Let's communicate

RS-232 to Multimode Optic Fiber Converter ELO E14C

Characteristics

DIN rail mounting
TxD, RxD transferring
Max. data rate 115.2 kbps
Supply voltage 9-24 V DC
Max. range 2 km

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

Fiber Optic Modem Application

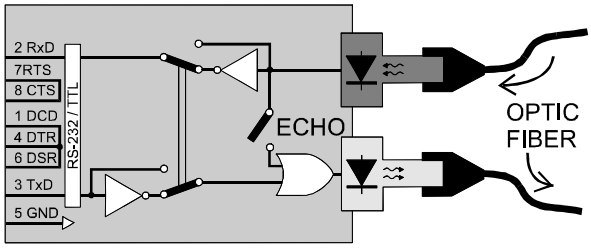
The fiber optic cable is resistant against the electrical disturbances and against the influences of the atmospheric electricity. It gives the maximum protection of the DTE and the high reliability of communication. The security of communication over optic cable is last but not least advantage.

Principles of Operation

ELO E14C converts TxD signal to transmitting optic cable and the signal from the receiving cable converts to RxD. This way the full duplex connection can be realized.

There are not any other signals transmitted over optic fiber.
ELO E14C has two switches:
Switch IDLE sets a polarity of optic signal. In "LIGHT" position the light in transmitting fiber corresponds to idle state of TxD and the light coming from receiving fiber is been interpreted as idle state of RxD. In "DARK" position of **IDLE** the dark is the idle state in the fibers.
In "LIGHT" mode DTE is getting the information about optic cable's integrity all the time. So this mode is suitable for using in security systems.
Switch ECHO in "ECHO=OFF" position is suitable for two-point full duplex lines. In "ECHO=ON" position data from receiving optic fiber are copied not only to RxD, but to transmitting fiber too. This way data can be delivered to all users of ring optic net. This configuration is equivalent to bus structure on metallic lines. There must be a communication protocol which must synchronize the stream of data packets among wars of the net.

Block diagram



Specification

Electrical Parameters

Interface	RS-232
Transmitted signals	TxD and RxD
Control signals	local loops RTS-CTS DTR-DSR-DCD
RS-232 connector	DB9F, DCE
Communication mode	ECHO OFF - full duplex ECHO ON – half duplex
Maximum data rate	115 200 bps

Optical Parameters

Wave length	820 nm
Fiber optic cable	50/125 or 62.5/125, multimode fiber
Connectors	ST
Maximum range	2 km

Other

Supply	12-24V (min 9, max 30 V)
Consumption Dark / Light	max. 30 / 50 mA,
Dimension: Width	55 mm
Length	80 mm
Height	24 mm
Weight	90 g
Stocking temperature	- 10^{O} to +55 ^{O}C
Working temperature	+ 0^{O} to +50 ^{O}C
Humidity	0 – 85% (non-condensing)

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