



Product features

- ❑ Low insertion loss
- ❑ Fast switching speed
- ❑ LCD display screen, intuitive display light path status
- ❑ Panel key and network interface command mode for light path switching setting, and can be operated by the chain interface command lock key
- ❑ Output port (OUT port) with light power monitoring

Scope of application

- ❑ Multichannel optical monitoring in optical transmission systems
- ❑ Automatic LAN multi-light source/detector switching
- ❑ Optical sensing multi-point dynamic monitoring system
- ❑ Optical testing system for optical fiber, optical devices, network and field engineering optical cable testing
- ❑ Optical device assembly and adjustment

Technical parameters

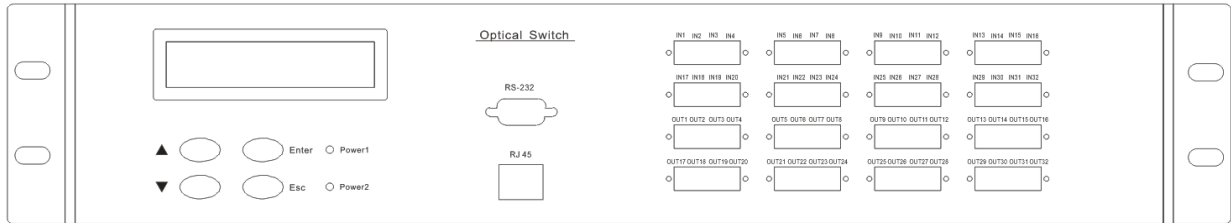
Type no.	MFSW-32X32-2U-LP
Working wavelength	1260 ~ 1650nm
Test the wavelength	1310/1550 nm
Insertion loss	≤4.5 dB
Monitor optical power range	+20 ~ -50 dBm
Monitor optical power accuracy	±0.5 dB (+20 ~ -30 dBm) ±1.0 dB (-30 ~ -50 dBm)
Monitor optical power resolution	±0.01 dB
repetitive	≤±0.2 dB
Return loss	≥45 dB
crosstalk	≥50 dB
Wavelength dependent loss	≤0.8 dB
Polarization dependent loss	≤0.3 dB
Switch time	≤ 50 ms
Optical fiber type	SM (9/125um)
Connector type	LC/PC
Monitor the port	RJ45、RS-232
Working power supply	AC: 85 ~ 264 V (50/60Hz) 或 DC: 36 ~ 72 V
Working temperature	-10 ~ + 55°C
Storage temperature	-40 ~ + 80°C
The case type	19-inch standard 2U rack (483×500×89mm)



Directions for use

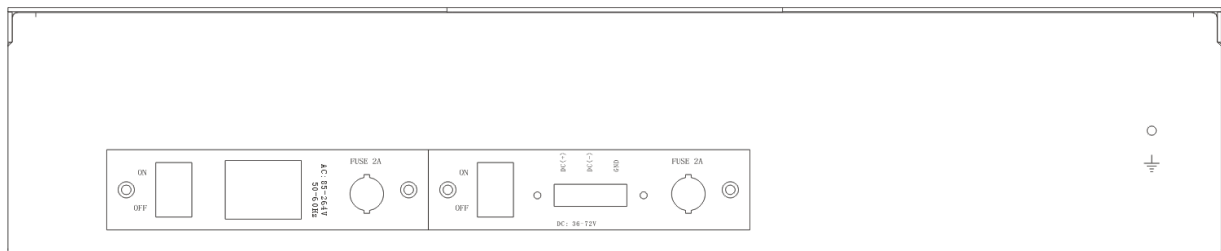
1. 1. Panel illustration

The front panel



- (1) RJ45 network port: communication interface for equipment monitoring data and information.
- (2) RS-232 serial port: Communication interface for monitoring data and information of equipment.
- (3) LCD display: Display of device address, current channel and related information.
- (4) ▲ -- Up key; ▼ -- Down key; Enter -- to determine the key; ESC -- Cancel key.
- (5) Power indicator light POWER1, POWER2: working power indicator.
- (6) Description of optical interface: IN1 ~ IN32 on the device panel are optical input interfaces, OUT1 ~ OUT32 are optical output interfaces.

Rear panel



- (1) Terminal post: External earthing post.
- (2) AC and DC power interface: power input interface for equipment operation.

