

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



2744458

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

# TTY RS-232

## Commercial data

Item number	2744458
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN11

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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

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## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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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
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 <sub>rms</sub> (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
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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

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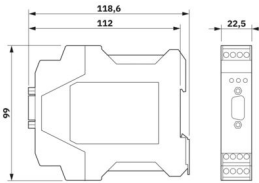
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Pin assignment	DTE/DCE switchover via switch
Transmission length	15 m (shielded twisted pair)
Single-wire/terminal point, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Max. AWG conductor cross-section, flexible	13
Min. AWG conductor cross-section, 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 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
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

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## CE

Certificate	CE-compliant
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## 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
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## Shipbuilding

Identification	DNV GL
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## 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
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## 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

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

## 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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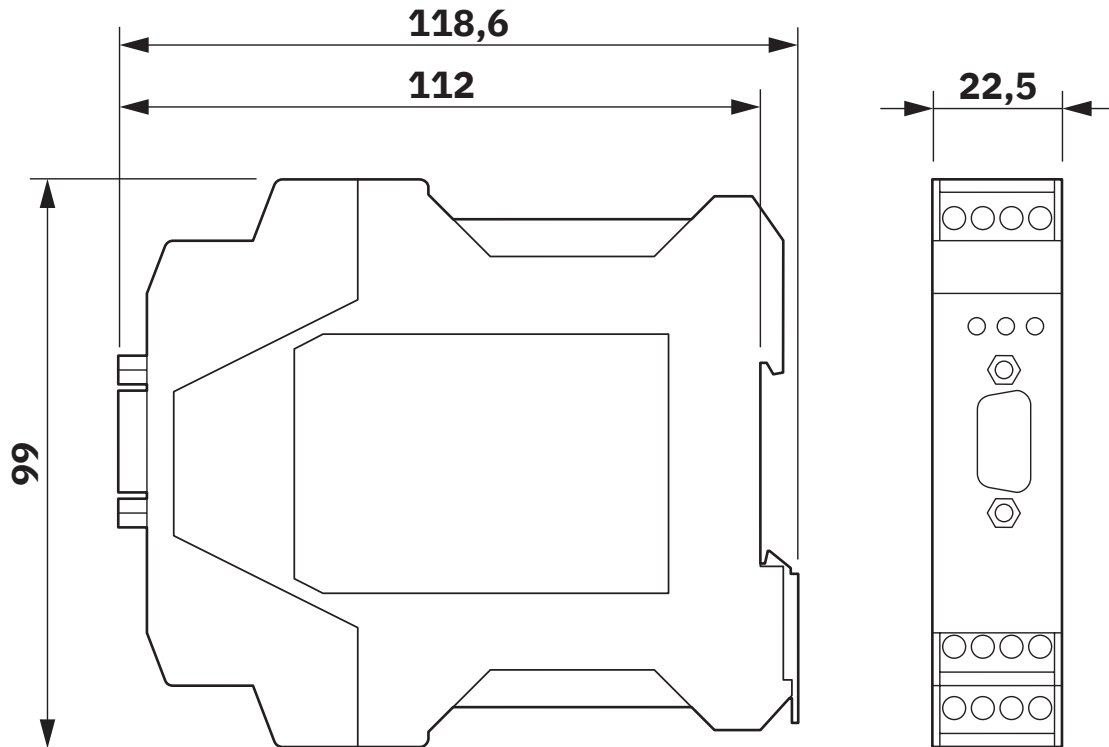


