-Interface Tap-off	**TCSATV01N2**

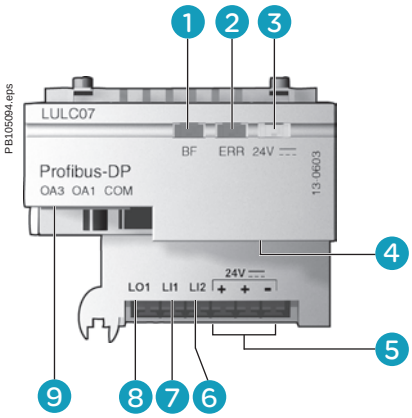
XZ MC11



ASI TERV2

Consoles and cable adapter	
Designation	**References**
Addressing terminal Battery operated. Battery charger supplied AS-Interface V.1 and V.2.1 compatible	**XZMC11**
Adjustment and diagnostics console Runs on LR6 batteries Allows addressing of AS-Interface V.2.1 slaves and diagnostics	**ASITERV2**
Cable adapter For console XZ MC11	**XZMG12**

Bus-type cabling systems
TeSys U components for CANopen bus



1 LED indicating module status
2 Fault signalling LED
3 LED indicating ⎓ 24 V supply ON for outputs OA1, OA3 and LO1
4 SUB-D connector for bus link
5 ⎓ 24 V supply connection
6 Discrete input
7 Discrete input
8 Discrete output
9 Outputs for starter commands

The LUL C08 communication module, combined with the power base and control unit is used to control TeSys U starters-controllers via CANopen bus.
The LULC09 communication module is slave type.

Module Specifications

I/O terminal block

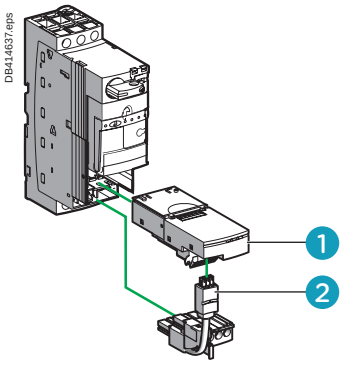
- Powered by external 24 V DC (power supply not included):
  - 2 x configurable inputs for binary sensors
  - 1 x 24 V DC output - 0.5 A local auxiliary command.

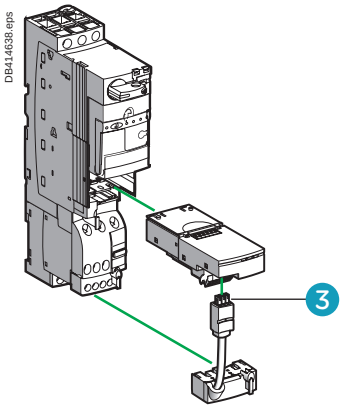
Connectors

- For TeSys U 24 V DC coil (common, direction 1, direction 2).
- For CANopen bus.

Signaling

- Module Status - Error - 24 V, by LED.





Tesys components		
Description	**Item**	**References**
CANopen communication module	1	**LULC08**
Pre-wired connector: coil - LUB powerbase	2	**LU9BN11L**
Pre-wired connector: coil - LUB2B powerbase	3	**LU9MRL**

Compatibility of CANopen communication module with control units	
LUCA ●●BL / B ●●BL / C ●●BL / D ●●BL	All versions marketed after **2T0481** (1)
LUC M●●BL	All versions ≥ V3.2
LUC MT1BL	All versions ≥ V3.2

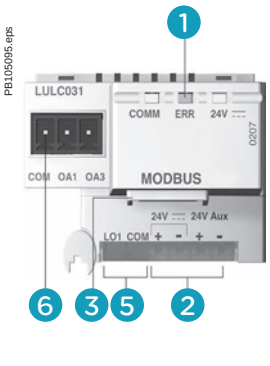
(1) This "date code" is made up as follows:
2T *or* ***2C****: factory code.*
04*,* ***05****,* ***06*** *and so on: year of manufacture.*
08*: week.*
1*: 1st day of the week.*

How to get information on the design of a CANopen architecture and the choice of network accessories

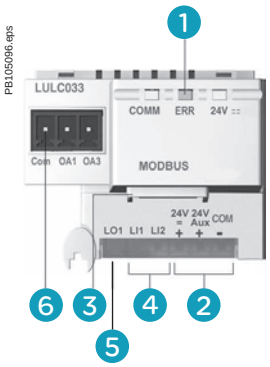
Consult the library of downloadable documents on schneider-electric.com by searching on the name of the communication protocol.

