

Let's communicate



RS-232 to Multimode Fiber Optic Converter



ELO E146, ELO E147

Operation Manual

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1.0 Introduction

RS-232 is the interface with asymmetric signals. The maximum load capacitance can be 2500 pF. It corresponds to the 50m of the typical twisted pair cable.

The load impedance can be 3-7 kilohm and it enables to induce the disturbing impulses even from the soft supplies into the cable.

The asymmetric signals can not eliminate the influence of the signal grand's potential drifts.

Therefore the RS-232 interface is destined for the point-to-point connection at 15 m distance. The end devices (DTE) must have the same signal grand's potential.

1.1 Using Fiber Optic Converter

The fiber optic cable is resistant against the electrical disturbances and against the influences of the atmospheric electricity. It gives the maximum protection of the DTE and the high reliability of communication.

2.0 Principles of Operation

ELO E146, E147 converts TxD signal to transmitting optic cable and the signal from the receiving cable converts to RxD signal. This way the full duplex connection can be realized.

In the idle mode the E146 model's transmitter lights and E147, does not light.

The maximum transmission speed is 115 200 bps.

The control and status signals are not transmitted. There are the local loops RTS-CTS and DTR-DSR-DCD.

3.0 Installation

This section describes the proper procedures of installation of the ELO E146, E147.

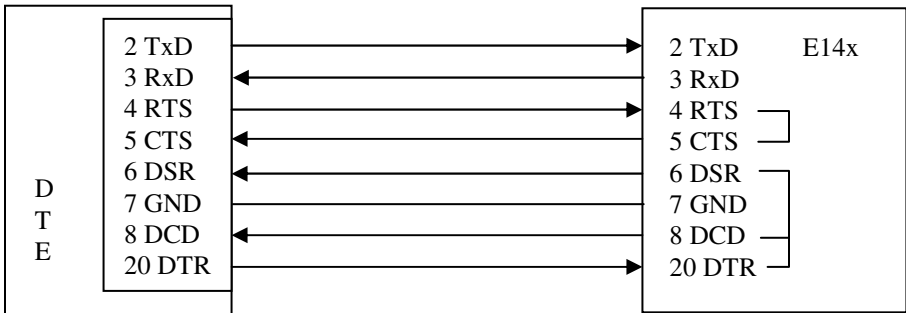
3.1 Fiber Link Connection

The fiber optic cables are connected through the ST optical connectors. To connect two E146 or E147, the TxD of the near-end must be connected to RxD of the far-end E146, E147, and the RxD of the near-end must be connected to TxD of the far-end.

3.2 RS-232 Interface Connection

The RS-232 interface connector is DB25 female and the pins are connected as DCE. So the converter can be connected to DTE directly or via the short cable with wiring 1:1.

There are only three signals of RS-232 necessary for the right operation: TxD, RxD and GND. The other RS-232 output signals are connected with the RS-232 input signals as shown below.

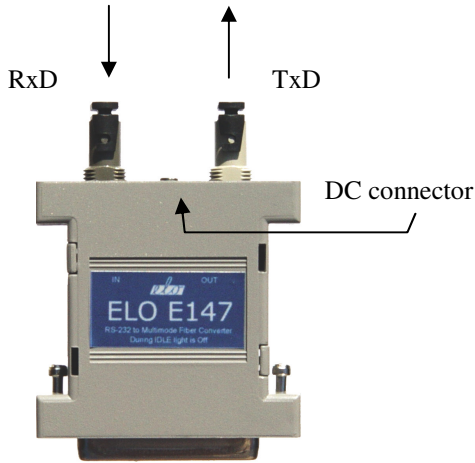


3.3 Power Connection

The DC 6V/150mA external power supply is necessary for both E146 and E147 models. DC connector is placed between the optical connectors.

Caution!

Do not connect the DC connector to converter when the DC supply is turned on!



RS-232 connector

4.0 Specification

4.1 Electrical Parameters

Interface	RS-232
Transmitted signals	TxD a RxD,
Control signals	local loops RTS-CTS, DTR-DSR-DCD,
RS-232 Connector	DB25, DCE
Communication mode	full duplex
Maximum data rate	115 200 bps
Minimum data rate	1200 bps

4.2 Optical parameters

Wave length	820 nm
Fiber optic cable	50/125 or 62.5/125 multimode
Connectors	ST
Idle state of E146 (E147)	light (dark)
Maximum range	up to 3km

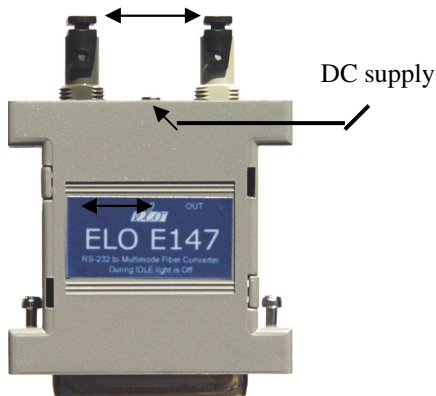
4.3 Other

Power Supply	External DC supply 6V/150mA,
Dimension: Width	55 mm
Length	75 mm
Height	16 mm
Weight	40 g
Stocking temperature	- 10° to +55° C
Working temperature	+ 0° to +50° C
Humidity	0 – 85% (non-condensing)

5.0 Testing

Autotest is the way to assure about the serviceability of the converter. Both optical connectors must be interconnected. Transmitted data must equal to data received.

Any simple communication program can be used (terminal emulator, e.g. Hyperterminal).



6.0 Troubleshooting

Symptom	Action
After the installation converter does not work	Check if the fiber cables are connected properly. Check if the RS-232 is powered-on. Check if the power supply is OK.
The normally working connection quit working	Check if the power supply is OK. Check if the fiber cables are connected properly. Realize the autotest to detect if the converter is OK.

7.0 Ordering Information

Ordering product mode is ELO E146, ELO E147.

ELOE146ZKE001

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