

LightBend™

Mini 1x4 Fiber Optic Switch

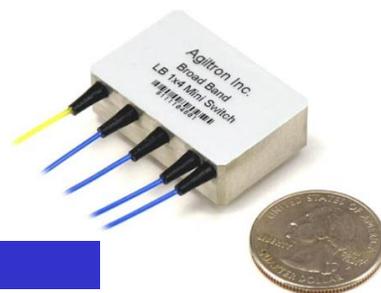
(Bidirectional)

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

Product Description

The LB Series Mini 1x4 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.



Performance Specifications

LB Series 1x4 Mini Switch	Min	Typical	Max	Unit
Operation Wavelength	Dual Band	1260-1360 and 1510-1620		nm
	Single Band	1260-1360 or 1510-1620		nm
	Broad Band	1260 - 1620		nm
Insertion Loss ¹	0.4	0.6	1.0	dB
Wavelength Dependent Loss		0.2	0.4	dB
Polarization Dependent Loss	0.05	0.1	0.2	dB
Return Loss	50			dB
Cross Talk	50			dB
Switching Time		3	10	ms
Repeatability			±0.05	dB
Operating Voltage	4.5	5	6	VDC
Operating Current ³	Latching		26	mA
	Non-Latching		36	
Switching Type	Latching / Non-Latching			
Operating Temperature ²	-5		70	°C
Optical Power Handling		300	500*	mW
Storage Temperature	-40		85	°C
Fiber Type	SMF-28			
Package Dimension	35L x 23W x 10H			mm

Note:

1. Exclude connectors, higher loss for Dual and Broad Band.

2. -40 °C to 85 °C is also available.

3. Tested at 5V DC for each coil actuation.

* Continuous operation, for pulse operation call

Features

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

Applications

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



Revision: 9-24-18

Mini 1x4 Fiber Optic Switch

Electrical Driving Requirement

The load is a resistive coil which is activated by applying 5V (draw ~ 40mA). Agiltron offers a computer control kit with TTL and USB interfaces and Windows™ GUI. We also offer RS232 interface as an option - please contact Agiltron sales.

Latching Type

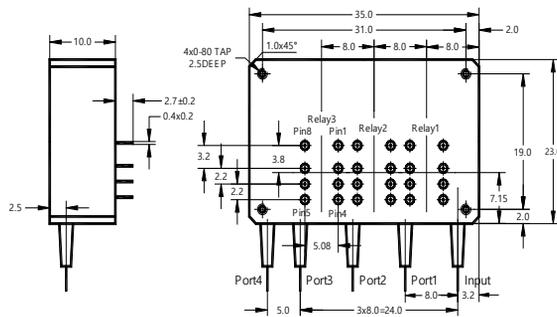
Application Note: Applying a constant driving voltage increases stability. The switches can also be driven by a pulse mode using Agiltron recommended circuit for energy saving.

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	GND	Open	Close	Close	Open
	Relay 2, 3	N/A	N/A				
Input → Port 2	Relay1	GND	5V	Close	Open	Open	Close
	Relay 2	5V	GND	Open	Close	Close	Open
	Relay 3	N/A	N/A				
Input → Port 3	Relay1, 2	GND	5V	Close	Open	Open	Close
	Relay 3	5V	GND	Open	Close	Close	Open
Input → Port 4	Relay1, 2, 3	GND	5V	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

LBMN-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
<input type="checkbox"/>	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 1260-1620=B Special=0	Latch=1 Non-latch=2	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

