

PSI-TERMINATOR-PB - Termination resistor



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 mounting
- 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
Note	Made to order (non-returnable)
Sales key	DN11
Product key	DNC141
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 _{rms} (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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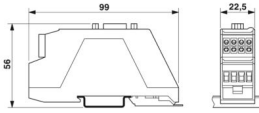


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Connection method	D-SUB-9, COMBICON
Transmission length	≤ 1200 m (Depends on transmission speed and cable type)
Termination resistor	390 Ω
	220 Ω
	390 Ω (Can be connected)
Conductor cross-section flexible max.	1.5 mm ²
Conductor cross-section flexible min.	0.2 mm ²
Conductor cross-section, rigid max.	1.5 mm ²
Conductor cross-section, rigid min.	0.2 mm ²
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

Color (Housing)	green (RAL 6021)
Material (Housing)	PA 6.6-FR

Mechanical tests

Free fall in accordance with IEC 60068-2-32	Free fall: 1 m
Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Vibration (operation): 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Shock (operation): 25g, 11 ms period, half-sine shock pulse

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)

Approvals

CE

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Certificate	CE-compliant
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
UL, Canada	
Identification	Class I, Zone 2, Ex nA IIC T5 Gc X
Corrosive gas test	
Identification	ISA-S71.04-1985 G3 Harsh Group A
ATEX	
Identification	⊕ 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
Electrostatic discharge	
Standards/regulations	EN 61000-4-2
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
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
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

Criteria

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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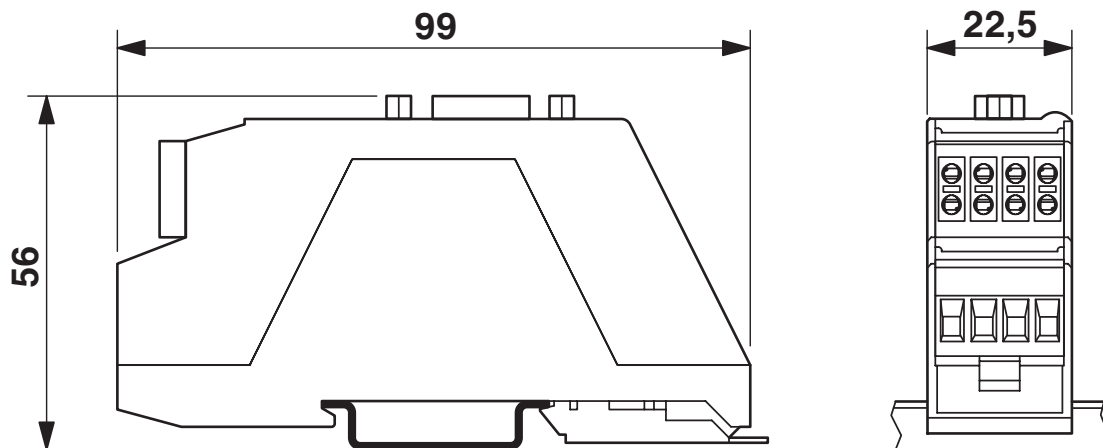


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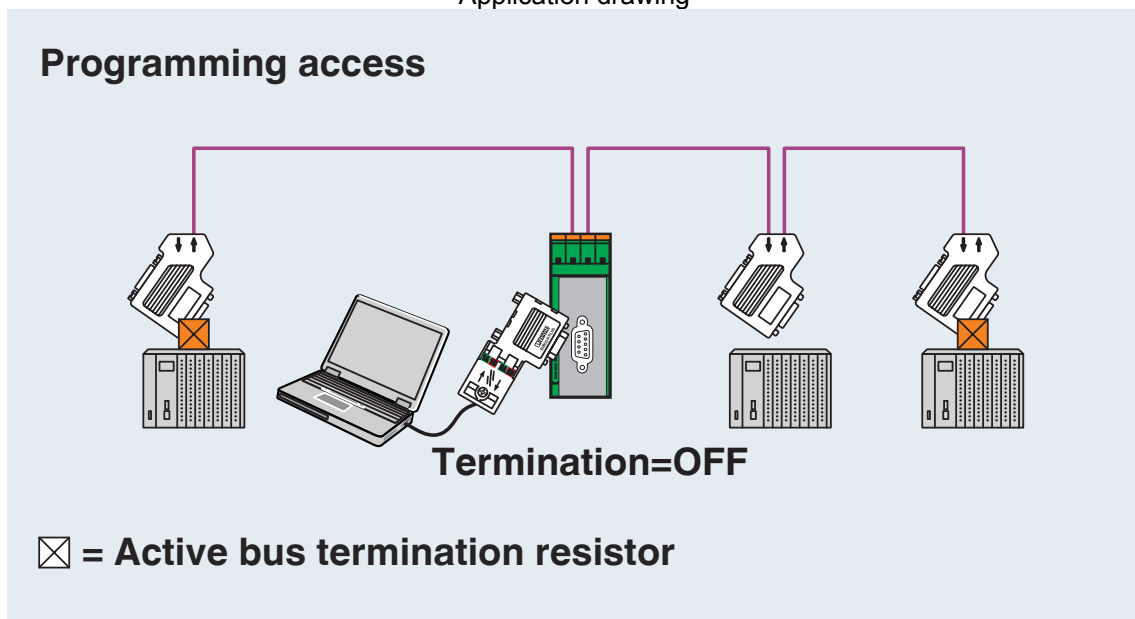
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Drawings

