

USB – RS-485/422 Communication adapter – virtual serial port

ELO E216



Characteristics

- Galvanic isolation between the interfaces
- Easy installation of drivers
- Internal terminators
- Cygnal chip
- Al case

Introduction

The USB interface is preferred to the COM port with RS232 interface in personal computer technology. To connect the peripheral devices of the RS485/422 interface, the USB/RS485/422 adapters along with the driver are applied to create so-called virtual COM on the PC. ELO E216 is a device which converts virtual COM to the asynchronous line of the symmetric signal via the USB interface. The signals transmission to the duplex RS-422 interface allows the range and the transmission interference immunity to increase. The signals transmission to the half-duplex RS-485 interface allows the range, communication partners' number and the transmission interference immunity to increase.

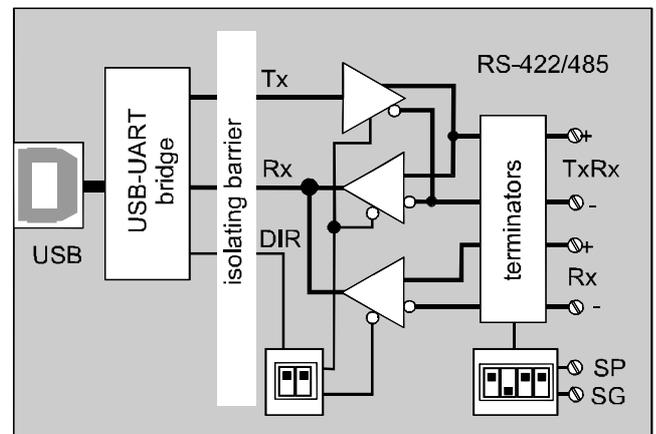
Use of the converter

The adapter increases transmission immunity against electrical disturbance and isolates both interfaces USB / RS422 but it is intended to be used in the environments where lightning over-voltage is not necessary to be considered. To lead the RS422 link cable outside buildings, it is necessary to provide additional over-voltage protection on the input points. The adapter allows the transmission rate up to 1 Mbps. This maximum attainable rate decreases due to the line length and/or its impedance growth. Recommended maximum line length is 1200 m at the rate of 9600 bps. The E216 adapter may be applied on the PC computers under the MS Windows 98/Me/2000/XP, Vista or Linux operating systems.

Operation principles

The adapter converts the RS-422 or RS-485 interface to the USB interface, transmits TxD and RxD signals. The RS485/422 interface is taken out onto the bus. RS485 interface is used to the communication of up to 32 partners in one twisted pair. The transmission is half-duplex that means switching on the RS-485 transmitter only during its own transmitting to allow other communication partners to transmit. RS422 interface is mainly designed for two devices communication in the duplex mode. As transmission media there are two twisted pairs, each for one transmission direction. The adapter also supports the MULTIDROP mode where the transmitter may be switched off as with RS485. In this mode, one partner as the MASTER can communicate with up to 31 other partners operating as the SLAVE.

Block diagram



Specification Parameters

USB interface	USB 2.0 full-speed (12 Mbps)
USB connector	B type
RS-422, RS-485 connector	clamps
Communication mode	full duplex, half-duplex
Isolation between USB/RS4xx	isolation barrier of 1 kV for 1 sec
Transmission mode	asynchronous, duplex/half-duplex
Maximum data rate	1 Mbps

Other

Supply	from USB interface
Power take-off	to 100mA (Low power)
Dimension: Width	55 mm
Length	65 mm
Height	20 mm
Stocking temperature	- 10° to +55 °C
Working temperature	+ 0° to +50 °C
Humidity	0 – 85% (non-condensing)