

# RS-232 Miniature Converter to Current Loop ELO E00X



## Characteristics

- Galvanic isolation of interfaces
- TxD, RxD transferring
- Maximum data rate 115.2 kbps
- Asymmetric current loop 20 mA
- External supply is not necessary in passive mode

## Introduction

RS-232 is the interface with asymmetric signals. Maximum load capacity can be 2500pF and equates to c.50m typical twisted-pair cable. The asymmetric signals are not ideal to eliminate the influence of zero potential differences of terminal equipments (DTE). The DTE and neutral potentials have to be the same hence the RS-232 interface is intended to the point-to-point connection for 15m distance. The load impedance is to be 3-7 kilo-ohm that allows disturbing pulses to induce into the cable even from the soft supplies.

## Use of the converter

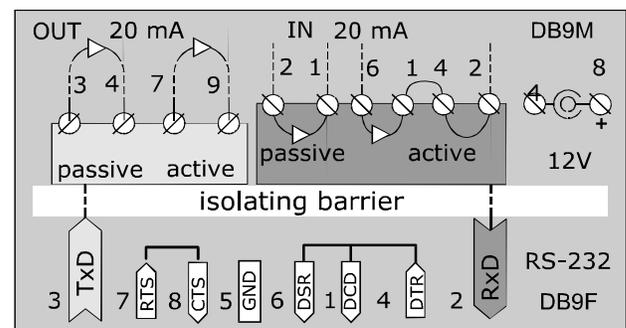
Current loop interface is resistant to electromagnetic interference **but not to atmospheric electricity influences!** The current loop enables to span the metallic link of the resistance up to 500 Ohm using the power supply of 12 V.

## Operation principles

E00X converts TxD signal into the transmitting cable pair

of the current loop and the signal from the receiving pair into the RxD thus the full duplex connection is carried out. In the idle mode the 20mA current flows through each current loop. The maximum transmission rate is 115 200 bps. Control signals are not transmitted. Both transmitting and receiving current loop can be set to the active or passive mode. When in the active mode, the converter supplies the loop with the current, when in the passive mode the current is supplied via the opposite part. If both transmitter and receiver are in passive mode the external power supply is not necessary.

## Block diagram



## Specifications

### Parameters

RS-232 interface	DCE
RS-232 connector	DB9F
Current loop interface	transmitter and receiver active / passive
Current loop connector	DB9M
Loop current in idle mode	20mA
Isolation between interfaces	1 kV
Transmitted signals	TxD and RxD, full duplex
Control signals	are not transmitted, local jumpers RTS-CTS, DTR-DSR-DCD
RS-232 connector	DB9F, DCE
Transmission mode	duplex

Maximum range of the link with parameters: 200 Ohm, 50nF / 1km	1000m
Maximum data rate	115 200 bps
Minimum data rate	50 bps
Supply	typ. 12 V, max. 24 V / 50 mA

### Other

Dimension: Width x Length x Height	34 x 64 x 17 mm
Weight	25 g
Stocking temperature	- 10° to +55° C
Working temperature	+ 0° to +50° C
Humidity	0 – 85% (non-condensing)