

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

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

## Product Description

The LB series 1x1, 1x2 High Power OptoMechanical fiber optic switch can be configured as either a 1x1 switch or a 1x2 switch. Based on Agiltron's patent pending, it can work in high optical power up to 10 W. The switch is driven by a pulsed electrical signal, and the latching operation preserves the selected optical path after the drive signal has been removed. Its integrated status contacts to provide an electrical readout of the switch position. It is designed for high optical power and some specific applications. Electronic driver is available for this series of switches.



## Performance Specification

LB Series 1x1, 1x2 HP Switch	Min	Typical	Max	Unit	
Operation Wavelength	530, 850, 980, 1060, 1310, 1550			nm	
Insertion Loss <sup>1</sup>	>850nm:	0.5	0.8	dB	
	530nm:	0.7	1.2	dB	
Wavelength Dependent Loss				0.25	dB
Polarization Dependent Loss				0.1	dB
Return Loss <sup>1</sup>	55			dB	
Cross Talk <sup>1</sup>	50			dB	
Switching Time	3		10	ms	
Repeatability				±0.02	dB
Durability	10 <sup>7</sup>			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 <sup>2</sup>	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

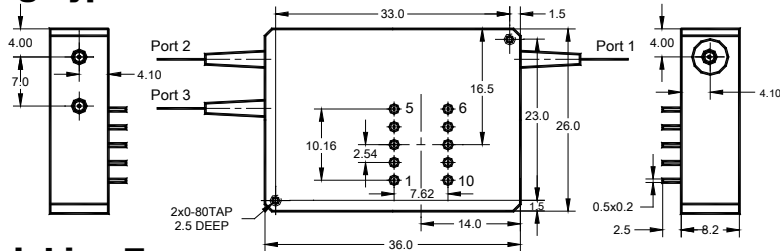
- Fault Protection
- Channel Add/Drop
- Channel Switching
- Instrumentation



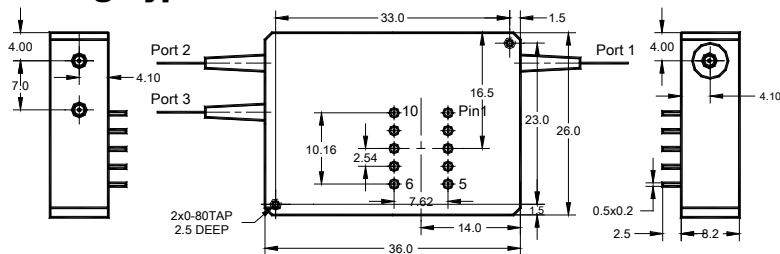
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## Mechanical Dimensions (Unit:mm)

### Latching Type



### Non-Latching Type



## 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	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
Port 1 → Port 3	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open

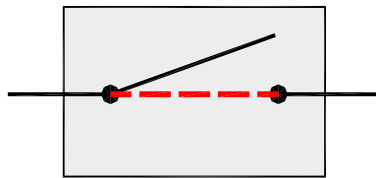
### Non-Latching Type

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	Close	Open	Open	Close
Port 1 → Port 3	No Power		N/A	N/A	Open	Close	Close	Open

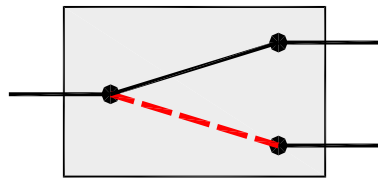


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## Functional Diagram



LB 1x1 HP Switch



LB 1x2 HP Switch

## Ordering Information

LBHP-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1*
	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
	1x1 Latching=11 1x1 N/O <sup>1</sup> =10 1x1 N/C <sup>2</sup> =1C 1x2=12 2x1=21 Special=00	1060=1 1310=3 1410=4 1550=5 650=6 780=7 850 =8 Special=0	Latching=1 Non-latching=2	Latching=2 Non-Latching=3 Special=0	SMF-28=1 MM50/125=5 MM62.5/125=6 Special=0	Bare fiber=1 900um tube=3 Special=0	0.25m=1 0.5m=2 1.0m=3 Special=0	

1. N/O: LB 1x1 High Power Switch, Non-Latching, Normally open.
2. N/C: LB 1x1 High Power Switch, Non-Latching, Normally close.

\* Agiltron provide high power connector, please call.