

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



2744416

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

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

Product Description

The RS-485 standard allows more than two devices to communicate with one another. Converting the V.24 (RS-232) point-to-point interface into the bus-capable RS-485 standard makes it possible to network up to 32 devices via a 2- or 4-wire cable.

Your advantages

- Mounting on standard EN DIN rails
- Transmission speed of 4.8 Kbps ... 115.2 Kbps
- High-quality 3-way isolation between power supply, RS-232, and RS-422/RS-485 for safe decoupling of potentials with 2 kV
- RS-422 4-wire point-to-point operation
- RS-485 2-wire operation, half duplex
- RS-485 4-wire operation, full duplex
- Automatic RS-485 transmit/receive changeover
- Integrated data indicator for dynamic indication of transmit and receive data
- Integrated surge protection with transient discharge to the DIN rail
- Shipbuilding approval in accordance with DNV GL and ABS

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Commercial Data

Item number	2744416
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Product Key	DNC111
Catalog Page	Page 425 (C-6-2019)
GTIN	4017918171780
Weight per Piece (including packing)	213.2 g
Weight per Piece (excluding packing)	196.1 g
Customs tariff number	85176200
Country of origin	DE

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	Interface converter
MTTF	1654 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	746 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	310 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	10 Years (Telcordia standard, temperature 40 °C, operating cycle 100 % (7 days a week, 24 hours a day))

Insulation characteristics

Pollution degree	2
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Electrical properties

Electrical isolation	VCC // V.24 (RS-232) // RS-485
Maximum power dissipation for nominal condition	2.04 W
Test voltage data interface/power supply	1.5 kV AC
Test voltage data interface/power supply	1.5 kV AC
Test voltage data interfaces	1.5 kV AC

Supply

Supply voltage range	18 V AC/DC ... 30 V AC/DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V AC/DC
Typical current consumption	85 mA (24 V DC)
Max. current consumption	100 mA

Connection data

Supply

Conductor cross section, flexible	0.20 mm ² ... 2.50 mm ²
Conductor cross section, rigid	0.20 mm ² ... 2.50 mm ²
Torque	0.56 Nm ... 0.79 Nm

Interfaces

Interface	RS-232/-485
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Bit distortion	≤ 5 %
Bit delay	≤ 2.5 μs
Signal	Modbus
Transmission channels	2 (1/1), RxD, TxD, full duplex

Data: V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1

Serial transmission speed	1.2; 2.4; 4.8; 7.2; 9.6; 19.2; 31.25; 38.4; 57.6; 75; 93.75; 115.2 kbps
Connection method	D-SUB 9 plug
Pin assignment	DTE/DCE switchover via switch
Transmission length	15 m (shielded twisted pair)
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section AWG max.	12
Conductor cross section AWG min.	24
Protocols supported	transparent protocol

Data: RS-422 interface in acc. with ITU-T V.11, EIA/TIA-422, DIN 66348-1

Serial transmission speed	1.2; 2.4; 4.8; 9.6; 19.2; 38.4; 57.6; 75; 93.75; 115.2 kbps
Connection method	Pluggable screw connection
Transmission length	1200 m (shielded twisted pair)
Termination resistor	390 Ω 150 Ω 390 Ω (Can be connected)
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section AWG max.	13
Conductor cross section AWG min.	24
Protocols supported	transparent protocol

Data: RS-485 interface in acc. with EIA/TIA-485, DIN 66259-1

Serial transmission speed	1.2; 2.4; 4.8; 9.6; 19.2; 38.4; 57.6; 75; 93.75; 115.2 kbps
Connection method	Pluggable screw connection
Transmission length	1200 m (shielded twisted pair)
Termination resistor	390 Ω 150 Ω 390 Ω (Can be connected)
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section AWG max.	14
Conductor cross section AWG min.	24
Data direction switching	Automatic control or via RTS/CTS
Protocols supported	transparent protocol

Dimensions

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Dimensional drawing	
Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color	green
Material	PA 6.6-FR (Housing)

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)
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

Approval data

CE

Certificate	CE-compliant
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CE

Identification	EAC
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CE

Identification	□ II 3 G Ex nA IIC T4 Gc
Certificate	IBExU16ATEXB004 X
Note	Please follow the special installation instructions in the documentation!

