

## USB interface

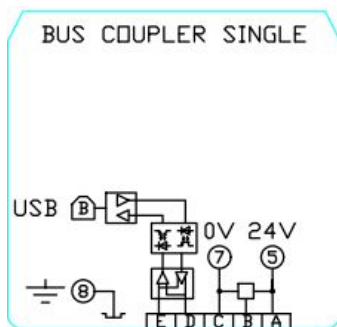
For communication with TFX AM, BM and IM modules

The communication interface connects the TFX measurement system to a PC for modules configuration and data acquisition purposes.

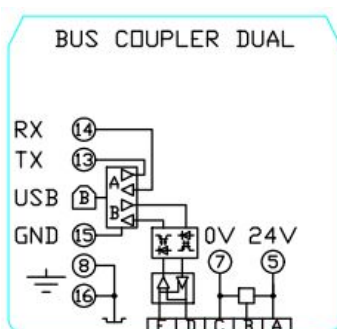
- Type USB 1.1 - FTDI chip, compatible with USB2, USB3 interfaces.
- Power supply LED
- Side bus transmission
- Local RS-232 port option

### Wiring diagram

#### Single Interface



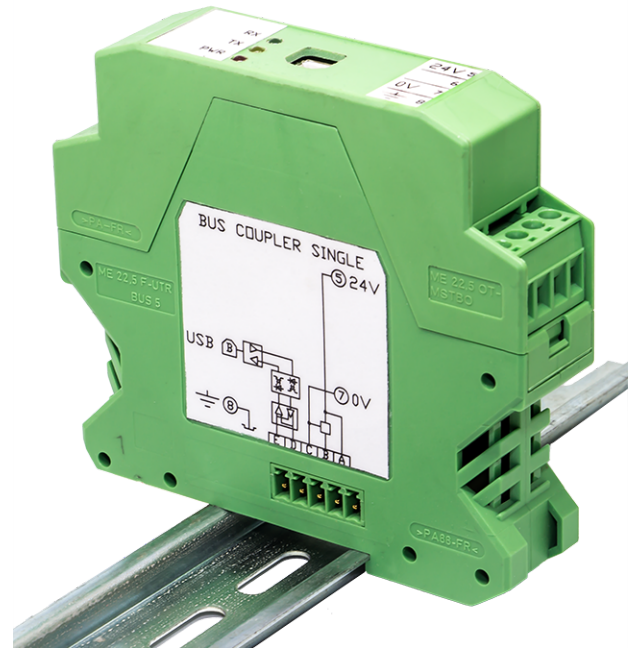
#### Dual interface with local port



The serial port option connects to 3 wires including shielding (terminals 13, 14 and 16). The first serial port declared on the PC is option (A), the second port is bus (B).

### Commissioning

- Connect the power supply between 24V and 0V
- Connect the interface to the PC via the supplied USB AB cable
- Connect the analog modules



Analog modules are powered by the bus. Grounding is done through the DIN rail.

### Power

#### Input Electrical Specifications

Name	Description	Min	Typ.	Max	Unit
V <sub>CC</sub>	Power supply	21.6	24	26.4	V <sub>DC</sub>
I <sub>IN</sub>	Power consumption (without modules)		12		mA
-	Short-circuit protected				

Pin	Name	Description
5	24V	Positive power supply
7	0V	Reference negative power supply
8	Earth	Continuity or shielding

For wires 0.2 - 2.5 mm<sup>2</sup> (AWG 24 - 12)

### Isolation

The communication (USB and RS-232) is isolated from the PLC part (bus). USB / RS-232 isolation with respect to the bus: 500 V<sub>DC</sub>

## Communication

### TFX Bus

RS-485, half duplex, with proprietary protocol. The PC is line master, ie as soon as the PC is active, it takes the line, otherwise it waits and reads the data circulating on the bus.

Name	Description	Typ.	Unit
B <sub>RATE</sub>	Transfer rate	38'400	bps

Interlocking connection of modules and interface. The interface can be relocated to stay close to the PC. In this case, interconnect the modules and the interface with a two-pair cable via connectors. The bus connectors protruding from the last module can be protected by a cache.

### Local RS-232 port

For connecting an RS-232 device. Free transfer speed. Appears as a virtual port on PC

### Pinout

Pin	Name	Description	DSUB 9 pinning
14	RX	Incoming Communication	3
13	TX	Outgoing Communication	2
15	GND	0V	May
16	Ground	Continuity of shield	Shield

For son 0.2 - 2.5 mm<sup>2</sup> (AWG 24 - 12)

RS-232 cable to ordered separately.




### Bus

USB type B socket




### LEDs

The module is equipped with three indicator LEDs.

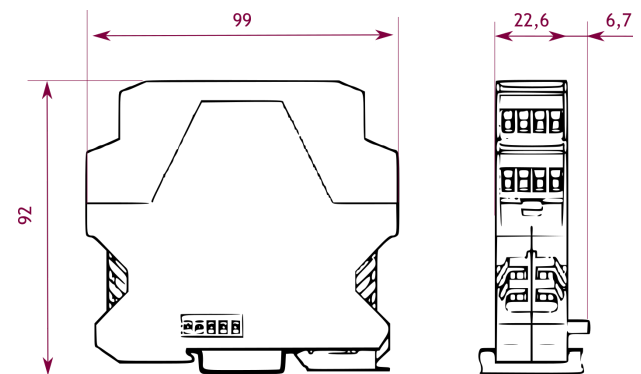
### Simple interface

Code	Color	Description
RX		Incoming communication (from the PC)
TX		Outgoing communication (to the PC)
PWR		Power supply

### Dual interface with local port

Code	Color	Description
AUX		Communication on RS-232
BUS		TFX Bus communication
PWR		Power supply

### Dimensions



### Content

- 1 module IM
- 1 or 2 4-pin connectors Phoenix Contact MSTBT 2.5 / 4 depending on model
- 1 USB cable AB of 1m80

### Accessories

- Replacement connectors
- Communication bus protection cap
- Industrial 24V power supply
- 24V laboratory power supply
- RS-232 cable with SUB-connector D9

### Workaround

- Ethernet interface - 215.EC with aDda-V software for configuration

### Product Number

Code	Description
204.BC.U	simple USB interface
204.BC.D	dual USB interface, with RS-232 local