

## MEMS Optical Switch Module



- **Product Description**

The matrix optical switch is a high-performance, modular all-optical signal matrix switch. It adopts MEMS technology and switching control technology, uses light as the signal transmission medium, and features strong anti-interference ability and small signal attenuation amplitude.

- **Product features**

Strong anti-interference ability and small signal attenuation amplitude.



- **Part Number**

MP-IP-YFMS-MxN

- **Application area**

Fiber Optic Sensing Networks | Defense and Aerospace | Test and Measurement

- **Core parameters**

Operating Wavelength	Channel Crosstalk	Switching Time
SM:1260-1650nm	SM $\geq$ 45dB	$\leq$ 20ms

- **General Parameters**

#### Description

The matrix optical switch is a high-performance, modular all-optical signal matrix switch. It adopts MEMS technology and switching control technology, uses light as the signal transmission medium, and features strong anti-interference ability and small signal attenuation amplitude.

As shown in Figure 1, the block diagram of the M × N optical switch matrix optical path is composed of M 1 × N MEMS optical switches and N 1 × M MEMS optical switches in cascade, which can realize arbitrary switching of M optical signals to N optical signals. The optical switch matrix provides non-blocking and

fully transparent optical switching, making it an ideal solution for telecommunications, data centers, network security, and laboratory/production network operators. It has the capabilities of flexible and reliable remote resource allocation and rapid path reconfiguration.

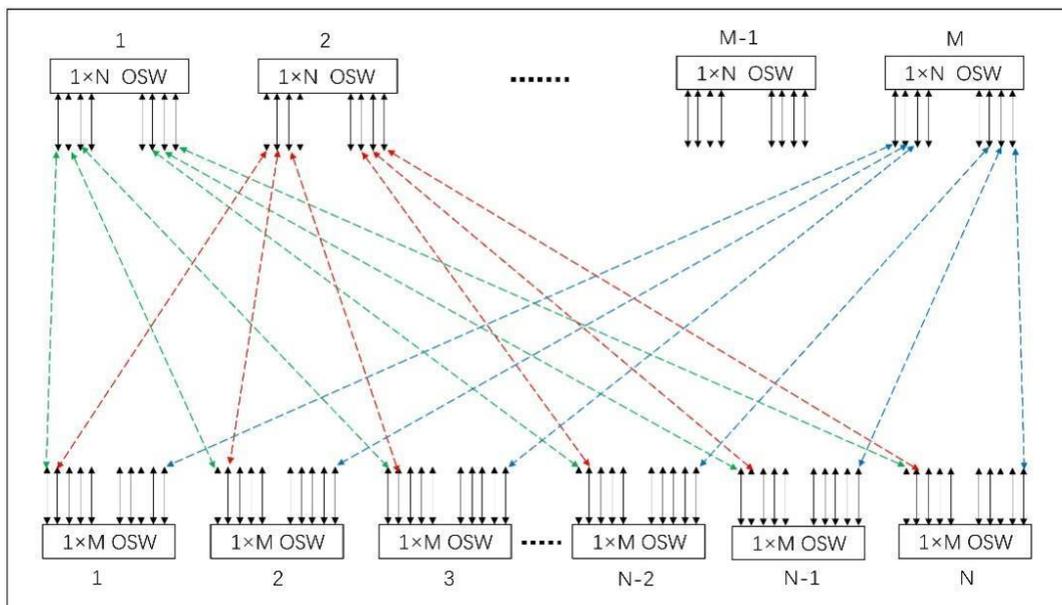


Figure 1. Schematic Diagram of  $M \times N$  Matrix Optical Switch Optical Path

## Performance Parameters

List of Parameters	Index	Remarks



<b>Operating Wavelength (nm)</b>	SM:1260-1650		MM:850±30 1310±30	
<b>Test Wavelength (nm)</b>	1310 or 1550		850 or 1310	
<b>Number of Channels</b>	8x8	16x16	32x32	N≤32(SM) N≤16(MM)
<b>Insertion Loss (dB)</b>	≤2.2	≤2.8	≤3.5	
<b>Return Loss (dB)</b>	SM≥50		MM≥30	
<b>Channel Crosstalk (dB)</b>	SM≥45		MM≥30	
<b>Repeatability (dB)</b>	≤±0.05			
<b>Service Life (times)</b>	≥10 <sup>9</sup>			
<b>Switching Time (ms)</b>	≤20			