1. 2. Illustration of optical path of equipment

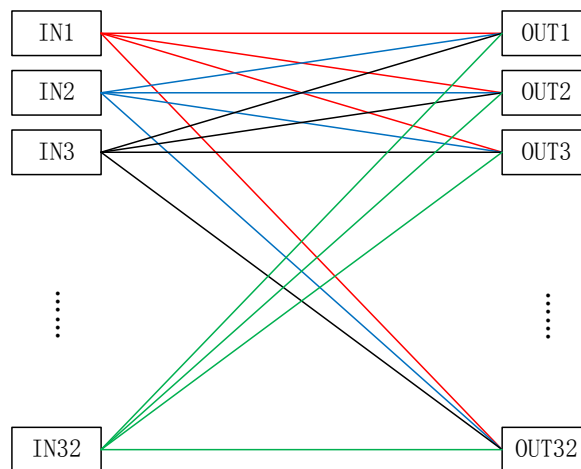


Diagram of internal optical path of 32x32 optical switch

注 : Note: cannot have two input at the same time select the same output!Such an order is an illegal order.



1.3. Panel operation instructions

(1) Panel button light path channel switch:

- Initial interface

光路: I1 - O1 I2 - O2
I3 - O3 I4 - O4

Input and output port selection interface:

- ① 按“Enter”键进入更改界面；② 按“▲”或“▼”键选择“Ix”的输出端口；③ 按“Enter”键确定选择；④ 按“Esc”键返回上一步。

更改: I1 - O1 I2 - O2
I3 - O3 I4 - O4

设置成功

注意：在选择“I1”~“I32”的输出端时，不能选择相同的端口。否则不能进行切换，并提示：

光路冲突

(2) IP address setting

- ① 长按“Enter”键4秒进入菜单；② 按“▲”或“▼”键选择“1.IP地址设置”；③ 按“Enter”键进入可看到当前IP地址；④ 按“Enter”键进入IP设置界面；⑤ 按“▲”或“▼”键选择“IP地址”。⑥ 按“Enter”键确定完成。

光路: I1 - O1 I2 - O2
I3 - O3 I4 - O4

【1. IP 地址设置】
2. TCP 端口设置

IP 地址设置
192.168.001.172

192.168.001.172
19

设置成功

(3) TCP port setup

- ① 长按“Enter”键4秒进入菜单；② 按“▲”或“▼”键选择“2.TCP端口设置”；③ 按“Enter”键进入；④ 按“▲”或“▼”键选择端口号；⑤ 按“Enter”键确定完成。

光路: I1 - O1 I2 - O2
I3 - O3 I4 - O4

【2. TCP 端口设置】
3. 网关设置

端口号: 04001
0

设置成功

(4) The gateway is set

- ① 长按“Enter”键4秒进入菜单；② 按“▲”或“▼”键选择“3.网关设置”；③ 按“Enter”键进入可看到当前网关地址；④ 按“Enter”键进入网关设置界面；⑤ 按“▲”或“▼”键选择“网关地址”。⑥ 按“Enter”键确定完成。

光路: I1 - O1 I2 - O2
I3 - O3 I4 - O4

【3. 网关设置】
4. 子网掩码设置

网关设置
192.168.001.001

192.168.001.001
19

设置成功

(5) Subnet mask Settings

- ① 长按“Enter”键4秒进入菜单；② 按“▲”或“▼”键选择“4.子网掩码设置”；③ 按“Enter”键进入可看到当前网关地址；④ 按“Enter”键进入子网掩码设置界面；⑤ 按“▲”或“▼”键选择“子网掩码地址”。⑥ 按



“Enter” 键确定完成。

光路: I1 - O1 I2 - O2 I3 - O3 I4 - O4	【4. 子网掩码设置】 5. LCD 背光	子网掩码设置 255 . 255 . 255 . 000	255 . 255 . 255 . 000 25
设置成功			

(6) LCD backlight

- ① 长按“Enter”键4秒进入菜单；②按“▲”或“▼”键选择“5. LCD 背光”；③按“Enter”键进入；④按“▲”或“▼”键选择时间；⑤按“Enter”键确定完成。

光路: I1 - O1 I2 - O2 I3 - O3 I4 - O4	【5. LCD 背光】 6. 恢复出厂设置	背光时间: 00010 0	设置成功
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(7) Factory data reset

- ① 长按“Enter”键4秒进入菜单；②按“▲”或“▼”键选择“6. 恢复出厂设置”；③按“Enter”键进入；④按“Enter”键确定完成。

光路: I1 - O1 I2 - O2 I3 - O3 I4 - O4	5. LCD 背光 【6.恢复出厂设置】	恢复出厂设置 【确定】 取消	设置成功
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1. 4. Monitoring instructions for upper computer

The device can realize automatic measurement or real-time monitoring by receiving control signals from the computer through interfaces such as Ethernet, RS232 and other interfaces on the front panel.

