

LightBend™ Dual 2x2 Bypass Multimode Fiberoptic Switch

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

Product Description

The LB Dual 2x2 Bypass Multimode Fiberoptic switch is a highly integrated single device with 8 fiber ports. Based on an Agiltron's pending patent, the switch is designed especially for protection and restoration applications. The switch is activated by a 5V pulse between two states, and the latching operation preserves the selected optical path after the drive signal has been removed. The switch has integrated electrical contact based position sensors. The simple 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 Dual 2x2 Bypass Switch	Min	Typical	Max	Unit
Wavelength	850	1310, 1410, 1550		nm
Insertion Loss ^{1,2}		0.7	1.0	dB
Wavelength Dependent Loss			0.25	dB
Return Loss ^{1,2}	35			dB
Cross Talk ¹	35			dB
Switching Time		3	10	ms
Repeatability			±0.02	dB
Durability	10 ⁷			Cycles
Operating Optical Power		300	500	mW
Operating Voltage	5	5	7	VDC
Operating Current (Latching/Non-Latching)		30	60	mA
Voltage Pulse Width (Square)		20		ms
Switching Type		Latching / Non-Latching		
Operating Temperature		0 ~ 70		°C
Optical Power Handling		300	500	mW
Storage Temperature		-40 ~ 85		°C
Package Dimension		30.0L x 30.0W x 8.5H		mm

Notes:

¹ Within operating temperature and with light source CPR <14dB.

² Excluding Connectors.

Features

- Low Optical Distortions
- 8 Ports Integration
- High Isolation
- High Reliability
- Fail-Safe Latching
- Epoxy-Free Optical Path
- Low Cost

Applications

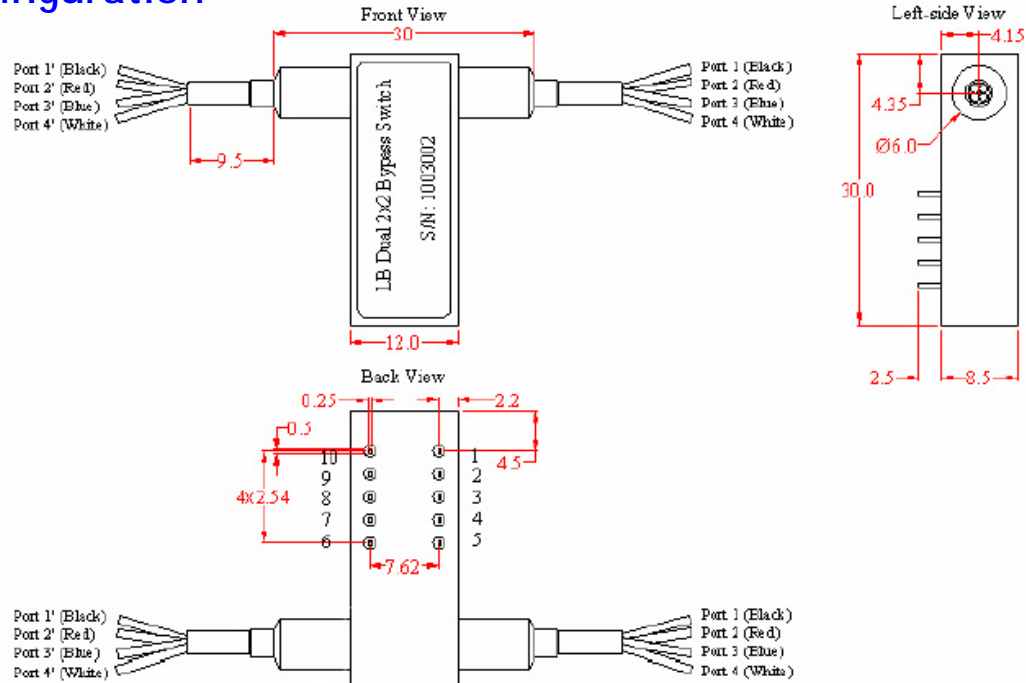
- Protection
- Instrumentation



LightBend™ Dual 2x2 Bypass Multimode Fiberoptic Switch

Single Coil Latching Relay

Configuration



Electrical Driving Requirements

Optical Path	Electric Drive				Status Sensor			
	Pin 1	Pin10	Pin5	Pin6	Pin2-3	Pin3-4	Pin7-8	Pin8-9
1--1' 2--2' 3--3' 4--4'	GND	5V Pulse	N/A	N/A	Close	Open	Open	Close
1--3' 2--4'	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open

