Description

XH-OLP-1-1-M optical protection module is mainly used in optical fiber transmission, the main fiber and the backup fiber fault judgment automatic switching. In the optical network signal link, when the main fiber optical signal exceeds the set optical power alarm value (such as power down the set threshold value, including no light), the module automatically switches from the main fiber to the backup fiber optical path, and vice versa when the backup fiber fails to break the fiber, the module automatically switches back to the main fiber (the module detects whether the optical path is normal, and only normal optical path can be automatically switched). The module supports RJ45 Ethernet and serial RS-232 communication, and the module status information can be queried by command.

Features

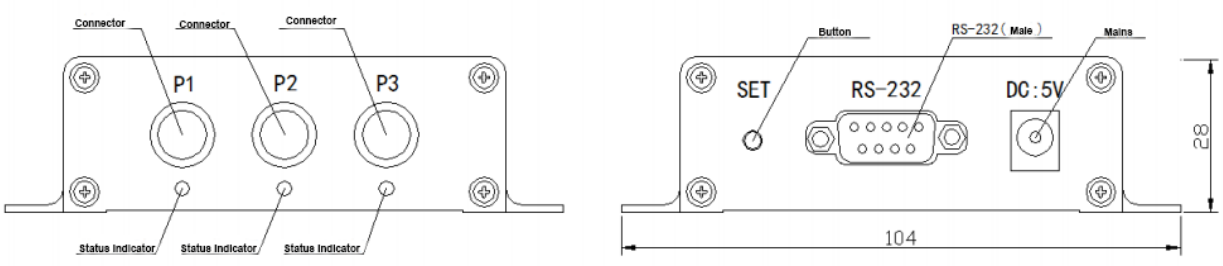
- High reliability with low insertion loss
- Real-time monitoring of main and backup fiber optical signal status
- Manual switching and automatic switching of optical paths are available
- Support Ethernet and serial communication control

Performance

Parameter	Parameter Value	
Model	XH-OLP-1-1-M	
Insertion Loss（dB）	Typ：1.0　　Max：1.5	
Wavelength Range（nm）	1260~1650	
Monitoring wavelength（nm）	1550nm	
Return Loss（dB）	≥50	
Crosstalk（dB）	≥55	
Optical power threshold automatic switching value（dBm）	Can be set -10、-15、-20、-25、-30、-35	
Fiber connection interface	FC/PC	FC/APC
Power down state	Maintain optical path	
Communication method	RJ45 和 RS-232	
Lifetime（Times）	≥10^7	
Switching Time（ms）	≤10	
Transmitted power（mW）	≤500	
Operating Voltage（V）	5	
Operating Temperature（　）	-20~+70	
Storage Temperature（　）	-40~+85	
Dimensions（mm）	(L)104.0×(W)120×(H)28±0.2mm	

Tip: The above are common equipment parameters, if you have other requirements can be customized, optional main fiber monitoring or both main and backup fiber monitoring.

Panel view



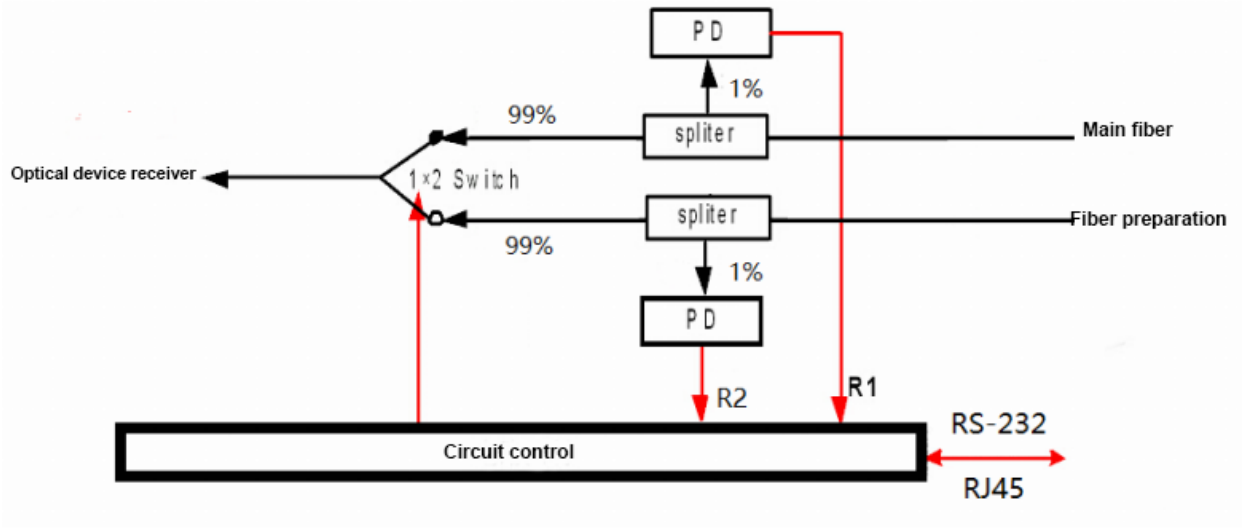
Description: P1 connector is the public receiver of optical path, P2 connector is the main fiber of optical path, P3 connector is the backup fiber of optical path. P1 status indicator is the optical path status indicator, the indicator is green indicates the current working in the main fiber, the indicator is red indicates the current working in the backup fiber; P2 status indicator is the main fiber optical path status indicator, the indicator is green indicates the normal signal of the main fiber, the indicator is red indicates the signal of the main fiber exceeds the set optical power threshold. SET button is the manual control switch button (need to switch the main and backup fiber optical paths are normal or abnormal, long press to restore the factory settings); RS-232 is DB9 male Serial communication interface, factory baud rate of 9600, data bit 8 bits, stop bit 1 bit, no parity; RJ45 Ethernet has two communication protocols, TCP/IP communication protocol (server) factory configuration IP address: 192.168.1.100, port number: 5000, subnet mask: 255.255.255.0, default gateway: 192.168. 1.1, UDP communication protocol fixed port: 18888, 5V for power adapter interface.

