

CrystaLatch™ 1x8 Fiberoptic Switch

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

Product Description

The CL Series 1x8 fiber optical 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 solid state CL 1x8 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.



Performance Specifications

CL Series 1x8 Switch	Min	Typical	Max	Unit
Operation Wavelength ¹	1520	1550	1580	nm
	1295	1310	1325	nm
Insertion Loss ²		1.3	2.5	dB
Uniformity		0.7	1.0	dB
Cross Talk ³	36	50		dB
Switch Speed (Rise, Fall)	5	50	200	µs
Repetition Rate		2K		Hz
Durability	10 ¹¹			cycle
Polarization Dependent Loss		0.15	0.4	dB
Polarization Mode Dispersion			0.2	ps
Return Loss ²	50			dB
Operating Temperature ³	-5		65	°C
Optical Power Handling ^{4, 5}		300		mW
Storage Temperature	-40		85	°C
Switch type	Solid-State Latching			
Fiber Type	Corning SMF-28			
Package Dimension	68.9L x 37.1W x 8.5H			mm

1. Agiltron can achieve same SPEC at L band

2. Measured without connectors

3. -40 °C version is also available.

4. High power version available.

5. Continuous operation, for pulse operation call.

Features

- High Speed
- Non-Mechanical
- High Reliability
- Fail-Safe Latching
- Low Insertion Loss
- Rugged
- Compact
- Cost Effective
- Direct Low Voltage Drive

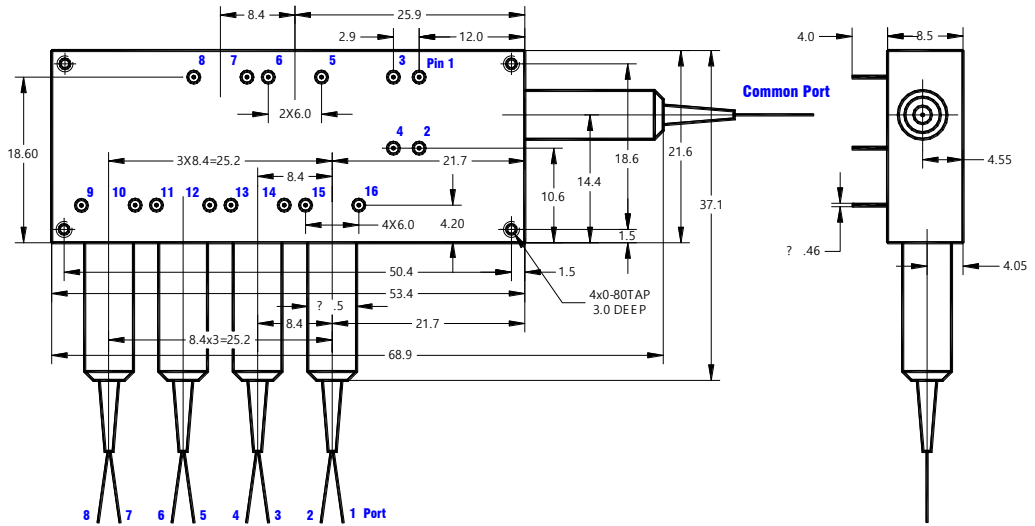
Applications

- Optical Signal Routing
- Network Protection
- Burst Switching
- Configurable Add/Drop
- Signal Monitoring
- Instrumentation



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Mechanical Dimensions (Unit: mm)



Electrical Driving Information

Each switching point 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
Resistance (each Pin group)	15	18	22	Ω
Switch Voltage	2.25	2.5	2.75*	V
Pulse Duration	0.2	0.3	0.5	ms

*Over this value will damage the device.

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

CL 1x8 Switch Electrical Driving Table

Optical Path	Pin Group 1		Pin Group 2		Pin Group 3		Pin Group 4		Pin Group 5		Pin Group 6		Pin Group 7		Pin Group 8	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Common → Port 1	+	-	+	-	-	+	-	+	+	-	+	-	-	+	+	-
Common → Port 2	-	+	-	+	-	+	-	+	+	-	+	-	-	+	+	-
Common → Port 3	+	-	-	+	-	+	-	+	+	-	+	-	+	-	-	+
Common → Port 4	-	+	+	-	-	+	-	+	+	-	+	-	+	-	-	+
Common → Port 5	+	-	-	+	+	-	+	-	+	-	-	+	-	+	-	+
Common → Port 6	-	+	+	-	+	-	+	-	+	-	-	+	-	+	-	+
Common → Port 7	+	-	-	+	+	-	-	+	-	+	+	-	-	+	-	+
Common → Port 8	-	+	+	-	+	-	-	+	-	+	+	-	-	+	-	+

*+ : 2.25~2.75V Pulse, Topical is 2.5V pulse; "-": Ground.

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1x8 Fiberoptic Switch

CL 8x1 Switch Electrical Driving Table

Optical Path	Pin Group 1		Pin Group 2		Pin Group 3		Pin Group 4		Pin Group 5		Pin Group 6		Pin Group 7		Pin Group 8	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Port 1→ Common	-	+	-	+	+	-	+	-	-	+	-	+	+	-	-	+
Port 2→ Common	+	-	+	-	+	-	+	-	-	+	-	+	+	-	-	+
Port 3→ Common	-	+	+	-	+	-	+	-	-	+	-	+	-	+	+	-
Port 4→ Common	+	-	-	+	+	-	+	-	-	+	-	+	-	+	+	-
Port 5→ Common	-	+	+	-	-	+	-	+	-	+	+	-	+	-	+	-
Port 6→ Common	+	-	-	+	-	+	-	+	-	+	+	-	+	-	+	-
Port 7→ Common	-	+	+	-	-	+	+	-	+	-	-	+	+	-	+	-
Port 8→ Common	+	-	-	+	-	+	+	-	+	-	-	+	+	-	+	-

“+”: 2.25~2.75V Pulse, Topical is 2.5V pulse; “-”: Ground.

Ordering Information

CLSW-	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"/>	1x8=18 8x1=81 Special=00	1310=3 1550=5 Special=0	Dual Stage=2 Special=0	Standard=2 Special=0	SMF-28 =1 Special=0 Bare fiber=1 900,µm loose 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