

# Termination resistor - PSI-TERMINATOR-PB



2313944

<https://www.phoenixcontact.com/us/products/2313944>

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Active termination resistor for PROFIBUS and RS-485 bus systems. Compact design, electrical isolation between supply and data interface, bus termination can be activated, integrated programming interface.

## Product Description

PROFIBUS or other RS-485 networks can be actively terminated at the end of the bus using the **PSI-TERMINATOR-PB**. This ensures safe communication even if the bus device is connected/disconnected during operation. In addition, the connectable termination enables the device to be operated as a service interface at any point in the bus system. For the operation of active programming and diagnostic devices, the required power supply is provided at the alternative D-SUB connection.

## Your advantages

- Extended temperature range of -20°C ... +65°C
- DIN rail mount
- Termination can be connected externally
- Fixed programming interface in the network
- Electrical isolation of power supply and data interface
- Interference-free bus communication thanks to active termination
- Diagnostic LEDs for voltage and data activity
- Compact housing design

## Commercial Data

Item number	2313944
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C28
Product Key	DNC141
Catalog Page	Page 335 (C-8-2015)
GTIN	4046356579445
Weight per Piece (including packing)	136 g
Weight per Piece (excluding packing)	124.2 g
Customs tariff number	85389091
Country of origin	DE

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## Technical Data

### Notes

#### Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Product properties

Product type	Terminal resistor
MTTF	3550 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	1818 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	849 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	2383 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	559 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

### Electrical properties

Electrical isolation	RS-485 // VCC
Maximum power dissipation for nominal condition	1.08 W
Test voltage data interface/power supply	1.5 kV <sub>rms</sub> (50 Hz, 1 min.)

#### Supply

Supply voltage range	19.2 V DC ... 28.8 V DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V DC (via pluggable COMBICON screw terminal block)
Typical current consumption	45 mA (24 V DC)

#### Function

Status and diagnostic indicators	LEDs: UL (communications power), data activity (not marked)
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### Connection data

#### Supply

Tightening torque	0.56 Nm ... 0.79 Nm
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### Interfaces

Signal	Modbus
	PROFIBUS

Data: PROFIBUS acc. to IEC 61158, RS-485 2-conductor

Serial transmission speed	≤ 12 Mbps
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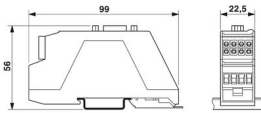


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Connection method	D-SUB 9, COMBICON
Transmission length	≤ 1200 m (Depends on transmission speed and cable type)
Termination resistor	390 Ω
	220 Ω
	390 Ω (Can be connected)
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section AWG max.	16
Conductor cross section AWG min.	24
Output nominal voltage	5 V DC

## Dimensions

Dimensional drawing	
Width	22.5 mm
Height	99 mm
Depth	56 mm

## Material specifications

Material	PA 6.6-FR (Housing)
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Permissible humidity (operation)	30 % ... 95 % (non-condensing)

## Approval data

### CE

Certificate	CE-compliant
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### UL, USA / Canada

Identification	508 Listed
	Class I, Div. 2, Groups A, B, C, D

### UL, USA

Identification	Class I, Zone 2, AEx nA IIC T5
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## UL, Canada

Identification	Class I, Zone 2, Ex nA IIC T5 Gc X
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## Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
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## ATEX

Identification	<input type="checkbox"/> II 3 G Ex nA IIC T4 Gc X
Note	Please follow the special installation instructions in the documentation!

## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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## Electrostatic discharge

Standards/regulations	EN 61000-4-2
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## Electrostatic discharge

Contact discharge	± 6 kV (Test Level 3)
Discharge in air	± 8 kV (Test Level 3)
Comments	Criterion B

## Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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## Electromagnetic HF field

Frequency range	80 MHz ... 3 GHz (Test Level 3)
Field intensity	10 V/m
Comments	Criterion A

## Fast transients (burst)

Standards/regulations	EN 61000-4-4
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## Fast transients (burst)

Input	± 2.2 kV (Test Level 3)
Signal	± 2.2 kV (Test Level 3)
Comments	Criterion B

## Surge current load (surge)

Standards/regulations	EN 61000-4-5
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## Surge current load (surge)

Input	± 0.5 kV (DC supply)
Signal	± 1 kV (Data line, asymmetrical)
Comments	Criterion B

## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

## Emitted interference

Standards/regulations	EN 61000-6-4
Radio interference voltage in acc. with EN 55011	EN 55011 class A industrial area of application
Emitted radio interference in acc. with EN 55011	EN 55011 class A industrial area of application
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

## Standards and regulations

Free from substances that could impair the application of coating	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0
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## Mounting

Mounting type	DIN rail mounting
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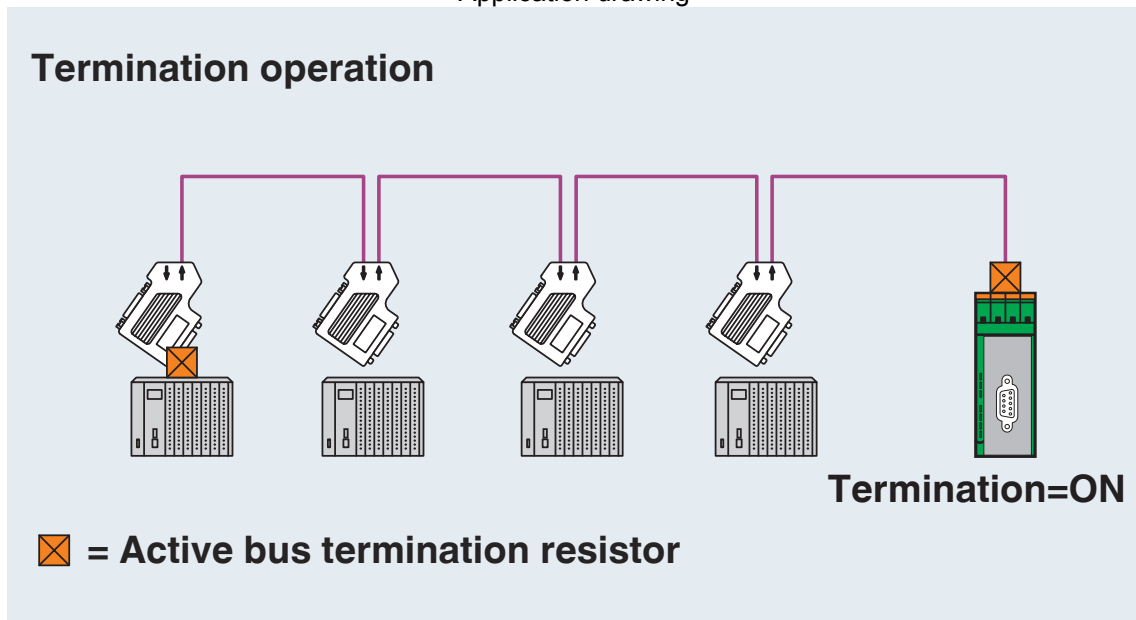
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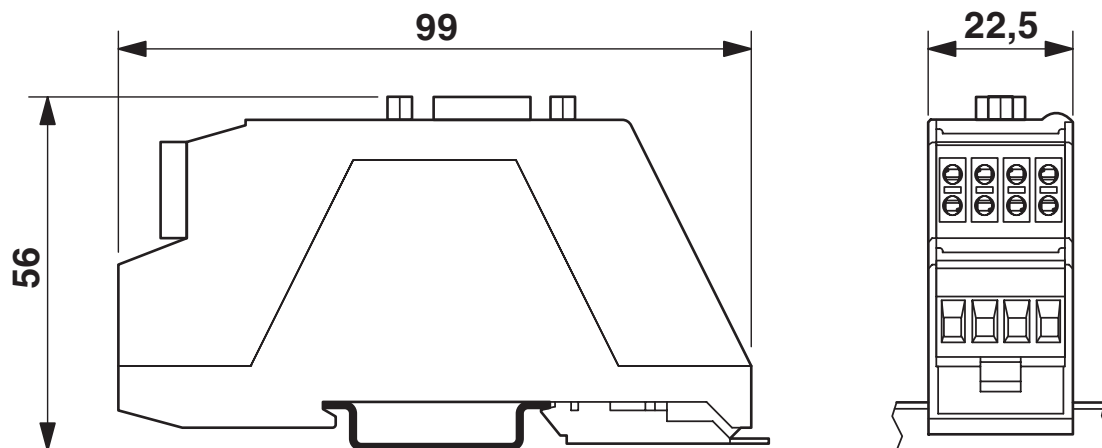
## Drawings

