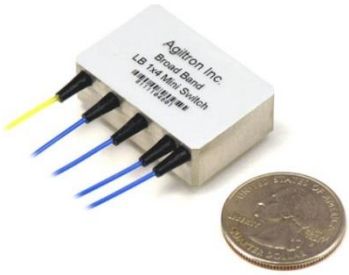
LightBend™ Mini 1x4 MM OptoMechanical Fiberoptic Switch

(Bidirectional)

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

Product Description

The LB Series Mini 1x4 MM fiber optic switch connects optical channels by redirecting an incoming optical signal into a selected output fiber. This is achieved by using a patented opto-mechanical configuration 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, and the new material based advanced design significantly reduces moving part position sensitivity, offering unprecedented high stability and longevity, as well as an unmatched low cost. Electrical driver is also available. 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

- Unmatched Low Cost
- Low Optical Distortions
- High Isolation
- High Reliability
- Epoxy-Free Optical Path

Performance Specifications

LB Series Mini 1x4 MM Switch		Min	Typical	Max	Unit
Operation Wavelength			820~880, 1260~1360		nm
Insertion Loss [1, 2]			0.5	1.0	dB
Wavelength Dependent Loss			0.15	0.3	dB
Polarization Dependent Loss			0.1	0.15	dB
Return Loss		35			dB
Cross Talk		50			dB
Switching Time			3	10	ms
Repeatability				±0.05	dB
Operating Voltage		4.5	5	6	VDC
Voltage Pulse Width	Latching		20		ms
Operating Current[3]	Latching			26	mA
	Non-Latching			36	
Switching Type			Latching / Non-Latching		
Operating Temperature[4]		-5		70	°C
Optical Power Handling			300	500	mW
Storage Temperature		-40		85	°C
Fiber Type			MM 50/125, MM 62.5/125		
Package Dimension			35L x 23W x 10H		mm

Note:
1. Exclude connectors, higher loss for Dual and Broad Band.
2. Measured using laser with coupled power ratio 5 (CPR). Laser with larger mode fill ratio needs special version.
3. Tested at 5V DC for each coil actuation.
4. -40 °C to 85 °C is also available.

Applications

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

RoHS Compliant

Revision: 070-02
02-10-16

15 Presidential Way, Woburn, MA 01801 Tel: (781) 935-1200 Fax: (781) 935-2040
www.agiltron.com

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Electrical Driving Requirement

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

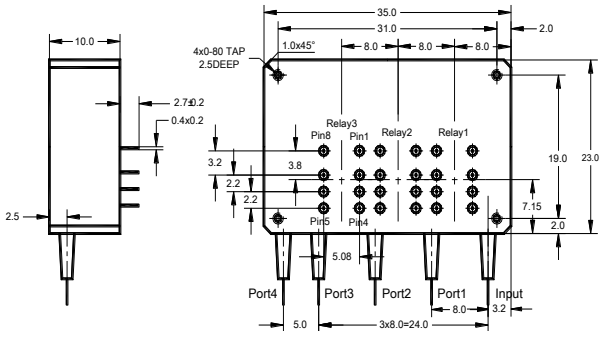
Latching Type

Optical Path	Relay	Electrical Drive		Status Sensor			
		Pin 1	Pin 8	Pin 2-3	Pin 3-4	Pin 5-6	Pin 6-7
Input → Port 1	Relay1	5V Pulse	GND	Open	Close	Close	Open
	Relay 2, 3	N/A	N/A				
Input → Port 2	Relay1	GND	5V Pulse	Close	Open	Open	Close
	Relay 2	5V Pulse	GND	Open	Close	Close	Open
	Relay 3	N/A	N/A				
Input → Port 3	Relay1, 2	GND	5V Pulse	Close	Open	Open	Close
	Relay 3	5V Pulse	GND	Open	Close	Close	Open
Input → Port 4	Relay1, 2, 3	GND	5V Pulse	Close	Open	Open	Close

Non-Latching Type

Optical Path	Relay	Electrical Drive		Status Sensor			
		Pin 1	Pin 8	Pin 2-3	Pin 3-4	Pin 5-6	Pin 6-7
Input → Port 1	Relay 1	5V	GND	Open	Close	Close	Open
	Relay 2, 3	No Power		Close	Open	Open	Close
Input → Port 2	Relay 2	5V	GND	Open	Close	Close	Open
	Relay 1, 3	No Power		Close	Open	Open	Close
Input → Port 3	Relay 3	5V	GND	Open	Close	Close	Open
	Relay 1, 2	No Power		Close	Open	Open	Close
Input → Port 4	Relay1, 2, 3	No Power		Close	Open	Open	Close

Mechanical Dimensions (Unit: mm)



Ordering Information

LBMM-	☐☐	☐	☐	☐	☐	☐	☐	☐
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	1x4=14 4x1=41 Special=00	1060=1 C+L=2 1310=3 1410=4 1550=5 650=6 780=7 850=8 1310 & 1550=9 Special=0	Latch=1 Non-latch=2 Special=0	Standard=1 Special=0	50/125=5 62.5/125=6 Tightbend=2 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

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