

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



2744458

<https://www.phoenixcontact.com/pc/products/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

Commercial Data

Item number	2744458
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DNC111
Catalog Page	Page 427 (C-6-2019)
GTIN	4017918171803
Weight per Piece (including packing)	186.6 g
Weight per Piece (excluding packing)	179.6 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
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Utilization restriction

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

Product type	Interface converter
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.)
Test voltage data interface/power supply	2 kV AC
Test voltage data interfaces	2 kV AC

Supply

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

Torque	0.56 Nm ... 0.79 Nm
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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)

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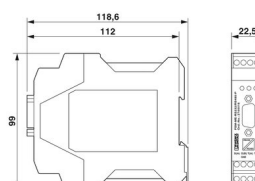
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Conductor cross section flexible max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section AWG max.	13
Conductor cross section AWG min.	24
Protocols supported	transparent protocol

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)
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section AWG max.	13
Conductor cross section AWG min.	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	green
Material	PA (Housing)

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)

Approval data

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CE

Designation	CE
Certificate	CE-compliant

CE

Designation	EAC
Identification	EAC

CE

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

CE

Designation	Corrosive gas test
Identification	ISA-S71.04-1985 G3 Harsh Group A

CE

Designation	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

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2:2005

Electrostatic discharge

Standards/regulations	EN 61000-4-2
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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
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Electromagnetic HF field

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Frequency range	Test Level 3
Field intensity	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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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
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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
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Conducted interference

Comments	Criterion A
Voltage	10 V

Emitted interference

Standards/regulations	EN 55011
Comments	Class A, industrial applications
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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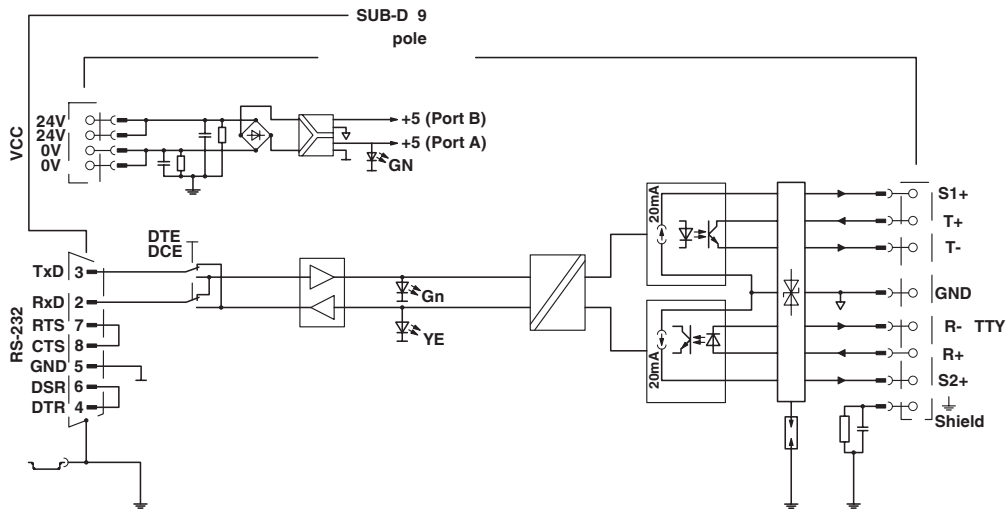


