CrystaLatch™ Mini 1x3,1x4 Solid State Fiberoptic Switch

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

Product Description

The CL Series 1x3,1x4 Mini 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 sate CL 1x3,1x4 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.

Features

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

Applications

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

Performance Specifications

CL Series 1x3, 1x4 Mini Switch	Min	Typical	Max	Unit
Operation Wavelength [1]	1520	1550	1580	nm
	1295	1310	1325	nm
Insertion Loss [2]	0.8	1.3	1.5	dB
Polarization Dependent Loss		0.1	0.25	dB
Cross Talk	40	45		dB
Polarization Mode Dispersion		0.1	0.2	ps
Return Loss [2]	50			dB
Switch Time (Rise, Fall)	5	50	200	μs
Repetition Rate		2K		Hz
Durability	10^{11}			cycle
Operating Temperature	-5[3]		70	°C
Optical Power [3]		300		mW
Storage Temperature	-40		85	°C
Switch type		Solid-Status Latching		
Fiber Type		Corning SMF28		
Package Dimension		42.0L x 20.0W x 7.8H		mm

1. Agiltron can achieve same SPEC at L band
2. Measured without connectors
3. Continuous operation, for pulse operation call.

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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
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.

CL 1x4 Switch

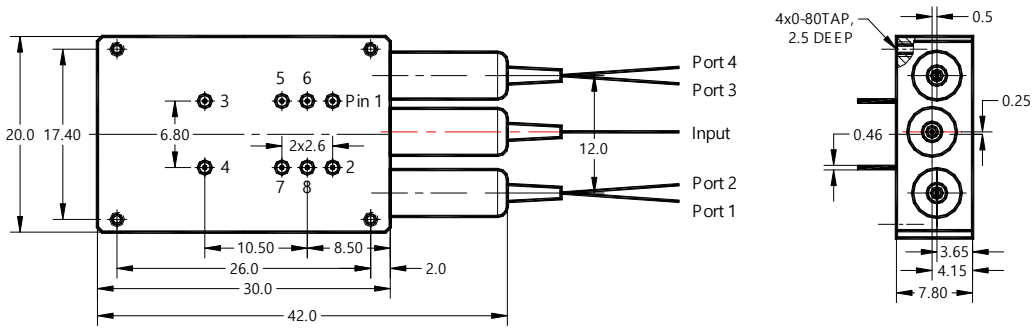
Optical Path	Pin Group 1		Pin Group 2		Pin Group 3		Pin Group 4	
	1	2	3	4	5	6	7	8
Input → Port 1	+	-	+	-	-	+	+	-
Input → Port 2	-	+	-	+	-	+	+	-
Input → Port 3	+	-	-	+	+	-	-	+
Input → Port 4	-	+	+	-	+	-	-	+

CL 4x1 Switch

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

Note: "+" is 2.5~3.0V Pulse. "-" is Ground.

Mechanical Footprint Dimensions (mm)



Ordering Information

CLMN-	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	1x3=13 3x1=31 1x4=14 4x1=41	1310=3 1550=5 Special=0	Dual Stage=2 Special=0	Standard=1 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 Special = 0

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