

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

- ✓ 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
- ✓ Transmission speed of 4.8 kbps to 115.2 kbps
- ✓ Integrated data indicator for dynamic indication of transmit and receive data
- ✓ High-quality 3-way isolation between power supply, RS-232, and RS-422/RS-485 for safe decoupling of potentials with 2 kV
- ✓ Integrated surge protection with transient discharge to the DIN rail
- ✓ Shipbuilding approval in accordance with DNV GL and ABS



## Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4017918171780

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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### Dimensions

Caption	Slim design
Width	22.5 mm

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## Technical data

### Dimensions

Height	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Degree of protection	IP20
Noise immunity	EN 50 082-2

### General

Transmission channels	2 (1/1), Rx/D, Tx/D, full duplex
Bit delay	≤ 2.5 μs
Bit distortion	≤ 5 %
Electrical isolation	VCC // V.24 (RS-232) // RS-485
Test voltage data interfaces	1.5 kV AC
Test voltage data interface/power supply	1.5 kV AC
	1.5 kV AC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 50 081-1
Net weight	196.1 g
Housing material	PA 6.6-FR
Color	green
MTBF	10 Years (Telcordia standard, temperature 40 °C, operating cycle 100 % (7 days a week, 24 hours a day))
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%)
Degree of pollution	2

### Power supply

Nominal supply voltage	24 V AC/DC
Supply voltage range	18 V AC/DC ... 30 V AC/DC (via pluggable COMBICON screw terminal block)
Max. current consumption	100 mA
Typical current consumption	85 mA (24 V DC)
Conductor cross section flexible max.	2.50 mm <sup>2</sup>
Conductor cross section flexible min.	0.20 mm <sup>2</sup>
Conductor cross section solid max.	2.50 mm <sup>2</sup>

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## Technical data

### Power supply

Conductor cross section solid min.	0.20 mm <sup>2</sup>
Max. AWG conductor cross section, flexible	12
Min. AWG conductor cross section, flexible	24
Conductor cross section AWG max.	12
Conductor cross section AWG min.	24

### Interfaces

Interface 1	V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1
Connection method	D-SUB 9 plug
Transmission length	15 m (shielded twisted pair)
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Pin assignment	DTE/DCE switchover via switch
Protocols supported	transparent protocol
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
Interface 2	RS-422 interface in acc. with ITU-T V.11, EIA/TIA-422, DIN 66348-1
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 min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	13
Protocols supported	transparent protocol
Serial transmission speed	1.2; 2.4; 4.8; 9.6; 19.2; 38.4; 57.6; 75; 93.75; 115.2 kbps
Interface 3	RS-485 interface in acc. with EIA/TIA-485, DIN 66259-1
Connection method	Pluggable screw connection
Data direction switching	Automatic control or via RTS/CTS
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 <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section AWG max.	14
Conductor cross section AWG min.	24

# Interface converter - PSM-ME-RS232/RS485-P - 2744416

## Technical data

### Interfaces

Protocols supported	transparent protocol
Serial transmission speed	1.2; 2.4; 4.8; 9.6; 19.2; 38.4; 57.6; 75; 93.75; 115.2 kbps

### Conformance/approvals

Designation	CE
Identification	CE-compliant
Designation	EAC
Identification	EAC
Designation	ATEX
Identification	# II 3 G Ex nA IIC T4 Gc
Certificate	IBExU16ATEXB004 X
Additional text	Please follow the special installation instructions in the documentation!
Designation	IECEX
Identification	Ex nA IIC T4 Gc
Certificate	IECEX IBE 15.0034X
Designation	UL, USA/Canada
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
Designation	Corrosive gas test
Identification	ISA-S71.04-1985 G3 Harsh Group A
Designation	Shipbuilding
Identification	DNV GL
	ABS
Temperature	B
Humidity	A
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Type of test	Free fall in acc. with IEC 60068-2-32
Test result	1 m
Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6
Test result	5g, 10...150 Hz, 2.5 h, in XYZ direction
Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27
Test result	25g, 11 ms period, half-sine shock pulse
Noise emission	EN 50 081-1
Noise immunity	EN 50 082-2

