

TeSys

TeSys U



Presentation

A4/2

Power bases, control modules, connectors - TeSys U

Type of product

Range

Page

Standard power base,
basic control functionalities
Direct and reversing

Up to 15 kW

A4/10

Advance power base, control, alarm
and communication possibilities
Direct and reversing

Up to 15 kW

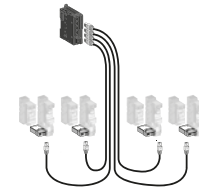
A4/12



Communication components - TeSys U

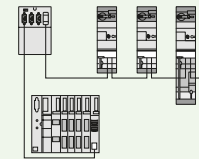
Parallel type cabling system
Principle and components

A4/18



Bus type cabling systems
Principle, panorama and components

A4/23



LUF communication gateway

A4/32



Accessories - TeSys U

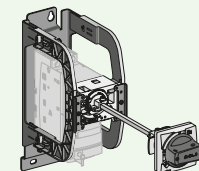
Short circuit current limiter

A4/33



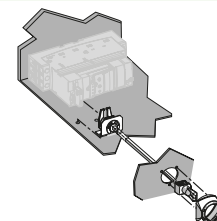
Handles and accessories
for rotary control

A4/34



Handles and accessories
for integration into a MCC drawer

A4/35



Technical Data for Designers

A4/37

From traditional solution to ...

TeSys U

Motor circuit breaker:
TeSys GV2 L



Magnetic protection
> short-circuit protection

Contactor:
TeSys D



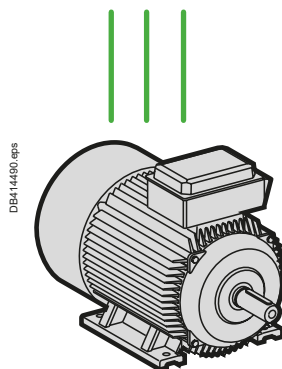
Control
> Start /Stop

Status monitoring
> signaling
> alarm monitoring

Protection relay:
TeSys LRD



Thermal protection
> overload



...TeSys U starter-controller



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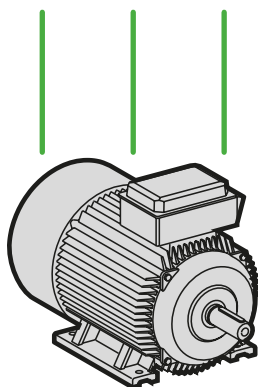
TeSys U

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



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TeSys U

can be used in

80 %

of motor protection and control applications.



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.

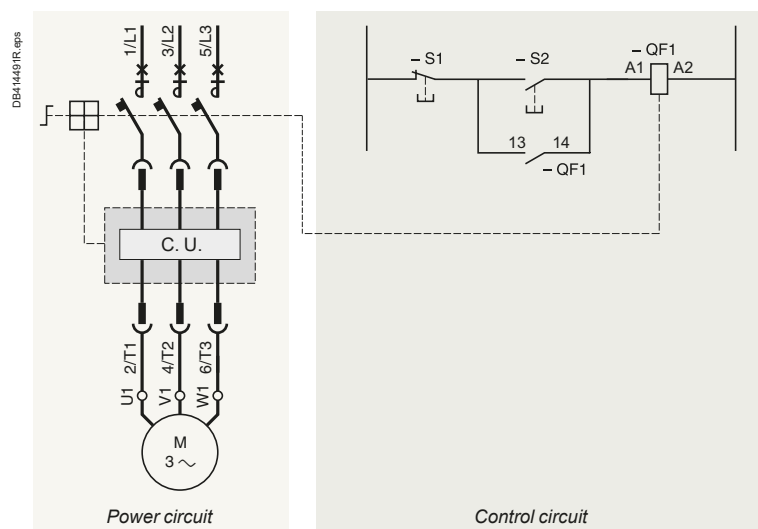
4 Conventional projet design

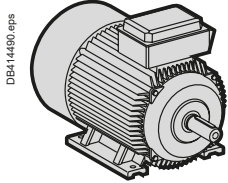
- Conventional control scheme with start , stop push buttons.

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.





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

- I_{sc}:
 - 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).
- I_{max}, for 12 A power base (direct - reversing):
 - 12 A at up to 500 V / 50 Hz
 - 9 A > 500 V, up to 690 V.
- I_{max}, 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

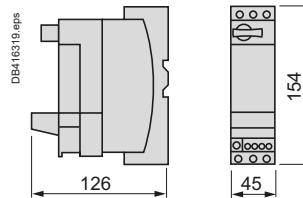
- 5 A / max. 690 V AC or 250 V DC.

Communication modules

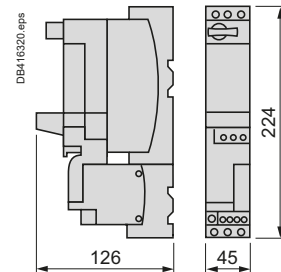
- Modbus,
- Ethernet,
- CANopen,
- DeviceNet,
- Advantys stb,
- Profibus DP,
- Beckhoff,
- AS-interface.

Dimensions

■ Base:



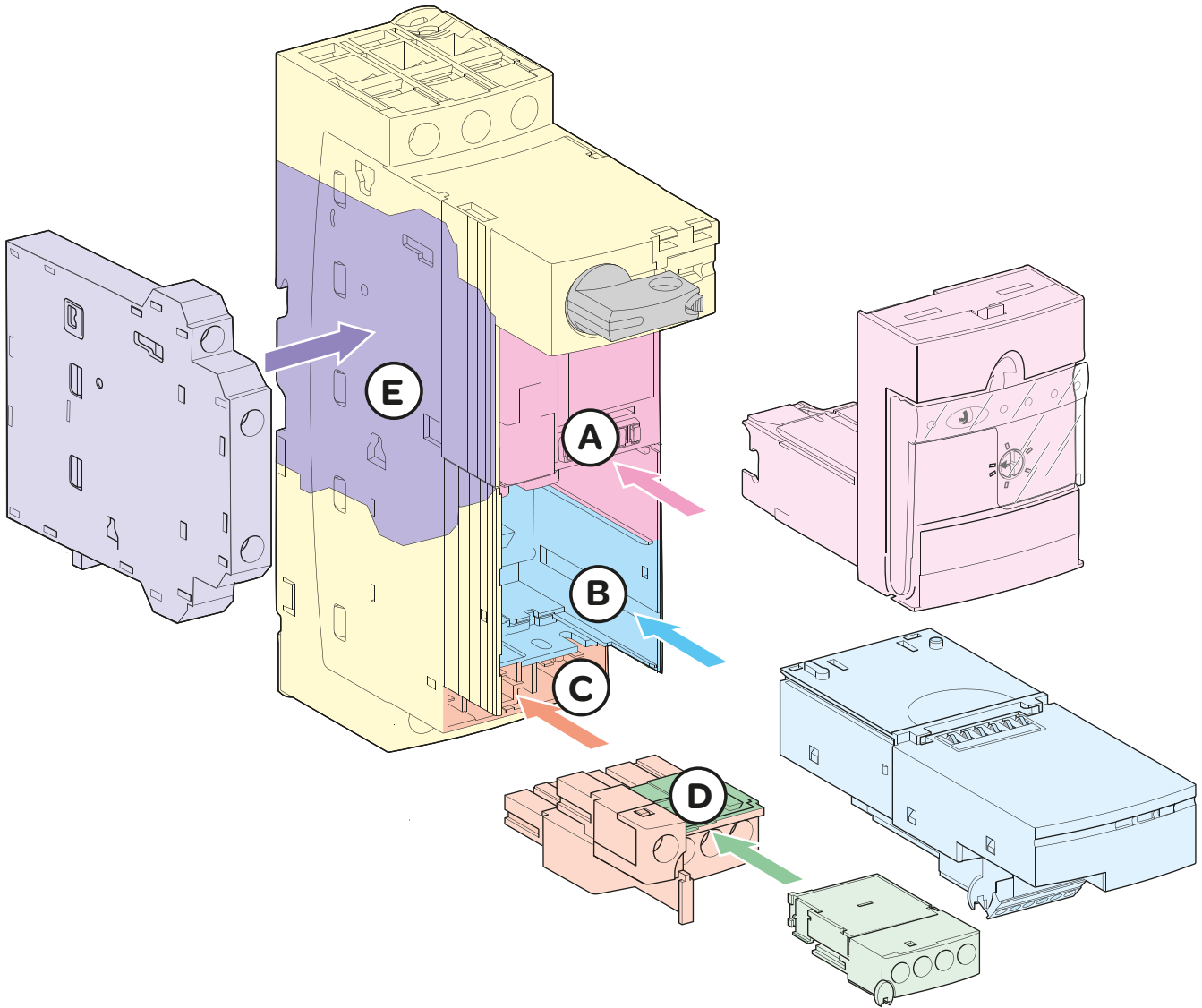
■ Base + reverser block:



The modularity principle

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TeSys U



- 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

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.

