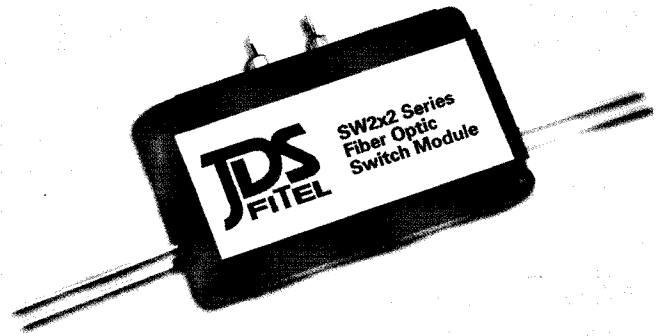


# SW Series Fiber Optic Switch Module



## Description

The SW Series of fiber optic switching modules is designed to connect a single channel to one of several (up to five) channels. In addition to the single pole configurations, the SW Series also supports several two pole versions as shown schematically below. Note that the SW 2x4 can be driven independently as two 1x2 switches.

Both single-mode and multimode versions of the SW Series are available. In operation, the SW switch connects the optical channel by redirecting the optical signal into a selected output fiber. This is achieved using optical prisms driven by a highly precise mechanism and activated via an electrical control signal.

The use of collimating lenses minimizes the insertion loss and improves the repeatability and stability of the switch parameters. The SW Series is optically passive and is, therefore, transparent to signalling formats. Configurations can be optimized for bidirectional performance as a factory option.

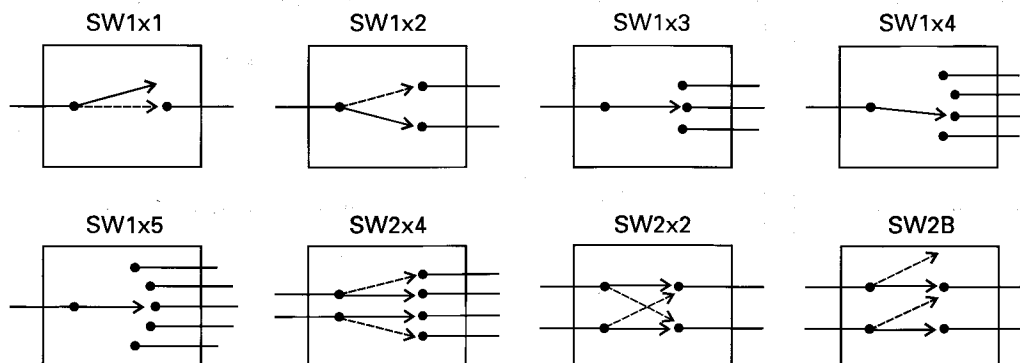
## Key Features

- Typical insertion loss 0.5 dB
- Return loss greater than 55 dB
- Wide choice of configurations
- Small-size modules with high repeatability over a broad range of environmental conditions
- Simple control

## Applications

- Optical signal routing, fiber network configuration and restoration
- Sensor switching, source/detection selection, reference and multi-source measurements in instrumentation
- Fiber optic component testing
- Research and development

## Configurations



Solid lines represent the unpowered (0 VDC) state of the switch.

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## Specifications

Parameter		Typical	Maximum
Insertion loss	single-mode <sup>1</sup> (SM)	0.5 dB	0.8 dB
	multimode <sup>1</sup> (MM)	0.4 dB	0.7 dB
Return loss	SM <sup>2</sup>	50 dB	45 dB (minimum)
	SM <sup>2</sup> (high RL)	60 dB	55 dB (minimum)
	MM	25 dB	20 dB (minimum)
Polarization dependent loss <sup>2,3</sup>	SM	0.02 dB	0.07 dB
Insertion loss stability <sup>4</sup>		±0.03 dB	±0.05 dB
Repeatability		±0.003 dB	±0.005 dB
Crosstalk		-70 dB	-60 dB
Optical input power			300 mW
Switching time <sup>5</sup>		10 ms	15 ms
Cycle rate			5 c/s
Operating temperature			-25 to 65°C
Storage temperature			-40 to 80°C
Humidity (non-condensing)			95%
Power <sup>6</sup>		5±5% VDC/45 mA (70 mA for TTL option)	
Dimensions (WxHxD)	SW1x1, 1x2, 2B	40 x 17 x 40 mm (fiber version)	
	SW1x1, 1x2, 2B	70 x 17 x 40 mm (cable version)	
	SW2x2	70 x 17 x 40 mm (fiber or cable version)	
	SW1x3, 1x4, 1x5, 2x4	70 x 17 x 70 mm (fiber or cable version)	
Weight		45, 80 and 140 g	
Control		direct or TTL	

- Excluding connectors. Include 0.2 dB (typical insertion loss) for each connector. Add 0.2 dB insertion loss for 1x3, 2x2 and higher configurations.
- Excluding connectors.
- PDL for SW2x2 is typically 0.09 dB.

- Drift of any channel relative to one assigned reference channel at ±3°C deviation of ambient temperature over 7 day period.
- For SW1x4, 1x5 and 2x2, the maximum switching time is 20 ms.
- 90 mA (115 mA TTL) for SW2x4.

## Ordering Information

Indicate your application requirements by selecting one feature from each configuration table. For more information on this or other products and their availability, please contact your local JDS FIBER OPTICAL TECHNOLOGIES sales representative, or JDS FIBER OPTICAL TECHNOLOGIES directly at (613)727-1303, or by fax at (613)727-8284 or via e-mail at sales@jdsfiber.com. JDS FIBER OPTICAL TECHNOLOGIES also designs and manufactures OEM and custom switch modules and assemblies to meet your special applications. Please specify your requirements in detail and consult your JDS FIBER OPTICAL TECHNOLOGIES sales representative or factory to obtain a quote.

A. Number of Channels	Specify
1. Input (1 or 2)	
2. Output (1 to 5 or B for bypass)	

B. Control	Check
1. Direct	
2. TTL	

C. Fiber Type	Check
1. 9/125	
2. 50/125	
3. 62.5/125	
4. 100/140	

D. Wavelength	Check
1. 1300 / 1550 nm	
2. 1300 nm	
3. 1550 nm	
4. 850 nm (MM)	

E. Return Loss	Check
1. 45 dB (SM)	
2. 55 dB (SM, high RL)	
3. 20 dB (MM)	

F. Connector Type	Check
1. FC/PC	
2. FC/APC (SM only)	
3. SC/PC	
4. SC/APC (SM only)	
5. ST/PC	
6. No connector	

G. Pigtail (1.5 m length)	Check
1. 0.9 mm fiber	
2. 3.0 mm cable	

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