

## Modems RS232 / Fibre Optic Singlemode (SM) – ELO E242 and multimode (MM) ELO E240, ELO E241



### Characteristics

- Independent on communication protocol
- DTE-DCE switch
- Optic line watch dog
- Supply voltage DC 9-24 V
- Range MM-2 km, SM-15 km

### Introduction

Modems are the converters of RS232 data signals to optic fiber and back. Optic fibers can be SINGLE MODE (SC connectors) or MULTI MODE (SC or ST connectors). The modems are suitable for two-point connections.

### Use of the modems

Conversion of metallic media to more expensive fiber optic is mainly suitable:

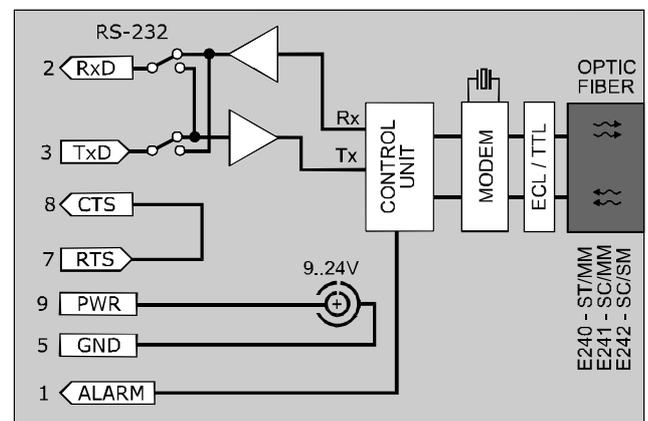
- 1] in the environment of high interference level,
- 2] if the higher isolation is required, (switching stations, transformers),
- 3] if the metallic line can not be used because of EMI,
- 4] if the higher transport security and safety is necessary,
- 5] if isolation via the optocouplers is not suitable for different reasons

### Operation principles

A pair of modems communicate over the optic fibers. If the communication is correct, the LINK indicator is alight.

The modems are watching for the optic line and in the case of disconnection the ALARM signal has been activated. RS232 communication data rate can be any ranging from 0 to 230 kbps without any modem adjusting. The data format can be random too. The RS232 connector can be set to DTE or DCE mode using the switches on the back side of modem.

### Block diagram



Modem ELO E242 is designed for singlemode fibers 9/125  $\mu\text{m}$ . Its range is typically 15 km, optic connectors are SC type. For multimode cables 50/125  $\mu\text{m}$  or 62.5/125  $\mu\text{m}$  there are models ELO E241 with SC connectors and ELO E240 with ST ones.

### Specification

#### Parameters

Transmitted signals	TxD, RxD
Type and connection of RS232 conn.	DB9F, DTE/DCE
Transmit mode	duplex
Fiber optic cable E240/E241	two multimode fiber cables 50/125 $\mu\text{m}$ (62/125 $\mu\text{m}$ )
Optic connectors E240/E241	ST/SC type
Range	c. 2 km
Fiber optic cable E242	two singlemode fiber cables 9/125 $\mu\text{m}$
Optic connectors E242	SC type
Range	c. 15 km

Maximum data rate	230 400 bps
Minimum data rate	0 bps
Supply	external DC supply 9-24V/200 mA
Limiting voltage	7 – 30 V DC
Dimension:	Length
	120 mm
	Width 80 mm
	Height 25 mm
	Weight 160 g

### Other

Stocking temperature	-10° to +55°C
Working temperature	+0° to +50°C
Humidity	0 – 85% (non-condensing)