*et*MEMS™ Full 2x2 Fiberoptic Switch

(Protected by U.S. patent 8,203,775 and other patents pending)

Product Description

The *et*MEMS™ Series 2x2 Fiberoptic switch connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a proprietary *et*MEMS™ configuration and activated via an electrical control signal. It uniquely features rugged thermal activated micro-mirror movement instead of rotation, and latches to preserve the selected optical path after the drive signal and the power have been removed. This novel design significantly simplify the control electronics, offering unprecedented high stability and an unmatched low cost.

We also offer the built-in driver version, which features a convenient user interface.

Features

- High Reliability
- Latching
- Intrinsic tolerance to ESD

Applications

- Channel Routing
- Configurable Add/Drop
- System Monitoring
- Instrumentation

RoHS Compliant

Performance Specifications

*et*MEMS™ Full 2x2 Switch	Min	Typical	Max	Unit
Operation Wavelength	Single Band 1260~1360 or 1510~1610			nm
	Dual Band 1260~1360 and 1510~1610			
	Broad Band 1260~1620			
Insertion Loss [1]		0.6	1.0	dB
Wavelength Dependent Loss		0.2	0.3 [2]	dB
Polarization Dependent Loss			0.1	dB
Return Loss [1]	50			dB
Cross Talk [1]	50			dB
Switching Time		20		ms
Repeatability			±0.05	dB
Repetition Rate			20	Hz
Durability	10^9			Cycle
Switching Type		Latching		
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling		300	500	mW
Fiber Type		SMF-28 [3]		

[1]. Excluding connectors.

[2]. Dual band and Broad band.
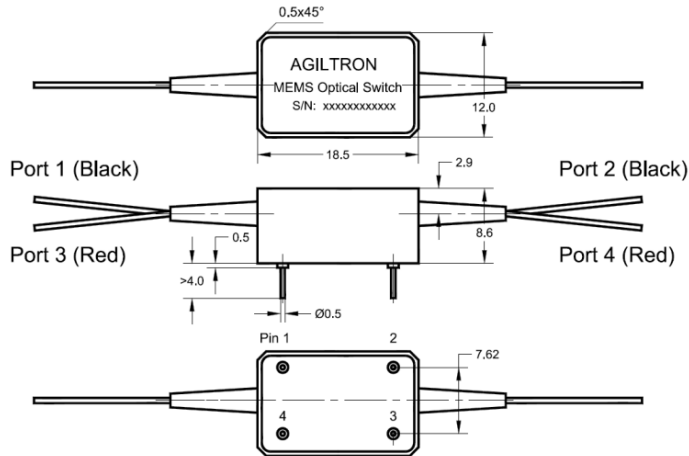
[3]. Please contact us for the different fiber version.

*et*MEMS™ 2x2 Fiberoptic Switch

Mechanical Dimensions with Built-in Driver (Unit: mm)

Electrical Driving Requirements with Built-in driver

Pin No.	Symbol	Type	Description
1	12VDC	I	DC power supply, voltage range is 11.5V~12.5V.
2	TTL-A	I	TTL input port.
3	TTL-B	I	TTL input port.
4	GND		Ground.

Control Input Pins [1]		Optical Path Directing
TTL-A	TTL-B	
H pulse [2]	L	Port 1→2, Port 4→3
L	H pulse [2]	Port 1→3, Port 4→2

[1]. H**:** high level (3.5V~5.5V), L**:** low level (0V~1.5V).
[2]. H pulse: (3.5V~5.5V) high level pulse, minimum width of 10 us is required. It should return to L to prevent repetitively switching actions.
[3]. Please call sale for user manual if the position sensing is needed.
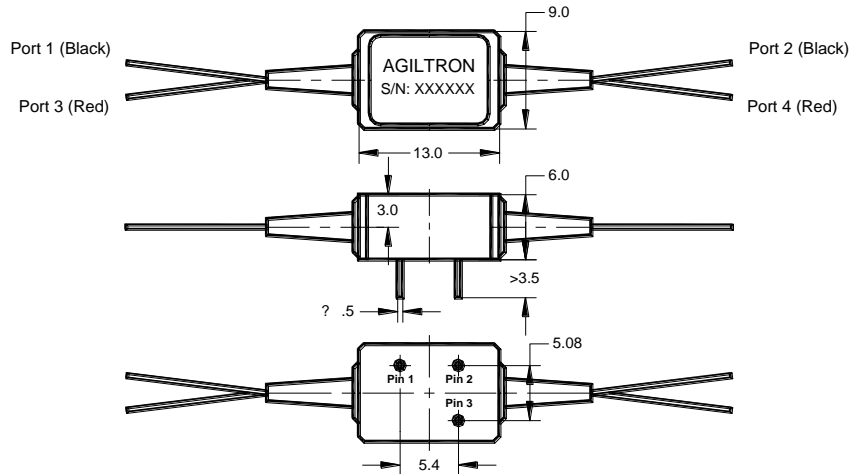
Function Diagram
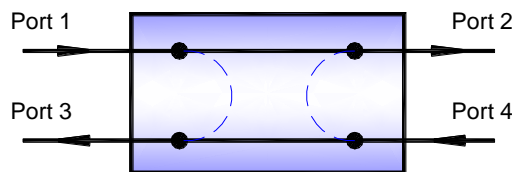
MEMS 2x2 Switch

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Mechanical Dimensions without Built-in Driver (Unit: mm)

Port 1 (Black)
Port 3 (Red)
Port 2 (Black)
Port 4 (Red)

AGILTRON
S/N: XXXXXX

9.0
13.0
6.0
3.0
>3.5
? .5
5.08
Pin 1 Pin 2
Pin 3
5.4

Electrical Driving Requirements w/o Built-in Driver

Optical Path	Pin 1	Pin 2	Pin 3
Port 1→2, Port 4→3	Driving pulse	GND	NC
Port 1→3, Port 4→2	NC		Driving pulse

Driving Pulse Definition	Min	Typical	Max	Unit
Driving Pulse Voltage	9	9.3	9.5 [1]	V
Driving Pulse Width	12	12.5	13 [1]	ms
Peak Current		290		mA

[1]. Attention! Outside this range could damage the device.

Ordering Information

MEMS-	☐☐	☐	1	☐	☐	☐	☐	☐
	Type	**Wavelength**	**Switch**	**Package**	**Fiber Type**		**Fiber Length**	**Connector**
	2X2=22 Special=00	C+L=2 1310=3 1410=4 1550=5 1310 &1550=9 1260~1620=B Special=0	Latching Type =1	Straight & Build-in Driver=1 Straight=3 Special=0	SMF-28=1 Special=0	Bare fiber=1 900um 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 Duplex LC=8 Special=9