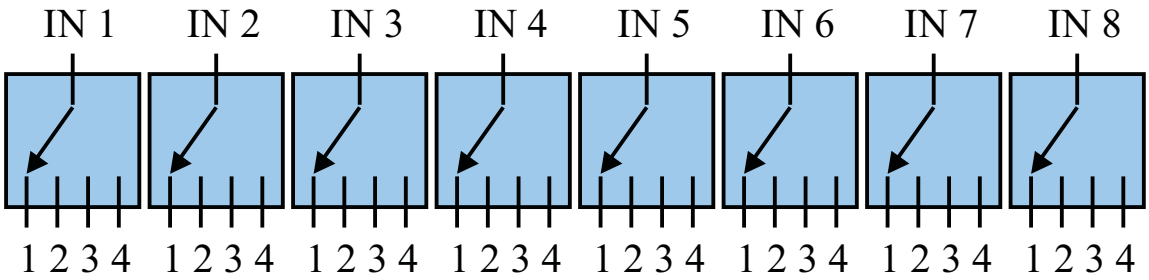
# MEMS 1XN OPTICAL ARRAY SWITCH

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 SPECIFICATIONS[1]

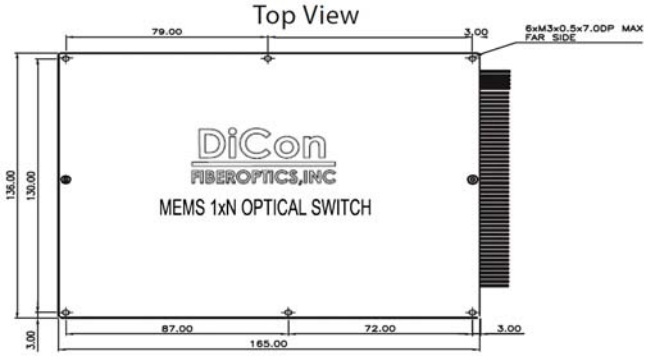
| PARAMETER | | RATING |
|---|---|---|
| Insertion Loss[2,3,4] | 1x2, 1x4 | 0.7 dB max. |
| | 1x8 | 0.8 dB max. |
| | 1X12 | 1.2 dB max |
| Crosstalk[5] | | -50 dB max. |
| Back Reflection | | -50 dB max. |
| Switching Time | | 30 ms max. |
| TDL | | 0.30 dB max. |
| WDL[6] | 1x2, 1x4, 1x8 | 0.30 dB 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 |

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

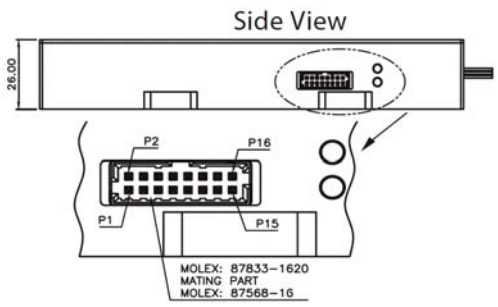
## MECHANICAL DIMENSIONS

(Units: mm)

Top View




Side View




## ORDERING INFORMATION

MS5 - M/1XN - ☐ - ☐ - ☐ - ☐ - ☐

**Product Code**

| | |
|---|---|
| MS5 | MEMS Switch |

**Switch Configuration**

| | |
|---|---|
| M/1xN | M 1xN Array Switch<br>(M≤16, N≤12<br>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 | I²C or RS232 |
| Vcc Voltage | 12 VDC |
| Power Consumption | 1 W max. |
| Connector Type | Molex 87833-1620 |