Dimensional drawing

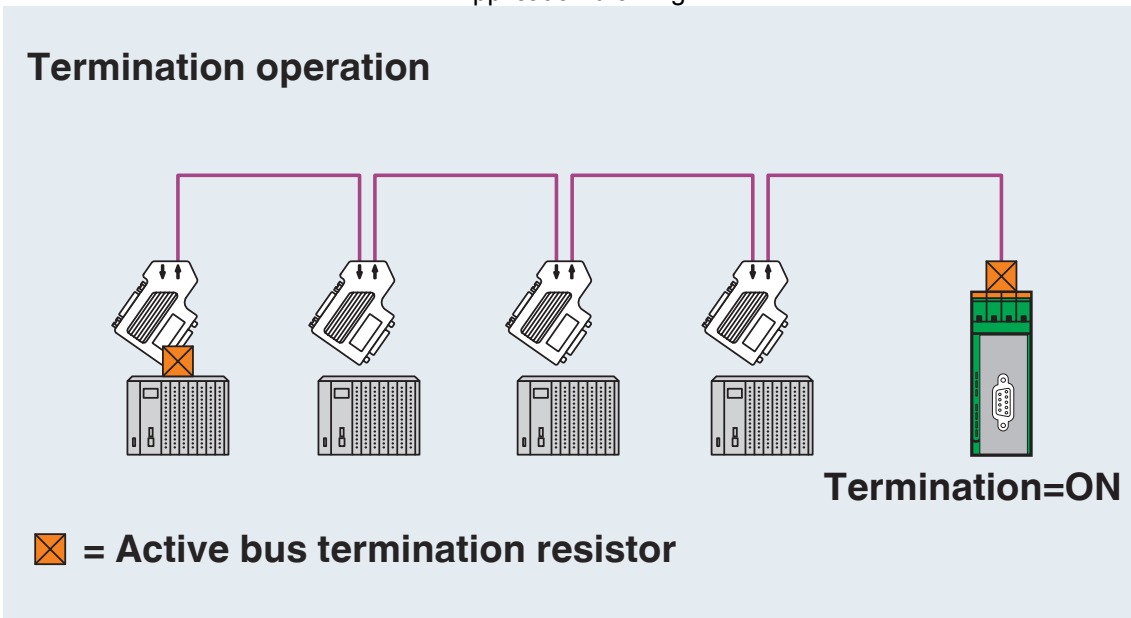


Application drawing



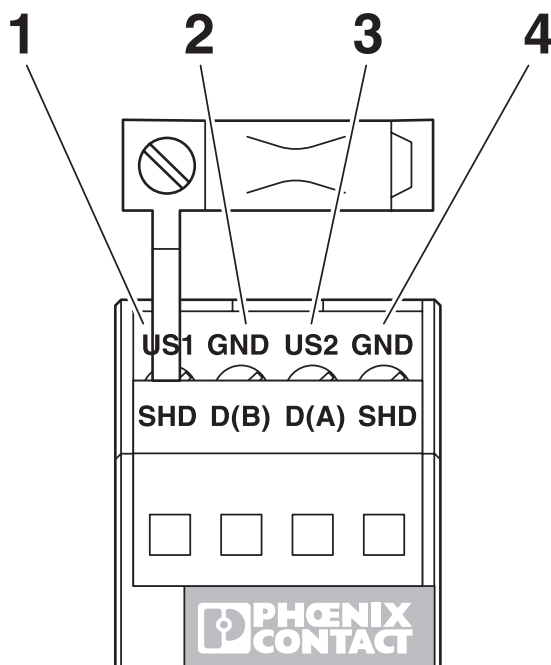
Fixed service interface in (professional) bus system

