

*Let's communicate*



## **RS-422 / Multimode Fiber Optic Converter**



# **ELO E174**

## **Operation manual**

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## **1.0 Introduction**

RS-422 (V.11) is a duplex interface for two devices' communication. The symmetric signals are transmitted via the twisted pair and they are immune to the interference. Maximum range is 1200m which can be increased using repeaters.

### **1.1 Use of the converter**

The fibre optic cable is immune to electromagnetic interference and atmospheric electricity influences, it provides maximum DTE protection and high communication reliability. The distance between devices is not more than 2km so using multimode fibres is economically convenient in automation.

## **2.0 Operation principles**

The converter transfers Tx signal of the RS-422 interface to the transmitting optic fiber and copies it from the receiving optic fiber to Rx of the RS-422 interface. Maximum data rate limit is 115.2 kbps. LED diodes indicate the transmitted and received signal.

## **3.0 Installation**

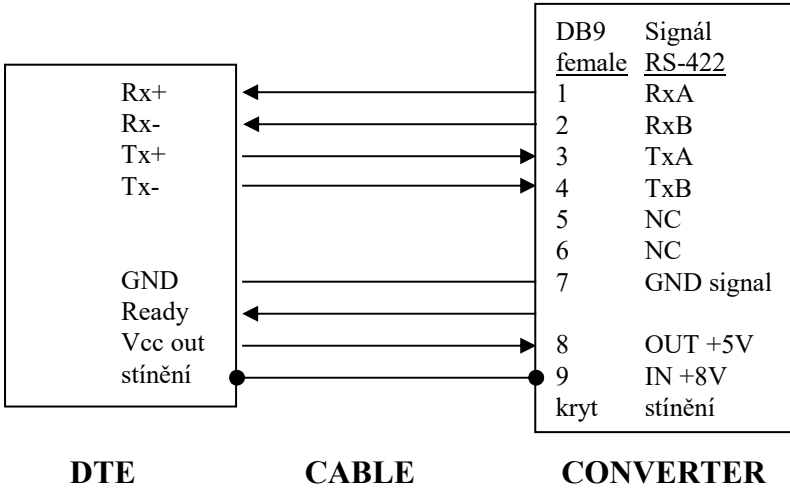
This part describes the ELO E174 converter installation principles.

### **3.1 Optic link connection**

ST 400 connectors are used to connect the fiber optic cable. To connect two converters, the TRANSMIT connector of the local converter has to be connected to the RECEIVE connector of the remote converter and the RECEIVE of the local converter has to be connected to the TRANSMIT connector of the remote one. The cable has to be multimode 50/125 or 62.5/125 $\mu$ m and it should not be longer than 2 km are recommended.

### **3.2 RS-422 interface connection**

RS-422 interface connector is DB9F (female), signals assignment to the contacts (see the Fig.). If the OUT +5V and IN +8V signals are not used the DTE can be connected to the converter via the cable up to 1200m long or the tolerable supply voltage decrease limits the cable length.



### 3.3 Power supply connection

To supply the converter, the external power supply of 6V via SCJ 2.5mm connector (yellow LED labelled 6V indicates it) or via 9 contact (IN+8V) is used, e.g. from the DTE. The green LED labelled 8V indicates this supply. The DTE receives the external supply information via OUT+5V signal. This arrangement enables to back up the converter supply. The external supply 6V is isolated from the RS-422 link. Maximum take off is 170mA.

#### **Caution!**

Do not connect the DC connector if the supply is on.

## 4.0 Specification

### 4.1 Parameters

Interface	RS-422
RS-422 connector	DB9F
Transmission mode	full duplex

### 4.2 Optical parameters

Wavelength	820nm, multimode fibre
Optic fibre	2x 50/125 or 62.5/125
Connectors	ST
Fibre optic cable	two single mode fibres 9/125 $\mu\text{m}$
Maximum data rate	115 200 bps

### 4.3 Other

Supply	ext. DC supply of 6V/200mA galv. isolation DC supply of 8V/170 mA (from DTE)
Dimension: Length	80mm
Width	55mm
Height	20mm
Weight	80g
Stocking temperature	-10° to +55°C
Working temperature	+0° to +50°C
Humidity	0 – 85% (non-condensing)

## 5.0 Testing

When the power supply is connected the appropriate LED has to be alight. To work properly at least one of 8V or 6V LED must be alight.

The LED diodes respective to the optic transmitter/receiver (TRANSMIT/RECEIVE) must blink during transmission.



## 6.0 Troubleshooting

Symptom	Action
The modem does not work after installation.	Check if the optic cables and the RS-422 cable are connected properly. Check the power supply.
Connection in normal operation quit working	Check the power supply. Check if the cables are connected properly. Check if the power supply is on. Check if the DTE works properly.

## 7.0 Ordering Information

Supply code is ELO E174.

Option:

Supply code for power supply 6V/200mA is ELO E0Q0.

## Note

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