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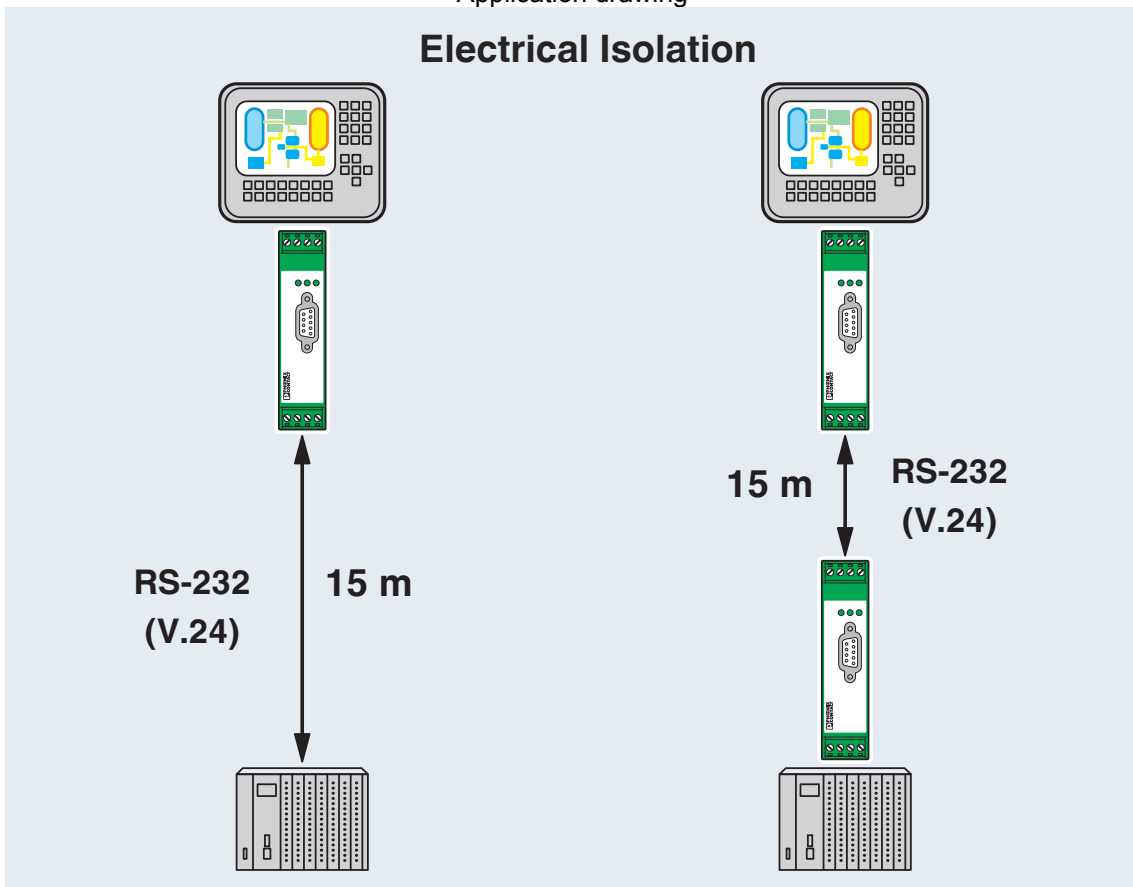
Drawings

