

# MEMS DUAL 4x4 MULTICAST SWITCH

DiCon's MEMS Dual 4x4 Multicast Switch is based on DiCon's proven MEMS 1xN Switch, and incorporates two 4x4 Multicast Switches for add/drop functionality in a single package. For the drop side, input signals are first broadcast via 1x4 optical splitters into 4 optical switches, which are then used to independently route network traffic from any input to any or all output ports. For the add side, each switch receives an input and selects one of the N splitters to receive traffic for broadcast to the network. The MEMS Dual 4x4 Multicast Switch is ideal for colorless, directionless and contentionless add/drop multiplexing.



## FEATURES

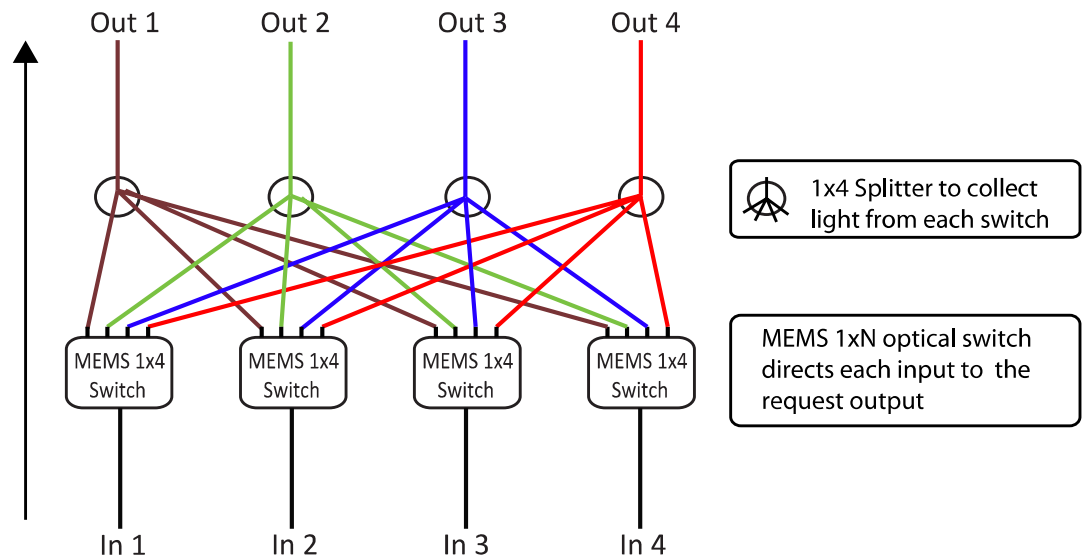
- Compact Form Factor
- Excellent Thermal Stability
- Proven MEMS Durability and Reliability

## APPLICATIONS

DiCon's MEMS Multicast Switches are intended for colorless, directionless and contentionless add/drop multiplexing in ROADM networks.

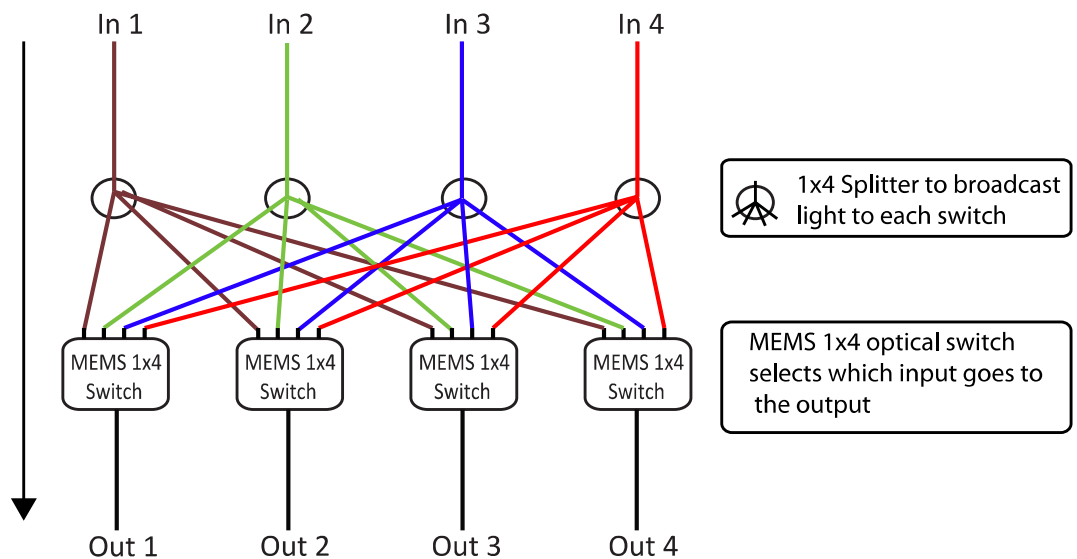


## ADD SIDE



On the Add Side, a series of MEMS 1xN optical switches are used to direct each input to a requested output. Splitters are then used on each output to collect and combine the light from the switches, so that each output can contain any requested combination of inputs.