- (1) This instrument can only execute one instruction at a time. Usually wait for the program to return the corresponding value before entering the next instruction.
- (2) Please use capital letters.
- (3) In practice, enter the sharp bracket "<" as a starting character, the brackets ">" as an end.
- (4) When accessed through a serial port, the format is: send command, note that send is lowercase, the command is uppercase, there is a space between send and the command, and the command is followed by carriage return. When using TCP connection, enter the command directly.

Programmed instruction set

Optical path switching instruction set:

The command	Describe	The sample
<OSW_SW_I1_I2_I3_I4 I5_I6_I7_I8_I9_I10_I11 I12_I13_I14_I15_I16_I 17_I18_I19_I20_I21_I2 2_I23_I24_I25_I26_I27 I28_I129_I30_I31_I32 > (I1~I32取值01~32,且 取值不能相同!)	通道切换 发送: <OSW_SW_In1对应的输出通道 _In2对应的输出通道_In3对应的输出通道 _In4对应的输出通道_In5对应的输出通道 _In6对应的输出通道_In7对应的输出通道 _In8对应的输出通道_In9对应的输出通道 _In10对应的输出通道_In11对应的输出通 道_In12对应的输出通道_In13对应的输出 通道_In14对应的输出通道_In15对应的输 出通道_In16对应的输出通道_In17对应的 输出通道_In18对应的输出通道_In19对应	发送: <OSW_SW_01_02_03_04_05_06_07_08_09_1 0_11_12_13_14_15_16_17_18_19_20_21_22_ 23_24_25_26_27_28_29_30_31_32> 返回: <OSW_SW_01_02_03_04_05_06_07_08_09_1 0_11_12_13_14_15_16_17_18_19_20_21_22_ 23_24_25_26_27_28_29_30_31_32_OK> 表示将32X32光路设置为: In1→Out1、In2→Out2、In3→Out3、In4→ Out4、In5→Out5、In6→Out6、In7→Out7、



Factory default configuration

List of factory default configurations

Project	Factory default configuration	Note
Use of panel keys	Allows the use of	
The light path channel	In1→Out1、In2→Out2、In3→Out3、In4→Out4、In5→Out5、In6→Out6、In7→Out7、In8→Out8、In9→Out9、In10→Out10、In11→Out11、In12→Out12、In13→Out13、In14→Out14、In15→Out15、In16→Out16、In17→Out17、In18→Out18、In19→Out19、In20→Out20、In21→Out21、In22→Out22、In23→Out23、In24→Out24、In25→Out25、In26→Out26、In27→Out27、In28→Out28、In29→Out29、In30→Out30、In31→Out31、In32→Out32	
Out port operating wavelength	1310nm	
Baud rate setting	19200	8 data bits, 1 stop bit, no parity.
LCD backlight	1 minute	In "1 minute" no panel button operation, backlight off.
The equipment IP	192.168.1.178	Way to work : TCP Server
Gateway equipment	192.168.1.1	
Subnet mask	255.255.255.0	
The TCP port number	4001	

Note and maintenance

Matters needing attention

- (1) When using this device, all ports must be connected correctly according to the optical connection instructions.
- (2) The power supply should be grounded, and ensure that the input power supply voltage is within the range required by the equipment.



- (3) In case of sudden disturbance, the host is abnormal, it should be shut down before processing.
- (4) The optical input port must be connected and positioned accurately, otherwise the measurement results and insertion losses may be incorrect.
- (5) It is normal to have slight vibration or sound when switching optical path channels.

Equipment maintenance

Reasonable use and proper storage of equipment can maintain good performance index for a long time and extend its service life, so proper maintenance is required:

- (1) The equipment should avoid strong mechanical vibration, collision, falling and other mechanical damage. Transport must have good packaging and vibration, rain and waterproof measures;
- (2) The equipment should be kept clean and the working environment should be free of corrosive gases such as acid and alkali. Use a clean towel with water or soapy water to gently scrub the chassis and panels. Do not use alcohol and other solvents to scrub.
- (3) Remove the fiber cable should be timely covered with dust caps to prevent hard objects, dust or other dirt touching the end face of the fiber.

Please feel free to contact us for any unspecified matters. We would be glad to hear your valuable comments.

Equipment maintenance common fault handling

The fault performance	Possible reasons for	The solution
No display after boot	The electricity is not properly connected	Reconnect the power and turn it on
Excessive insertion loss	The end face of the connection head is soiled	Rinse the end face of the smooth connection head and fix the connection head. Check the end face for damage.
The panel cannot switch light paths	The panel keys are locked	Allow panel keys to be used by sending commands through the serial port.
The upper computer instruction is invalid	The serial port is not set correctly	The query checks the serial port Settings
	The serial line is not properly connected	Power off first, recheck the serial line, and then power on.