

# LightBend™ Octo Full 2x2 MultiMode Fiberoptic Switch (Bidirectional)

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

## Product Description

The LB Series Octo Full 2x2 multimode switch integrated 8 simultaneously activated 2x2 switches in a single compact format. It is designed for 40G transceiver bypass application. The device connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a patented 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. The switch is bidirectional.

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 Octo Full 2x2 MM Switch	Min	Typical	Max	Unit
Operation Wavelength	850, 1310, 1550, 850 & 1310			nm
Insertion Loss <sup>1 3</sup>		0.5	1.0	dB
Wavelength Dependent Loss			0.25	dB
Return Loss <sup>2, 3</sup>	35			dB
Cross Talk <sup>2 3</sup>	35			dB
Switching Time		3	10	ms
Repeatability			±0.02	dB
Durability	10 <sup>7</sup>			Cycle
Operating Voltage	4.5	5	6	VDC
Operating Current [±10%]	Latching	45		mA
	Non-Latching		62	
Voltage Pulse Width (Latching)	12			mS
Switching Type	Latching/Non-Latching			
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling <sup>4</sup>		300	500	mW
Package Dimension	30.0L x 27.0W x 14.0H			mm

1. Insertion loss excludes connector.  
 2. Light source CPR<14dB.  
 3. Our device is designed and optimized for certain laser launch condition which is characterized as CPR value. In general, if application exceeds the specified CPR value, optical performance will become worsen.  
 4. Continuous operation, for pulse operation call.

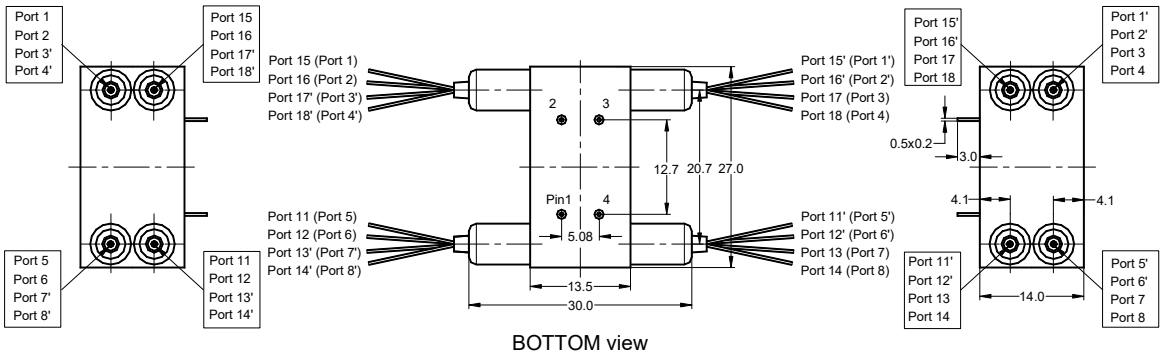
## Applications

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



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## Mechanical Dimensions (Unit: mm)



BOTTOM view

Fiber or Loose tube colors:

- [1]. Port 1, Port 1', Port 11, Port 11', Port 5, Port 5', Port 15 and Port 15' are Black.
- [2]. Port 2, Port 2', Port 12, Port 12', Port 6, Port 6', Port 16 and Port 16' are Red.
- [3]. Port 3, Port 3', Port 13, Port 13', Port 7, Port 7', Port 17 and Port 17' are Blue.
- [4]. Port 4, Port 4', Port 14, Port 14', Port 8, Port 8', Port 18 and Port 18' are white.

## 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	Electrical Drive		Status Sensor
	Pin 1	Pin 4	Pin 2-3
1→1', 2→2', 3→3', 4→4' 11→11', 12→12', 13→13', 14→14' 5→8', 6→7', 7→6', 8→5' 15→18', 16→17', 17→16', 18→15'	GND	5V Pulse	Open
1→4', 2→3', 3→2', 4→1' 11→14', 12→13', 13→12', 14→11' 5→5', 6→6', 7→7', 8→8' 15→15', 16→16', 17→17', 18→18'	5V Pulse	GND	Close

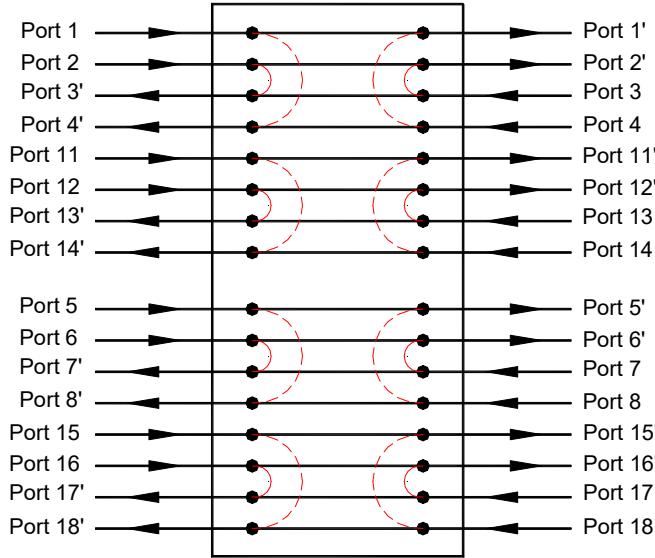
### Non-Latching type

Optical Path	Electrical Drive		Status Sensor
	Pin 1	Pin 4	Pin 2-3
1→1', 2→2', 3→3', 4→4' 11→11', 12→12', 13→13', 14→14' 5→8', 6→7', 7→6', 8→5' 15→18', 16→17', 17→16', 18→15'	No Power		Open
1→4', 2→3', 3→2', 4→1' 11→14', 12→13', 13→12', 14→11' 5→5', 6→6', 7→7', 8→8' 15→15', 16→16', 17→17', 18→18'	5V	GND	Close



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## Functional Diagram



LB Octo Full 2x2 MM Switch

## Ordering Information

LOFM*-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector		
2x2=22 Special=00	1310=3 1550=5 850=8 850/1310=A Special=0	Latching=1 Non-Latching=2 Special=0	Standard=6 Special=0	50/125=5 62.5/125=6 OM4=7 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 MTP=9 Special=0	

\* LOFM: LightBend Octo Full Multimode Switch.



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