

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

- All specifications referenced without connectors.
- Bottom-mount terminals available upon request.
- For SMF-28 fiber type only. Measured at 1550 nm.
- Repeatability for 100 cycles at constant temperature.
- Corning Panda PM fiber type only.
- 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.

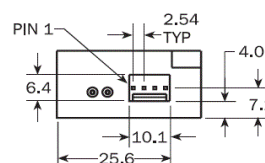
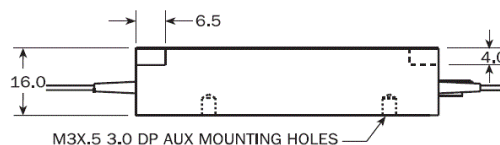
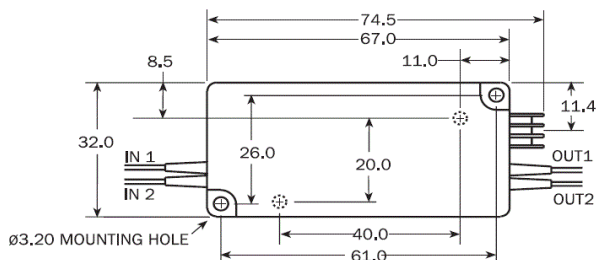
Latching 3-pin control: Pins 1, 2 and 3 are used for control. Pin 3 is a center tap. Position changes when pin 1 or pin 2 is held to ground. When no power is applied to pins 1 and 2, the switch is latched in place.

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 VDC 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

- 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 μ m bare fiber
9	900 μ m 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 μ m jacket.
3. Corning Panda PM 1030 fiber with 400 μ m 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.