Application drawing



Permanent termination at the end of the (professional) bus system

Dimensional drawing



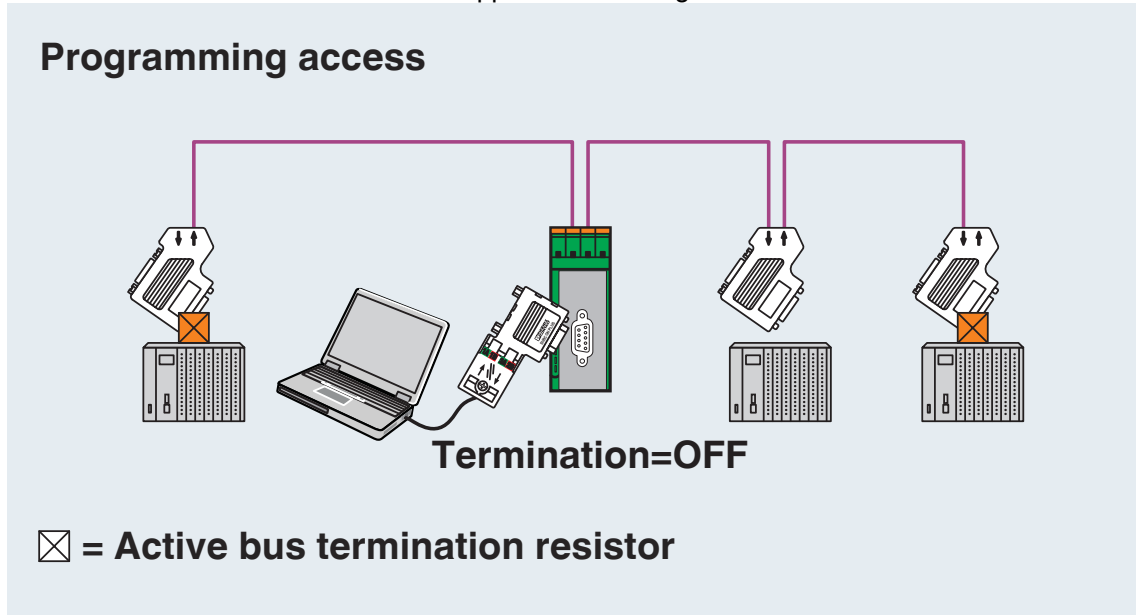
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Application drawing



Fixed service interface in (professional) bus system

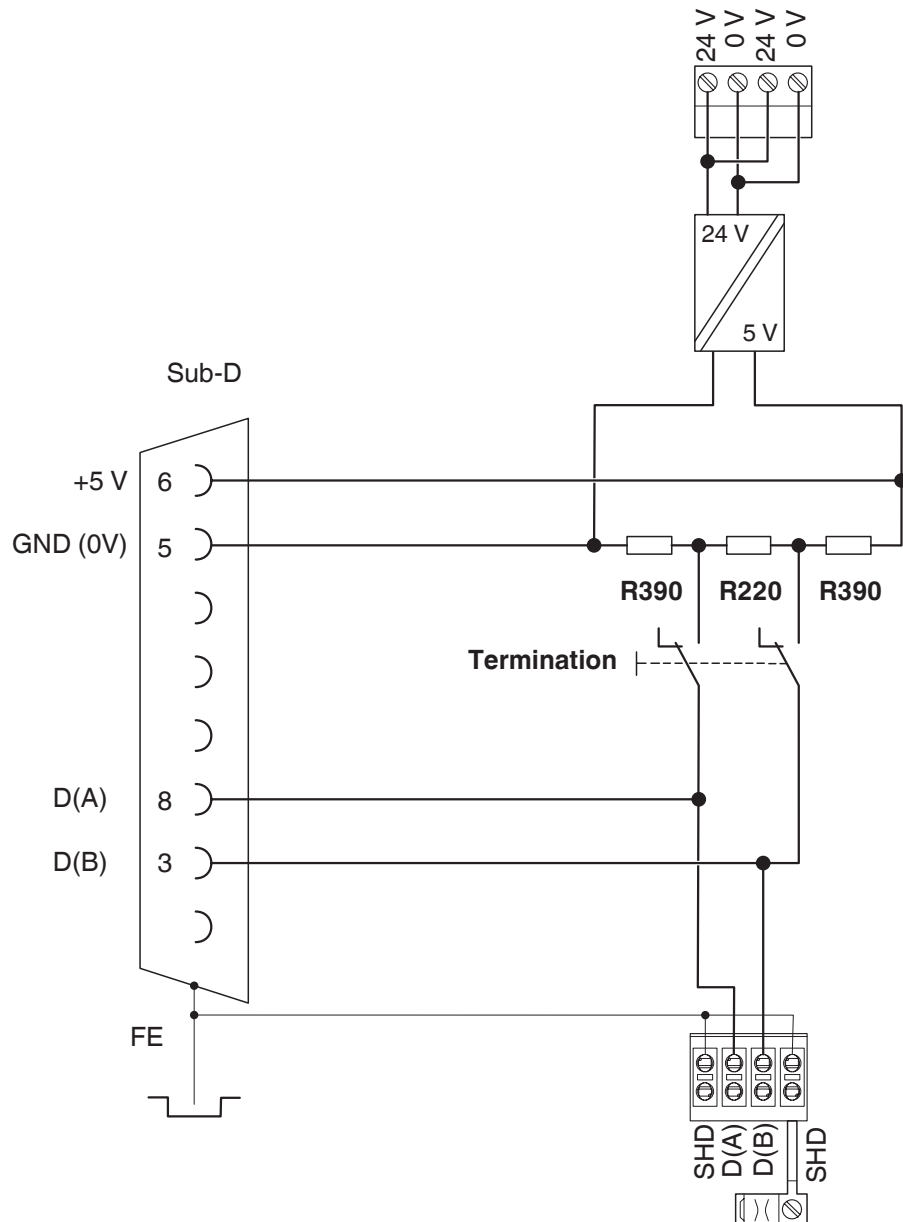
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Block diagram





