

# FTBx-9160 MEMS Optical Switch



Provides highly accurate and repeatable fiber-to-fiber switching.

## KEY FEATURES

Singlemode 1 x N up to 1 x 32

Fast switching time of  $\leq 30$  ms

Lifetime expectancy of more than  $1 \times 10^9$  cycles

Variety of connector options

## COMPATIBLE PRODUCTS AND ACCESSORIES



**Rackmount Platform**  
LTB-8



**Variable Attenuator**  
FTBx-3500

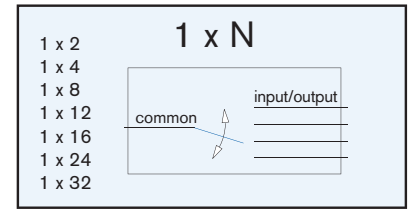


**Multi-User Interface**  
EXFO Multilink



## MEMS-BASED DESIGN

With its MEMS-based design, EXFO's FTBx-9160 delivers durable performance in a compact package. Fast switching time and a 1-billion-cycle lifetime expectancy make it the perfect optical switch for demanding manufacturing applications. The FTBx-9160 MEMS Optical Switch is available for singlemode fibers with a choice of 1 x 2, 1 x 4, 1 x 8, 1 x 12, 1 x 16, 1 x 24 and 1 x 32 modules.

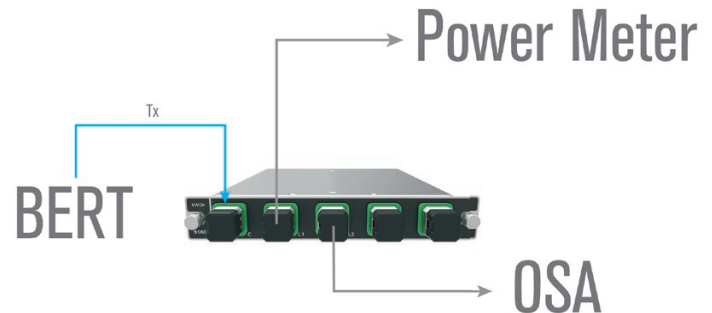


*The 1 x N configurations provide precise optical switching between one common port and N input/output ports—perfect for multiple-component or ribbon-fiber testing.*

## SUPPORTING VARIOUS APPLICATIONS

Optical switches are basic components integrated in almost every test station. The FTBx-9160 offers the specifications and features to support a wide variety of applications. Choose it to:

- › Analyze transmitted signals using several types of test instruments, such as an optical spectrum analyzer and a bit-error-rate tester
- › Reconfigure an R&D or manufacturing test station to allow testing of several types of devices
- › Test multiple devices under test (DUTs) in parallel



## LTB-8 PLATFORM

The LTB-8 is a highly scalable and compact platform featuring the industry's best 100G port density and hot-swap capabilities for no downtime or interruption in tests, and greatly improved efficiency.

The FTBx-9160 can be easily remote-controlled by means of the standard LAN or optimal GPIB interface using SPCI commands, IVI drivers or any other automation software.



光技術をサポートする

株式会社オプトサイエンス

<http://www.optoscience.com>

東京本社 〒160-0014 東京都新宿区内藤町1番地 内藤町ビルディング TEL:03-3356-1064  
 大阪支店 〒532-0011 大阪市淀川区西中島7-7-2 新大阪ビル西館 TEL:06-6305-2064  
 名古屋営業所 〒450-0002 名古屋市中村区名駅2-37-21 東海ソフトビル TEL:052-569-6064

E-mail: [info@optoscience.com](mailto:info@optoscience.com)

SPECIFICATIONS <sup>a</sup>					
Switch	1 x 2, 1 x 4	1 x 8	1 x 12	1 x 16	1 x 24, 1 x 32
Operating wavelength (nm)	1290 to 1650				
Insertion loss (dB) at 1310 nm <sup>b,c</sup>	0.9	1.2	1.6	1.8	2.0
Insertion loss (dB) at 1530 nm to 1650 nm <sup>b,c</sup>	0.7	1.0	1.2	1.4	1.5
Repeatability (dB) <sup>d</sup>	0.02				
Backreflection (dB) (typical)	-50 (-55)				
Crosstalk (dB) (typical)	50 (60)				
Polarization-dependent loss (dB) (typical) <sup>e</sup>	0.09 (0.06)			0.11 (0.08)	
Switching time (ms) <sup>e</sup>	20	30			
Fiber type	Singlemode 9/125 $\mu$ m				
Input power (damage threshold) (dBm)	27				