Additional lateral block

Composed of the protection device signaling contacts.

Control unit

Composed of the power base management processor and setting knobs.

Auxiliary module

Depending on its type, it integrates load status contacts or a communication processor or an alarm processor.

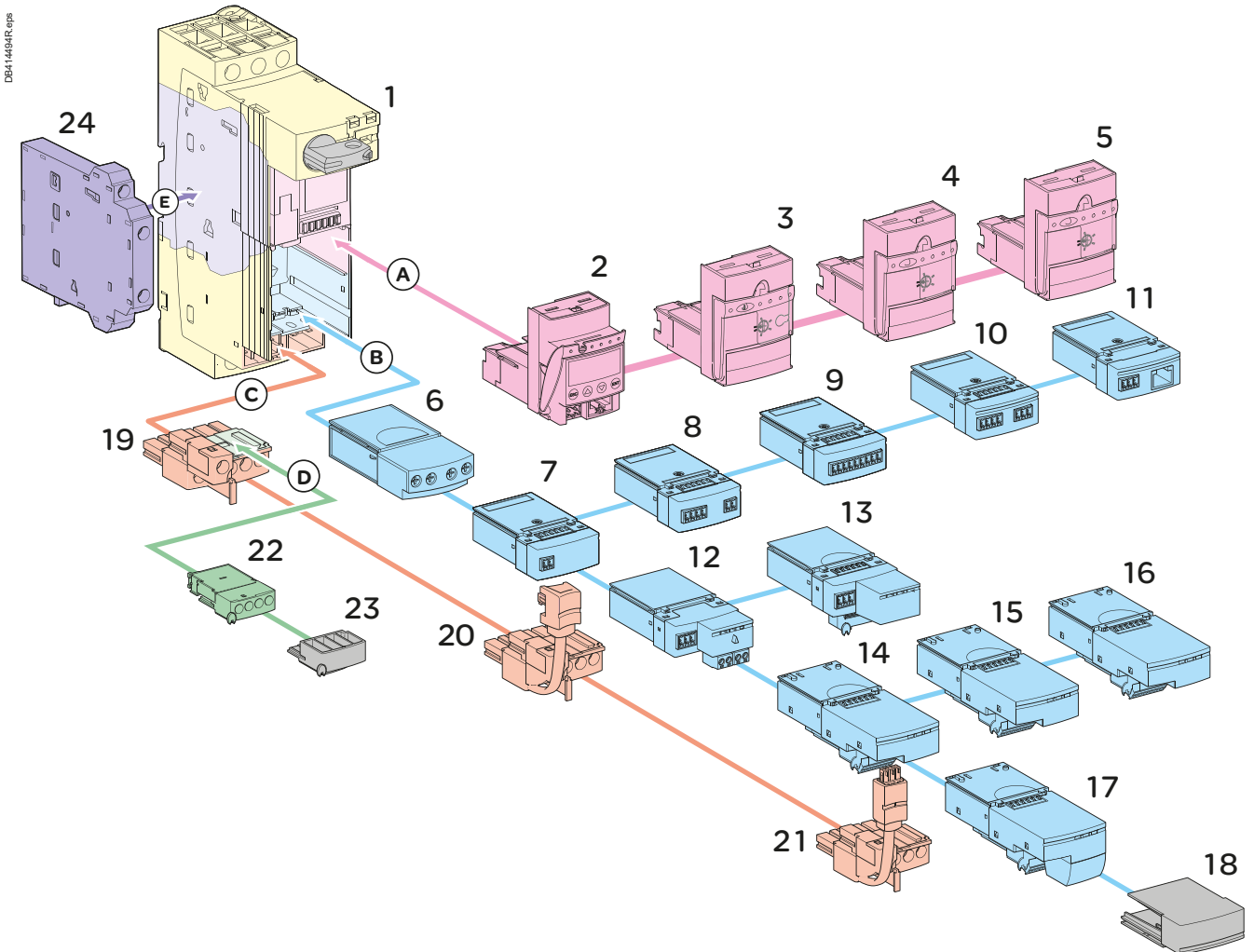
Control terminal block

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.

Additional block

It includes protection device additional signaling contacts. By default, this is a simple shutter.

Components overview



TeSys U

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- LUFDA01/LUFAD10**
Overload alarm module with automatic reset/remote reset
- 10- LUFV2**
Motor load indication module

Communication auxiliary modules

- 11- LUF00**
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

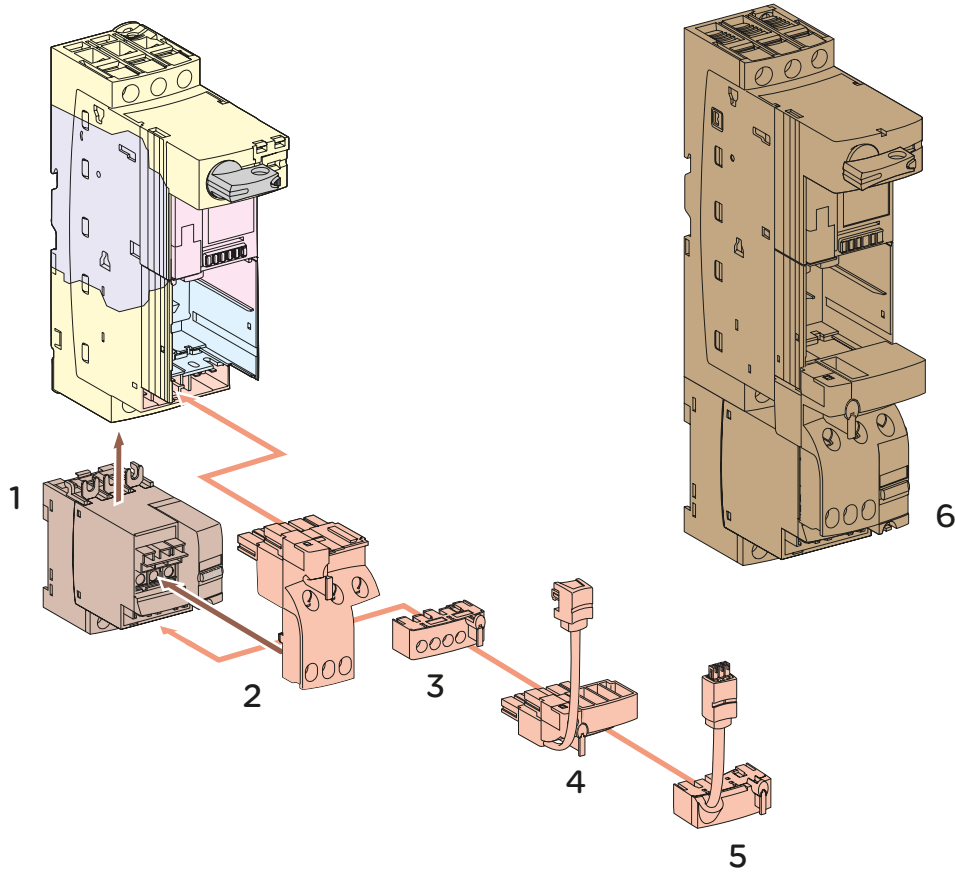
Presentation

Control units and modules

On/off control, 2 directions of rotation, vertical mounting

Additional components overview

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TeSys U

Reverser block

1- LU2M B0●●
vertical-mounting reverser block

Evolving 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- LU9MRC**
Coil terminal block with its connecting cable for communicating control (only compatible with a selection of com. modules).
- 5- LU9MRL**
Coil terminal block with its connecting cable for communicating control (only compatible with a selection of com. modules).