CE

Identification	Ex nA IIC T4 Gc
Certificate	IECEX IBE 15.0034X

CE

Identification	508 Recognized
	Class I, Div. 2, Groups A, B, C, D
	Class I, Zone 2, AEx nA IIC T4
	Class I, Zone 2, Ex nA IIC T4 Gc X

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CE

Certificate	MSIP-REI-PCK-ME2744416
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CE

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

Identification	DNV GL
	ABS

DNV GL data

Temperature	B
Humidity	A
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2:2005

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	26 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)

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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 55011
Comments	Class A, industrial applications
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Mounting

Mounting type	DIN rail mounting
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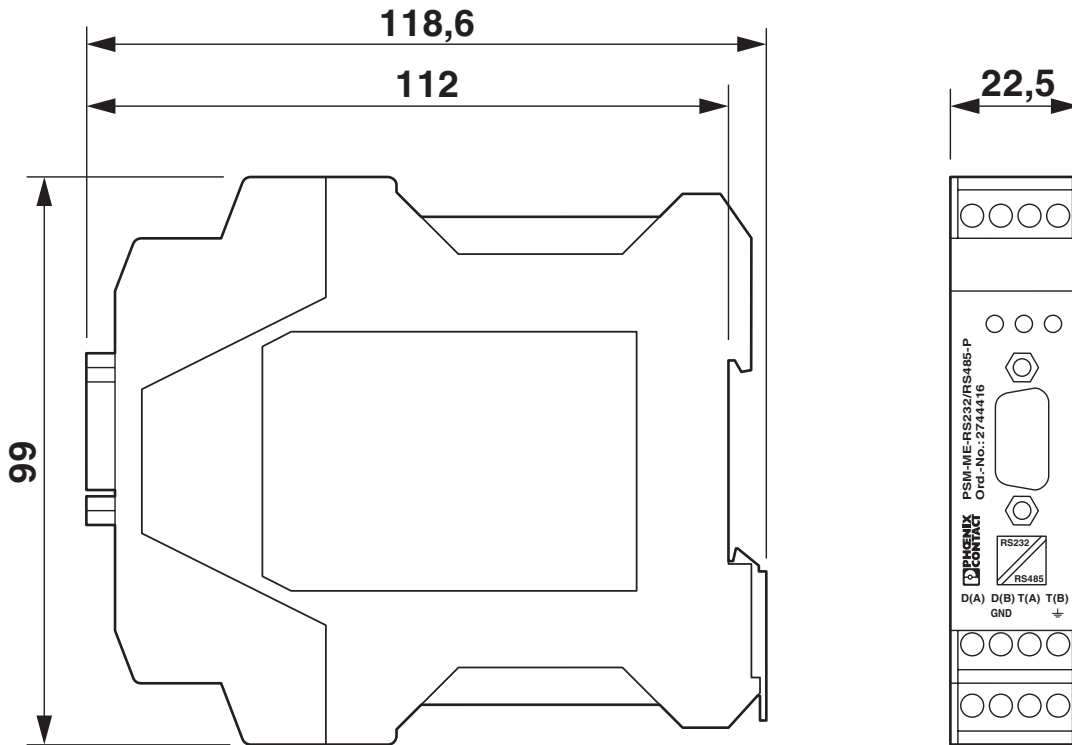


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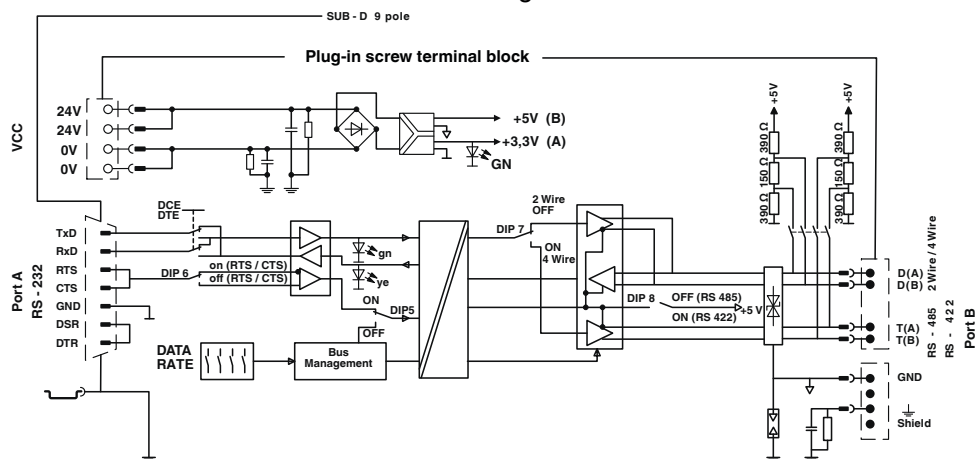
Drawings

