

Fiber Phase Shifter – Piezoelectric

Up to 8π , 400nm to 2600nm

DATASHEET

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Features

- Large Phase Shift
- High Reliability
- Low Insertion Loss
- Compact Size
- High Optical Power Handling

Applications

- Fiber Sensor
- Fiber Interferometer
- Fiber Laser
- Instrumentation

The Piezoelectric Fiber Phase Shifter (PIPS) utilizes a piezoelectric fiber squeezing plates to induce fiber birefringence phase retardation. It features ultra low insertion loss, all fiber type accommodation, high power handling, and a large phase change capability. We further offer driver with a coinvent 0-5V control inputs. The device is designed for customers to incorporate it into their systems. We offer two versions: straight and coil. The straight version provide phase shift up to 8π , while the coil can generate large phase shift up to 50π . The PIPS is engineered to meet the operational requirements of fast response and continuous operation, providing an ultimate solution for large fiber phase shifting application.

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength	400		2650	nm
Insertion Loss ^[1]	0.1	0.5	0.8	dB
Polarization Mode Dispersion			0.05	ps
Return Loss	65			dB
Response Time Rise/Fall	30			μ s
Operating Optical Power		0.5	1	W
Operation Frequency	DC		1	kHz
Resonance Frequency		35		kHz
Residual Amplitude Modulation			0.02	dB
Polarization Rotation ^[2]	0		8	π
Control Voltage ^[2]	0	20	150	V
Capacitance of Piezo	2	5	12	nF
Operating Temperature		0 ~ 60		$^{\circ}$ C
Storage Temperature		-40 ~ 85		$^{\circ}$ C

Notes:

[1]. Excluding connectors. Connectors ad 0.3dB.

[2]. @1550nm

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):



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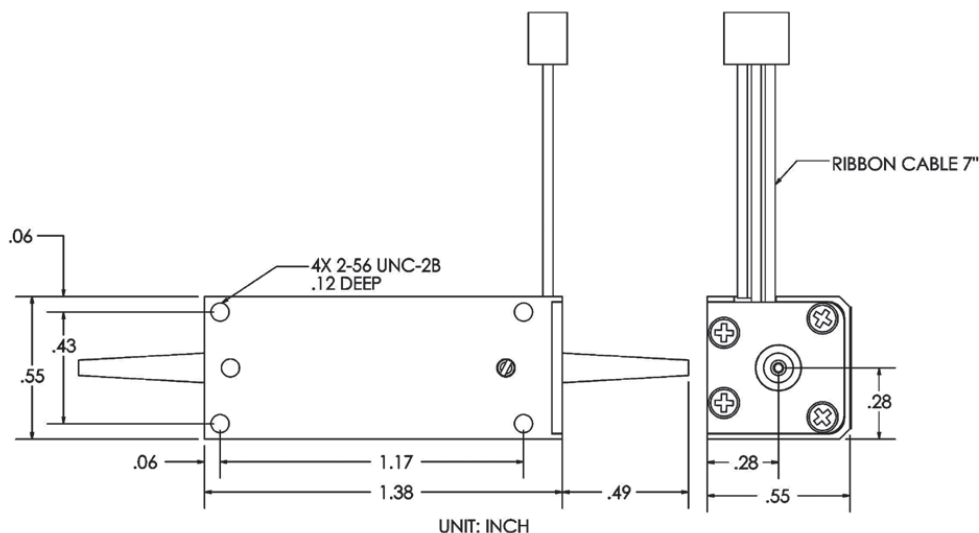
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Mechanical Dimensions (mm)



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

Electrical Driver Pin Definition

Pin #	Connection
1	+
2	-

Ordering Information

Prefix	Type	Wavelength	Type	Driver	Fiber Type	Fiber Cover	Fiber Length	Connector
PIPS-		1550 nm = 5 1310nm = 3 1060nm = 1 980nm = 9 850nm = 8 Special = 0	Standard = 1 Special = 0	Non = 1 Yes = 2 Special = 0	SMF-28 = 1 Hi1060 = 2 SM980 = 9 SM850 = 8 780HP = 3 Special = 0	Bare fiber = 1 0.9mm 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 LC/PC = L Special = 0

Driver is \$340



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Driver PCB

The Piezoelectric Driver is a PCB designed to mount the Fiber Phase Shifter (PIPS). It features an SMA analog control input capable of modulation speeds up to 20 Hz. The applied voltage is adjustable from 10 to 120 V via a resistance potentiometer on the PCB. A wall-pluggable 12V DC power supply is included. Enclosure is also available at extra.

Warning: do not touch the PCB at any time to void static damage and unpleasant electrical shock.