

LightBend™ Dual 1x2 Multimode Fiberoptic Switch

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

Product Description

The LB Dual 1x2 Multimode Fiberoptic switch is a highly integrated single device with 6 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 latching operation preserves the selected optical path after the drive signal has been removed. The switch has integrated electrical contact based position sensors. The proprietary simple design significantly reduces moving part position sensitivity, offering unprecedented high stability as well as unmatched low cost. Electronic driver is available for this series of switches.



Performance Specifications

LB Series Dual 1x2 MM Switch	Min	Typical	Max	Unit
Wavelength		850, 1310, 1410, 1550		nm
Insertion Loss ^{1,2}		0.6	0.9	dB
Wavelength Dependent Loss			0.25	dB
Cross Talk ¹	35			dB
Return Loss ^{1,2}	35			dB
Switching Time		10	20	ms
Repeatability			± 0.02	dB
Durability	10 ⁷			Cycles
Operating Optical Power		300	500	mW
Operating Voltage	4.5	5	6	V
Operating Current		20	50	mA
Voltage Pulse Width (square)		12	20	ms
Switch Type		Latching / Non-Latching		
Operating Temperature		0 ~ 70		°C
Fiber Type		MM62.5/125 or MM50/125		
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 <14 dB.

². Excluding Connectors.

Features

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

Applications

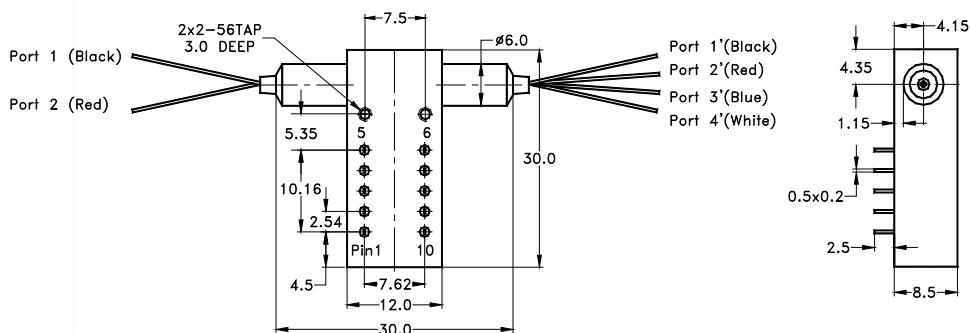
- Protection
- Instrumentation



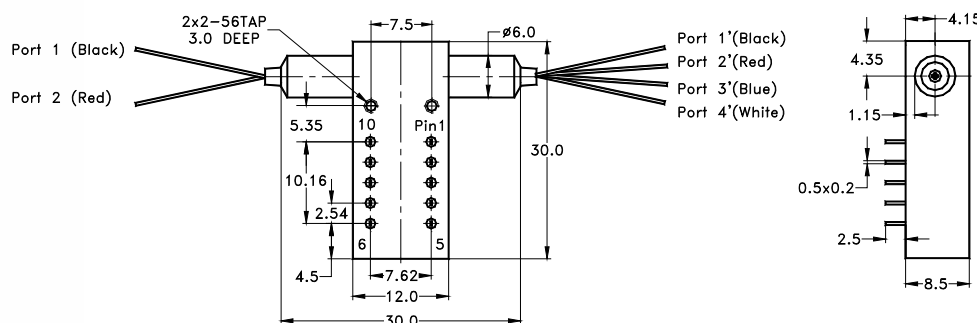
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Mechanical Dimensions (Unit:mm)

Latching Type



Non-Latching Type



Electrical Connector Configurations

Latching Type - Single Coils

Optic Path	Electric Drive				Status Sensor			
	Pin1	Pin10	Pin5	Pin6	Pin 2-3	Pin 3-4	Pin 7-8	Pin 8-9
Port 1 → Port 1' Port 2 → Port 2'	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

Latching Type - Dual Coils

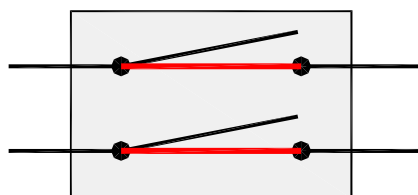
Optic Path	Electric Drive				Status Sensor			
	Pin1	Pin5	Pin6	Pin10	Pin2-3	Pin 3-4	Pin 7-8	Pin 8-9
Port 1 → Port 1' Port 2 → Port 2'	N/A	N/A	5V Pulse	GND	Close	Open	Open	Close
1--3' 2--4'	5V Pulse	GND	N/A	N/A	Open	Close	Close	Open

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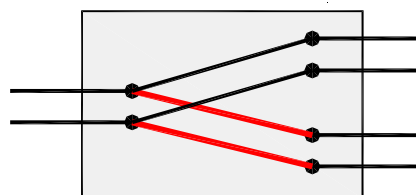
Non-Latching Type

Optic Path	Electric Drive				Status Sensor			
	Pin1	Pin10	Pin5	Pin6	Pin2-3	Pin 4	Pin 8	Pin 9
Port 1 \rightarrow Port 1' Port 2 \rightarrow Port 2'	5V	GND	N/A	N/A	Open	Close	Close	Open
1--3' 2--4'	No Power		N/A	N/A	Close	Open	Open	Close

Functional Diagram



LB Dual 1x1 MM Switch



LB Dual 1x2 MM Switch

Ordering Information

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	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	Dual 1x1=11 Dual 1x2=12 Dual 2x1=21 Special=00	1060=1 C+L=2 1310=3 1410=4 1550=5 650=6 780=7 850=8 1310 & 1550=9 Special=0	Latching Type Single Coil=2 Latching Type Dual Coil=1 Non-latch=3		MM 50/125=5 MM62.5/125=6 Special=0	Bare fiber=1 900μm tube=3 Special=0	0.25m=1 0.5m=2 1.0=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