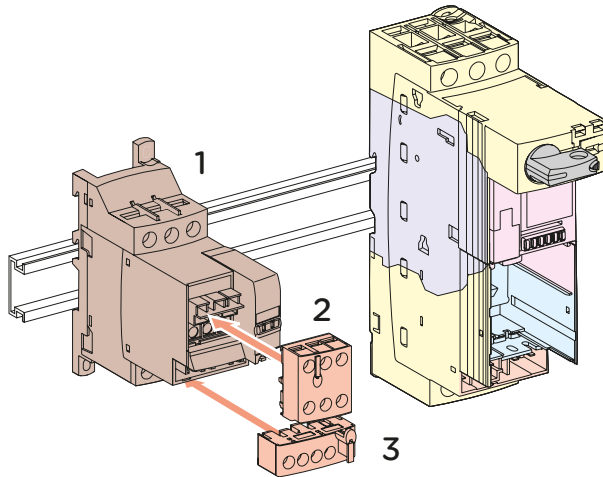
Presentation

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

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

- 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 Standard power base LUB12	2 directions Standard reversing power base LU2B12●●	1 direction Standard power base LUB32	2 directions Standard reversing power base LU2B32●●
Cial. ref.: replace dots by the coil code				

2- Selection of the control unit

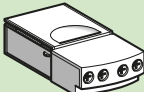
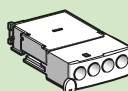
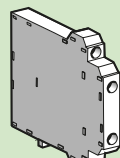
Maximum standardized power ratings of 3 phases motors 50/60 Hz

400/440 V kW	500 V kW	600 V kW	Setting range A	Lip_in mounting on the power base - Rating A	Protection type	
0.09	-	-	0.15...0,6	12 and 32	Thermal + magnetic LUCA	Magnetic LUCL
0.25	-	-	0.35...1,4	12 and 32	LUCAX6●●	LUCLX6●●
1.5	2.2	3	1.25...5	12 and 32	LUA1X●●	LUCL1X●●
5.5	5.5	9	3...12	12 and 32	LUCAX6●●	LUCLX6●●
7.5	9	15	4.5...18	32	LUA05●●	LUCL05●●
15	15	18.5	8...32	32	LUA12●●	LUCL12●●
					LUA18●●	LUCL18●●
					LUA32●●	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

> **LU9BN1**

2 terminals → for coil

2 terminals → NO contact (24 ... 250 V DC/AC, 5 A max)

2 terminals → NC contact (24 ... 250 V DC/AC, 5 A max)

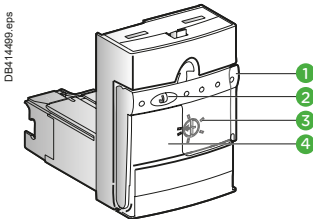
> **LU9M1**

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

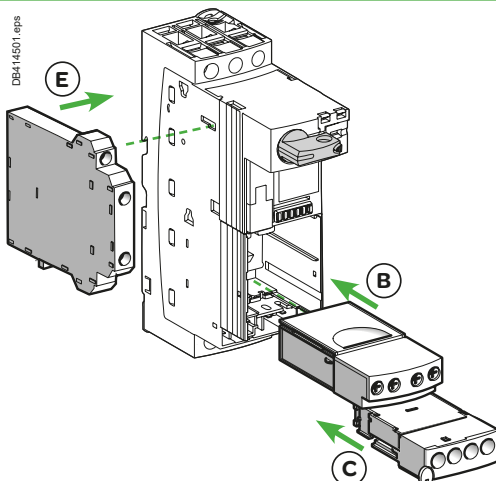
LUCA - standard units

- Protection against overload: $14.2 \times I_r$ (setting current).
- Protection against short circuit: $13 \times I_r \text{ max}$ (max setting current).
- 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.

Note: both LUCA and LUCL units can be used in the advanced power bases LUB120 and LUB320.




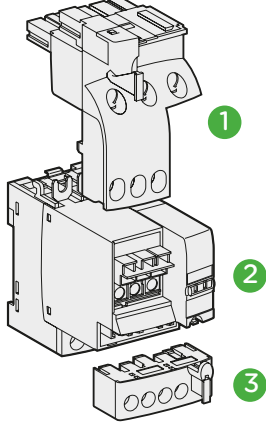
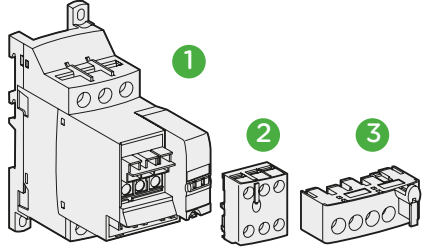
Modules and blocks are compatible with all standard and standard inverting power bases

Common electrical characteristics

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

- 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.

1- Selection of the advanced power base and reverser block

 <p style="font-size: 8px;">PB107367...10 eps</p>	 <p style="font-size: 8px;">DB4116347 eps</p>	 <p style="font-size: 8px;">DB414503 eps</p>
Advanced power base	Reverser block - vertical mounting	Reverser block - side mounting
Rating / Ue AC 12 A / 400 et 500 V 9 A / 690 V 32 A / 400 V 23 A / 500 V 21 A / 690 V	LUB120 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

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

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 A4/14

Magelis XBT NU HMI terminal (optional)



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, height 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

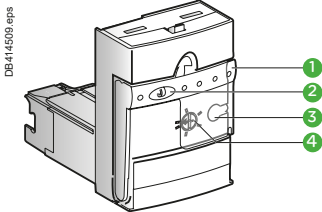
Inverser block: its maximum controlled power might be limited by the power base capacity

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.

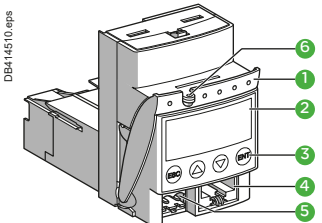


LUCB ●●●●, LUCC ●●●●, LUCD ●●●● control units

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

LUCB, LUCC, LUCD control and diagnostic units

- Motor protection, fault diagnostic.
- Protection against
 - overload: $14.2 \times I_r$ (setting current).
 - Simulation of an overload by depressing the test push button.
 - short circuit: $13 \times I_r$ max (max setting current).
 - 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 ●●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.

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.

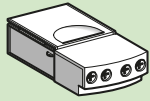
Note: a 24 V DC power supply is required during the configuration process.

Components for "advanced control" (continued)

- 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.

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

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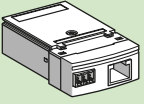
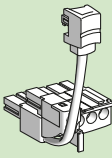
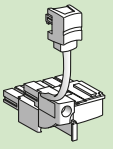
Function	Indicates the ON/OFF running status of the motor, whatever the direction of rotation		
Output	Change of the state of 2 contacts: 1NO + 1NC 5 A / 24 ... 250V AC/DC	Opening of 2 NC contacts 5 A / 24 ... 250V AC/DC	Closing of 2 NO contacts 5 A / 24 ... 250V AC/DC
Cial. reference	LUFN11	LUFN02	LUFN20

3b - Selection of additional function module (optional)

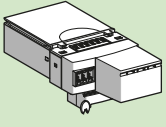
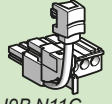
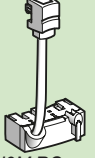
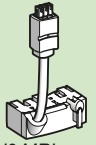
Function	Measure of average current in each phase	Alarm if average current in the phases = 105% of In	Indicates the overload tripping - manual reset	Indicates the overload tripping - reset with the power base control pad or remote reset	
Output	4-20 mA signal, image of the pourcentage of In	Closing of 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

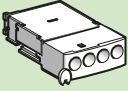
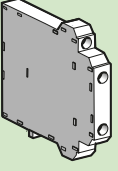
TeSys U

	Telefast system Module  DB414505 eps	Terminal block / control cable 1 direction of rotation  DB414506 eps	Terminal block / control cable 2 directions of rotation  DB414507 eps
Cial. reference	LUFC00	LU9BN11C use with LUB120 or LUB320	LU9MRC

4b- Selection of the communication auxiliary module

	Communication module  DB414508 eps	Terminal block / control cable for LUB... power base, 1 direction of rotation  DB414524 eps LU9B N11C	Terminal blocks / control cables for LU2B... ou LUB... + LU2MB0... power base, 2 directions of rotation  DB414526 eps LU9M RC  DB414527 eps LU9 MRL
Modbus	LUL C033	LU9BN11C	LU9MRC
Ethernet	LUL C033 + TeSys port TCSEQM113M13M		
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 TeSys U status

	Auxiliary signaling contacts block  DB124030 eps	Auxiliary signaling contacts block  DB414500 eps
Function	Indicates the off/ready status of TeSys U: by NO/NC contact Protection on/tripped: by SD contact To be inserted below the auxiliary module cavity (B)	Indicates the off/ready status of the protection
Output	OF and SD contacts: 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.

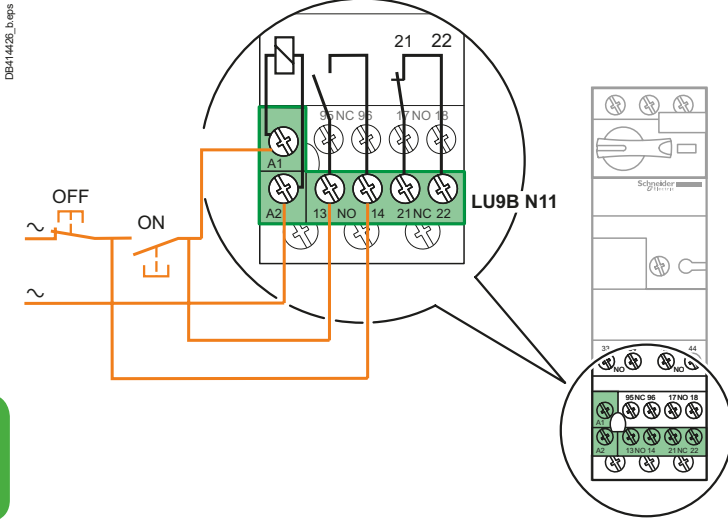
- **Additional blocks:**
 - used for wiring indicator lights or controllers.
- **Advantage:**
 - the locations for these blocks are always available, regardless of the configuration of the power base.
- **Contact rating:** 5 A / 24...250 V AC/DC.

