

## Modems RS485/422 to optic fibre singlemode (SM) – ELO E245 and multimode (MM) ELO E243, ELO E244



### Characteristics

- Independent on communication protocol**
- Data rate up to 1.5 Mbps**
- Optic line watch dog**
- Supply voltage DC 9-24 V**
- Range MM-2 km, SM-15 km**

### Introduction

Modems are the converters of duplex RS422 interface and half-duplex RS485 bus to optic fiber and back. Optic fibers can be SINGLE MODE (SC connectors) or MULTI MODE (SC or ST connectors).

### 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

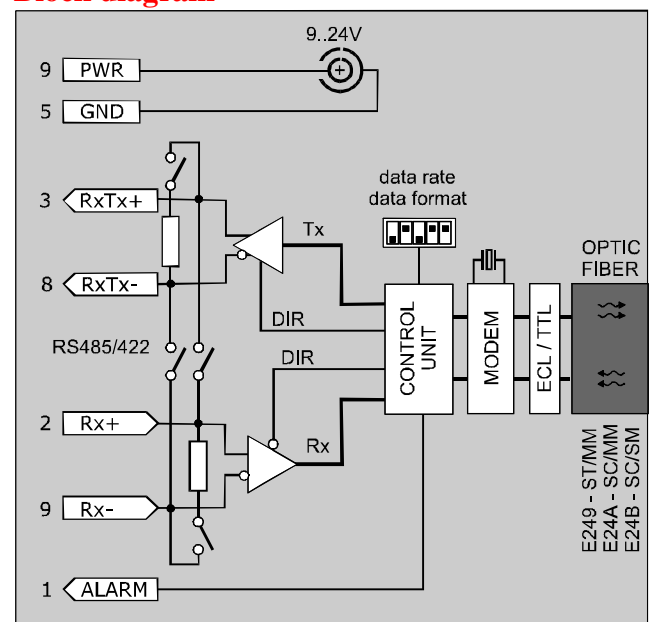
### Operation principles

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.

The maximum data rate is 5 Mbps in duplex RS422 mode without any modem adjusting. If the half-duplex mode is

selected, the communication data rate and data format must be set properly. The data rate can be from 4.8 to 1500 kbps, data format 8 or 9 bits. Using the switches on the back side of modem the internal 120 Ω resistors can be connected to RS485/422 outputs and inputs.

### Block diagram



Modem ELO E245 is designed for singlemode fibers 9/125 μm. Its range is typically 15 km, optic connectors are SC type. For multimode cables 50/125 μm or 62.5/125 μm there are models ELO E244 with SC connectors and ELO E243 with ST ones.

### Specification

#### Parameters

Transmitted signals	Tx, Rx or TxRx
Type of RS485/422 connector	DB9F
Transmit mode	duplex / half-duplex
Fiber optic cable E243/E244	two multimode fiber cables 50/125 μm (62/125μm)
Optic connectors E243/E244	ST/SC type
Range	c. 2 km
Fiber optic cable E245	two singlemode fiber cables 9/125 μm
Optic connectors E245	SC type
Range	c. 15 km

Maximum data rate RS422	5 Mbps
Minimum data rate	0 bps
Maximum data rate RS485	1.5 Mbps
Minimum data rate	4.8 kbps
Supply	external DC supply 9-24V/200 mA
Limiting voltage	7 – 30 V DC
Dimension:	
Length x Width x Height	120 x 80 x 25 mm
Weight	160 g

### Other

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