

## Interface converter - PSM-ME-RS232/TTY-P - 2744458

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

### Product Description

This converter converts a V.24 (RS-232) interface into a 20 mA TTY current loop interface bidirectionally.

The interference immune TTY signal allows problem-free data transmission over distances of up to 1000 m using a twisted-pair and shielded 4-wire cable.

### Your advantages

- ✓ Mounting on standard EN DIN rails
- ✓ Transmission distances of up to 1000 m in active TTY mode
- ✓ High-quality 3-way isolation up to 2 kV (VCC // RS-232 // TTY)
- ✓ In the case of variable cable lengths, the TTY connection on the field side can be established conveniently using plug-in screw terminal blocks
- ✓ Integrated surge protection with transient discharge to the DIN rail
- ✓ Conversion of RS-232 TxD/RxD full duplex data signals to the TTY current loop standard
- ✓ Semi-active, active or passive TTY mode, depending on pin assignment
- ✓ 24 V DC or AC power supply suitable for the control cabinet
- ✓ Active data transmission indicated by separate data indicators for the transmit and receive channels
- ✓ RS-232 connection via 9-pos. D-SUB and standard RS-232 cable
- ✓ Transmission speed of up to 19.2 kbps
- ✓ Shipbuilding approval in accordance with DNV GL

RoHS

TTY<sub>RS-232</sub>

### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 pc                                                                                                    |
| GTIN                                 | <br>4 017918 171803 |
| GTIN                                 | 4017918171803                                                                                           |
| Weight per Piece (excluding packing) | 180.000 g                                                                                               |
| Custom tariff number                 | 85176200                                                                                                |

## Interface converter - PSM-ME-RS232/TTY-P - 2744458

|                   |         |
|-------------------|---------|
| Country of origin | Germany |
|-------------------|---------|

### Technical data

#### Note

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

#### Dimensions

|         |             |
|---------|-------------|
| Caption | Slim design |
| Width   | 22.5 mm     |
| Height  | 99 mm       |
| Depth   | 118.6 mm    |

#### Ambient conditions

|                                         |                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------|
| Ambient temperature (operation)         | 0 °C ... 55 °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 61000-6-2:2005                                                                      |

#### General

|                                          |                                                                                                          |
|------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Transmission channels                    | 2 (1/1), Rx/D, Tx/D, full duplex                                                                         |
| Bit delay                                | < 3 µs                                                                                                   |
| Bit distortion                           | < 5 %                                                                                                    |
| Electrical isolation                     | VCC // V.24 (RS-232) // TTY                                                                              |
| Test voltage data interfaces             | 2 kV AC                                                                                                  |
| Test voltage data interface/power supply | 2 kV AC                                                                                                  |
|                                          | 2 kV <sub>rms</sub> (50 Hz, 1 min.)                                                                      |
| Electromagnetic compatibility            | Conformance with EMC Directive 2014/30/EU                                                                |
| Noise emission                           | EN 61000-6-4                                                                                             |
| Net weight                               | 179.6 g                                                                                                  |
| Housing material                         | PA                                                                                                       |
| Color                                    | green                                                                                                    |
| MTBF                                     | 1989 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))    |
|                                          | 410 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day)) |

#### Power supply

|                             |                                                                |
|-----------------------------|----------------------------------------------------------------|
| Nominal supply voltage      | 24 V AC/DC ±20 % (via pluggable COMBICON screw terminal block) |
| Typical current consumption | 75 mA (24 V DC)                                                |

# Interface converter - PSM-ME-RS232/TTY-P - 2744458

## Technical data

### Power supply

|                    |                                   |
|--------------------|-----------------------------------|
| Protective circuit | Surge protection Suppressor diode |
|--------------------|-----------------------------------|

