



**Market Central<sup>®</sup>**

[www.secureswitch.com](http://www.secureswitch.com)

**500 Business Center Drive Pittsburgh, PA 15205 USA  
412.494.2800 CAGE 1BGJ7**

## **Data DeadBolt<sup>®</sup> Latching Fiber Optic A/B Switch**

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Model: 6100620	Multimode with ST connectors
Model: 6100644	Multimode with SC connectors
Model: 6100654	Single-mode with ST connectors
Model: 6100655	Single-mode with SC connectors

Market Central Inc., 500 Business Center Drive, Pittsburgh, PA 15205  
Phone: (412) 494-2800, Fax: (412) 494-5550 [www.secureswitch.com](http://www.secureswitch.com) CAGE Code 1BGJ7

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**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.

# Data DeadBolt® Latching Fiber Optic A/B Switch

## 1. 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 sec 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: 45 dB minimum; Single-mode: 55 dB minimum

**Grounding:** None required

**Approvals:** UL, CE, and PSE (power supply)

**Operating Temperature:** 32 to 158°F (0 to +70°C)

**Relative Humidity Tolerance:** up to 80%, noncondensing

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

**Power:** supplied by external power supply, 12 VDC output.

**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)

## 2. Introduction

The Data DeadBolt® 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.

### **3. 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. On ST models with ports labeled IN and OUT, the switch connects COMMON Port IN to Port A or B OUT and COMMON Port OUT to Port A or B IN.

### **4. 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.

### **5. 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 is connected to a power source and to the switch.
2. Check the fiber optic connectors for proper connection to the correct ports of the switch.
3. Operate the switch knob to verify that it is 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.

## 5.1 Calling Your Supplier

If you determine that your Fiber Optic A/B Switch is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Market Central, Inc. at (412) 494-2800

Before you do, make a record of the history of the problem. Your supplier will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular applications that, when used, appears to create the problem or make it worse.

## 5.2 Shipping and Packaging

If you need to transport or ship your switch:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the switch for repair, make sure you include everything that came in the original package. Before you ship, contact Market Central, Inc. to get a Return Materials Authorization (RMA) number.

MARKET CENTRAL, INC.

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