RS-232 interface pins

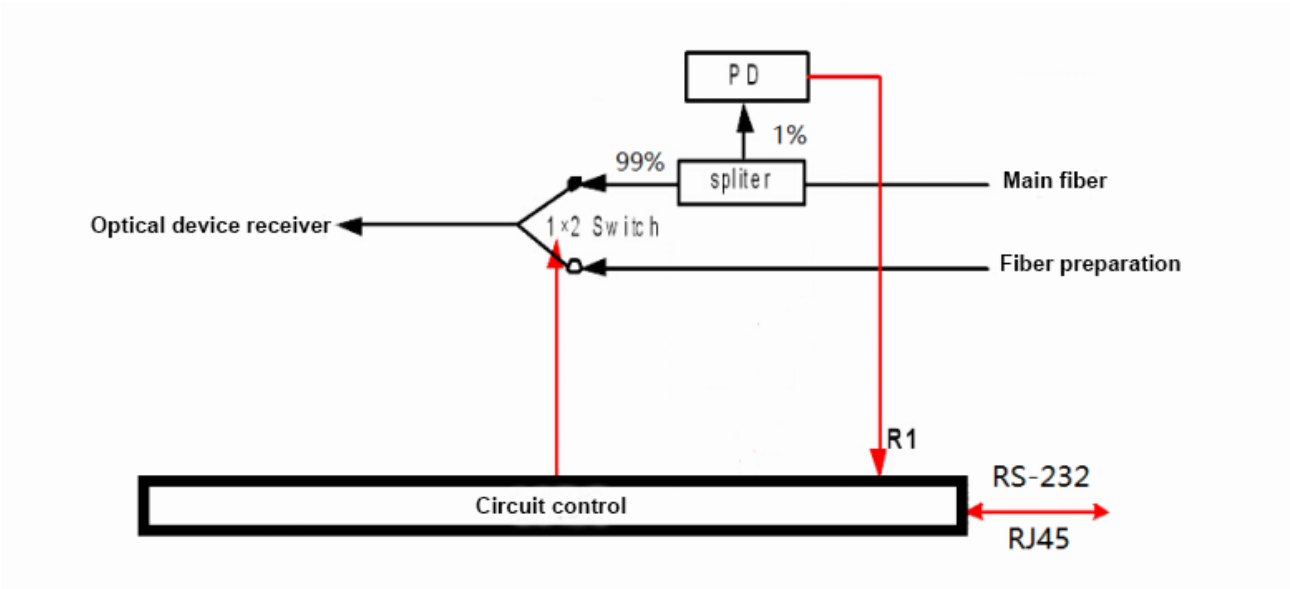
pins	Type（I/O）	Name	Functions
2	Input	RXD	Serial port receiver
3	Out	TXD	Serial port transmitter
5	Power	GND	Public
6	Out	TX+	Ethernet send signal +
7	Out	TX-	Ethernet send signal-
8	Input	RX+	Ethernet receive signal+
9	Input	RX-	Ethernet receive signal-
1,4	NC	NC	Air

Operating schematic

Main backup fiber monitoring



Main Fiber Monitoring



Control instruction set

（1）、"_" indicates an underscore.

（2）、All letters in the communication protocol are in uppercase.

