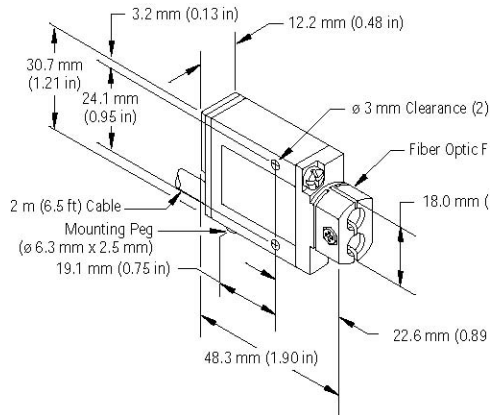




# MINI-BEAM<sup>®</sup> SM312FP1H

Rodix P/N 111-500

Self-contained DC-operated Visible-red Fiber Optic Sensor



RODIX INC.

2316 23<sup>rd</sup> Ave Rockford, IL 61104

Phone: (800) 562-1868 or

(815) 316-4700

Fax: (815) 316-4701

www.rodix.com

## MINI-BEAM DC Fiber Optic Sensor Specifications

<b>Supply Voltage and Current</b>	10 to 30V dc (10% maximum ripple) at less than 25 mA (exclusive of load)
<b>Supply Protection Circuitry</b>	Protected against reverse polarity and transient voltages
<b>Output Configuration</b>	Bipolar: One current sourcing (PNP) and one current sinking (NPN) open-collector transistor
<b>Output Rating</b>	150mA maximum each output at 25°C, derated to 100 mA at 70°C (derate ≈1 mA per °C) <b>Off-state leakage current</b> less than 1 microamp <b>Output saturation voltage</b> (PNP output) less than 1 volt at 10 mA and less than 2 volts at 150 mA <b>Output saturation voltage</b> (NPN output) less than 200 millivolts at 10 mA and less than 1 volt at 150 mA
<b>Output Protection Circuitry</b>	Protected against false pulse on power-up and continuous overload or short-circuit of outputs
<b>Output Response Time</b>	Sensors will respond to either a "light" or a "dark" signal of 1 millisecond or longer duration, 500 Hz max. 0.3 millisecond response modification is available. See note below. 100 millisecond delay on power-up; outputs do not conduct during this time.
<b>Repeatability</b>	0.3 milliseconds. Response time and repeatability specifications are independent of signal strength.
<b>Adjustments</b>	Light/Dark Operate select switch, and 15-turn slotted brass screw Gain (sensitivity) adjustment potentiometer (clutched at both ends of travel). Both controls are located on rear panel of sensor and protected by a gasketed, clear acrylic cover.
<b>Indicators</b>	Exclusive, patented Alignment Indicating Device system (AID™, US patent #4356393) lights a rear-panel mounted red LED indicator whenever the sensor sees a "light" condition, with a superimposed pulse rate proportional to the light signal strength (the stronger the signal, the faster the pulse rate).
<b>Construction</b>	Reinforced thermoplastic polyester housing, totally encapsulated, o-ring sealing, acrylic lenses, and stainless steel screws.
<b>Environmental Rating</b>	Meets NEMA standards 1, 2, 3, 3S, 4, 4X, 12, and 13; IEC IP67
<b>Connections</b>	PVC-jacketed 4-conductor 2 m (6.5') or 9 m (30') cables, 4-pin Euro-style quick-disconnect (QD) fitting or 150 mm (6") pigtail are available. QD cables are ordered separately. See page 5.
<b>Operating Conditions</b>	<b>Temperature:</b> -20° to +70°C (-4° to +158°F) <b>Maximum relative humidity:</b> 90% at 50°C (non-condensing)
<b>Application Notes</b>	The NPN (current sinking) output of dc MINI-BEAM sensors is directly compatible as an input to Banner logic modules, including all non-amplified MAXI-AMP and MICRO-AMP modules. MINI-BEAMS are TTL compatible.
<b>Certifications</b>	Printed in USA 06/00 P/N 60965

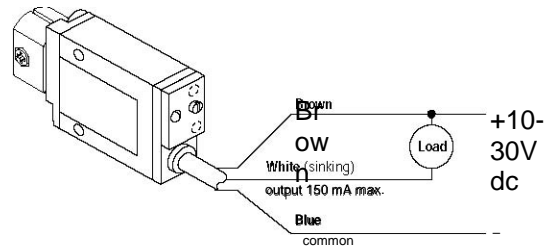


# MINI-BEAM<sup>®</sup> SM312FP1H RODIX P/N 111-500

## Hookup to a dc Relay or Solenoid (sinking)

The diagram to the right shows hookup of a dc MINI-BEAM to a dc load using the sensor's sinking output, which is rated at 150 mA maximum. The BLACK wire is not used.

*Note: maximum load capacity of each output is 150 mA at 25°C, derated to 100 mA at 70°C (see Specifications).*



## MINI-BEAM Operation

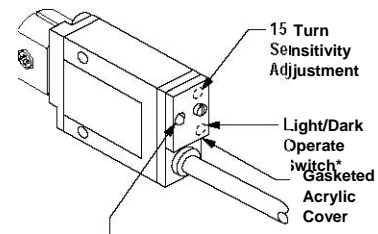
The sensor's Gain adjustment and Light/Dark Operate switch are located under the gasketed acrylic cover. Loosen the screw to access these adjustments and use a small screwdriver to adjust.

### Gain adjustment:

Turn clockwise to increase gain (sensitivity); 15-turn Gain potentiometer is clutched at both ends of travel.

### Light/Dark operate selection:

- Turn switch *fully* clockwise for light operate (sensor outputs conduct when light is sensed)
- Turn switch *fully* counterclockwise for dark operate (sensor outputs conduct when no light is sensed)



"AID" Indicator LED Lights when the sensor sees its own modulated light and pulses at a rate proportional to the strength of the received light signal.

\*Under acrylic cover

BANNER<sup>®</sup> Fiber Optic Sensor

### RODIX P/N 111-500

To Apply to RODIX Feeder Cube<sup>®</sup>  
Blue (-V) White (Sig/Load) Brown  
(+V) Black (Not Used)



**WARNING . . . Not To Be Used for Personnel Protection Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death.**

These sensors do NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition. Consult your current Banner Safety Products catalog for safety products which meet OSHA, ANSI and IEC standards for personnel protection.