

LightBend™ 1x4 OptoMechanical Fiberoptic Switch

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

Product Description

The LB Series 1x4 fiber optic switch connects optical channels by redirecting an incoming optical signal into a selected output fiber. This is achieved by using a patent pending 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 as well as an unmatched low cost.



Performance Specifications

LB Series 1x4 SM Switch	Min	Typical	Max	Unit
Operation Wavelength	Dual Band	1260~1360 and 1510~1610		nm
	Single Band	1260~1360 or 1510~1610		nm
	Broad Band	1260 ~ 1610		nm
Insertion Loss ¹	0.4	0.6	0.9	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			170	mA
Voltage Pulse Width (Latching)		12	20	ms
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		54L x 31W x 12H		mm

Note:

1. Exclude connectors, higher loss for Dual and Broad Band.
2. -40 °C to 85 °C is also available.

Features

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

Applications

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



LightBend™ 1x4 OptoMechanical Fiberoptic Switch

Electrical Driving Requirements

Agiltron offers a computer control kit with TTL and RS232 interfaces and Windows™ GUI

Latching Type

Optical Path	Relay	Electric Drive		Status Sensor					
		Pin 1	Pin 10	Pin 5	Pin 6	Pin 2-3	Pin 3-4	Pin 7-8	Pin 8-9
Input → Port 1	Relay1	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 2, 3	N/A	N/A	N/A	N/A				
Input → Port 2	Relay1	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 2	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 3	N/A	N/A	N/A	N/A				
Input → Port 3	Relay1, 2	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 3	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
Input → Port 4	Relay1, 2, 3	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open

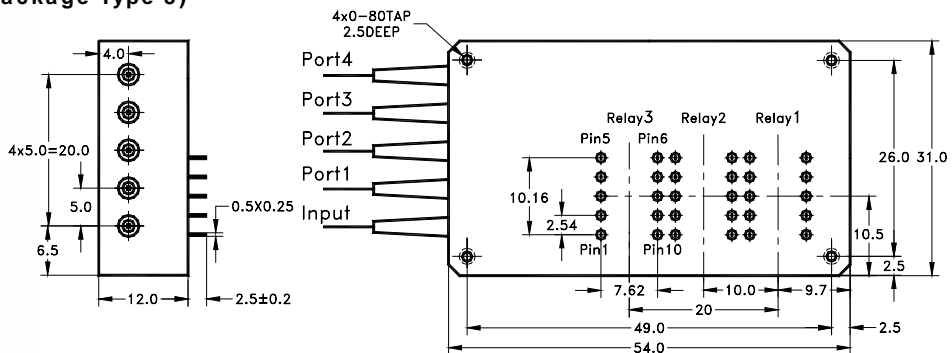
Non-Latching Type

Optical Path	Relay	Electric Drive		Status Sensor					
		Pin 1	Pin 10	Pin 5	Pin 6	Pin 2-3	Pin 3-4	Pin 7-8	Pin 8-9
Input → Port 1	Relay 1	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 2, 3	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 2	Relay 2	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 3	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 3	Relay 3	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 2	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 4	Relay1, 2, 3	No Power		N/A	N/A	Close	Open	Open	Close

Mechanical Dimensions (Unit: mm)

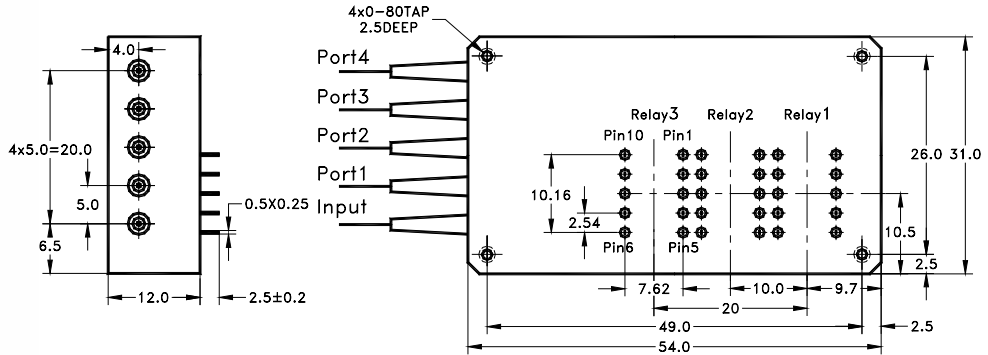
Latching Type

(Package Type 3)



LightBend™ 1x4 OptoMechanical Fiberoptic Switch

Non-Latching Type (Package Type 4)



Ordering Information

LBSW-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1x4=14 4x1=41 Special=00	1310=3 1410=4 1550=5 850 =8 1260-1610= 2 1310/1550=9 Special=0	Latch=1 Non-latch=2	Latching=3 Non-Latching=4 Special=0	SMF-28=1 Special=0	Bare fiber=1 900m loose 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 Special=0