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### Technical data

#### Standards and Regulations

Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2
Contact discharge	± 6 kV (Test Level 3)
Standards/regulations	EN 61000-4-3
Frequency range	26 MHz ... 3 GHz (Test Level 3)
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-4-5
Signal	± 1 kV (Data line, asymmetrical)
Standards/regulations	EN 55011
	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz

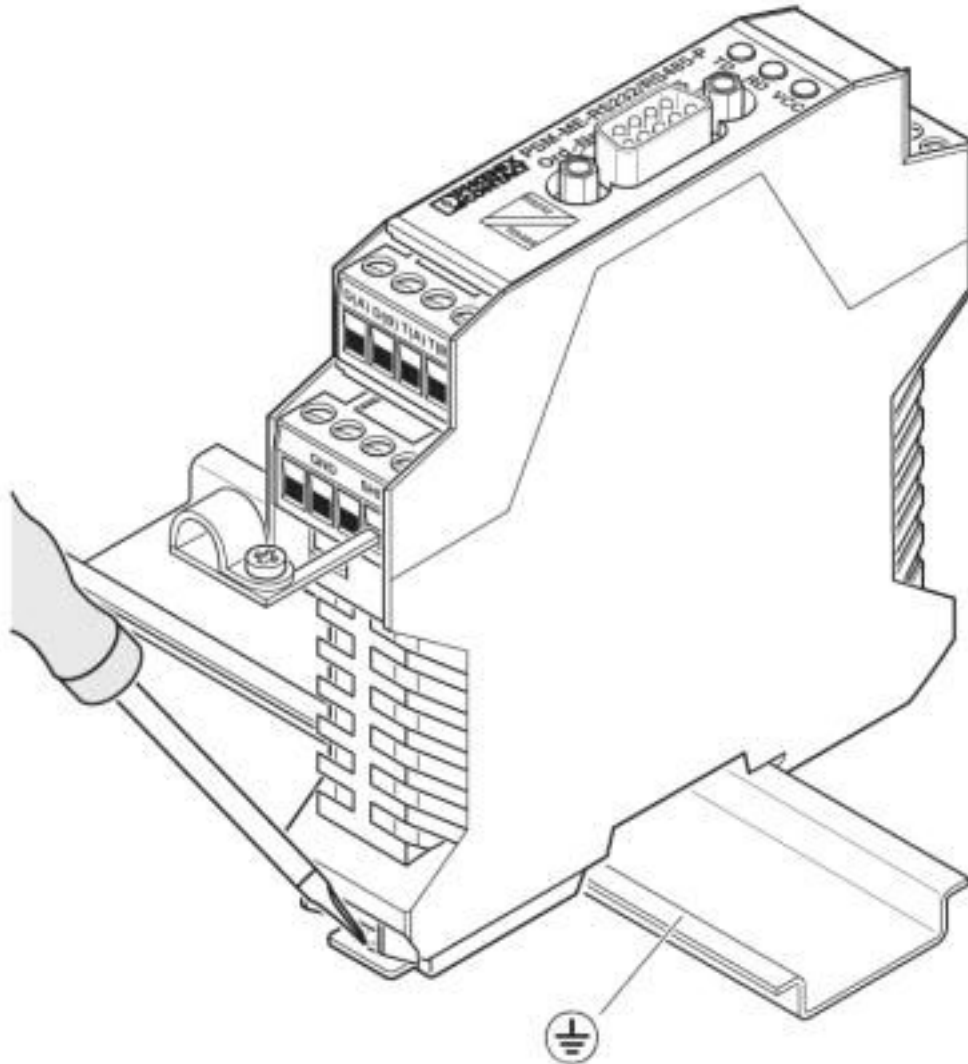
#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