Bus-type cabling systems
TeSys U components for Modbus bus

LUL C031



LUL C033



1 Module status signalling LED
2 24 V supply connection
3 RJ45 connector for RS485 Modbus link
4 2 discrete inputs
5 1 discrete output
6 Outputs for starter commands

The LULC031 and LULC032 communication modules, combined with the power base and control unit is used to control TeSys U starters-controllers via Modbus.

Module Specifications

I/O terminal block

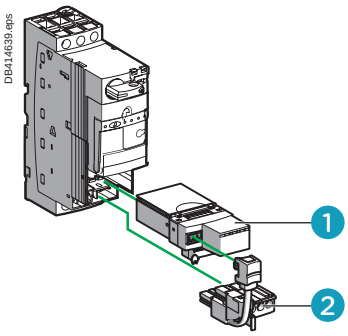
- Powered by external 24 V DC (power supply not included):
  - 2 x configurable inputs for binary sensors (on LULC033 only)
  - 1 x 24 V DC output - 0.5 A local auxiliary command.

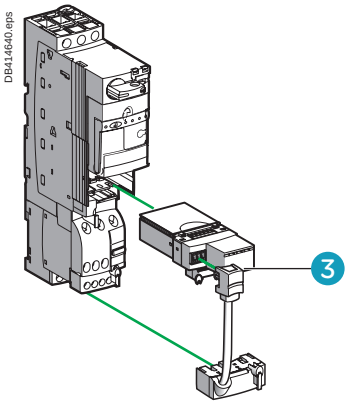
Connectors

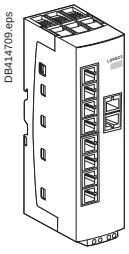
- For TeSys U 24 V DC coil (common, direction 1, direction 2).
- RJ45, For Modbus line.

Signaling

- Module Status - Error - 24 V, by LED.







Tesys components			
Description	**Item**	**Bin. input**	**References**
Modbus communication module	1	0	**LULC031**
		2	**LULC033**
Pre-wired connector: coil - LUB powerbase	2	-	**LU9BN11C**
Pre-wired connector: coil - LUB2B powerbase	3	-	**LU9MRC**

Modbus hub		
Description	**Length (m)**	**References**
Modbus communication distributor	-	**LU9GC3**
Cables fitted with 2 x RJ45 connectors	0.3	**VW3A8306R03**
	1	**VW3A8306R10**
	3	**VW3A8306R30**
Tees derivations	0.3	**VW3A8306TF03**
	1	**VW3A8306TF10**
Description		**References**
RS 485 line terminator		**VW3A8306R**

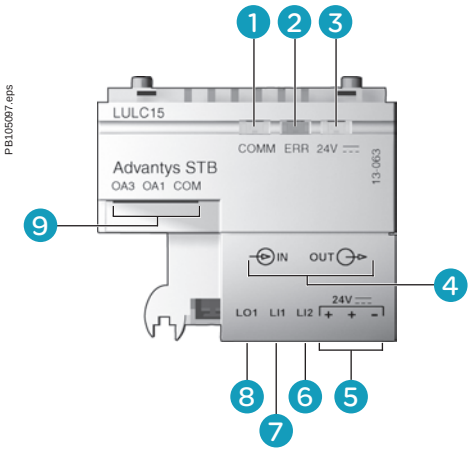
Compatibility of Modbus communication modules				
Communication modules (software version)		**LUCL C031 from V2.3**	**LUCL C033 from V2.1**	**LUCL C033 from V2.2**
Power base	LUB ●● / LU2B ●2	■	■	■
	LUTM ●●BL		■	■
Control unit	LUCA ●●BL	■		■
	LUCB ●●BL LUCC ●●BL LUCD ●●BL	■		■
	LUCM ●●BL	■		■ (1)
	LUCBT ●●BL LUCDT ●●BL		■	
	LUCMT ●●BL		■	

(1) Except LUCM ●●BL V1.04 andV1.06.

How to get information on the design of a Modbus architecture and the choice of network accessories

Consult the library of downloadable documents on schneider-electric.com by searching on the name of the communication protocol.

