

BUY NOW 

CrystaLatch™ 1x8 5W High Power Series Fiber Optic Switch

(SM High Power, SM High Power Bidirectional)

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

Product Description

The CrystaLatch™ 1x8 5W High Power Series 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 5W High Power fiber optic 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.



Features

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

Performance Specifications

| CL 1x8 5W HP Series Switch | Min | Typical | Max | Unit | |
|--------------------------------------|-----------------------|---------|------|-------|----|
| Operation Wavelength ^[1] | 1520 | 1550 | 1580 | nm | |
| | 1295 | 1310 | 1325 | nm | |
| Insertion Loss ^[2] | | 1.7 | 2.7 | dB | |
| Cross Talk ^[2] | Bidirectional Series | | 35 | 45 | dB |
| | Unidirectional Series | | 40 | 50 | dB |
| Return Loss ^[2] | 50 | 55 | | dB | |
| Polarization Dependent Loss | | 0.15 | 0.35 | dB | |
| Polarization Mode Dispersion | | | 0.2 | ps | |
| Optical Switching Speed (Rise, Fall) | 5 | | 10 | µs | |
| Repetition Rate | | 2K | | Hz | |
| Durability | 10 ¹⁵ | | | cycle | |
| Optical Power Handling | | | 5 | W | |
| Operating Temperature ^[3] | -5 | | 70 | °C | |
| Storage Temperature | -40 | | 85 | °C | |
| Fiber Type | SMF-28, or equivalent | | | | |
| Package Dimension | 70.6L x 38.3W x 8.5H | | | mm | |

[1]. Agiltron can achieve same SPEC at L band.

[2]. Measured without connectors.

[3]. The premium versions with the operating temperature larger than -5--+70°C are available, please see the ordering information.

Applications

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

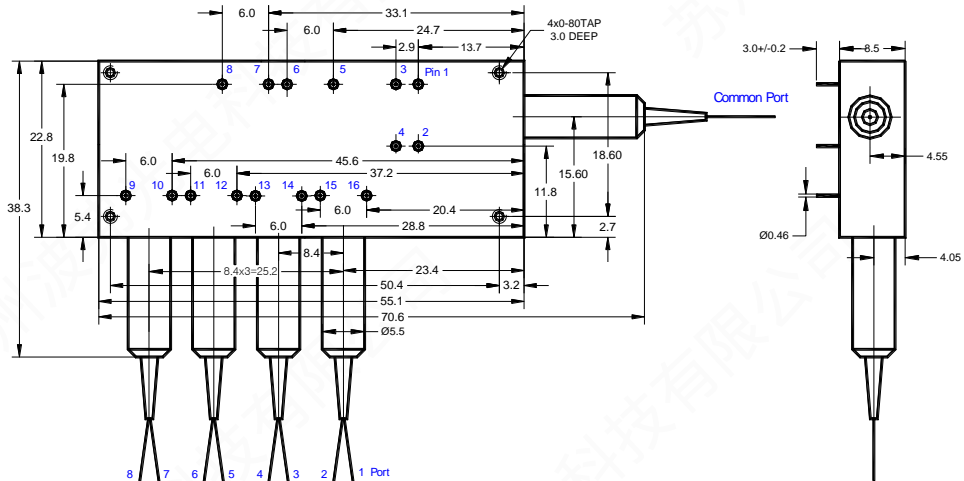


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(Click here for latest revision)

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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

Each switching point is actuated by applying a polarity voltage pulse through a pair of PINS, and latched after pulse removed.

| Parameter | Minimum | Typical | Maximum | Unit |
|-----------------------------|---------|---------|---------------------|------|
| Resistance (each Pin group) | 15 | 18 | 22 | Ω |
| Switch Voltage | 2.25 | 2.5 | 2.75 ^[1] | V |
| Pulse Duration | 0.2 | 0.3 | 0.5 | ms |

[1]. Over this value will damage the device.

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

Bidirectional series CL 1x8, or 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 |
| Common ↔ Port 1 | + ^[1] | - | + | - | - | + | - | + | + | - | + | - | - | + | + | - |
| Common ↔ Port 2 | - | + | - | + | - | + | - | + | + | - | + | - | - | + | + | - |
| Common ↔ Port 3 | + | - | - | + | - | + | - | + | + | - | + | - | + | - | - | + |
| Common ↔ Port 4 | - | + | + | - | - | + | - | + | + | - | + | - | + | - | - | + |
| Common ↔ Port 5 | + | - | - | + | + | - | + | - | + | - | - | + | - | + | - | + |
| Common ↔ Port 6 | - | + | + | - | + | - | + | - | + | - | - | + | - | + | - | + |
| Common ↔ Port 7 | + | - | - | + | + | - | - | + | - | + | + | - | - | + | - | + |
| Common ↔ Port 8 | - | + | + | - | + | - | - | + | - | + | + | - | - | + | - | + |

[1]. "+": 2.25~2.75V Pulse, Topical is 2.5V pulse; "-": Ground.