Application drawing



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

Schematic diagram



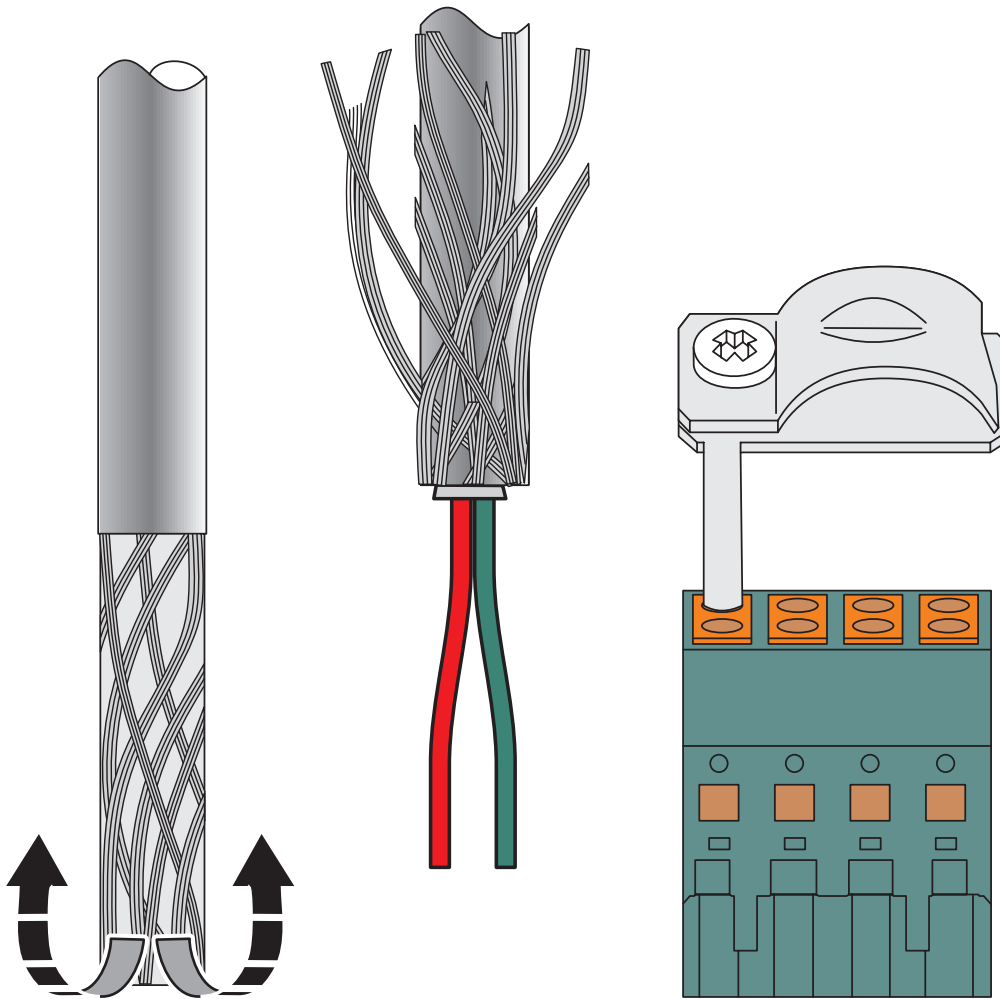
Power supply

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Schematic diagram



Push the braided shield back

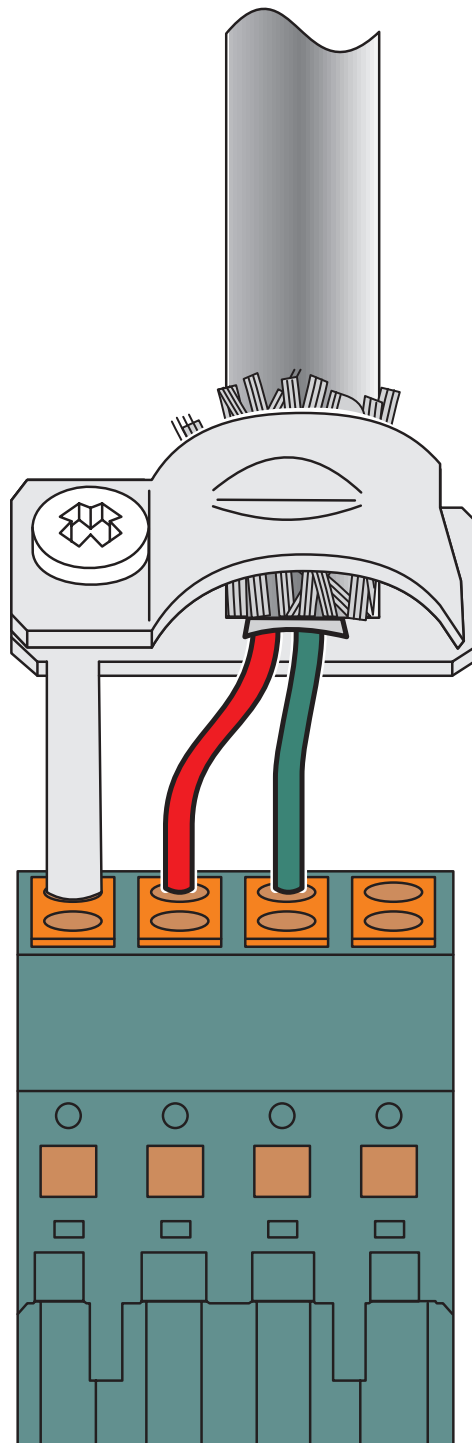
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Schematic diagram



