

1x4 / 4x1 Optical Switch

Product Description

Lightwave Link 1X4 / 4X1 Fiber Optical Switches optimized for a wide range of fiber-optic applications. Design is based on worldwide telecommunications, data communication, system monitoring and component testing requirements. This 1x4 / 4x1 OSW Module has 1 Input Port, 4 Output Ports or 4 Input Ports, 1 Output port. The Module is controlled by a set of electrical connections. Electrical feedback will be provided by the Module indicating which state the optical switch is in. Lightwave Link Inc. 1x4 / 4x1 OSW Module fully complies with RoHS Directive 2002/95/EC (2008/385/EC).



Features

- Compact Size
- Low Insertion-Loss
- Fast Switching Speed
- Built-In position monitoring
- Latching Type available
- RoHS Compliance

Applications

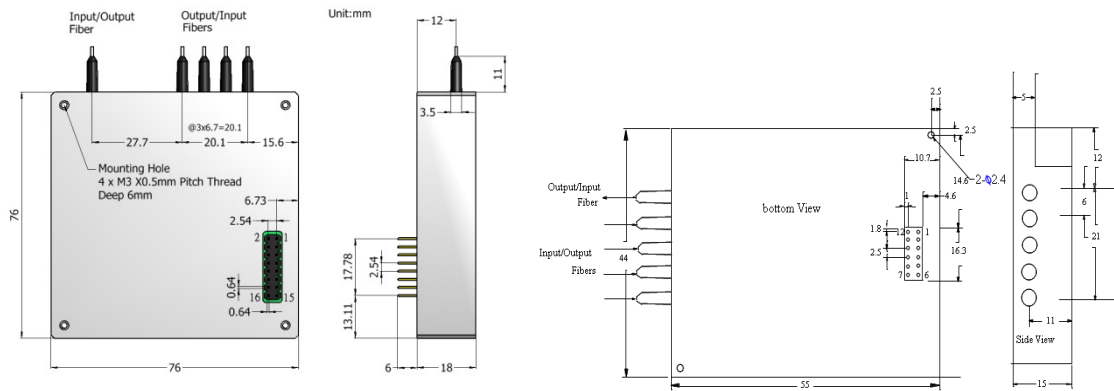
- Optical network monitoring
- Optical measurement systems

Performance Specification

Parameter	9µm Core Single Mode			50µm or 62.5µm Core Multi Mode			Unit
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Wavelength Range ¹	1260~1630			850/1300			nm
Insertion Loss ²	0.8			0.8			dB
Return Loss	-50						dB
PDL	0.1						dB
WDL	0.3						dB
Crosstalk	-80			-80			dB
Repeatability	±0.1			±0.1			dB
Switching Time ³	5			5			ms
Absolute Optical Input Power	500			500			mW
Operating Voltage	4.5	5.0	5.5	4.5	5.0	5.5	VDC
Power Consumption	800±10%						mW
Switching Life Expectancy	3x10 ⁷			3x10 ⁷			Cycles
Operation Temperature-Normal	-5		70	-5		70	°C
Operation Temperature-Special	-20		70	-20		70	°C
Storage Temperature	-40		85	-40		85	°C
Operation Humidity	5		85	5		85	%RH
Storage Humidity	5		85	5		85	%RH
Dimension (H*W*L)	Normal Type : 18 x 76 x 76 / Mini Type : 15 x 44 x 55						mm
Weight ⁴	Normal Type : 135 / Mini Type : 100						g

- 1.Special wavelength would be upon request.
- 2.Optical parameters excluded connectors.
- 3.A minimum ≥20ms pulse is recommended for latching type of switch.
4. The product weight excluded optical connectors.

Physical Dimension



PIN Description

Pin Number	Name	Input or Output	Function
1	S1	Input	Port Selection Pin1 (TTL signals)
2	S0	Input	Port Selection Pin2 (TTL signals)
3	NC		NO Connect
4	Vcc	Input	+5.0V Power Supply (TTL Power)
5	NC		NO Connect
6	NC		NO Connect
7	Vbb	Input	+5.0V Power Supply (OSW Power)
8	GND	Input	Power Ground
9	M3	Output	Input / Output fiber 4 "ON", M3 = High
10	M2	Output	Input / Output fiber 3 "ON", M2 = High
11	M1	Output	Input / Output fiber 2 "ON", M1 = High
12	M0	Output	Input / Output fiber 1 "ON", M0 = High
13	NC		NO Connect
14	NC		NO Connect
15	NC		NO Connect
16	NC		NO Connect

Operation of the optical switch

Input Signals		The Selected Path	Monitor Signals			
S1	S0		M0	M1	M2	M3
0	0	Input / Output Fiber 1	1	0	0	0
0	1	Input / Output Fiber 2	0	1	0	0
1	0	Input / Output Fiber 3	0	0	1	0
1	1	Input / Output Fiber 4	0	0	0	1

Logic Levels

Command	Minimum (V)	Maximum (V)
High Level Input Voltage, 1	2.0	-
Low Level Input Voltage, 0	0.0	0.8
High Level Output Voltage, 1	2.4	-
Low Level Output Voltage, 0	0.0	0.4

Operation

Operating sequences are listed below:





1. Connect the switch unit with power supply. (Pin4 and Pin7 connect to +5.0VDC, Pin8 connects to GND)
2. Use the Pin1 and Pin2 (S1 and S0) to switch the switch unit to the selected path.
3. Use the Pin9 ~ Pin12 (M3 ~ M0) to monitor the selected path of the switch unit.

Note:

When Pin1, Pin2 are open, but the switch unit is connected to the power supply, the switch unit is in Input / Output Fiber 4.

The switch unit is in Input / Output Fiber 1 when the Non-Latching type switch unit without power supply.

Ordering Information

FOSW -	1 -	4-				
Product Version	Input	Output	Operation Function	Fiber Type	Fiber Cabling	Connector Type
	No. of Input	No. of Output	L: Latching N: Non-Latching	9: 9/125µm 50: 50/125µm 62: 62.5/125µm	B: Bare fiber L: 900µm loose tube	1: None 2: FC/PC 3: FC/APC 4: SC/APC 5: SC/PC 6: MU/PC 7: ST/PC 8: LC/PC 9: SC/UPC A: MT/RJ B: MU/UPC C: FC/UPC D: LC/APC E: LC/UPC

- Do not open the case of LLI's product without authorization to maintain warranty.