

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



2744416

<https://www.phoenixcontact.com/gb/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

Commercial data

Item number	2744416
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DNC111
Product key	DNC111
Catalog page	Page 425 (C-6-2019)
GTIN	4017918171780
Weight per piece (including packing)	206 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
Application	RS-232
	RS-422
	RS-485
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
	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
Conductor cross section, flexible [AWG]	24 ... 12

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Tightening torque	0.56 Nm ... 0.79 Nm
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Interfaces

Interface	RS-232/-485
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
Max. AWG conductor cross section, flexible	12
Min. AWG conductor cross section, flexible	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
Max. AWG conductor cross section, flexible	13
Min. AWG conductor cross section, flexible	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
Max. AWG conductor cross section, flexible	14
Min. AWG conductor cross section, flexible	24
Data direction switching	Automatic control or via RTS/CTS

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Protocols supported	transparent protocol
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Dimensions

Dimensional drawing	
Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Material	PA 6.6-FR
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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)

Approvals

CE

Certificate	CE-compliant
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EAC

Identification	EAC
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ATEX

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

IECEX

Identification	Ex nA IIC T4 Gc
Certificate	IECEX IBE 15.0034X

UL, USA/Canada

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

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	Class I, Zone 2, Ex nA IIC T4 Gc X
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KC approval for South Korea

Certificate	MSIP-REI-PCK-ME2744416
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Corrosive gas test

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

Identification	DNV GL
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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

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

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

Criteria

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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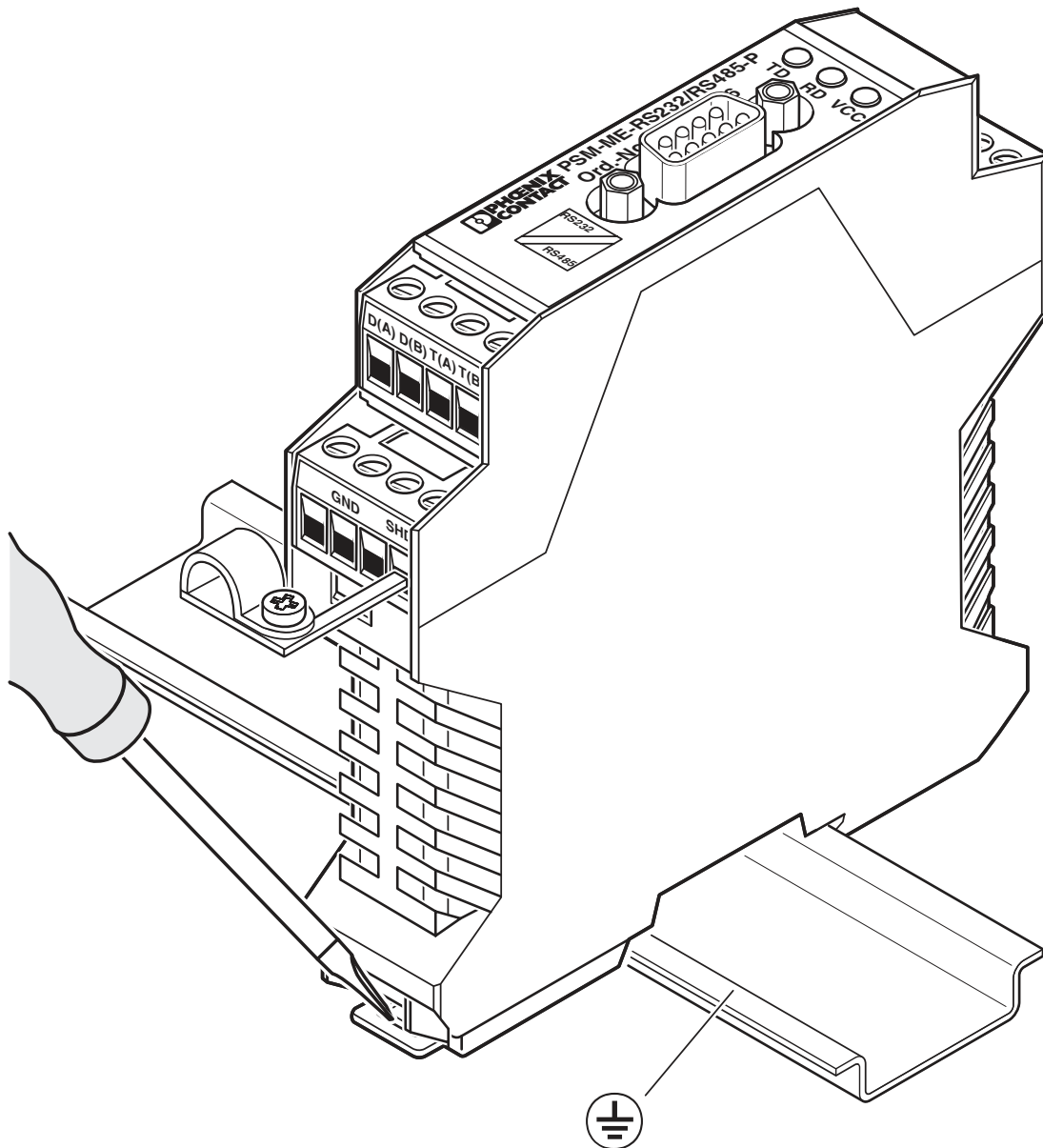