<b>Operating Temperature (°C)</b>	<b>-5~+70</b>			
<b>Storage Temperature (°C)</b>	<b>-40 ~ +85</b>			
<b>Operating Voltage (V)</b>	<b>9-36</b>			<b>Customizable</b>
<b>Control Interface</b>	<b>RS232</b>			<b>Customizable</b>
<b>Overall Dimensions (mm)</b>	<b>125x88x18</b>	<b>195x136x20</b>	<b>270x190x40</b>	<b>220VAC input requires re-customized dimensions.</b>
<p><b>Note:</b></p> <p><b>1 Test at room temperature and SOP.</b></p> <p><b>2 Excluding connectors, 0.2dB for one pair connectors.</b></p> <p><b>3 IL is for single-band, Dual-band adds 0.3dB</b></p>				

**Table 1. Performance Specification Parameters**

## Mechanical Dimensions (Unit: mm)

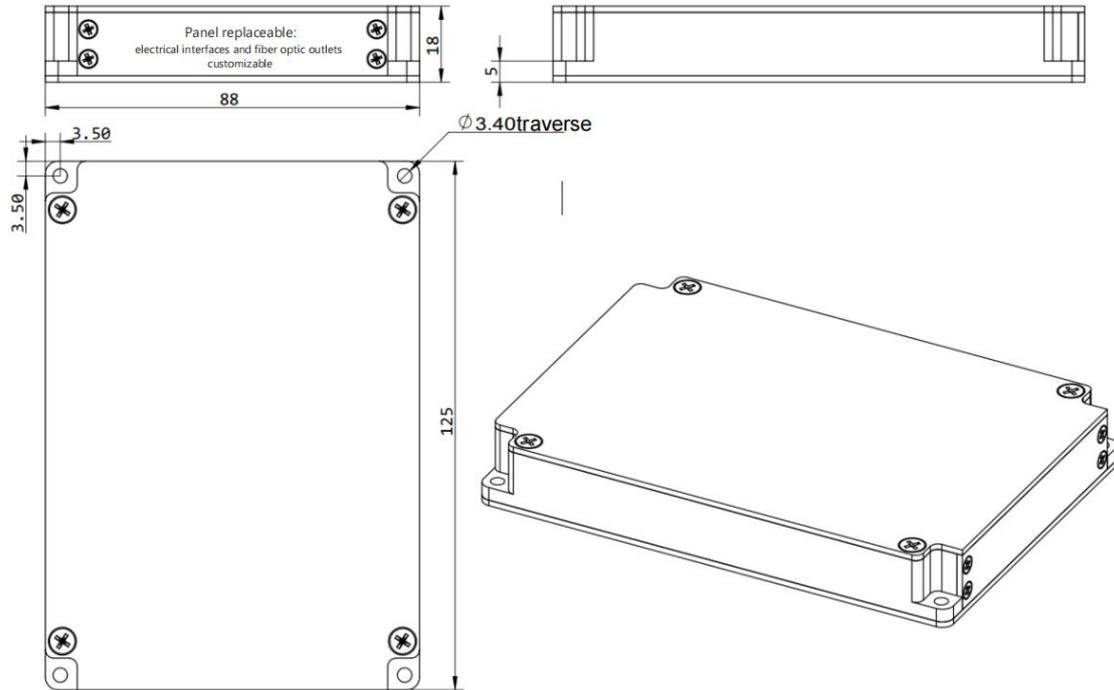


Figure 2. External Structure of Matrix Matrix Optical Switch Module ((M+N) ≤ 16)