### Drawings

# Interface converter - PSM-ME-RS232/RS485-P - 2744416

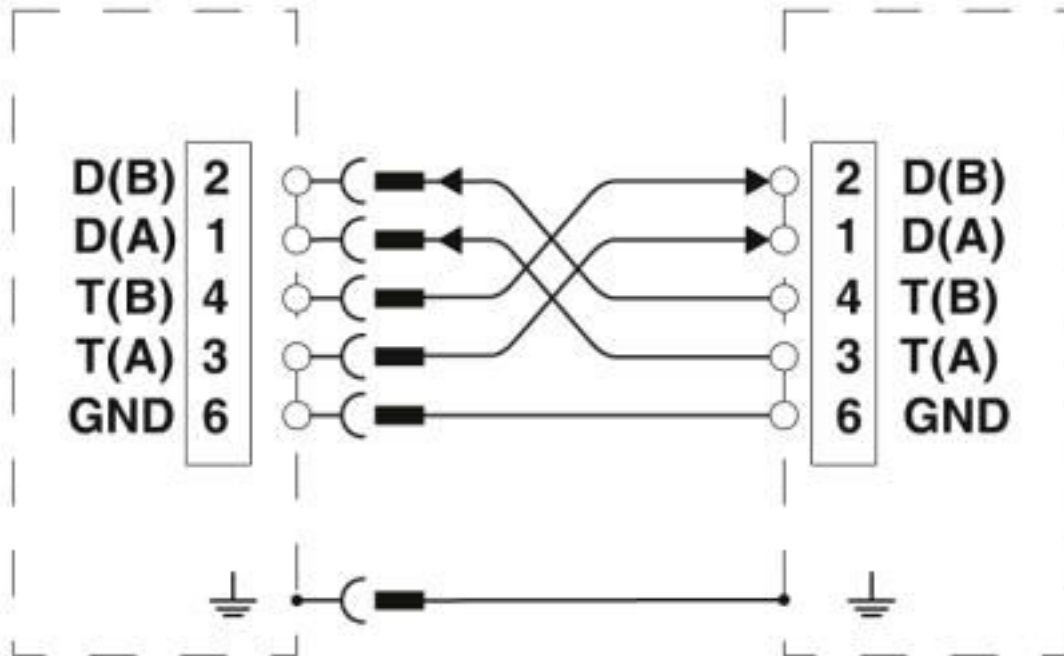
Schematic diagram



Removal

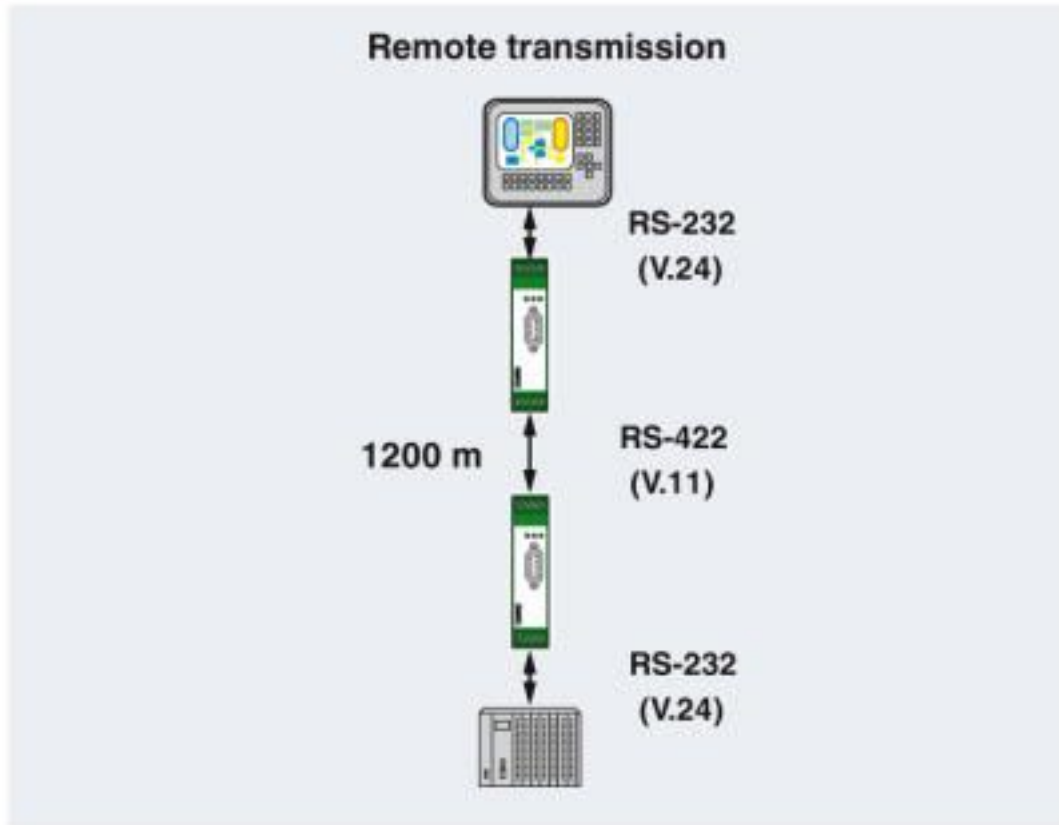
# Interface converter - PSM-ME-RS232/RS485-P - 2744416