Dimensional drawing



Slim design

Circuit diagram

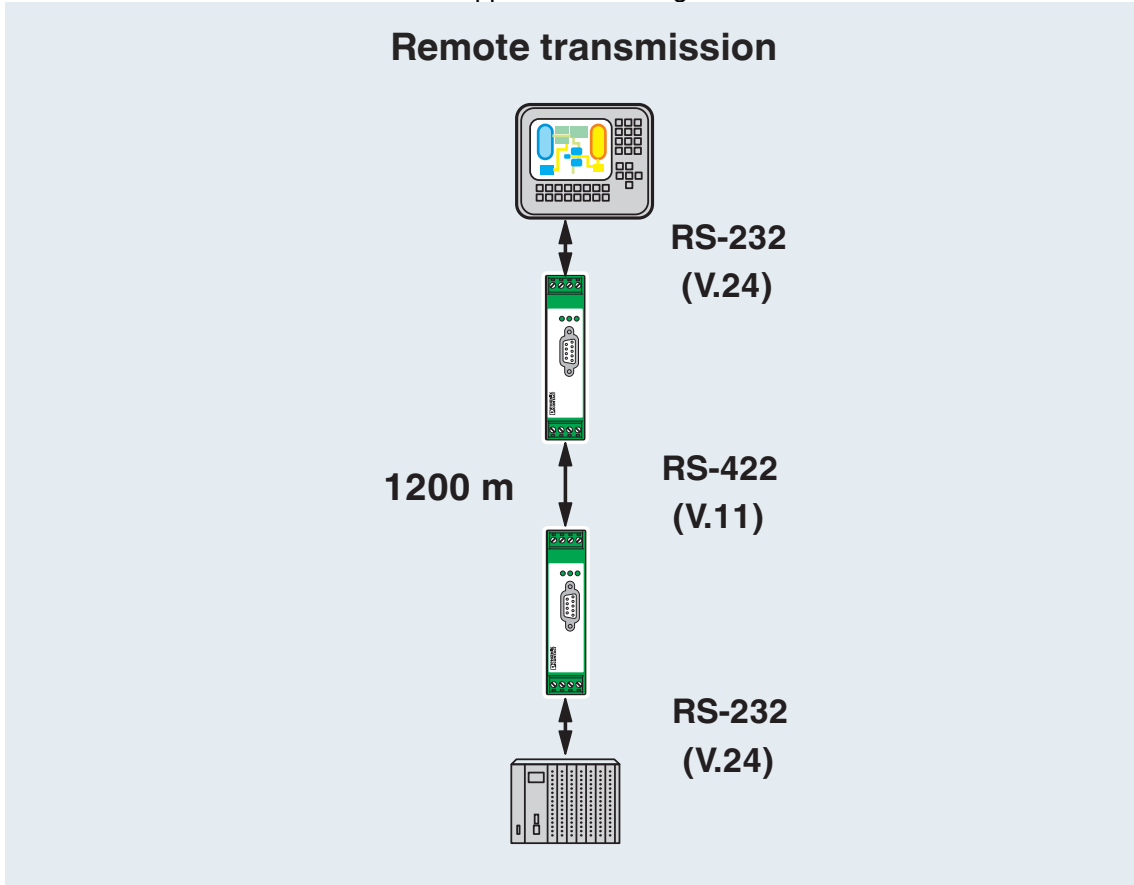


Basic circuit diagram

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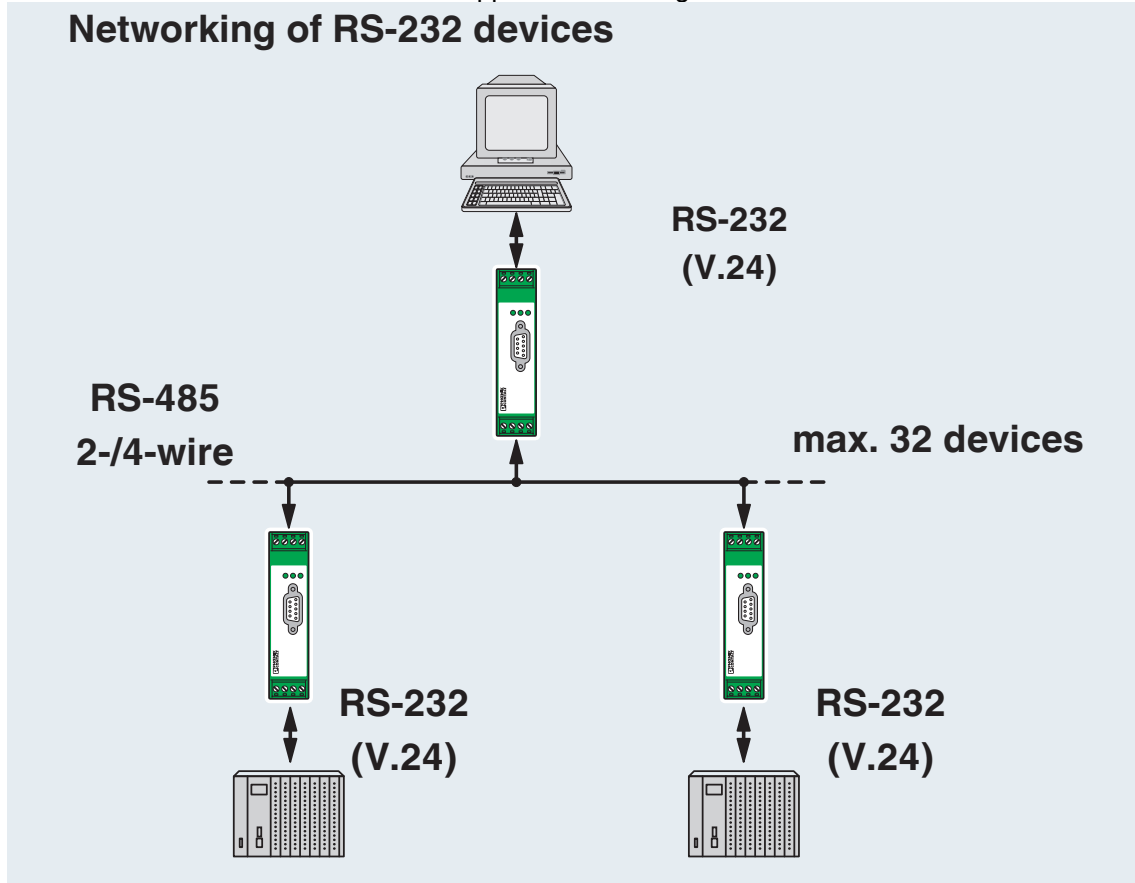
<https://www.phoenixcontact.com/pc/products/2744416>

