

PSM-ME-RS232/RS232-P Serial Isolator

 perle.com/products/serial-extenders/psm-me-rs232-serial-isolator.shtml

Interface converter for the electrical isolation of RS-232 interfaces

- 3-way isolation up to 2 kV
- Transmission speed of 115.2 kbps
- Integrated surge protection
- Transmit TxD/RxD data channels and RTS/CTS control lines

For the electrical isolation of RS-232 (V.24) interfaces, the PSM-ME-RS232/RS232-P is the ideal solution.

3-way EMI, RFI and Transient Surge Immunity

The RS-232 interface is an asymmetric voltage interface with common signal ground for all signals. In addition to its very low signal power, a characteristic feature of the interface is that the signal ground is connected to the grounded chassis housing. This results in very little immunity to interference and a maximum range of 15 meters. Using the PSM-ME-RS232/RS232-P Serial Isolator, considerably higher immunity to interference in industrial applications can be achieved.

By isolating the TX/RX data channels and the RTS/CTS control lines the PSM-ME-RS232 Serial Isolator effectively protects your RS232 devices from transient surges, lightning strikes, ground loops and noise issues.

With their high-grade 3-way isolation between both interface sides the PSM-ME-RS232 provides a floating and interference resistant RS-232 interface for the supply and ground potential. Expensive termination devices are also protected against damage by this decoupling.

Any additional potential EMI can be removed from the transmission path by using additional PSM-ME-RS232 Serial Isolators on both device interfaces.

The PSM-ME-RS232 Serial Isolators can be wall mount AC powered or snapped onto standard DIN rails supplied with 24V DC or AC. In the case of variable cable lengths, the RS-232 connection on the field side can be established conveniently using plug-in screw terminal blocks

Serial Isolator Features

- Maximum transmission speed of 115.2 kbps
- High-quality 3-way isolation up to 2 kV (VCC, V.24 (RS-232), TTY)
- Integrated surge protection with transient discharge to the DIN rail
- Transmission speed up to 115.2 kbps
- Transmission of TxD/RxD data channels and RTS/CTS control lines
- Active data transmission indicated by separate data indicators for the transmit and receive channels
- 24 V DC or AC power supply suitable for the control cabinet





RS-232



PSM-ME-RS232/RS232-P Technical Specifications

Serial interface

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 ²
Conductor cross section flexible max.	2.5 mm ²
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	115.2 kbps
Interface 2	V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1
Connection method	Pluggable screw connection
Transmission length	15 m (shielded twisted pair)
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	13

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 manufacturer's declaration)
Degree of protection	IP20
Noise immunity	EN 61000-6-2:2005

General

Electrical isolation	VCC // V.24 (RS-232) (A) // V.24 (RS-232) (B)
Test voltage data interface/power supply	2 kVrms (50 Hz, 1 min.)
Standards/regulations	
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Net weight	123.18 g
Housing material	PA
Color	green
Conformance	CE-compliant
UL, USA/Canada	508 recognized
Noise emission	EN 61000-6-3
MTBF	2263 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day)) 438 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
Transmission channels	4 (2/2), RxD, TxD, RTS, CTS; full duplex
Bit delay	< 3 µs
Bit distortion	< 5 %

Test voltage data interfaces 2 kV AC

Test voltage data interface/power supply 2 kV AC

Power supply

Nominal supply voltage 24 V AC/DC $\pm 20\%$

Supply voltage range 19.2 V AC/DC ... 28.8 V AC/DC

Typical current consumption 40 mA (24 V DC)

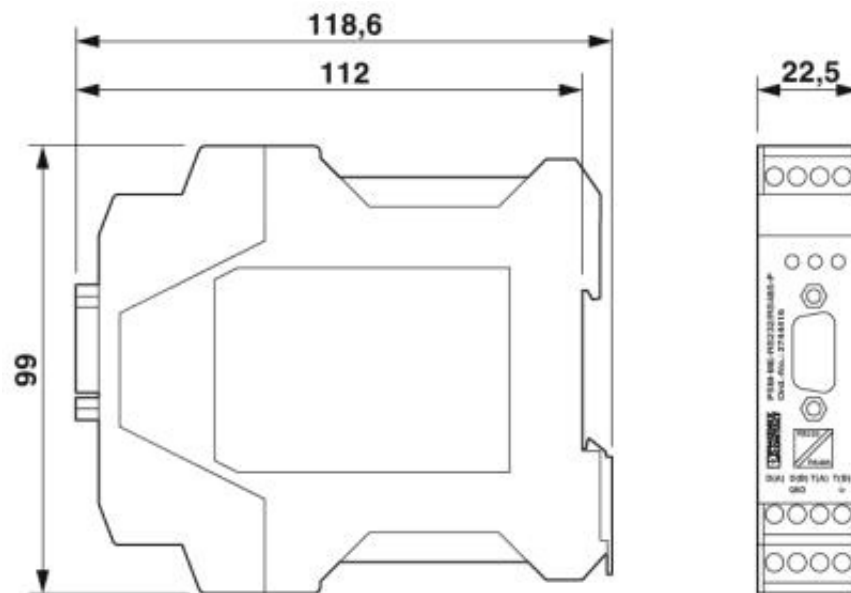
Protective circuit Surge protection Suppressor diode

Dimensions

Width 22.5 mm

Height 99 mm

Depth 118.6 mm



Environmental Product Compliance

China RoHS Environmentally Friendly Use Period = 50

Reach and RoHS Compliant [Reach and RoHS Compliant](#)