Bus-type cabling systems
TeSys U components for Advantys STB bus



1 Two-colour LED indicating module status
2 Fault signalling LED
3 LED indicating that ⎓ 24 V supply is ON
4 Bus connectors
5 ⎓ 24 V supply connection
6 Discrete input
7 Discrete input
8 Discrete output
9 Outputs for starter commands

Communication module LUL C15 allows direct connection of TeSys U starter-controllers and controllers on an Advantys STB island, between two segments or at the end of a segment. The starter-controller will then be able to make use of the services provided by Advantys STB: self-addressing, autobaud, fallback positions.

Module Specifications

I/O terminal block

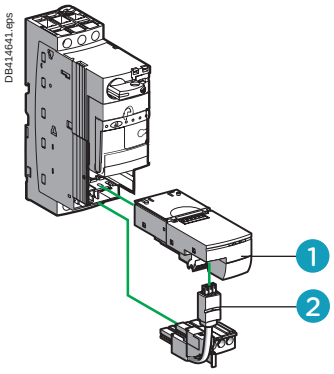
- Powered by external 24 V DC (power supply not included):
  - 2 x configurable inputs for binary sensors (on LULC033 only)
  - 1 x 24 V DC output - 0.5 A local auxiliary command.

Connectors

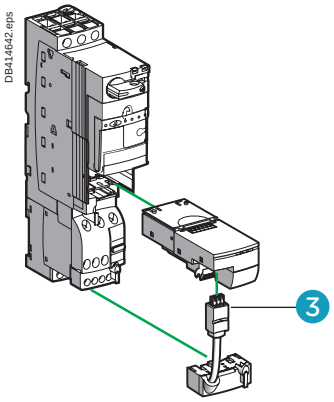
- For TeSys U 24 V DC coil (common, direction 1, direction 2).
- For Advantys STB bus.

Signaling

- Com - Error - 24 V, by LED.



LUB + LUL C15 + LU9B N11L



LU2B + LUL C15 + LU9M RL

Tesys components		
Description	**Item**	**References**
Advantys STB communication module	1	**LULC15**
Pre-wired connector: coil - LUB powerbase	2	**LU9BN11L**
Pre-wired connector: coil - LUB2B powerbase	3	**LU9MRL**

Cables		
Description	**Length (m)**	**References**
Cables fitted with connectors, one straight and one elbowed	0.3	**LU9RCD03**
	1	**LU9RCD10**
	3	**LU9RCD30**
	5	**LU9RCD50**
Cables fitted with two straight connectors	0.3	**LU9RDD03**
	1	**LU9RDD10**
	3	**LU9RDD30**

Compatibility of Advantys STB communication module with control units	
LUCA ●●BL / B ●●BL / C ●●BL / D ●●BL	All versions marketed after **2T0481** (1)
LUCM ●●BL	All versions ≥ V3.2
LUCM T1BL	All versions ≥ V3.2

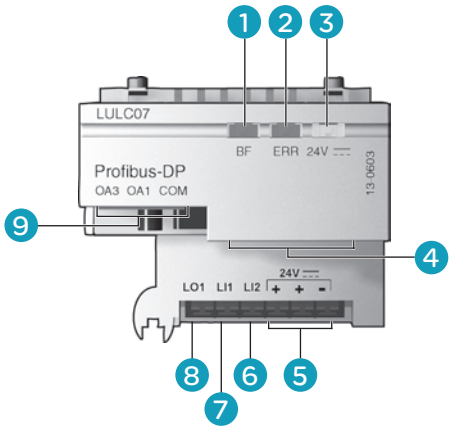
(1) This "date code" is made up as follows:
2T *or* ***2C****: factory code.*
04*,* ***05****,* ***06*** *and so on: year of manufacture.*
08*: week.*
1*: 1st day of the week.*

How to get information on the design of a Advantys STB architecture and the choice of network accessories

Consulter la librairie des documents téléchargeables sur le site schneider-electric.com en faisant une recherche sur le nom du protocole de transmission.