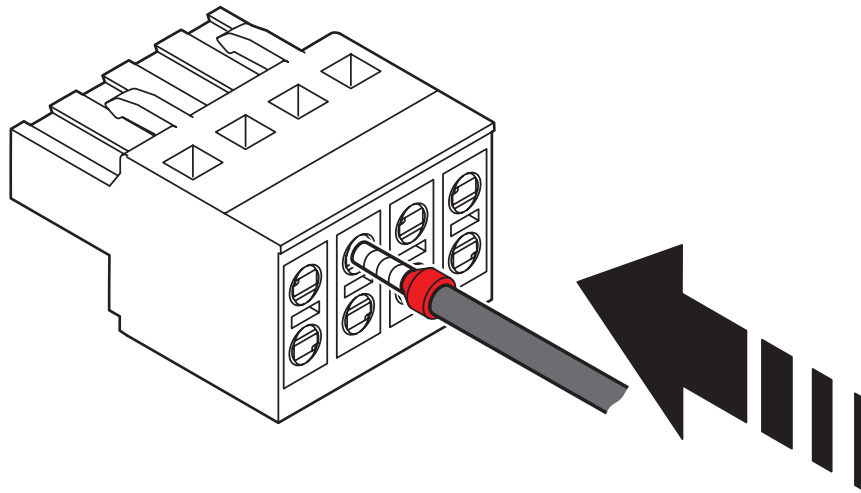
Connecting cables with a shield clamp

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Schematic diagram



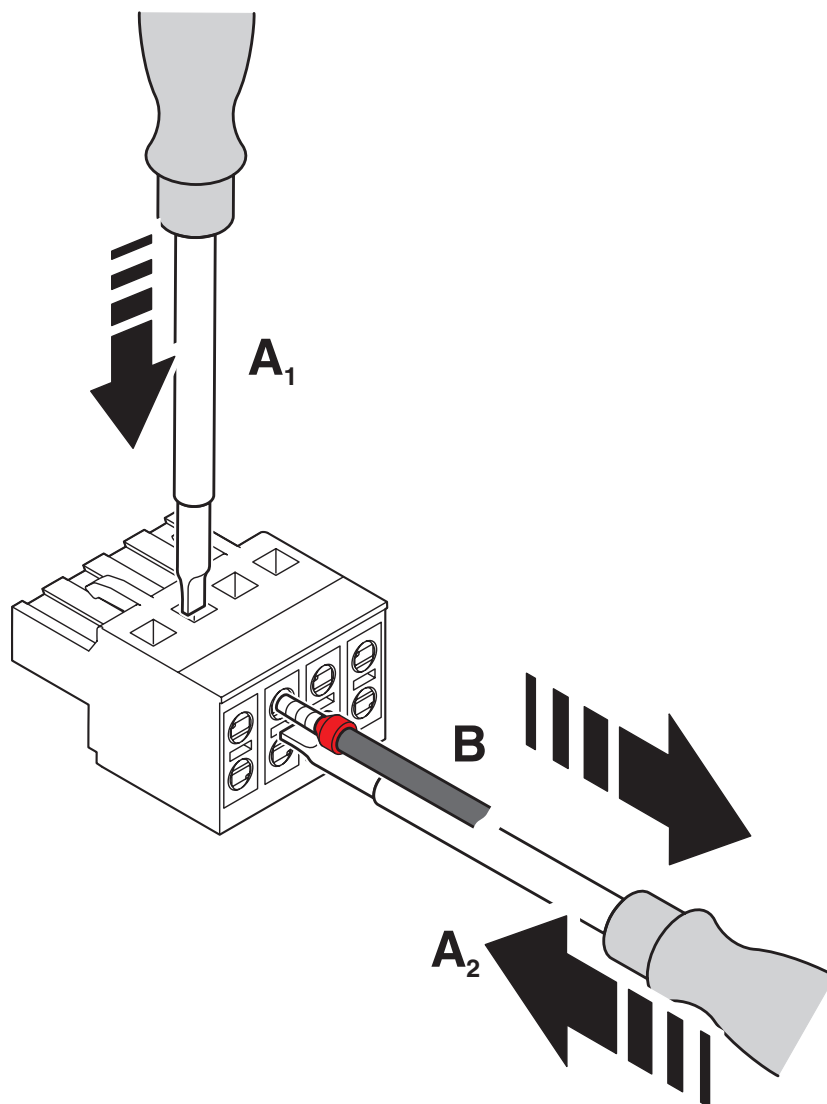
Install signal cable

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Schematic diagram



Deinstall signal cable