Application drawing



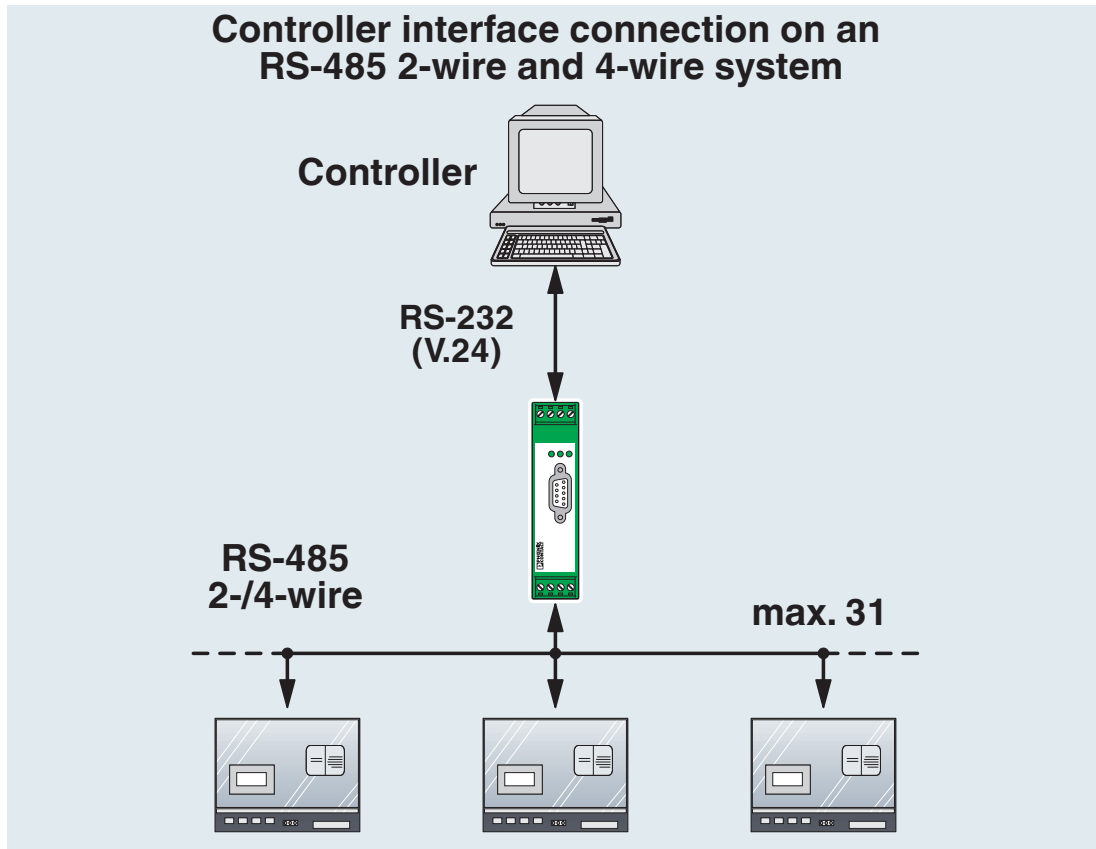
Remote transmission

Application drawing



Networking of RS-232 devices

Application drawing



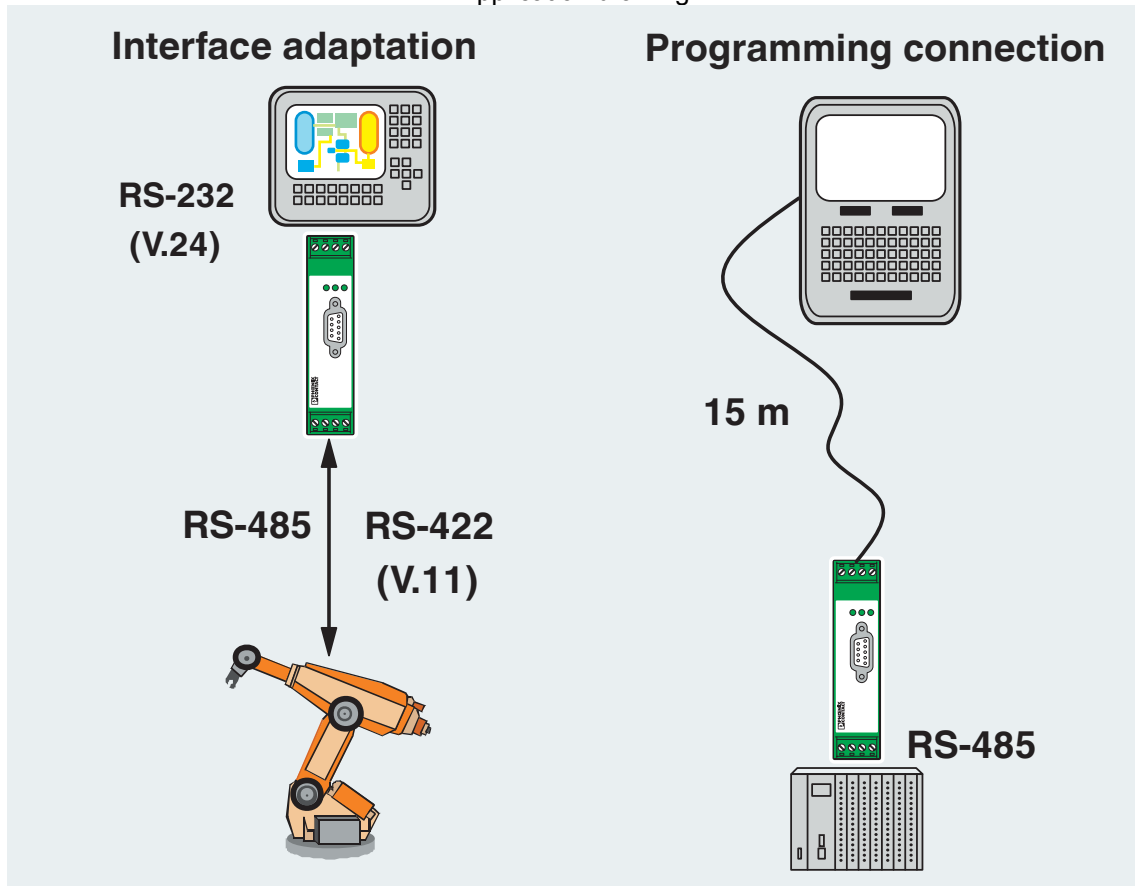