### 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.      | 13                                                                        |
| Pin assignment                        | DTE/DCE switchover via switch                                             |
| Protocols supported                   | transparent protocol                                                      |
| Serial transmission speed             | ≤ 19.2 kbps                                                               |
| Interface 2                           | TTY interface, CL2 in acc. with DIN 66348-1                               |
| Operating mode                        | Active, semi active, passive                                              |
| Connection method                     | Pluggable screw connection                                                |
| Transmission length                   | 1000 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.      | 13                                                                        |
| Load/output load current output       | ≤ 500 Ω                                                                   |
| Impedance                             | ≤ 117 Ω (Output)                                                          |
|                                       | 126 Ω (Input)                                                             |
| Serial transmission speed             | ≤ 19.2 kbps                                                               |
| Output current                        | 2x 20 mA ±10 % (Loop current)                                             |

### Conformance/approvals

|                |                                    |
|----------------|------------------------------------|
| Designation    | CE                                 |
| Identification | CE-compliant                       |
| Designation    | EAC                                |
| Identification | EAC                                |
| 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                 |

## Interface converter - PSM-ME-RS232/TTY-P - 2744458

### Technical data

#### Conformance/approvals

|                |                                                                                         |
|----------------|-----------------------------------------------------------------------------------------|
| Identification | ISA-S71.04-1985 G3 Harsh Group A                                                        |
| Designation    | Shipbuilding                                                                            |
| Identification | DNV GL                                                                                  |
| 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 |
| Noise emission                   | EN 61000-6-4                              |
| Noise immunity                   | EN 61000-6-2:2005                         |
| 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                  | Test Level 3                              |
| Standards/regulations            | EN 61000-4-4                              |
| Comments                         | Criterion B                               |
| Standards/regulations            | EN 61000-4-5                              |
| Signal                           | ± 2 kV (42 Ω)                             |
| Standards/regulations            | EN 55011                                  |
|                                  | EN 61000-4-6                              |

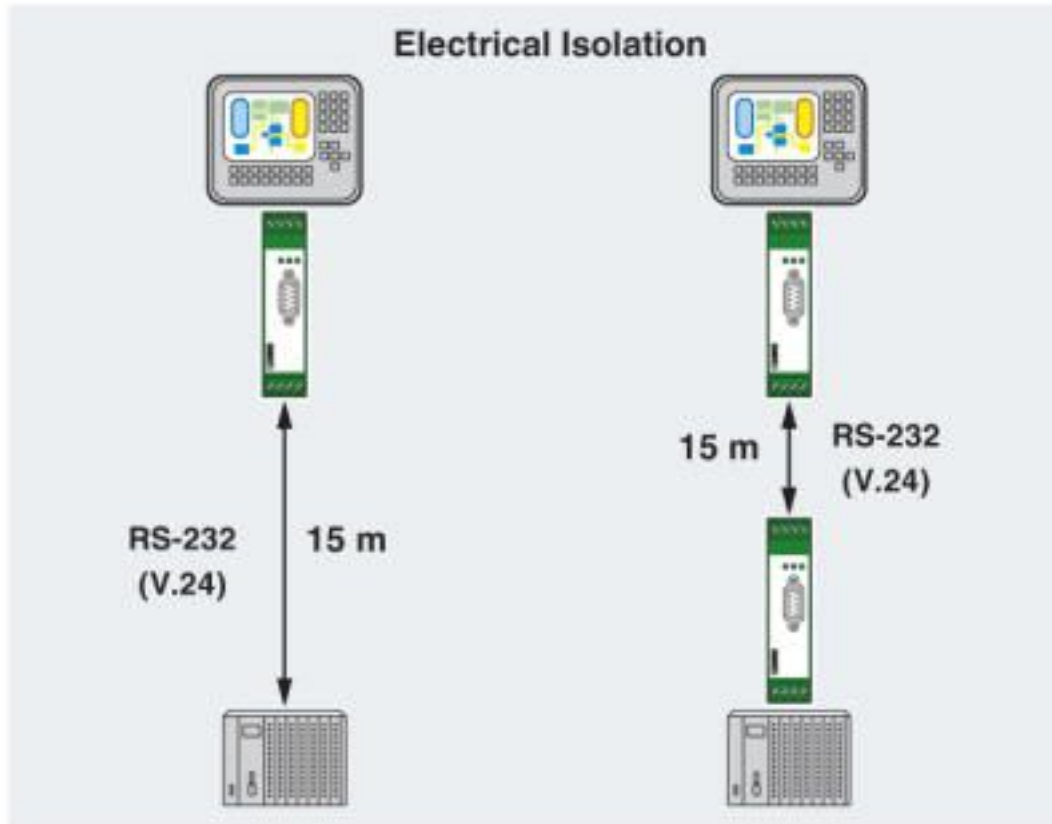
#### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| 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/TTY-P - 2744458