## DROP SIDE



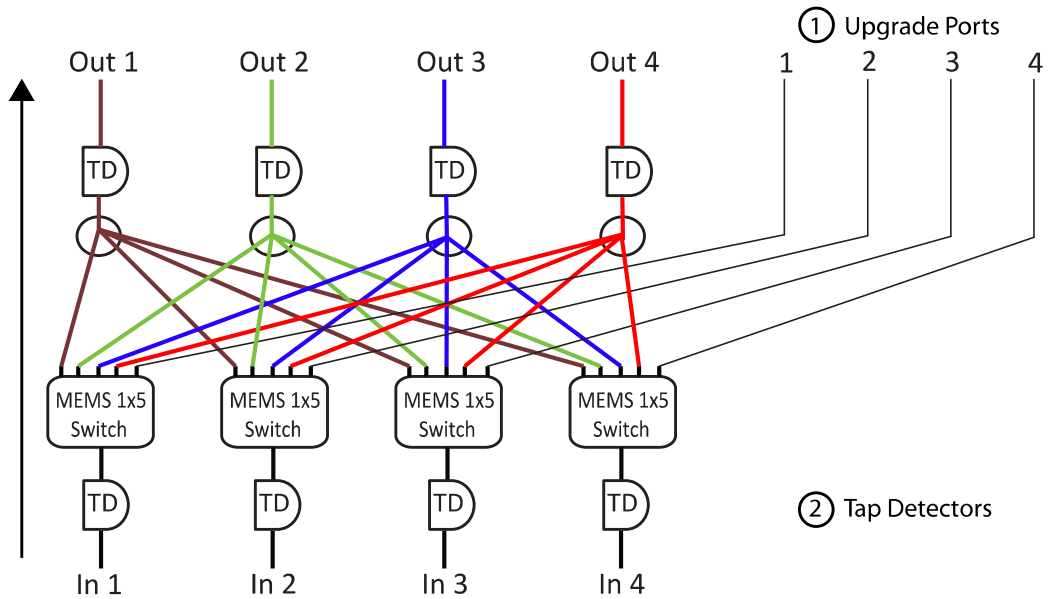
On the Drop Side, splitters are used on each input to broadcast light to a series of MEMS 1xN optical switches, which select which input goes to which output. In this way each output can contain the signal from any requested input.

## OPTIONS

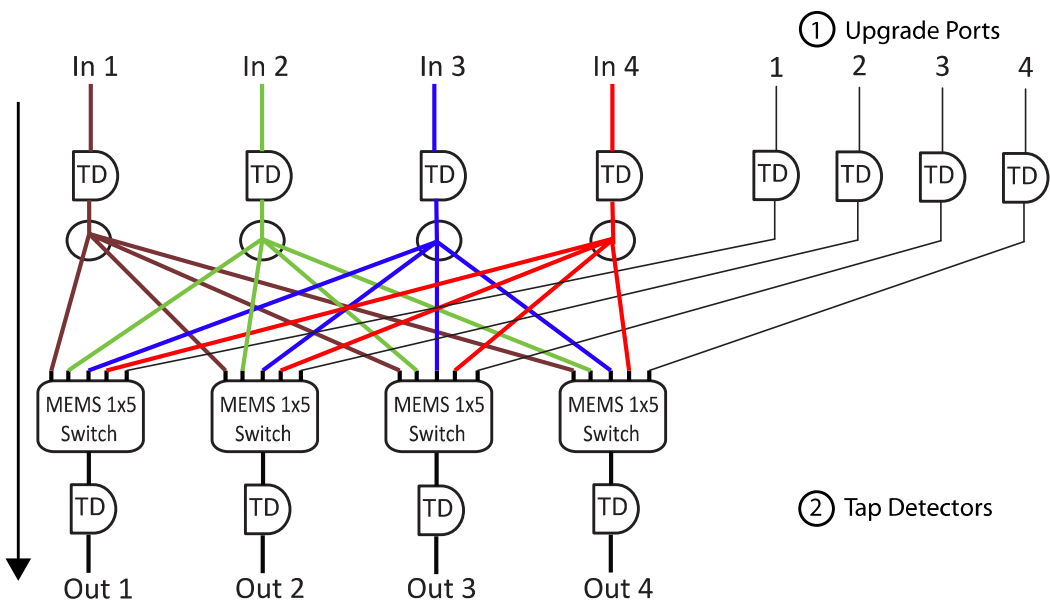
The MEMS Dual 4x4 Multicast Switches can be customized to best meet the applications requirements, and two standard options are available as follows:

- 1) Upgrade ports can be added to the Add and Drop sides.
- 2) Tap Detectors to monitor the input and output power.

