

CrystaLatch™ Bidirectional 1x4 Solid State Fiberoptic Switch

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

Product Description

The CL Series bidirectional 1x4 solid-state 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. These switches are true bidirectional allowing light propagating in both directions simultaneously, a critical feature for sensing applications. 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. 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

Performance Specifications

CL Series 1x4 BD Switch	Min	Typical	Max	Unit
Operation Wavelength ¹	1520	1550	1580	nm
	1295	1310	1325	nm
Insertion Loss ²		1.2	1.7	dB
Cross Talk	35	50		dB
Switch Speed (Rise, Fall)	5	50	200	μs
Repetition Rate		2K		Hz
Durability		10 ¹¹		cycle
Polarization Dependent Loss		0.1	0.25	dB
Polarization Mode Dispersion		0.1	0.2	ps
Return Loss ²	50	55		dB
Operating Temperature ³	-5		70	°C
Optical Power Handling ^{4, 5}		300	500	mW
Storage Temperature	-40		85	°C
Fiber Type	Corning SMF-28			
Package Dimension	53.5L x 38.3W x 8.5H			mm

1. Agiltron can achieve same SPEC at L band.
 2. Exclude connectors.
 3. -40°C version is also available.
 4. High power version available.
 5. Continuous operation, for pulse operation call.

Applications

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

CrystaLatch™ Bi-directional 1x4 Solid State Fiberoptic Switch

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

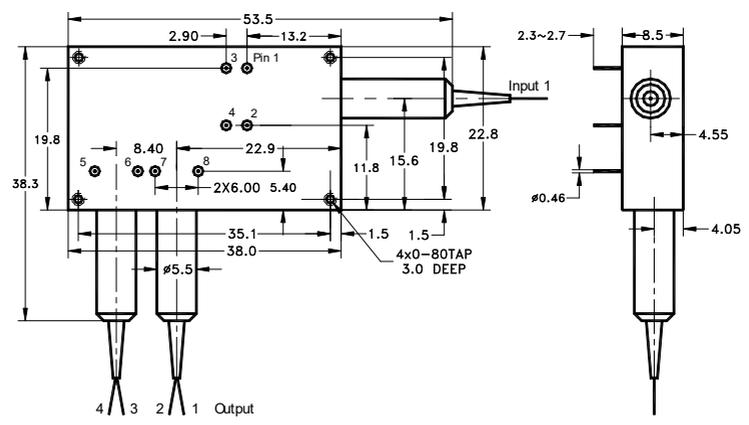
*Over this value will damage the device.

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

Optical Path	Pin Group 1		Pin Group 2		Pin Group 3		Pin Group 4	
	1	2	3	4	5	6	7	8
Input → Output 1	+	-	+	-	-	+	+	-
Input → Output 2	-	+	-	+	+	+	+	-
Input → Output 3	+	-	-	+	-	-	-	+
Input → Output 4	-	+	+	-	+	-	-	+

"+" : 2.5~3.0V Pulse; "-" : Ground.

Mechanical Footprint Dimensions (Unit: mm)



Ordering Information

CLBD-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
	1x4=14 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 900µm 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