Connection diagram



# Interface converter - PSM-ME-RS232/RS485-P - 2744416

Application drawing

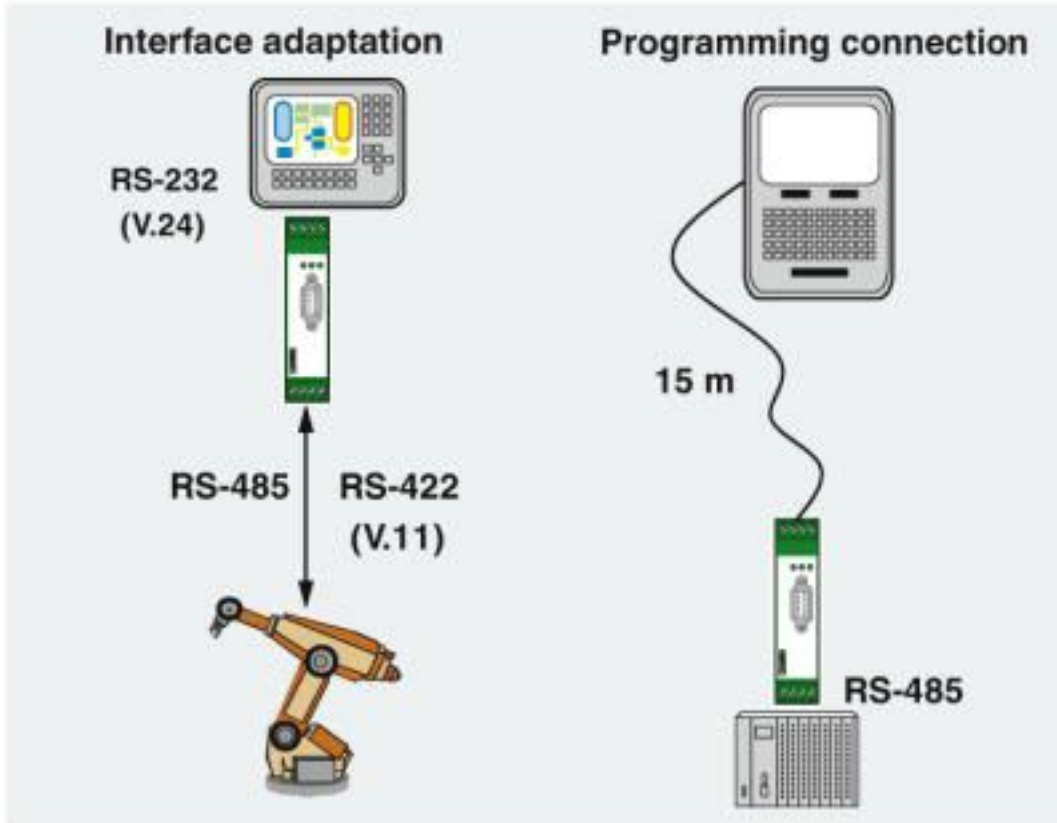


Remote transmission



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