OPTICAL SYSTEMS DESIGN

OSD138 UNIVERSAL DATA TRANSCEIVER

APPLICATIONS

▲ Long distance RS422, RS232 or RS485 links

▲ Links requiring a module at one end and a card at the other

▲ Secure, noise immune government and industrial communications

FEATURES AND BENEFITS

▲ Multi-protocol operation

▲ 2 and 4-wire RS485, TTL, RS422, Manchester, Biphase or RS232 operation

▲ Extends link lengths to 5km on multimode and over 100km on singlemode fiber

▲ Full duplex, asynchronous, DC to 1Mbps

▲ Plugs directly into the OSD370 standard chassis

▲ ST optical connectors standard

▲ Safe transmission in hazardous environments

▲ More secure than copper cables

▲ Robust and reliable

TYPICAL APPLICATION DESIGN

RS232/RS422/RS485 x 1 ch ⟷ OSD138 — 1 or 2 fibers — OSD138 ⟷ RS232/RS422/RS485 x 1 ch
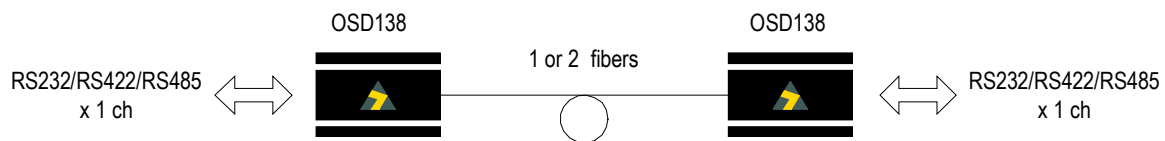
ORDERING INFORMATION

OSD138	Fiber Optic RS232/RS485/RS422/TTL Transceiver Card	Option C	Module version
OSD138L	1300nm singlemode version		
OSD138.W	Fiber Optic RS232/RS485/RS422/TTL Transceiver Card, 1 multimode fiber version		
OSD138L.W	Fiber Optic RS232/RS485/RS422/TTL 1 singlemode fiber version		

SPECIFICATIONS

PERFORMANCE

Data rate	DC to 1Mbps NRZ
Pulse Distortion and Jitter	<±0.3µS over full dynamic range

OPTICAL SIGNAL

Wavelength	850nm nominal (1300nm for the OSD138L)
Coupled Transmit Power	-15 to -12dBm peak into 62.5/125 multimode fiber -15 to -12dBm peak into 10/125 singlemode fiber (OSD138L only)
Receiver Sensitivity	<-37dBm peak for 1 x 10^{-9} BER
Optical Link Budget	>22dB at 850nm (>5km of multimode fiber for OSD138) >22dB at 1300nm (>50km of singlemode fiber for OSD138L)
Receiver Saturation	>-12dBm peak

ELECTRICAL SIGNAL

Input	User selectable between RS422/RS485 levels, TTL on the + input with - input floating or RS232 levels
User Controls	A 6-way user adjustable lever switch controls: RS422/RS232 or RS485 RS232 polarity 2-wire or 4-wire RS485 RS485 bias on/off RS485 turnaround times

PIN CONFIGURATION

Pin 1	Data Input or I/O+	(To OSD138)	Pin 5	Data Output -	(From OSD138)
Pin 2	Data Input or I/O -	(To OSD138)	Pin 6	RS232 Input	(To OSD138)
Pin 3	Ground		Pin 7	RS232 Output	(From OSD138)
Pin 4	Data Output +	(From OSD138)	Pin 8	Ground	

PHYSICAL

Electrical Connectors	9 pin male subminiature D connector for power on card 2 way terminal block with screw clamps for power on module 8 way terminal block with screw clamps for data
Optical Connector	ST standard
Operating Temperature	-20 to +75ºC
Relative Humidity	0 to 95% non-condensing
Power Requirements	+11 to +35VDC or 22 to 28VAC @ 1.8VA
Weight	150g (card) 280g (module)
Dimensions(mm)	208D x 25W x 100H (card) 104D x 104W x 25H (module)
Chassis Current Consumption (CCC)	0.15 Amp