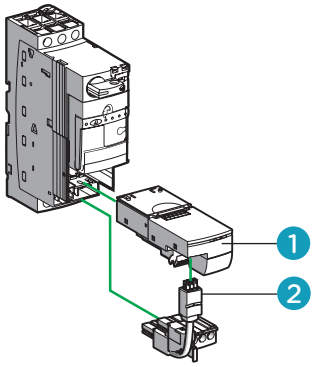
Bus-type cabling systems
TeSys U components for Profidus DP bus

PB105098.eps



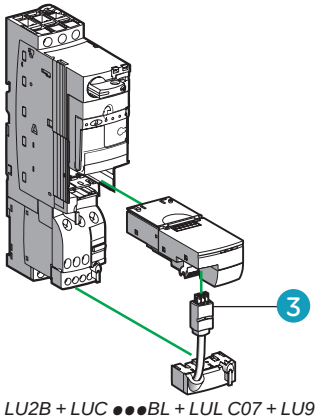
1. Two-colour LED indicating module status
2. Fault signalling LED
3. LED indicating ⎓ 24 V supply ON for outputs OA1, OA3 and LO1
4. SUB-D connector for bus link
5. ⎓ 24 V supply connection
6. Discrete input
7. Discrete input
8. Discrete output
9. Outputs for starter-controller commands (non-reversing and reversing)

DB414643.eps



LUB + LUC ●●●BL + LUL C07 + LU9B N11L

DB414644.eps



LU2B + LUC ●●●BL + LUL C07 + LU9 MRL

When used in conjunction with the power base and control unit, communication module LULC07 allows TeSys U starter-controllers to be controlled via Profibus DP (Deported Periphery) bus.
Communication module LULC07 is of the slave type.

Module Specifications

I/O terminal block

- ■ Powered by external 24 V DC (power supply not included):
  - □ 2 x configurable inputs for binary sensors
  - □ 1 x 24 V DC output - 0.5 A local auxiliary command.

Connectors

- ■ For TeSys U 24 V DC coil (common, direction 1, direction 2).
- ■ For Profibus DP bus.

Signaling

- ■ Com - Error - 24 V, by LED.

Tesys components		
Description	**Item**	**References**
Profibus DP communication module	1	**LULC07**
Pre-wired connector: coil - LUB powerbase	2	**LU9BN11L**
Pre-wired connector: coil - LUB2B powerbase	3	**LU9MRL**

Components for connection to the bus and to the installation

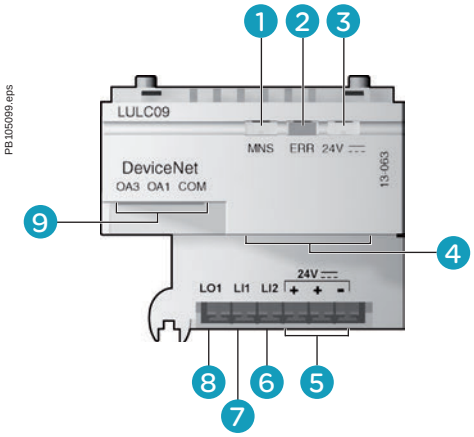
The 24 V DC -Aux supply to Profibus DP modules LUL C07 must pass through power supply module LU9 GC7.
LUL C07 modules must be connected to the LU9 GC7 splitter box in order to be powered.
The number of TeSys U starter-controllers that can be powered by an LU9 GC7 module is limited by the maximum current (1.5 A) which it can deliver.
The ⎓ 24 V supply for the inputs/outputs must be provided separately..

Description	Length (m)	References
Profibus DP power supply module	-	**LU9GC7**
Profibus DP connector	-	**LU9AD7**
Profibus DP cables 2-wire	100	**TSXPBSCA100**
	400	**TSXPBSCA400**
Profibus DP cables 4-wire	10	**LU9RPB010**
	100	**LU9RPB100**
	400	**LU9RPB400**

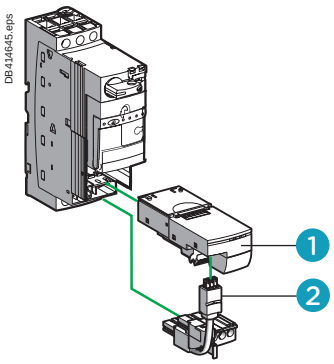
How to get information on the design of a Profibus DP architecture and the choice of network accessories

Consult the library of downloadable documents on schneider-electric.com by searching on the name of the communication protocol.

