July 2017
Model# SW1002A
Model# SW1008A
Model# SW1035A
Model# SW1036A

FIBER OPTIC A/B SWITCH
(LATCHING)

Model# SW1002A (Multimode with ST connectors)
Model# SW1008A (Multimode with SC connectors)
Model# SW1035A (Single-mode with ST connectors)
Model# SW1036A (Single-mode with SC connectors)

CUSTOMER SUPPORT INFORMATION

Order toll-free in the U.S.: 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support, 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
Mail order: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

Specifications

Connectors
(3) duplex SC or ST depending on model
(1) 3.5-mm power input

Data Rates
Transparent to signal rates, & formats

Switching Speed
About 0.1 second typical

Optical Wavelength
Multimode: 800 through 1600 nanometers
Single-mode: 1310 and 1550 nanometers

Insertion Loss
Multimode: 2.0 dB maximum
Single-mode: 1.5 dB maximum

Optical Isolation
Multimode: 35 dB minimum
Single-mode: 55 dB minimum

Grounding
None required

Approvals
UL, CE, and PSE (power supply)

Operating Temperature
32 to 158ºF (0 to +70ºC)

Relative Humidity Tolerance
Up to 80%, non-condensing

Mean Time Between Failures
100,000 hours or 1,000,000 cycles

Power
100-240 VAC 50/60 Hz wall-mount PSU, 12 VDC out

Size
2.5”H x 8”W x 6.3”D (6.4 x 20.3 x 16 cm)

Weight
4 lb. (1.8 kg)

Introduction

The Latching Fiber Optic A/B Switch is a full-duplex optical switch. It can be used to connect a network or shared device to one of two networks or remote devices. A front panel rotary style knob allows the user to select which of the two ports (A or B) is connected to the COMMON Port on the switch. The switch operates using a unique all-optical micro-mirror, eliminating the complexity and vulnerabilities of electronic fiber switches. When you turn the rotary knob on the front of the switch to select (A or B) connected to COMMON, the internal micro-mirror rotates to redirect the optical beam from one port to the other. This technique eliminates the need to convert optical signals to electronic signals for switching and is therefore transparent to data rates and protocols. No power is required to pass optical data through the switch and there is no setup required. The latching optical switch maintains the selected optical connection even when power is lost or removed.

Installation

Place the switch in a location relatively free from vibration and mechanical disturbances, near a source of AC power. Before connecting the switch to your fiber optic devices, apply power to the switch and cycle the front panel rotary knob, switching between different connection states, to insure that the latching fiber optic switch modules are in a known position.

Connect the shared network or device to the COMMON Port. Connect one remote device or network to Port A and the other to Port B. Note that the switch supports separate transmit and receive paths, so you must be consistent when connecting the fiber pairs to the switch so that the transmit output from the device connected to the COMMON Port routes to the receive input on the devices connected to Port A and Port B, and vice versa.

Your installation of this switch is now complete.

Operation

Operation is easy. Simply turn the knob on the switch front panel to route the signals. Turning the knob to “A” will route signals between the COMMON Port and Port A. Selecting “B” routes the signals between the COMMON Port and Port B.

The switch uses an internal mirror to switch between ports. The mirror directs a light beam from the COMMON Port to Port A, or the COMMON Port to Port B. There’s no optical-to-electrical conversion between the fiber optic connections. Although power is required to change the selected connection, the latching optical switches continue to pass optical data if power is lost or removed.

Troubleshooting

If the Fiber Optic A/B Switch fails to operate, check the following before calling for technical support.

1. Ensure that the power supply connected to a power source and to the switch.
2. Check the fiber optic connectors for proper connections to the correct ports of the switch.
3. Operate the switch knob to verify that it’s tightly secured to the switch shaft and does not spin loosely.
4. Verify the integrity of the fiber optic leads by replacing a suspect lead with a spare.

Notes:

FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le Industrie Canada.

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