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

Commercial data

Item number	2702636

Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN11
Product key	DNC141
GTIN	4055626251530
Weight per piece (including packing)	137 g
Weight per piece (excluding packing)	73.69 g
Customs tariff number	85389091
Country of origin	DE

Technical data

Notes

Utilization restriction

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

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)

Connection data

Supply

Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section, flexible [AWG]	24 ... 12
Stripping length	7.00 mm
Tightening torque	0.6 Nm ... 0.8 Nm

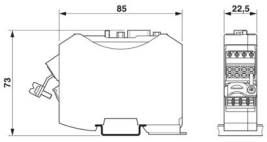
Interfaces

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 mm² ... 1.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 1.5 mm²
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	Operation: 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	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

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

ATEX

Identification	Ⓔx 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

Corrosive gas test

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

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)
Indirect discharge	± 6 kV
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

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

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

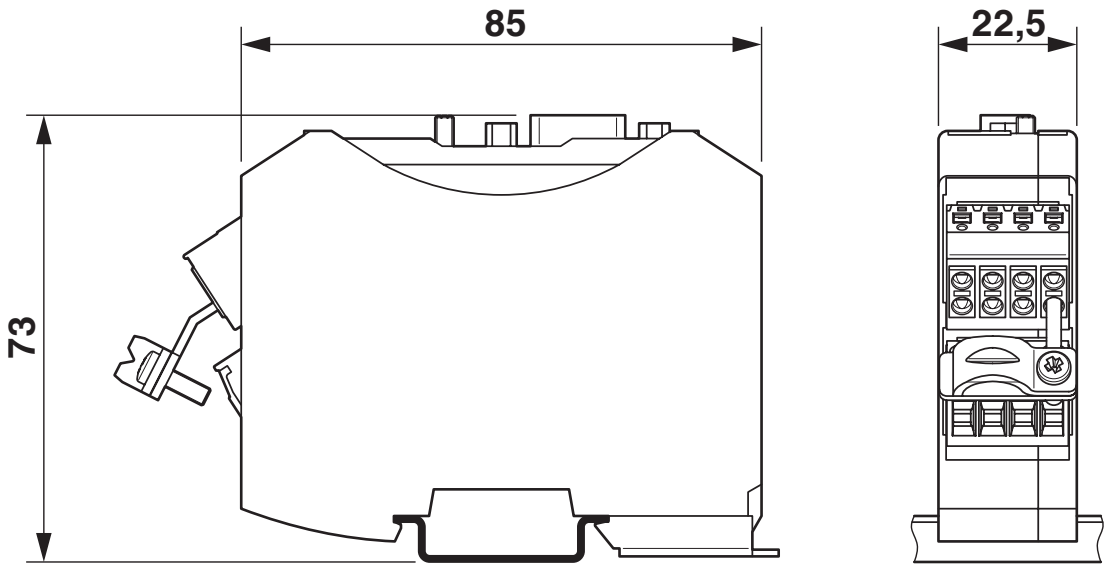
Free from substances that could impair the application of coating	VDMA 24364:2018-05

