

# PSI-TERMINATOR-PB-TBUS - Termination resistor



2702636

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Active termination resistor for PROFIBUS and RS-485 bus systems, redundant power supply, routing of the supply voltage via DIN rail connector, electrical isolation, switchable termination, integrated programming interface

## Product description

PROFIBUS or other RS-485 networks can be actively terminated at the bus end using the **PSI-TERMINATOR-PB-TBUS**. 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 devices, the required power supply is provided at the alternative D-SUB connection. When several devices are installed in combination, the supply voltage can be conveniently routed through the DIN rail connector.

## Your advantages

- Diagnostic LEDs for voltage and data activity
- Interference-free bus communication thanks to active termination
- Compact housing design
- Fixed programming interface in the network
- Termination can be connected externally
- Installation as single device or in combination with other devices
- Extended temperature range of -40 °C ... +70 °C
- Electrical isolation of power supply and data interface
- Redundant power supply
- Supply voltage routed through a DIN rail connector for use in combination with other devices



# RS-485

## Commercial data

Item number	2702636
Packing unit	1 pc

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Minimum order quantity	1 pc
Sales key	DN11
Product key	DNC141
GTIN	4055626251530
Weight per piece (including packing)	135.64 g
Weight per piece (excluding packing)	73.69 g
Customs tariff number	85389091
Country of origin	DE

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## Technical data

### Notes

#### 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	3305 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	1923 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	911 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

#### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### Electrical properties

Electrical isolation	RS-485 // VCC
Maximum power dissipation for nominal condition	0.24 W
Test voltage data interface/power supply	1.5 kV AC (50 Hz, 1 min.)

#### Supply

Supply voltage range	18 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V DC (via pluggable COMBICON screw terminal block)
Typical current consumption	10 mA (24 V DC, no load on D-SUB)
	60 mA (24 V DC, current drain at D-SUB of 150 mA)
Max. current consumption	12 mA (18 V DC, no load on D-SUB)
	77 mA (18 V DC, current drain at D-SUB of 150 mA)

#### Function

Status and diagnostic indicators	LEDs: US (power supply), ACT (data activity)
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### Connection data

#### Supply

Single conductor/terminal point, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Single-wire/terminal point, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section, flexible [AWG]	24 ... 12
Stripping length	7.00 mm
Tightening torque	0.6 Nm ... 0.8 Nm

### Interfaces

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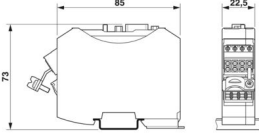
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Signal	Modbus
	PROFIBUS

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

Serial transmission speed	≤ 12 Mbps
Connection method	D-SUB-9, COMBICON
Tightening torque	0.4 Nm (D-SUB interface)
Transmission length	≤ 1200 m (Depends on transmission speed and cable type)
Termination resistor	390 Ω
	220 Ω
	390 Ω (Can be connected)
Single conductor/terminal point, rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Single-wire/terminal point, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Max. AWG conductor cross-section, flexible	16
Min. AWG conductor cross-section, flexible	24
Single-wire/terminal point, rigid AWG max.	16
Single-wire/terminal point, rigid AWG min.	24
Stripping length	8 mm
Output nominal voltage	5 V DC

## Dimensions

Dimensional drawing	
Width	22.5 mm
Height	92 mm
Depth	73 mm

## Material specifications

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

## Mechanical tests

Free fall in accordance with EN 60068-2-31	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)	-40 °C ... 70 °C

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Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
	≤ 2000 m (Restrictions for ATEX applications)
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Air pressure (operation)	≤ 80 kPa (When used in EX zone 2)

## Approvals

### CE

Certificate	CE-compliant
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### ATEX

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF16ATEX2702636X
Note	Please follow the special installation instructions in the documentation!

