# 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 | 4 017918 171780 |
| GTIN | 4017918171780 |
| Weight per Piece (excluding packing) | 200.000 g |
| Custom tariff number | 85176200 |
| Country of origin | Germany |

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

## Technical data

### Note

| | |
|---|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
| | Use in potentially explosive areas is not permitted in China. |

### Dimensions

| | |
|---|---|
| Caption | Slim design |
| Width | 22.5 mm |
| 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), RxD, TxD, 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 |

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## Technical data

### 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 mm² |
| Conductor cross section flexible min. | 0.20 mm² |
| Conductor cross section solid max. | 2.50 mm² |
| Conductor cross section solid min. | 0.20 mm² |
| 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 mm² |
| Conductor cross section flexible max. | 2.5 mm² |
| 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 mm² |
| Conductor cross section flexible max. | 2.5 mm² |
| 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 |

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## Technical data

### Interfaces

| | |
|---|---|
| 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 mm² |
| Conductor cross section flexible min. | 0.2 mm² |
| Conductor cross section AWG max. | 14 |
| Conductor cross section AWG min. | 24 |
| 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 |

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

## Technical data

### Conformance/approvals

| | |
|---|---|
| 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 |
| 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 |

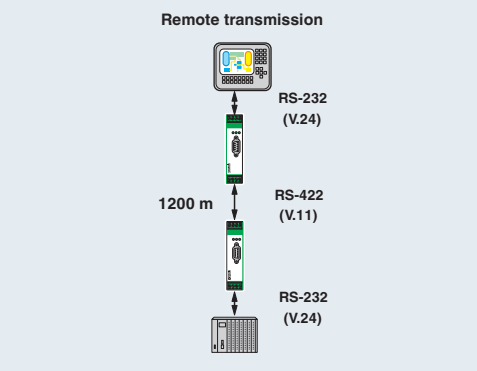
### Environmental Product Compliance

| | |
|---|---|
| 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

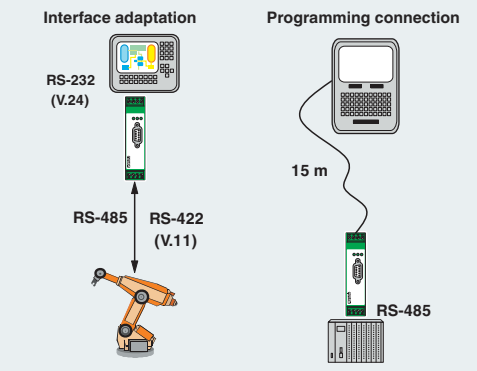
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Application drawing