Mounting

Mounting type	DIN rail mounting

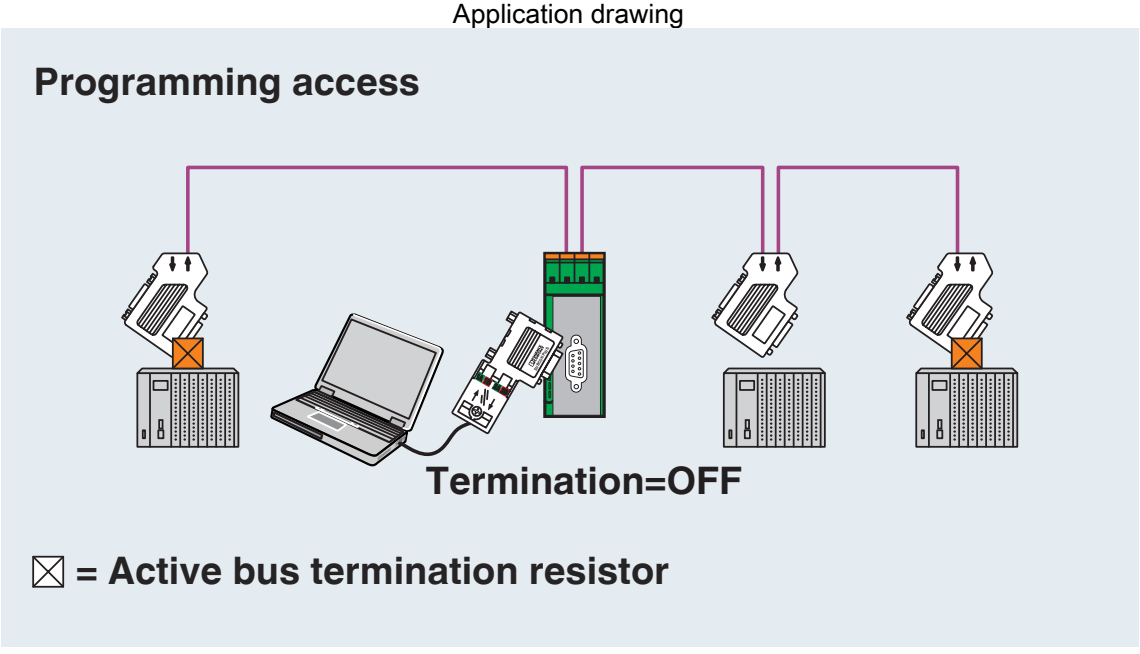
Drawings

Dimensional drawing



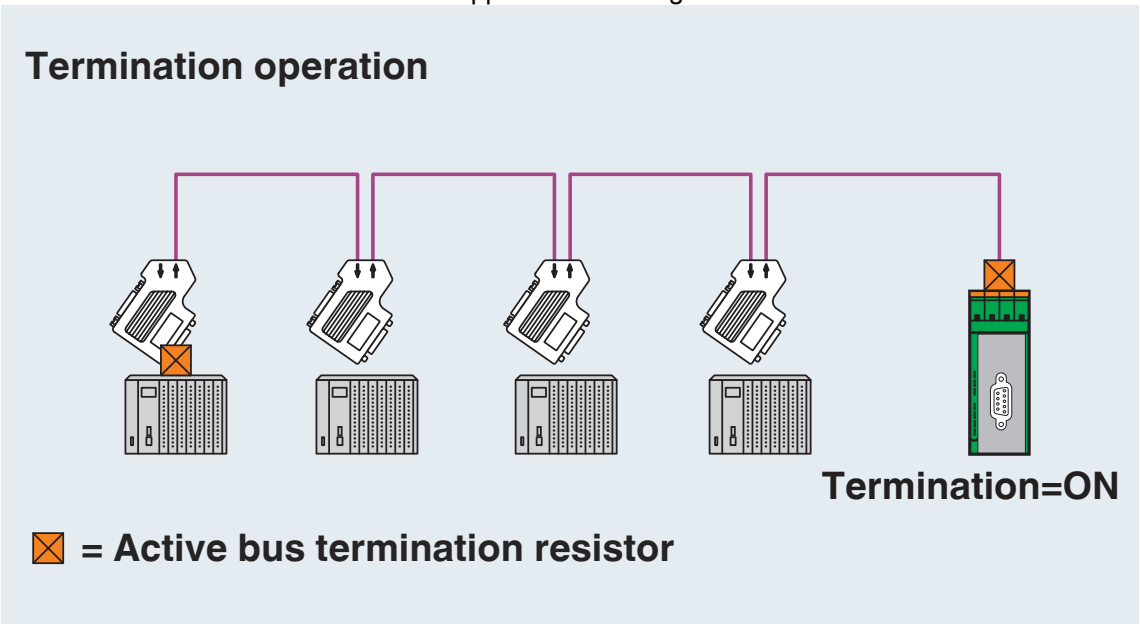
