

# LightBend™ 1x4 PM OptoMechanical Fiberoptic Switch

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

## Product Description

The LB Series 1x4 PM 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. Electrical driver is also available.



## Performance Specifications

LB Series 1x4 PM Switch	Min	Typical	Max	Unit
Operation Wavelength	820-880, 1260-1360, 1510-1610			nm
Insertion Loss <sup>1,2</sup>		0.6	1.0	dB
Wavelength Dependent Loss		0.15	0.25	dB
Extinction Ratio	18	25		dB
Return Loss	50			dB
Cross Talk <sup>1</sup>	50			dB
Switching Time		3	10	ms
Repeatability			±0.05	dB
Operating Voltage	5	5	7	VDC
Voltage Pulse Width	Latching	20		ms
Operating Current <sup>3</sup>	Latching		24	mA
	Non-Latching		34	
Switching Type	Latching / Non-Latching			
Operating Temperature	-5		70	°C
Optical Power Handling		300	500	mW
Storage Temperature	-40		85	°C
Fiber Type	Panda 400, Panda 250			
Package Dimension	54L x 31 W x 12H			mm

Note:

1. Exclude connectors.
2. -40 °C to 85 °C is also available.
3. Tested at 5V DC for each coil actuation

## Features

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

## Applications

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



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## 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

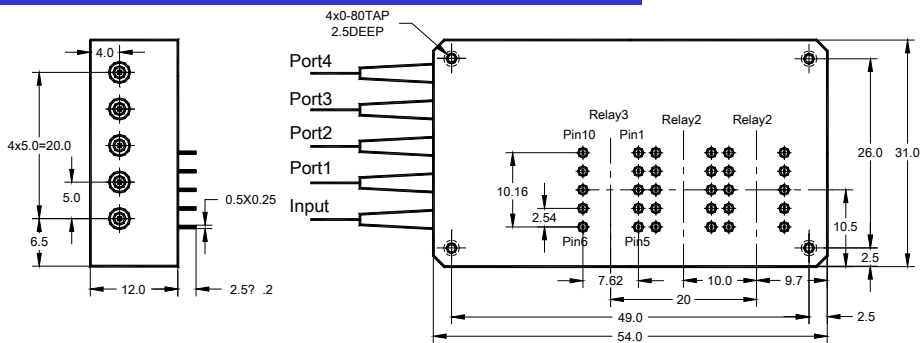
### Latching Type

Optical Path	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
In → Port 1	Relay1	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 2, 3	N/A	N/A	N/A	N/A				
In → Port 2	Relay1	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 2	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 3	N/A	N/A	N/A	N/A				
In → Port 3	Relay1, 2	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 3	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
In → Port 4	Relay1, 2, 3	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close

### 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
In → Port 1	Relay 1	5.0 V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 2, 3	No Power		N/A	N/A	Close	Open	Open	Close
In → Port 2	Relay 2	5.0 V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 3	No Power		N/A	N/A	Close	Open	Open	Close
In → Port 3	Relay 3	5.0 V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 2	No Power		N/A	N/A	Close	Open	Open	Close
In → Port 4	Relay1, 2, 3	No Power		N/A	N/A	Close	Open	Open	Close

## Mechanical Dimensions (Unit: mm)



## Ordering Information

LBPM-	Type	Wavelength	Switch Type	Package Type	Fiber Type	Fiber Length	Connector	
	1x4=14 4x1=41 Special=00	1060=1 1310=3 1410=4 1550=5 650=6 780=7 850 =8 Special=0	Latch=1 Non-latch=2	Standard=4 Special=0	Panda 400=A Panda 250=B 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 Duplex LC=8 Special=0