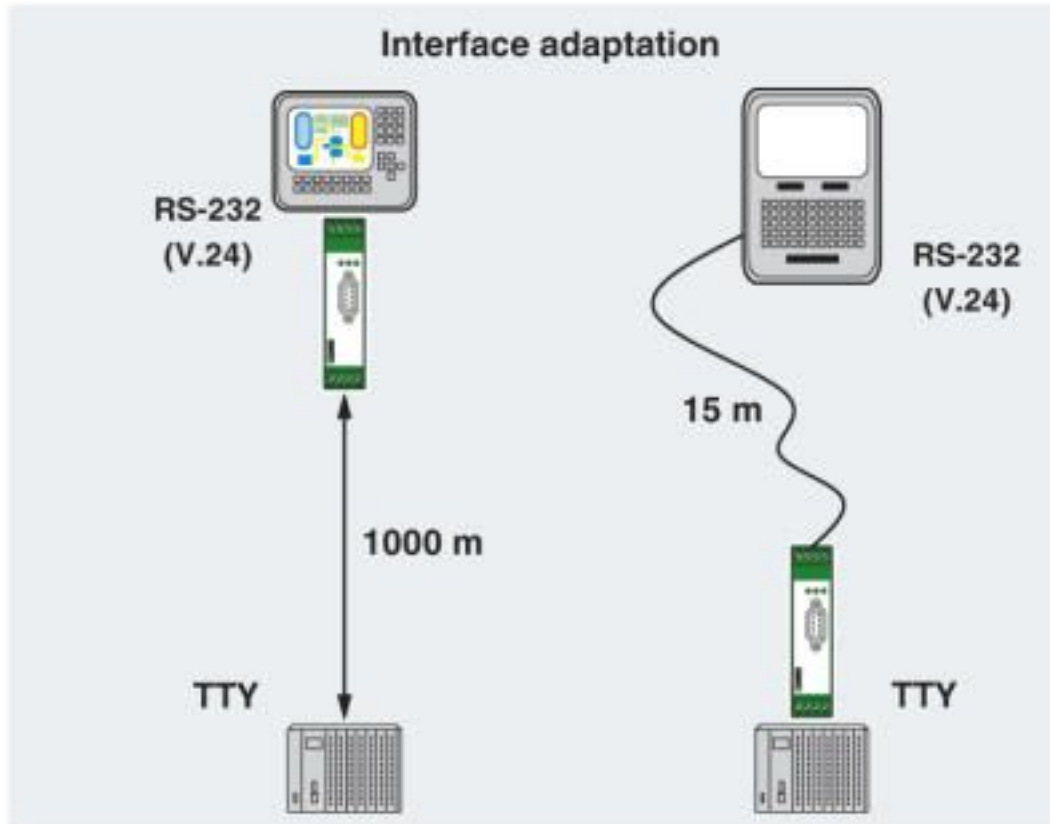
Application drawing



Electrical isolation

## Interface converter - PSM-ME-RS232/TTY-P - 2744458

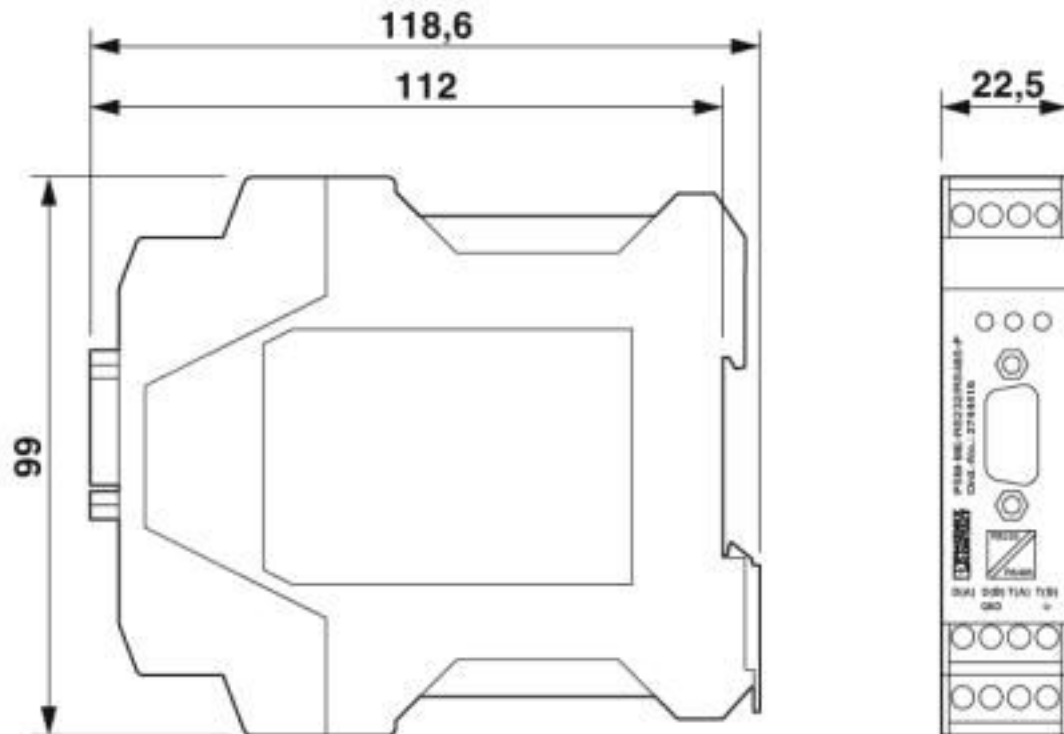
