

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



2744416

<https://www.phoenixcontact.com/us/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 | DN11 |
| 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 |

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Technical data

Notes

Utilization restriction

| | |
|----------|---|
| EMC note | EMC: class A product, see manufacturer's declaration in the download area |
|----------|---|

Utilization restriction

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

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

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

| | |
|---|---|
| Single conductor/terminal point, rigid | 0.2 mm ² ... 2.5 mm ² |
| Single-wire/terminal point, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section, flexible [AWG] | 24 ... 12 |

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| | |
|-------------------|---------------------|
| Tightening torque | 0.56 Nm ... 0.79 Nm |
|-------------------|---------------------|

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) |
| Single-wire/terminal point, flexible | 0.2 mm² ... 2.5 mm² |
| 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) |
| Single-wire/terminal point, flexible | 0.2 mm² ... 2.5 mm² |
| 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) |
| Single-wire/terminal point, flexible | 0.2 mm² ... 2.5 mm² |
| Max. AWG conductor cross section, flexible | 14 |
| Min. AWG conductor cross section, flexible | 24 |
| Data direction switching | Automatic control or via RTS/CTS |
| Protocols supported | transparent protocol |

Dimensions

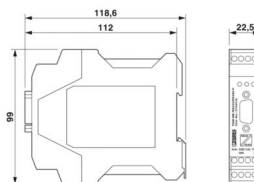
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Dimensional drawing



| | |
|--------|----------|
| Width | 22.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

Material specifications

| | |
|------------------|------------------|
| Color (Housing) | green (RAL 6021) |
| Material Housing | PA 6.6-FR |

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

EAC

| | |
|----------------|-----|
| Identification | EAC |
|----------------|-----|

ATEX

| | |
|----------------|---|
| Identification | Ex 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 |
| | Class I, Zone 2, Ex nA IIC T4 Gc X |

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KC approval for South Korea

| | |
|-------------|------------------------|
| Certificate | MSIP-REI-PCK-ME2744416 |
|-------------|------------------------|

Corrosive gas test

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

Shipbuilding

| | |
|----------------|--------|
| Identification | DNV GL |
|----------------|--------|

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

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

Electromagnetic HF field

| | |
|-----------------|---------------------------------|
| Frequency range | 26 MHz ... 3 GHz (Test Level 3) |
| Field intensity | 10 V/m |
| Comments | Criterion A |

Fast transients (burst)

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

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

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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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27242208 |
| ECLASS-12.0 | 27242208 |
| ECLASS-13.0 | 27242208 |

ETIM

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|----------|----------|
| ETIM 9.0 | EC001423 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151700 |
|-------------|----------|

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Environmental product compliance

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