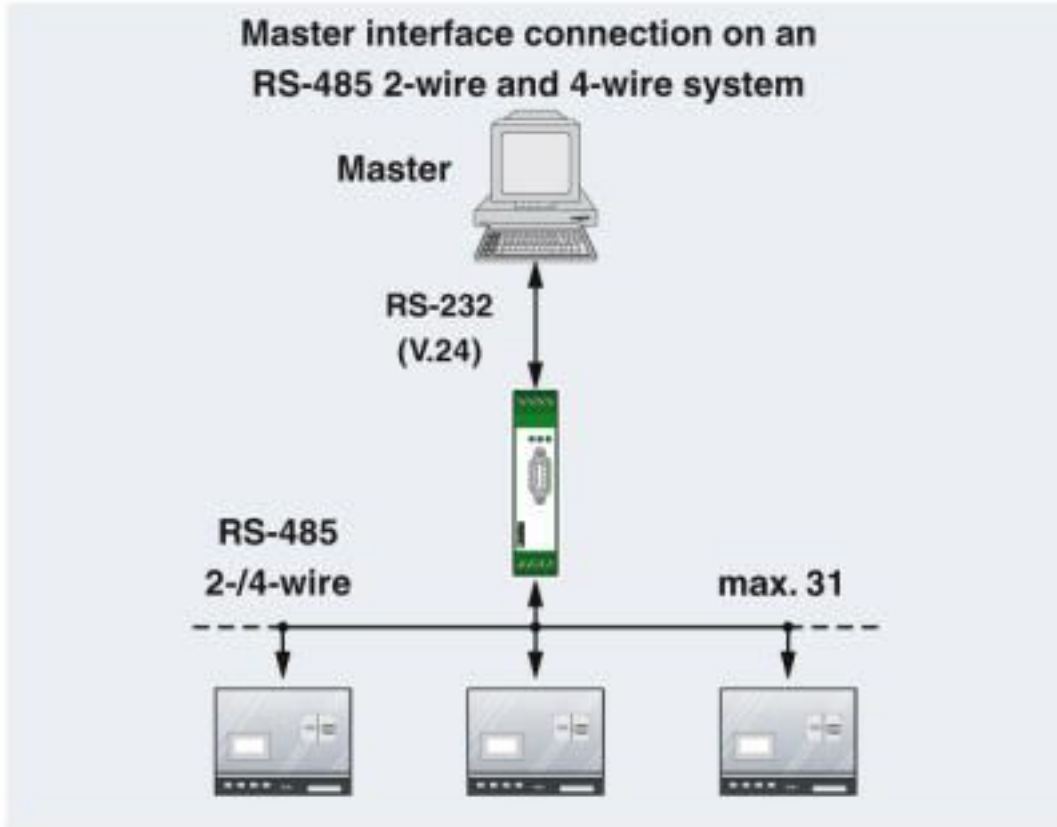
Application drawing



Interface adaptation or programming connection

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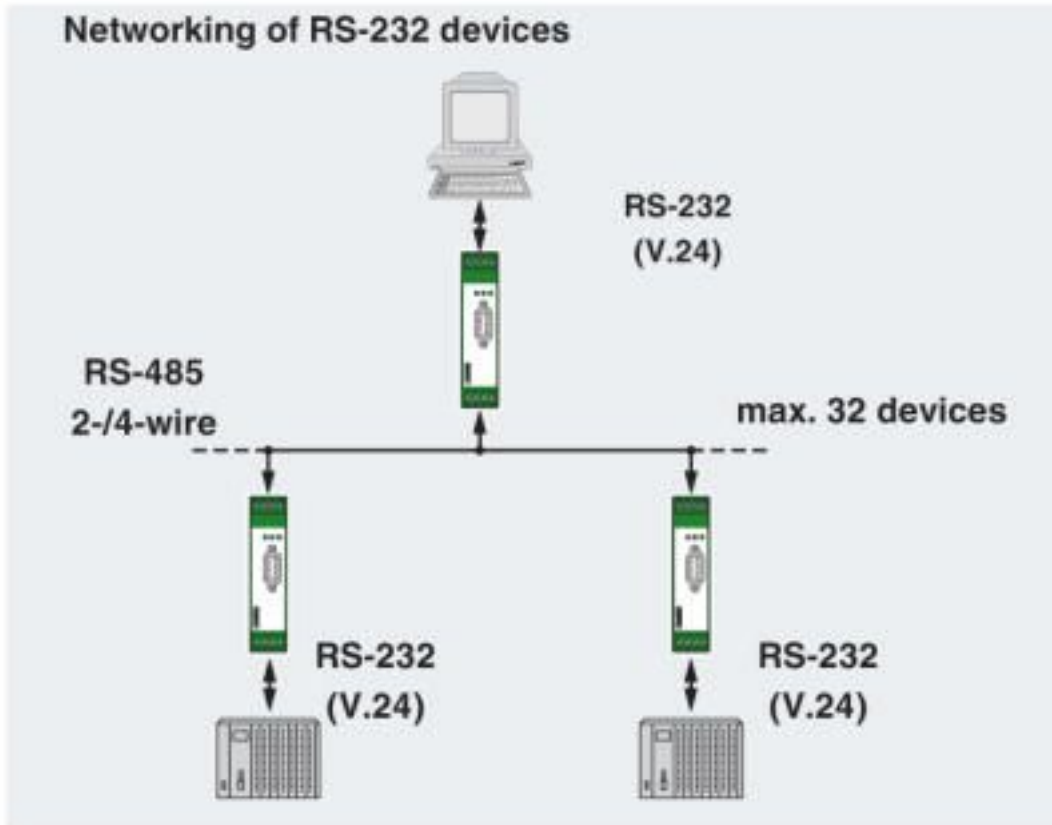
Application drawing