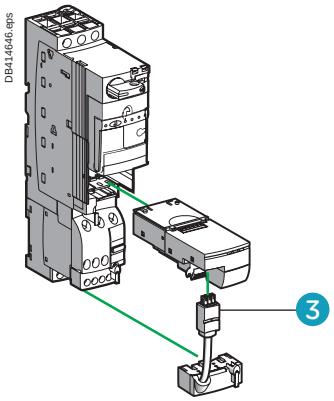
Bus-type cabling systems
TeSys U components for DeviceNet bus



1. LED indicating module status
2. Fault signalling LED
3. LED indicating ⎓ 24 V supply ON for outputs OA1, OA3 and LO1 and 24 V bus
4. DeviceNet connector for bus link
5. ⎓ 24 V supply connection
6. Discrete input
7. Discrete input
8. Discrete output
9. Outputs for starter-controller commands (non-reversing and reversing)



LUB + LUC ●●●BL + LUL C07 + LU9B N11L



LU2B + LUC ●●●BL + LUL C07 + LU9 MRL

When used in conjunction with the power base and control unit, communication module LULC09 allows TeSys U starter-controllers to be controlled via DeviceNet bus. Communication module LUL C09 is of the slave type.

Module Specifications

I/O terminal block

- Powered by external 24 V DC (power supply not included):
  - 2 x configurable inputs for binary sensors
  - 1 x 24 V DC output - 0.5 A local auxiliary command.

Connectors

- For TeSys U 24 V DC coil (common, direction 1, direction 2).
- For DeviceNet bus.

Signaling

- Com - Error - 24 V , by LED.

Tesys components		
Description	**Item**	**References**
DeviceNet communication module	1	**LULC09**
Pre-wired connector: coil - LUB powerbase	2	**LU9BN11L**
Pre-wired connector: coil - LUB2B powerbase	3	**LU9MRL**

How to get information on the design of a DeviceNet architecture and the choice of network accessories

Consult the library of downloadable documents on schneider-electric.com by searching on the name of the communication protocol.

Communication gateways LUFP

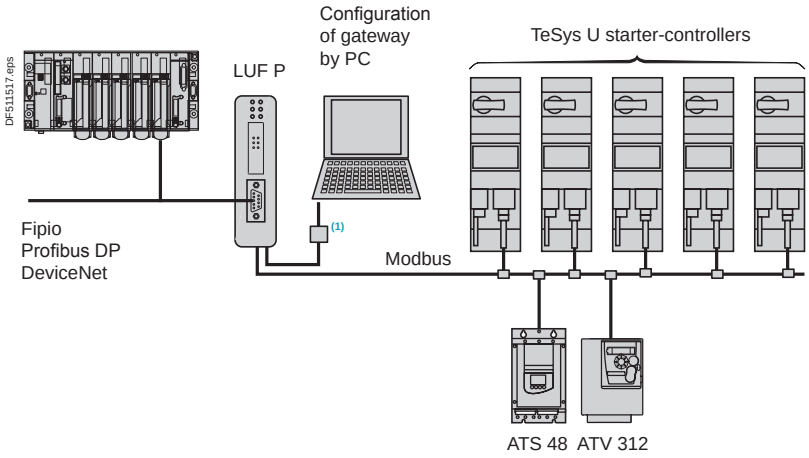
Presentation

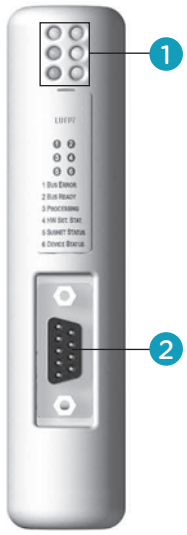
Communication gateways LUF P allow connection between the Modbus serial link and Fipio, Profibus DP or DeviceNet field buses.

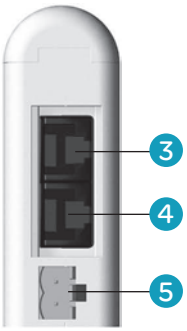
After configuration, these gateways manage information which can be accessed by the Modbus serial link and make this information available for read/write functions (command, monitoring, configuration and adjustment) on the field buses.

An LUF P communication gateway consists of a box which can be clipped onto a 35 mm omega rail, allowing connection of up to 8 Slaves connected on the Modbus serial link.

Example of architecture







Communication gateway LUFP	
Description	**Reference**
Fipio / Modbus gateway	**LUFP1**
Profidus DP / Modbus gateway	**LUFP7**
DeviceNet / Modbus gateway	**LUFP9**

Description

Front panel of the product

1 LED indicating :
- communication status of the Modbus serial links,
- gateway status,
- communication status of the Fipio, Profibus DP or DeviceNet bus.