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.

Standard or advanced power base

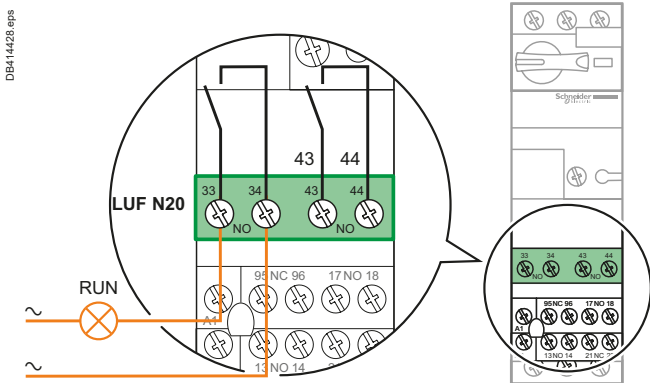
ON/OFF control (1 direction of rotation)

Push buttons wiring

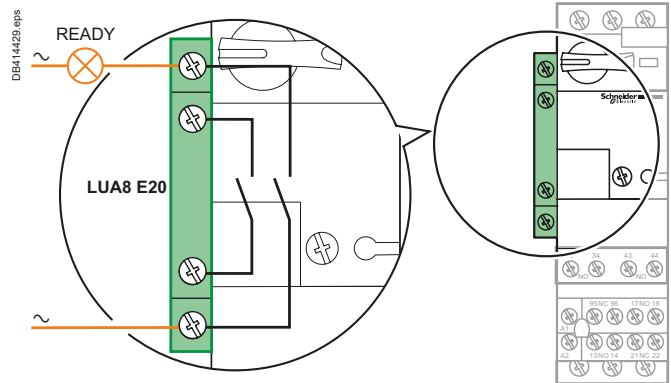


ON indication

"Motor RUN" indicator wiring

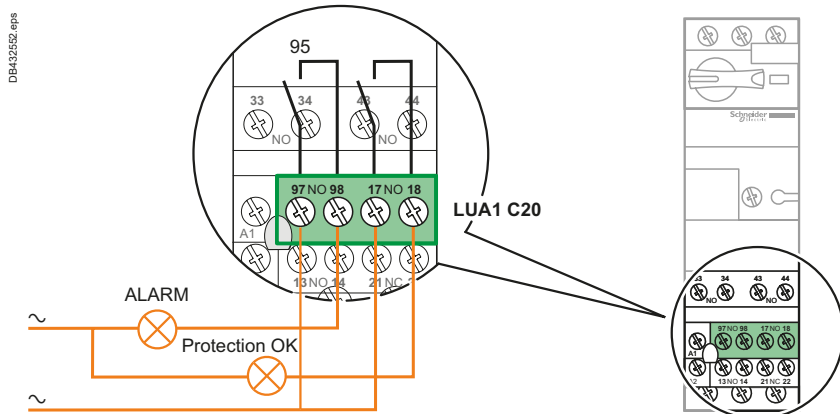


"Motor starter READY" indicator wiring



ALARM indication

Protection device status indicator wiring



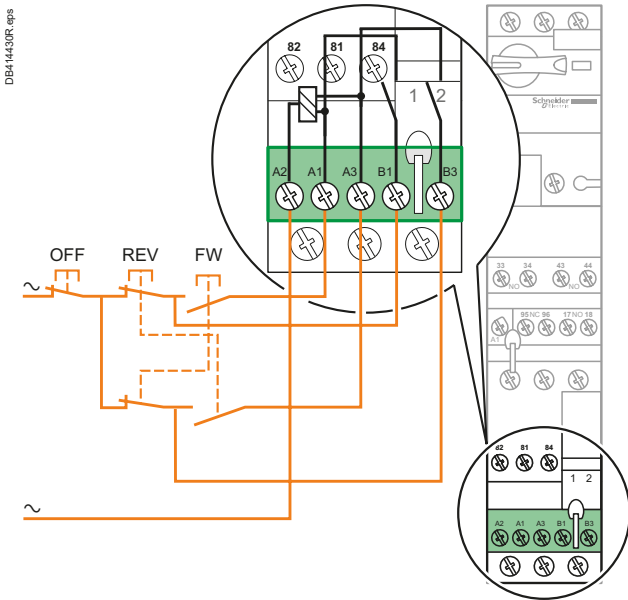
References

Typical wiring diagrams and contacts status

Power base with vertical mounting reverser block

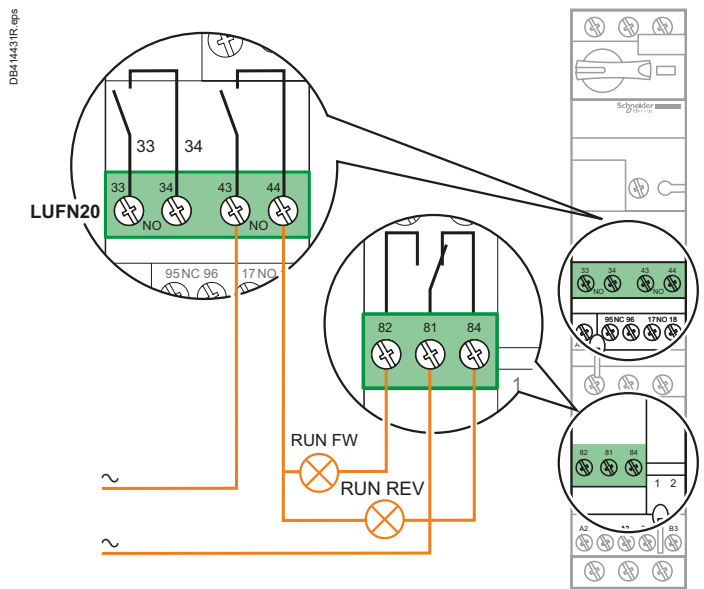
FW/REV/OFF control (2 directions of rotation)

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 contact 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	!>>						
Tripped on thermal overload	Manual reset mode	TRIP						
	Automatic reset on thermal overload fault mode							
	Remote reset mode		0					

N/O contact in closed position.

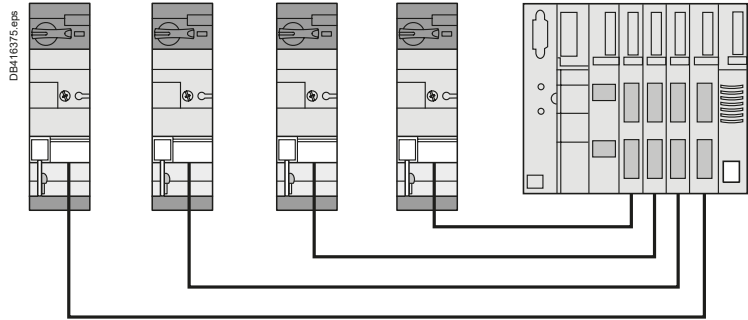
N/C contact in open position.

PB 106098 eps



TeSys U

Point-to-point wiring

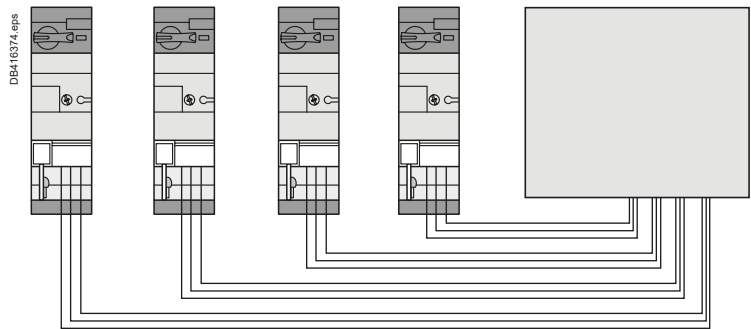


- The control inputs and signaling outputs of the starter are grouped in a single socket, usually RJ45. They are individually connected to PLC outputs and inputs.
- The wires run in parallel in a multicore cable equipped with a multipin connectors, RJ45 in the case of Telefast type system.
- 3 parallel 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.