Circuit diagram



Basic circuit diagram

Application drawing



Electrical isolation

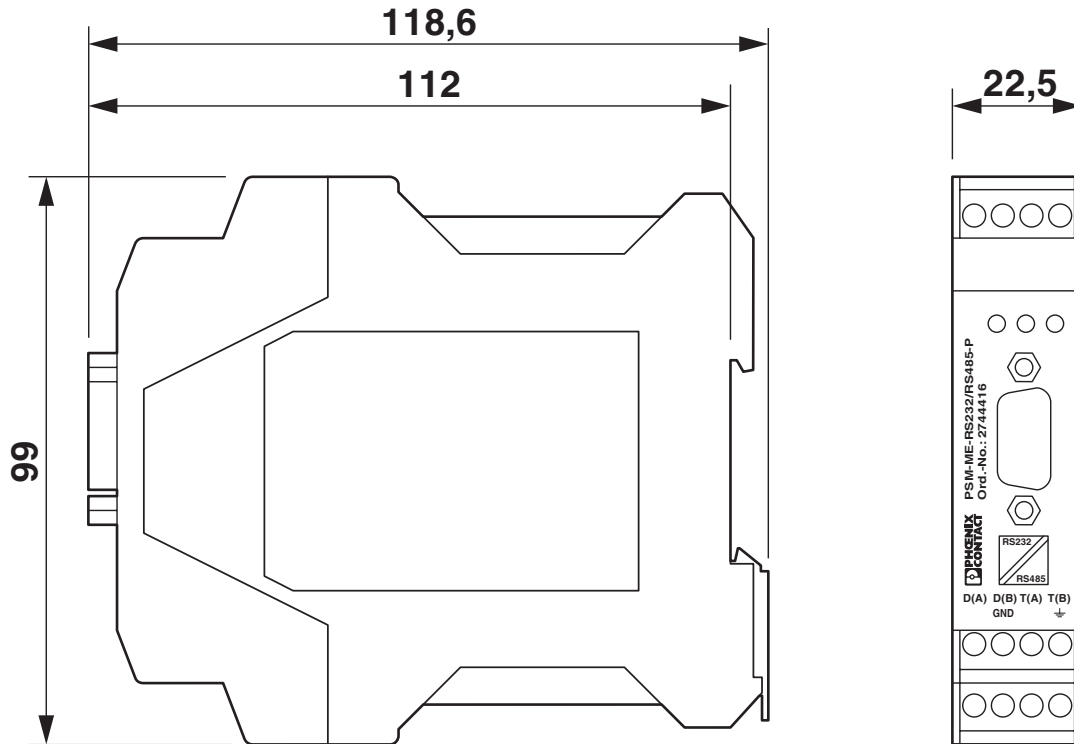
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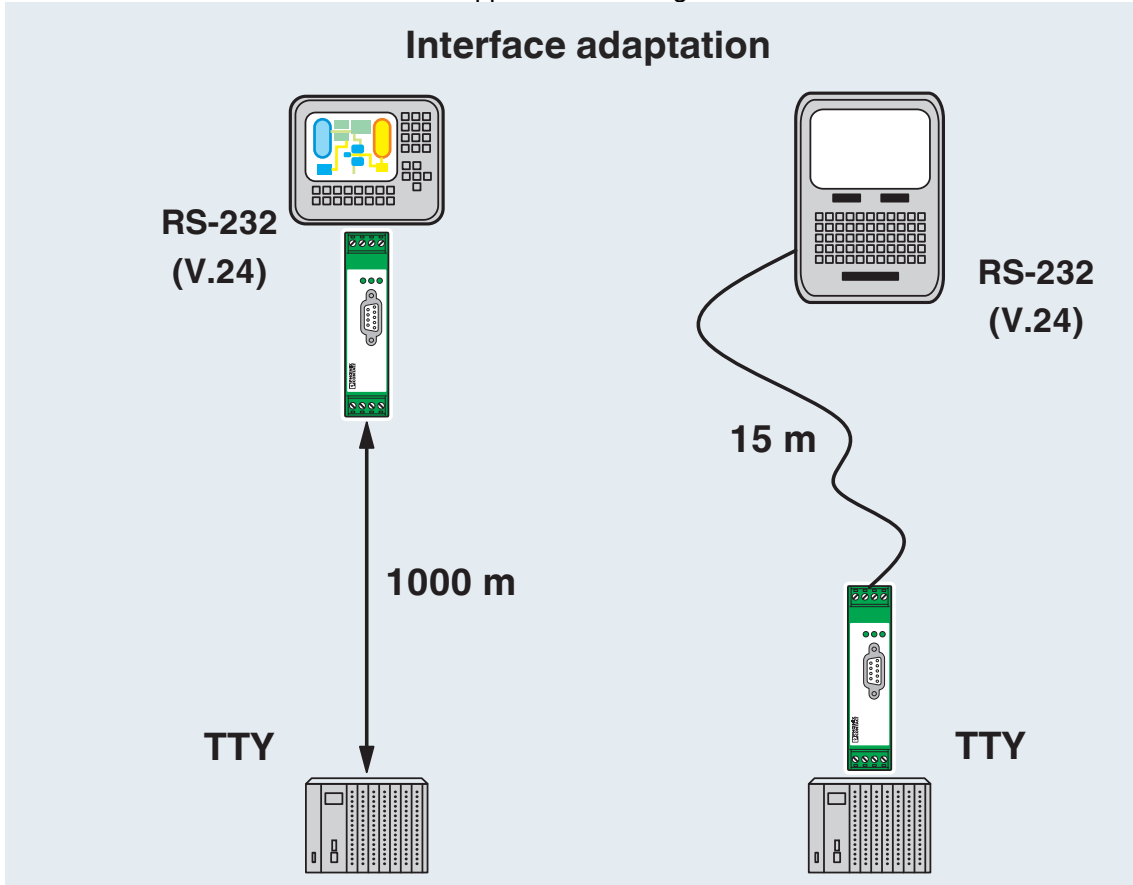