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## Drawings

Dimensional drawing

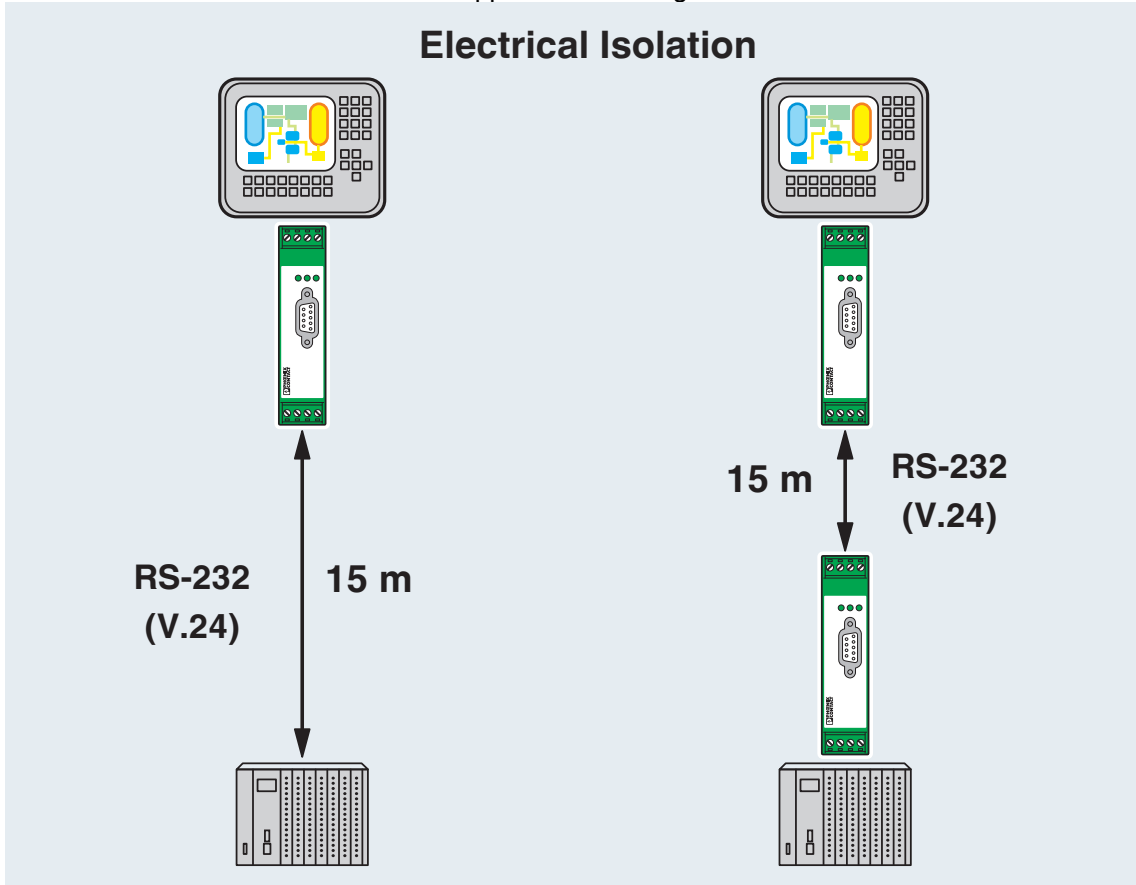


Slim design

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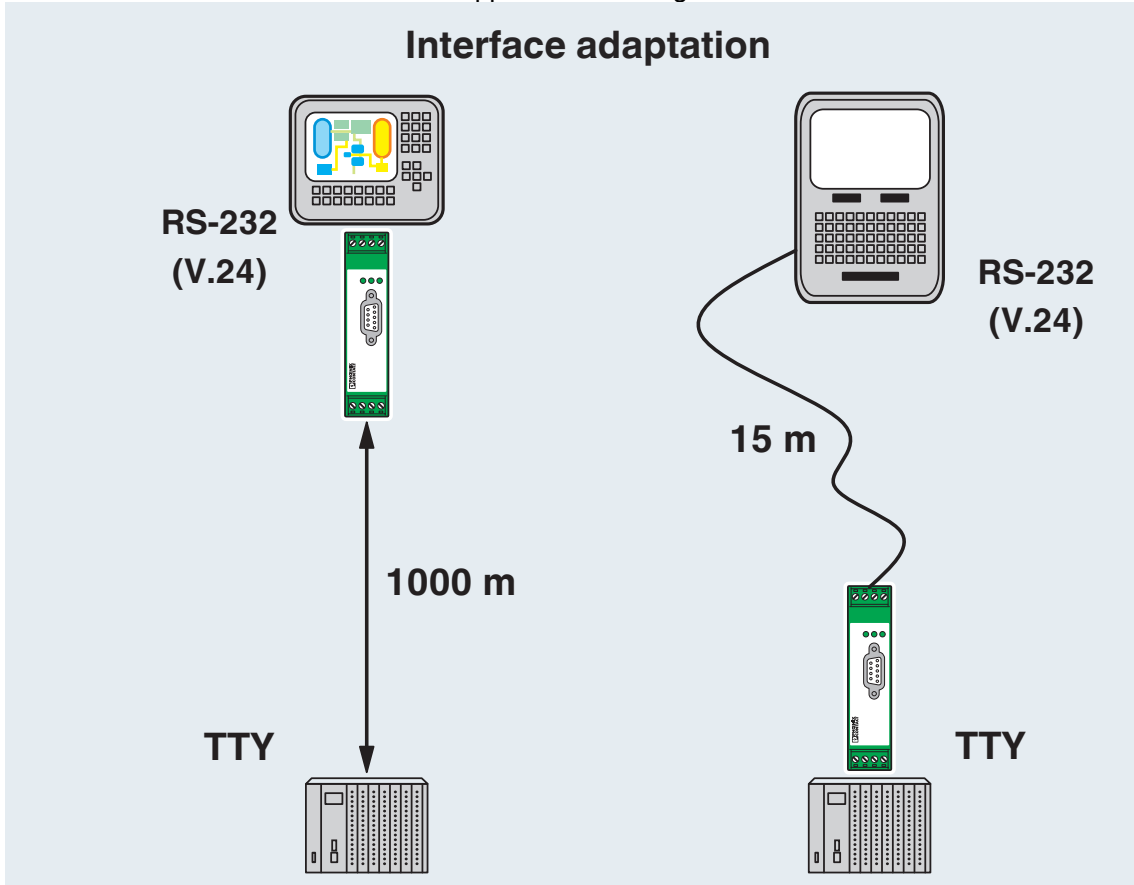
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## Application drawing