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Drawings

Schematic diagram



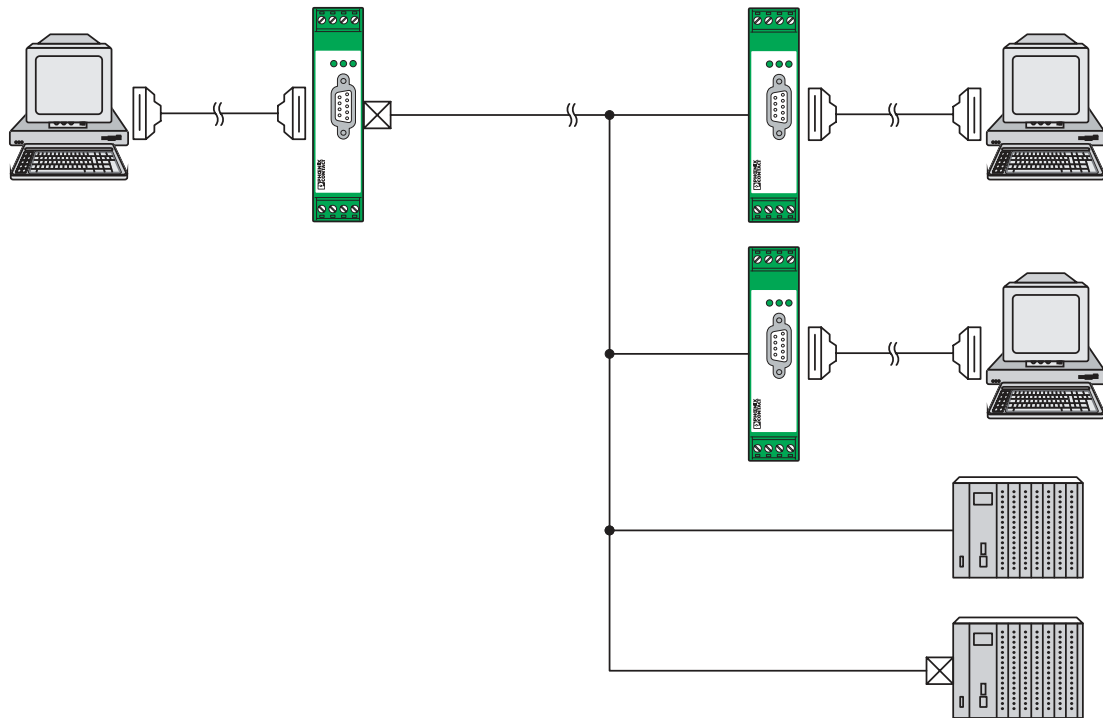
Removal


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Application drawing



 = Switch on bus terminating resistor

