■ Working Principle

The 3-D1×2 configuration consists of either three sets of dual 1×2 or six sets of 1×2 fiber structures, forming a 6×12 optical switch. The working principle of the manually switched optical switch is based on a precision mechanical structure design. When an external manual control signal acts on the switch, it drives internal mechanical components (such as micro-motors or spring plates) to move, thereby altering the path of the optical signal. Specifically, when an input optical signal enters the switch, it is directed to one of the two output ports according to the state of the manual control signal, achieving switching and distribution of the optical signal.

Furthermore, there is another type of 6×12 optical switch based on the Faraday effect. This switch contains no moving components internally. It utilizes the principle of electromagnetic induction and the Faraday rotation effect to change the polarization state of the incident light beam. Combined with a birefringent polarizing beam splitter crystal, this alters the propagation path of the light beam, thereby enabling optical path switching functionality.

■ Product Features

- Extremely low insertion loss
- Compact size
- Low channel crosstalk
- High stability

■ Applications

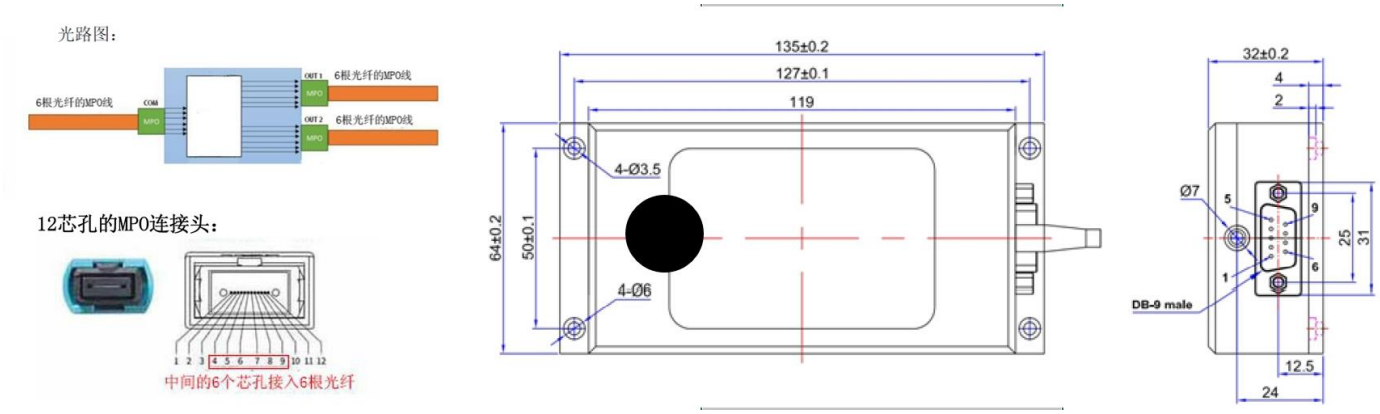
- Passive Optical Networks (PON)
- Optical protection systems
- Measurement systems
- Network monitoring

■ Specifications

Operating Wavelength (nm)	532~980 (MM)	532~980 (SM)	1260~1620 (MM)	1260~1620 (SM)
Test Wavelength (optional, nm)	650/780/850/980	650/780/850/980	1310/1490/1550/1625	1310/1490/1550/1653
Insertion Loss (dB)	<1dB	<1.2dB	<1dB	<1.2dB
Return Loss (dB)	SM≥50、MM≥30			
Channel Crosstalk (dB)	SM≥55、MM≥35			
Polarization Dependent Loss (dB)	≤0.05			
Wavelength Dependent Loss (dB)	≤0.2			
Extinction Ratio (dB)	≥18			
Temperature Dependent Loss (dB)	≤0.25			
Repeatability (dB)	±0.02			
Lifetime (cycles)	切换 10^7 次后(插损≤0.7 dB)、10^9 次后(插损≤0.9 dB)、10^{10} 次后(插损≤1.5dB)			

Optical Power Handling (mW)	≤500
Switching Time (ms)	≤15（相邻信道切换）
Operating Temperature (℃)	-20 to +70
Storage Temperature (℃)	-40 to +85
Power Supply (V)	5

■ Dimension Drawing



■ Ordering Information: OSW—A—B—C—D—E—F

A	B	C	D	E	F
Wavelength	Fiber Type	Voltage	Ferrule	Patch Cord Length	Connector
13: 1310nm 15: 1550nm 13/15: 1310+1550nm X: Other	SM: Single Mode X: Other	5-5V	025: Φ0.25mm 09: Φ0.9mm X: Other	05: 0.5m 10: 1.0m 15: 1.5m X: Other	1: SC/UPC 2: SC/APC 3: LC/UPC 4: FC/UPC 5: FC/APC

Example Model:OSW-113-SM-5-025-05-1

Description: Wavelength: 1310nm, Fiber Type: Single Mode, Voltage: 5V, Ferrule: Φ0.25mm, Patch Cord Length: 0.5m, Connector: SC/UPC.

For custom components, please provide detailed requirements.