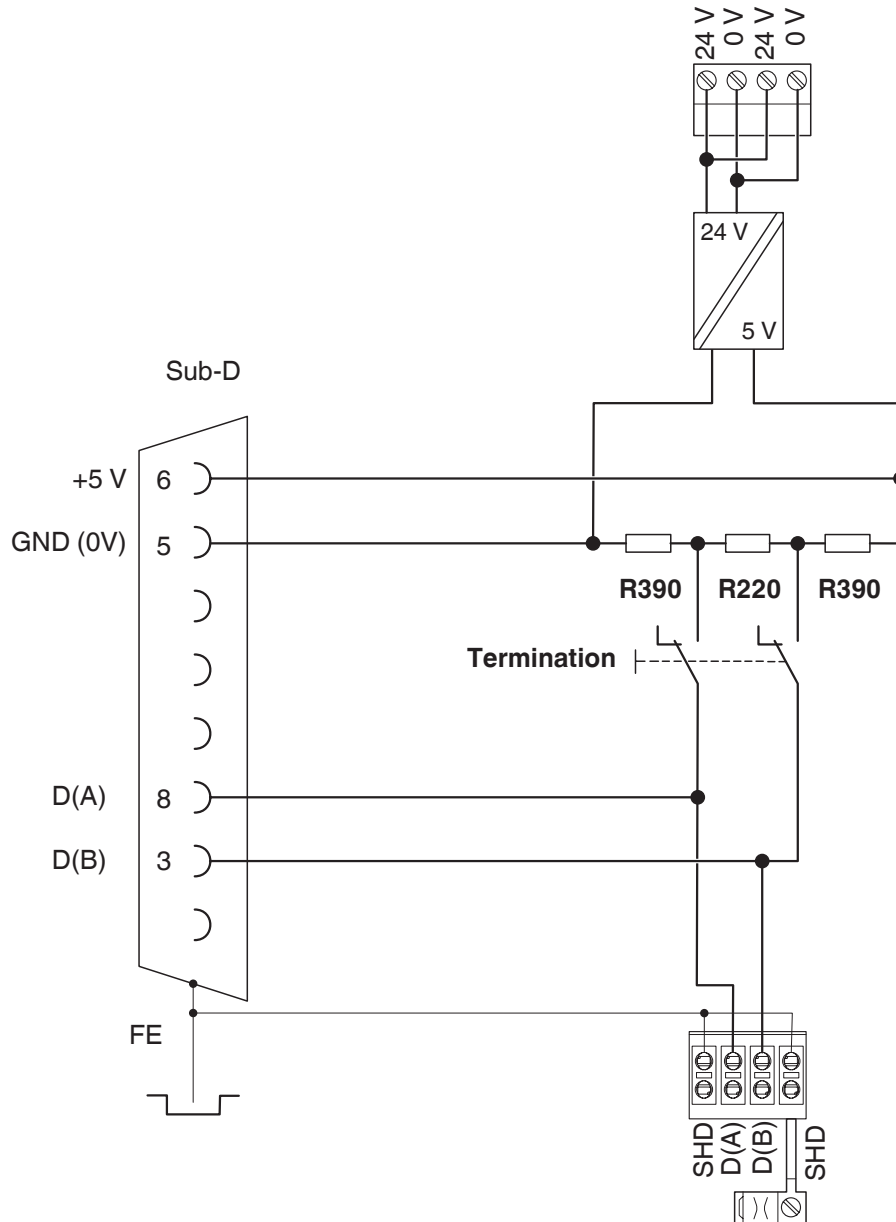
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Block diagram



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Classifications

UNSPSC

UNSPSC 21.0	32121617
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
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