### UL, USA/Canada

Identification	508 Listed
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### Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
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## 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)
Indirect discharge	± 6 kV
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)
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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 (sym./asym.)
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 55011
Comments	Class A, industrial applications

## 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	VDMA 24364:2018-05
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## Mounting

Mounting type	DIN rail mounting
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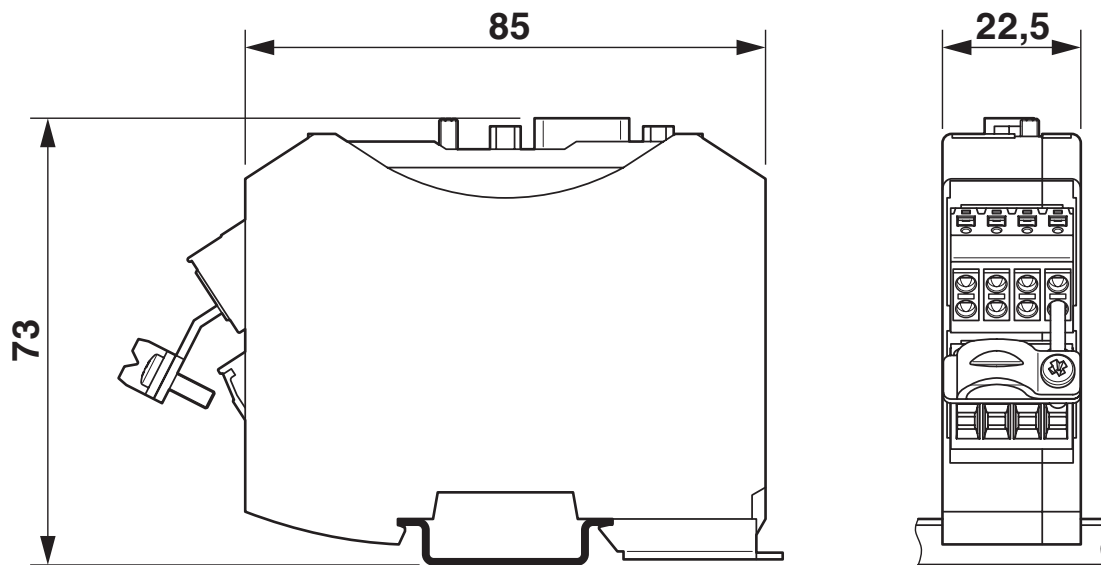


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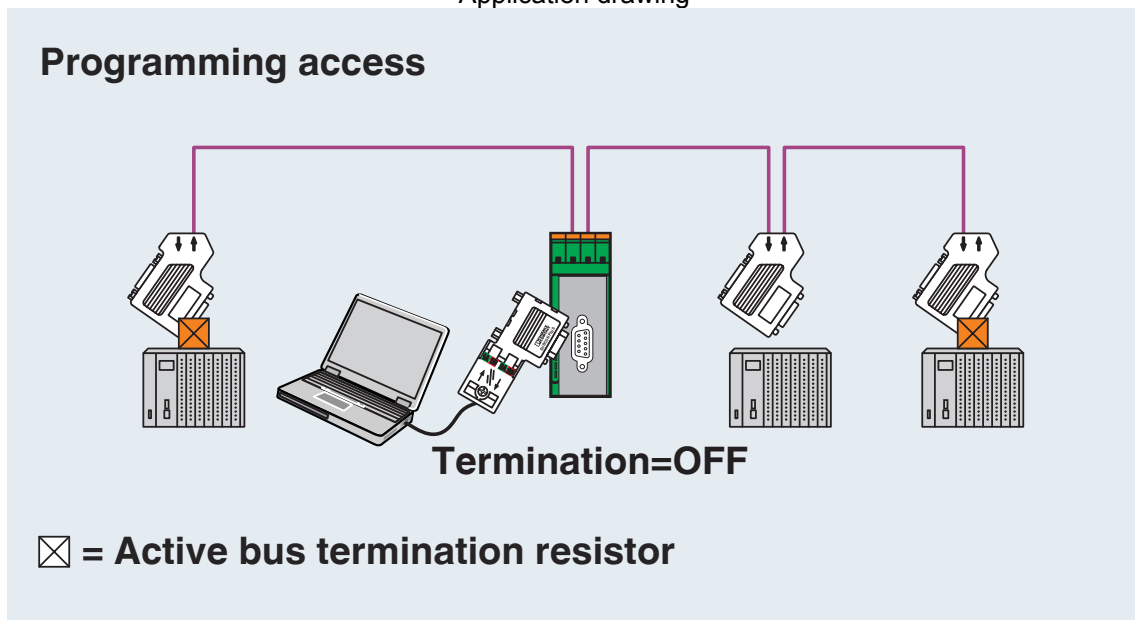
## Drawings