Application drawing



Interface adaptation

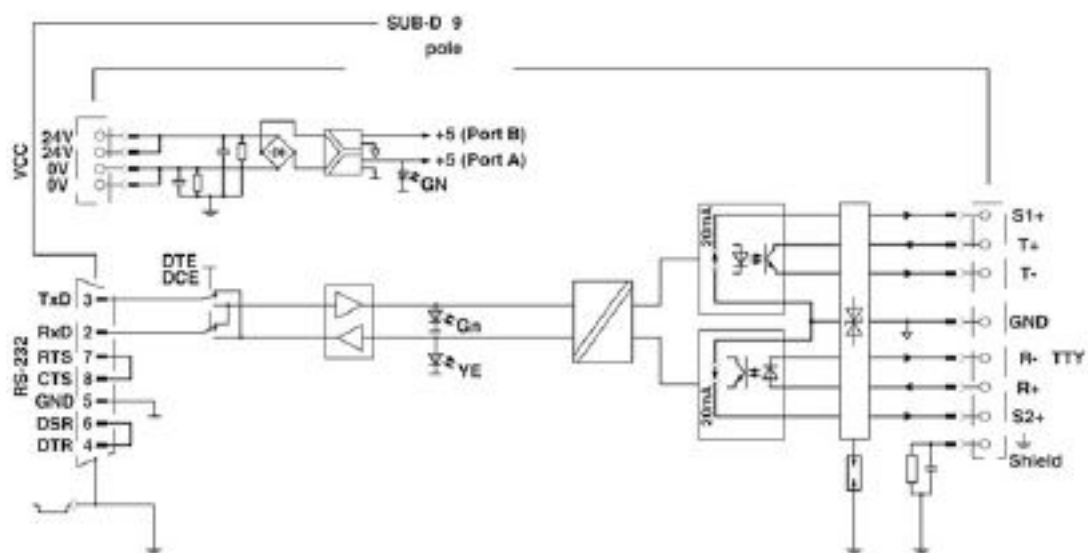
## Interface converter - PSM-ME-RS232/TTY-P - 2744458

