

Duplex Fiber Optical A/B/C/D Switch

(Ethernet Interface, PLC,)

The Fiber Optical A/B/C/D Switch with Telnet allows the user to connect the "COMMON" port among four other devices connected to the "A," "B," "C," and "D" ports. The default configuration is a duplex 1U metal chassis rack. Each channel is a front pluggable module designed for easy repair. Up to 20 channels can be accommodated.

- It is an all-optical routing supporting Gigabit data rate.
- Two data channels are activated together by a single command via either a front pushbutton or remote.
- Front panel LED's display present position and power status.
- Remote Control access uses an Ethernet 10/100Base-T connection with Telnet commands, reachable through the local EJ45 Ethernet port. It can lockout front panel operations, obtain switch status, as well as query firmware version number, query serial number, and enable/disable autosend of switch positions.
- The unit has two power suppliers to increase reliability. EMI power inlet filter reduces the effect of power supply noise.
- We uniquely provide several switch choices: low-cost mechanical, high-reliability MEMS, fast 100 ns switching, and vibration-insensitive switch that can function live in a shock/vibration environment.
- Moreover, the system can be configured by automatically switching when the power value is lower than a user-defined threshold.

The order table includes a list of standard control interfaces. Additionally, we provide a list of commands to assist customer engineers in coding. For those who require it, we offer a code-writing service for customer interfaces at an additional charge.

Each switch driver includes a GUI for programming and a command set (API) so customers can develop their own control software. Python and LabVIEW interface libraries; integration support is available for a fee.



Features

- Vibration Resist
- Dual Power
- Pluggable
- High Speed
- Easy to Use
- Low Cost
- Reliable

Applications

- Network
- Shipboard



Rev 04/16/26

Specifications ^[1]

Parameters	Min	Typical	Max	Unit
Operating Wavelength	850		1620	nm
Insertion Loss ^{[1], [2]}	1x4	1.0	1.3	dB
Return Loss		45		dB
Cross Talk On/Off Ratio		55	70 ^[3]	dB
PDL			0.05	dB
Optical Switching Time ^[4]	100 ns	10 ms		
Repeatability			± 0.05	dB
Durability ^[5]	10 ⁷		10 ¹³	cycle
Operating Temperature	0		70	°C
Storage Temperature	-40		85	°C
Interface	RJ45, Console, SFP, CLI, SSH, Telnet, SNMP			
Power Supply	DC: 12~48V; AC: 110~220V (50/60 Hz), 50W, Dual and Hot Swappable			
Alarms	Signal Degradation, Switching Event, Fan Failure, CPU at high work load			
Fiber Type	SMF-28 or equivalent			
Chassis Type	19" Rack, 1U Supports 4 pluggable with Dimension 44.5x482.6x300mm			
Internal Cooling Fan	Included			
Relative Humidity	5-95%			

[1]. Excluding connectors.

[2]. Multimode IL measure @ Light Source CPR<14 dB.

