PHOTONWARES

LightBend™

1x4 High Power Fiber Optic Switch

(SM, MM, PM, 5W, Bidirectional)

(Protected by U.S. pending patents)

Product Description

The LB 1x4 Series 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. Electronic driver is available for this series of switches.

Features

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

Applications

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

Performance Specifications

LB 1x4 PM Series Switch		Min	Typical	Max	Unit
Operation Wavelength			850, 980, 1060, 1310, 1550		nm
Insertion Loss [1]			0.7	1.1	dB
Extinction Ratio [1] (PM)		18			dB
Polarization Dependent Loss (SM, PM)				0.1	dB
Return Loss [1]	SM, PM	50			dB
	MM	35			dB
Cross Talk [1]	SM, PM	50			dB
	MM	35			dB
Switching Time			3	10	ms
Repeatability				±0.05	dB
Operating Voltage		4.5	5	6	VDC
Operating Current [2]	Latching			26	mA
	Non-Latching			36	
Voltage Pulse Width (Latching)			20		ms
Switching Type			Latching / Non-Latching		
Operating Temperature		-5		70	°C
Storage Temperature		-40		85	°C
Optical Power Handling	Standard		300	500	mW
	High Power		3	5	W
Fiber Type	SM, MM		SMF-28, MM 50/125, MM 62.5/125,		
	PM		Panda PM 250		
Package Dimension			54L x 31W x 12H		mm

[1]. Exclude connectors.
[2]. Tested at 5VDC for each coil actuation.
[3]. Measure at Light Source CPR<14 dB.

Warning: This device must use the reference circuit to driver otherwise it is unstable.

RoHS Compliant

Revised on 11/16/22

15 Presidential Way, Woburn, MA 01801 Tel: (781) 935-1200 Fax: (781) 935-2040

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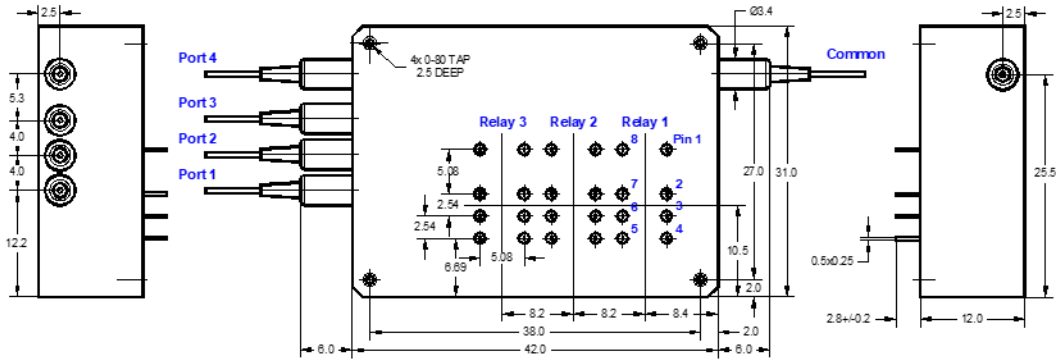
Mechanical Dimensions (Unit: mm)



Electrical Driving Requirements

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

The load is a resistive coil which is activated by applying 5V (draw ~ 40mA). However, the current flow direction must be correct otherwise it will cancel the permanent magnet inside causing instability. We strongly recommend to use the reference circuit to avoid major issues. We offer pushbutton elevation driver for verifications or convenient income inspection.

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
Common → Port 1	Relay1	5V	GND	Open	Close	Close	Open
	Relay 2, 3	N/A	N/A				
Common → Port 2	Relay1	GND	5V	Close	Open	Open	Close
	Relay 2	5V	GND	Open	Close	Close	Open
	Relay 3	N/A	N/A				
Common → Port 3	Relay1, 2	GND	5V	Close	Open	Open	Close
	Relay 3	5V	GND	Open	Close	Close	Open
Common → 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
Common → Port 1	Relay1	5V	GND	Open	Close	Close	Open
	Relay 2, 3	No Power		Close	Open	Open	Close
Common → Port 2	Relay 2	5V	GND	Open	Close	Close	Open
	Relay 1, 3	No Power		Close	Open	Open	Close
Common → Port 3	Relay 3	5V	GND	Open	Close	Close	Open
	Relay 1, 2	No Power		Close	Open	Open	Close
Common → Port 4	Relay1, 2, 3	No Power		Close	Open	Open	Close

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Ordering Information

	☐☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Type**	**Wavelength**	**Switch**	**Package**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**
LBHP-	1x2=12 1x3=13 1x4=14 4x1=41 Special=00	1060=1 1310=3 1550=5 780=7 850 =8 980=9 Special=0	Latching=1 Non-latching=2 Special=0	Standard=2 Special=0	SMF-28=1 MM 50/125=5 MM62.5/125=6 PM1550=B PM1310=D PM980=E PM850=F 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

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