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

2744458

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CRA-READY



Interface converter, for converting RS-232 (V.24) to TTY, with electrical isolation, 2 channels, DIN-rail mountable. Product is being prepared for compliance with the Cyber Resilience Act (CRA).

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



Commercial data

Item number	2744458
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN11
Product key	DNC111
GTIN	4017918171803
Weight per piece (including packing)	184 g
Weight per piece (excluding packing)	179.6 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Notes

Note on application	Only for industrial use
Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

Utilization restriction

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

Product properties

Product type	Interface converter
Application	RS-232
	TTY
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))

Electrical properties

Electrical isolation	VCC // V.24 (RS-232) // TTY
Maximum power dissipation for nominal condition	1.8 W
Test voltage data interface/power supply	2 kV_{rms} (50 Hz, 1 min.)
	2 kV AC
Test voltage data interfaces	2 kV AC

Supply

Supply voltage range	19.2 V AC/DC ... 28.8 V AC/DC
Nominal supply voltage	24 V AC/DC ±20 % (via pluggable COMBICON screw terminal block)
Typical current consumption	75 mA (24 V DC)
Protective circuit	Surge protection; Suppressor diode

Connection data

Supply

Tightening torque	0.56 Nm ... 0.79 Nm

Interfaces

Bit distortion	< 5 %
Bit delay	< 3 µs
Signal	Modbus
Transmission channels	2 (1/1), RxD, TxD, full duplex

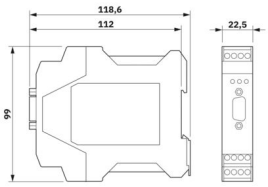
Data: V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1

Serial transmission speed	≤ 19.2 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	13
Min. AWG conductor cross-section, flexible	24
Protocols supported	transparent protocol

Data: TTY interface, CL2 in acc. with DIN 66348-1

Serial transmission speed	≤ 19.2 kbps
Connection method	Pluggable screw connection
Transmission length	1000 m (shielded twisted pair)
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
Load/output load current output	≤ 500 Ω
Impedance	≤ 117 Ω (Output)
	126 Ω (Input)
Output current	2x 20 mA ±10 % (Loop current)

Dimensions

Dimensional drawing	
Width	22.5 mm
Height	99 mm
Depth	118.6 mm

Material specifications

Color (Housing)	green (RAL 6021)
Material (Housing)	PA

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 55 °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

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

Corrosive gas test

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

Shipbuilding

Identification	DNV GL

Shipbuilding 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

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	EN 61000-6-2:2005

Noise emission

Standards/regulations	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	Test Level 3
Field intensity	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4

Fast transients (burst)

Input	± 4 kV (5 kHz)
Signal	± 2 kV (5 kHz)
Comments	Criterion B

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Surge current load (surge)

Input	± 0.5 kV (2 Ω)
Signal	± 2 kV (42 Ω)
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