GENERAL SPECIFICATIONS					
Switch	1 x 2, 1 x 4	1 x 8	1 x 12	1 x 16, 1 x 24	1 x 32
Number of slots	1	2	3	4	4
Dimensions					
Height	25 mm (1 in)	50 mm (2 in)	75 mm (3 in)	100 mm (4 in)	100 mm (4 in)
Width	159 mm (6 ¼ in)	159 mm (6 ¼ in)	159 mm (6 ¼ in)	159 mm (6 ¼ in)	159 mm (6 ¼ in)
Depth	185 mm (6 7/8 in)	185 mm (6 7/8 in)	185 mm (6 7/8 in)	185 mm (6 7/8 in)	185 mm (6 7/8 in)
Switch life	1 billion (10 <sup>9</sup> ) cycles minimum				
Temperature					
Operating	0 °C to 40 °C (32 °F to 104 °F)				
Storage	-40 °C to 70 °C (-40 °F to 158 °F)				
Maximum relative humidity	80 % non-condensing at 40 °C				
<b>Instrument Drivers</b> IVI drivers and SCPI commands.					
<b>Remote Control</b> With LTB-8 and Ethernet.					
<b>Standard Accessories</b> User guide, certificate of compliance and calibration certificate.					

**Notes**

- Specifications valid at 23 °C  $\pm$  5 °C.
- Insertion losses per module, including one connector.
- Typical specifications.
- Repeatability values are for 100 cycles per switch module at constant temperature with stabilized source/meter.
- At 1550 nm.

## ORDERING INFORMATION

FTBx-9160-01-XX-B-XX

**Channel configuration<sup>a</sup>**

02 = 2 channels  
 04 = 4 channels  
 08 = 8 channels  
 12 = 12 channels  
 16 = 16 channels  
 24 = 24 channels  
 32 = 32 channels

**Connector**

58 = FC/APC narrow key  
 88 = SC/APC  
 89 = FC/UPC  
 91 = SC/UPC  
 101 = LC/UPC<sup>c</sup>  
 104 = LC/APC<sup>c</sup>  
 EI-EUI-89 = UPC/FC narrow key<sup>b</sup>  
 EI-EUI-90 = UPC/ST<sup>b</sup>  
 EI-EUI-91 = UPC/SC<sup>b</sup>  
 EI-EUI-98 = UPC/LC<sup>b</sup>  
 EA-EUI-89 = APC/FC narrow key<sup>b</sup>  
 EA-EUI-91 = APC/SC<sup>b</sup>  
 EA-EUI-98 = APC/LC<sup>b</sup>

Example: FTBx-9160-01-04-B-EI-EUI-98

**Notes**

- a. For 2 x N and multimode configurations, please refer to the FTBx-9150 ordering information.  
 b. Not available for 1 x 32 switches.  
 c. Available for 1 x 32 switches only.

EXFO Headquarters > Tel.: +1 418 683-0211 | Toll-free: +1 800 663-3936 (USA and Canada) | Fax: +1 418 683-2170 | info@EXFO.com | [www.EXFO.com](http://www.EXFO.com)

EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to [www.EXFO.com/contact](http://www.EXFO.com/contact).

EXFO is certified ISO 9001 and attests to the quality of these products. EXFO has made every effort to ensure that the information contained in this specification sheet is accurate. However, we accept no responsibility for any errors or omissions, and we reserve the right to modify design, characteristics and products at any time without obligation. Units of measurement in this document conform to SI standards and practices. In addition, all of EXFO's manufactured products are compliant with the European Union's WEEE directive. For more information, please visit [www.EXFO.com/recycle](http://www.EXFO.com/recycle). Contact EXFO for prices and availability or to obtain the phone number of your local EXFO distributor.

For the most recent version of this spec sheet, please go to the EXFO website at [www.EXFO.com/specs](http://www.EXFO.com/specs).

In case of discrepancy, the web version takes precedence over any printed literature.