

LightBend™

High Power 1x8 Fiber Optic Switch

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

(Protected by U.S. pending patents)

Product Description

The LB 1x8 Series fiber optic switch connects optical channels by redirecting an incoming optical signal into a selected output fiber. This is achieved using a patent-pending optomechanical configuration activated via an electrical control signal. The 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. An electronic driver is available for this series of switches.



Performance Specifications

LB 1x8 PM Series Switch		Min	Typical	Max	Unit		
Operation Wavelength		850, 980, 1060, 1310, 1550, 1620			nm		
Insertion Loss [1]		0.7			1.1	dB	
Extinction Ratio [1] (PM)		18				dB	
PDL (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, MM50/125, MM 62.5/125,					
	PM	Panda 400, Panda 250					
Package Dimension		75L x 31W x 12H				mm	

[1]. Exclude connectors.

[2]. Tested at 5VDC for each coil actuation.

[3]. Measure at Light Source CPR < 14 dB.

Features

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

Applications

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



Revised on 11/16/22

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

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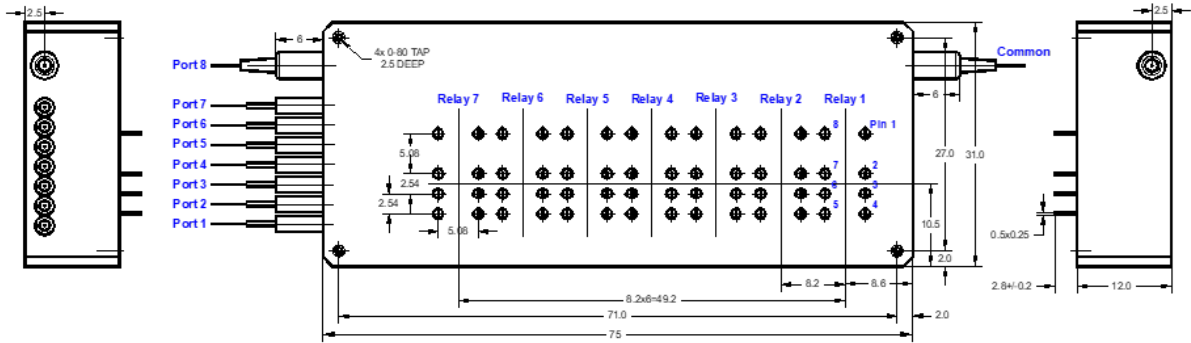
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Mechanical Dimensions (Unit: mm)



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 No.	Electrical Drive		Status Sensor			
		Pin 1	Pin 8	Pin 2-3	Pin 3-4	Pin 5-6	Pin 6-7
Common → Port 1	Relay 1	5V	GND	Open	Close	Close	Open
	Relay 2, 3, 4, 5, 6, 7	N/A	N/A				
Common → Port 2	Relay 1	GND	5V	Close	Open	Open	Close
	Relay 2	5V	GND	Open	Close	Close	Open
	Relay 3, 4, 5, 6, 7	N/A	N/A				
Common → Port 3	Relay 1, 2	GND	5V	Close	Open	Open	Close
	Relay 3	5V	GND	Open	Close	Close	Open
	Relay 4, 5, 6, 7	N/A	N/A				
Common → Port 4	Relay 1, 2, 3	GND	5V	Close	Open	Open	Close
	Relay 4	5V	GND	Open	Close	Close	Open
	Relay 5, 6, 7	N/A	N/A				
Common → Port 5	Relay 1, 2, 3, 4	GND	5V	Close	Open	Open	Close
	Relay 5	5V	GND	Open	Close	Close	Open
	Relay 6, 7	N/A	N/A				
Common → Port 6	Relay 1, 2, 3, 4, 5	GND	5V	Close	Open	Open	Close
	Relay 6	5V	GND	Open	Close	Close	Open
	Relay 7	N/A	N/A				
Common → Port 7	Relay 1, 2, 3, 4, 5, 6	GND	5V	Close	Open	Open	Close
	Relay 7	5V	GND	Open	Close	Close	Open
Common → Port 8	Relay 1, 2, 3, 4, 5, 6, 7	GND	5V	Close	Open	Open	Close



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Non-Latching Type

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

Ordering Information

Prefix	Type	Wavelength	Switch	Package	Fiber Type	Fiber Cover	Fiber Length	Connector
LBHP-	1x5=15 5x1=51 1x6=16 6x1=61 1x7=17 7x1=71 1x8=18 8x1=81 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 MM50/125=5 MM62.5/125=6 PM1550=B PM1310=D PM980=E PM850=F Special=0	Bare fiber=1 900 um 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