Dimensional drawing



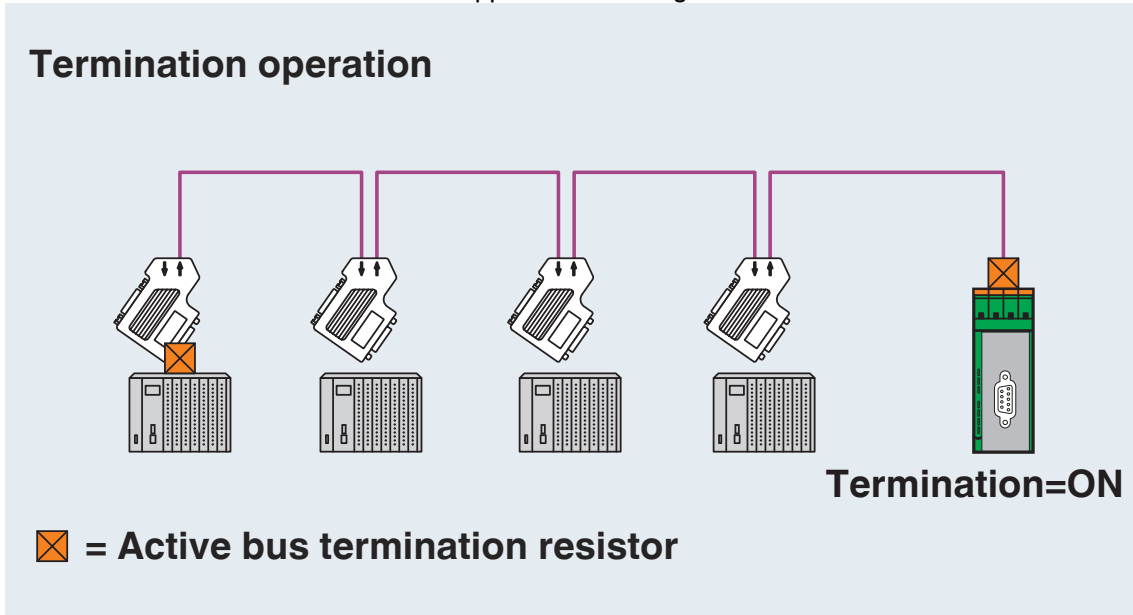
Compact housing

Application drawing



Fixed service interface in (professional) bus system

## Application drawing



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

