



***High-Speed Fiber-Optic Switch  
(SW-FOP-L)***

# High-Speed Fiber-Optic Switch (SW-FOP-L)

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The High-Speed Fiber-Optic Switch, or SW-FOP-L, uses an advanced dual sensor for edge- and hole-detect pick-ups. The dual sensor is designed to be a precision registration mark sensor with 5 $\mu$ s repeatability, and a standard photoelectric sensor for any high speed application, in one package.

The High-Speed Fiber Optic Switch (SW-FOP-L) is not a replacement for the Fiber Optic Switch (SW-FOP) offered by AMS Controls. The Fiber Optic Switch is still available for purchase, but should be used in slower line-speed applications.

This high-speed switch has two key advantages over the SW-FOP:

1. **Hole detection uses a line of light rather than a single point of light.** This allows you to avoid length errors caused by the single point of light hitting an angled, curved, or shifted. Instead, the full line of light gives a wider range of detection. As soon as any part of the registration hole or notch crosses the line, the High-Speed Fiber Optic Switch registers the position.
2. **The fiber optic cables are protected by a stainless steel flexible jacket.** This offers extra protection not provided with a simple fiber optic switch and is much better for industrial uses.

The sensor uses an NPN (Sink) or PNP (Source) output and the user can select between “Light” mode and “Dark” mode dependent upon the application.

“Dark” mode is used as an edge-detect to look for the presence of a part. In this mode, the switch signals the controller once it sees the leading edge of a part.

“Light” mode is used when counting holes or when looking for a pick-up hole. In this mode, the switch signals the controller when it sees the leading edge of a hole.

## Included Items

- Sensor (enclosed in rugged steel box)
- 5’ Fiber-Optic Cable (with stainless steel jacket)
- 25’ Power and I/O Cable

## Setup Instructions

The switch’s default setting is “Light” mode.

**Note:** The light beam must be blocked when setting up the sensor.

### Dark Mode

Press and hold the yellow button for five seconds.

## Light Mode

Press and hold the red button for five seconds.

## Specifications

### Supply Voltage

12 to 24 VDC  
Polarity protected  
Intended for Class 2 circuits

### Current Requirements

45 milliamps (exclusive of load)

### Output Transistors

NPN and (1) PNP sensor output transistors  
Outputs sink or source up to 150 milliamps (current limit).  
All outputs are continuously short circuit protected.

### Response Time

Light/Dark = 10 $\mu$ s  
Repeatability = 5 $\mu$ s

### LED Light Source

White = Broadband Color Spectrum

### Ambient Temperature

0° - 57° C (32° - 135° F)

### Light Immunity

Responds to sensor's pulsed modulated light source  
– immune to most ambient light including indirect sunlight.

### Maximum Sensing Range

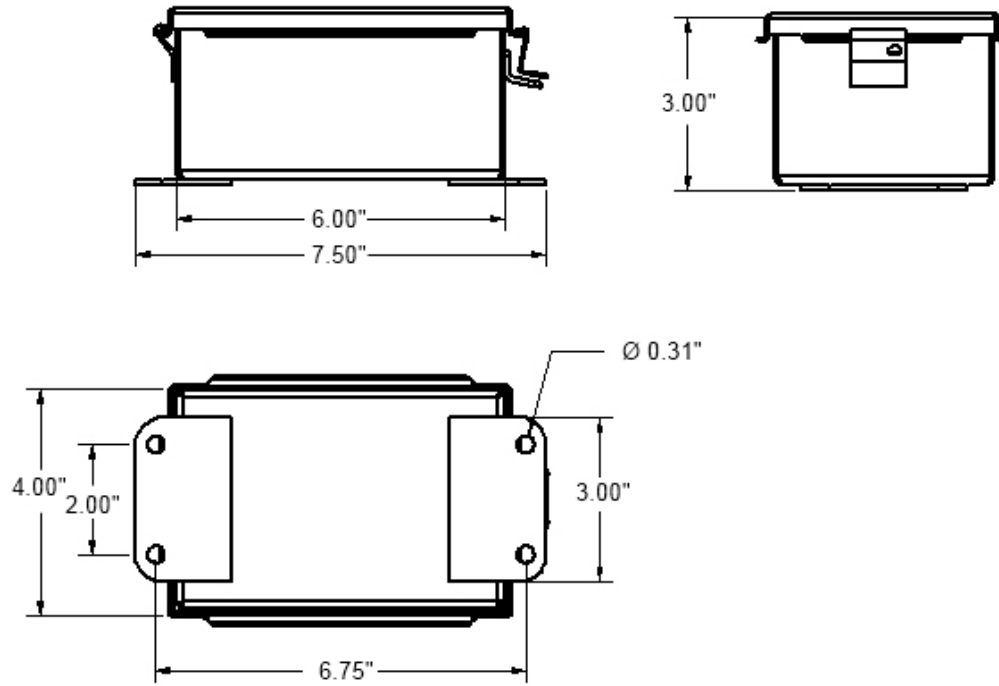
7 in. (177.8mm)

## Wiring

<b>Brown</b>	12-24 VDC
<b>Blue</b>	Ground
<b>Black</b>	PNP Output (Source)
<b>White</b>	NPN Output (Sink)
<b>Gray</b>	N/A
<b>Shield</b>	N/A

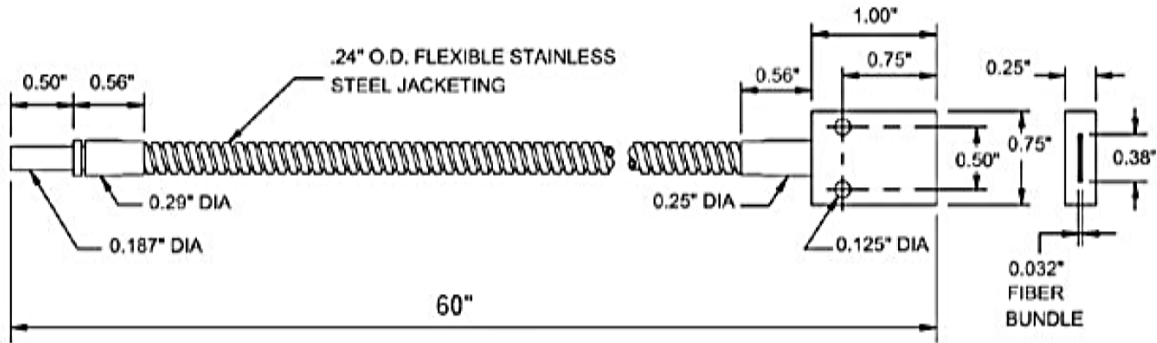
## Dimensions

## Enclosure



## Optic Cables

### 3/8" Flat Housing



### 1 1/2" Flat Housing

This larger sensor is only available by special order. It may require a longer lead time.

