MEMS 3D MATRIX SWITCH

SX1

DiCon's MEMS 3D Matrix Switch is a proprietary optical switch structure built on DiCon's industry-proven MEMS mirror technology that enables any input to connect to any output in a stable, non-blocking all-optical cross-connect configuration. Its superior optical performance and reliability make it a versatile solution for routing classical optical signals and sensitive quantum information.

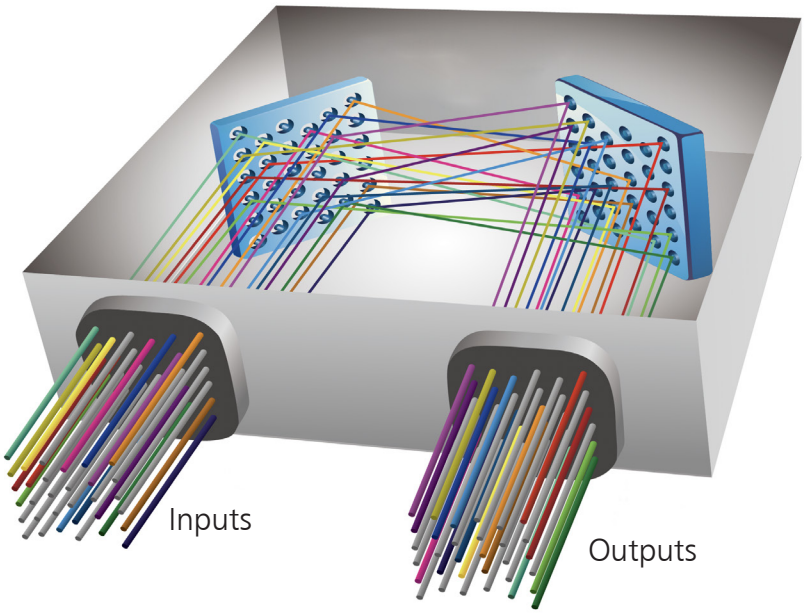
FEATURES

- No dithering or active alignment artifacts
- High Reliability / Stability
- Lifetime > 1 Billion Switch Cycles
- Available in any MxN configuration up to 16x16
- Proven MEMS Technology

APPLICATIONS

- Quantum Computing / Communication
- Cyber Surveillance
- Data Center Network
- Configurable Test & Measurement

OPERATING PRINCIPLE



DiCon FIBEROPTICS

MEMS 3D SWITCH MODULE - SX1
ORDERING INFORMATION

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Product Code

SX1	3D Switch

Switch Configuration

MxN	Specify M≤16, N≤16 (For MMF)

Alignment Type

P	Opaque

Fiber Type

50	50/125 μm MMF

**Other fiber options available upon request*

Wavelength Range

850	850 nm
980	980 nm
1310	1310 nm
1550	1550 nm
850/1310	850 & 1310 nm
1310/1550	1310 & 1550 nm

**Other wavelength options available upon request.*

Control Interface

U	I^2C/RS232/USB

Start Up State

0	Channel 0 (Off state)

Fiber and Jacket Type

50/BF	50 μm core, bare fiber
50/LT	50 μm core, loose tube

**Other fiber options available upon request*

Connector Type

FC	FC/UPC
FC/APC	FC/APC
LC	LC/UPC
LC/APC	LC/APC
SC	SC/UPC
SC/APC	SC/APC
N	None

**Other connector types available upon request*

Connector Key Orientation

N	None

Pigtail Length

1	1 Meter
X	Specify X Meters

**Tolerance is +/- 0.05 m*

Please contact DiCon Fiberoptics to discuss any special requirements not defined above.