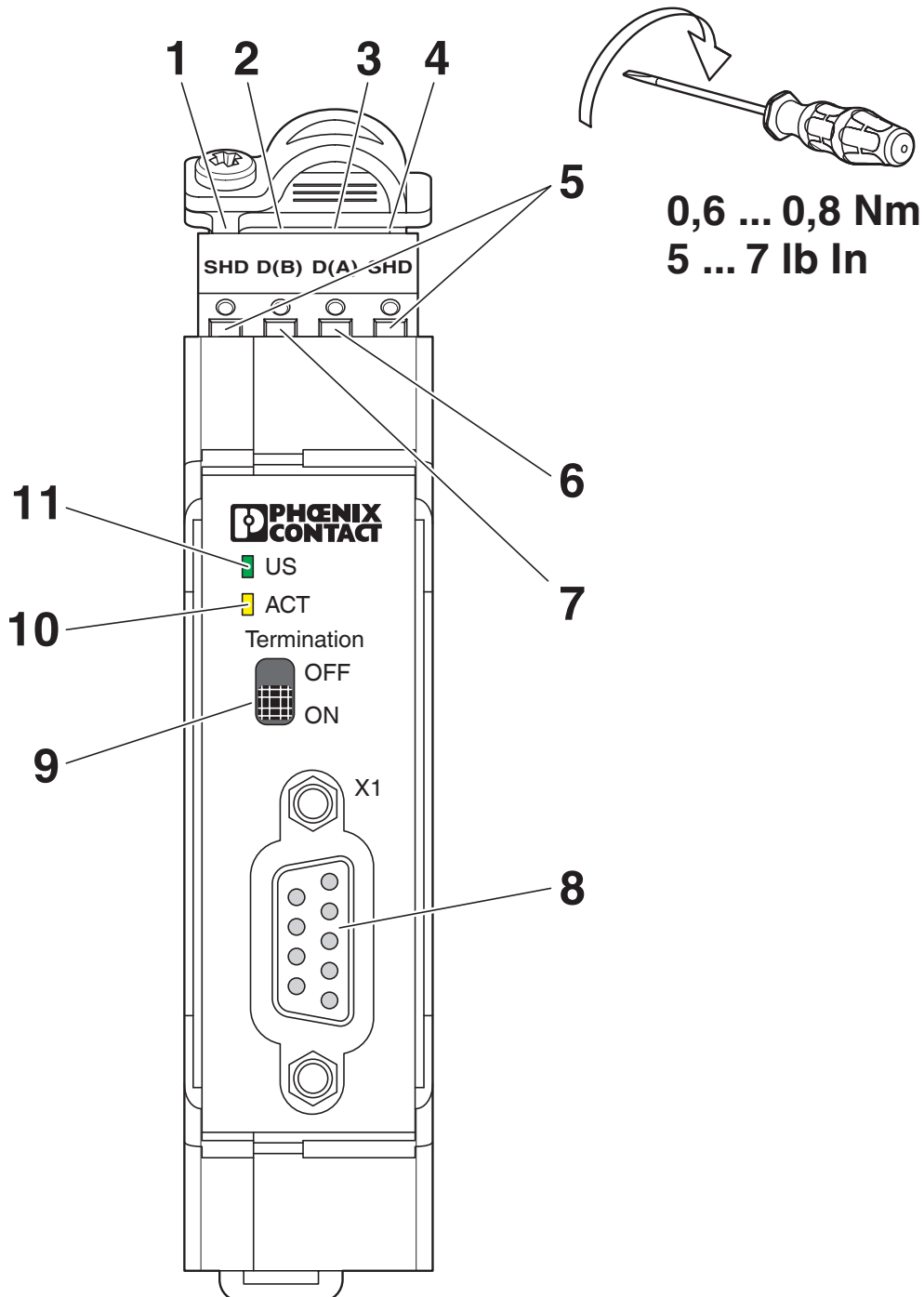
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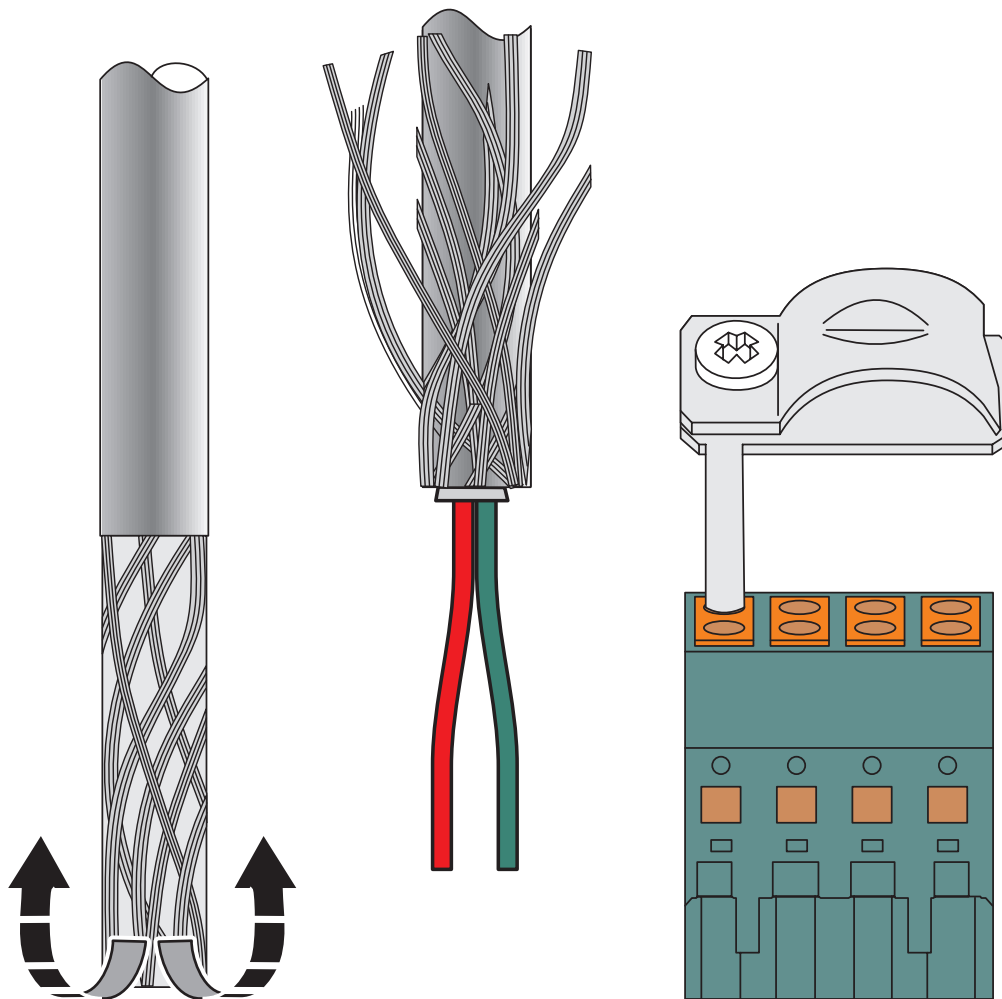
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Schematic diagram