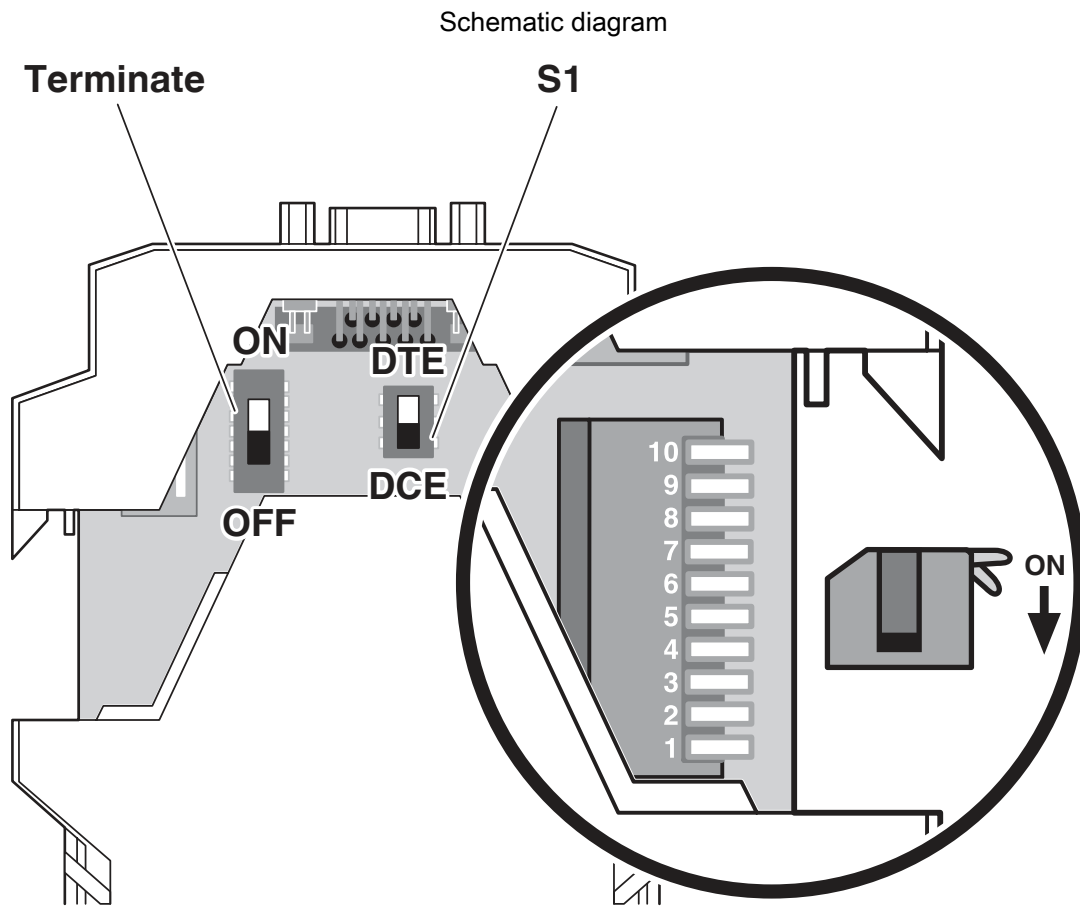
Activate termination resistors - RS-485

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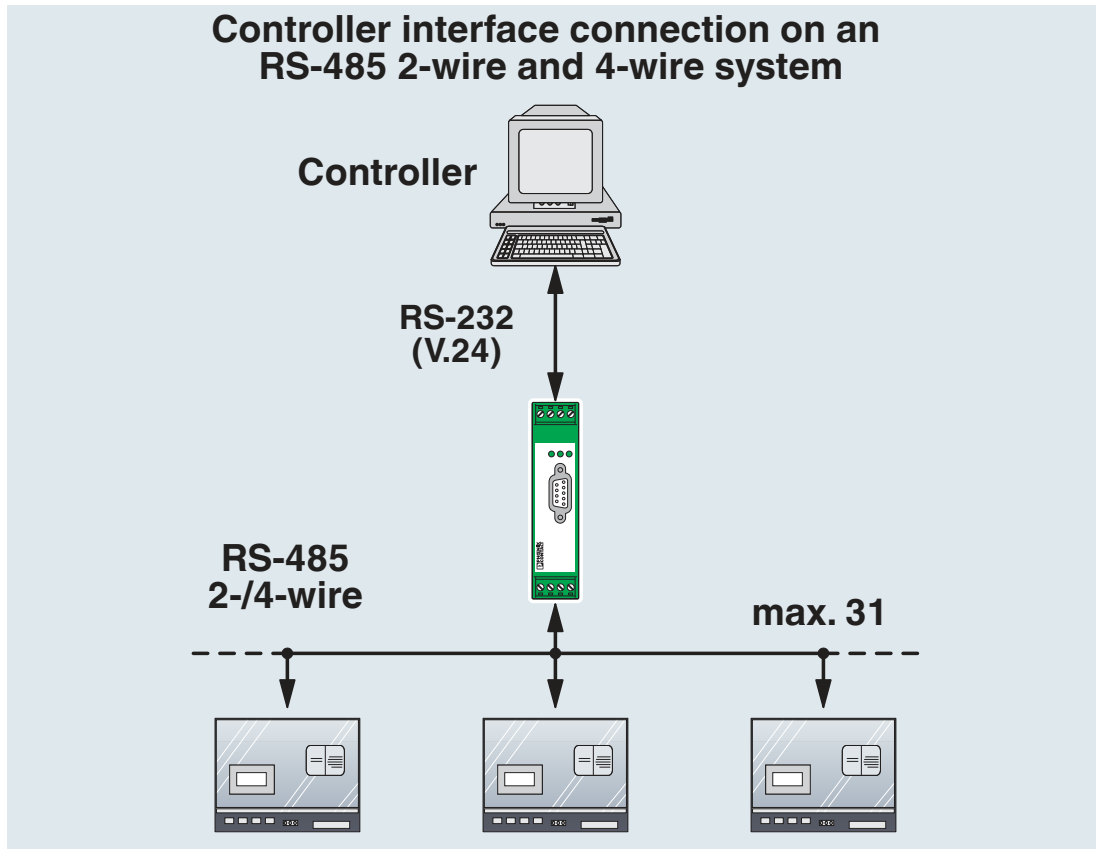
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DIP switches

