

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

**ELO E211**



**Characteristics**

- Galvanic isolation between the interfaces**
- Easy installation**
- FTDI chip**

**Introduction**

The USB interface is preferred to the COM port with RS-232 interface in personal computer technology. To connect the peripheral devices of the RS-232 interface, the USB/RS-232 adapters along with the driver are applied to create so-called virtual COM on the PC.

ELO E211 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 converter increases transmission immunity against electrical disturbance and isolates both interfaces USB / RS-422 but it is intended to be used in the environments where lightning over-voltage is not necessary to be considered. To lead the RS-422 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.

**Operation principles**

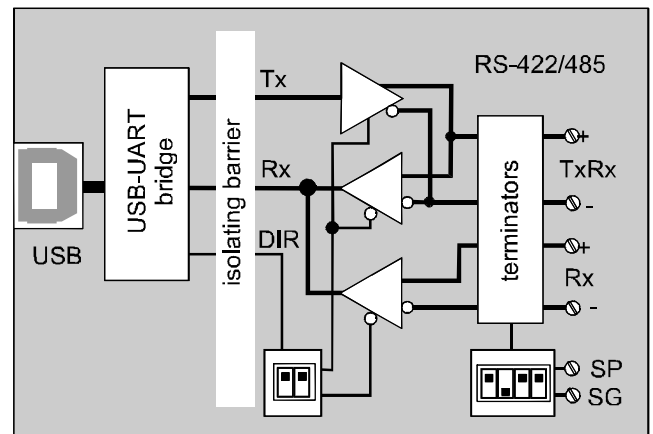
The adapter converts the RS-422 or RS-485 interface to

the USB interface, transmits TxD and RxD signals. The RS-485/422 interface is taken out onto the bus.

RS-485 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.

RS-422 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 RS-485. 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)