Dimensional drawing



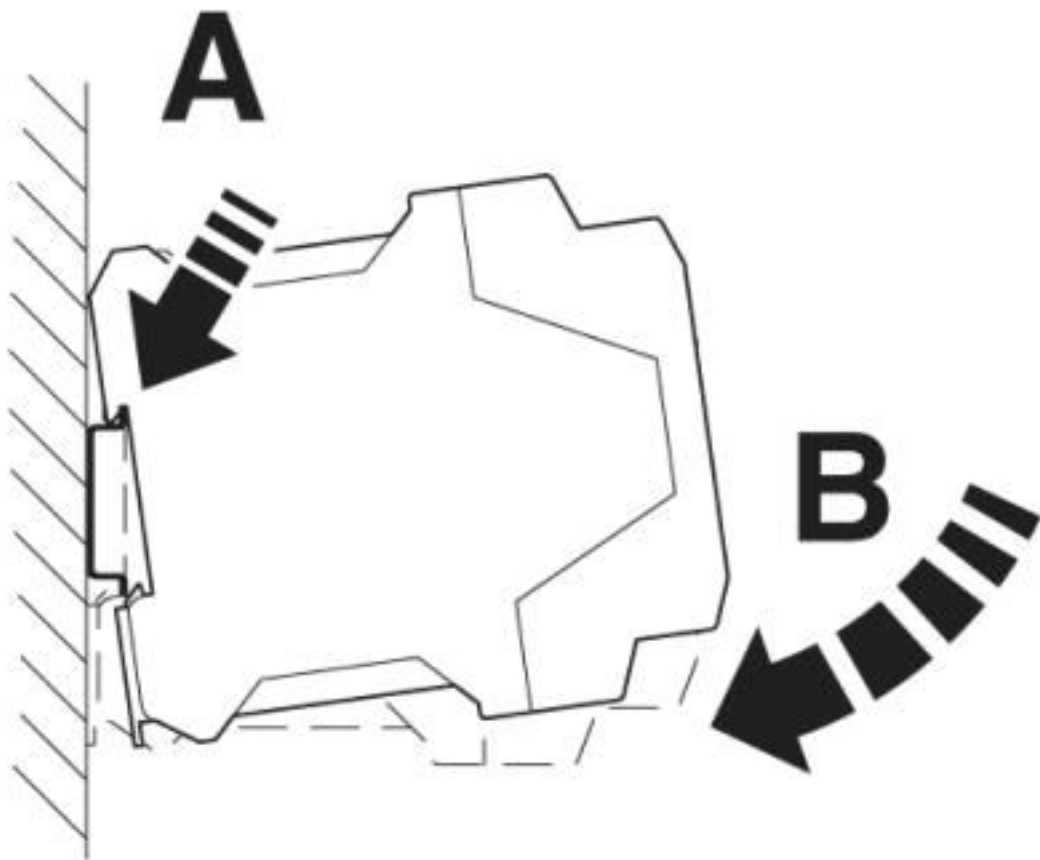
Slim design

Circuit diagram



Interface converter - PSM-ME-RS232/TTY-P - 2744458

Schematic diagram



Mounting

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 |

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### Classifications

#### 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 / UL Recognized / cUL Recognized / EAC / cULus Recognized

##### Ex Approvals

cUL Recognized / UL Listed / cUL Listed / cULus Listed

#### Approval details

|        |                                                                                     |                                                                                   |            |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|
| DNV GL |  | <a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a> | TAA00001KR |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|

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

## Interface converter - PSM-ME-RS232/TTY-P - 2744458

### Approvals

cUL Recognized



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

EAC



EAC-Zulassung

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

##### 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

## Interface converter - PSM-ME-RS232/TTY-P - 2744458

### Accessories

Shield connection clamp - ME-SAS - 2853899



Shield connection clamp for printed circuit terminal block

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### 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