[3]. Special order for 70dB

[4]. Optical switch speed only, there are electrical signal delay in the system

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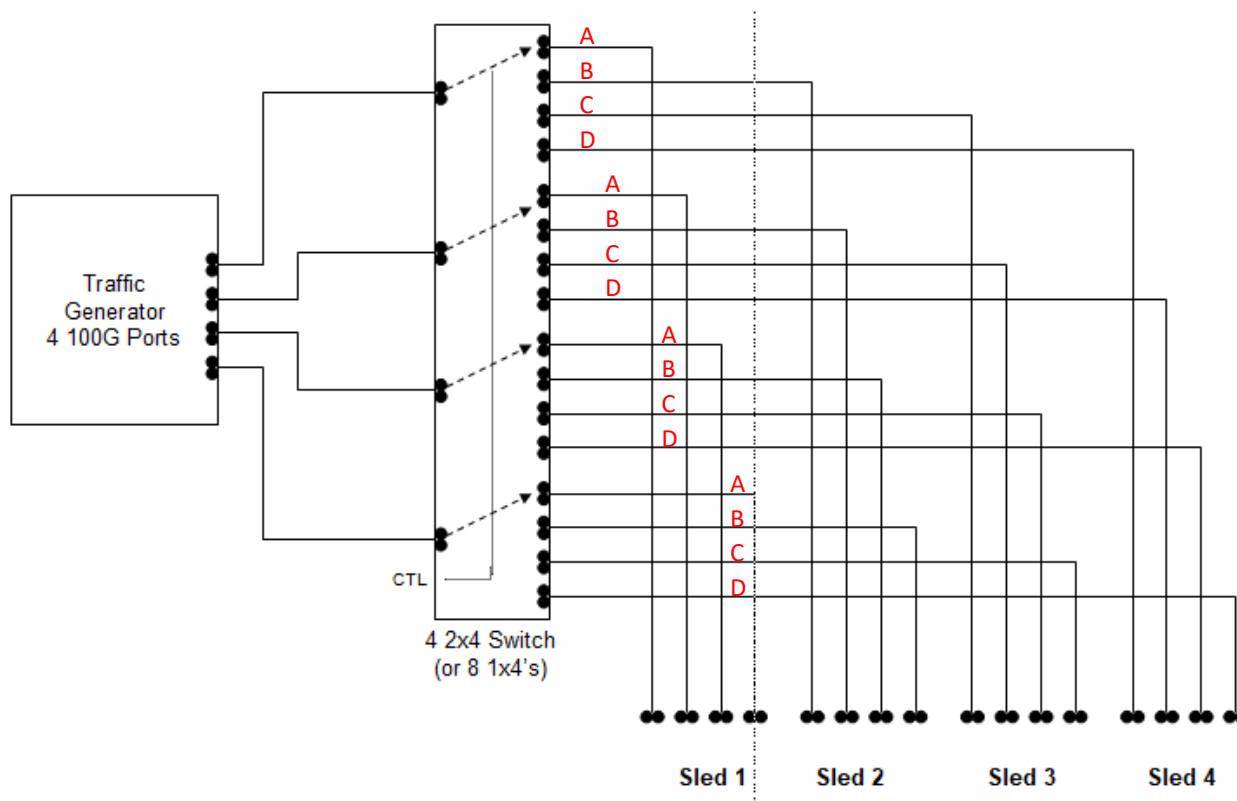
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Optical Path Diagram (an example of 4 duplex total 8 channel ABCD)

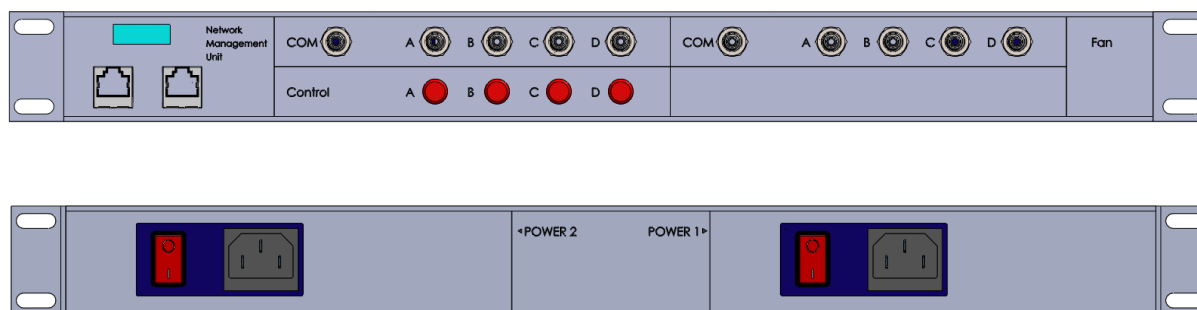


Typical Dimensions (Unit: mm) (it uses fitted rackmount size)

1U DIMENSIONS WITHOUT EARS: 16.75" W x 1.75" H x 10.63" D. (42.5 x 4.4 x 27.1 cm)

1U DIMENSIONS WITH EARS: 19.0" W x 1.75" H x 10.63" D. (48.3 x 4.4 x 27.1 cm)