Application drawing

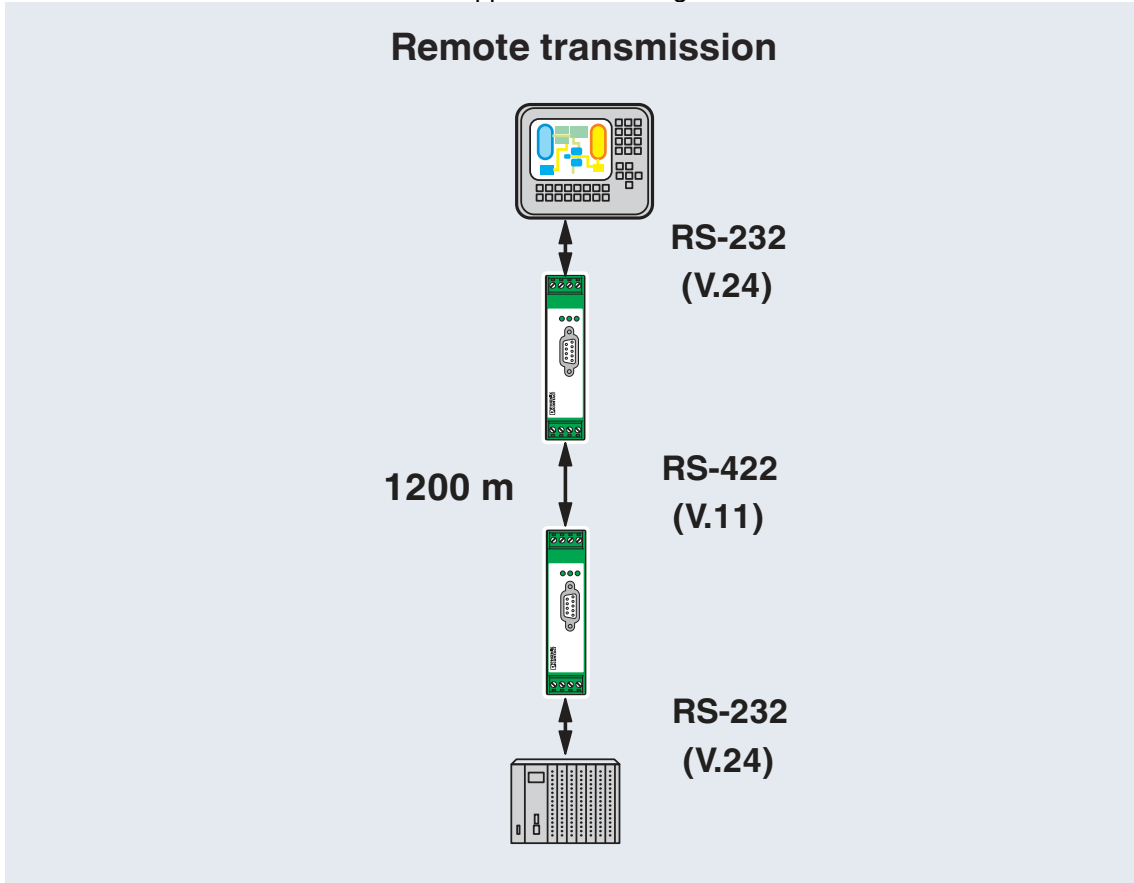


Controller interface

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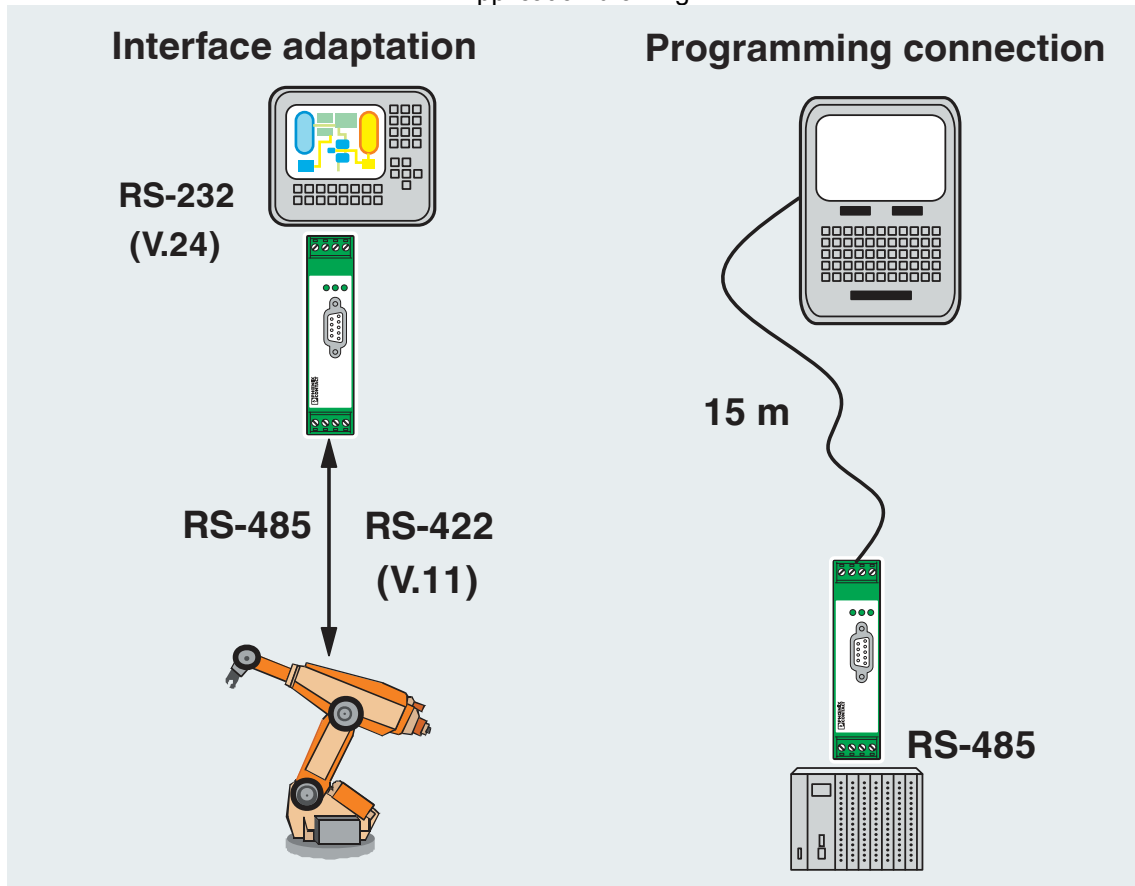
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Application drawing