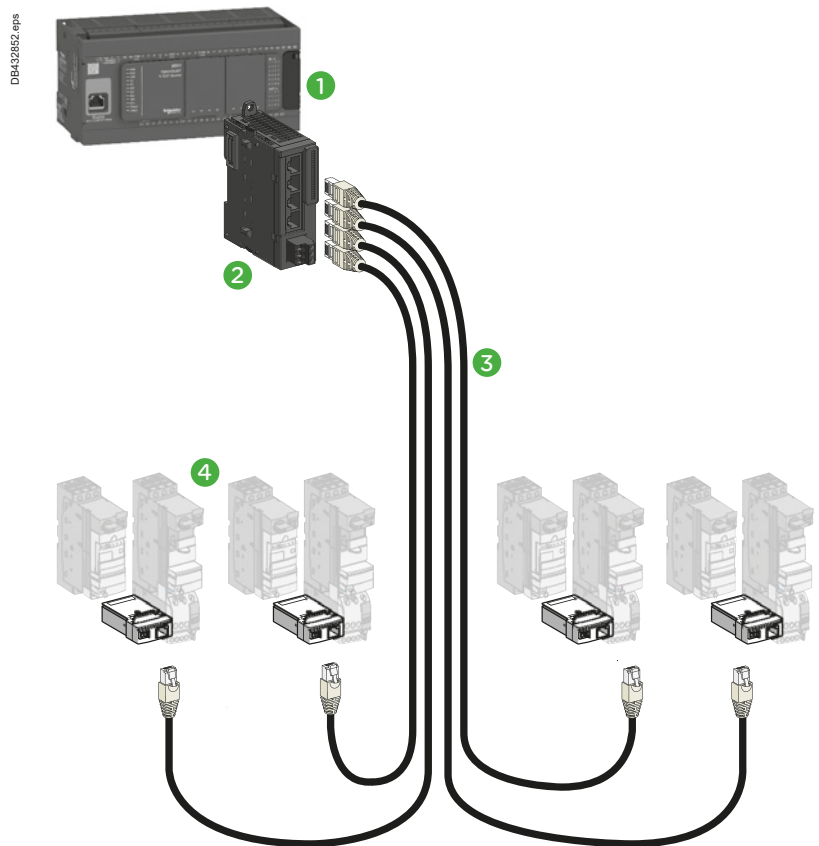
Parallel cabling systems



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).



Integration in the Modicon Advantys STB system

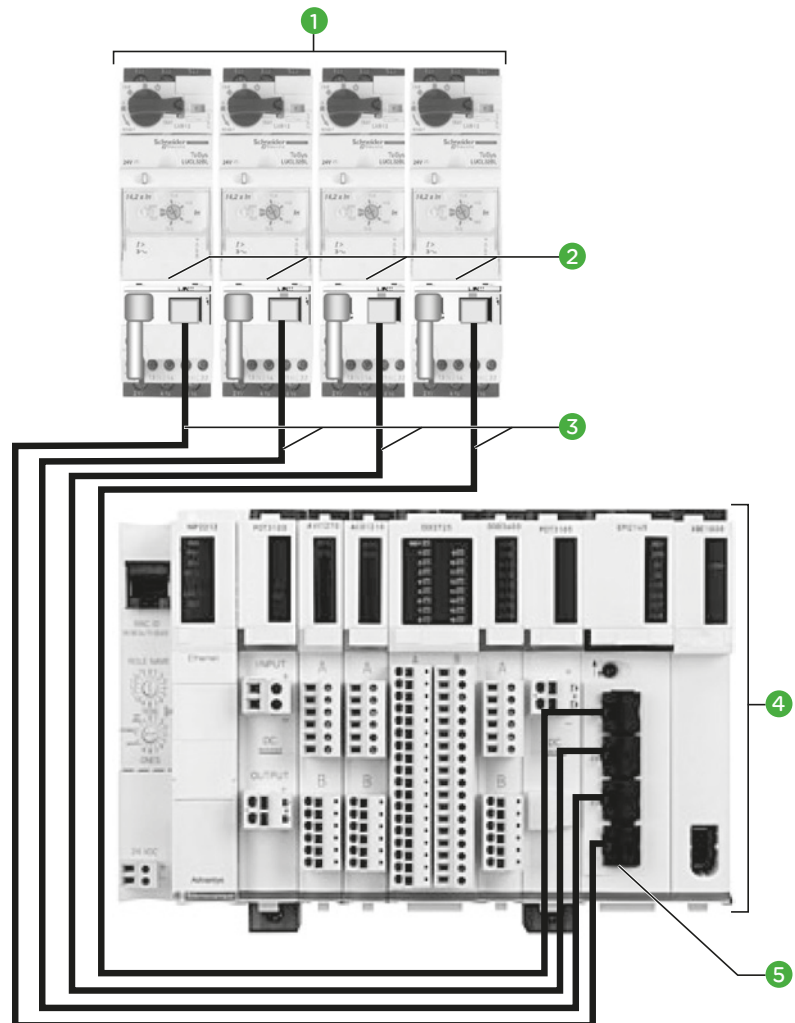
Advantys STB is a solution for remote I/O modules.

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



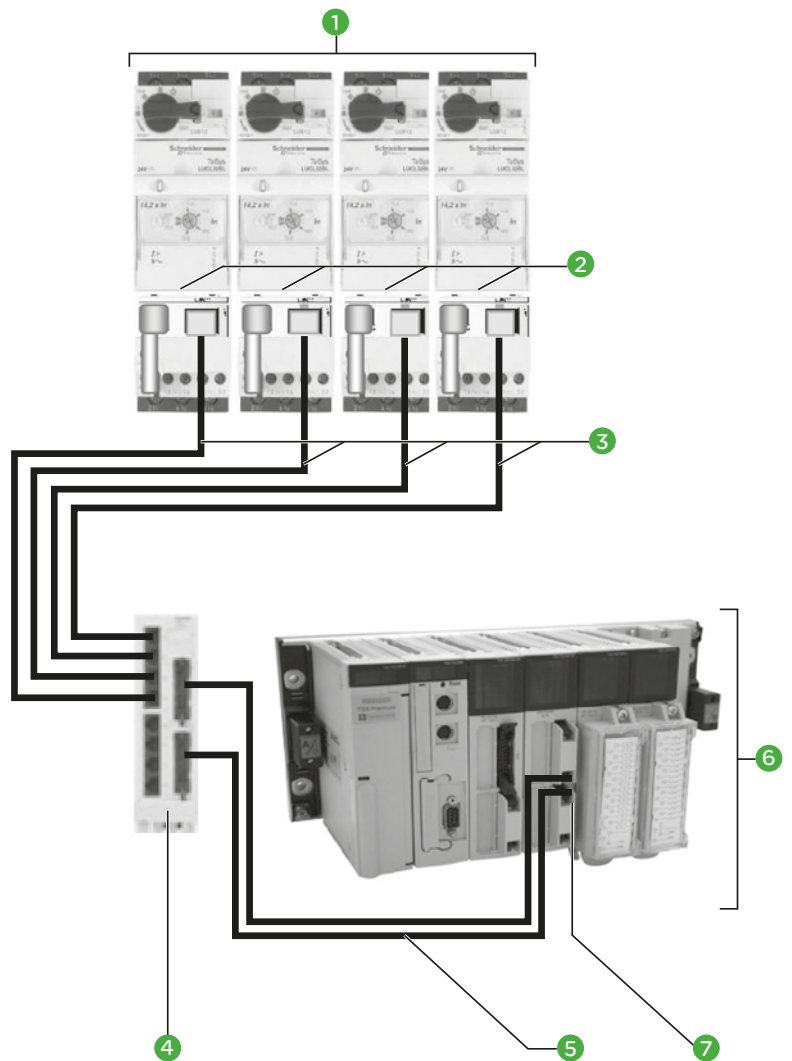
Integration in the Modicon Telefast system

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

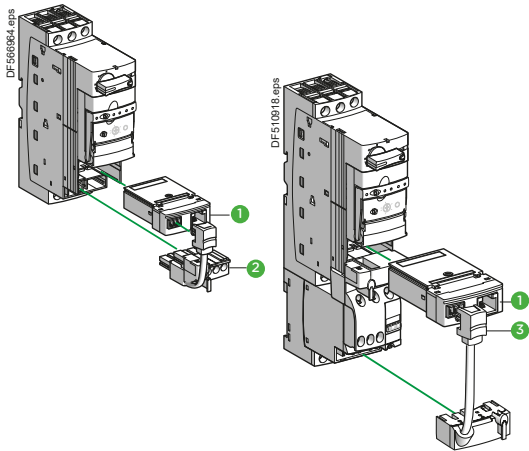


TeSys U

References

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

TeSys U



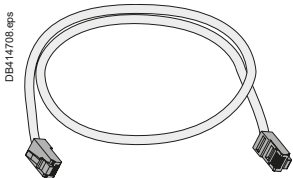
LU9 G02



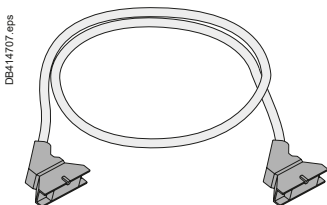
LU9 G03

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 channels, for pole status, alarms 1 x HE10 connector - 20 channels, 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 channels, for pole status, alarms 1 x HE10 connector - 20 channels, 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 mm ²	
0,5 m	TSXCDP053
1 m	TSXCDP103
2 m	TSXCDP203
3 m	TSXCDP303
5 m	TSXCDP503
Section: AWG 28 / 0.080 mm ² (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 mm ²	
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 mm ²	
3 m	TSXCDP301
5 m	TSXCDP501