Controller interface

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Application drawing



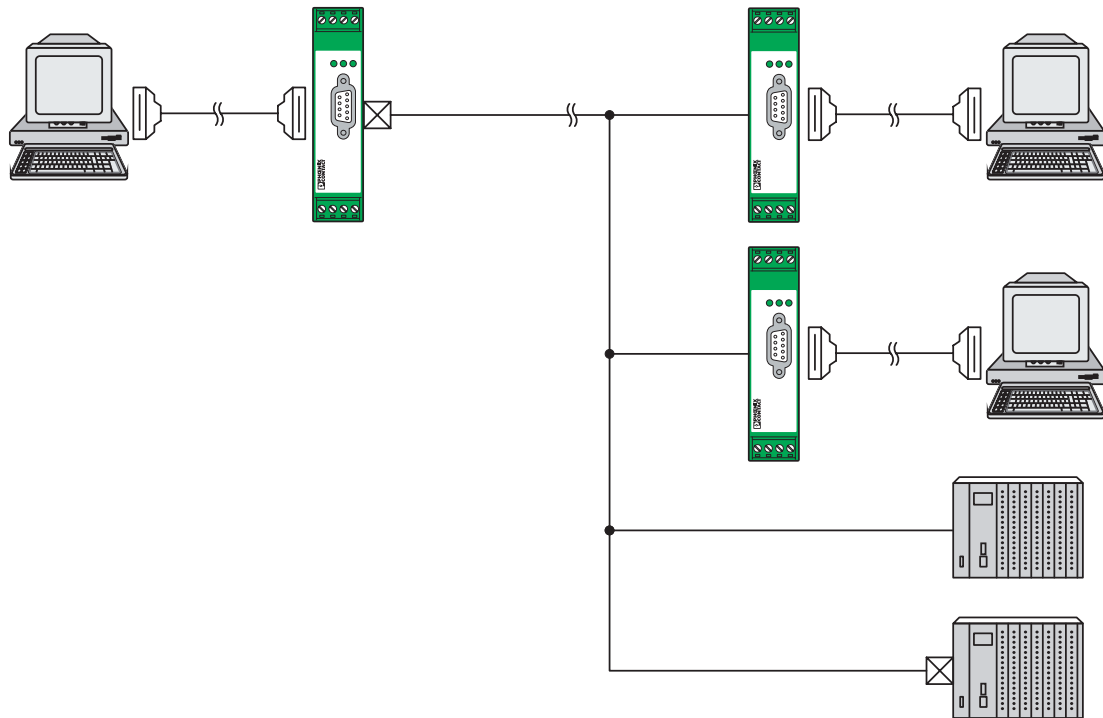
Interface adaptation or programming connection