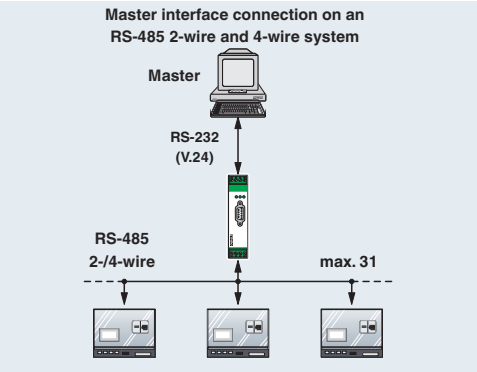

Remote transmission

Application drawing



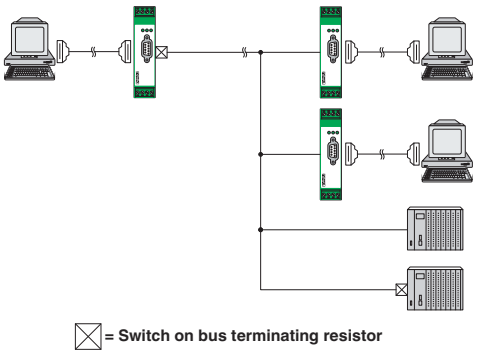

Interface adaptation or programming connection

Application drawing



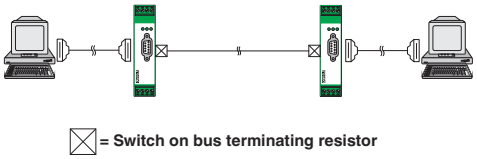

Master interface connection

Application drawing



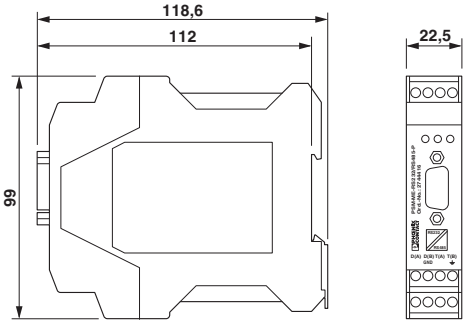

Activate termination resistors - RS-485

Application drawing




Activate termination resistors - RS-422

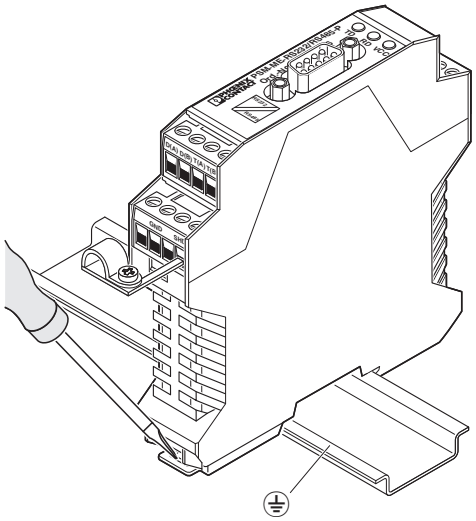
Dimensional drawing




Slim design

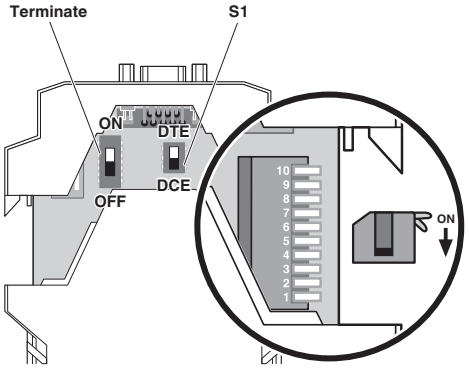
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Schematic diagram



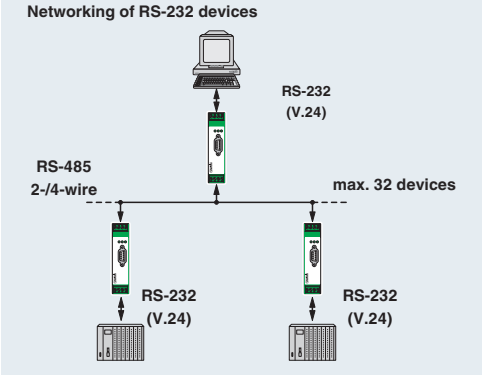
Removal

Schematic diagram



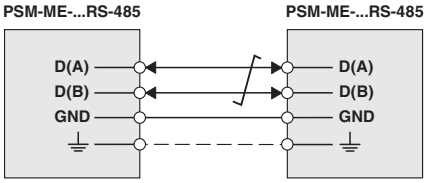

DIP switches

Application drawing




Networking of RS-232 devices

Connection diagram



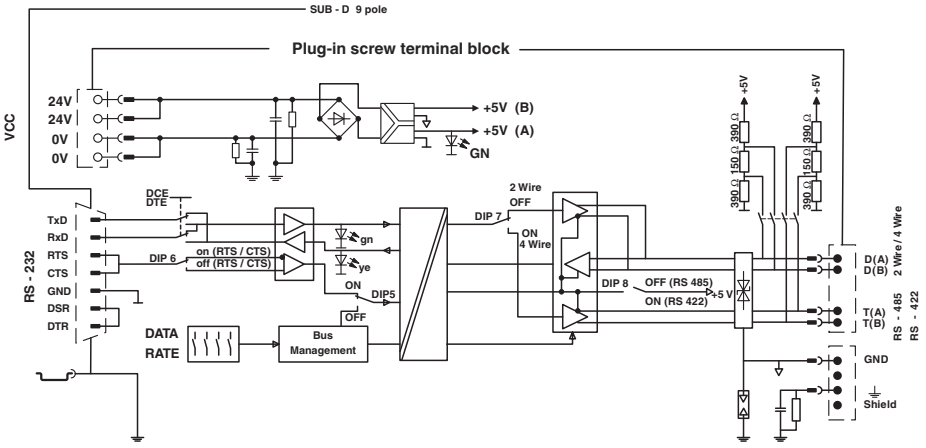

RS-485 interface

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Connection diagram



Circuit diagram




## Classifications

### eCl@ss

| | |
|---|---|
| eCl@ss 10.0.1 | 27242208 |
| eCl@ss 11.0 | 27242208 |
| eCl@ss 4.0 | 27250300 |

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## Classifications

### eCl@ss

| | |
|---|---|
| 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 |
| 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

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

## Approvals

### Approval details

| | | |
|---|---|---|
| DNV GL | https://approvalfinder.dnvgl.com/ | TAA00001KR |
| ABS | http://www.eagle.org/eagleExternalPortalWEB/ | 17-HG1637705-PDA |
| UL Recognized | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
| cUL Recognized | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
| EAC | | EAC-Zulassung |
| KC | http://eng.kcc.go.kr/user/ehpMain.do | MSIP-REI-PCK-ME27444 |
| cULus Recognized | | |

## 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

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## Accessories

### 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

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

### 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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