

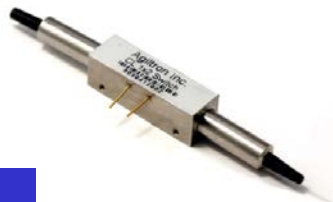


CrystaLatch™ 45° Polarization Fiber Optical Switch

Product Description

The CrystaLatch polarization switch can quickly switch the incoming SOP between two SOPs in output. There are two version 45° rotation. Latching operation preserves the selected SOP after the drive signal has been removed. These switches feature low insertion loss, high extinction ratio, 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. This is achieved using patented non-mechanical configurations and activated via an electrical control signal.

The input is PM fiber, the output could be either PM or SM fiber. For PM fiber, the polarizations is aligned with either slow axis or fast axis per request.



Features

- Solid-State High Speed
- Low Insertion Loss
- High Extinction Ratio
- Fail-Safe Latching
- Non-Mechanical
- Compact & Rugged

Performance Specifications

CL Polarization Switch	Min	Typical	Max	Unit
Operation Wavelength ^[1]	1520	1550	1580	nm
	1290	1310	1340	nm
Insertion Loss ^[2]		0.5	0.8	dB
PER(Extinction Ratio)	18			dB
Return Loss	50	55		dB
Polarization Rotation	@ λ_c , 23° C		45 ± 0.5°	
	@ OW, OT ^[3]		45 ± 5°	
Rotation Angle Temp. Dependence	0.07 degree / °C			
Repetition Rate	2K			Hz
Switching Time	50		100	µs
Durability	10 ¹⁴			cycle
Operating Temperature	0		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling ^[4]	300		500	mW
Fiber Type	Input Port	PM 250, or equivalent		
	Output Port	SMF-28, PM 250, or equivalent		
Package Dimension	58.2L x 8.4W x 8.4H			mm

Applications

- Polarization diversified detectors, and sensors.
- PMD monitoring, polarization modulation, polarization detection, and polarization metrology.
- Coherent communication.



Revised on 5/5/21
(Click here for latest revision)

[1]. λ_c = 1550nm or 1310nm. Agiltron can achieve same SPEC at L band.
 [2]. Measured without connectors.
 [3]. OW: Over Wavelength range. OT: Over Temperature range.
 [4]. Continuous operation. For pulse operation, please call.

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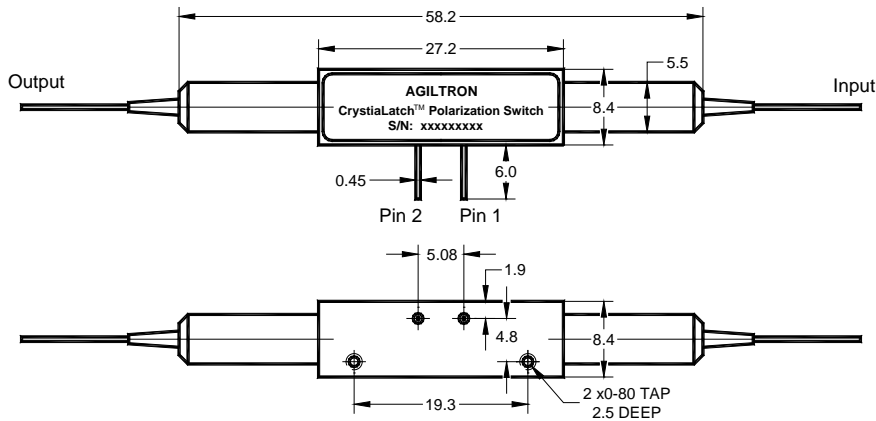
Electrical Driving Information

The polarization switch is actuated by applying a voltage pulse. Applying one polarity pulse, the output light beam polarization is one oriented status. Applying a reversed polarity pulse, the output light beam polarization is rotated by either 90 degrees or 45 degrees. The SOP is kept until the next pulse with opposite polarity.

Parameter	Minimum	Typical	Maximum	Unit
Drive Voltage	2.3	2.5	2.7	V
Drive Current	110	140	195	mA
Pulse Duration	0.2	0.3	0.5	ms

Output SOP	Pin 1	Pin 2
Same as Input SOP	2.5V Pulse	GND
45° rotation	GND	2.5V Pulse

Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information

CLPS ⁽¹⁾ -	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Polarization Rotation	Package	Wavelength	Input Axis	Fiber Type		Fiber Length	Connector	
	45° = 2 Special=0	Standard=1 Special=0	1310nm=3 1550nm=5 Special=0	Slow Axis=1 Fast Axis=2 Special=0	Input: PM 250=B SMF-28=1 Special=0	Output: PM 250=B SMF-28=1 Special=0	Bare fiber=1 900µm loose tube=3 Special=0	0.25m=1 0.5m=2 1.0 m=3 Special=0	None=1 FC/PC=2 FC/APC= 3 SC/PC=4 SC/APC=5 ST/PC=6 LC/PC=7 Special=0

[1]. CLPS: CrystaLatch Polarization Switch.