Comments	Criterion A
Voltage	10 V

Emitted interference

Standards/regulations	EN 55011
Comments	Class A, industrial applications

Criteria

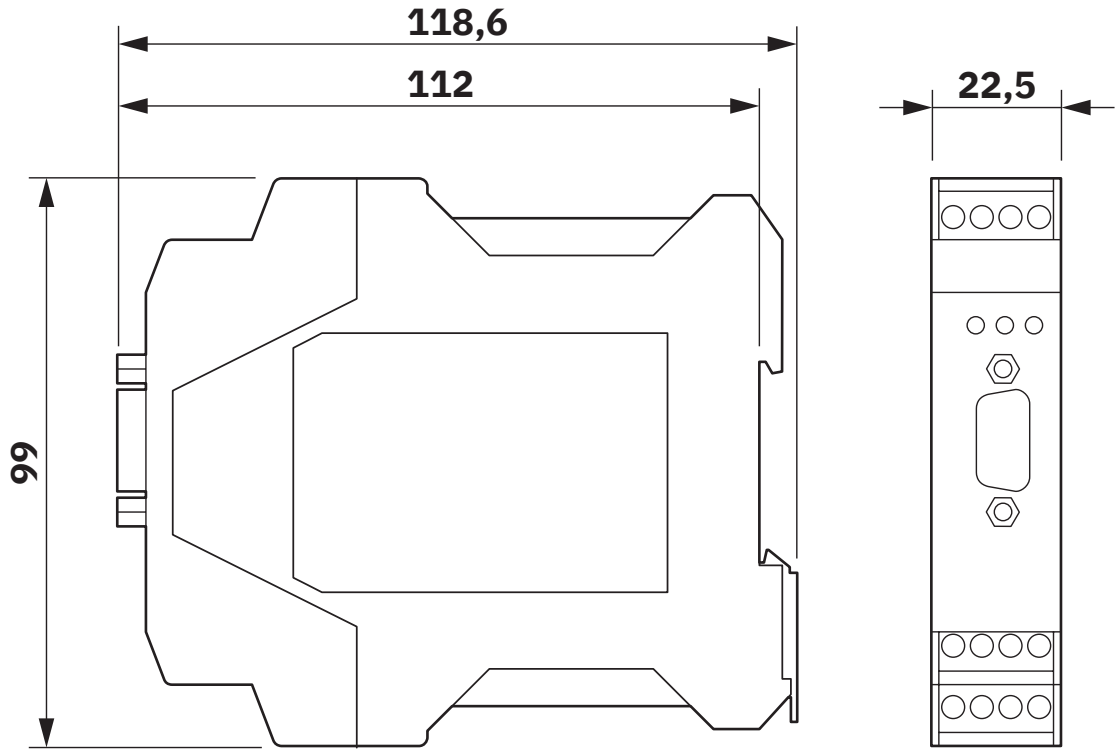
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Mounting

