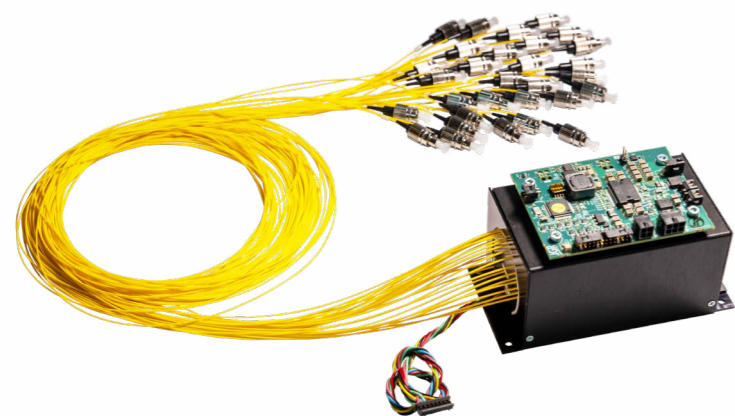


OSX-100E

OEM Optical Switch



Product Overview

The OSX-100E is an off-the-shelf fiber optic switch component that can be easily integrated into virtually any fiber optic routing or switching application. It is readily available in common fiber types (standard single-mode, 50 μm or 62.5 μm multimode); but can also be ordered with specialty fiber types (step index, large core multimode, small core single-mode).

Switches can be configured for 1x2 up to 1x80 channels and are also available in 2B or 2C configurations (see configuration options). For more complex signal routing and switching, the low loss (< 0.5 dB) allows for concatenating switches to enable higher channel counts. For ease of integration, each switch comes with a pre-programmed driver board and uses standard I2C communication protocol for control. The driver board that can be mounted separately or with the optical switch, giving more flexibility.

Features

- Up to 80 outputs
- Ultra low IL < 0.5 dB
- ± 0.005 dB repeatability
- Crosstalk < -80 dB
- Customization available
- I2C communication
- < 0.2 dB IL port-to-port variation



Applications

- Fiber optic signal routing/conditioning
- Automation
- Instrumentation
- Fiber optic sensing

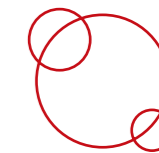


Invisible

Negligible loss (≤ 0.5 dB) along with the combination of uniform temperature dependence, low PDL (≤ 0.05 dB), wide wavelength operation, and low port-to-port loss variation (< 0.2 dB typical) make the OSX-100E nearly invisible to the optical signal. This allows the switch to maintain signal integrity across all ports. For multimode applications the optical switching mechanism maintains the modal conditions from input to output. This is important when testing components using optical sources with non-uniform modal distribution (VCSELs, lasers, etc.) that are susceptible to mode filling.

Small Form Factor

The smallest switch can accommodate up to 27 channels and measures just 26 mm x 100 mm x 22 mm, which fits into a 1U enclosure. This allows for more channels/ports in a smaller space.



Many Fiber Types Available

Beyond the typical fiber types like SMF, 50 μm , and 62.5 μm graded-index fiber, the OSX-100E offers a wide variety of fiber options. These span from 5/125 μm single mode fiber to 100 μm graded index multimode fiber, extending to larger core step index hard clad silica fibers such as 200 μm , 300 μm , and larger.

Ordering Scheme & Instructions

Configure OSX Optical Switch

Opto-mechanical version

OSX-100E - [] - [] [] - [] [] - [] [] - 150 - 100 - [] []

MOTOR SIZE	
X	Extra small
S	Small
M	Medium
L	Large

CONFIGURATION	
1A	1xN
2B	ganged
2C	trailing

OUTPUTS	
02	2-outputs
04	4-outputs
08	8-outputs
16	16-outputs
32	32-outputs
..	200-outputs
80	300-outputs
PM	Panda PMF

FIBER TYPE	
05	5/125 μm
09	9/125 μm
50	50/125 μm
62	62.5/125 μm
10	100/140 μm
20	200/225 μm
30	300/325 μm
PM	Panda PMF

CONNECTOR TYPE	
FA	FC/APC
FP	FC/UPC
SA	SC/APC
SP	SC/UPC
LA	LC/APC
LP	LC/UPC

TIGHT BUFFER LENGTH	
150	150 cm

JACKET LENGTH	
100	100 cm
	leave blank if none

*custom type buffer and jackets lengths available

Configuration Options

1A

Position 0

1A Configuration
Single input switched to any output

2B

Position 0

2B Configuration
Two inputs switched to synchronized outputs

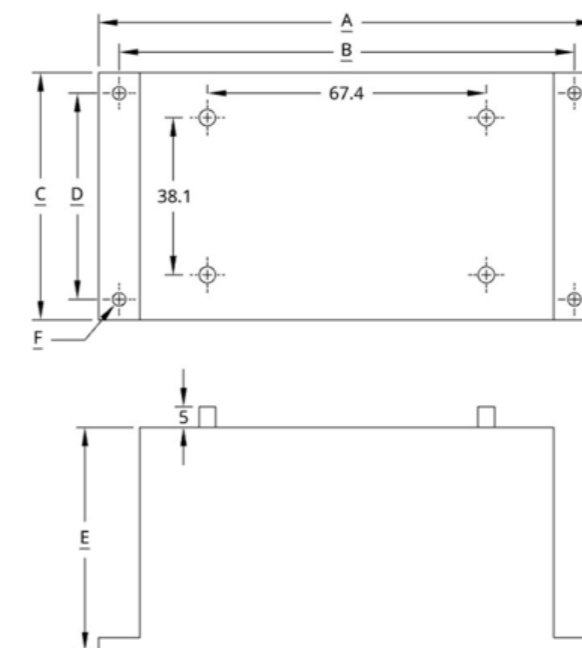
2C

Position 0

2C Configuration
Two inputs switched to any output with second input trailing first input