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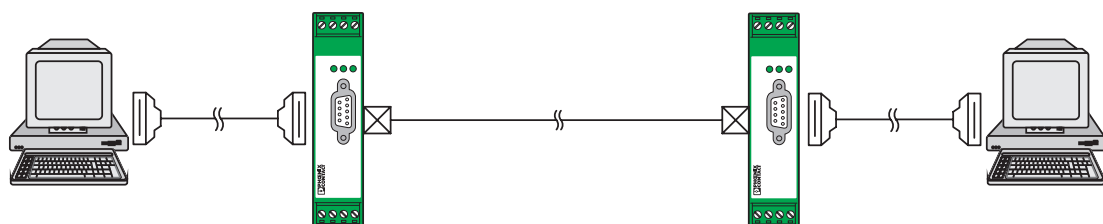
Application drawing



 = Switch on bus terminating resistor

Activate termination resistors - RS-485

Application drawing



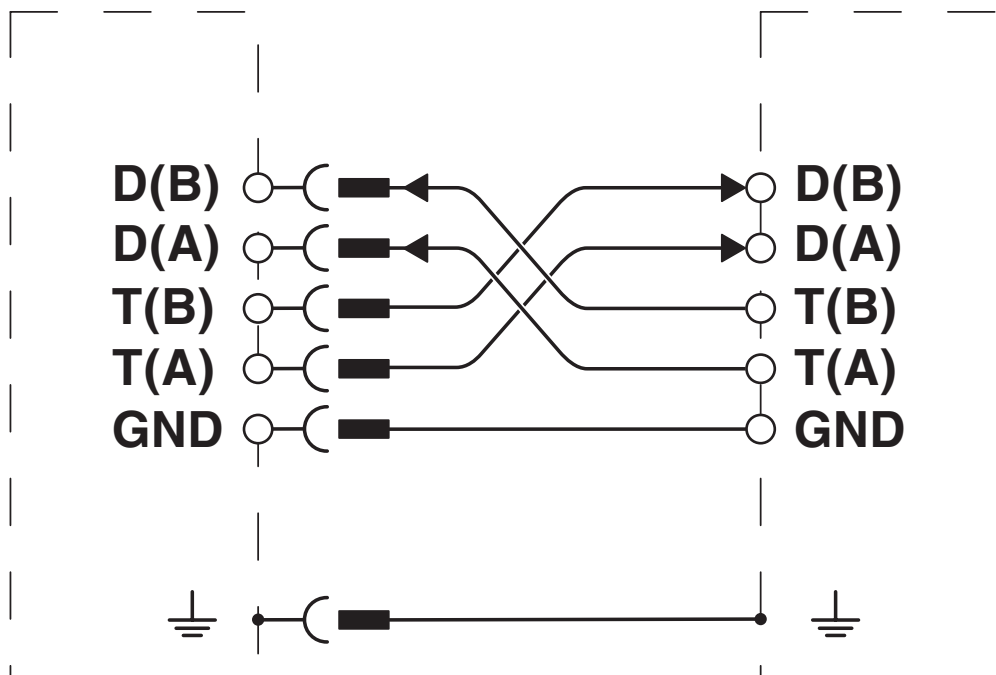
 = Switch on bus terminating resistor

Activate termination resistors - RS-422

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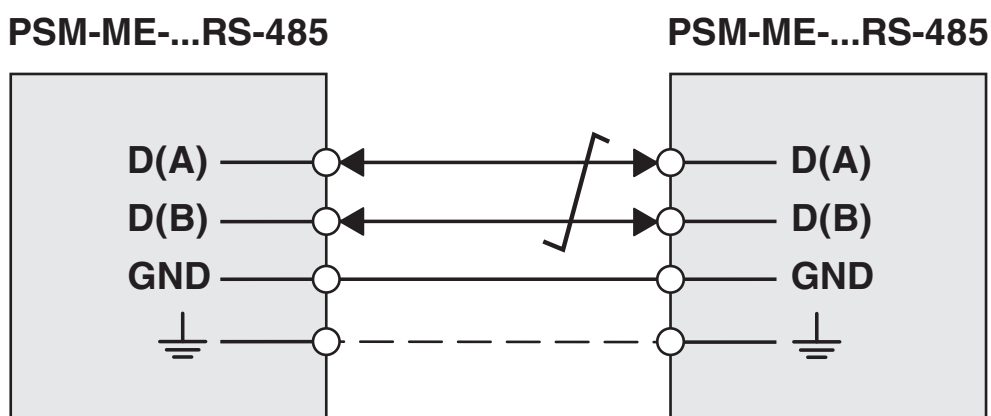
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Connection diagram