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OPTICAL SPECIFICATIONS[1,2]	
Wavelength Range	850 to 1550 nm
Insertion Loss[3] (IL)[4]	0.6 dB typ. 1.0 dB max.
Stability[5,6]	0.02 dB typ. 0.05 dB max.
Crosstalk	-70 dB typ. -65 dB max.
Back Reflection	-25 dB typ. -20 dB max.
Switching Time	25 ms max.
Durability	10^9 cycles min.
Repeatability[7]	0.06 dB max.
Optical Power	500 mW max.
Fiber Type	50/125 μm, MMF

Environmental Temperature Specifications	
Operating[8]	10 to 50°C
Storage	-40 to 85°C

Electrical Specifications	
Control Type	RS-232, I^2C or USB
Supply Voltage	12 VDC
Power Consumption	3.8 W max. Operating 6.5 W max. Start Up
Connector type	Samtec P/N:STMM-108-02-G-D
Mating connector	Samtec P/N:TCSD-08-01-F-N

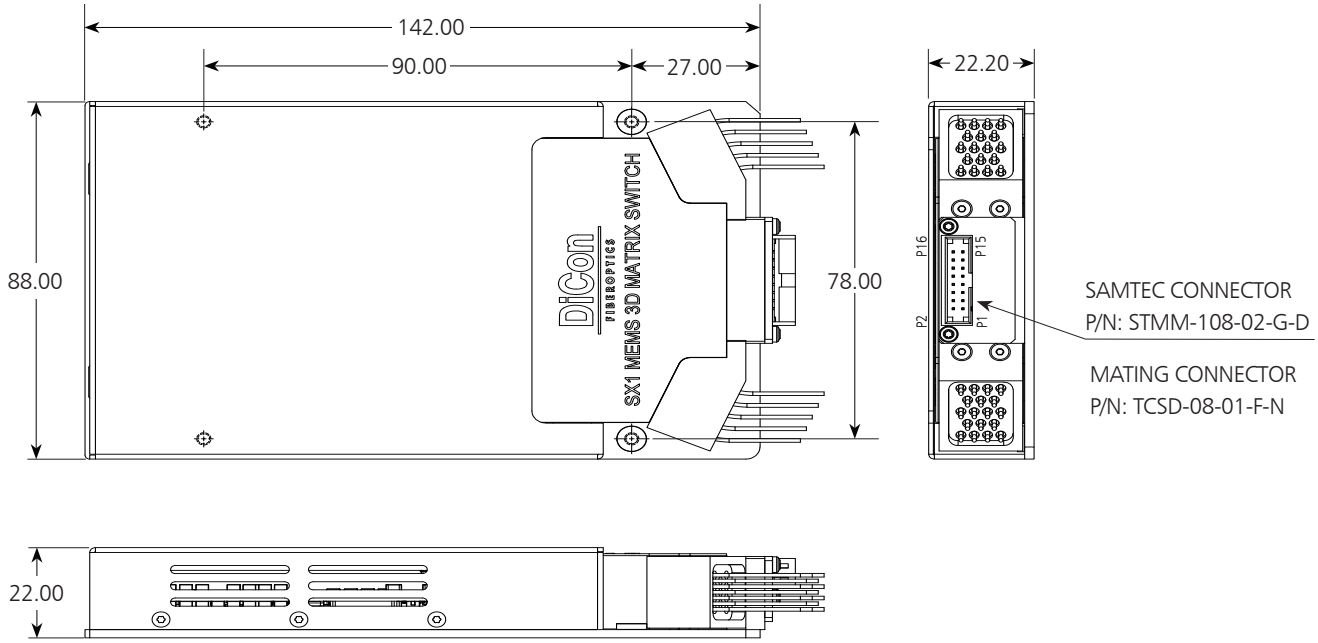
1. Specifications are without connector loss. IL adds 0.2 dB for one pair connector loss.
2. All measurements taken at room temperature for the set wavelength band index.

Note: Each wavelength band has its own wavelength band index, which can be set to optimize the optical performance for that band. Only one wavelength band index can be selected at a time. Set a nearby wavelength band index to have the best performance if the selected band has no wavelength band index.

3. For dual bands operation, add up to 0.3 dB IL max over entire range.
4. IL is measured with a reference mode condition, CPR=15dB.
5. Stability is defined as the difference between highest and lowest insertion loss for a given connection, over a given period.
6. Defined over 10 second period using 10 kHz sample rate.
7. Repeatability is defined over 100 cycles.
8. Extended operational temperature ranges are available.

MECHANICAL SPECIFICATIONS

Dimensions in mm



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