1U WEIGHT: Approximately 4.7 lbs. (2.2 kg)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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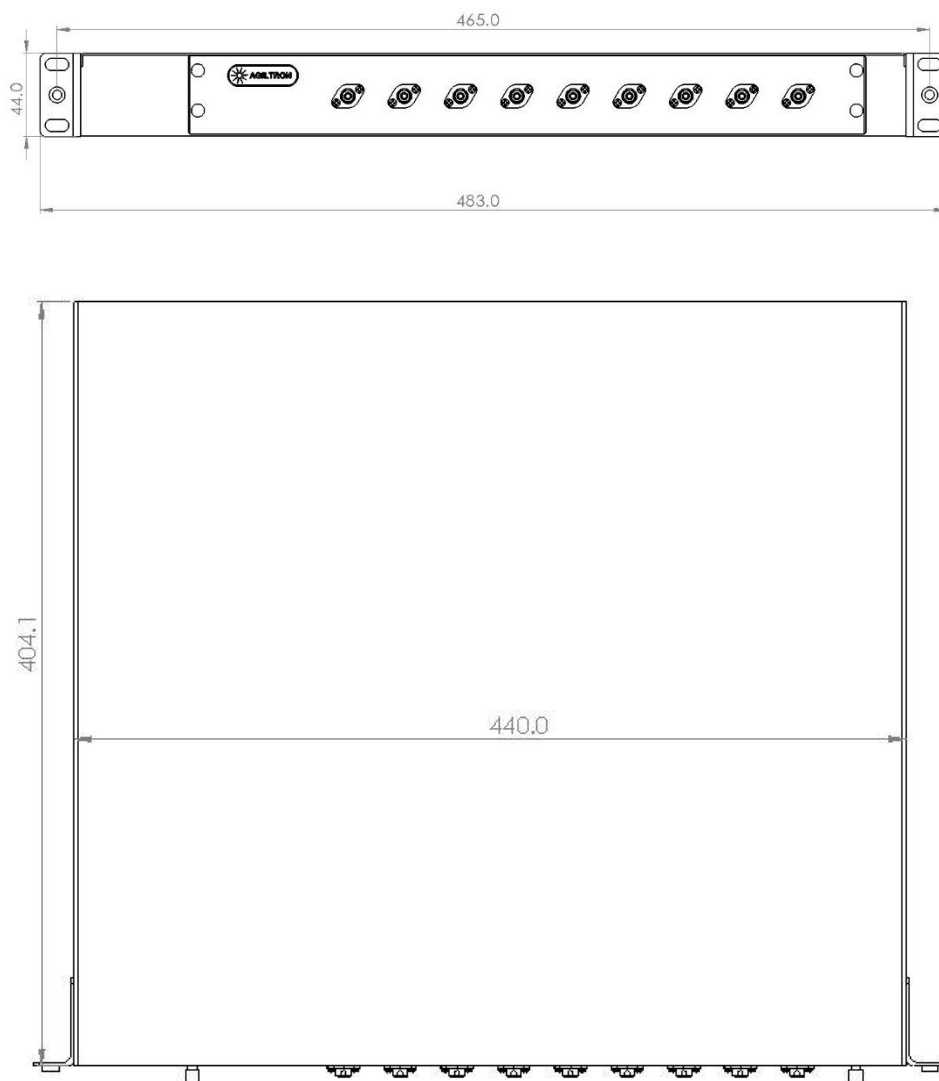
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Duplex Fiber Optical A/B/C/D Switch

(Ethernet Interface, PLC,)

Mechanical Dimensions (mm)

1U Rack Mount



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Duplex Fiber Optical A/B/C/D Switch

(Ethernet Interface, PLC,)

Electrical/Computer Connection

DISPLAY: (4) Front panel LED's display switch position and power status.

REMOTE: (1) RJ45 female connector on rear panel accepts 10/100 Base-T LAN access Ethernet for Remote Control.

POWER SUPPLY: 110VAC-220VAC, 50Hz/60Hz receptacle.

Ordering Information (Part Number)

Prefix	# Duplex Output ^[1]	# Duplex Input ^[2]	Wavelength	Interface	Fiber Type	Switch Type	Pushbutton ^[3]	Connector ^{[4][6]}	Interface ^[5]
ABSW-	A/B = 02 A/B/C = 03 A/B/C/D = 04 5 = 05 6 = 06 7 = 07 8 = 08 12 = 12 22 = 22 32 = 32 48 = 48 Special = 00	One Channel = 01 Two Channel = 02 Three Channel = 03 5 = 05 6 = 06 7 = 07 8 = 08 12 = 12 22 = 22 32 = 32 48 = 48 Special = 00	1270-1620nm = 1 850/1310nm = 4 1310nm = 3 850nm = 8 Special = 0	Ethernet = A RS232 = B USB = C TTL = D PLC = P Push Button = P Special = 0	SMF28e = 1 MM50/125 = 5 MM62.5/125 = 6 Special = 0	10 ms = 1 100 ns = 3 1 ms = 5 0.1 ms = 6 50 ms LED = L Special = 0	Non = 0 Yes = 1	ST Simplex = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Duple LC/PC = 8 LC/UPC = U MPO = Y HER FC/PC = E HRE FC/APC = H	Non = N Python = P LabVIEW = L

[1]. The switch bundles two fibers (Duplex) as Tx and Rx and switches them simultaneously. The selectable paths are defined as A, B, C, and D (see the diagram), forming the default cost-effective and convenient configuration. Additional configurations can also be supported.

[3]. Manual Pushbutton is located in the front panel that overwrite remove control.

[4]. Duplex configuration is the default. Regular fiber connector has PER ~22dB. HER Connector with PER >27 dB is available using special process

[5]. GUI and a command set (API) are included. Python **\$760**. LabVIEW interface libraries **\$850**

[6]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μ m.

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.

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