Remote transmission

Application drawing



Interface adaptation or programming connection

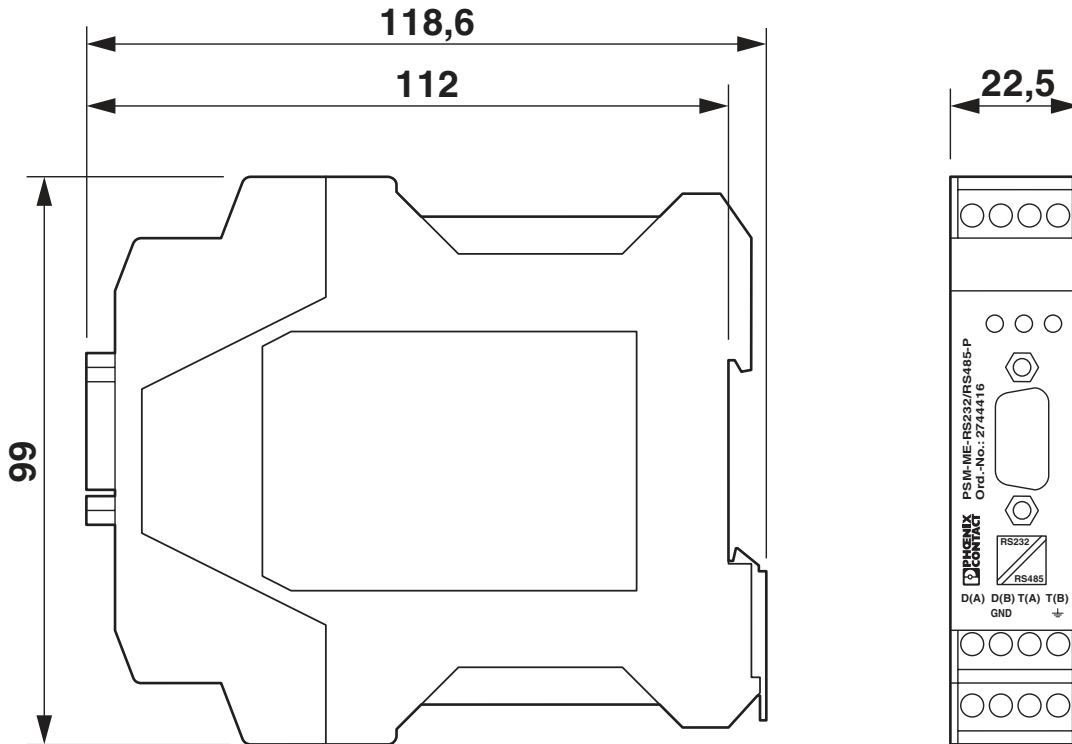
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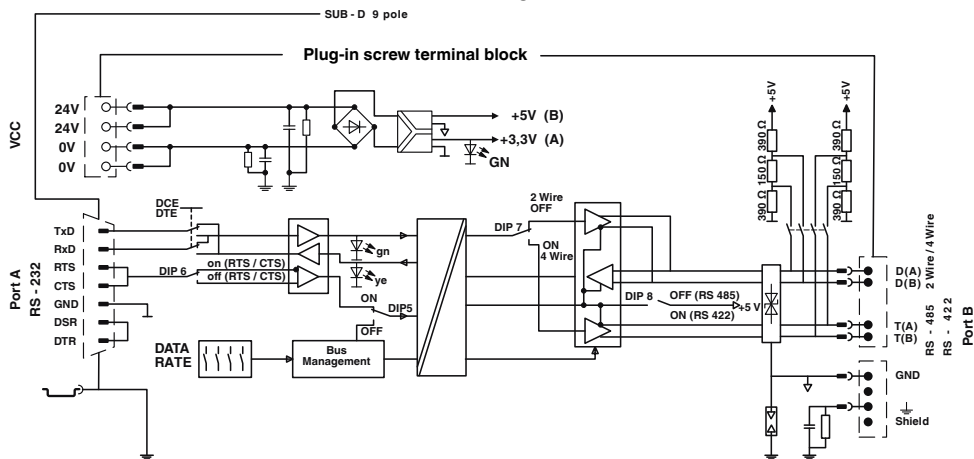


