

**BUY NOW**

# CrystaLatch™ 2x2 Fiber Optic Switch

(full aerospace, outspace, and undersea qualified)

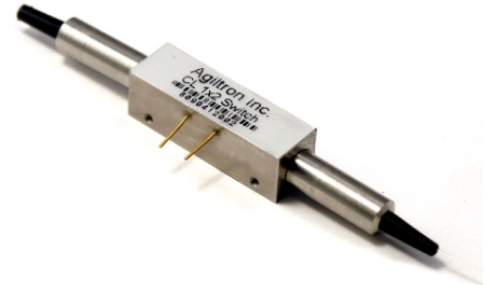
(SM, PM, High Power, Bidirectional, Isolator/Circulator Build-in)

(Protected by U.S. patents 7224860, 6757101, 6577430 and pending patents)

## Product Description

The CL 2x2 Fiber Optical Switch redirects an incoming optical signal into a selected output fiber, achieved using patented non-mechanical configurations and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. The all solid state CL 1x1,1x2 fiberoptic switch features low insertion loss, high extinction ratio, high channel isolation, and extremely high reliability and repeatability. It is designed to meet the most demanding switching requirements of continuous operation without failure, over 25 year longevity, operation under shock/vibration environment and large temperature variations, and fast response time.

The switch also has build-in circulator and isolator functions. Electronic driver is available for this series of switches.



## Performance Specifications

CL Single Stage 2x2 Series Switch	Min	Typical	Max	Unit	
Operation Wavelength <sup>[1]</sup>	1520	1550	1580	nm	
	1295	1310	1325	nm	
Insertion Loss <sup>[2]</sup>		0.7	1.2	dB	
Cross Talk	Bidirectional Series Switch		18	25	dB
	Unidirectional Series Switch		20	25	dB
PDL (SM Series Switch only)		0.1	0.2	dB	
Extinction Ratio (PM Series Switch only)	18	25		dB	
Return Loss	50	55		dB	
Polarization Mode Dispersion		0.1	0.2	ps	
Switch Speed (rise, fall)	5	50	200	μs	
Repetition Rate		2K		Hz	
Durability	10 <sup>14</sup>			cycle	
Operating Temperature	-5 (-40) <sup>3</sup>		70 (80) <sup>4</sup>	°C	
Storage Temperature	-40		85	°C	
Optical Power Handling	Standard		300	500	mW
	High power series		1.5	2	W
Switch type	Solid-State Latching				
Package Dimension	67.3L x 8.5W x 8.5H			mm	

[1]. L band version available

[2]. Measured without connectors.

[3]. Special -40 C version available

[4]. Special -80 C version available

## Features

- High speed
- High reliability
- Latching
- Low loss
- Direct drive
- Compact
- Low cost

## Applications

- Telcom
- Airplane
- Satellite
- Undersea
- LiDAR

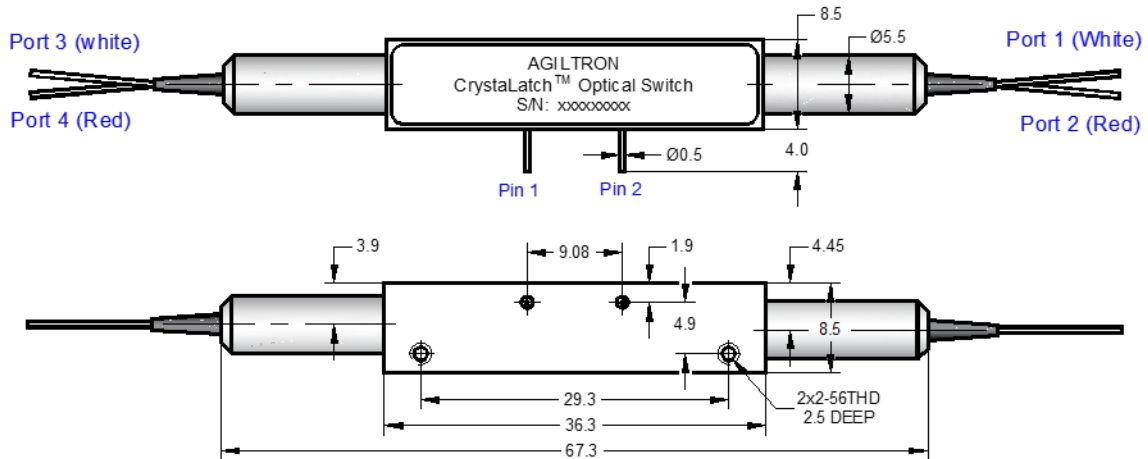


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### Mechanical Dimensions (Unit: mm)



