

# LightBend™ Full 2x2 Fiberoptic Switch

(Protected by U.S. patent 6823102 and pending patents)

## Product Description

The LB Series Full 2x2 OptoMechanical Fiberoptic switch connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a patent pending opto-mechanical configuration and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. The switch has integrated electrical position sensors. This novel design significantly reduces moving part position sensitivity, offering unprecedented high stability as well as an unmatched low cost. Electronic driver is available for this series of switches.

We offer tight-bend-fiber version, which reduces the minimum bending radius from normal 15 mm to 7 mm. This feature enables smaller overall foot print.



## Features

- Low Optical Distortions
- High Reliability
- Fail-Safe Latching
- Epoxy-Free Optical Path

## Performance Specifications

LB Series Full 2x2 Switch	Min	Typical	Max	Unit
Operation Wavelength	Single Band 1260-1360 or 1510-1610			nm
	Dual Band 1260-1360 and 1510-1610			
	Broad Band 1260-1620			
Insertion Loss <sup>1</sup>		0.6	1.0 (DW3)	dB
Wavelength Dependent Loss		0.2	0.3 (DW3)	dB
Polarization Dependent Loss			0.1	dB
Return Loss <sup>1 2</sup>	55			dB
Cross Talk <sup>1 2</sup>	55			dB
Switching Time		4	10	ms
Repeatability		±0.05		
Durability	10 <sup>7</sup>			Cycle
Operating Voltage	5	5	7	VDC
Operating Current		30	60	mA
Voltage Pulse Width (Latching)		20		mS
Switching Type	Latching/Non-Latching			
Operating Temperature	-5		70	°C
Optical Power Handling		300	500	mW
Storage Temperature	-40		85	°C
Fiber Type	SMF-28			
Package Dimension	30.0L x 27.0W x 8.2H			mm

1. Within operating temperature and SOP.  
2. Excluding connectors.  
3. DW: Dual band and Broad band.

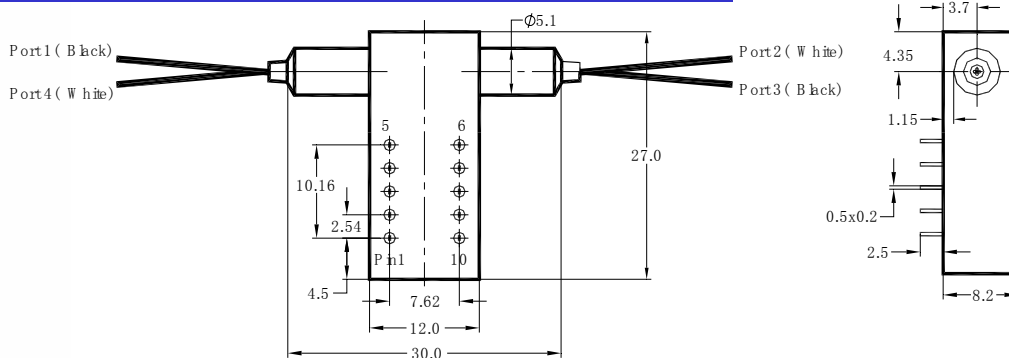
## Applications

- Channel Blocking
- Configurable Add/Drop
- System Monitoring
- Instrumentation



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## Mechanical Dimensions (Unit:mm)



## Electrical Driving Requirements

The load is a resistive coil which is activated by applying 5V (draw ~ 40mA). Applying too long pulse for the latching version will heat up the device. Agiltron offers a computer control kit with TTL and RS232 interfaces and Windows™ GUI

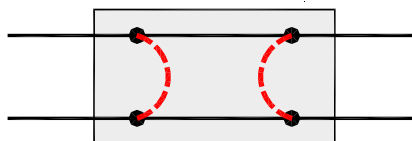
### Latching Type

Optical Path	Electric Drive				Status Sensor			
	Pin 1	Pin 10	Pin 5	Pin 6	Pin 2-3	Pin 3-4	Pin 7-8	Pin 8-9
1→3, 2→4	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
1→4, 2→3	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open

### Non-Latching Type

Optical Path	Electric Drive				Status Sensor			
	Pin 1	Pin 10	Pin 5	Pin 6	Pin 2-3	Pin 3-4	Pin 7-8	Pin 8-9
1→3, 2→4	No Power		N/A	N/A	Close	Open	Open	Close
1→4, 2→3	5V	GND	N/A	N/A	Open	Close	Close	Open

## Functional Diagram



LB Full 2x2 Switch

## Ordering Information

LBSW-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
□ □ □ □ □ □ □ □ □ □	2x2=22 Special=00	1060=1 C+L=2 1310=3 1410=4 1550=5 650=6 780=7 850=8 1310 & 1550=9 Special=0	Latching Type=1 Non-Latching Type=2 Special=0	Standard=1 Special=0	SMF-28=1 Corning XB=2 Draka BBE=3 Special=0	Bare fiber=1 900um tube=3 Special=0	0.25m=1 0.5m=2 1.0m=3 Special=0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC=7 Duplex LC=8 Special=0