Front view

Schematic diagram



Push the braided shield back

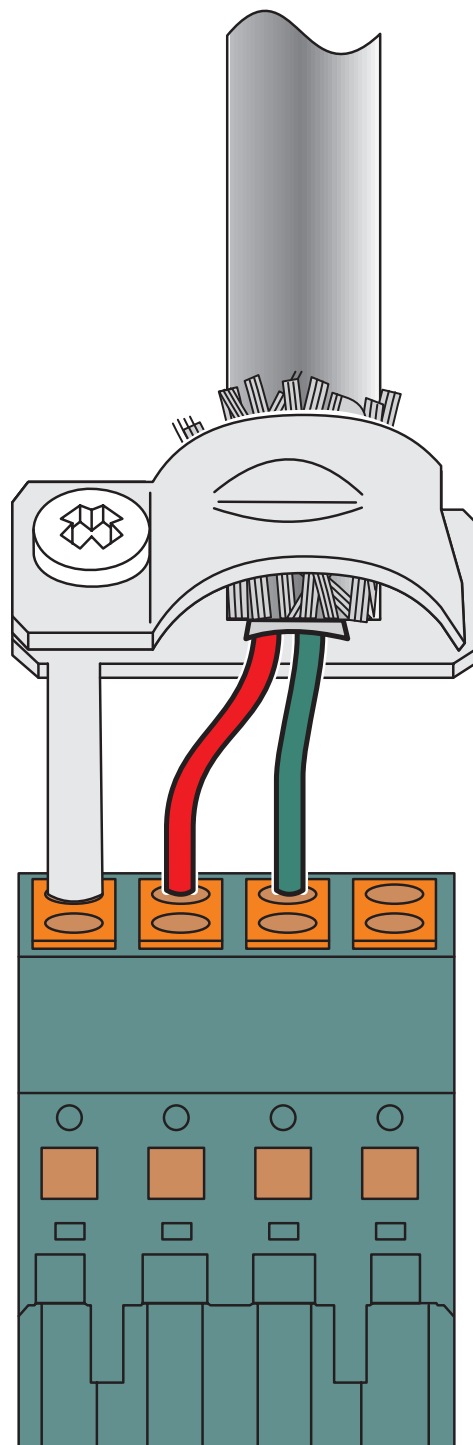
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Schematic diagram