2 Connectors for connection to Fipio, Profibus DP or DeviceNet buses.

Underside of product

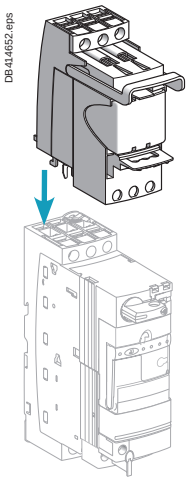
3 RJ45 connector for connection of the Modbus serial link
4 RJ45 connector for link to a PC
5 ⎓ 24 V power supply

Software set-up

For the Fipio bus, software set-up of the gateway is performed using either PL7 Micro/Junior/Pro software or ABC Configurator software.
For the Profibus DP and DeviceNet buses, software set-up is performed using ABC Configurator.
This software is included in the TeSys U user's manual.

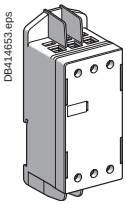
(1) Connection kit for PowerSuite software workshop.

Current limiter blocks and accessories



LUA LB1

LUA LF1



LUA LB920

Short-circuit current limiter block

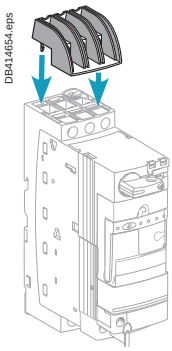
To be connected in series and upstream of a TeSys U starter-controller . It increases its ability to withstand the short circuit current from 50 kA to 100 or 130 kA under 400 V.

Principle: under the action of a short-circuit, the opening of two contacts of each phase of the limiter creates a resistive arc. The current then decreases to a value tolerable by a TeSys U power base.

Limiter blocks and accessories

Description	Breaking capacity Iq (kA)		Mounting	Unit reference
	≤ 440 V	690 V		
Limiter-disconnector (1 x LUAFL1 cartridge supplied)	130	70	Direct on power base	**LUALB1** (1)
Limiter	100	35	Separate	**LA9LB920** (2)
limiter cartridge for LUALB1	130	70	Limiter-disconnector	**LUALF1**

(1) Must be connected to one power base only.
(2) Can be connected to multiple power bases in parallel, max total current 63 A.



LUA LB920

Phase barrier

Ensures a complementary electrical insulation between phases.
690 V AC network: compulsory.
440 V AC network: compulsory when assembling a UL508 type E compliant motor starter (Self Protected Starter).

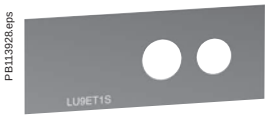
Description	Use	Mounting	Reference
Phase separator	LUB or LU2B 12 or 120 LUB or LUB2B 32 or 320 LUA LB1	Live terminals L1, L2, L3	**LU9SP0**

Clip-in labels

Can be clipped on any TeSys U power base, on LU6M B0●● inverser block, and Linergy HK busbar system.

Marking accessory

Description	Sold by lot of	Reference per unit
Clip-in label 8 x 18 mm	100	**LAD90**



LU9ET1S

Safety-chain identification - Red label

The red sticker is dedicated to TeSys U LUCA, LUCB, LUCC, LUCD and LUCL control units.

Description	Reference per unit
Retrofit safety-chain identification sticker	**LU9ET1S**

Handles and components for rotary control

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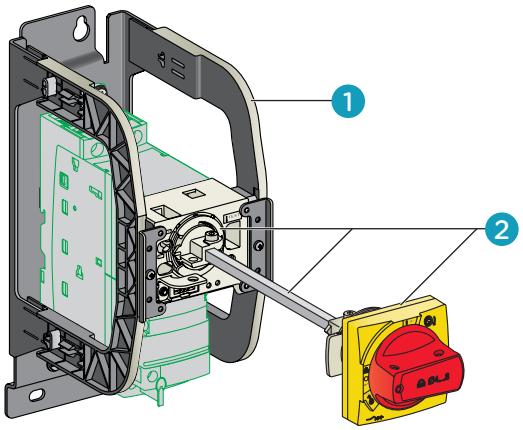

LUA PN21 mounting kit

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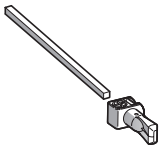

GVA PA1 long shaft

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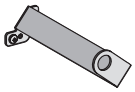

GVA PK12 shaft support plate for deep enclosure

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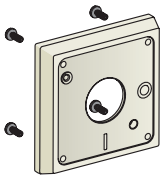

GVAPP1 spacer base (retrofit accessory)

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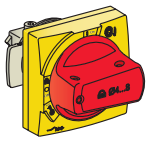