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

### Electrical Driving Information

The switch is actuated by applying a voltage pulse. Applying one polarity pulse, one light path will be connected and latched to the position. Applying a reversed polarity pulse, another light path will be connected and latched to the position after pulse removed.

Parameter	Minimum	Typical	Maximum	Unit
Drive Voltage	2.25	2.5	2.75*	V
Drive Current	110	140	195	mA
Pulse Duration	0.2	0.3	0.5	ms

Driving kit with USB and TTL interfaces and Windows™ GUI is available. We also offer RS232 interface as an option - please contact Agiltron sales.

### Unidirectional Series Switch Driving Table

Optical Path A	Pin 1	Pin 2
Port 1 → 3, Port 2 → 4	GND	2.5V Pulse
Port 1 → 4, Port 2 → 3	2.5V Pulse	GND

Optical Path B	Pin 1	Pin 2
Port 3 → 1, Port 4 → 2	2.5V Pulse	GND
Port 3 → 2, Port 4 → 1	GND	2.5V Pulse

### Bidirectional Series Switch Driving Table

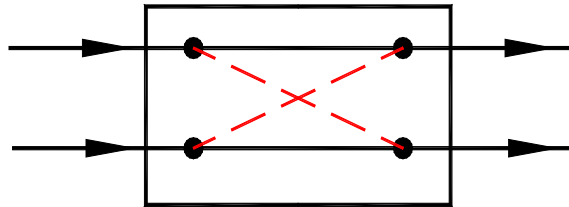
Optical Path	Pin 1	Pin 2
Port 1 → 3 (or Port 3 → 1) Port 2 → 4 (or Port 1 → 3)	GND	2.5V Pulse
Port 1 → 4 (or Port 4 → 1) Port 2 → 3 (or Port 3 → 2)	2.5V Pulse	GND

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### Function Diagram



CL 2x2 Single Stage Switch

### Ordering Information

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	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector <sup>[9]</sup>	
CLSW [1]	2x2 =2	1310=3	Single Stage=1	Standard=3	SMF-28=1	Bare fiber=1	0.25m=1	None=1
CLPM [2]	Special=00	1550=5	Special=0	-40C Version=5	PM 1550/250=B	900um tube=3	0.5m=2	FC/PC=2
CLHP [3]		Special=0			Special=0	Special=0	1.0m=3	FC/APC= 3
CLBD [4]							Special=0	SC/PC= 4
CLPH [5]								SC/APC=5
CLHB [6]								ST/PC=6
CLPB [7]								LC/PC=7
CPHB [8]								Duplex LC=8
								Special=0

[1]. **CLSW**: CrystaLatch 2x2 Single Stage **SWITCH**.

[2]. **CLPM**: CrystaLatch 2x2 Single Stage **PM** Switch.

[3]. **CLHP**: CrystaLatch 2x2 Single Stage **High Power** Switch.

[4]. **CLBD**: CrystaLatch 2x2 Single Stage **BIDIRECTIONAL** Switch.

[5]. **CLPH**: CrystaLatch 2x2 Single Stage **PM High Power** Switch.

[6]. **CLHB**: CrystaLatch 2x2 Single Stage **High Power Bidirectional** Switch.

[7]. **CLPB**: CrystaLatch 2x2 Single Stage **PM Bidirectional** Switch.

[8]. **CPHB**: CrystaLatch 2x2 Single Stage **PM High Power Bidirectional** Switch.

[9]. There isn't any connector in the high power switches normally. Please contact us for high power connectors.