Electrical isolation

Application drawing



Interface adaptation

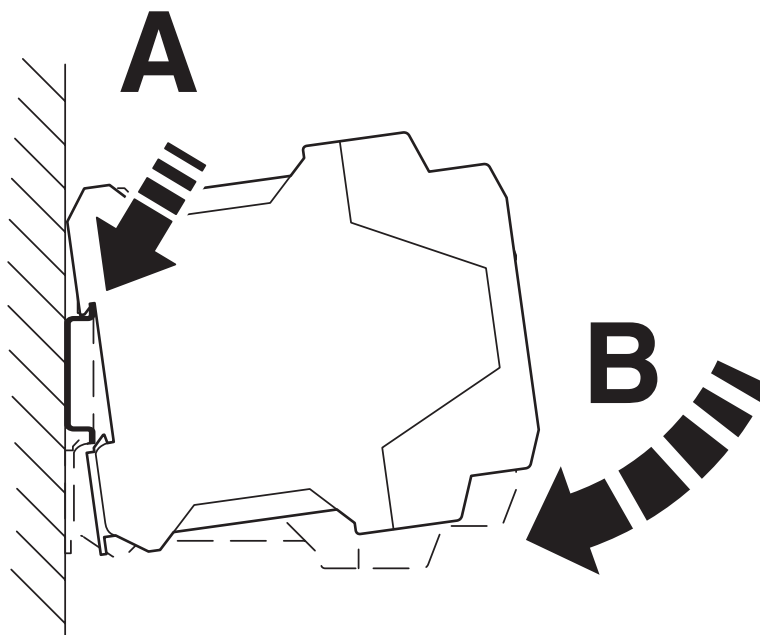
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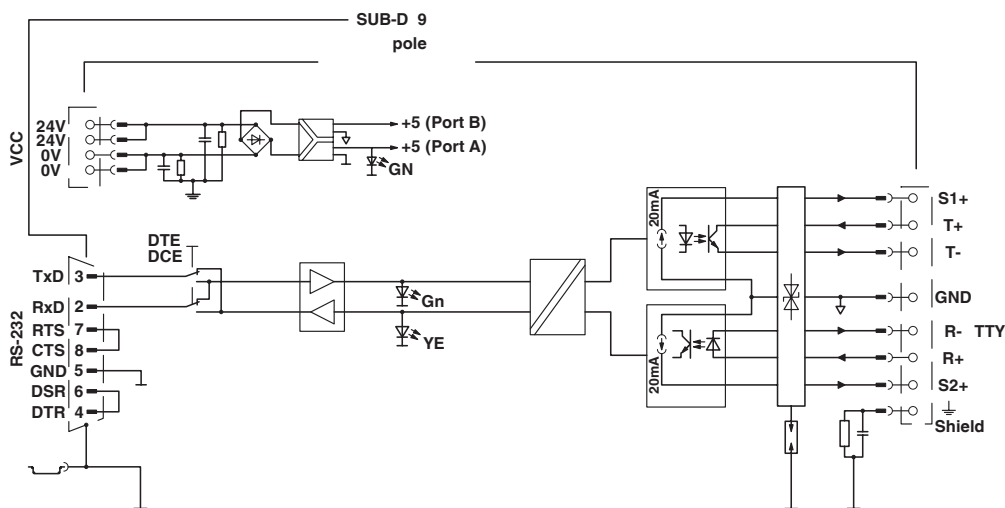
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Schematic diagram



## Mounting

Circuit diagram



## Basic circuit diagram

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## Approvals

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**cUL Recognized**  
Approval ID: E238705



**UL Recognized**  
Approval ID: E238705



**DNV GL**  
Approval ID: TAA00001KR



**cUL Recognized**  
Approval ID: E199827

	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	24 V	0.075 A	-	-



**cUL Listed**  
Approval ID: E199827



**UL Listed**  
Approval ID: E199827

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## Classifications

### ECLASS

ECLASS-13.0	27242208
ECLASS-15.0	27242208

### UNSPSC

UNSPSC 21.0	32151700
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## 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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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)