

Optical Data Link Module (ODLM)



- Replaces the standard Solid-State Interlocking (SSI) Data Link Module (DLM) with a physically compatible unit that transmits the SSI signal over optical fibres or copper cabling
- Completely compatible with all SSI system elements and existing manufacturers
- Provides extreme immunity to electrical interference when optical fibres are used in preference to copper cabling
- Extends module separation range greater than copper cabling when using optical fibres
- The specified Optical Fibre to be used is SM (9µm/125µm) to ITI-T G.652
- ODLM connectors provided are LC-duplex within ODVA bulkheads
- Extremely robust electronics and packaging designed for the severe environments typical of railway applications

ODLM Bypass Unit

- For intermediate ODLM's (i.e. fibre to fibre) a passive optical bypass will be required external to the ODLM
- This is to address the new causes of the existing hazard of loss of upstream data link (due to ODLM power loss, failure or maintenance)
- Bypass Unit forms part of the termination of two incoming cables (Four optical fibres) into a 'torpedo' cable joint casing with flexible tails to connect to the ODLM

ODLM Bypass Unit Mounting

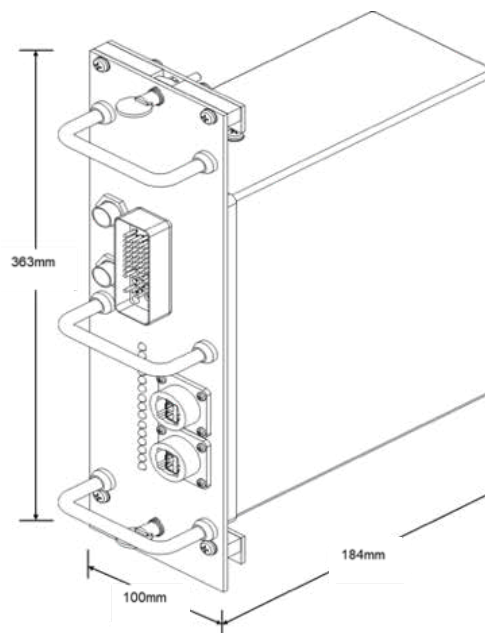
Options that are available:

- Unit to be mountable upon a lineside location case or Relocatable Equipment Building (REB) internal frame
- Unit to be mountable on the outside of the lineside location case or wall of a REB

Technical Specifications

Electrical																			
SSI Data Interface	6 x optically isolated 0 – 20mA current loops																		
Data and Power Connector	50-way ITT Cannon Trident bulkhead plug																		
Data Rates	10kbps, Manchester coded																		
Bit Error Rate	$< 1 \times 10^{-10}$																		
Data Link Interface	Two 2-wire balanced twisted copper pair interfaces via Pins P+R (Datalink 1) and Pins m+k (Datalink 2) of the 50-way Trident connector. Datalink 2 MUST be terminated in 47Ω by the user if it is not used.																		
Optical																			
Optical Port Connector	Subject to customer requirements																		
Transmit Optical Power	-15dBm to -8dBm into single mode fibre																		
Receiver Sensitivity	$< -33\text{dBm}$																		
Receiver Saturation	$> -3\text{dBm}$																		
Indicators	<table border="0"> <tr> <td>Data to SSI</td> <td>1 x Amber</td> </tr> <tr> <td>Data from SSI</td> <td>1 x Amber</td> </tr> <tr> <td>Data to / from Datalink</td> <td>1 x Amber</td> </tr> <tr> <td>Receiver Optical Signal OK</td> <td>2 x Green / Red (1 per port)</td> </tr> <tr> <td>Receive Sync OK</td> <td>2 x Green / Red (1 per port)</td> </tr> <tr> <td>Laser OK</td> <td>2 x Green / Red (1 per port)</td> </tr> <tr> <td>Receive Data Present</td> <td>2 x Amber (1 per port)</td> </tr> <tr> <td>Receive Bit Error</td> <td>2 x Red (1 per port)</td> </tr> <tr> <td>Transmitter Switched to Local Crystal</td> <td>2 x Red (1 per port)</td> </tr> </table>	Data to SSI	1 x Amber	Data from SSI	1 x Amber	Data to / from Datalink	1 x Amber	Receiver Optical Signal OK	2 x Green / Red (1 per port)	Receive Sync OK	2 x Green / Red (1 per port)	Laser OK	2 x Green / Red (1 per port)	Receive Data Present	2 x Amber (1 per port)	Receive Bit Error	2 x Red (1 per port)	Transmitter Switched to Local Crystal	2 x Red (1 per port)
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Dimensions



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