Master interface connection

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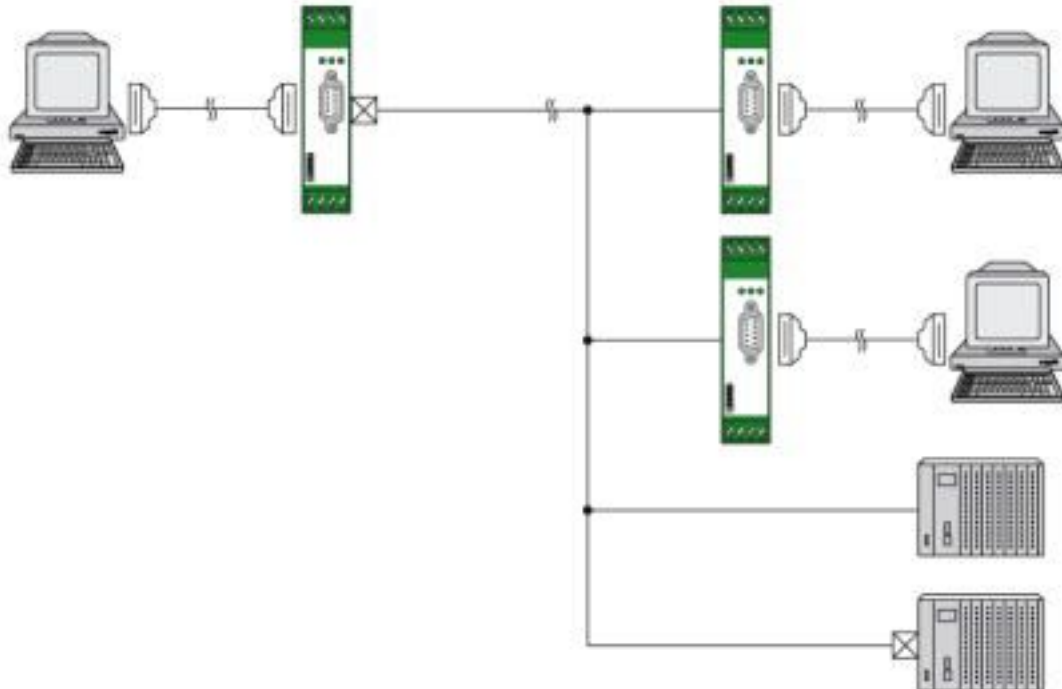
Application drawing