RS-422/RS-485 4-wire

Connection diagram

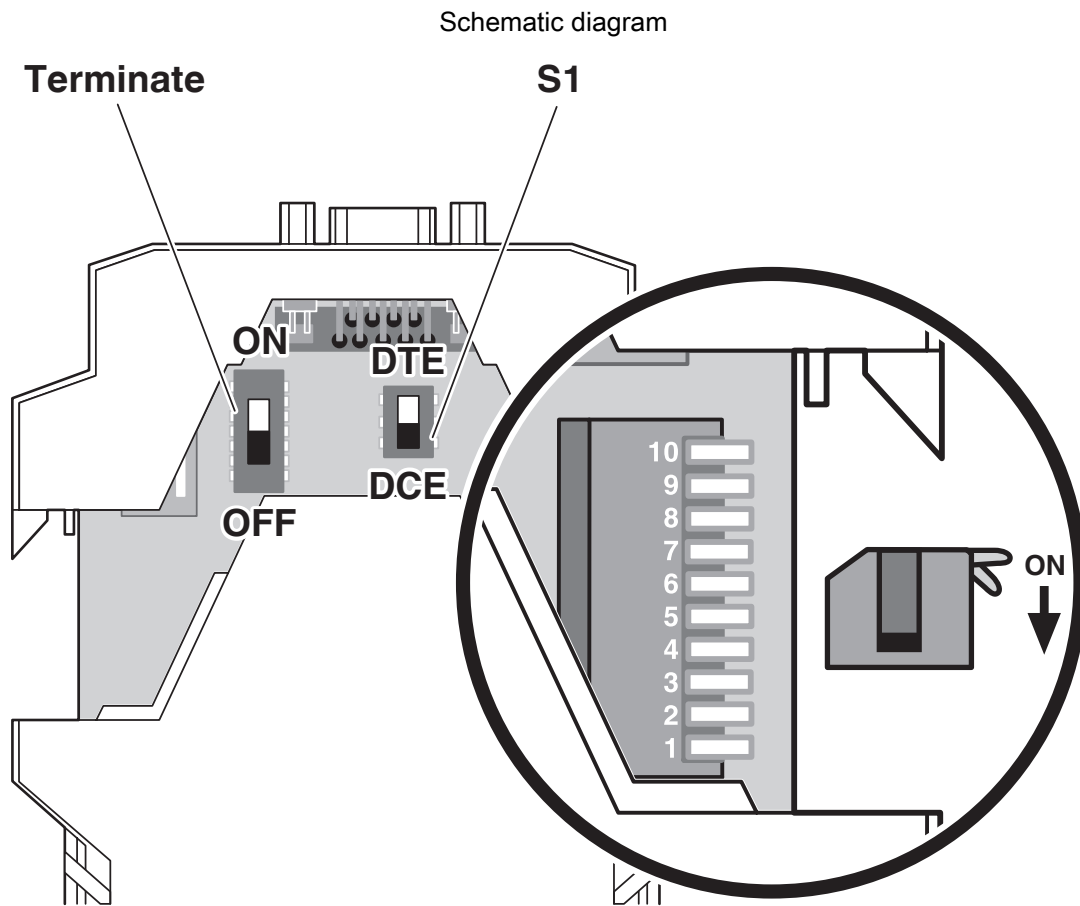


RS-485 interface

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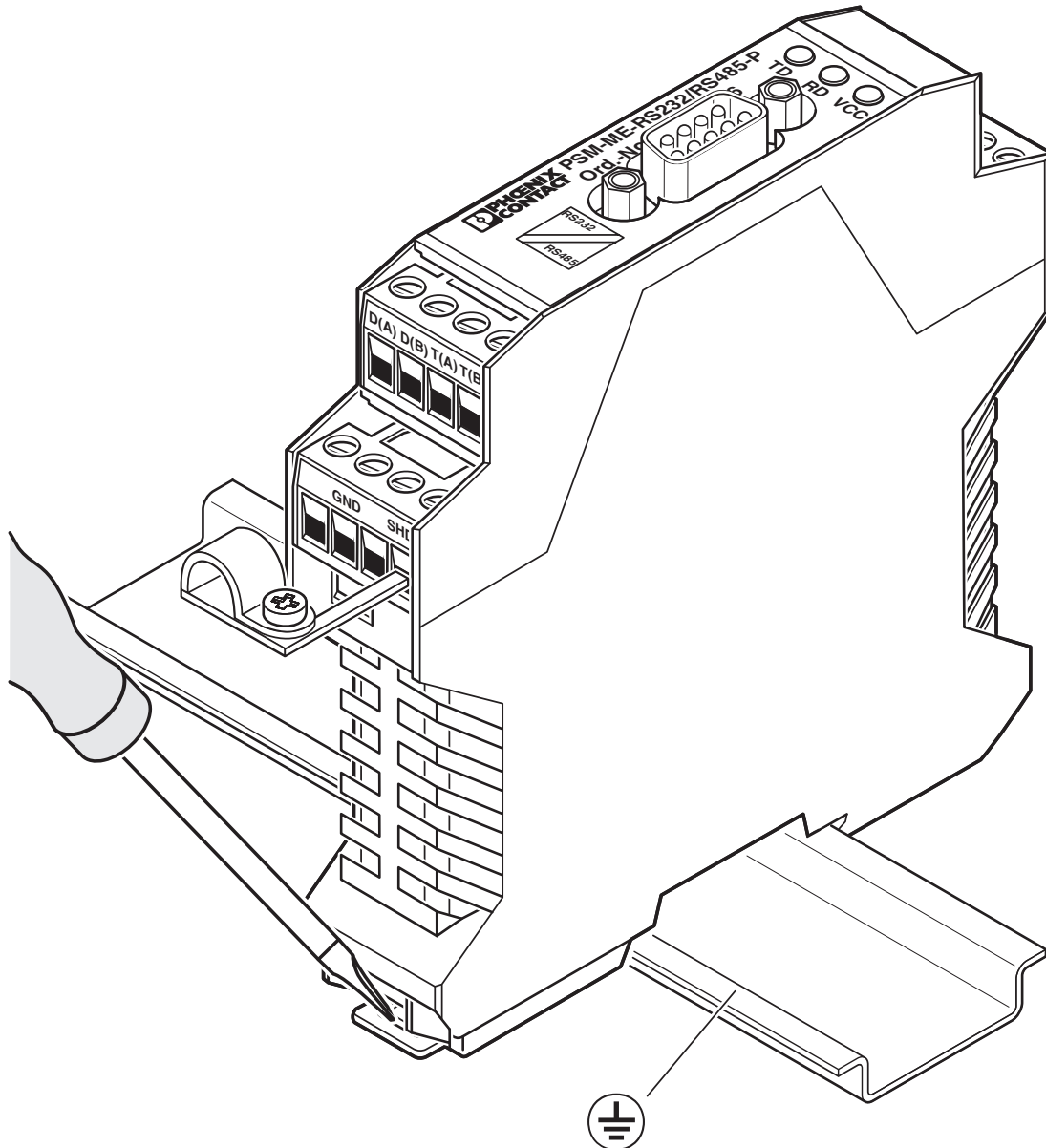
DIP switches

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Schematic diagram



Removal


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Approvals


 cUL Recognized Approval ID: FILE E 238705				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
			-	-

 UL Recognized Approval ID: FILE E 238705				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
			-	-

 DNV GL Approval ID: TAA00001KR				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
			-	-

 KC Approval ID: MSIP-REI-PCK-ME27444				
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ABS Approval ID: 17-HG1637705-PDA				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
			-	-

 cUL Recognized Approval ID: FILE E 199827				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	24 V	0.085 A	-	-

 IECEx Approval ID: IECEx IBE 15.0034 X				
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 cUL Listed Approval ID: FILE E 199827				
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 UL Listed Approval ID: FILE E 199827				
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ATEX

Approval ID: IBExU 16 ATEX B004 X

cULus Recognized

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	19179290
ECLASS-10.0.1	27242208