（3）、Instrument can only execute one command at a time. The next command is sent after returning the corresponding value to the input.

（4）、Actual operation is to enter a pointed bracket "<" as the start character and a pointed bracket ">" as the end character.

Name	Instruction	Description
Set automatic Switching Optical Power Threshold	Command<OLP_DBM_6> Response<OLP_DBM_OK>	Command sets the optical power threshold auto-switching value. x: indicates the setting value, range 1 to 6, and returns the response if the setting is successful. x=1 means set the threshold value to -10dBm. x=2 means set the threshold value to -15dBm. x=3 indicates that the set threshold value of -20dBm. x=4 indicates that the set threshold value is -25dBm; x=4 indicates that the set threshold value is -25dBm. x=5 indicates that the set threshold value is -30dBm; x=5 indicates that the set threshold value is -30dBm. x=6 indicates that the set threshold value is -35dBm; x=6 indicates that the set threshold value is -35dBm.
Query Switching Power Threshold	Command<OLP_DBM_?> Response<OLP_DBM_6>	command queries the current setting threshold of the optical protection module; the return response indicates that the setting is -35dBm.
Set to switch between primary and secondary fiber channels	Command:<OLP_SWITCH_1> Response:<OLP_SWITCH_OK>	Command indicates that the optical protection module is set to switch to the main fiber; successful return response. 1：for the main path 2：for the backup path
Query the current working channel	Command:<OLP_SWITCH_?> Response:<OLP_SWITCH_2>	Command indicates the current working channel of the optical protection module; the returned response indicates that the current channel is the backup fiber path
Querying the main fiber channel Optical signal status	Command:<OLP_MAIN_?> Response1:<OLP_MAIN_1> or Response2:<OLP_MAIN_0>	Command indicates that the optical signal status of the main fiber channel of the optical protection module is queried, and the return response 1 command indicates that the optical path is normal, and the return response 2 indicates that the optical path is faulty.
Querying spare fiber channels Optical signal status	Command:<OLP_STANDBY_?> Response1:<OLP_ STANDBY_1> or Response2:<OLP_ STANDBY_0>	Command indicates that the optical signal status of the spare fiber channel of the optical protection module is queried, and the return response 1 command indicates that the optical circuit is normal, and the return response 2 indicates that the optical circuit is faulty.

Set baud rate	Command:<OLP_BAUD_9600> Response:<OLP_BAUD_OK>	Command sets the baud rate of the serial port of the optical protection module to 9600 (2400, 4800, 9600, 115200 can be set); successful return should be.
Query Baud Rate	Command:<OSW01_BAUD_?> Response:<OSW01_BAUD_9600>	Command queries the baud rate of the serial port of the optical protection module; the returned response indicates that the baud rate of the serial port of the device is 9600.
Locking button	Command:<OLP_KEY_OFF> Response:<OLP_KEY_OK>	Command indicates that the optical protection module SET button lock is set, and the response is returned successfully.。
Unlocking button	Command:<OLP_KEY_ON> Response:<OLP_KEY_OK>	Command indicates to set the optical protection module SET button to unlock; successfully return the response.
Query button status	Command:<OLP_KEY_?> Response:< OLP_KEY_ON> 或 Response:< OLP_KEY_OFF>	Command queries the key status of the optical protection module; the return response ON indicates that the key is allowed to be used; the return response OFF indicates that the key is locked.
Rebooting devices	Command:<OLP_RESET> Response:< OLP_RESET_OK>	Command indicates setting the optical protection module to reset and restart; successful return response.
Inquiry Information	Command:<OLP_TYPE_?> Response:<OLP_TYPE_CH-OLP-1X1-M_9/125 _FP_5V>	command queries the optical protection module information; the returned response indicates Device model: CH-OLP-1-1-M. Fiber type: SM (9/125um). Connection head: FC/PC. Operating voltage: 5V
Query Version	Command:<OLP_VERSION_?> Response: <OLP_VERSION_HARDWARE:V1.0.1SOFTWARE:V1.0.1>	Command indicates the query of optical protection module version; the returned response indicates Hardware version：V1.0.1 Software version：V1.0.1

Note: When an error command is sent, the device returns the response <OLP_ER>

Ordering Information: XH-OLP-1-1-M-A-B-C-D

Wavelength（A）	Fiber Type（B）	Fiber Diameter（C）	Connector（D）
1310:1310nm 1550:1550nm 1625:11625nm X:Others	SM:SM,9/125 M5:MM,50/125 M6:MM,62.5/125 X:Others	L:Keep the optical path unchanged N:Switching to the standby side	FP: FC/PC FA: FC/APC X:Others

Warm tip: module comes standard with 5V power adapter, serial port cable, and network port cable.