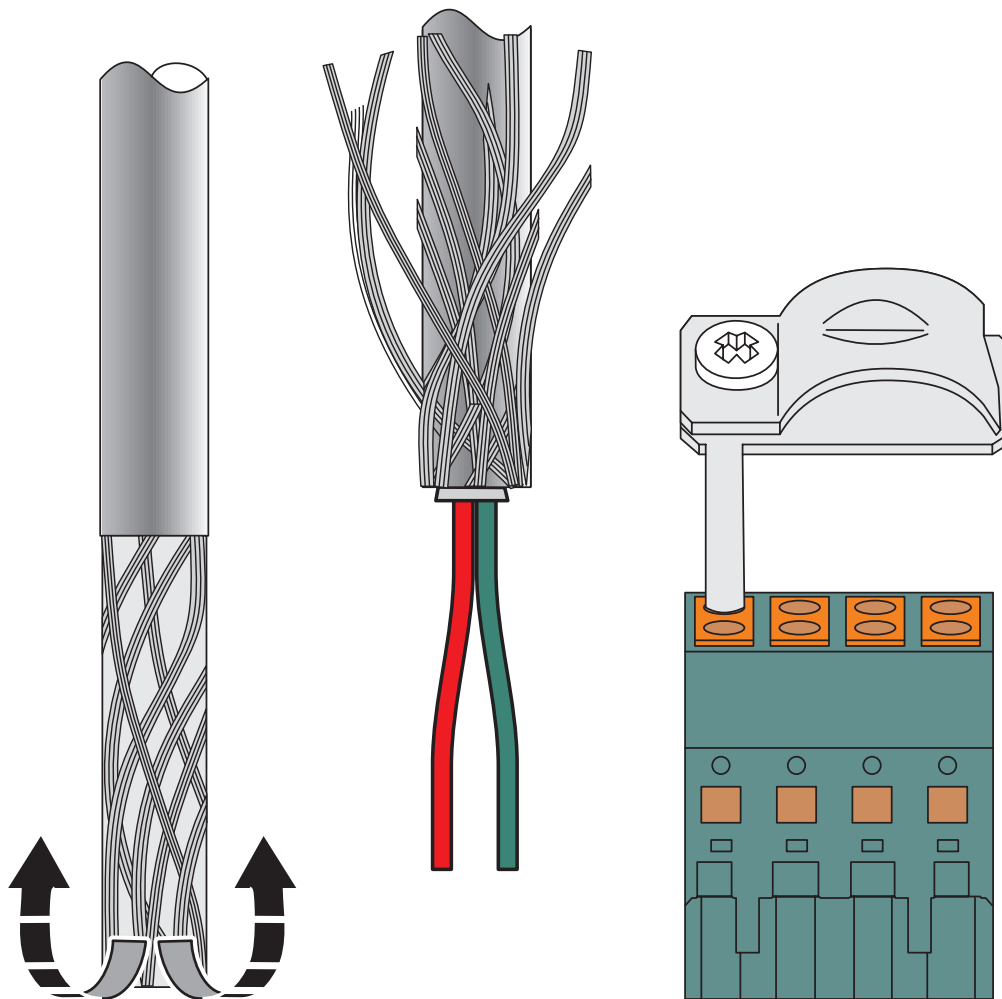
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Schematic diagram