Compact housing

Application drawing



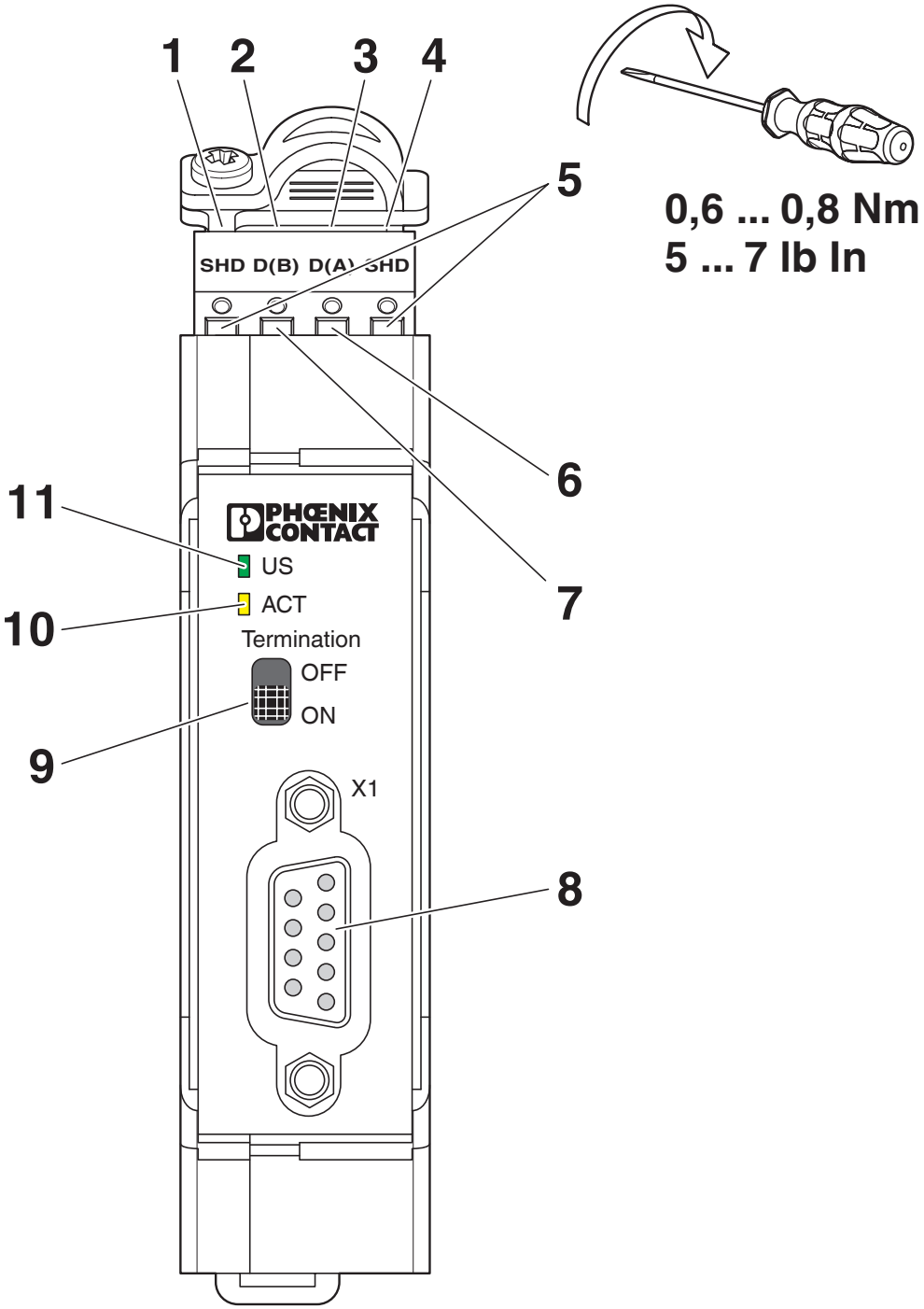
Fixed service interface in (professional) bus system