CrystaLatch™1x8 5W High Power Series Fiber Optic Switch

(SM High Power, SM High Power Bidirectional)

Unidirectional series 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 | + [1] | - | + | - | - | + | - | + | + | - | + | - | - | + | + | - |
| Common→ Port 2 | - | + | - | + | - | + | - | + | + | - | + | - | - | + | + | - |
| Common→ Port 3 | + | - | - | + | - | + | - | + | + | - | + | - | + | - | - | + |
| Common→ Port 4 | - | + | + | - | - | + | - | + | + | - | + | - | + | - | - | + |
| Common→ Port 5 | + | - | - | + | + | - | + | - | + | - | - | + | - | + | - | + |
| Common→ Port 6 | - | + | + | - | + | - | + | - | + | - | - | + | - | + | - | + |
| Common→ Port 7 | + | - | - | + | + | - | - | + | - | + | + | - | - | + | - | + |
| Common→ Port 8 | - | + | + | - | + | - | - | + | - | + | + | - | - | + | - | + |

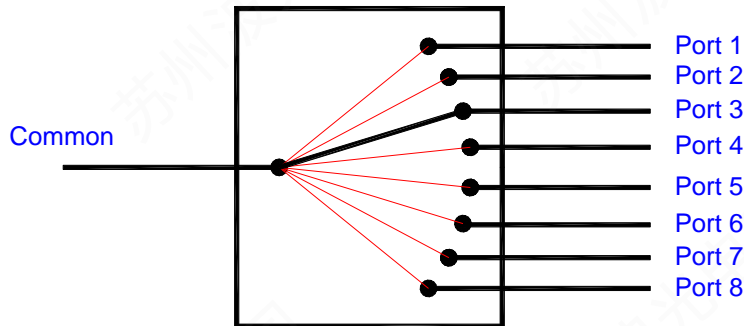
[1]. "+": 2.25~2.75V Pulse, Topical is 2.5V pulse; "-": Ground.

Unidirectional series 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 |
| Common→ Port 1 | - | + [1] | - | + | + | - | + | - | - | + | + | - | + | - | - | + |
| Common→ Port 2 | + | - | + | - | + | - | + | - | - | + | + | - | + | - | - | + |
| Common→ Port 3 | - | + | + | - | + | - | + | - | - | + | + | - | - | + | - | + |
| Common→ Port 4 | + | - | - | + | + | - | + | - | - | + | + | - | - | + | - | + |
| Common→ Port 5 | - | + | + | - | - | + | - | + | + | - | + | - | - | + | - | + |
| Common→ Port 6 | + | - | - | + | - | + | - | + | + | - | + | - | - | + | - | + |
| Common→ Port 7 | - | + | + | - | - | + | + | - | + | - | + | - | - | + | - | + |
| Common→ Port 8 | + | - | - | + | - | + | + | - | + | - | + | - | - | + | - | + |

[1]. "+": 2.25~2.75V Pulse, Topical is 2.5V pulse; "-": Ground.

Functional Diagram



CrystaLatch™1x8 5W High Power Series Fiber Optic Switch

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Ordering Information

| Prefix | Type | Wavelength | Switch | Package | Fiber Type | Fiber Cover | Fiber Length | Connector [9] |
|----------------------|--------------|-------------|-------------------|---------------|-------------|----------------|--------------|---------------|
| CLSW- ^[1] | 1x8=18 | 1310 = 3 | Dual Stage+5W = 4 | Standard = 2 | SMF-28 = 1 | Bare fiber = 1 | 0.25m = 1 | None = 1 |
| CLPM- ^[2] | 8x1=81 | 1550 = 5 | | -40-+85°C = A | Special = 0 | 900 μm tube =3 | 0.5m = 2 | FC/PC = 2 |
| CLHP- ^[3] | 1x7=17 | Special = 0 | | -40-+70°C = B | | Special = 0 | 1.0m = 3 | FC/APC = 3 |
| CLBD- ^[4] | 7x1=71 | | | -20-+85°C = C | | | Special = 0 | SC/PC = 4 |
| CLPH- ^[5] | 1x6=16 | | | -20-+70°C = D | | | | SC/APC = 5 |
| CLHB- ^[6] | 6x1=61 | | | Special = 0 | | | | ST/PC = 6 |
| CLPB- ^[7] | 1x5=15 | | | | | | | LC/PC = 7 |
| CPHB- ^[8] | 5x1=51 | | | | | | | Duplex LC = 8 |
| | Special = 00 | | | | | | | Special = 0 |

- [1]. **CLSW**: CrystaLatch Dual Stage 1x8 5W **SWITCH**.
- [2]. **CLPM**: CrystaLatch Dual Stage 1x8 5W **PM** Switch.
- [3]. **CLHP**: CrystaLatch Dual Stage 1x8 5W **Power** Switch.
- [4]. **CLBD**: CrystaLatch Dual Stage 1x8 5W **BIDIRECTIONAL** Switch.
- [5]. **CLPH**: CrystaLatch Dual Stage 1x8 5W **PM High Power** Switch.
- [6]. **CLHB**: CrystaLatch Dual Stage 1x8 5W **High Power Bidirectional** Switch.
- [7]. **CLPB**: CrystaLatch Dual Stage 1x8 5W **PM Bidirectional** Switch.
- [8]. **CPHB**: CrystaLatch Dual Stage 1x8 5W **PM High Power Bidirectional** Switch.
- [9]. There isn't any connector in high power switches. Please contact us for high power connectors.