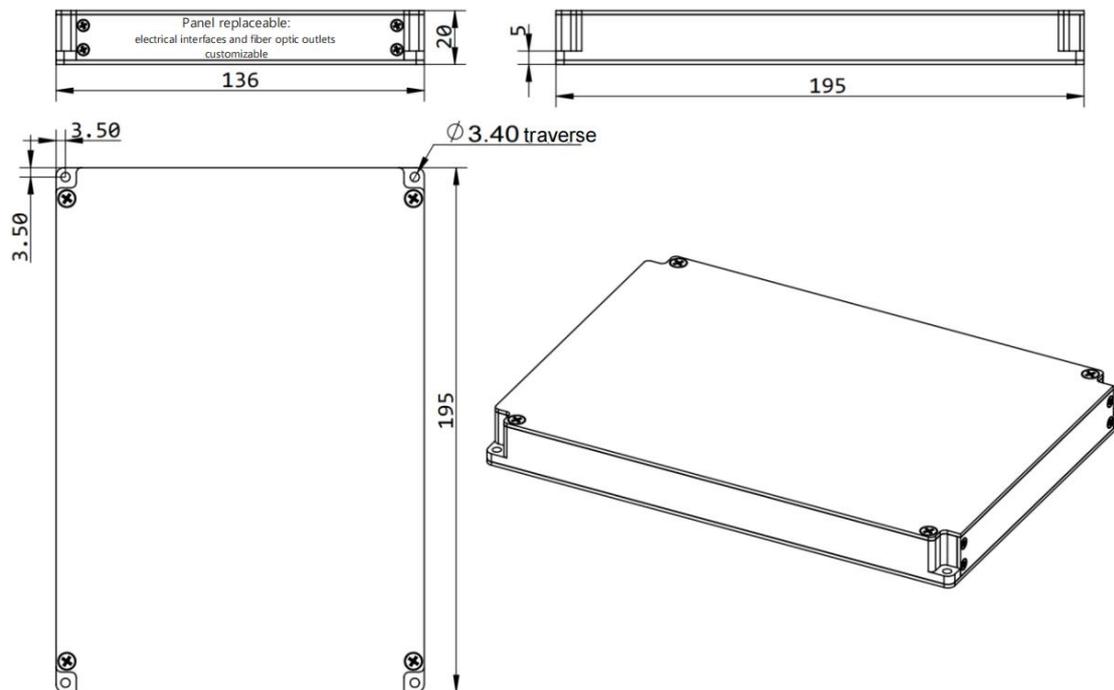


Figure 3. External Structure of Matrix Optical Switch Module (16 < (M+N) ≤ 32)

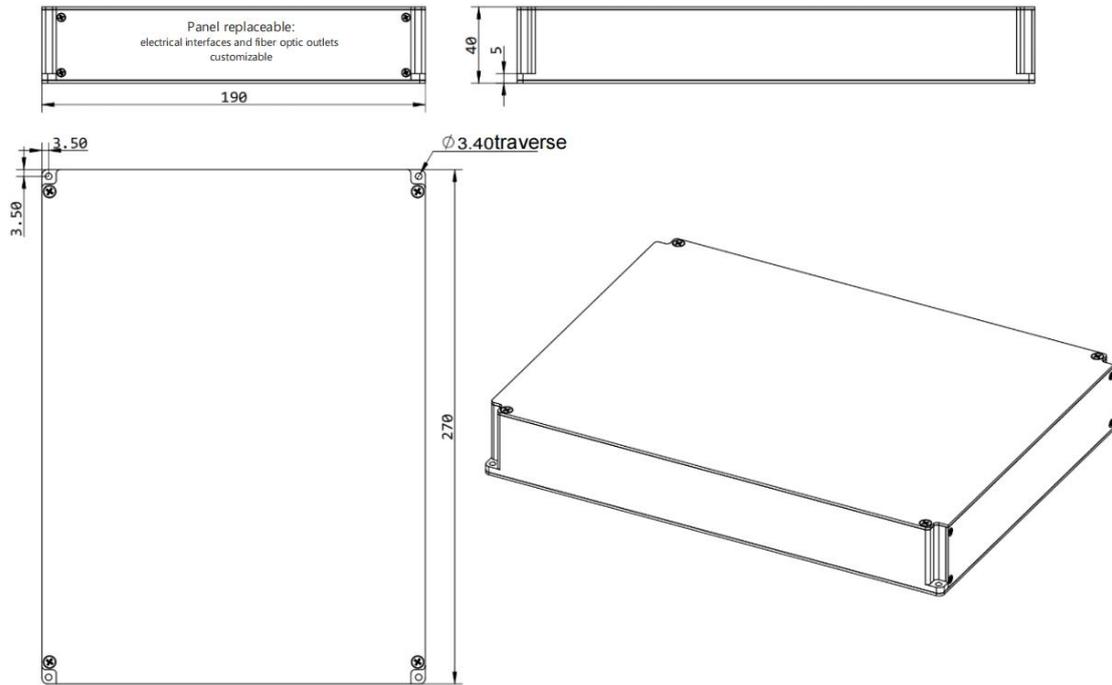


Figure 4. External Structure of Matrix Optical Switch Module ( $32 < (M+N) \leq 64$ )

## Ordering info

MP-YFMS-A-B-C-D-E-F-G

A	B	C	D	E	F	G
Channel	Fiber Type	Test Wavelength h	Tube Type	Fiber Length h	Connector r	Control type



8x8: 8x8	SM:G657A2	850: 850nm	3000:		OO: None	
16x16:	M5: MM ,	1310: 1310nm	3.0mm	05: 0.5m±	FC: FC/PC	
16x16	50/125	1550: 1550nm	900:	5cm	FA:	
32x32:	M6:	1315:	900um	10: 1.0m±	FC/APC	RS232:RS23
32x32	MM62.5/12	1310nm&1550n	250:	5cm	SC: SC/PC	2
MxN: Mx	5	m	250um	X: Others	SA:	
N	X: Others	X: Others	X:Other		SC/APC	
			s		LC: LC/PC	
					LA:	
					LC/APC	
					X: Others	