

LightBend™ PM High Power 1x1, 1x2 OptoMechanical Fiberoptic Switch

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

Product Description

The LB series PM High Power 1x1, 1x2 fiber optic switch has 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 switches 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.



Performance Specification

LB PM High Power 1x1, 1x2 Switch	Min	Typical	Max	Unit
Operation Wavelength		850, 1310, 1550		nm
Insertion Loss ¹		0.5	0.9	dB
Wavelength Dependent Loss			0.25	dB
Extinction Dependent Loss	18	25		dB
Return Loss ¹	55			dB
Cross Talk ¹	55			dB
Switching Time		4	10	ms
Repeatability			±0.02	dB
Durability	10 ⁷			Cycle
Operating Voltage	5	5	7	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
Optical Power Handling			10 ²	W
Storage Temperature	-40		85	°C
Package Dimension		36.0L x 26.0W x 8.2H		mm

Note:

1. Exclude connectors.
2. Continuous operation, for pulse operation call.
3. Light source CPR<14dB.

Features

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

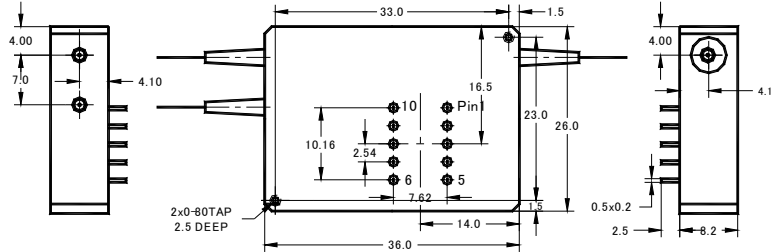
Applications

- 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 RS232 interfaces and Windows™ GUI

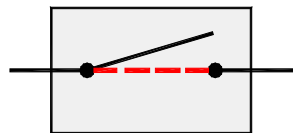
Latching Type

Optical Path	Electrical Drive				Status Sensor			
	Pin 1	Pin 10	Pin 5	Pin 6	Pin2-3	Pin3-4	Pin7-8	Pin 8-9
Port 1 → Port 2	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
Port 1 → Port 3	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close

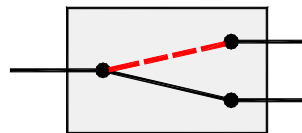
Non-Latching Type

Optical Path	Electrical Drive				Status Sensor			
	Pin 1	Pin 10	Pin 5	Pin 6	Pin2-3	Pin3-4	Pin7-8	Pin 8-9
Port 1 → Port 2	5 V	GND	N/A	N/A	Open	Close	Close	Open
Port 1 → Port 3	No Power		N/A	N/A	Close	Open	Open	Close

Function Diagram



LB PM High Power 1x1 Switch



LB PM High Power 1x2 Switch

Ordering Information

LBPH ¹ -	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector
	1x1 Latching=11 1x1 N/O ² =10 1x1 N/C ³ =1C 1x2=12 2x1=21 Special=00	1310=3 1410=4 1550=5 850=8 C+L= 2 1310 & 1550=9 Special=0	Latching=1 Non-latching=2	Latching=2 Non-Latching=3 Special=0	PM 1550=5 PM 1310=7 PM 850=8 PM 980=9 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

1. LB: LightBend switch; P: PM; H: High Power.
2. N/O: LB 1x1 PM Switch, Non-Latching, Normally open.
3. N/C: LB 1x1 PM Switch, Non-Latching, Normally close.