Application drawing



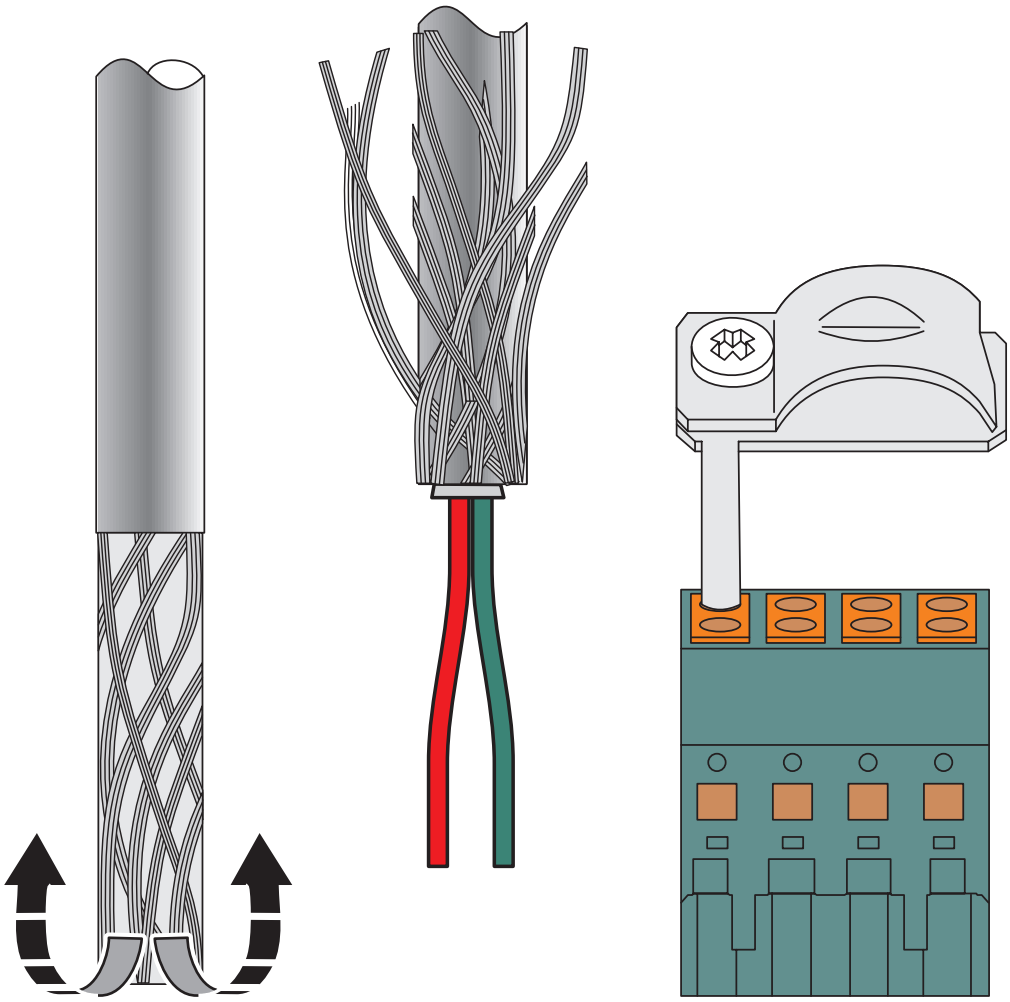
Permanent termination at the end of the (professional) bus system