Push the braided shield back

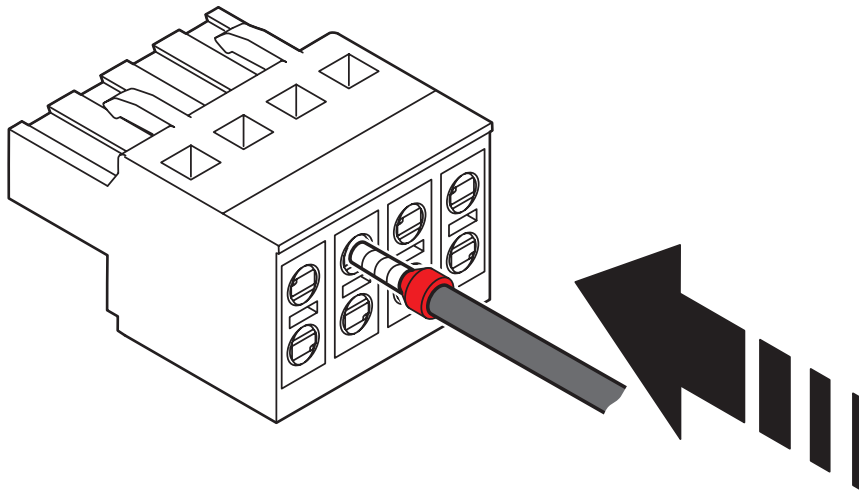
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Schematic diagram



Install signal cable

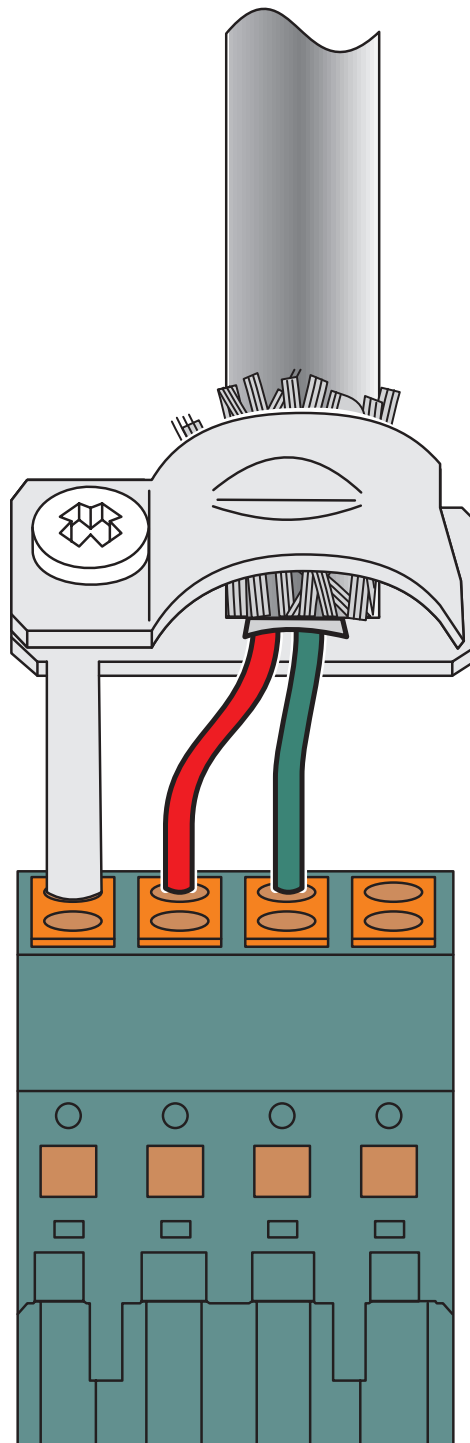
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Schematic diagram