Dimensional drawing



Slim design

Circuit diagram

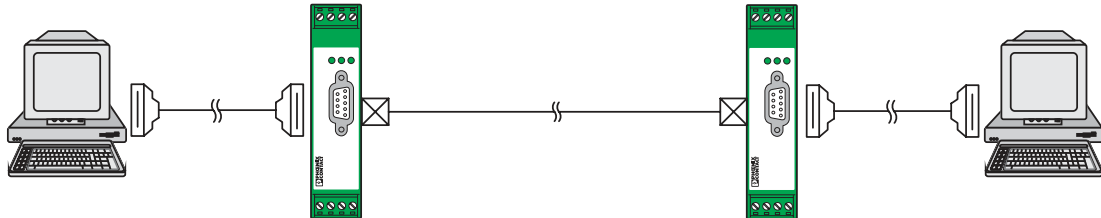


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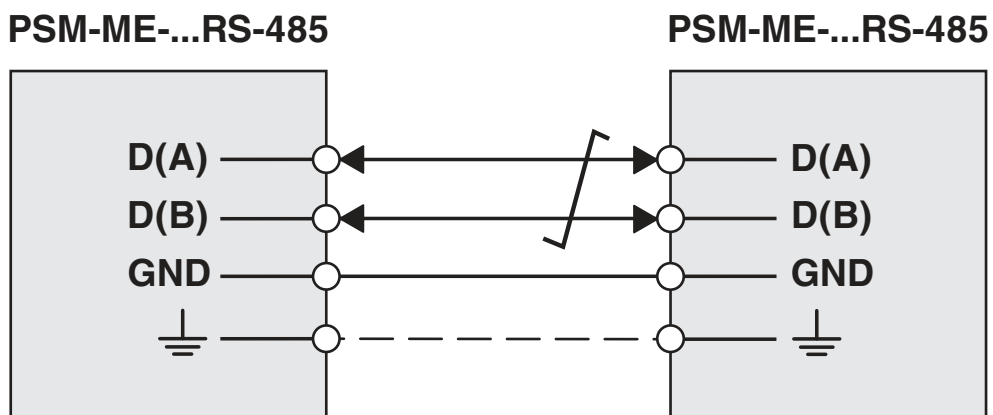
Application drawing



