



LightBend™ Octo 2x2 Bypass Multimode Fiberoptic Switch (Bidirectional)

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

Product Description

The LB Series Octo 2x2 Bypass Multimode Fiberoptic switch integrated 4 dual 2x2 bypass switches in a single compact format. It is designed for 40G/100G transceiver bypass application. The device connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a patented 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. The switch is bidirectional.

We offer tight-bend-fiber version, which reduces the minimum bending radius. This feature enables smaller overall foot print.

Performance Specifications

LB Octo 2x2 Bypass MM Switch	Min	Typical	Max	Unit
Operation Wavelength	850, 1310, 1550, 850 & 1310			nm
Insertion Loss ^{[1], [2], [3]}	0.5		1.2	dB
Wavelength Dependent Loss	0.15		0.25	dB
Return Loss ^[1]	35			dB
Cross Talk ^[1]	35			dB
Switching Time	3		10	ms
Repeatability				±0.05 dB
Durability	10 ⁷			Cycle
Operating Voltage	4.5	5	6	VDC
Operating Current for each Switch [±10%]				42 mA
Switching Type	Latching/Non-Latching			
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling	300		500	mW

[1]. Excluding connectors.
 [2]. Dual band and Broad band.
 [3]. Measure at Laser source CPR<14dB.

Features

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

Applications

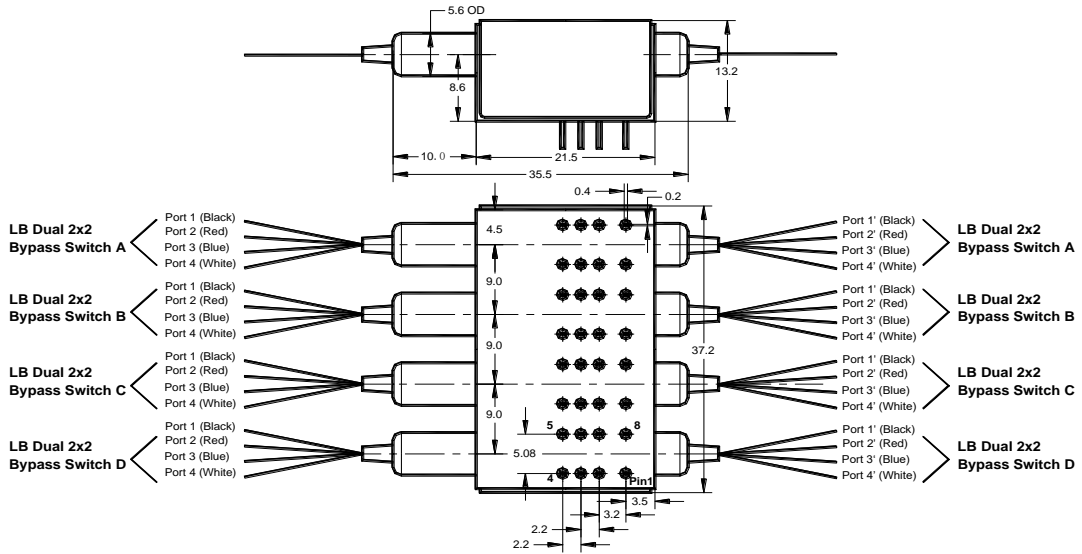
- Channel Blocking
- Configurable Add/Drop
- System Monitoring
- Instrumentation



Revised on 5/2/21
 (Click here for latest revision)

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Mechanical Dimensions (Unit: mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical Driving Requirements

The loads are four resistive coils which are activated by applying 5V (draw~160mA). Applying too long pulse for the latching version will heat up the device. Agiltron offers a computer control kit with TTL and USB interfaces and WindowsT M GUI. We also offer RS232 interface as an option – please contact Agiltron sales.

Latching type (For LB Dual 2x2 Bypass MM Switch A, B, C and D)

Application Note: Applying a constant driving voltage increases stability. The switches can also be driven by a pulse mode using Agiltron recommended circuit for energy saving.

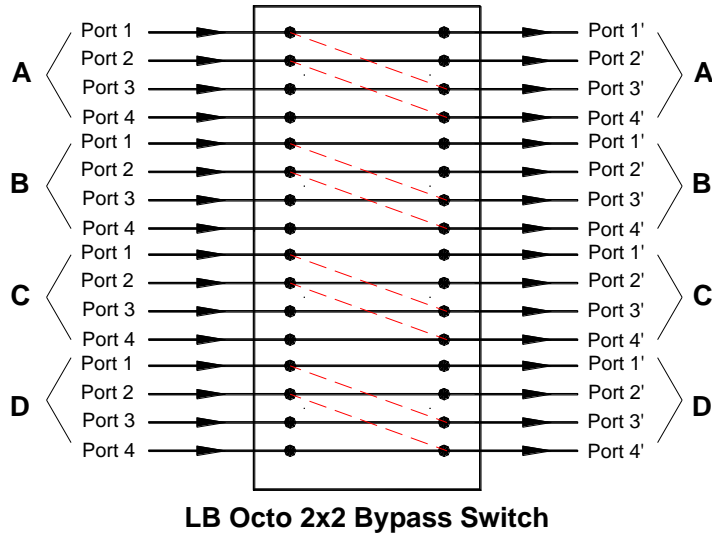
Optical Path	Electrical Drive		Status Sensor			
	Pin1	Pin8	Pin2-3	Pin3-4	Pin5-6	Pin 6-7
Port 1→ Port 1' Port 2→ Port 2' Port 3→ Port 3' Port 4→ Port 4'	5V Pulse	GND	Open	Close	Close	Open
Port 1→ Port 3' Port 2→ Port 4'	GND	5V Pulse	Close	Open	Open	Close

Non-Latching type (For LB Dual 2x2 Bypass MM Switch A, B, C and D)

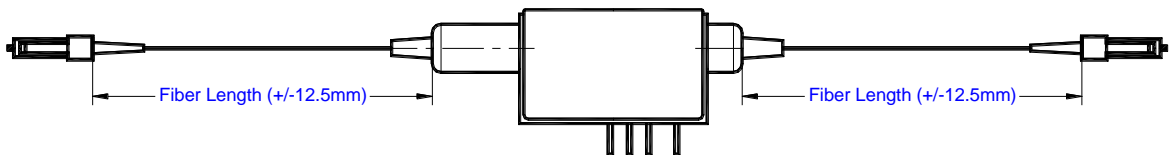
Optical Path	Electrical Drive		Status Sensor			
	Pin1	Pin8	Pin2-3	Pin3-4	Pin5-6	Pin 6-7
Port 1→ Port 1' Port 2→ Port 2' Port 3→ Port 3' Port 4→ Port 4'	5V	GND	Open	Close	Close	Open
Port 1→ Port 3' Port 2→ Port 4'	No Power		Close	Open	Open	Close

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Functional Diagram



Fiber Length Definition



Ordering Information

LOBM *-	2	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	2x2=22 Special=00	850=8 1310=3 1550=5 850/1310=A Special=0	Latching =1 Non-Latching=3 Special=0	Standard=1 Special=0	MM50/125=5 MM62.5/125=6 OM4=7 Special=0	Bare fiber=1 900µm loose tube=3 Special=0	0.25m=1 0.5m=2 1 m=3 Special=0	None=1 FC/PC=2 FC/PC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC=7 Duplex LC=8 MTP=9 Special = 0

* LOBM: LightBend Octo 2x2 Bypass Multimode Switch.



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Driver Reference Design