Dimensional drawing



Slim design

Application drawing

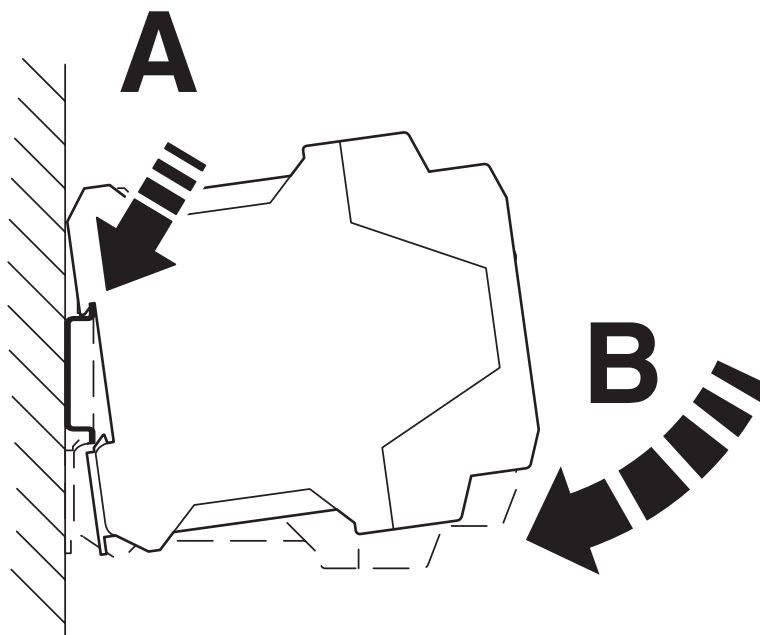


Interface adaptation

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Schematic diagram



Mounting


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Approvals

 cUL Recognized Approval ID: FILE E 238705				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
			-	-


 UL Recognized Approval ID: FILE E 238705				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
			-	-

 EAC Approval ID: TR TS_D_01871-19				
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 DNV GL Approval ID: TAA00001KR				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
			-	-

 cUL Recognized Approval ID: FILE E 199827				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	24 V	0.075 A	-	-

 cUL Listed Approval ID: FILE E 199827				
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 UL Listed Approval ID: FILE E 199827				
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cULus Recognized

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	19179290
ECLASS-10.0.1	27242208
ECLASS-11.0	27242208

ETIM

ETIM 8.0	EC001423
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UNSPSC

UNSPSC 21.0	32151700
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Environmental Product Compliance

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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Accessories

Data cable

Data cable - PSM-KA9SUB9/BB/2METER - 2799474

<https://www.phoenixcontact.com/pc/products/2799474>

RS-232 cable, 9-pos. D-SUB socket on 9-pos. D-SUB socket, 9-wire, 1:1



Shield connection clamp

Shield connection clamp - ME-SAS - 2853899

<https://www.phoenixcontact.com/pc/products/2853899>

Shield connection clamp for terminal points starting from 2.5 mm²



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Screwdriver

Screwdriver - SZF 1-0,6X3,5 - 1204517

<https://www.phoenixcontact.com/pc/products/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

D-SUB bus connector

D-SUB bus connector - SUBCON 9/F-SH - 2761499

<https://www.phoenixcontact.com/pc/products/2761499>



D-SUB plug, 9-pos. female connector, one 35° cable entry, universal type for all systems, pin assignment: 1, 2, 3, 4, 5, 6, 7, 8, 9 to screw connection terminal block

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