PB105392.eps



> 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

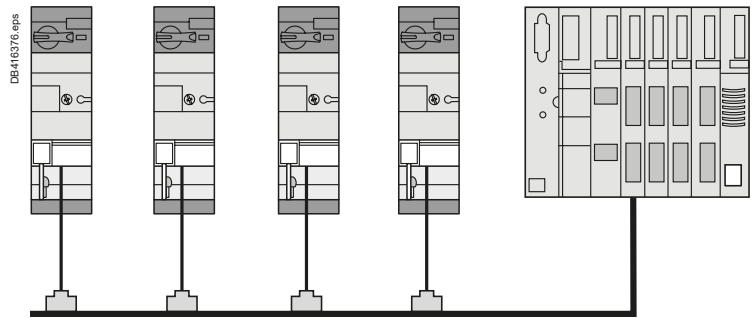
Thanks to a communication bus, starter-controllers are part of an automation system controlled by a PLC and (or) various communicating controllers.

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.



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, ...)			■

TeSys U

Bus-type cabling systems

View

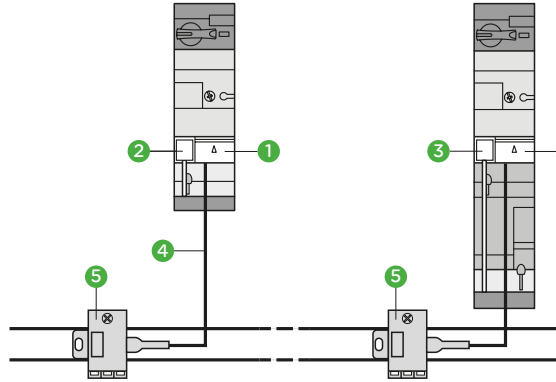
Network

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.



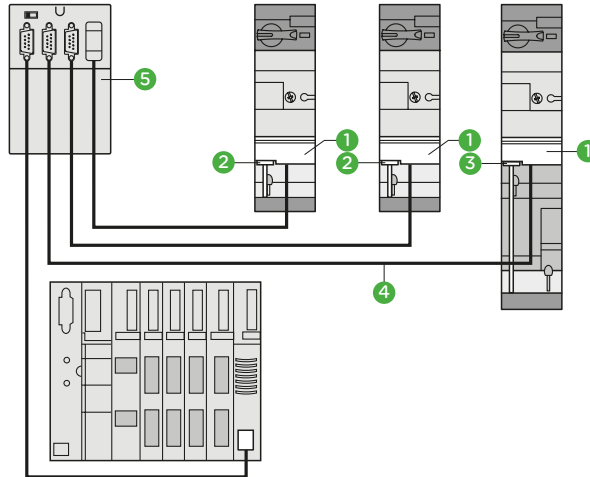
- 1 ASI LUF C5 or ASI LUF C51
- 2 LU9B N11C
- 3 LU9M RC
- 4 XZ CG0142
- 5 TC SAT V01 N2

Details page

[A4/26](#)

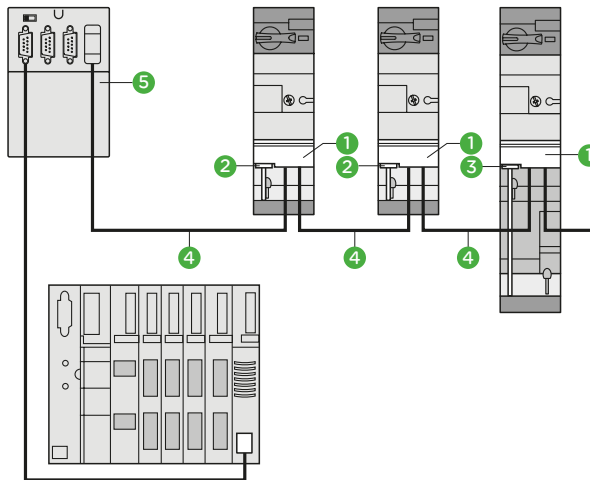
CANopen

Etoile



- 1 LUL C08
- 2 LU9B N11L
- 3 LU9M RL
- 4 TSX CAN C●●●
- 5 TSX CAN TDM4
- 6 TSX CPP 110

Bus



Details page

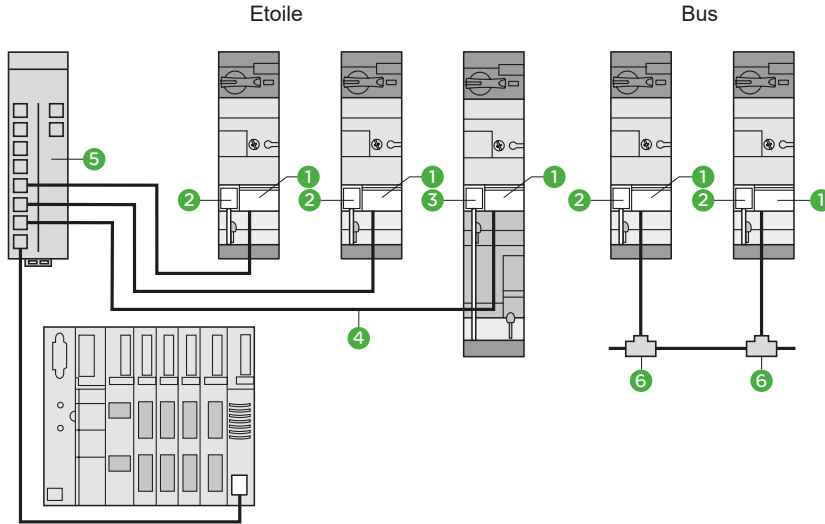
[A4/27](#)

Network

Architecture

Component references

Modbus

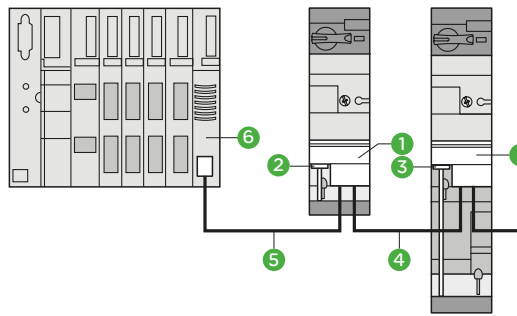


- 1 LUL C031 or LUL C033
- 2 LU9B N11C
- 3 LU9M RC
- 4 VW3 A8 306R...
- 5 LU9 GC3
- 6 VW3 A8 306TF

Details page
A4/28

Advantys STB

Starter-controllers communicate using ADVANTYS STB protocol to fit into a remote I/O architecture.

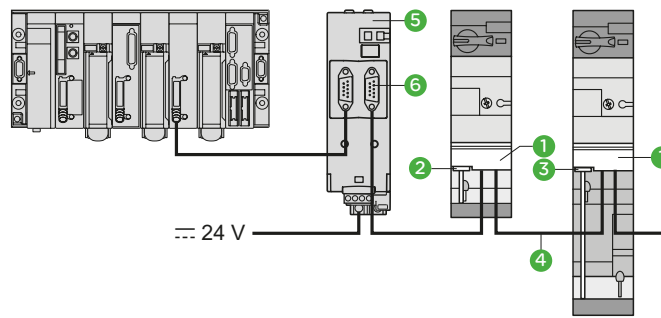


- 1 LUL C15
- 2 LU9B N11L
- 3 LU9M RL
- 4 LU9 RDD...
- 5 LU9 RCD
- 6 STB XBE1100

Details page
A4/29

Profibus-DP (Decentralized Peripherals)

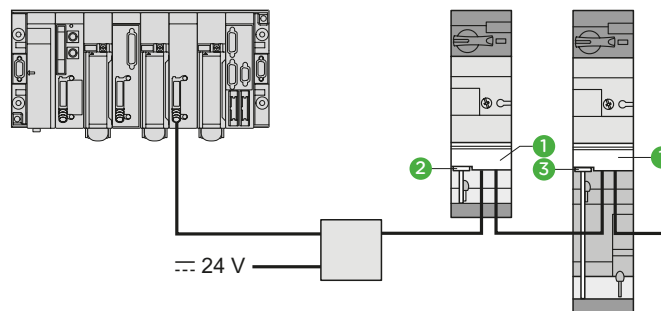
is used for connecting actuators and sensors to a central controller for applications in industrial production. The standard bus provides a number of diagnostic means



- 1 LUL C07
- 2 LU9B N11L
- 3 LU9M RL
- 4 LU9 RPB010
LU9 RPB100
LU9 RPB400
- 5 LU9 AD7
- 6 LU9 GC7

Details page
A4/30

DeviceNet



- 1 LUL C09
- 2 LU9B N11L
- 3 LU9M RL

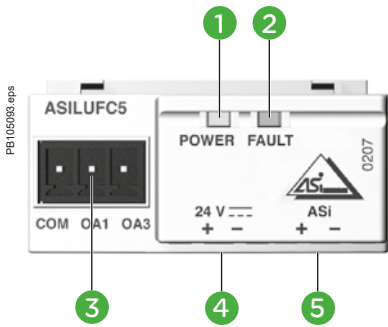
Details page
A4/31

TeSys U

References

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.

