Let's communicate

Isolating Repeater of RS-232 interfaces transmitting data, control, state and clock signals

ELO E0N9

Characteristics

Isolating barrier 1kV
All RS-232 signals transferred incl. TxC and RxC
Maximum data rate 115.2 kbps
External power supply 6V DC

Introduction

RS-232 is the interface with asymmetric signals designed for two terminal equipments connection (DTE). The maximum load capacity may be 2500pF (about 50m of twisted pair). The load impedance is to be 3-7 kilo-ohm that enables disturbing pulses to induce into the cable even from relatively soft supplies. The terminal equipments have to have the same neutral potentials. For this reason, RS-232 interface range is limited to 15m distance.

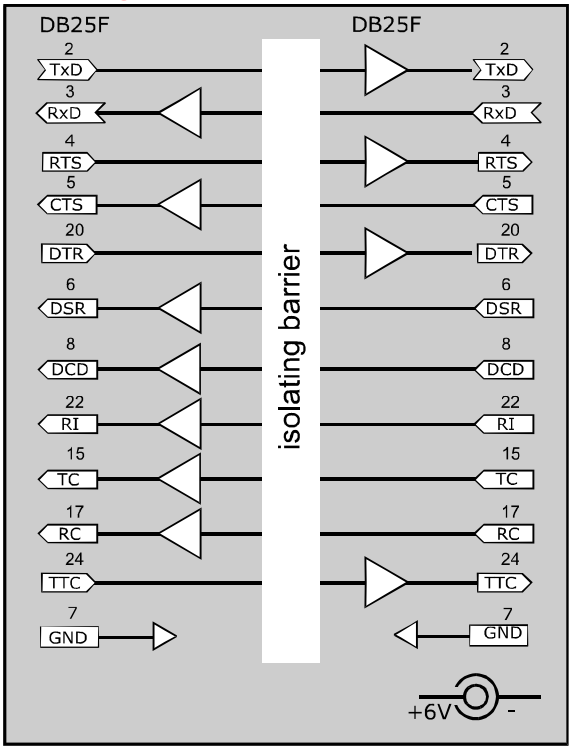
Use of the converter

ELO E0N9 is the ELO+ company product which is designed for two devices isolation of RS-232 interface. The signal isolation protects the terminal equipment against the over-voltage being induced into the link.
ELO E0N9 is suitable for the unwanted ground loop interruption or for the terminal equipment protection against the static charge effect while connecting to the other device.
ELO E0N9 isolates two devices of the RS-232 interface and inserts 1 kV isolation barrier between them.
ELO E0N9 may also be used as a repeater and increase the maximum cable length between the terminal equipments for up to 2 x 15m. As for permissible over-voltage, the E0N9 can be used in the environments where lightning over-voltage is not necessary to be considered.

Operation principles

The synchronous RS-232 interface is designed for two devices communication. The data signals are accompanied by the clock signals. Except of them, some communication protocols also use control and state signals to control data flow and if need be to set up or dissolve connection.
Two data, three clock, two control and three state signals are transmitted via ELO E0N9 whereas inserting 1 kV isolation barrier into all of them.

Block diagram



Specifications

Electrical parameters

Interface	RS-232/RS-232
Transmitted signals	TxD, RxD, RTS, CTS, DTR DSR, DCD, TC, RC, TTC
RS-232 (a) connector	DB25F
RS-232 (b) connector	DB25F
Transmission mode	half-duplex
Power supply	DC supply 6V/70mA
Isolation voltage between interfaces	1 kV for 1 sec
Permissible over-voltage on the line	the line must not be exposed to the atmospheric discharge influences
Range	2 x 15m
Maximum data rate	115 200 bps
Dimension: Width x Length x Height	57 x 83 x 24 mm
Weight	80 g

Other

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

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