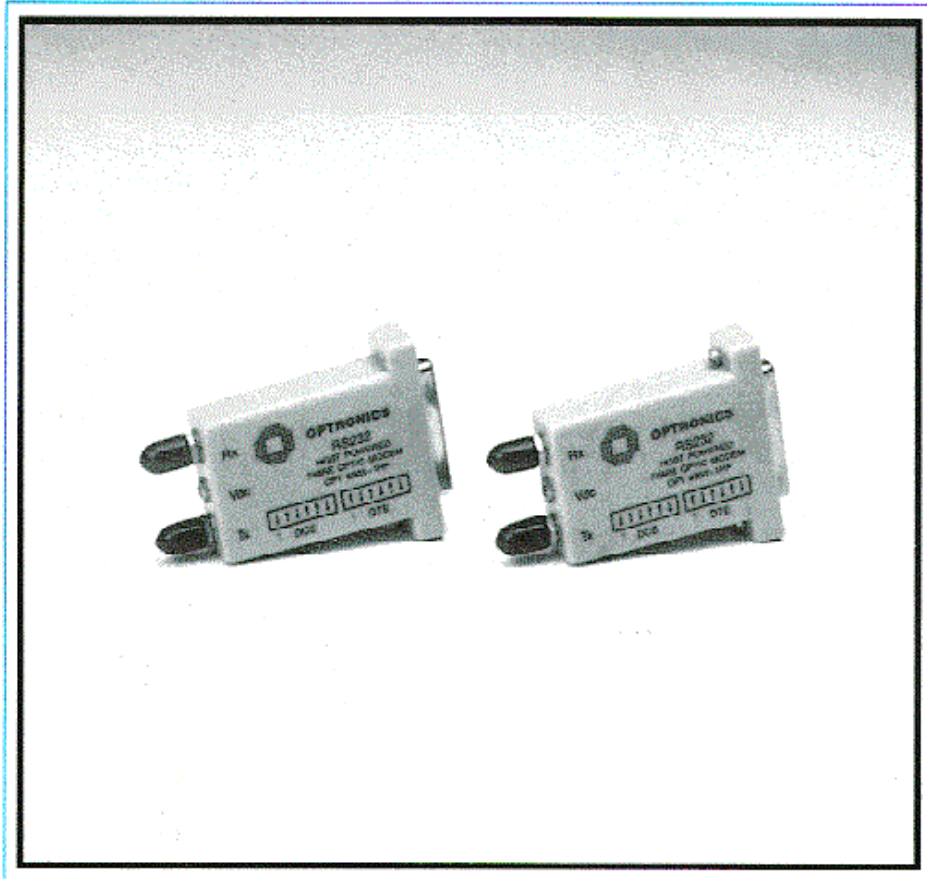




OPTRONICS

DATA SHEET

INSTRUCTIONS FOR THE USE OF THE OPTRONICS HOST POWERED RS232 FIBRE OPTICS TRANSCEIVER



Introduction

The Optronics RS232 – fibre optics transceiver (OPT 6303-HPI) transmits and receives RS232 data along a duplex optical fibre. The devices facilitate communication between systems in noisy and hostile environments, extending communication from a few tens of metres to several kilometres. Further, because optical fibre does not conduct electricity, an optical link breaks the ground loop inherent in RS232 systems.

Range of RS232 Host Powered

Most RS232 interfaces will provide at least 12 to 20 mA for driving the LED. However, in some cases the available current may be about 6 to 8 mA.

Detector sensitivity –30 dBm

At 6 mA current flowing through the diode:

Fibre size	50/125	100/140	200
Power dBm	-25	-19	-13
Att'n dB/km	3	4	8-10
Dist. km	2	3	2
Typical Optical Power Budget dB	5	11	17

Functioning and Handshaking

The transceiver communicates RS232 data lines only over the fibre. For some systems it is necessary to generate artificial handshaking. This is done internally by connecting RTS (pin 4) to CTS (pin 5) and DTR (pin 20) to DSR (pin 6). By turning switch 5 ON, DCD (pin 8), may be connected to DTR (pin 20) and DSR (pin 6). Furthermore, switch 6 when in the ON position connects signal ground to system ground.

Switch settings for DTE/DCE and Local and remote loopback

A row of 6 switches is mounted on the printed circuit board (PCB). To access them it is necessary, in the first instance, to unscrew three nuts: one on the optical receiver, one on the optical transmitter and one on the external power socket. Then the whole PCB must be pulled out from the enclosure. This is best done by holding the enclosure and by pressing the optical devices against a flat surface. Once the PCB is slightly shifted it may be then pulled out by the D25 connect Switch 1 which is nearest to the D-25 connector. With the D-25 connector pointing to the left and with the switches at the top of the PCB the ON position is up. The function of switches 5 and 6 are described above. Switches 1-4 are used to switch between DCE & DTE modes and to provide either a remote or local loopback. The switch positions are as follows:-

SW1	SW2	SW3	SW4	Function
ON	OFF	ON	OFF	DTE. Pin 2 outputs an RS232 signal and pin 3 receives the RS232 signal
OFF	ON	OFF	ON	DCE. Pin 3 outputs an RS232 signal and pin 2 receives signal
ON	OFF	OFF	ON	Local loopback. Pins 2 & 3 connected together
OFF	OFF	ON	ON	Remote loopback (Optical loopback). The signal is sent on the fibre to the remote unit. The signal is then returned to the originating unit. The RS232 cable should be disconnected from the remote unit.

NO OTHER COMBINATION SHOULD BE USED

External Power Source

A DC power supply (5 to 15 volts) may be connected via a jackplug. The centre pin is the positive terminal.

FACTORY SETTING: THE UNIT IS SET TO DTE

Without an external power supply at least one of the pins 4, 5, 6, 9, 19 or 20 on the D-25 connector must be held high during the time valid data is expected.

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