

# USB/RS-232 INTERFACE CONVERTER PD12 TYPE



## 1. APPLICATION

At present, more and more PC computers operating in industrial computer-based systems are equipped only with a USB (Universal Serial Bus) serial interface. This interface serves to communicate with other computers and devices in the framework of the USB network.

The PD12 converter is a device enabling, in a very easy way, to create the connection between the USB and the RS-232 port, ensuring simultaneously between them the galvanic separation. The USB interface is destined to communicate with the computer, however the RS-232 interface is destined to communicate with devices in the object side. The maximal baud rate is 921.6 kb/s.

The converter does not interfere in the structure of transmitted data and is compatible with a lot of industrial communication protocols, i.e. MODBUS RTU, MODBUS ASCII, and the like.

A programmed controller of the network serial port for the master system computer is added to the set. It allows supervising programs to exchange data with industrial objects via the PD12 converter.

## 2. TECHNICAL DATA

### USB:

- compatible with USB 1.0, 1.1, 2.0
- connector USB type B

### RS-232:

- Signals TxD, RxD, RTS, CTS, GND
- Connector DB9 male

### Transmission data:

- baud rate [kbit/s] 1.2... 921.6
- control of transmission flow RTS/CTS, XON/XOFF, WITHOUT CONTROL
- parity none, Even, Odd, Space, Mark
- data bits 5, 6, 7, 8
- stop bits 1, 1.5, 2
- controllers Windows 98/98SE/Me, 2000/XP

**Converter power consumption** 30 mA, at 5 V d.c.

### Rated operation conditions:

- supply voltage 5 V d.c., from the USB port
- ambient temperature 0...55°C
- relative humidity < 85%
- external magnetic field < 400 A/m
- working position any

### Storage and transport conditions:

- ambient temperature 0...70°C
- relative humidity < 85%
- admissible sinusoidal vibrations:
  - frequency 10...150 Hz
  - displacement amplitude ≤ 0.35 mm

### Ensured protection grades:

- from the housing side IP 40
- from the terminal side IP 20

**Dimensions** 65 × 43 × 24 mm

**Weight** 0.1 kg

**Housing** portable

### Electromagnetic compatibility:

- immunity EN 61000-6-2
- emission EN 61000-6-4

### Safety requirements acc. EN 61010-1:

- installation category III
- pollution grade 2

### Maximal working voltage in relation to earth:

- for supplying circuits 50 V
- for other circuits 50 V

## 3. CONVERTER INSTALLATION

The PD12 converter is a portable device supplied from the USB bus.

The connection way is presented on the fig. 1

Markings of particular outlets are presented on the fig. 2

## 4. ORDERING CODES

CONVERTER PD12	X	X	X
<b>Galvanic isolation:</b>			
with isolation .....	1		
without isolation .....	2		
<b>Version:</b>			
catalog .....	0		
custom-made* .....	X		
<b>Acceptance tests:</b>			
without extra requirements .....	8		
with an extra quality inspection certificate .....	7		
other requirements* .....	X		

\* Numbering of the version code is established by the manufacturer

### Example of ordering:

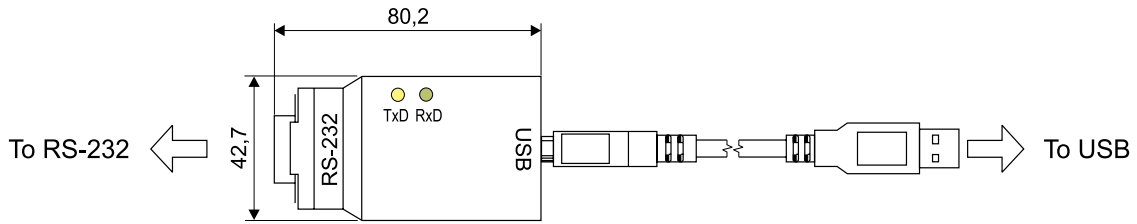
**PD12 1 0 7** code means:

a PD12 converter:

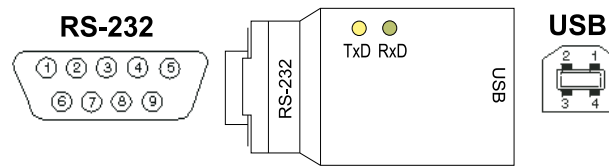
**1** - with galvanic isolation

**0** - catalog version

**7** - with an extra quality inspection certificate



**Fig.1 Overall and assembly drawing of the PD12 converter**



**Fig.2 Outlets of the PD12 converter**

External signals should be connected acc. table 1 and table 2 in which the assignment of particular PD12 converter outlets are described.

On the frontal plate there are two diodes:

**Green** (RxD) - signals the reception of data through RS-232

**Yellow** (TxD) - signals the transmission of data through RS-232

**Outlets of RS-232 interface**

Table 1

DB9 RS-232 pin No	RS-232 signals
2	RxD
3	TxD
5	GND
7	RTS
8	CTS

**Outlets of USB interface**

Table 2

USB pin of type B No	USB signals
1	+5 V d.c.
2	-Data
3	+Data
4	GND