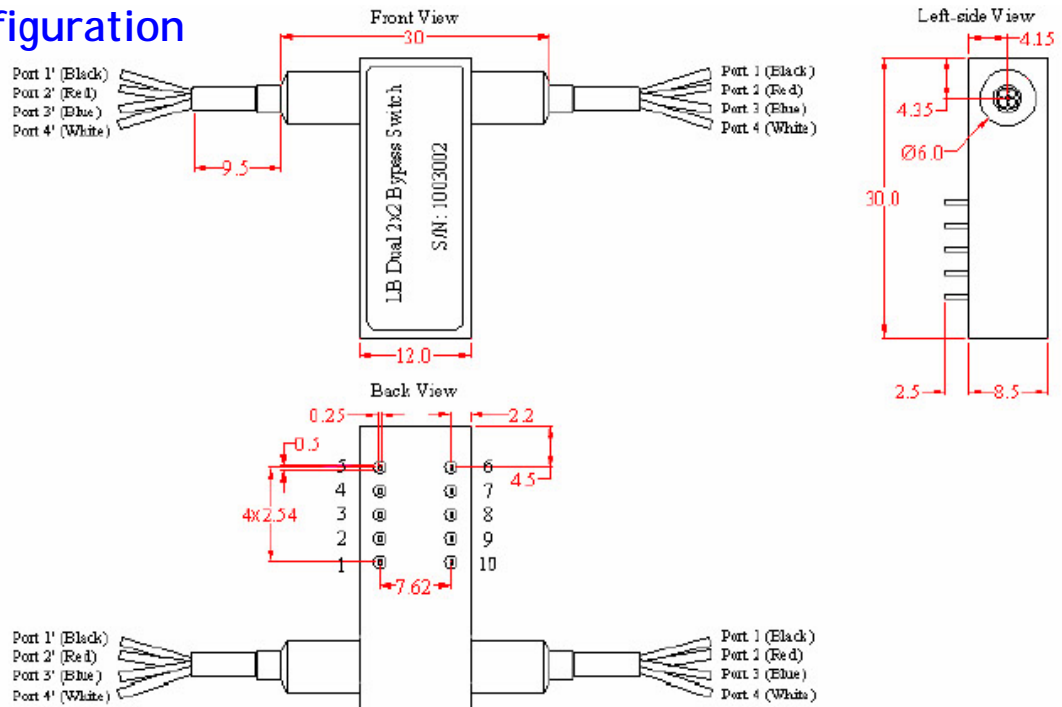
The load is a resistive coil which is activated by applying 5V (draw ~ 40mA). Applying too long pulse for the latching version will heat up the device.



LightBend™ Dual 2x2 Bypass Multimode Fiberoptic Switch

Non-Latching Relay

Configuration



Electrical Driving Requirements

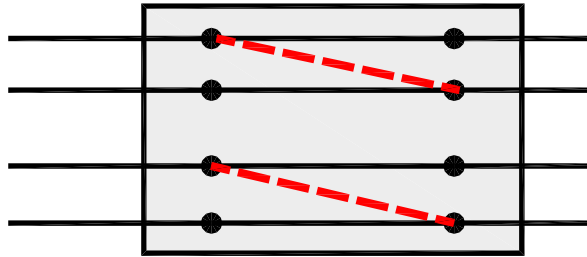
Optical Path	Electric Drive				Status Sensor			
	Pin 1	Pin10	Pin5	Pin6	Pin2-3	Pin3-4	Pin7-8	Pin8-9
1--1' 2--2' 3--3' 4--4'	5V	GND	N/A	N/A	Open	Close	Close	Open
1--3' 2--4'	No Power		N/A	N/A	Close	Open	Open	Close

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.



LightBend™ Dual 2x2 Bypass Multimode Fiberoptic Switch

Functional Diagram



LB Dual 2x2 Bypass Switch

Ordering Information

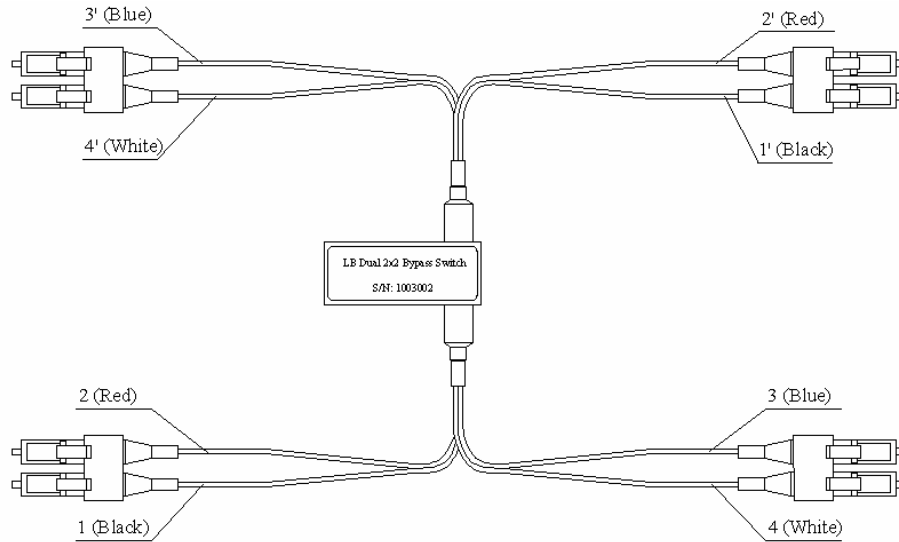
LBSW-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector
4 2	Special=00	1060=1 C+L= 2 1310=3 1410=4 1550=5 650=6 780=7 850=8 1310 & 1550=9 Special=0	Single coil Latching=2 Non-latching=3 Special=0	1	Multimode50/125=5 Multimode62.5/125=6 Special=0	Bare fiber=1 0.25m=1 0.5m=2 1.0m=3 Special=0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC=7 Duplex LC=8 Special=0



LightBend™ Dual 2x2 Bypass Multimode Fiberoptic Switch

Application

Prepared with 4 duplex LC connectors and customized fiber length for convenient installation



Normal Mode

Bypass Mode