 = Switch on bus terminating resistor

Activate termination resistors - RS-422

Connection diagram



RS-485 interface

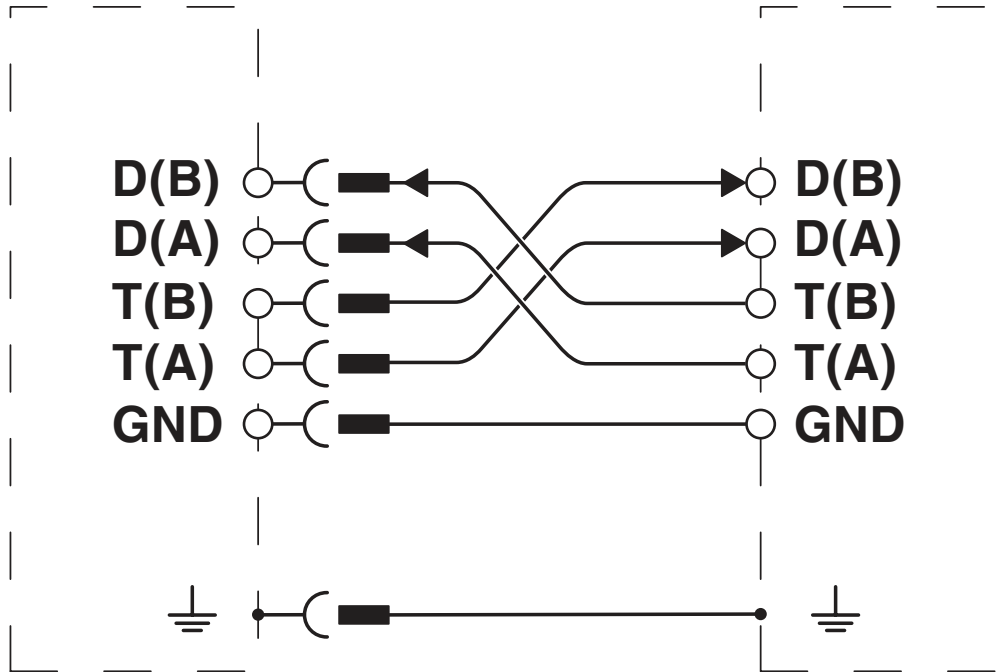
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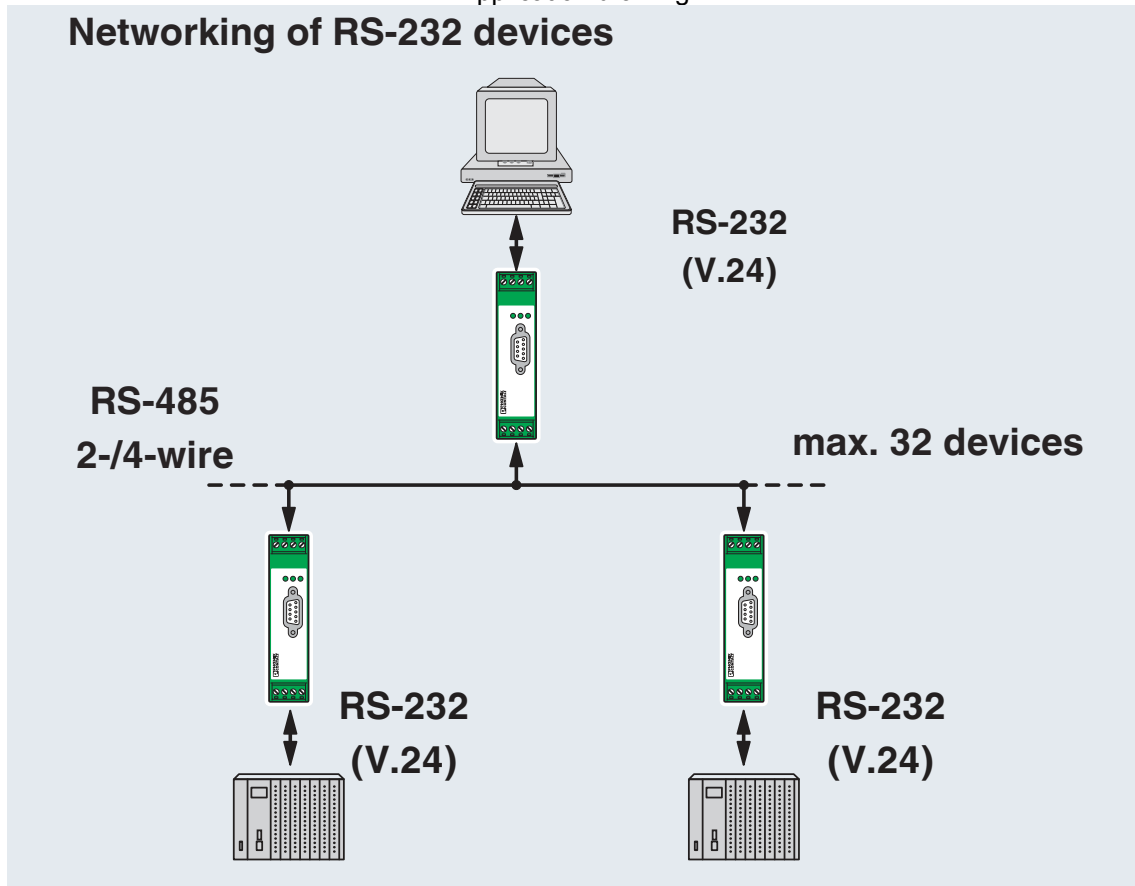
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Connection diagram



RS-422/RS-485 4-wire

Application drawing



Networking of RS-232 devices

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/2744416>



cUL Recognized
Approval ID: FILE E 238705



UL Recognized
Approval ID: FILE E 238705



DNV GL
Approval ID: TAA00001KR



KC
Approval ID: MSIP-REI-PCK-ME27444



EAC
Approval ID: TR TS_D_01871-19

UAE-RoHS
Approval ID: 23-02-63194



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



cUL Listed
Approval ID: FILE E 199827



UL Listed
Approval ID: FILE E 199827



ATEX
Approval ID: IBExU 16 ATEX B004 X

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cULus Recognized

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27242208
ECLASS-12.0	27242208
ECLASS-13.0	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

PSM-KA9SUB9/BB/2METER - Data cable

2799474

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

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



ME-SAS - Shield connection clamp

2853899

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

Shield connection clamp for terminal points starting from 2.5 mm²



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SZF 1-0,6X3,5 - Screwdriver

1204517

<https://www.phoenixcontact.com/gb/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

PSI-TERMINATOR-PB-TBUS - Termination resistor

2702636

<https://www.phoenixcontact.com/gb/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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SUBCON 9/F-SH - D-SUB bus connector

2761499

<https://www.phoenixcontact.com/gb/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

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