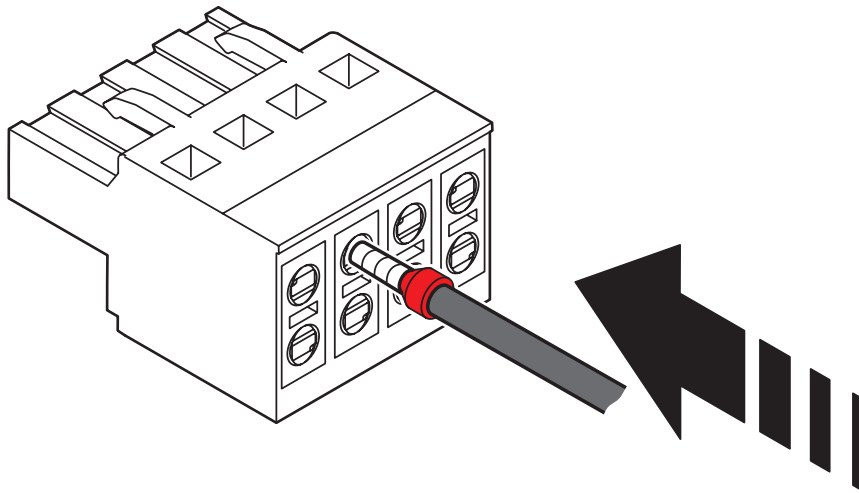
Connecting cables with a shield clamp

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Schematic diagram



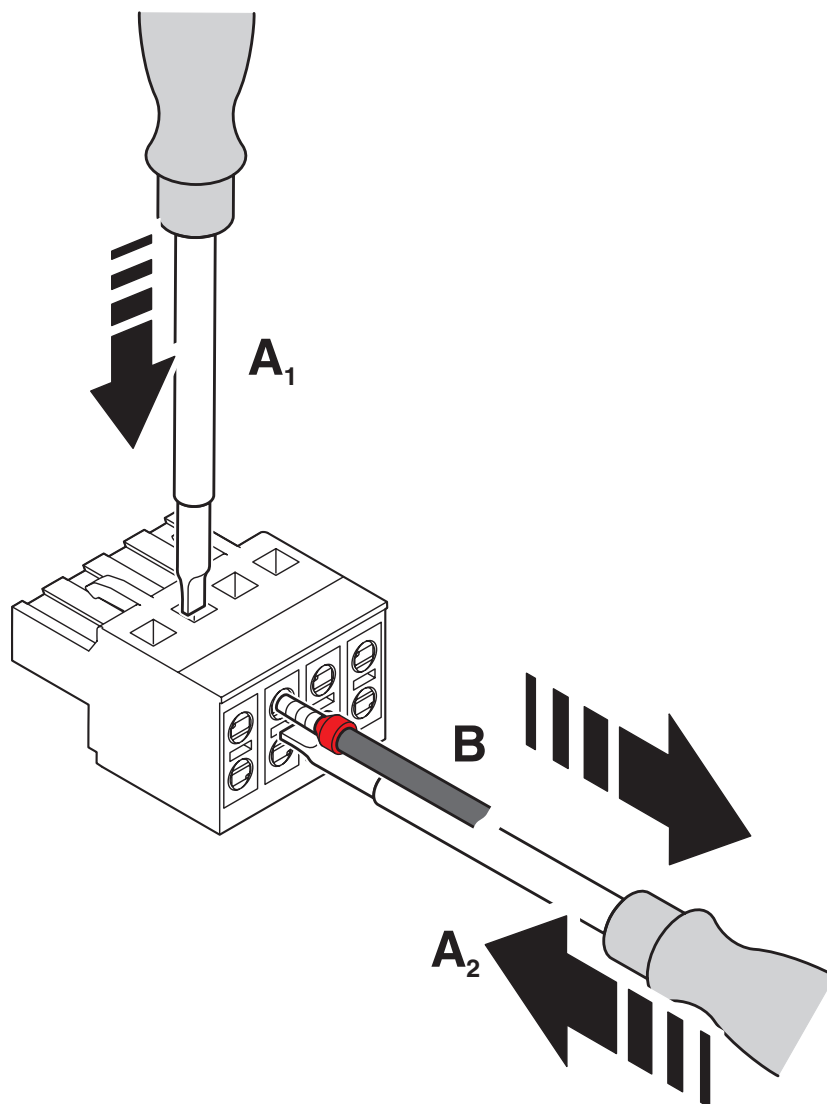
Install signal cable

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Schematic diagram



Deinstall signal cable

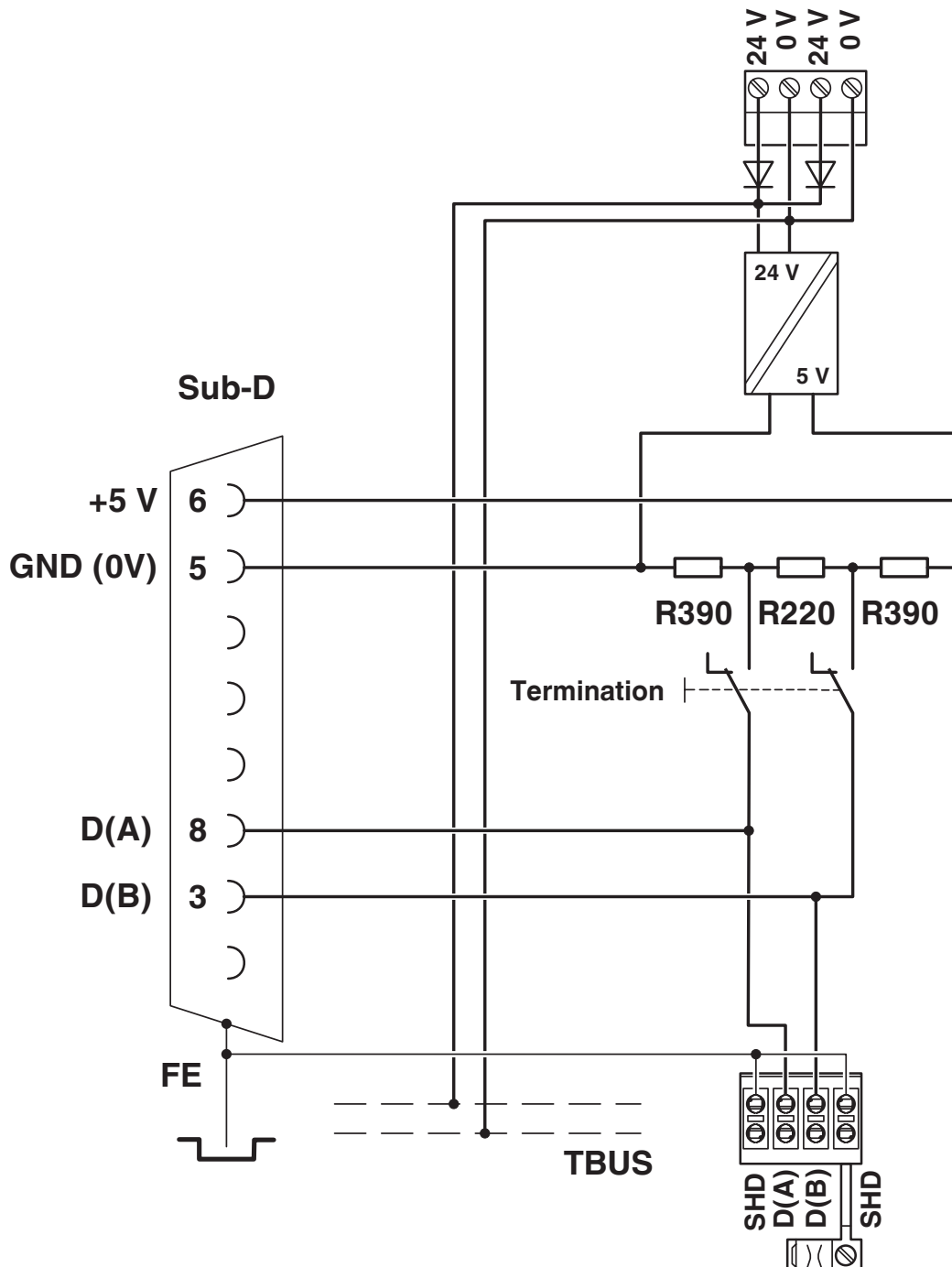
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Block diagram



Basic circuit diagram

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## Classifications

### ECLASS

ECLASS-13.0	19070403
ECLASS-15.0	19070403

### ETIM

ETIM 10.0	EC000448
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### UNSPSC

UNSPSC 21.0	32121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	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)
SCIP	d60f1396-450b-48d2-9be3-ffd4cd90d5f7

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