GVA PR54 red handle, IP 54

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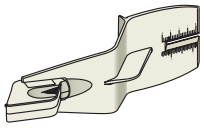

GVAPL01 "Laser square" plotting tool

Extended rotary handle

Allows a circuit breaker or a TeSys U starter-controller installed in back of an enclosure to be operated from the front panel.
The rotary handle can be black or red/yellow, IP54 or IP65. It includes a function for locking the circuit breaker or the starter in the O (OFF) or | (ON) position (depending on the type of rotary handle) by means of up to 3 padlocks with a shank diameter of 4 to 8 mm.
The extension shaft must be adjusted to the depth of the enclosure.
The IP54 rotary handle is fixed with a nut (Ø22) to make it easier to assemble.

Mounting kit

1 TeSys U Power base bracket; its horseshoe shaped sides hold the rotary mechanism facing the original handle.
2 Mechanism, shaft and handle; the shaft enters the handle attached to the door during closing.

Long shaft

■ to be cut to the required length. Equipped with a connection endpiece.

Shaft support plate for deep enclosure

■ Provides horizontal guiding of the shaft, when the door is open.

Spacer base (retrofit accessory)

■ Fixed on a side of the box, for heightening an GVA P●●● handle.

Handle

■ Delivered as a single unit, to be fitted on a side of the enclosure.
Note: references below are suitable for TeSys U power bases after 2004.

"Laser Square" Tool

■ On the principle of an angle extended with a laser beam, the "Laser Square" facilitates tracing the piercing marks on the door or the sides of an enclosure.

"Safety" stickers

■ Marking: Electrical hazard, etc.

Description		Tripping indication	Reference
Mounting kit	Black handle, with error status, IP54	●	**LU9APN21**
	Red handle, with error status, IP54	●	**LU9APN22**
	Red handle, without error status, IP65	-	**LU9APN24**
Separate elements	Long shaft = 315 mm	-	**GVAPA1**
	Shaft (≥ 300 mm) support plate for deep enclosure	-	**GVAPK12**
	Spacer base	-	**GVAPP1**
	Black handle, IP54	●	**GVAPB54**
	Red handle, IP54	●	**GVAPR54**
	Red handle, IP65	●	**GVAPB65**
Tool	"Laser square" plotting tool		**GVAPL01**
"Safety" stickers	French (x10)		**GVAPSFR**
	English (x10)		**GVAPSEN**
	German (x10)		**GVAPSDE**
	Spanish (x10)		**GVAPSES**
	Chinese (x10)		**GVAPSCN**
	Portuguese (x10)		**GVAPSPT**
	Russian (x10)		**GVAPSRU**
	Italian (x10)		**GVAPSIT**

Handles and components for MCC control drawers

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MCC drawers (Motor Control Center)

The drawers are composed of:

- a fixed part, in the frame of the panel,
- a fully withdrawable part, integrating the protection, control and automation components.

With a height of 3/4/6/8/12/18/24/36 modules, they allow the assembling of motor protection/control feeders:

- Direct, one direction of rotation
- Direct, 2 directions of rotation
- Star-delta
- Dahlander (2 speeds)
- 2-speed, separate winding
- Motor drives from 0 to 500 kW
- Soft starters of 0 to 75 kW.

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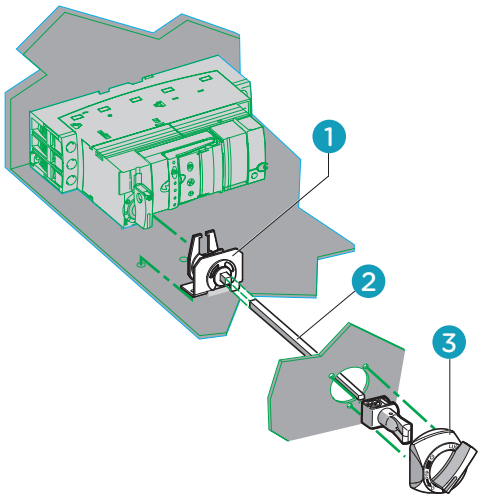

Mounting kit and handle for MCC drawer

Together, this provides manual control of a TeSys U starter-controller from the front face of the drawer.
As the clamping part on top of TeSys U control pad is open, the kit may be used on TeSys U power bases before 2005.

Mounting kit + small handle		
Description	**Item**	**Reference**
Handle with mounting kit for MCC drawer	❶ + ❷ + ❸	**LU9AP20**