

# LightBend™ 1x16 Multimode OptoMechanical Fiberoptical Switch

## Product Description

The LB Series 1x16 Multimode fiber optic switch connects optical channels by redirecting an incoming optical signal into a selected output fiber. This is achieved by using a patent pending opto-mechanical configuration 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, and the new material based advanced design significantly reduces moving part position sensitivity, offering unprecedented high stability as well as an unmatched low cost.

## Features

- Unmatched Low Cost
- Low Optical Distortions
- Low Cross Talk
- High Reliability
- Epoxy-Free Optical Path

## Performance Specifications

LB Series 1x16 MM Switch	Min	Typical	Max	Unit
Operation Wavelength	Single Band 1260-1360 or 1510-1620			nm
	Dual Band 1260-1360 and 1510-1620			
Insertion Loss <sup>[1]</sup>		1.0	1.8 <sup>[2]</sup>	dB
Wavelength Dependent Loss		0.15	0.35 <sup>[2]</sup>	dB
Return Loss	35			dB
Cross Talk	40			dB
Switching Time		3	10	ms
Repeatability			±0.05	dB
Operating Voltage	4.5	5	6	VDC
Switching Type	Latching / Non-Latching			
Current <sup>[3]</sup>	Latching		26	mA
	Non-Latching		36	
Optical Power Handling		300	500	mW
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Fiber Type	MM 50/125, MM 62.5/125			
Package Dimension	152.0L x 60.0W x 24H			mm

**Note:**

[1]. Exclude connectors, higher loss for Dual and Broad band. Measured at Light source CPR<14dB.

[2]. Dual band and Broad band.

[3]. Tested at 5VDC for each relay actuation.

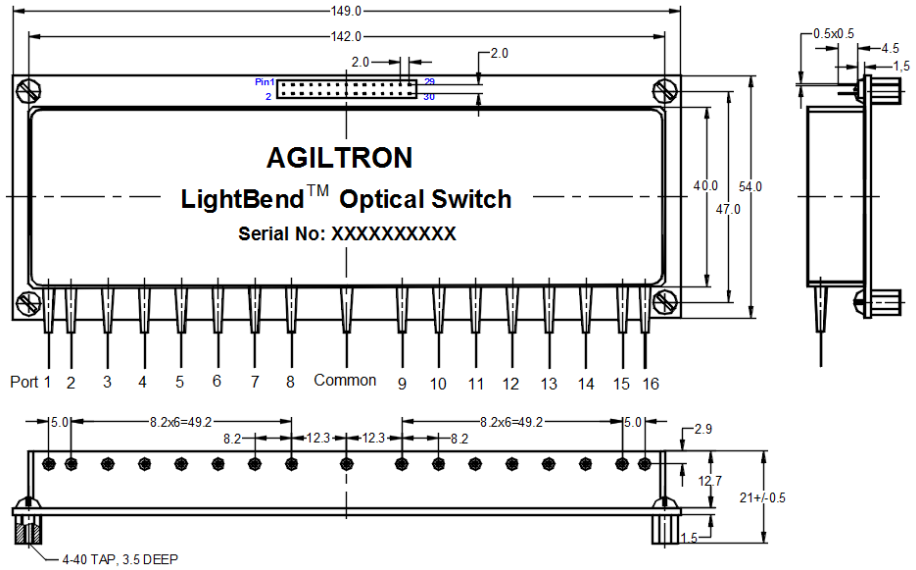
## Applications

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



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## Mechanical Dimensions (Unit: mm)



## Electrical Driving Requirements

Agiltron offers a computer control kit with TTL and RS232 interface and Windows™ GUI

### Latching Type

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	Connector Pin Number																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Comm↔1	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔2	+	-	-	+	-	+	-	+	-	+	-	+	-	+	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔3	NC	NC	+	-	-	+	-	+	-	+	-	+	-	+	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔4	NC	NC	NC	NC	+	-	-	+	-	+	-	+	-	+	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔5	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	-	+	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔6	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔8	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔10	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔11	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	+	-	NC	NC	NC	NC	NC	NC	NC	NC
Comm↔12	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	-	+	+	-	NC	NC	NC	NC	NC	NC
Comm↔13	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	-	+	+	+	+	+	+	+	+	NC
Comm↔14	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	-	+	+	+	+	+	+	+	+	NC
Comm↔15	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	-	+	+	+	+	+	+	+	+	+
Comm↔16	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	-	+	-	+	-	+	-	+	-	+	-	+	-	+

Note: "+" is DC 5V, "-" is GND.



# LightBend™ 1x16 Multimode OptoMechanical Fiberoptic Switch

Non-Latching Type

Optical Path	Connector Pin Number																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Comm→1	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→2	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→3	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→4	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→5	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→6	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→7	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→8	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→10	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→11	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC
Comm→12	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC
Comm→13	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC
Comm→14	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC
Comm→15	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-
Comm→16	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	+	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Note: "+" is DC 5V, "-" is GND.

## Ordering Information

LBMS <sup>[1]</sup>	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1x16=116 Special=000	1310=3 1550=5 780=7 850=8 980=9 850/1310=A Special=0	Latching=1 Non-latching=2 Special=0	Standard=2 Special=0	MM 50125=5 MM 62.5/125=6 Special=0	Bare fiber=1 900µm 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

[1]. LBMS: LightBend 1x16 Multimode Switch.

