

2X2 BYPASS OPTICAL SWITCH

Product Description

Lightwave Link Inc. 2x2 Bypass optical switch with R15 Corning® ClearCurve® XB or equivalent Optical Fiber is designed for use in optical fiber communication networks and measurement instruments. The switch consists of two ports that selectively transmits, redirects, or blocks optical power in a fiber optic transmission line. The optical switch must be actuated to select or change between two states. Furthermore, for the Latching type, it only takes an electrical pulse width with duration $\geq 20\text{msec}$ to change the state. As a result, it consumes low electric energy to operate the optical switch. Lightwave Link Inc. 2x2 Bypass optical switch fully complies with RoHS Directive 2011/65/EU.

Features

- Smallest Size
- Low Insertion-Loss
- Fast Switching Speed
- PCB Mountable
- Available in Single Mode / Multi Mode
- RoHS Compliance

Applications

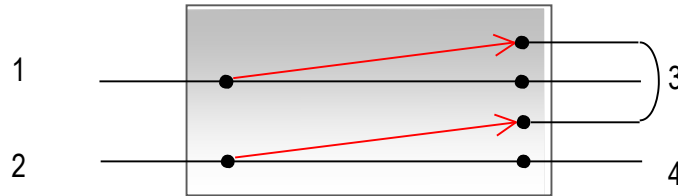
- Optical network protection and restoration
- Optical network monitoring
- Reconfigurable add/drop multiplexers
- Transmission equipment protection
- Research and development
- Wavelength router

Performance Specification

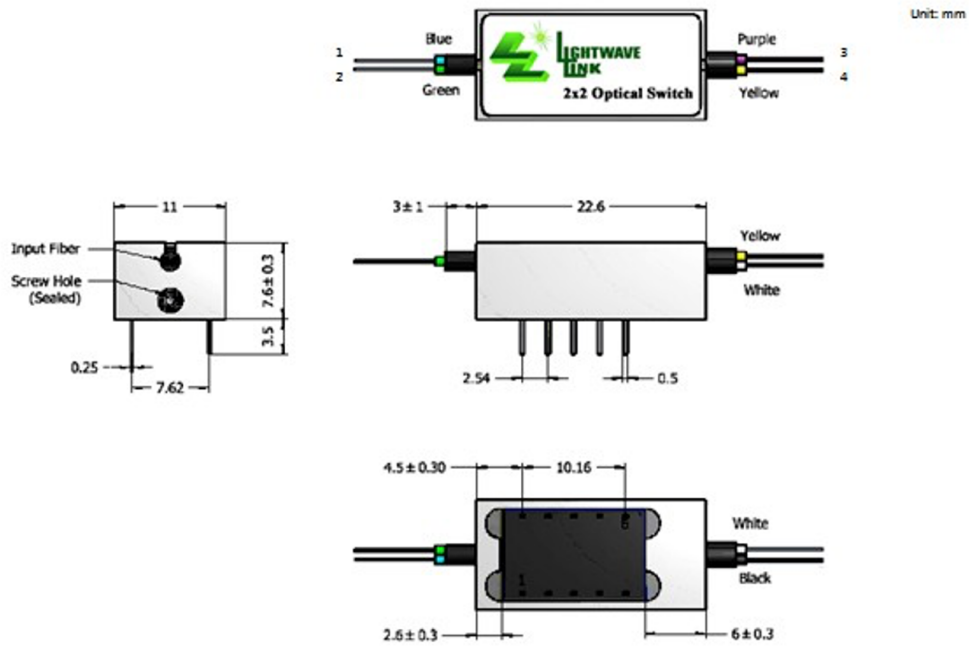
Parameter	9μm Core Single Mode			50μm or 62.5μm Core Multi Mode			Unit
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Wavelength Range ¹		1260~1630			850/1300		nm
Straight Insertion Loss ²			1.0			0.5	dB
Bypass Insertion Loss ²			2.0			1.0	dB
Return Loss		-50					dB
PDL			0.1				d
WDL			0.3				dB
Crosstalk		-80			-80		dB
Repeatability			±0.1			±0.1	dB
Switching Time ³			3.5			3.5	ms
Absolute Optical Input Power			500			500	mW
Operating Current	Latching: 40±10% / Non-Latching: 28±10%						mA
Operating Voltage	4.5	5.0	5.5	4.5	5.0	5.5	VDC
Power Consumption	Latching: 200±10% / Non-Latching: 140±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		95	5		95	%RH
Storage Humidity	5		95	5		95	%RH
Dimension (H*W*L)	7.6 x 11 x 22.6						mm
Ring Size	Inner ring dimension ≥ 4						cm
Weight ⁴	10						g

1. Special wavelength would be upon request.
2. Optical parameters excluded connectors.
3. A minimum $\geq 20\text{ms}$ pulse is recommended for latching type of switch.
4. The product weight excluded optical connectors.

Function Diagram



Physical Dimension



PIN Description

Pin Number	Latching Pin Function	Non-Latching Pin Function
1	Bypass activation terminal(+)	N/C
2	Straight Monitor	Straight Monitor
3	Monitor Common	Monitor Common
4	Bypass Monitor	Bypass Monitor
5	Bypass activation terminal(-)	Straight activation terminal(+)
6	Straight activation terminal(-)	Straight activation terminal(-)
7	Bypass Monitor	Bypass Monitor
8	Monitor Common	Monitor Common
9	Straight Monitor	Straight Monitor
10	Straight activation terminal(+)	N/C

Operation of the Optical Switch

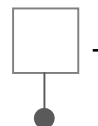
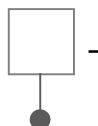
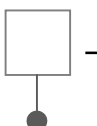
Relay Type	PIN OSW State	1	5	6	10	PIN Connection	Remark
Latching Type	1↔2	H	L	-	-	3, 4 pin closed ; 2, 3 pin open 7, 8 pin closed ; 8, 9 pin open	Bypass
	1↔3	-	-	L	H	2, 3 pin closed ; 3, 4 pin open 8, 9 pin closed ; 7, 8 pin open	Straight
	2↔4	-	-	L	H	2, 3 pin closed ; 3, 4 pin open 8, 9 pin closed ; 7, 8 pin open	Straight
Non-Latching Type	1↔2	-	-	-	-	3, 4 pin closed ; 2, 3 pin open 7, 8 pin closed ; 8, 9 pin open	Bypass (Default)
	1↔3	-	H	L	-	2, 3 pin closed ; 3, 4 pin open 8, 9 pin closed ; 7, 8 pin open	Straight
	2↔4	-	H	L	-	2, 3 pin closed ; 3, 4 pin open 8, 9 pin closed ; 7, 8 pin open	Straight

Ordering Information

FOBWE ...

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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