

OPS- Series Optical Switch

Multi-Channel Optical Switch for Single and Multi-Mode Fiber Applications



Overview

The OPTELLENT OPS-Series Optical Switch is a cost-effective easy-to-use all-optical switch solution for demanding applications in fiber optic instrumentation and communication. The rack mountable instrument can switch up to 4 input fibers to any of up to 48 output fibers in a simplex or duplex mode, independently of data format, wavelength or optical power. The switch supports either single or multimode fibers.

Optical connections are set by a MEMS-based switch network, where micro-machined silicon mirrors redirect light to the selected ports. The use of MEMS technology offers solid-state reliability and long-term stability.

The OPS-Series Optical Switch can be controlled locally using RS232 interface or from anywhere over the internet using its standard Ethernet interface.

An intuitive graphical user interface (GUI) enables easy point-and-click operation.

Applications

- ▶ Multimode and single mode fiber optic testing
- ▶ Automated multi-channel testing of optical components, subsystems and systems
- ▶ Datacom and telecom fiber network monitoring

Key Features

- ▶ **Low Insertion Loss**
- ▶ **Highly Reliable**
- ▶ **For Single and Multi-Mode fiber**
- ▶ **Efficient and Easy-to-Use**
- ▶ **RS232 and Ethernet Interfaces**

Switching Technology

The OPS-Series Optical Switch is based on Telcordia qualified MEMS technology, which achieve superior reliability and repeatability when compared to traditional mechanical solutions.

The switch is fully bi-directional and transparent to the full wavelength range of the installed fiber.

When several input fibers are required to be switched, the switch architecture can be either blocking or non-blocking. In the blocking architecture when one input is configured, the other inputs can only be configured to a limited number of “free” ports. In the non-blocking architecture there is no such limitation. Any of the input ports can be directed to any of the free output ports but the complexity of the non-blocking architecture is much higher.

Switching Configuration for 1 x 12 Switch

The 1 x 12 Optical Switch is equipped with one common optical port (A1) that can be linked to a choice of up to 12 optical ports (B1 to B12). Each port has two isolated channels, Tx and Rx, which are connected to the corresponding Tx and Rx of the linked port. Note that Tx and Rx can be used in any direction.

The front panel of the Optical Switch features a light emitting diode bar indicating the state of the internal connections between the switch ports (A1 to B1..B12).

Control Interface & Software

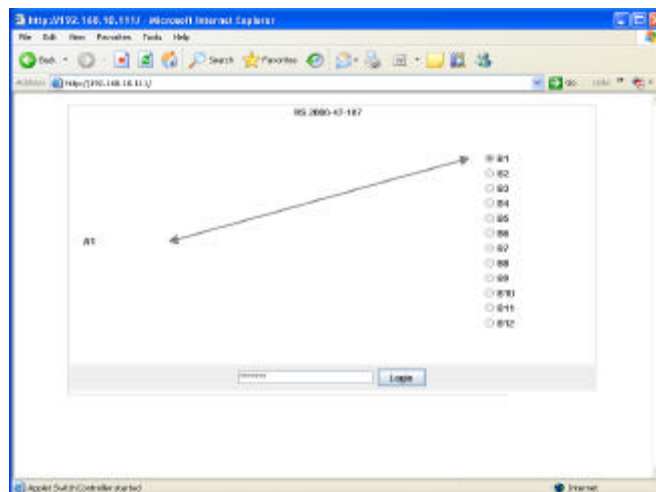
The OPS can be controlled via an RS232 or Ethernet interface which enables full control from anywhere with just an Internet browser.

The software for Optical Switch OPS-Series is an embedded application based on JAVA applet requiring

just an Internet browser (Example: Microsoft Internet Explorer) with JAVA plug-in.

A software driver is available for incorporating the Optical Switch into test automation suites using programs like C++, LabVIEW, and VisualBASIC.

User Interface



Technical Specifications

Parameter	Min	Typ	Max	Unit
Wavelength Range ¹	700		1650	nm
Insertion Loss for up to 1 x 48 ²			3.0	dB
Return Loss, for SMF ³		40	35	dB
Return Loss, for MMF	35			dB
Crosstalk	50			dB
Polarization Dependent Loss		0.1	0.25	dB
Repeatability ⁴			0.01	dB
Response Time for MMF		20		ms
Response Time for SMF		1		ms
Number of Input Ports	1		4	
Number of Output Ports	1		48	
Fiber Type	SMF-28 or MMF 50/125, 62.5/125um			µm
Durability	no wear out			cycles

¹ for Multi-Mode 700 – 1700 nm, for Single mode 1250 – 1700nm

² Including connectors

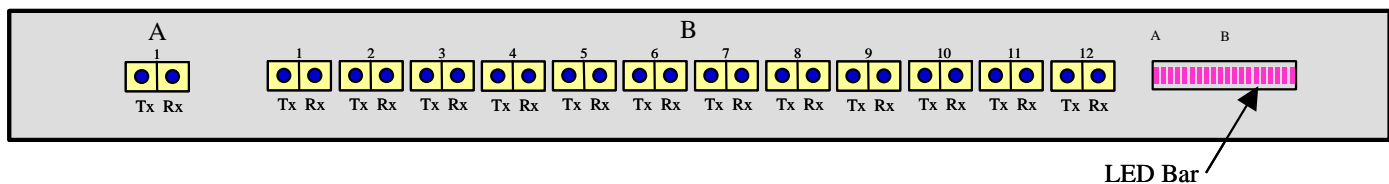
³ When using angle polished connectors (APC)

⁴ At constant wavelength, temperature and polarization

System and General Specifications

	Unit	Min	Typ	Max
Control interface		RJ45 Ethernet; RS232		
Optical Connectors		LC or SC or FC		
Operating Temperature	°C	0		70
Storage Temperature	°C	-40		85
Size (L x W x H)	mm	320 x 484 x 45		
Voltage	VAC	110 – 230		
Power Consumption	W	50		
Compliance		CE		
Standard Warranty		12 Months		

Front View



Ordering Information

OPS-XxXX -X-X-X-XX

LP: LC/PC
LA: LC/APC
SP: SC/PC
SA: SC/APC
FP: FC/PC
FA: FC/APC

6: 62.5/125um MM fiber
5: 50/125um MM fiber
9: 9/125um Single mode fiber

E: Ethernet Interface only
A: Ethernet and RS232 Interfaces

0: Blocking
1: Non-Blocking

P: Number of Input x Output Channels
 1...4 x 1...48

Example: OPS-1x12-0-E-5-LP: 1x12 Optical Switch, Blocking; Ethernet interface; 50/125um MMM fiber, LC/PC connectors

Related Products:

Model Number	Description
OPB4250	4.25 Gb/s OptoBERT (Optical/Electrical BERT)
OPB3200	3.2 Gb/s OptoBERT (Optical/Electrical BERT)
OPB1250	1.25 Gb/s OptoBERT (Optical/Electrical BERT)
OPG4250	4.25 Gb/s Data Generator
OPG3200	3.2 Gb/s Data Generator

Specifications are subject to change without notice.
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