

General Description

The PDR Optical Line Protection System (OLP) is a compact 1U rack-mountable device designed to safeguard optical fiber transmission networks through real-time power monitoring and automatic line switching. It continuously monitors both the primary and secondary fiber channels and instantly switches to the backup path when signal degradation or a line break is detected, ensuring uninterrupted service delivery. Supporting three industry-standard protection architectures (1+1, 1:1, and 1-1), the OLP operates transparently at the optical layer without affecting the carried signal. Dual power inputs (AC and -48V DC) provide full power redundancy, and built-in NMS support enables centralised monitoring and remote management across the network.



Key Features

- Compact 1U rack-mountable form factor for straightforward deployment in standard 19-inch racks
- Automatic optical fiber line switching — instantly reroutes traffic when primary channel fails or degrades
- Real-time optical power monitoring of both primary and secondary channels simultaneously
- Three protection architectures supported: 1+1 (full duplication), 1:1 (shared backup), and 1-1 (unidirectional)
- Carrier-grade switching speed with configurable delay (0 to 999 seconds) for flexible protection policies
- Auto switchback to primary channel after recovery, with configurable return delay
- Front panel LCD display with panel key control for local configuration and status monitoring
- Dual power supply inputs (220V AC and -48V DC) for full power redundancy
- Remote management via RJ-45 Ethernet and RS-232 serial interfaces with NMS support for unified OAM
- Operating wavelength selectable between 1310 nm and 1550 nm

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Technical Specifications

Parameter	Specification
Protection Architecture	1+1 1:1 1-1
Form Factor	1U rack-mountable (19-inch standard)
Working Wavelength	1310 nm or 1550 nm (selectable)
Switching Threshold	Default: -30 dBm (configurable via NMS or panel)
Switching Mode	Auto (threshold-based) Manual (panel / NMS / command)
Switching Delay	Non-delay (immediate) or 1 – 999 seconds (configurable)
Auto Switchback	Supported — configurable delay 1 – 999 minutes
Manual Mode Auto-Return	Configurable 1 – 999 minutes (factory default: 30 minutes)
Optical Interfaces	TX, RX (to transmission equipment) T1/R1 (primary fiber) T2/R2 (secondary fiber)
Management Interfaces	RJ-45 Ethernet (LAN) RS-232 DB9 serial port
LED Indicators	Power1, Power2, Run, Auto, Pri/Sec, R1, R2, TX, LS
Display	Front panel LCD with ▲▼ navigation keys and Enter key
Power Supply	220V AC -48V DC (dual redundant inputs)
Default IP Address	192.168.0.178
Serial Port Settings	Baud rate: 115200 Data: 8 Parity: None Stop: 1

Applications

- Optical fiber line protection in telecom transmission networks — primary/secondary path redundancy
- Real-time fiber quality surveillance via continuous optical power level monitoring
- Emergency rerouting and dispatching of live traffic across backup fiber routes
- FTTH, FTTB, and access network resilience for service providers and ISPs
- Data centre and enterprise campus fiber interconnects requiring high availability
- Long-haul and metro optical transport network protection deployments

Ordering Information

Standard Package Contents

Item	Quantity
Optical Line Protection System (OLP Unit)	1
Power Adaptor — 220V AC	1
Power Cord	1
Rack Mounting Brackets	1 pair
RJ-45 Ethernet Cable	1
RS-232 Serial Cable	1
User Manual	1

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