CrystaLatch™ 1x5, 1x6 PM High Power Reflection Switch (For Sensor and LIDAR applications)

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

Product Description

The CL Series 1x5, 1x6 PM High Power reflection switch connects optical channels by redirecting an incoming optical signal into a selected output fiber at the same time collect the reflected signal into a dedicate sensor port. This proprietary configuration is designed for sensor and LIDAR application, minimizing optical loss and eliminating the need for additional circulator or coupler. The switching 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.

Agiltron non-mechanical CL fiberoptic switch features low insertion loss, fast response time, high extinction ratio, and extremely high reliability and repeatability. It is designed to meet the most demanding switching requirements of continuous operation without wear-out, longevity without fail, and live operation under vibration/shock, as well as -40 C operation. Electronic driver is available for this series of switches.

Features

- Solid-State High Speed
- Non-Mechanical
- Ultra-High Reliability
- Fail-Safe Latching
- Low Insertion Loss
- Direct Low Voltage Drive
- Compact
- Vibration Tolerance
- Low Cost

Applications

- Sensor
- Lidar
- Instrumentation

Performance Specifications

CL 1X5, 1x6 PM HP RF Switch	Min	Typical	Max	Unit
Operation Wavelength [1]	1520	1550	1580	nm
	1295	1310	1325	nm
Insertion Loss [2]		1.2	1.6	dB
Cross Talk	40	50		dB
Directivity[3]	50	55		dB
Extinction Ratio	20	25		dB
Return Loss [2]	50	55		dB
Reliability	10^9			Cycles
Switch Speed (rise, fall)	5	50	200	μs
Repetition Rate		2K		Hz
Durability	10^{11}			cycle
Operating Temperature[4]	0		70	°C
Optical Power Handling[5]			5	W
Storage Temperature	-40		85	°C
Package Dimension	72L x 37W x 7.8H			mm

1. Agiltron can achieve same SPEC at L band.
2. Measured without connectors.
3. Defined as the optical power at the sensor port when light is launched into the input.
4. -40 C and 85°C version is available as special.
5. High pulse power version is available as special. Continuous operation, for pulse operation call.

RoHS Compliant

15 Presidential Way , Woburn, MA 01801 Tel: (781) 9351200 Fax: (781) 935-2040

www.agiltron.com

Revision: 060-14
05-10-13

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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.

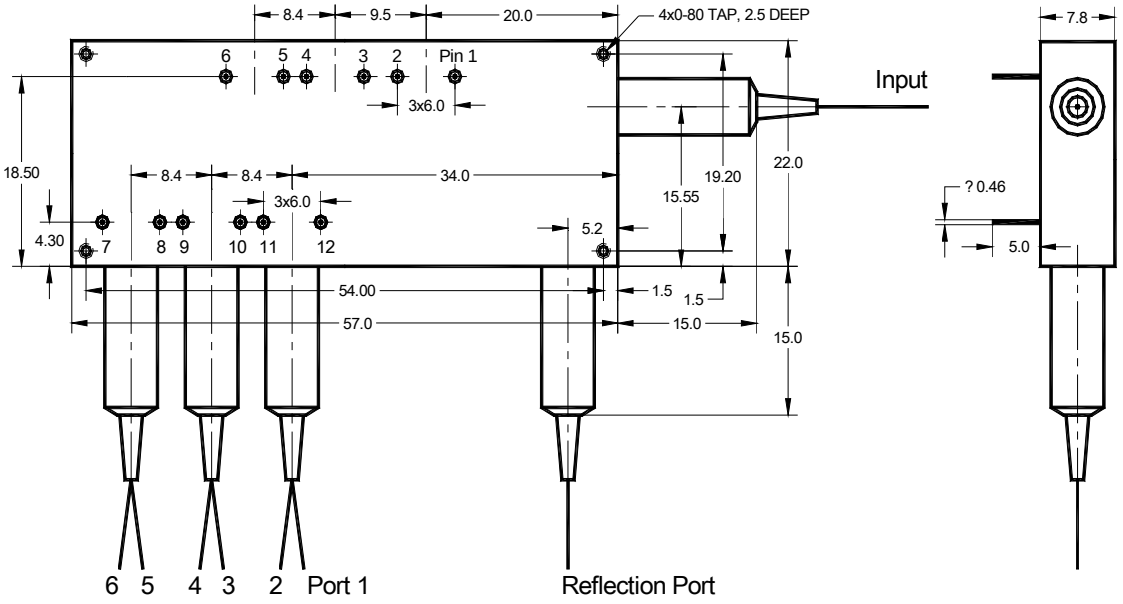
Parameter	Minimum	Typical	Maximum	Unit
Drive Voltage	2.25	2.5	2.75*	V
Resistance (each group)	15	18	22	Ω
Pulse Duration	0.2	0.3	0.5	ms

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

Electrical Driving Table

Optical Path	Pin Group 1		Pin Group 2		Pin Group 3		Pin Group 4		Pin Group 5		Pin Group 6	
	1	2	3	4	5	6	7	8	9	10	11	12
IN →Port 1 & Port 1→R	+	-	+	-	-	+	+	-	+	-	+	-
IN →Port 2 & Port 2→R	-	+	-	+	-	+	+	-	+	-	+	-
IN →Port 3 & Port 3→R	+	-	-	+	+	-	+	-	-	+	-	+
IN →Port 4 & Port 4→R	-	+	+	-	+	-	+	-	-	+	-	+
IN →Port 5 & Port 5→R	+	-	-	+	-	+	-	+	+	-	-	+
IN →Port 6 & Port 6→R	-	+	+	-	-	+	-	+	+	-	-	+

Mechanical Footprint Dimensions (mm)



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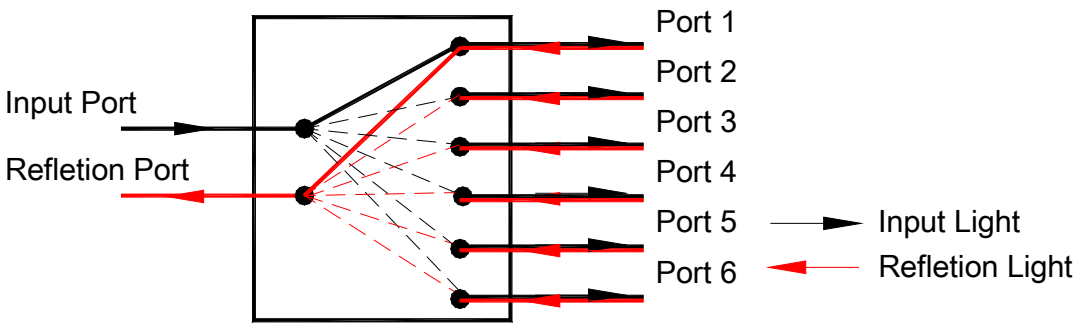
Functional Diagram



CL 1x5, 1x6 PM High Power Refletion Switch

Ordering Information

CLHR*-	☐☐	☐	☐	☐	☐	☐	☐	1**
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	1x5=15 1x6=6 Special=00	1310=3 1550=5 Special=0	Dual stage=2 Special=0	Standard=1 Special=0	PM1300=1 PM14XX=2 PM1550=3 SM28 = 4	Bare fiber=1 900um tube=3 Special=0	0.25m=1 0.5m=2 1.0m=3 Special=0	

*CLHR: CrystaLatch High Power Reflection Switch.

** Agiltron provide high power connector, please call.

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