

MEMS 1xN OPTICAL SWITCH

DiCon's MEMS 1xN Optical Switch is a high reliability, cost effective fiber optic switch available in any 1xN size up to 1x128, making it ideal for PON fiber monitoring applications. Based upon DiCon's industry proven MEMS technology, this optical switch has a lifetime greater than 1 billion switch cycles and performance can be optimized to any requested monitoring wavelength or wavelength range. Its compact design, 165 x 136 x 26 mm, makes it easy to integrate into a rack mount system.

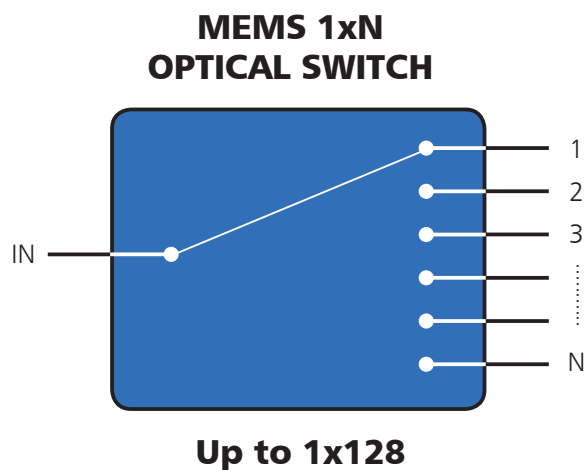


FEATURES

- High Reliability
- Cost Effective
- Available up to 1x128
- Proven DiCon MEMS Technology

APPLICATIONS

- Fiber Monitoring
- Fiber Sensing



DiCon



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MEMS 1xN OPTICAL SWITCH

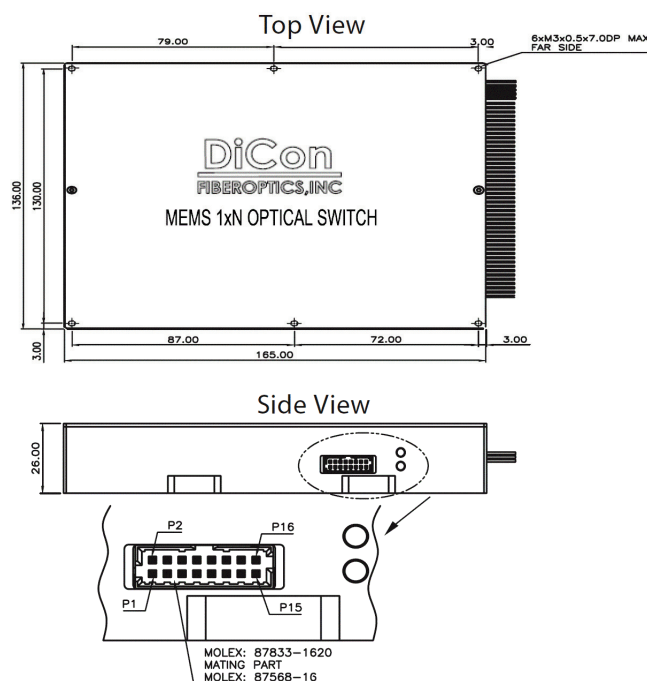
OPTICAL SPECIFICATIONS ¹

PARAMETER		RATING
Insertion Loss ^{2,3}	Up to 1x96	0.8 dB typ. / 1.2 dB max.
	Up to 1x128	0.8 dB typ. / 1.2 dB max.
Crosstalk ⁴		-50 dB max.
Back Reflection		-50 dB max.
Switching Time		30 ms max.
TDL		0.40 dB max.
WDL ⁵		0.40 dB max.
PDL ⁶		0.10 dB max.
Repeatability ⁷		0.04 dB max.
Optical Power		500 mW max.
Durability		10 ⁹ cycles min.
Operating Temperature		-5 to 70 °C
Storage Temperature		-40 to 85°C
Fiber Type		9/125 um Singlemode

1. Specifications are without connectors.
2. IL is for single-band. Dual-band adds 0.3 dB.
3. Measured at CWL, 23°C.
4. Power off isolation is the same as crosstalk.
5. WDL is measured in a +/- 20nm range at 23°C.
6. PDL is for single-band. Dual-band adds 0.05 dB.
7. Repeatability is defined after 100 cycles.

MECHANICAL SPECIFICATIONS

Dimensions in mm



ORDERING INFORMATION

MS5 - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐

Product Code

MS5 MEMS Switch

Switch Configuration

1xN 1xN, Specify N ≤ 128
(ex. 1x128)

Control Interface

I2C I²C
RS2 RS232

Wavelength Range

13 1290 - 1330 nm
15 1530 - 1570 nm
16 1570 - 1610 nm
13/15 1290 - 1330 & 1530 - 1570 nm
15/16 1530 - 1570 & 1570 - 1610 nm

Other wavelength ranges available upon request.

Fiber and Jacket Type

9/BF Corning SMF-28, Bare fiber
9/LT Corning SMF-28, Loose-tube

Connector Type

LC LC/SPC
N NONE

Other connectors available upon request.