Standards and Regulations

Electromagnetic compatibility Conformance with EMC Directive 2014/30/EU

EMC Immunity	EN 61000-4-2: Contact discharge ± 6 kV (Test Level 3) EN 61000-4-3: Frequency range Test Level 3 EN 61000-4-4: Criterion B EN 61000-4-5: Signal ± 2 kV (12 Ω) EN 55011 EN 61000-4-6
Conformance	CE-compliant
UL, USA/Canada	508 recognized
Noise emission	EN 61000-6-3
Noise immunity	EN 61000-6-2:2005
Connection in acc. with standard	CUL
UL, USA/Canada	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

Approvals

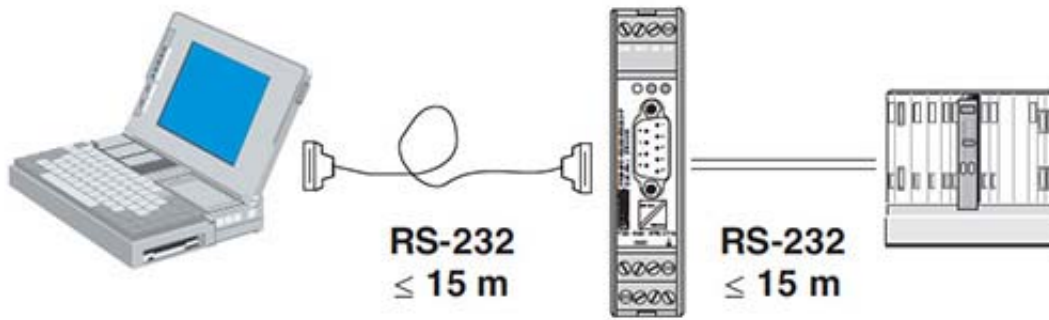
UL Recognized
 cUL Recognized
 DNV
 EAC
 cULus Recognized
 UL Listed
 cUL Listed
 cULus Listed

Commercial data

Packing unit	1
Weight per piece	181.2 g
Country of origin	Germany

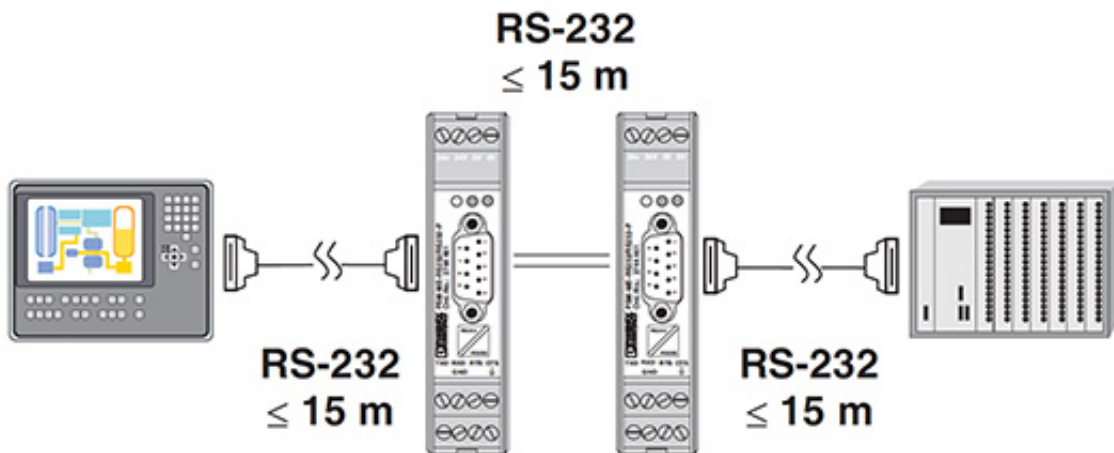
Interference-free RS-232 interface

Use the PSM-ME-RS232/RS232-P Serial Isolator for considerably higher immunity to interference in industrial applications.

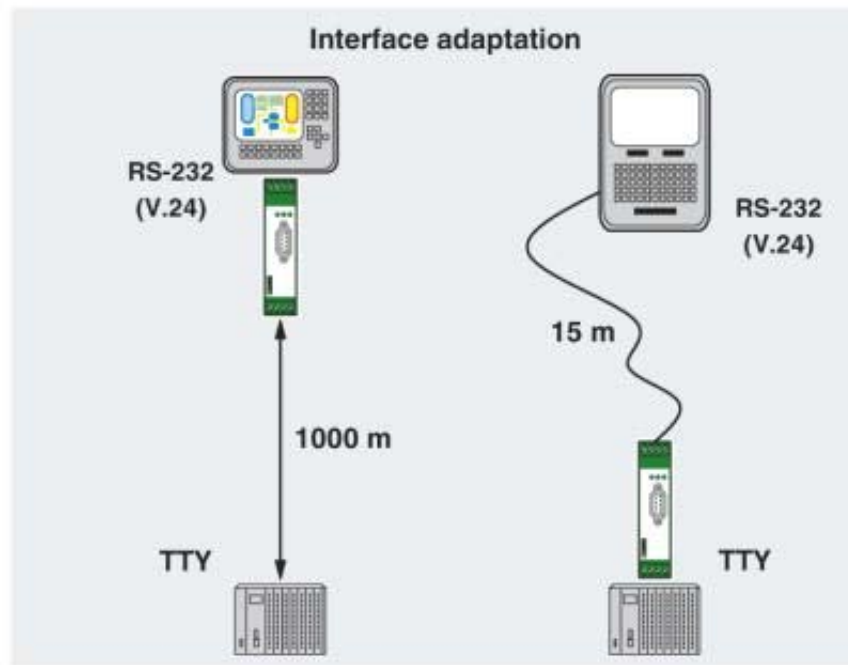


Electrical isolation

Use a PSM-ME-RS232/RS232-P Serial Isolator on both device interfaces to remove any potential EMI.



Interface Converter



Block Diagram

