

# SWITCHES

## ON-OFF SWITCH

DiCon's On-Off Switch provides channel control from one input fiber to one output fiber. Actuated electrically and operating independently of data rate and signal format, the component uses a moving shutter between a fixed collimator pair. DiCon's On-Off 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

On-Off Switches provide a means of interrupting an optical signal. They are commonly used to isolate sources and receivers in test equipment and high security networks.



# SWITCHES

## SPECIFICATIONS<sup>1,2,3</sup>

Insertion loss	0.6 dB typ., 1.0 dB max.	
Switching time	7 ms typ.	
Cross-talk	-70 dB max.	
Extinction ratio <sup>3</sup>	18 dB min.	
Durability	10 million cycles min.	
Repeatability <sup>4</sup>	±0.02 dB max.	
PDL <sup>5</sup>	0.05 dB max.	
Optical power <sup>6</sup>	300 mWatt max.	
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.
Coil resistance	Non-latching 2-pin	125±10% ohm
	Latching 2-pin	69.5±10% ohm
	Latching 3-pin	50±10% ohm
Back-reflection	-55 dB max.	
Operating temperature	-20° C to +75° C	
Storage temperature	-40° C to +85° C	

1. All specifications referenced without connectors.
2. Bottom-mount terminals available upon request.
3. Corning Panda PM 1300 fiber type only.
4. Repeatability for 100 cycles at constant temperature.
5. For SMF-28 fiber type only. Measured at 1550 nm.
6. High power option available by request.

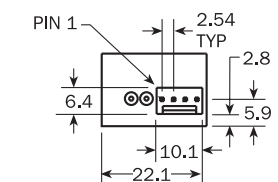
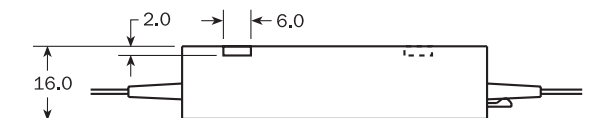
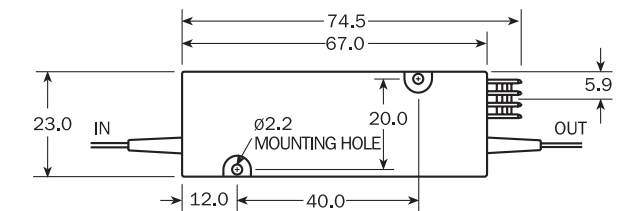
## ACTUATION STYLE

**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 no power is applied to pins 1 and 2, the switch is latched 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	Optical ON				Optical OFF			
	Switch Control		Position Sensor		Switch Control		Position Sensor	
	Pin 1	Pin 2	Pin 3	Pin 4	Pin 1	Pin 2	Pin 3	Pin 4
Non-latching 2-pin Control	GND	GND	+5V DC	Low	GND	+5V-DC	+5V DC	High
Latching 2-pin Control <sup>1</sup>	GND	+5V DC	+5V DC	Low	+5V DC	GND	+5V DC	High
Latching 3-pin Control <sup>1</sup>	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).

# SWITCHES

SP - 10 -  -  -  -  -  -  -

## Fiber Type

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

## Actuation Style

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

## Wavelength Range

9	960 - 1000 nm <sup>4</sup>
8/13	780 - 1350 nm <sup>5</sup>
13/15	1290 - 1360 nm and 1530 - 1560 nm <sup>6</sup>
13/16	1290 - 1360 nm and 1530 - 1610 nm <sup>6</sup>
15	1530 - 1560 nm <sup>7</sup>
16	1530 - 1610 nm <sup>6</sup>

## Connector Type

FC	FC/SPC
FC/APC	FC/APC
FC/UPC	FC/UPC
SC	SC/SPC
SC/APC	SC/APC
SC/UPC	SC/UPC
ST	ST/SPC
ST/UPC	ST/UPC
LC	LC/SPC
LC/UPC	LC/UPC
MU/UPC	MU/UPC
N	No connectors

## Connector Key Orientation<sup>8</sup>

S	Slow axis
F	Fast axis
N	Not applicable

## Fiber Jacket

2	250 micron, 200 kpsi bare fiber
9	900 micron, tight buffer
N	Not applicable for Panda fiber.

## Pigtail Length

1	1 meter
X	Specify X meters

1. Corning fiber SMF-28.
2. Corning Flexcor 1060 fiber with 250 um jacket.
3. Corning Panda PM 1300 fiber with 400 um 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.