MXS-9100 OPTICAL SWITCH

AVAILABLE EXCLUSIVELY FROM EXFO

Optimized for use with EXFO systems and software control via SCPI over ethernet, the MXS-9100 utilizes DiCon Fiberoptics' industry proven MEMS optical switch technology to reliably connect fibers together in a fully automated manner.

Available as a MxN matrix optical switch, or as an array of multiple 1xN optical switches, the MXS-9100 is the perfect solution for sharing centralized instruments or automated tests in manufacturing.

KEY FEATURES

- Proven DiCon MEMS technology
- Protocol and bit rate independent
- High density design, to minimize rack space
- High reliability with lifetime > 10^9 Cycles
- SCPI over ethernet remote control

AVAILABLE CONFIGURATIONS

CONFIGURATION		SWITCH SIZE		FIBER TYPE
#	TYPE	MIN	MAX	
1	MxN Matrix	2x8	96x96	Singlemode
2	1xN Array	1x4	1x8	Singlemode
3	1xN Array	1x4	1x12	Multimode

DiCon FIBEROPTICS

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MxN MATRIX, MXS-9100 OPTICAL SWITCH

OPTICAL SPECIFICATIONS[1,2]

PARAMETER	RATING
Insertion Loss[3]	0.8 dB typical 1.4 dB max
Crosstalk	-70 dB typical -55 dB max.
Back Reflection	-55 dB typical -45 dB max.
Switching Time	15 ms typical 20 ms max.
WDL[4]	0.3 dB max. for 2x8 to 16x16 0.4 dB max. for 24x24 to 96x96
PDL	0.08 dB typical 0.25 dB max.
Repeatability[5]	0.01 dB typical 0.06 dB max.
Optical Power	500 mW max.
Operating Temperature	0 to 50 °C
Storage Temperature	-20 to 60 °C
Relative Humidity	0% to 80% non-condensing
Fiber Type	9/125 um singlemode
Operating Wavelength Range	1240 - 1680 nm

1. Specifications referenced without connectors at 23 ± 5 °C. Add 0.2 dB for connector loss.
2. Specifications valid when wavelength is set to the wavelength range in use (C, L, O or U band).
3. Insertion Loss (IL) specification is defined at 1550 nm (C band).
   Operation at 1310 nm (O band) adds 0.1 dB typical, 0.2 dB max.
   Operation at 1590 nm (L band) adds 0.1 dB typical, 0.2 dB max.
   Operation at 1625 nm (U band) adds 0.2 dB typical, 0.4 dB max.
4. WDL is measured in a +/- 20 nm range centered at the set wavelength (1310, 1550, 1590 or 1625 nm). Operation in U band adds 0.1 dB to the max.
5. Repeatability is defined within 100 cycles.

ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	Non-latching
Control Type	Ethernet Interface with EXFO SCPI Command Set
Supply Voltage	AC 100 - 240 V, 50/60 Hz

ORDERING INFORMATION

MXS - 9100 - ☐ - ☐ - B - ☐

Product Code

MXS-9100

Configuration

2-8	2 inputs and 8 outputs
2-16	2 inputs and 16 outputs
4-4	4 inputs and 4 outputs
4-8	4 inputs and 8 outputs
4-12	4 inputs and 12 outputs
4-16	4 inputs and 16 outputs
8-8	8 inputs and 8 outputs
8-16	8 inputs and 16 outputs
16-16	16 inputs and 16 outputs
24-24	24 inputs and 24 outputs
32-32	32 inputs and 32 outputs
48-48	48 inputs and 48 outputs
64-64	64 inputs and 64 outputs
96-96	96 inputs and 96 outputs

Fiber Type

B	9/125 um singlemode

Connector Type

58	FC/APC connectors
89	FC/UPC connectors
104	LC/APC connectors
101	LC/UPC connectors
88	SC/APC connectors
91	SC/UPC connectors

MECHANICAL SPECIFICATIONS

PARAMETER	RATING
Housing Size, 2x8 to 16x16	Height: 43.65 mm (1U) Width: 483 mm (19") Depth: 342 mm
Housing Size, 24x24 to 32x32	Height: 88.0 mm (2U) Width: 483 mm (19") Depth: 434.5 mm
Housing Size, 48x48 to 96x96	Height: 177 mm (4U) Width: 483 mm (19") Depth: 434.5 mm

CE

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SINGLEMODE 1xN, MXS-9100 OPTICAL SWITCH

OPTICAL SPECIFICATIONS[1]

PARAMETER	RATING
Insertion Loss[2]	0.7 dB max
Crosstalk	-50 dB max.
Back Reflection	-50 dB max.
Switching Time	30 ms max.
WDL[3]	0.5 dB max.
PDL	0.15 dB max.
Repeatability[4]	0.02 dB max.
Optical Power	500 mW max.
Operating Temperature	0 to 50 °C
Storage Temperature	-20 to 60 °C
Relative Humidity	0% to 80% non-condensing
Fiber Type	9/125 um singlemode
Operating Wavelength Range	1240 - 1680 nm

1. Specifications referenced without connectors at 23 ± 5 °C. Add 0.4 dB for connector loss.
2. Insertion Loss (IL) specification is defined at 1550 nm & 1625 nm. Operation at 1310 nm adds 0.2 dB max.
3. WDL is defined within a wavelength band, and is measured over 1290 - 1330 nm, 1530 - 1570 nm, and 1605 - 1641 nm.
4. Repeatability is defined within 100 cycles.

ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	Non-latching
Control Type	Ethernet Interface with EXFO SCPI Command Set
Supply Voltage	AC 100 - 240 V, 50/60 Hz

ORDERING INFORMATION

MXS - 910☐ - ☐ - B - ☐

Product Code

MXS-9101	1 switch per system
MXS-9102	2 switches per system
MXS-9104	4 switches per system
MXS-9106	6 switches per system
MXS-9108	8 switches per system

Configuration

4	1x4 optical switch
8	1x8 optical switch

Fiber Type

B	9/125 um singlemode

Connector Type

58	FC/APC connectors
89	FC/UPC connectors
104	LC/APC connectors
101	LC/UPC connectors
88	SC/APC connectors
91	SC/UPC connectors

MECHANICAL SPECIFICATIONS

CHASSIS SIZE	RATING
1U	Height: 43.65 mm Width: 483 mm (19”) Depth: 342 mm
2U	Height: 88.0 mm Width: 483 mm (19”) Depth: 434.5 mm
4U	Height: 177 mm (4U) Width: 483 mm (19”) Depth: 434.5 mm

CHASSIS SIZE

NUMBER OF SWITCHES	1x4			1x8		
	FC/APC FC/UPC	LC/APC LC/UPC	SC/APC SC/UPC	FC/APC FC/UPC	LC/APC LC/UPC	SC/APC SC/UPC
1	1U	1U	1U	1U	1U	1U
2	1U	1U	1U	1U	1U	1U
4	1U	1U	1U	1U	1U	1U
6	1U	1U	1U	2U	1U	2U
8	2U	1U	1U	4U	1U	2U

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MULTIMODE 1XN, MXS-9100 OPTICAL SWITCH

OPTICAL SPECIFICATIONS[1]

PARAMETER		RATING
Insertion Loss[2]	1x4	1.3 dB max.
	1x8, 50 um	1.5 dB max.
	1x8, 62.5 um	1.8 dB max.
	1x12	2.0 dB max.
Crosstalk[3]	50 um	-25 dB max.
	62.5 um	-20 dB max.
Back Reflection		-20 dB max.
Switching Time		30 ms max.
Repeatability[4]		0.02 dB max.
Optical Power		500 mW max.
Operating Temperature		0 to 50 °C
Storage Temperature		-20 to 60 °C
Relative Humidity		0% to 80% non-condensing
Fiber Type		50/125 um multimode, or 62.5/125 um multimode
Operating Wavelength Range		840 - 1330 nm

1. Specifications referenced without connectors at 23 ± 5 °C. Add 0.4 dB for connector loss.
2. Insertion Loss (IL) specification is defined at 850nm & 1310nm and is based upon using a LED source for a full modefill condition. Underfilled sources, such as VCSELs, will have a lower insertion loss.
3. Optical off state isolation is the same as the crosstalk specification.
4. Repeatability is defined within 100 cycles.

ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	Non-latching
Control Type	Ethernet Interface with EXFO SCPI Command Set
Supply Voltage	AC 100 - 240 V, 50/60 Hz

ORDERING INFORMATION

MXS - 910☐ - ☐ - ☐ - ☐

Product Code

MXS-9101	1 switch per system
MXS-9102	2 switches per system
MXS-9104	4 switches per system
MXS-9106	6 switches per system
MXS-9108	8 switches per system

All options are available for 1x4 or 1x8, while 1x12 is only available with 1 to 4 switches per unit.

Configuration

4	1x4 optical switch
8	1x8 optical switch
12	1x12 optical switch

Fiber Type

C	50/125 um multimode
D	62.5/125 um multimode

Connector Type

50	FC connectors
54	SC connectors

MECHANICAL SPECIFICATIONS

CHASSIS SIZE	RATING
1U	Height: 43.65 mm Width: 483 mm (19”) Depth: 342 mm
2U	Height: 88.0 mm Width: 483 mm (19”) Depth: 434.5 mm
4U	Height: 177 mm (4U) Width: 483 mm (19”) Depth: 434.5 mm

CHASSIS SIZE

# OF SWITCHES	1x4		1x8		1x12	
	FC	SC	FC	SC	FC	SC
1	1U	1U	1U	1U	1U	1U
2	1U	1U	1U	1U	1U	1U
4	1U	1U	1U	1U	2U	2U
6	1U	1U	2U	2U	-	-
8	2U	1U	4U	2U	-	-

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