



CrystaLatch™ 1x2 10W Power Series Fiber Optic Switch

(SM High Power, PM High Power, SM High Power Bidirectional, PM High Power Bidirectional)

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

Product Description

The CL 1x2 High Power (10W) series Switch connects optical channels by redirecting an incoming optical signal into a selected output fiber. This is 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 High Power 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, 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.

The magneto-optical crystals used in the CL switches have no fatigue nor drift effect.



Performance Specification

CL 1x2 HP Series Switch	Min	Typical	Max	Unit
Operation Wavelength ^[1]	1520	1550	1580	nm
	1295	1310	1325	nm
Insertion Loss ^[2]	Single stage	0.6	0.9	dB
	Dual Stage	0.8	1.1	dB
Cross Talk ^[2]	Single stage	18	25	dB
	Dual Stage	36	50	dB
Polarization Dependent Loss ^[2] (SM)		0.1	0.2	dB
Extinction Ratio ^[2] (PM)	18			dB
Return Loss ^[2]	50	55		dB
Polarization Mode Dispersion		0.1	0.2	ps
Switch Speed (Rise, Fall)		50	200	µs
Repetition Rate		2K		Hz
Durability	10 ¹⁵			cycle
Optical Power Handling			10 ^[4]	W
Operating Temperature ^[3]	-5		70	°C
Storage Temperature	-40		85	°C
Fiber Type	SM	Corning SMF-28, or equivalent		
	PM	Panda PM 250, or equivalent		

[1]. Agiltron can achieve same SPEC at L band.
 [2]. Measured without connectors.
 [3]. -40 °C version is also available, please call us.
 [4]. Continuous operation, for pulse operation call.

Features

- Solid-State high speed
- High power
- Ultra-high reliability
- Fail-safe latching
- Low insertion loss
- Direct low voltage drive
- Compact
- Low cost

Applications

- Optical channel blocking
- Configurable Add/Drop
- System monitoring
- Instrumentation

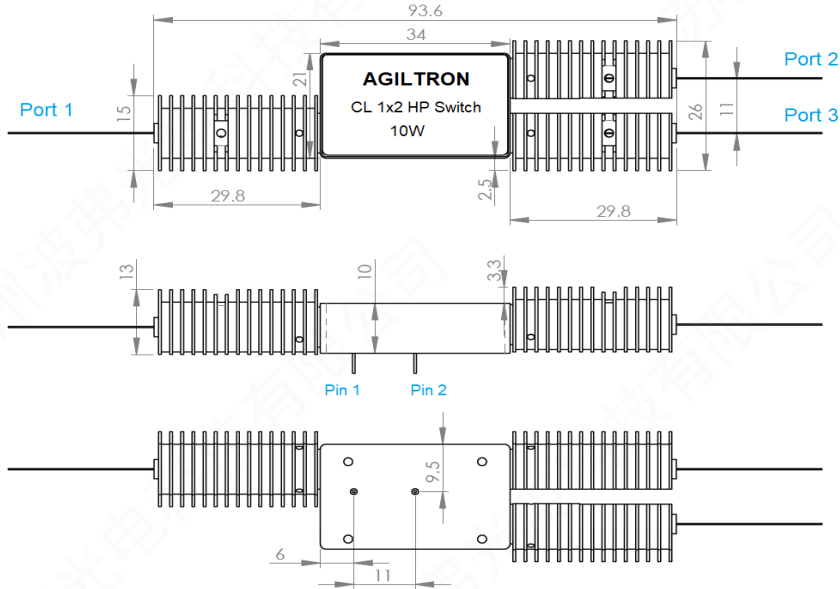


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 (Click here for latest revision)

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Mechanical Dimensions (Unit: mm)



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

Electrical Driving 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	Single Stage	2.25	2.5	2.75 ^[1]	V
	Dual Stage	4.5	5	5.5 ^[1]	V
Drive Current (each Coil)	110	140	195	mA	
Pulse Duration	0.2	0.3	0.5	ms	

[1]. Over this value will damage the device

Driving kit with USB and RS232, or RS232, or TTL interfaces is available. We provide GUI for USB and RS232 interface. Please contact Agiltron sales.

Single Stage Driving table

[1]. Bidirectional series 1x2 or 2x1 Switch

Optical Path	Pin 1	Pin 2
Port 1 ↔ Port 2	GND	2.5V Pulse
Port 1 ↔ Port 3	2.5V Pulse	GND

[2]. Unidirectional series 1x2 Switch

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

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[3]. Unidirectional series 2x1 Switch

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

Dual Stage Driving table

[1]. Bidirectional series 1x2 or 2x1 Switch

Optical Path	Pin 1	Pin 2
Port 1 ↔ Port 2	GND	5V Pulse
Port 1 ↔ Port 3	5V Pulse	GND

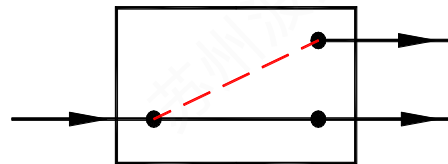
[2]. Unidirectional series 1x2 Switch

Optical Path	Pin 1	Pin 2
Port 1 → Port 2	GND	5V Pulse
Port 1 → Port 3	5V Pulse	GND

[3]. Unidirectional series 2x1 Switch Driving Table

Optical Path	Pin 1	Pin 2
Port 2 → Port 1	5V Pulse	GND
Port 3 → Port 1	GND	5V Pulse

Function Diagram



CL 1x2 High Power Switch

Ordering Information

Prefix	Type	Wavelength	Switch	Package	Fiber Type	Fiber Cover	Fiber Length	Connector ^[5]
CLHP- ^[1]	1x1 = 11	1310 = 3	Single Stage = 1	10W = H	SMF-28 = 1	Bare fiber = 1	0.25m = 1	None = 1
CLPH- ^[2]	1x2 = 12	1550 = 5	Dual Stage = 2		PM 1550 = B	900 μm tube = 3	0.5m = 2	Special = 0
CLHB- ^[3]	2x1 = 21	Special = 0	Special = 0		PM 1310 = D	Special = 0	1.0m = 3	
CPHB- ^[4]	Special = 00				Special = 0		Special = 0	

[1]. CLHP: CrystaLatch SM High Power Switch.

[2]. CLPH: CrystaLatch PM High Power Switch.

[3]. CLHB: CrystaLatch SM High Power Bidirectional Switch.

[4]. CPHB: CrystaLatch PM High Power Bidirectional Switch.

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