

LightBend™ 1x8 Multimode OptoMechanical Fiberoptic Switch (Bidirectional)

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

Product Description

The LB Series 1x8 MM 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. The switch is bidirectional.



Performance Specifications

LB Series 1x8 MM Switch	Min	Typical	Max	Unit
Operation Wavelength	850 ± 30,	1260-1360,	1510-1610	nm
Insertion Loss ^{1,2}		0.8	1.2	dB
Wavelength Dependent Loss		0.2	0.3	dB
Polarization Dependent Loss		0.1	0.2	dB
Return Loss	35			dB
Cross Talk ¹	50			dB
Switching Time		3	10	ms
Repeatability			±0.05	dB
Operating Voltage	4.5	5	6	VDC
Operating Current			170	mA
Voltage Pulse Width (Latching)		12	20	ms
Switching Type	Latching / Non-Latching			
Operating Temperature ³	-5		70	°C
Optical Power Handling		300	500	mW
Storage Temperature	-40		85	°C
Fiber Type	MM50/125, or MM62.5/125			
Package Dimension	65.0L x 53.0 W x 12.0H			mm

Note:

1. Measured using laser with coupled power ratio of categories 5 (CPR). Laser with larger mode fill ratio needs special version.
2. Exclude connectors.
3. -40 °C to 85 °C is also available.

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

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
Input → Port 1	Relay 7	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay1	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 2, 3, 4, 5, 6, 7	N/A	N/A	N/A	N/A				
Input → Port 2	Relay 1, 7	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 2	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 3, 4, 5, 6	N/A	N/A	N/A	N/A				
Input → Port 3	Relay1, 2, 6, 7	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 3	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 4, 5	N/A	N/A	N/A	N/A				
Input → Port 4	Relay 1, 2, 3, 5, 6, 7	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 4	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
Input → Port 5	Relay 1, 2, 3, 4, 5, 6, 7	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
Input → Port 6	Relay1, 2, 3, 4, 6, 7	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 5	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
Input → Port 7	Relay 1, 2, 3, 7	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 6	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 4, 5	N/A	N/A	N/A	N/A				
Input → Port 8	Relay 1, 2	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open
	Relay 7	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
	Relay 3, 4, 5, 6	N/A	N/A	N/A	N/A				

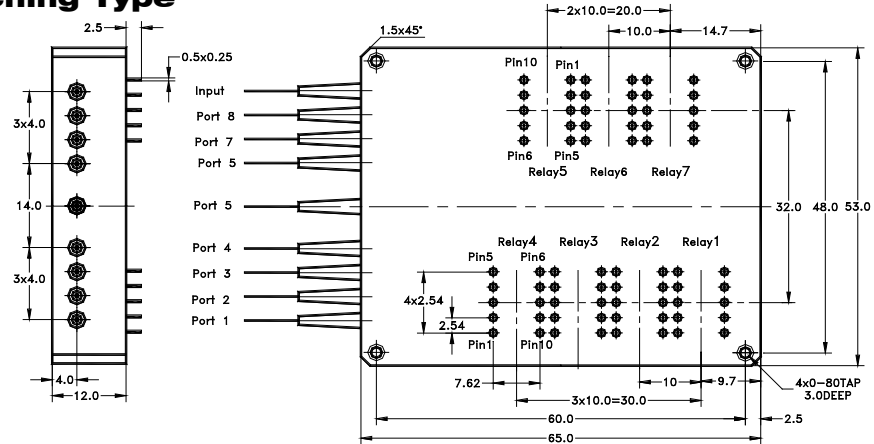
Non-Latching Type

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
Input → Port 1	Relay 1	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 2, 3, 4, 5, 6, 7	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 2	Relay 2	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 3, 4, 5, 6, 7	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 3	Relay 3	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1,2, 4, 5, 6, 7	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 4	Relay 4	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 2, 3, 5, 6, 7	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 5	Relay 1, 2, 3, 4, 5, 6, 7	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 6	Relay 5	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay1, 2, 3, 4, 6, 7	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 7	Relay 6	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 2, 3, 4, 5, 7	No Power		N/A	N/A	Close	Open	Open	Close
Input → Port 8	Relay 7	5V	GND	N/A	N/A	Open	Close	Close	Open
	Relay 1, 2, 3, 4, 5, 6	No Power		N/A	N/A	Close	Open	Open	Close

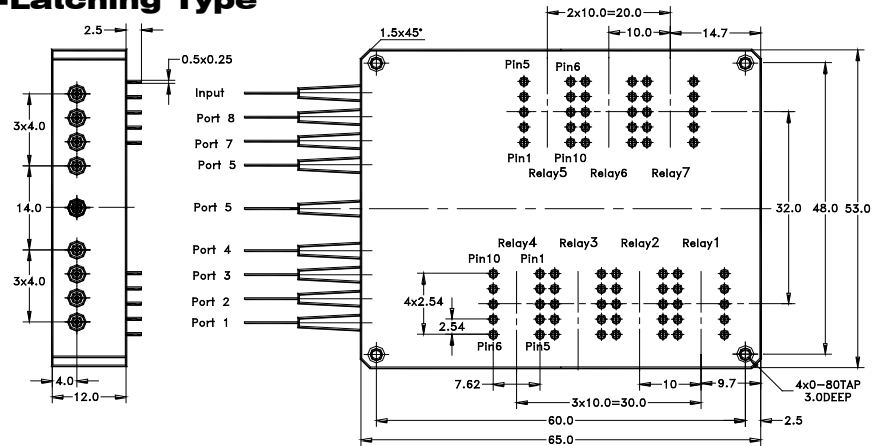
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Mechanical Dimension (Unit: mm)

Latching Type



Non-Latching Type



Ordering Information

LBSW-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector
<input type="checkbox"/>	1x8=18	1310=3	Latching=1	Latching=4	MM50/125=5	0.25m=1	None=1
<input type="checkbox"/>	8x1=81	1410=4	Non-latching=2	Non-latching=5	MM62.5/125=6	0.5m=2	FC/PC=2
<input type="checkbox"/>	Special=00	1550=5			Special=0	1.0m=3	FC/APC=3
<input type="checkbox"/>		850=8				Special=0	SC/PC=4
<input type="checkbox"/>		Special=0					SC/APC=5
<input type="checkbox"/>							ST/PC=6
<input type="checkbox"/>							LC=7
<input type="checkbox"/>							Duplex LC=8
<input type="checkbox"/>							Special=0