### ADD SIDE WITH OPTIONS



### DROP SIDE WITH OPTIONS



**DiCon**  
FIBEROPTICS

# MEMS DUAL 4x4 MULTICAST SWITCH

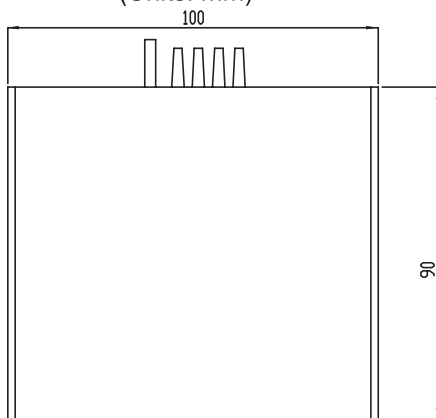
## OPTICAL SPECIFICATIONS<sup>1</sup>

PARAMETER		RATING
Insertion Loss <sup>2,3,4</sup>	Add/Drop Ports <sup>5</sup>	8.1 dB max.
	Upgrade Ports	1.6 dB max.
TDL		0.4 dB max.
WDL <sup>6</sup>		0.35 dB max.
PDL		0.2 dB max.
Crosstalk <sup>7</sup>		-50 dB max.
Back Reflection		-40 dB max.
Switching Time		30 ms max.
Repeatability <sup>8</sup>		0.04 dB max.
Durability		10 <sup>9</sup> cycles min.
Optical Power		200 mW max.
Operating Temp		-5 to 70°C
Storage Temp		-40 to 85°C
Fiber Type		9/125 μm single mode
PHOTODIODE PARAMETER		RATING
2% Tap TD	1260-1360nm	10-23 mA/W
Responsivity	1510-1610nm	14-25 mA/W
Dark Current	(70°C, -5V bias)	3 nA typ., 10 nA max.
Reverse Voltage		20 V max.
Forward Current		10 mA max.

- Specifications are without connectors.
- IL is measured at CWL, 23°C.
- IL is for standard opaque model.
- IL is for single-band. Dual band adds 0.2 dB.
- IL for Add/Drop Ports without Tap Detectors, add 0.2 dB for optional Tap Detectors
- WDL is measured in a +/- 20nm range at 23°C.
- Power off isolation is same as cross talk. -35 dB max. for hitless switching.
- Repeatability is defined after 100 cycles.

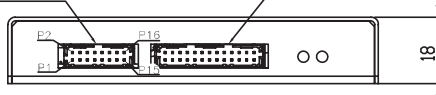
## MECHANICAL DIMENSIONS

(Units: mm)



MOLEX : 87833-1620  
MTAES : 87568-1694  
OR 5110-1651

MOLEX : 87833-2620  
MTAES : 87568-2694



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## ORDERING INFORMATION

MCS - □ - □ - □ - □ - □ - □ - □ - □

### Switch Configuration

4x4/D Dual 4x4

### Control Interface

I2C I<sup>2</sup>C  
RS2 RS-232

### 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

### Upgrade Port Option

UG With Upgrade Ports  
N Without Upgrade Ports

### Tap Detector Option

TD With Tap Detectors  
N Without Tap Detectors

### Fiber and Jacket Type

9/LT Corning SMF-28, Loose-Tube  
8/RB 8-Fiber Ribbon Cable, 3mm OD Jacket  
9/LR Loose-Tube for In/Out ports and Ribbon Cable for upgrade ports

### Connector Type

FC/SPC FC/SPC  
FC/APC FC/APC  
MPO/APC MPO/APC  
N NONE

Also Available: SC, SC/UPC, SC/APC, ST, ST/UPC, LC

### Pigtail Length

1 1 Meter  
X Specify X Meters

Tolerance is +/- 0.05 m

## ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	non-latching
Control Type	I <sup>2</sup> C or RS232
Vcc Voltage	5 or 12 VDC
Power Consumption	1 W max.