OPTICAL SYSTEMS DESIGN

OSD1240 SOLID STATE INTERLOCK RAILWAY SIGNALLING SYSTEM MODEM

APPLICATIONS

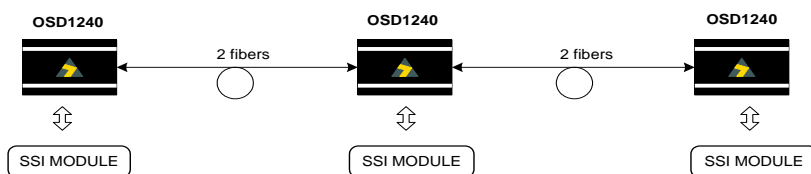▲ Railway signalling systems based on the Solid State Interlocking system developed by British Rail

FEATURES AND BENEFITS

▲ Standard version extends Data Link Module separation to greater than 10 km of multimode fiber or 50 km of singlemode fiber

▲ Optionally OSD can supply extended range versions of the unit that can operate over at least 100km of one or two singlemode fibers

▲ Compatible with all common fiber sizes

▲ Up to 63 units can be operated in a Bus configuration

▲ Complete end-to-end isolation

▲ Safe transmission in hazardous environments

▲ Immune to electrical interference

▲ Built in test features

▲ Available with either Phoenix or Molex power and signal connectors

▲ Extremely robust electronics and packaging designed for the severe environments typical of railway applications

TYPICAL APPLICATION DESIGN

BUS CONFIGURATION

ORDERING INFORMATION

OSD1240A   Multimode or singlemode bus optical fiber SSI modem with Molex connectors
OSD1240B   Multimode or singlemode bus optical fiber SSI modem with Phoenix Combicon connectors
Options   Contact OSD for information on the 1-fiber version, the extended range version or a combination of both

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SPECIFICATIONS

ELECTRICAL

Data Interface	2-wire balanced twisted copper pair SSI interface
Data Rate	2 to 500kbps
Bit Error Rate	$<1 \times 10^{-9}$

OPTICAL

Optical wavelength	1310nm (1550nm is optional)
Transmit power	-12 to -6dBm (Higher power levels are available: consult factory)
Receive sensitivity	<-35dBm
Receive saturation	>-5dBm
Operating Distances	> 10km of multimode fiber > 50km of singlemode fiber with 1310nm operation > 100km of singlemode fiber with 1550nm operation (consult factory)
Receiver fail indication	<-39 to - 41dBm

INDICATORS

Copper Transmit Data Present	Amber (1 only)
Receiver Optical Signal OK	Green/Red (2, 1 per port)
Receive Sync OK	Green/Red (2, 1 per port)
Laser OK	Green/Red (2, 1 per port)
Receive Data Present	Amber (2, 1 per port)
Receive Bit Error	Red (2, 1 per port)
Transmitter Switched to Local Crystal	Red (2, 1 per port)

CONTROLS

Master/Slave Operation	Connect Pins1 and 3 on the Data I/O Connector on Master
Data I/O 47Ω Termination Resistor	Connect Pins 2 and 5 on the Data I/O Connector for the termination

PACKAGING AND ENVIRONMENTAL

Dimensions (mm) excluding flanges and connectors	104W x 144D x 40H
Data I/O Connector	OSD1240A: 6-pin Molex Mini-Fit JR 39-01-2040 OSD1240B: 6-pin Phoenix MC 1,5/6-3,5 3.5mm header
Power Connector	OSD1240A: 4-pin Molex Mini-Fit JR 39-01-2060 OSD1240B: 2-pin Phoenix MSTBA 2,5/2-G 5mm header
Weight	500g
Operating Temperature	-20 to +75°C
Relative Humidity	0 to 95% non-condensing
Power Requirements	12 to 24VDC @ 6VA