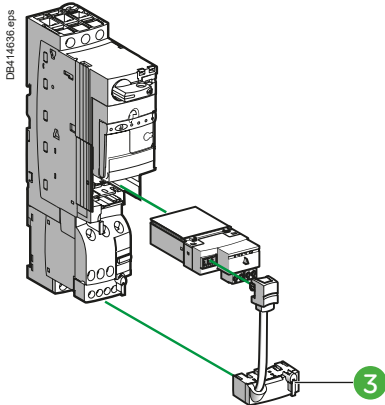
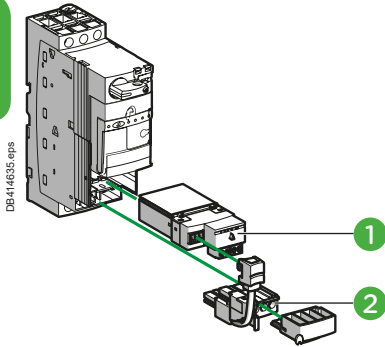
Connectors

- 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 U



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:

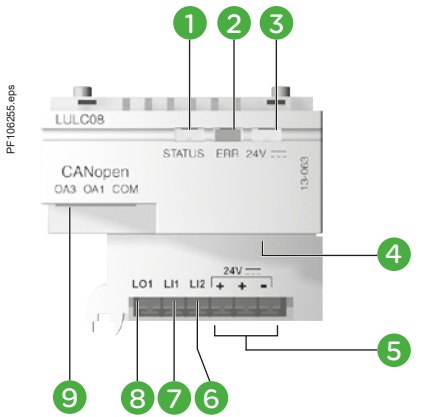
- TeSys U side, 2 connectors (bus + power),
- Bus side, one connector to be connected to the AS-Interface TCSATV01N2 tap-off.

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

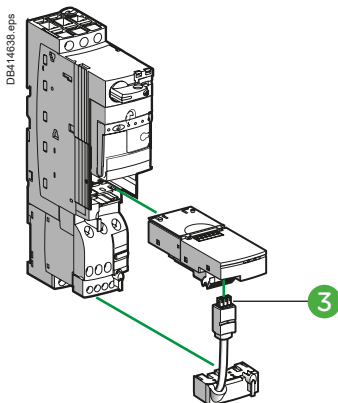
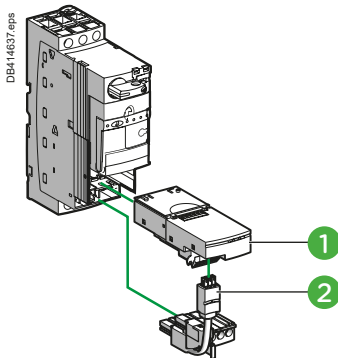
References

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 LULC08 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

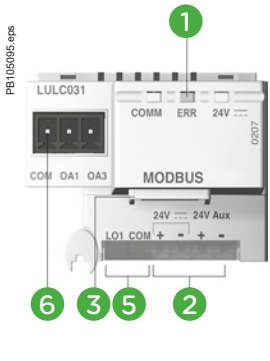
Consult the library of downloadable documents on schneider-electric.com by searching on the name of the communication protocol.

References

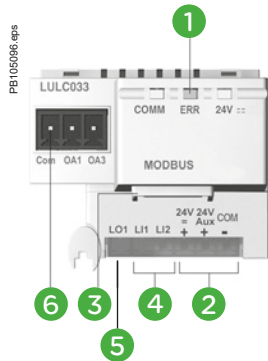
Bus-type cabling systems

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.

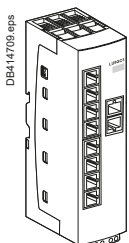
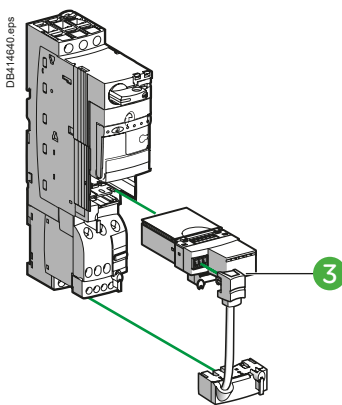
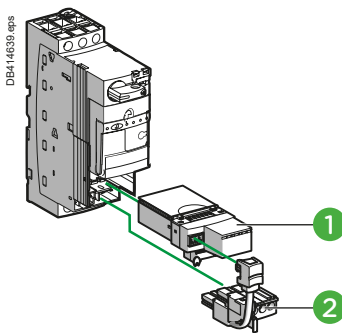
Connectors

- 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 U



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	■		■
	LUCU ●●BL			
	LUCD ●●BL			
	LUCM ●●BL	■		■ ⁽¹⁾
	LUCBT ●●BL		■	
	LUCDT ●●BL			
	LUCMT ●●BL		■	

(1) Except LUCM ●●BL V1.04 and V1.06.

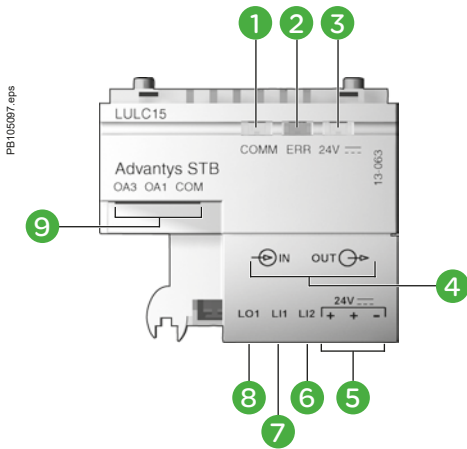
How to get information on the design of a Modbus architecture and the choice of network accessories

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

References

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

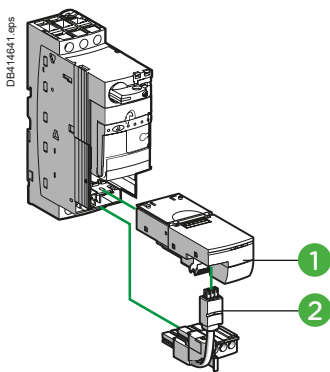
- Powered by external 24 V DC (power supply not included):
- 2 x configurable inputs for binary sensors (on LULC033 only)
- 1 x 24 V DC output - 0.5 A local auxiliary command.

Connectors

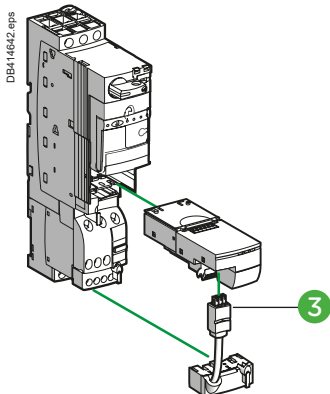
- For TeSys U 24 V DC coil (common, direction 1, direction 2).
- For Advantys STB bus.

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.