Pigtail Length

1 1 Meter
X Specify X Meter

Tolerance is +/- 0.05 m

ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	non-latching
Control Type	I ² C, RS232
Vcc Voltage	12 VDC
Power Consumption	1 W max.
Connector Type	Molex 87833-1620



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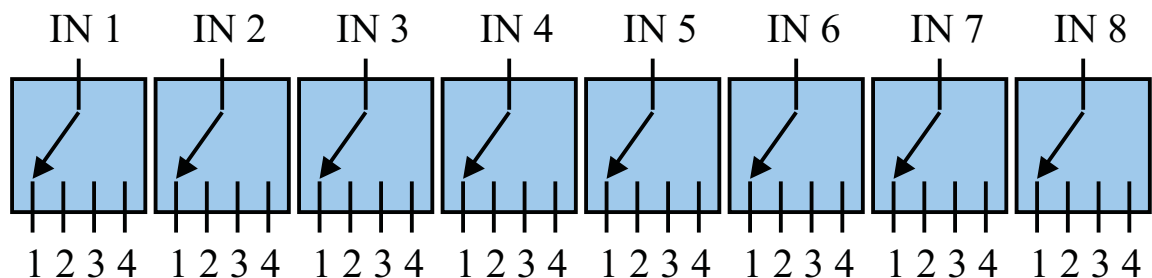


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MEMS 1xN OPTICAL ARRAY SWITCH

DiCon's MEMS 1xN Array Optical Switch allows precise control of multiple 1xN optical switches all through a single control interface, and housed in a compact housing that is only 165 x 136 x 26 mm. The switches are bidirectional and can also be used in the reverse direction as an Nx1 selector switch.

DiCon's optical switches operate by collecting and collimating light from the input fiber, and then reflecting this light off of an ultra-stable and reliable, 2-axis DiCon MEMS mirror, which precisely directs that light to the requested output fiber. The input and output fibers aligned to the MEMS mirror using a single ferrule, resulting in an extremely compact, robust design. The MEMS mirror utilizes DiCon's advanced MEMS technology developed over many years at DiCon, and tested and proven in the telecommunications, aerospace and other demanding applications.



FEATURES

- High Reliability
- Proven MEMS Technology
- Lifetime > 1 Billion Switch Cycles
- Controls up to 16 MEMS Optical Switches

APPLICATIONS

- Fiber Sensing
- Resource Sharing
- Test & Measurement

DiCon
FIBEROPTICS

MEMS 1xN OPTICAL ARRAY SWITCH

OPTICAL SPECIFICATIONS¹

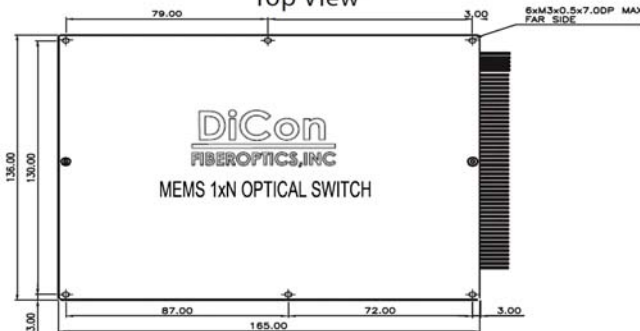
PARAMETER		RATING
Insertion Loss ^{2,3,4}	1x2, 1x4	0.7 dB max.
	1x8	0.8 dB max.
	1x12	1.2 dB max.
Crosstalk ⁵		-50 dB max.
Back Reflection		-50 dB max.
Switching Time		30 ms max.
TDL		0.30 dB max.
WDL ⁶	1x2, 1x4, 1x8	0.30 dB max.
	1x12	0.40 dB max.
PDL ⁷		0.10 dB max.
Repeatability ⁸		0.04 dB max.
Durability		10 ⁹ cycles min.
Optical Power		500 mW max.
Operating Temp		-5 to 70°C
Storage Temp		-40 to 85°C
Fiber Type		9/125 µm single mode

- Specifications are without connectors.
- Insertion Loss is for single band. Dual-Band adds 0.1 dB
- Measured at CWL, 23°C.
- IL is for standard opaque model.
- Power off isolation is the same as crosstalk.
- WDL is measured in a +/- 20nm range at 23°C.
- PDL is for single-band. Dual-band adds 0.05 dB.
- Repeatability is defined after 100 cycles.

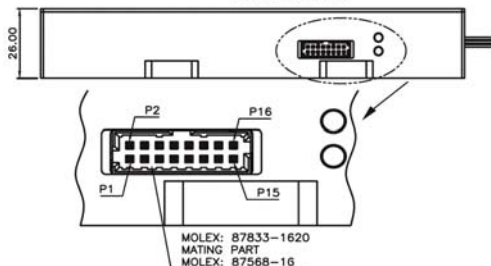
MECHANICAL DIMENSIONS

(Units: mm)

Top View



Side View



ORDERING INFORMATION

MS5 - M/1xN - ☐ - ☐ - ☐ - ☐ - ☐

Product Code

MS5 MEMS Switch

Switch Configuration

M/1xN M 1xN Array Switch
(M≤16, N≤12)
Max Fiber Count ≤ 150)

Control Interface

I2C I²C
RS2 RS232

Wavelength Range

13 1290 - 1330 nm
15 1530 - 1570 nm
16 1570 - 1610 nm
13/15 1290 - 1330 & 1530 - 1570 nm
15/16 1530 - 1570 & 1570 - 1610 nm

Fiber and Jacket Type

9/BF Corning SMF-28, Bare fiber
9/LT Corning SMF-28, Loose-tube
Or other equivalent 9µm singlemode fiber

Connector Type

FC FC/SPC
FC/APC FC/APC
SC SC/SPC
SC/APC SC/APC
N NONE

Other connectors available upon request.

Pigtail Length

1 1 Meter
X Specify X Meters

Tolerance is +/- 10 cm

ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	non-latching
Control Type	I ² C or RS232
Vcc Voltage	12 VDC
Power Consumption	1 W max.
Connector Type	Molex 87833-1620