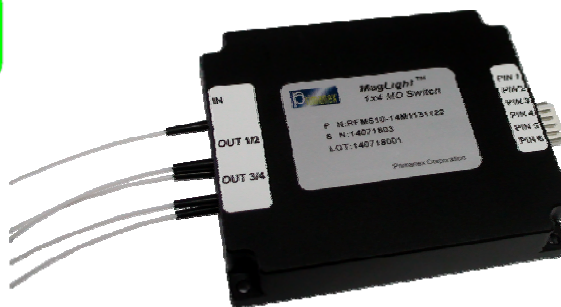## Features

● No moving parts, best reliability
● Ultra fast switching speed
● Extremely stable latching mode
● Low power consumption
● Easy to route-all fibers on one end
● Exceptional durability and stability

RoHS Compliant

Applications

● Optical switching
● Channel protection
● System monitoring
● Test & measurement
● Fiber optics sensing system
● High speed optics beam scanning

Product Description

Primanex *MagLight^TM* 1x4 optical switch is an all solid-state device without any moving parts. The switching of the optical signal is based on well-known Faraday Effect, and realized by using a patent protected non-mechanical configuration with solid-state all-crystal design which eliminates the need for mechanical movement. The microsecond fiber optic switch is designed to meet the most demanding switching requirements for reliability, durability, speed, and none-stopping high frequency switching.
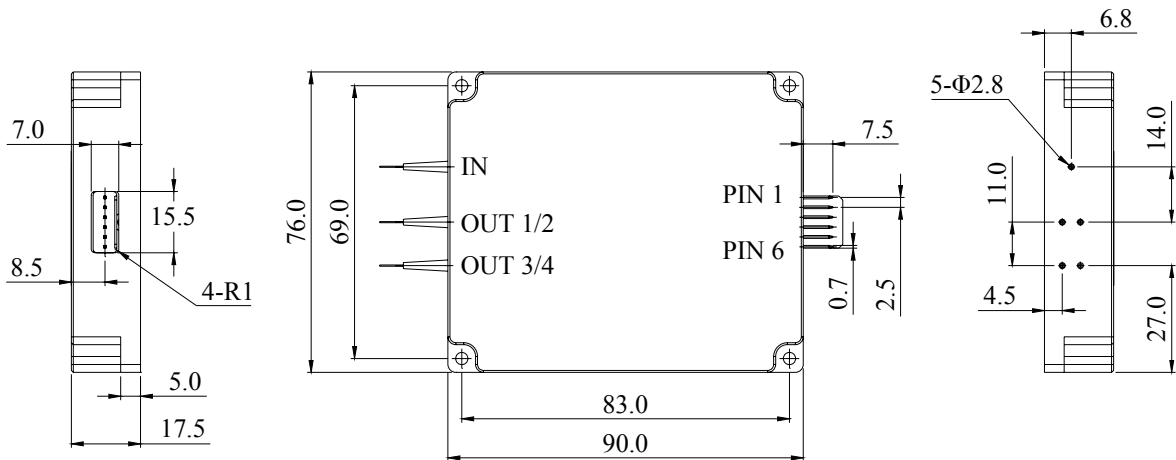
Specifications

Item	Unit	Parameters		Notes
		Unidirectional	**Bidirectional**	**Notes**
Wavelength Range	nm	1525 ~ 1565		Other wavelengths available
Insertion Loss	dB	<2.2	<2.4	Add 0.6dB for high-power version
PDL	dB	<0.3		
Return Loss	dB	>40	>30	
Crosstalk	dB	>40	>35	Typical >50dB
Repeatability	dB	+/- 0.01		
Durability	Cycles	> 100 Billions		
Switching Speed	μs	200 ~ 400		Other speed optional
Switching Type	N/A	Latching		Need power only during switching
Operating Temperature	°C	-5 ~ 70		
Storage Temperature	°C	-40 ~ 85		
Maximum Optical Power	mW	500		Refer to hi-power version for higher power handling requirement
Dimension(L×W×H)	mm	90×76×17.5		

*. All the specifications are based on the devices without connectors, and guaranteed over the operating temperature range, wavelength range, and all polarization states.
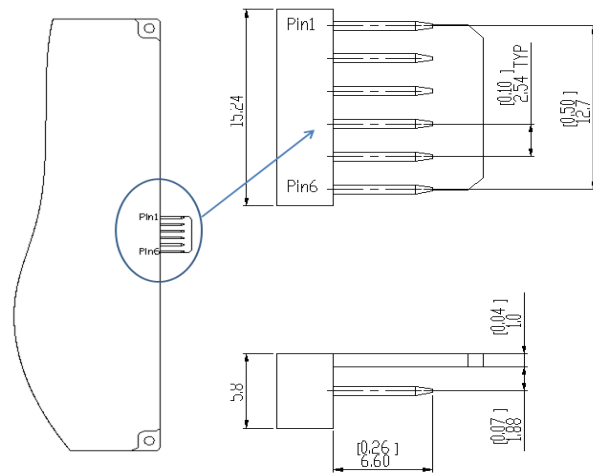
**. Specifications are subject to change without notice.

Dimensions Drawing (Unit: mm)

Electrical Connector Specifications

Vendor:	Molex (P/N: 0022057068)
Housing:	Natural nylon，UL 94V-O
Contact:	Brass, 0.64 mm (.025") square
Plating:	Tin

Electrical Specifications

Parameter	Specification	Unit
Switching Speed	200~400	μs
Switching Voltage(VCC)	5 (+/-5%)	V
Switching Current	< 200	mA
Pulse Width(typical)	1000	μs
Claim Frequency	< 800	Hz

*. for electrical specifications related to other switching speed, please contact Primanex.

Port Mark & Pin Assignment

Ports & Pins	Assignment	Note
IN	The optical input port	-
OUT1, OUT2, OUT3, OUT4	The optical output port1, 2, 3, 4,	-
Pin 1	VCC	5V
Pin 2	GND	-
Pin 3	Ctrl 0	5V TTL
Pin 4	Ctrl 1	5V TTL
Pin 5	Ctrl 2	5V TTL
Pin 6	NA	-

Pin Control Table

Table1: Pin control signal corresponding to switching status for unidirectional and bidirectional switch

Switching State	Ctrl 0	Ctrl 1	Optical Path	
			Unidirectional	Bidirectional
0	0	0	IN → OUT1, OUT4 → IN	IN ↔ OUT1
1	0	1	IN → OUT2, OUT3 → IN	IN ↔ OUT2
2	1	0	IN → OUT3, OUT2 → IN	IN ↔ OUT3
3	1	1	IN → OUT4, OUT1 → IN	IN ↔ OUT4

Ordering Information (Example:RFMS10-14M1121120）

☐FMS1☐-14M ☐ ☐ ☐1☐ ☐ ☐

Working Mode

R. Regular

(Unidirectional)

B. Bidirectional

Power Handling

0. Regular 500mW

1. Hi-power: 100μJ for
   pulsed or 5W for CW

2. Others

Operating Wavelength

1. C Band

2. L Band

3. C & L Band

4. Others

Switch Speed

1. 200~400μs

2. 10~30μs

3. Others

Dimension

1. Standard

2. Others

Fiber Length

1. 0. 5 +/- 0.1m

2. 1.0 +/- 0.1m

3. Others

Connector Type

0. No Connector

1. FC/UPC

2. FC/APC

3. SC/UPC

4. SC/APC

5. LC/PC

6. MU/PC

7. Others

Fiber Type

1. 250μm fiber

2. 900μm fiber

3. Others