Schematic diagram



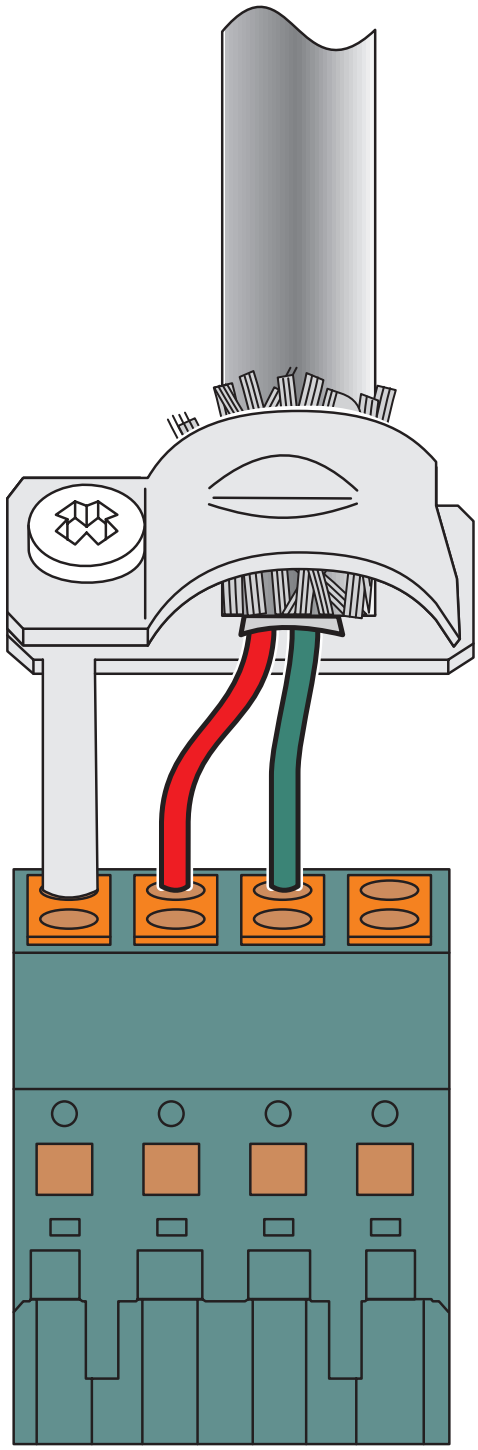
Front view

Schematic diagram



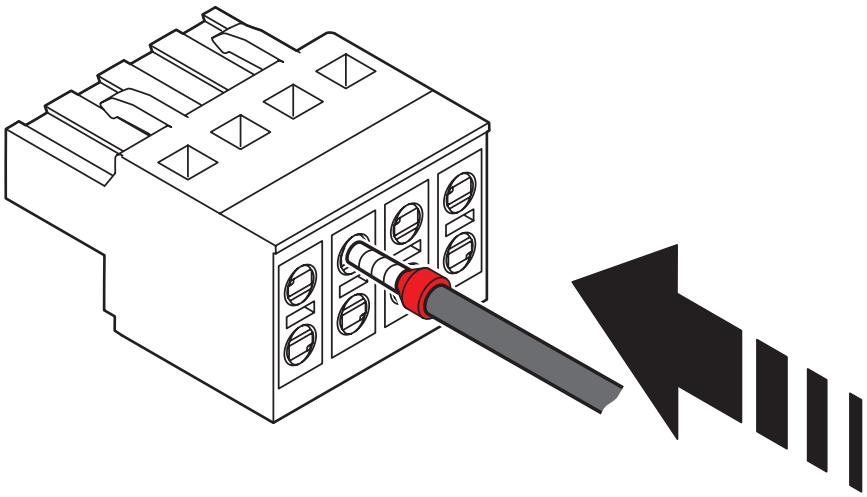
Push the braided shield back

Schematic diagram



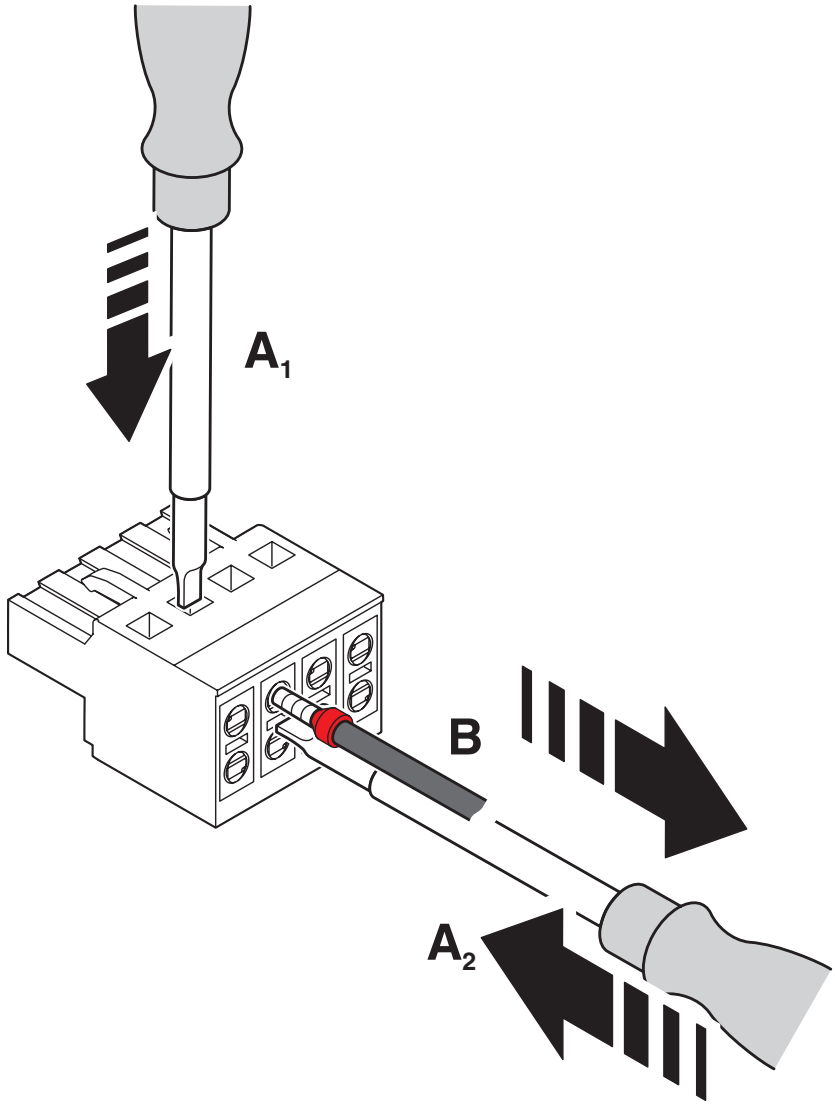
Connecting cables with a shield clamp

Schematic diagram



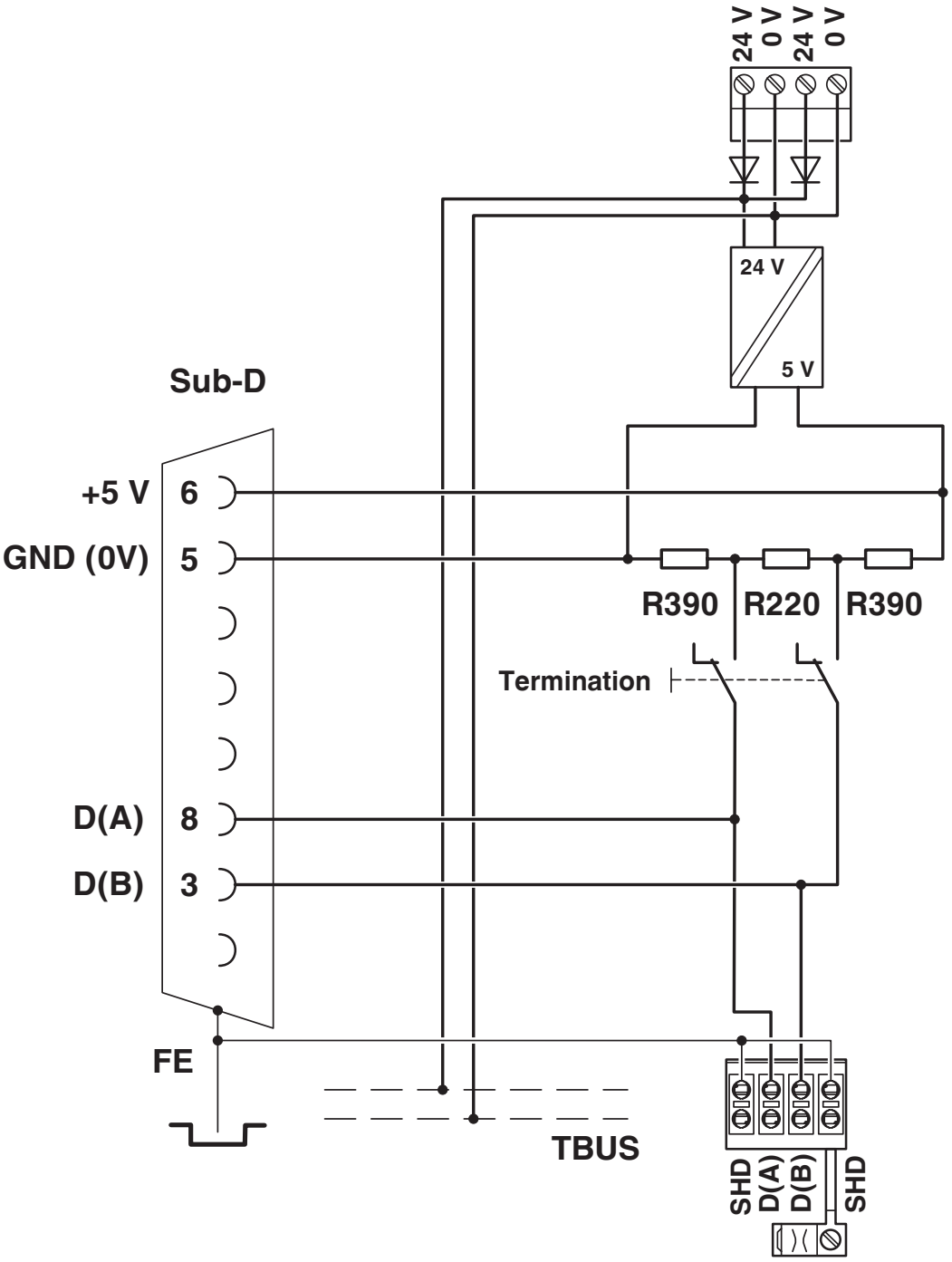
Install signal cable

Schematic diagram



Deinstall signal cable

Block diagram



Basic circuit diagram

Classifications

ECLASS

ECLASS-13.0	19070403
ECLASS-15.0	19070403

ETIM

ETIM 10.0	EC000448

UNSPSC

UNSPSC 21.0	32121600

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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https://www.phoenixcontact.com

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com