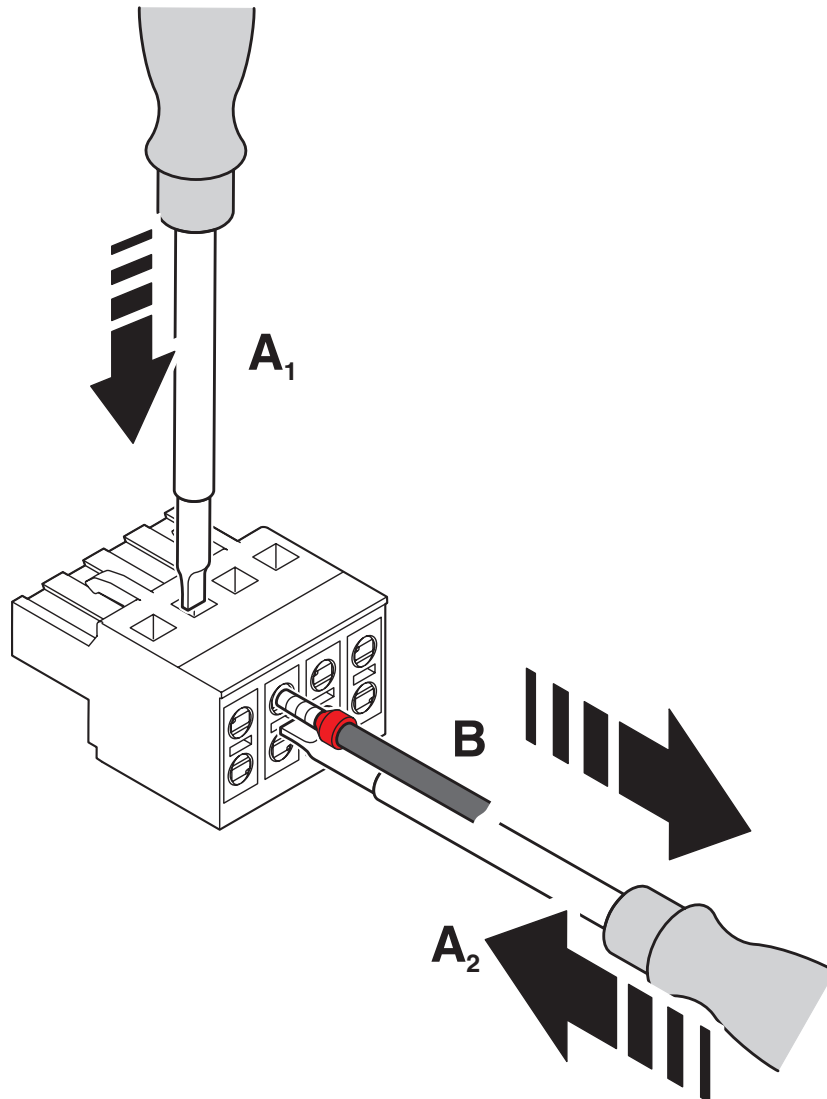
Connecting cables with a shield clamp

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Schematic diagram



Deinstall signal cable

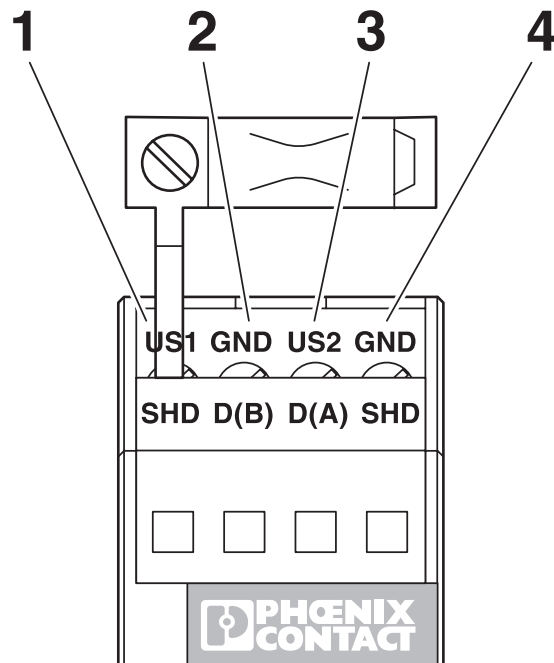
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Schematic diagram



