

## ■ Working Principle

The working principle of the **1xN manually operated optical switch** is based on a precise mechanical structure design. When an external manual control signal acts on the switch, it drives the 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, depending on the state of the manual control signal, the optical signal is directed to one of the two output ports, achieving switching and distribution of the optical signal.

Additionally, there is another type of **1xN optical switch based on the Faraday effect**. Its interior contains no moving components. Instead, 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 crystal for polarization splitting, this alters the beam's propagation path, achieving the function of optical path switching.

## ■ 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 $\geq$ 50、MM $\geq$ 30			
Channel Crosstalk (dB)	SM $\geq$ 55、MM $\geq$ 35			
Polarization Dependent Loss (dB)	$\leq$ 0.05			
Wavelength Dependent Loss (dB)	$\leq$ 0.2			
Extinction Ratio (dB)	$\geq$ 18			
Temperature Dependent Loss (dB)	$\leq$ 0.25			
Repeatability (dB)	$\pm$ 0.02			
Lifetime (cycles)	切换 $10^7$ 次后(插损 $\leq$ 0.7 dB)、 $10^9$ 次后(插损 $\leq$ 0.9 dB)、 $10^{10}$ 次后(插损 $\leq$ 1.5dB)			

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

■ 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: $\Phi$ 0.25mm 09: $\Phi$ 0.9mm 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:  $\Phi$ 0.25mm, Patch Cord Length: 0.5m, Connector: SC/UPC.

For custom components, please provide detailed requirements.