Mechanical / Environmental Specifications

Parameter	Specifications			
	XS	S	M	L
Channel Count	26	36	54	80
Dimensions Length A (mm)	100	120	154	175
Dimensions Width C (mm)	52	60	84	110
Dimensions Height E (mm)	41	54.5	78	102.5
Dimensions Mounting Holes BxD (mm)	90 x 42	110 x 50	144 x 74	165 x 100
Mounting Hole diameter F (mm)	3.2	3.2	3.4	3.4
PCB Standoffs Included	No	Yes	Yes	Yes
Recommended Fiber Area (mm)	200 x 125	200 x 125	200 x 160	200 x 200
Shipping Box Dimensions WxHxD (cm)	36 x 33 x 18	36 x 33 x 18	36 x 33 x 18	36 x 33 x 37
Unit Weight (kg)	0.3	0.5	1.2	1.8
Total Shipment Weight (kg)	1.1	1.6	2.0	2.6
Operating Temperature ($^{\circ}\text{C}$)	0 - 55			
Humidity (Non-Condensing) ($^{\circ}\text{C}$)	Maximum 95% RH from 0 to 40 $^{\circ}\text{C}$			



OSX Optical / Electrical Specifications

Parameter	Specification			
	Single-mode		Multimode	
Fiber Type	9/125	Panda PM	50/125	62/125
Wavelength Range (nm)	1250-1670		840-1350	
Insertion Loss (dB) ^{1, 2, 3}	≤ 0.5	≤ 1.0	≤ 0.5	
Backreflection (dB) ¹	≤ -60		≤ -40	
PDL (dB) ²	≤ 0.05	N/A	N/A	
PER (dB) ^{1, 2}	N/A	≥ 23	N/A	
Repeatability (dB) ^{2, 4}	± 0.005			
Crosstalk (dB)	< -80			
Port-to-port Variation (dB)	0.2 dB typical			
Maximum Input Power (dBm)	23			
Switch Life	10 ⁸ cycles			
Switching Time (ms)	300			
Remote Interface	12C			
Input Voltage	12V DC with <120mV _{pp} ripple			
Power Consumption (VA)	<1.3 A @ 12 V			

Notes:

¹ Excluding connectors

² Standard switch size (< 80 ch), 1A and 2B configurations.

³ Add 0.2 for 2C and 0.7 for 2A.

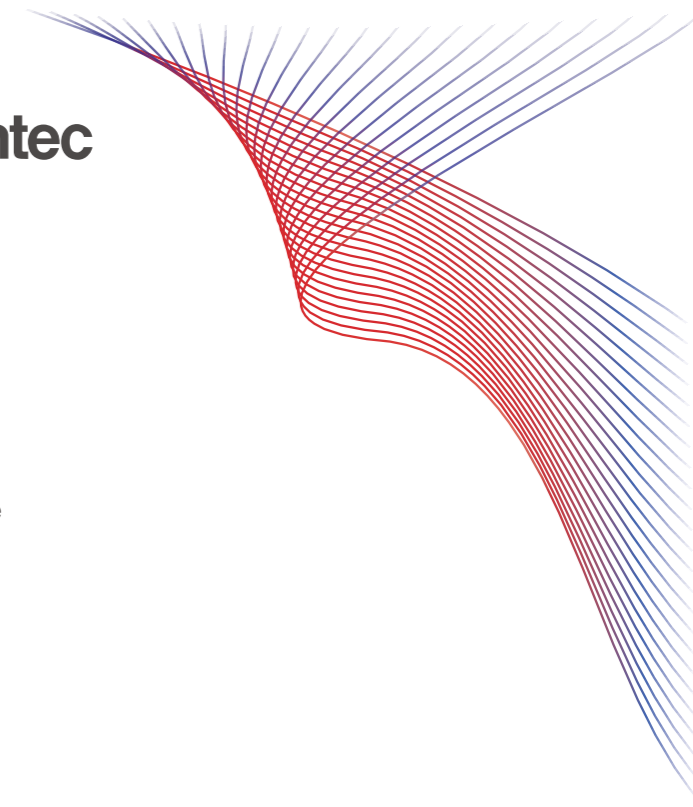
⁴ Sequential switching. Add + 0.02 for random.



In the Box

OSX-100E - OEM Optical Switch

- OSX-100E switch
- Driver board
- Pigtailed power and 12C communication cable



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