Networking of RS-232 devices

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Application drawing




 = Switch on bus terminating resistor

Activate termination resistors - RS-485

Application drawing

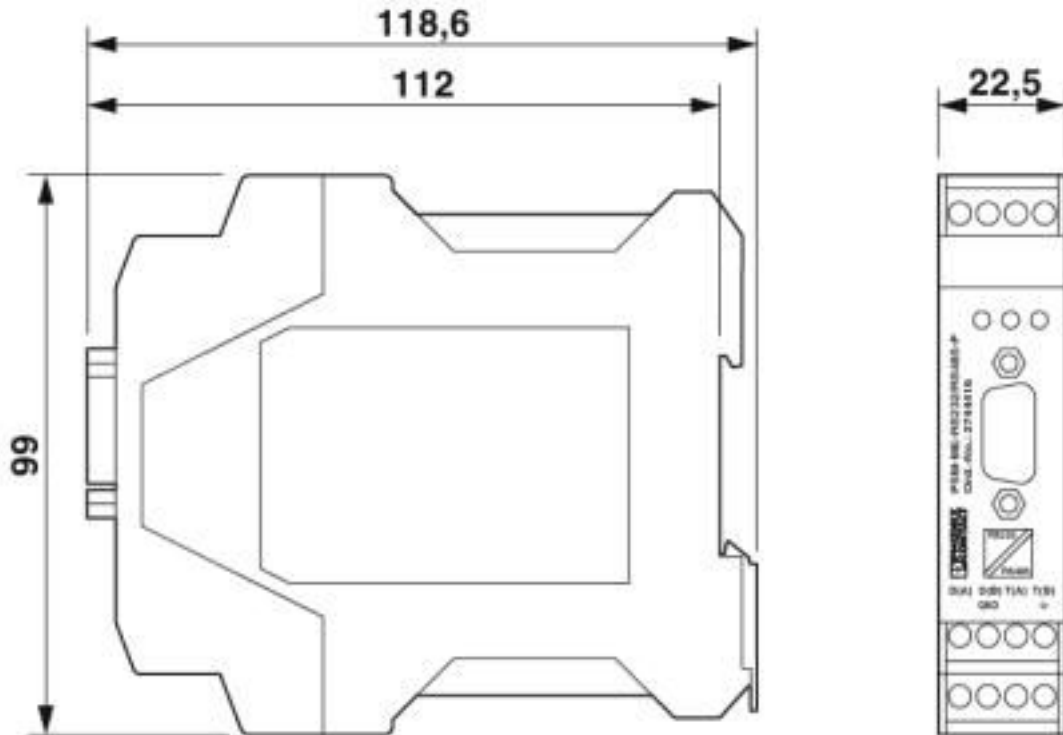


 = Switch on bus terminating resistor

Activate termination resistors - RS-422

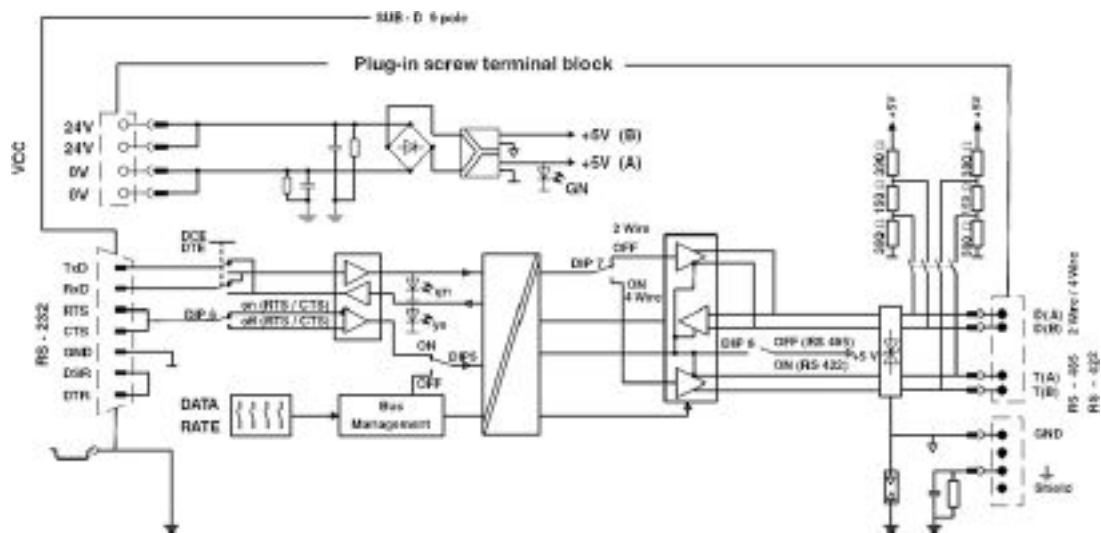
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Dimensional drawing



