

LightBend™ 2x2 PM OptoMechanical Fiberoptic Switch (Bidirectional)

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

Product Description

The LB series Full 2x2 PM fiber optic switch is a polarization-maintaining fiber switch, which connects optical channels by directing or blocking an incoming optical signal into the output fiber. This is achieved using a patent pending opto-mechanical configuration and achieved via an electrical control signal. A latching version preserves the selected optical path after the drive signal has been removed, while the non-latching version defaults to either the open or close state when power is removed. The switch has integrated electrical position sensors. The new material-based advanced design

significantly reduces moving part position sensitivity, offering unprecedented high stability as well as an unmatched low cost. Electronic driver is available for this series of switches. The switch is bidirectional.



Performance Specification

LB Series 2x2 PM Switch ^{[1], [2]}	Min	Typical	Max	Unit
Operation Wavelength		850, 1310, 1550		nm
Insertion Loss		0.6	1.1	dB
Wavelength Dependent Loss			0.25	dB
Temperature Dependent Loss			±0.15	dB
Extinction Ratio	18			dB
Return Loss	50			dB
Cross Talk	50			dB
Switching Time		3	10	ms
Repeatability			±0.02	dB
Durability	10 ⁷			Cycle
Operating Voltage	4.5	5	6	VDC
Operating Current (Latching/Non-Latching)		30	60	mA
Voltage Pulse Width (Latching)		20		ms
Switching Type	Latching / Non Latching			
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling		300	500	mW

Note:

[1] Exclude connectors.

[2] Within operating temperature and SOP.

Features

- Low Optical Distortions
- High Isolation
- High Reliability
- Fail-Safe Latching
- Epoxy-Free Optical Path

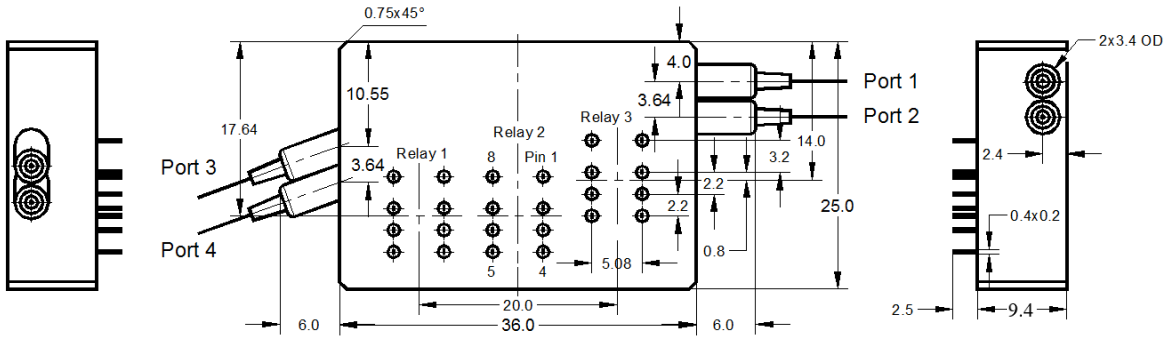
Applications

- Fault Protection
- Channel Add/Drop
- Channel Switching
- Instrumentation



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Mechanical Dimensions (Unit: mm)



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 USB interfaces and Windows™ GUI. We also offer RS232 interface as an option - please contact Agiltron sales.

Latching Type

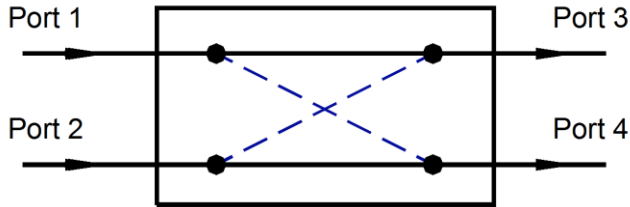
Optical Path	Relay	Electrical Drive		Status Sensor			
		Pin 1	Pin 8	Pin2-3	Pin3-4	Pin5-6	Pin 6-7
Port 1 → Port 3 Port 2 → Port 4	Relay 1, 3	GND	5V Pulse	Close	Open	Open	Close
	Relay 2	5V Pulse	GND	Open	Close	Close	Open
Port 1 → Port 4 Port 2 → Port 3	Relay 1, 3	5V Pulse	GND	Open	Close	Close	Open
	Relay 2	GND	5V Pulse	Close	Open	Open	Close

Non-Latching Type

Optical Path	Relay	Electrical Drive		Status Sensor			
		Pin 1	Pin 8	Pin2-3	Pin3-4	Pin5-6	Pin 6-7
Port 1 → Port 3 Port 2 → Port 4	Relay 1, 3	No Power		Close	Open	Open	Close
	Relay 2	5V	GND	Open	Close	Close	Open
Port 1 → Port 4 Port 2 → Port 3	Relay 1, 3	5V	GND	Open	Close	Close	Open
	Relay 2	No Power		Close	Open	Open	Close

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Functional Diagram



LB Full 2x2 PM Switch

Ordering Information

LBPM-	<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	Bare fiber=1 900um tube=3 Special=0	Fiber Length	Connector
	2x2=22 Special=00	1310=3 1410=4 1550=5 850 =8 Special=0	Latching=1 Non-latching=2 Special=0	Standard=1 Special=0	PM 1550=5 PM 1310=7 PM 850=8 PM 980=9 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