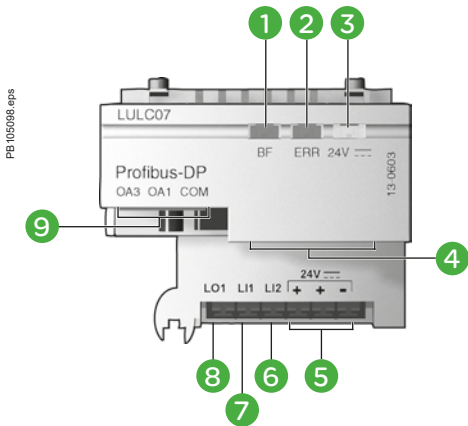
How to get information on the design of a Advantys STB architecture and the choice of network accessories

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

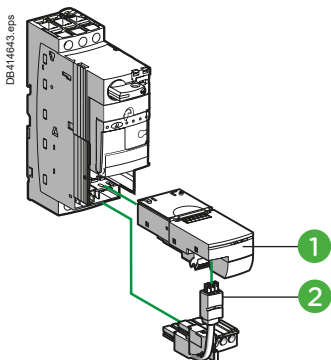
References

Bus-type cabling systems

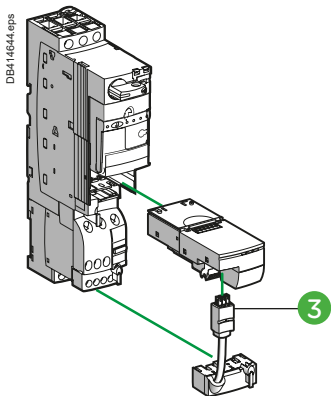
TeSys U components for Profibus DP bus



- 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)



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 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

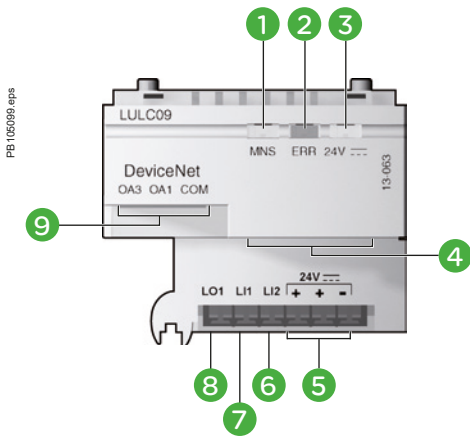
How to get information on the design of a Profibus DP architecture and the choice of network accessories

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

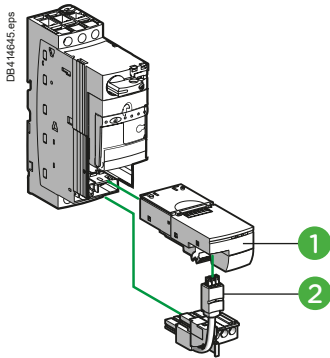
References

Bus-type cabling systems

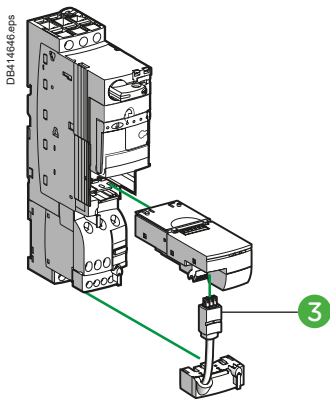
TeSys U components for DeviceNet bus



- 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 LUFFP



TeSys U

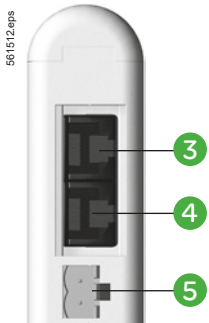
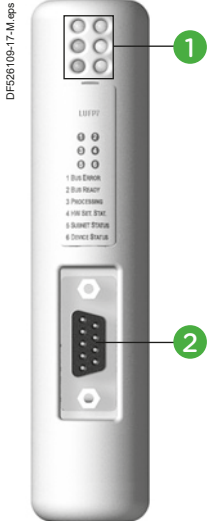
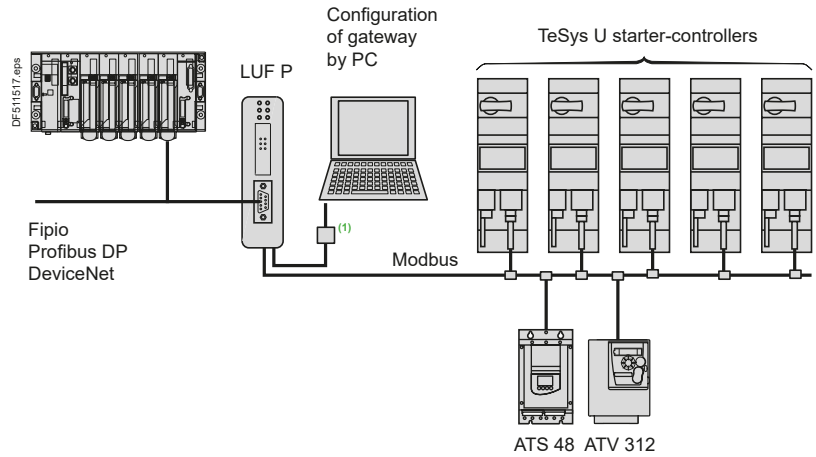
Presentation

Communication gateways LUFFP 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 LUFFP 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 LUFFP

Description	Reference
Fipio / Modbus gateway	LUFFP1
Profibus DP / Modbus gateway	LUFFP7
DeviceNet / Modbus gateway	LUFFP9

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.

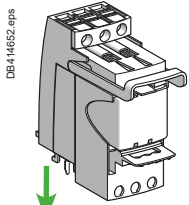
For the Profibus DP and DeviceNet buses, software set-up is performed using ABC Configurator.

This software is included in the TeSys U user's manual.

(1) Connection kit for PowerSuite software workshop.

References

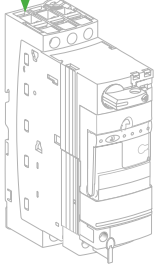
Current limiter blocks and accessories



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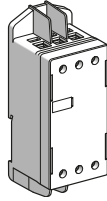


LUA LF1

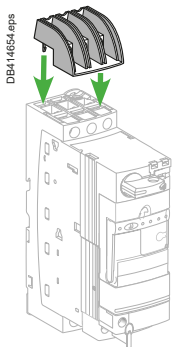


LUA LB1

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LA9LB920



LU9SP0

PB113926.eps



LU9ET1S

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 cartridge	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 TeSys U power bases in parallel with limitation :

■ Total Ith max 63 A

■ Total nominal current 32 A from motor with simultaneous start (LA9LB920 could not withstand higher inrush peak current)

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●● inverter block, and Linergy HK busbar system.

Marking accessory

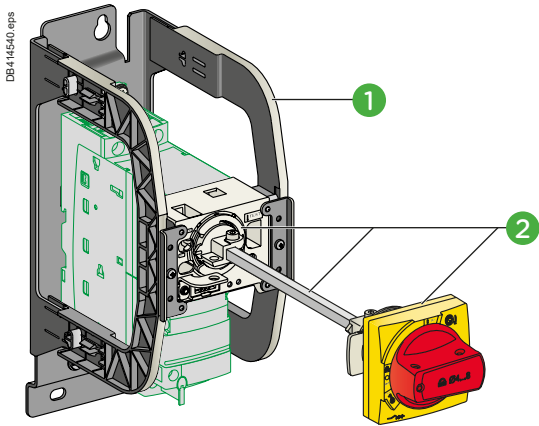
Description	Sold by lot of	Reference per unit
Clip-in label 8 x 18 mm	100	LAD90

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



LU9APN21 mounting kit

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 I (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

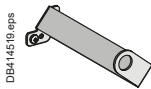
■ On the principle of an angle extended with a laser beam, the "Laser Square" facilitates tracing the piercing marks on the door or the sides of an enclosure.

"Safety" stickers

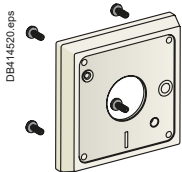
■ Marking: Electrical hazard, etc.



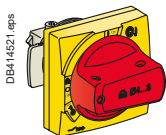
GVA PA1 long shaft



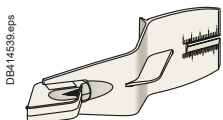
GVA PK12 shaft support plate for deep enclosure



GVAPP1 spacer base (retrofit accessory)



GVA PR54 red handle, IP 54



GVAPL01 "Laser square" plotting tool

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
	Black handle, IP65	● GVAPB65
	Red handle, IP65	● GVAPR65
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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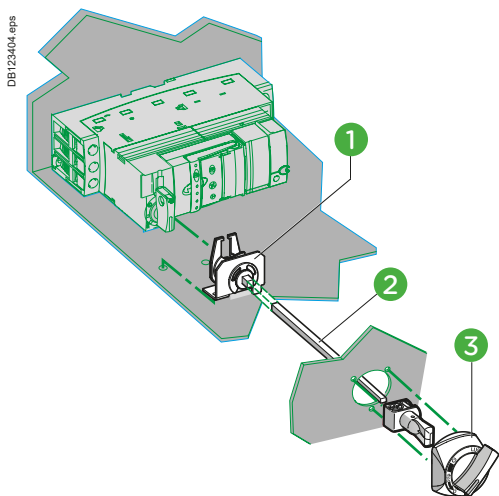
MCC drawers (Motor Control Center)

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.



DB123404.eps

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	1 + 2 + 3	LU9AP20

