

2X2 PRISM SWITCH

DiCon's 2x2 Prism Switch provides channel selection between a pair of input fibers and a pair of output fibers. Actuated electrically and operating independently of data rate and signal format, the component uses a moving prism between fixed collimators. DiCon's 2x2 Prism Switch can be built with Corning SMF-28, Flexcor 1060 or Polarization Maintaining Panda fiber.



Features

- Ultra low insertion loss
- Built in position sensor
- Flexible fiber types and wavelength ranges

Applications

- 2x2 Prism Switches with Corning SMF-28 fiber can be used for protection switching or in reconfigurable optical add/drop multiplexing modules.
- 2x2 Prism Switches with Panda fiber can be used to switch between light sources which use polarization maintaining fiber pigtails.
- 2x2 Prism Switches with Flexcor 1060 fiber can be used to switch between different 980 nm pump laser sources.



2X2 PRISM SWITCH

Specifications^{1,2}

PARAMETER		RATING
Insertion Loss		0.6 dB typ., 1.0 dB max.
Crosstalk		-70 dB max.
Back Reflection	Single Mode	-55 dB max.
	Multi-mode 50um	-25 dB max.
	Multi-mode 62.5um	-20 dB max.
PDL ³		0.05 dB max.
Repeatability ⁴		±0.02 dB max.
Extinction Ratio ⁵		18 dB min.
Optical Power ⁶		300 mW max.
Durability		10 million cycles min.
Switching Time		10 ms typ.
Switching Voltage		4.5 VDC min. 6.0 VDC max.
Switching Current	Non-latching 2-pin	36 mA min. 48 mA max.
	Latching 2-pin	65 mA min. 87 mA max.
	Latching 3-pin	90 mA min. 120 mA max.
Switching Resistance	Non-latching 2-pin	125±10% Ω
	Latching 2-pin	69.5±10% Ω
	Latching 3-pin	50±10% Ω
Operating Temperature		-20 to 75°C
Storage Temperature		-40 to 85°C

1. All specifications referenced without connectors.
2. Bottom-mount terminals available upon request.
3. For SMF-28 fiber type only. Measured at 1550 nm.
4. Repeatability for 100 cycles at constant temperature.
5. Corning Panda PM fiber type only.
6. High power option available by request.

Actuation Style

Non-latching 2-pin control: Requires no power to maintain one position and a constant +5 VDC across pins 1 and 2 to maintain the other position.

Latching 2-pin control: Changes position when the polarity of the +5 VDC signal to pins 1 and 2 is reversed. When the polarity of the +5 VDC signal to pins 1 and 2 is reversed. When no power is applied to pins 1 and 2, the switch is latching in place.

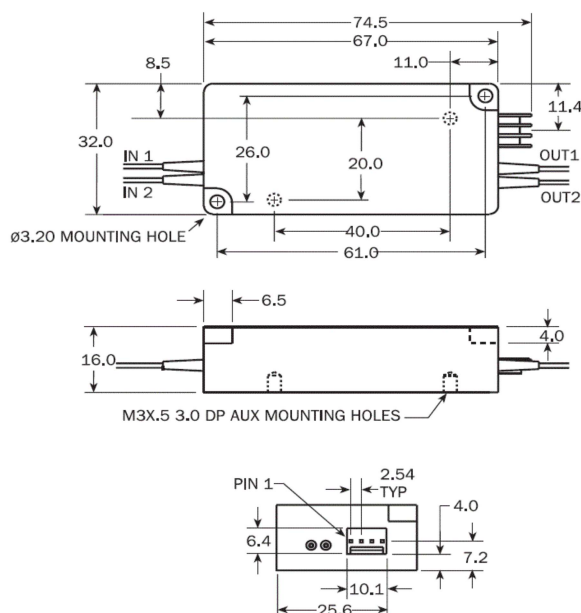
Latching 3-pin control: Pins 1, 2 and 3 are used for control. Pin 3 is a center tap. Position changes when pin 1 or pin 2 is held to ground. When no power is applied to pins 1 and 2, the switch is latched in place.

Position Sensor: Sensor output is on pin 4, as either a normal open or closed contact (low or high signal), depending on the switch position. The position sensor is powered with +5 VCD on pin 3.

Actuation Style	IN1 - OUT1 IN2 - OUT2				IN1 - OUT2 IN2 - OUT1			
	Switch Control		Position Sensor		Switch Control		Position Sensor	
	Pin1	Pin2	Pin3	Pin4	Pin1	Pin2	Pin3	Pin4
Non-latching 2-pin Control	GND	GND	+5V DC	Low	GND	+5V DC	+5V DC	High
Latching 2-pin Control ¹	GND	+5V DC	+5V DC	Low	+5V DC	GND	+5V DC	High
Latching 3-pin Control ¹	GND	+5V DC	+5V DC	Low	+5V DC	GND	+5V DC	High

1. Switch position remains the same when power is removed.

Housing Dimensions



Units: mm

Electrical connector is 4-pin male MTE (Molex 22-23-2041).



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ORDERING INFORMATION

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Fiber Type

9	9/125 ¹
50	50/125
62	62.5/125
10	Flexcor 1060 ²
PM	Panda 1300 ³

Actuation Type

N	Non-latching 2-pin
L2	Latching 2-pin
L3	Latching 3-pin

Wavelength Range

9	960 - 1000 nm ⁴
8/13	780 - 1350 nm ⁵
13/15	1290 - 1330 nm and 1530 - 1560 nm ⁶
13/16	1290 - 1330 nm and 1530 - 1610 nm ⁶
15	1530 - 1560 nm ⁷
16	1530 - 1610 nm ⁸

Connector Type

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

Connector Key Orientation⁸

S	Slow axis
F	Fast axis
N	Not applicable

Fiber Jacket

2	250 μm bare fiber
9	900 μm tight buffer
N	Not applicable for Panda fiber

Pigtail Length

1	1 meter
X	Specify X meters

1. Corning SMF-28 Fiber.
2. Corning Flexcor 1060 fiber with 250 μm jacket.
3. Corning Panda PM 1030 fiber with 400 μm jacket.
4. Flexcor only.
5. Multimode fiber only.
6. 9/125 fiber only.
7. 9/125 fiber and Panda 1300 fiber only.
8. Applicable to Corning PM 1300 with FC connectors only.