ECLASS-11.0	27242208

ETIM

ETIM 8.0	EC001423
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UNSPSC

UNSPSC 21.0	32151700
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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

Screwdriver

Screwdriver - SZF 1-0,6X3,5 - 1204517

<https://www.phoenixcontact.com/pc/products/1204517>



Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

Termination resistor

Termination resistor - PSI-TERMINATOR-PB-TBUS - 2702636

<https://www.phoenixcontact.com/pc/products/2702636>



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

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D-SUB bus connector

D-SUB bus connector - SUBCON 9/F-SH - 2761499

<https://www.phoenixcontact.com/pc/products/2761499>



D-SUB plug, 9-pos. female connector, one 35° cable entry, universal type for all systems, pin assignment: 1, 2, 3, 4, 5, 6, 7, 8, 9 to screw connection terminal block

Data cable

Data cable - PSM-KA9SUB9/BB/2METER - 2799474

<https://www.phoenixcontact.com/pc/products/2799474>



RS-232 cable, 9-pos. D-SUB socket on 9-pos. D-SUB socket, 9-wire, 1:1

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Shield connection clamp

Shield connection clamp - ME-SAS - 2853899

<https://www.phoenixcontact.com/pc/products/2853899>

Shield connection clamp for terminal points starting from 2.5 mm²



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