

# LightBend™ Dual 1x1 MultiMode Fiberoptic Switch

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

## Product Description

The LB Series Dual 1x1 multimode OptoMechanical Fiberoptic switch connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a patent pending opto-mechanical configuration and 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. This novel 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.

We offer tight-bend-fiber version, which reduces the minimum bending radius from normal 15 mm to 7 mm. This feature enables smaller overall foot print.



## Performance Specifications

LB Series Dual 1x1 MM Switch	Min	Typical	Max	Unit
Operation Wavelength	850, 1310, 1410, 1550			nm
Insertion Loss*, ***	0.5		0.8	dB
Wavelength Dependent Loss	0.15		0.25	dB
Return Loss **, ***	35			dB
Cross Talk ***	35			dB
Switching Time	3		10	ms
Repeatability			±0.02	dB
Durability	10 <sup>7</sup>			Cycle
Operating Voltage	5	5	7	VDC
Operating Current	30		60	mA
Voltage Pulse Width (Latching)	20			mS
Switching Type	Latching/Non-Latching			
Operating Temperature	-5			°C
Optical Power Handling	300		500****	mW
Storage Temperature	-40			°C
Package Dimension	30.0L x 30.0W x 8.5H			mm

\* Insertion loss excludes connector.

\*\* Light source CPR<14dB.

\*\*\* Our device is designed and optimized for certain laser launch condition which is Characterized as CPR value. In general, if application exceeds the specified CPR value, optical performance will become worsen.

\*\*\*\* Continuous operation, for pulse operation call.

## Features

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

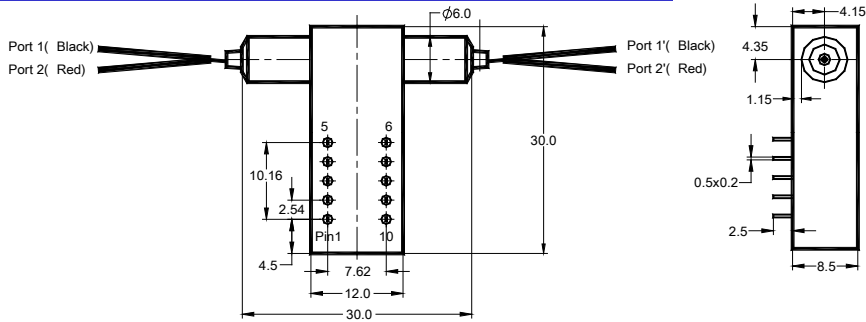
## Applications

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

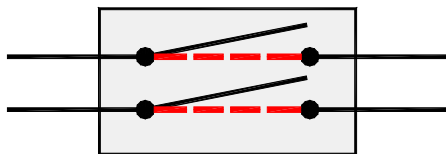
### Latching Type (Single Coil)

Optical Path	Electric Drive				Status Sensor			
	Pin 1	Pin 10	Pin 5	Pin 6	Pin 2-3	Pin 3-4	Pin 7-8	Pin 8-9
1→1', 2→2'	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
Block	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open

### Non-Latching Type

Optical Path	Electric Drive				Status Sensor			
	Pin 1	Pin 10	Pin 5	Pin 6	Pin 2-3	Pin 3-4	Pin 7-8	Pin 8-9
1→1', 2→2'	No Power		N/A	N/A	Close	Open	Open	Close
Block	5V	GND	N/A	N/A	Open	Close	Close	Open

## Functional Diagram



LB Dual 1x1 MM Switch

## Ordering Information

LBDU-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
	1x1 Latching=11 1x1 N/O*=10 1x1 N/C**=1C Special=00	1060=1 C+L=2 1310=3 1410=4 1550=5 650=6 780=7 850=8 1310 & 1550=9 850 & 1310=A Special=0	Latching(Single coil)=2 Non-Latching Type=3 Special=0	Standard=1 Special=0	50/125=5 62.5/125=6 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

\* N/O: LB Dual 1x1 MM Switch Non-Latching Normally Open.

\*\* N/C: LB Dual 1x1 MM Switch Non-Latching Normally Close.