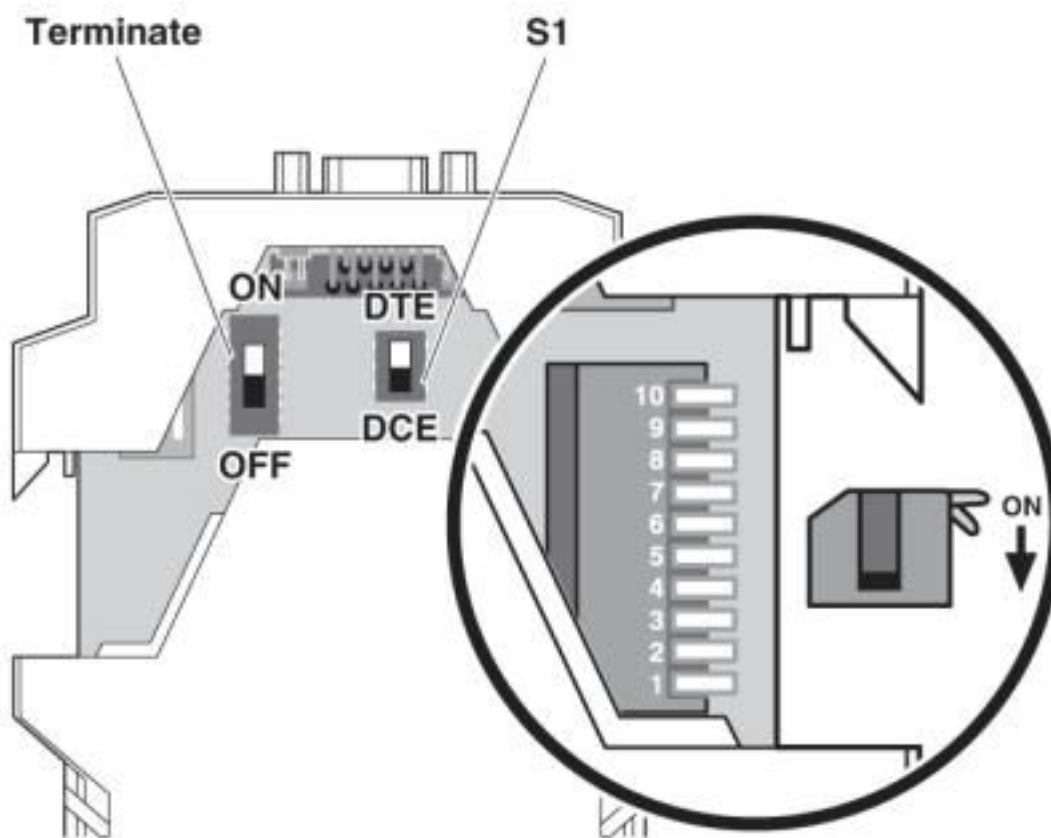
Slim design

Circuit diagram



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Schematic diagram



DIP switches

## Classifications

eCl@ss

eCl@ss 10.0.1	19179290
eCl@ss 4.0	27250300
eCl@ss 4.1	27250300
eCl@ss 5.0	27242200
eCl@ss 5.1	27242200
eCl@ss 6.0	19179200
eCl@ss 7.0	19179290
eCl@ss 8.0	19179290
eCl@ss 9.0	19179290

ETIM

ETIM 2.0	EC000698
ETIM 3.0	EC000698
ETIM 4.0	EC000698
ETIM 5.0	EC000310

# Interface converter - PSM-ME-RS232/RS485-P - 2744416

## Classifications

### ETIM

ETIM 6.0	EC000310
ETIM 7.0	EC000310

### UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	43222604
UNSPSC 18.0	43222604
UNSPSC 19.0	43222604
UNSPSC 20.0	43222604
UNSPSC 21.0	43222604

## Approvals

### Approvals

#### Approvals

DNV GL / ABS / UL Recognized / cUL Recognized / EAC / KC / cULus Recognized

#### Ex Approvals

IECEX / ATEX / cUL Recognized / UL Listed / cUL Listed / cULus Listed

### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00001KR
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ABS		<a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a>	17-HG1637705-PDA
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UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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cUL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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## Interface converter - PSM-ME-RS232/RS485-P - 2744416

### Approvals

EAC		EAC-Zulassung
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KC		<a href="http://eng.kcc.go.kr/user/ehpMain.do">http://eng.kcc.go.kr/user/ehpMain.do</a>	MSIP-REI- PCK-ME27444
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cULus Recognized		
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### Accessories

#### Accessories

##### Adapter cable

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



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

##### Data plug

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



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

##### Mounting material

Shield connection clamp - ME-SAS - 2853899



Shield connection clamp for printed circuit terminal block

##### Screwdriver tools



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### Accessories

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

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### Terminal resistor

Termination resistor - PSI-TERMINATOR-PB-TBUS - 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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