Power supply

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## Classifications

### ECLASS

ECLASS-9.0	19070403
ECLASS-10.0.1	19070403
ECLASS-11.0	19070403

### ETIM

ETIM 7.0	EC000448
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### UNSPSC

UNSPSC 21.0	32121617
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## Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/IDC - 2313672

<https://www.phoenixcontact.com/us/products/2313672>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection

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### D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/IDC - 2313685

<https://www.phoenixcontact.com/us/products/2313685>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection



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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/SC - 2313698

<https://www.phoenixcontact.com/us/products/2313698>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/SC - 2313708

<https://www.phoenixcontact.com/us/products/2313708>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/35/M12 - 2902320

<https://www.phoenixcontact.com/us/products/2902320>



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two 35° cable entries M12 (B-coded). Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/M12 - 2902318

<https://www.phoenixcontact.com/us/products/2902318>



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two 90° M12 cable glands (B-coded). Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90X/M12 - 2902729

<https://www.phoenixcontact.com/us/products/2902729>

D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two 90° cable entries M12 (B-coded). Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator. Long version; S7-compatible.



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## Bus system cable

Bus system cable - PSM-CABLE-PROFIB/FC - 2744652

<https://www.phoenixcontact.com/us/products/2744652>

By the meter, Bus system cable, PROFIBUS (12 Mbps), shielded, PVC FR VI/PVC, violet, 2-wire (1X2XAWG22/1), color single wire: Red, green, cable length: Free entry (1.0 ... 1000.0 m)



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## Screwdriver

Screwdriver - SZF 0-0,4X2,5 - 1204504

<https://www.phoenixcontact.com/us/products/1204504>



Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.4 x 2.5 x 75 mm, 2-component grip, with non-slip grip

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## Stripping tool

Stripping tool - PSM-STRIP-FC/PROFIB - 2744623

<https://www.phoenixcontact.com/us/products/2744623>

Quick stripping tool for PROFIBUS cable, type Fast Connect



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## Stripping pliers

Stripping pliers - QUICK WIREFOX 6 - 1204384

<https://www.phoenixcontact.com/us/products/1204384>



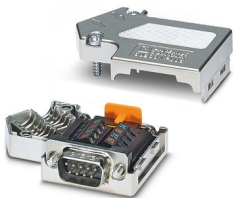
Stripping tool for cables with PVC insulation, stripping range: 0.08 to 6 mm<sup>2</sup>, wire cutting up to 6 mm<sup>2</sup> flexible or 4 mm<sup>2</sup> rigid

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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/SC2 - 2708232

<https://www.phoenixcontact.com/us/products/2708232>



D-SUB connector, 9-pos., male connector, 35° cable entry, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/PG/SC2 - 2708245

<https://www.phoenixcontact.com/us/products/2708245>



D-SUB connector, 9-pos., male connector, 35° cable entry, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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## D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/AX/SC - 2744380

<https://www.phoenixcontact.com/us/products/2744380>



D-SUB connector, 9-pos., male connector, axial version with two cable entries, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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## Repeater

Repeater - PSI-REP-PROFIBUS/12MB - 2708863

<https://www.phoenixcontact.com/us/products/2708863>



Modular repeater for electrical isolation and range increase for PROFIBUS up to 12 Mbps, 4-way isolation, rail-mountable, supply 24 V DC

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## Repeater

Repeater - PSI-REP-RS485W2 - 2313096

<https://www.phoenixcontact.com/us/products/2313096>



Modular repeater for electrical isolation and range increase in RS-485 2-wire bus systems up to 500 kbps, 4-way isolation, rail-mountable, supply 24 V DC

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<https://www.phoenixcontact.com/us/products/2313944>

## Repeater

Repeater - PSM-ME-RS485/RS485-P - 2744429

<https://www.phoenixcontact.com/us/products/2744429>



Repeater, for potential separation and range increase in RS-485 2-wire bus systems, 3-way isolation, rail-mountable

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## Interface converter

Interface converter - PSM-ME-RS232/RS485-P - 2744416

<https://www.phoenixcontact.com/us/products/2744416>



Interface converter, for converting RS-232 (V.24) to RS-422 (V.11) and RS-485, with electrical isolation, 2 channels, rail-mountable

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