Mounting type	DIN rail mounting
Mounting position	On horizontal DIN rail

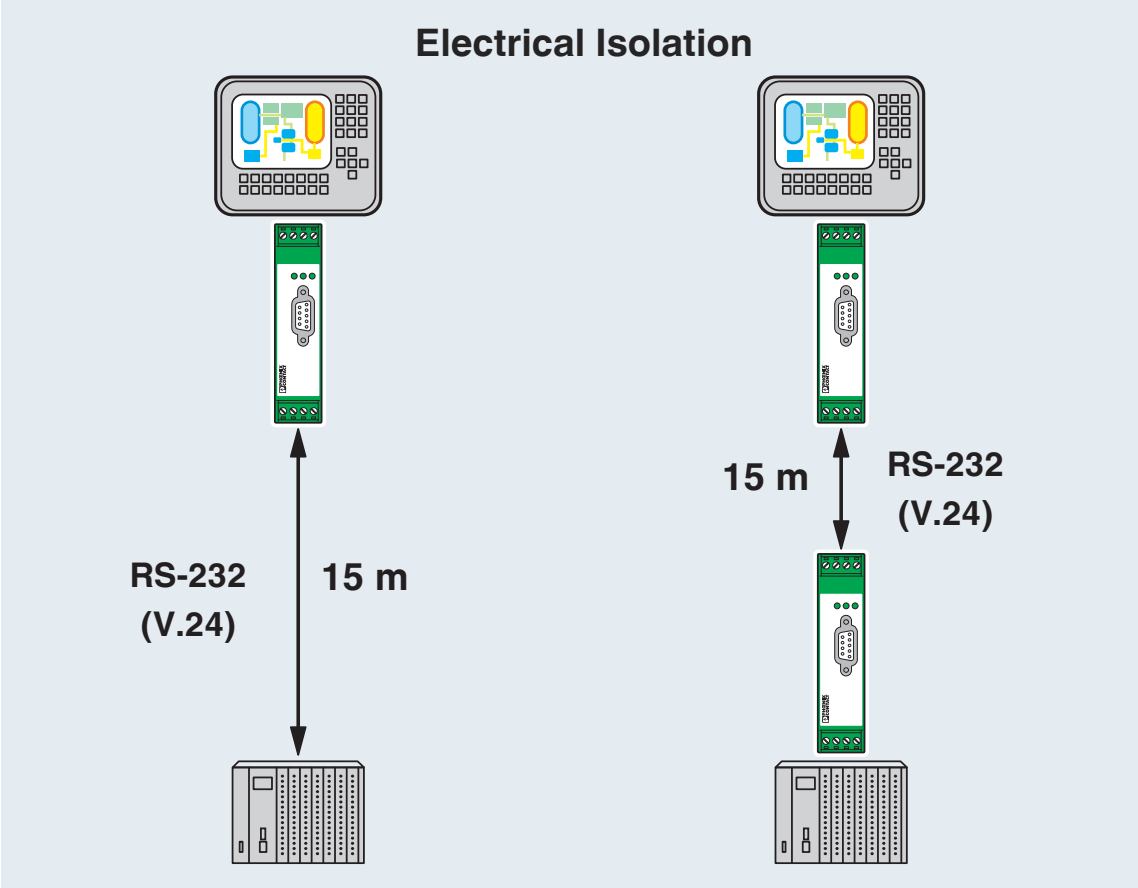
Drawings

Dimensional drawing



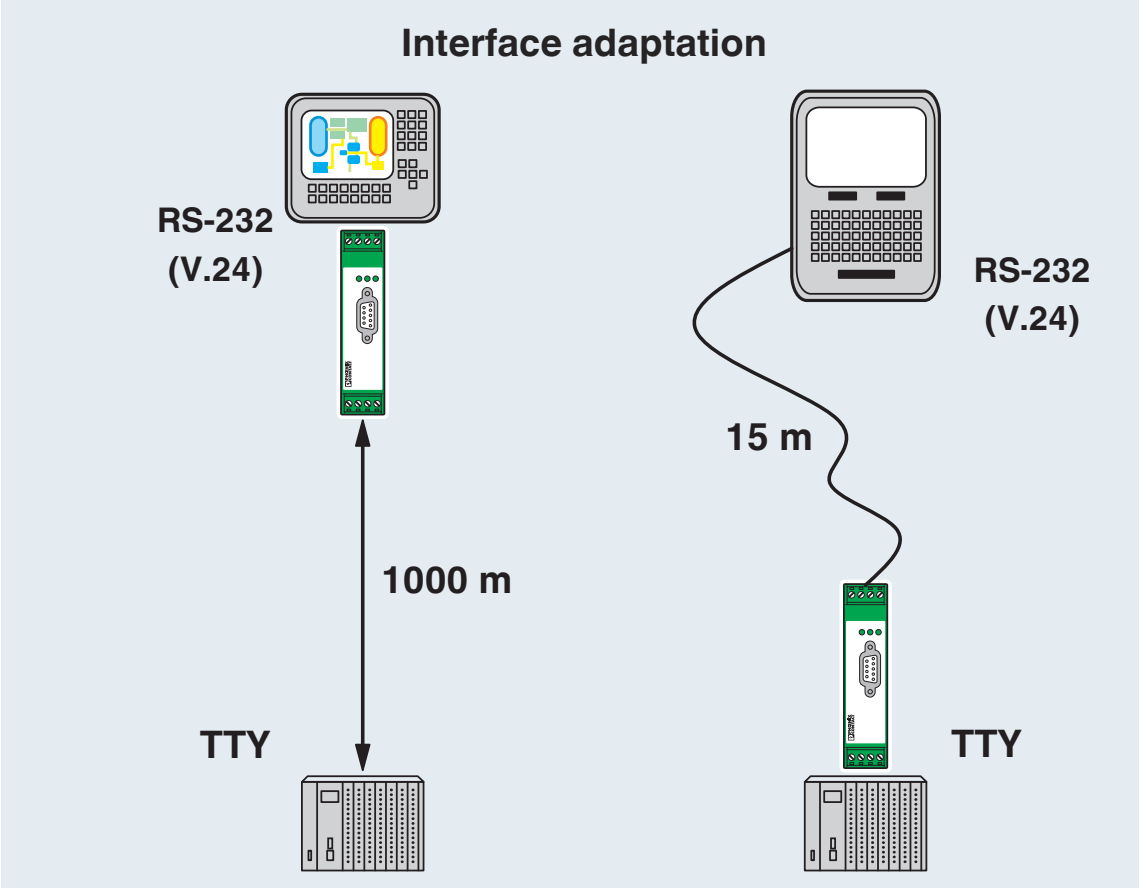
Slim design

Application drawing



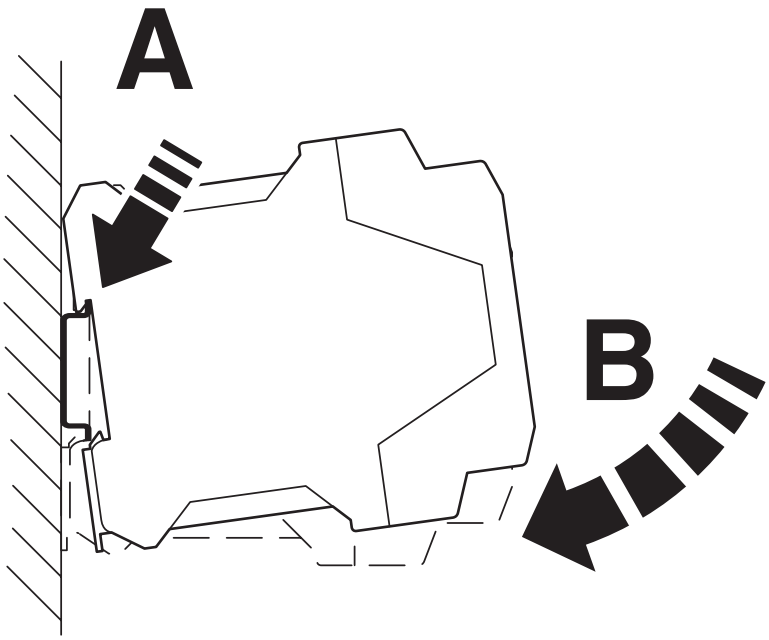
Electrical isolation

Application drawing



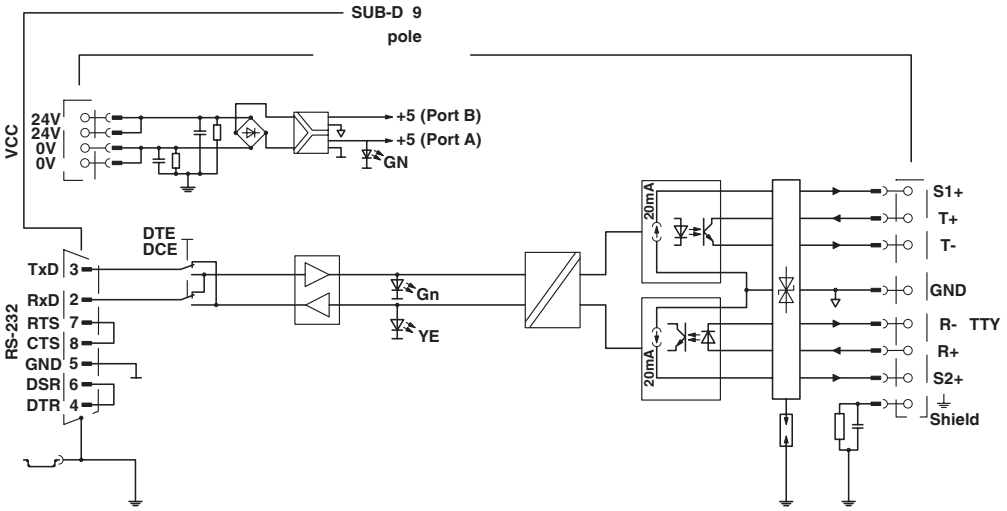
Interface adaptation

Schematic diagram



Mounting

Circuit diagram



Basic circuit diagram

Approvals

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cUL Recognized
Approval ID: E238705

UL Recognized
Approval ID: E238705

DNV GL
Approval ID: TAA00001KR_7

cUL Recognized
Approval ID: E199827

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
	24 V	0.075 A	-	-

cUL Listed
Approval ID: E199827

UL Listed
Approval ID: E199827

Classifications

ECLASS

ECLASS-13.0	27242208
ECLASS-15.0	27242208

ETIM

ETIM 10.0	EC001423

UNSPSC

UNSPSC 21.0	32151700

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	866dc614-eb99-4212-a3b5-c6b58345a1f7

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