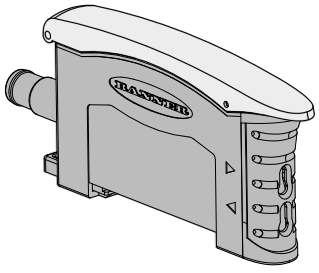
Features

Low-cost, 10 to 30 V DC sensor for use with plastic fiber optics

- Models available with visible red (660 nm) or visible green (525 nm) LED light source
- Sleek, ultra-slim 10 mm housing, mounts to standard 35 mm DIN rail
- Solid-state, bipolar discrete outputs: one current sourcing (PNP) and one current sinking (NPN)
- High-speed models: 200-microsecond output response
- Standard models: 500-microsecond output response plus crosstalk-avoidance circuitry (for applications with multiple sensors)
- Selectable Light/Dark Operate and 40-millisecond pulse stretcher (OFF-delay), via two easy-to-operate slide switches
- 12-turn Sensitivity adjustment with relative position indicator
- LED status indicators for Power ON and Light Sensed (AID™) indication
- Models available with integral cable or an M8 quick-disconnect connector



WARNING:

- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

Models

Red Beam (660 nm)	Green Beam (525 nm)	Response Time	Cable[1]	Output Type
D10AFP		500 microseconds	4-conductor 2 m (6.5 ft) Cable	Bipolar NPN/PNP Solid-state
D10AFPQ	**D10AFPGQ**		4-pin M8 QD	
D10AFPY	**D10AFPGY**	200 microseconds	4-conductor 2 m (6.5 ft) Cable	
D10AFPYQ	**D10AFPGYQ**		4-pin M8 QD	

The following models are no longer available for order but are still covered by the information in this document.

Green Beam (525 nm)	Response Time	Cable	Output Type
D10AFPG	500 microseconds	4-conductor 2 m (6.5 ft) Cable	Bipolar NPN/PNP Solid-state

[1] To order the 9 m (30 ft) PVC cable model, add the suffix "W/30" to the cabled model number. For example, D10AFP W/30. Models with a quick disconnect require a mating cordset.

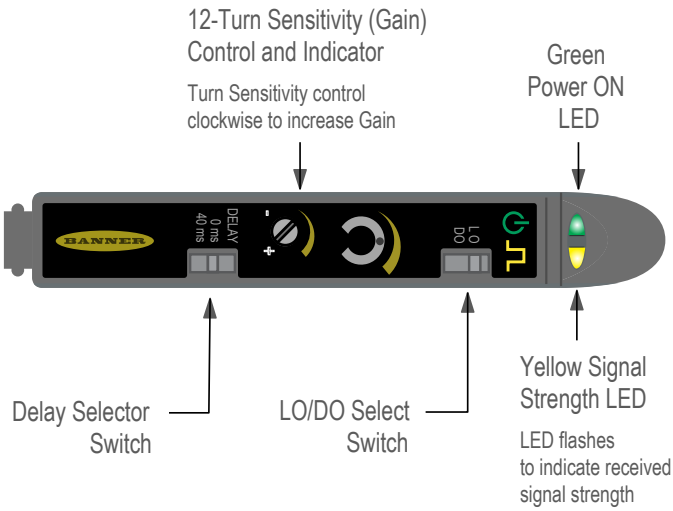
Original Instructions
02-Mar-26

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118431
p/n: 118431 Rev D

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

Overview

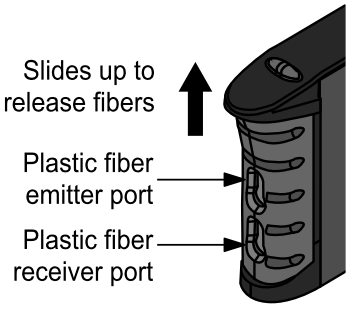


In dark operate (DO) mode, the output is ON when the target returns less light to the sensor than the configured target and OFF when the sensor detects more light than the configured/taught target. In light operate (LO) mode, the output is ON when the target returns the same or more light to the sensor and OFF when the sensor detects less light than the configured/taught target.

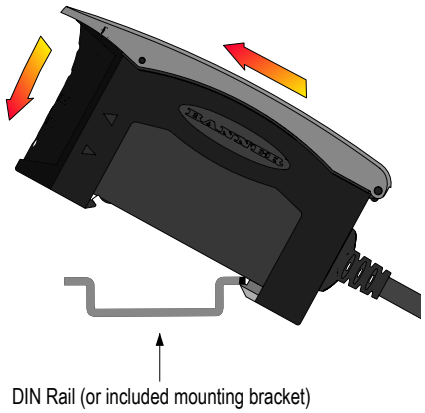
Installation

Installing Fibers and Housing

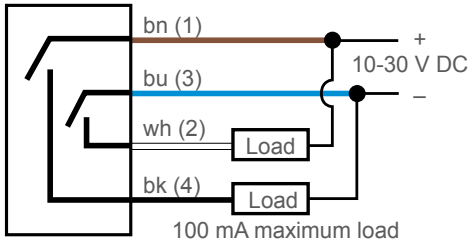
Install the fibers



Mount the D10 on a DIN rail or the mounting bracket



Wiring



NOTE: Quick disconnect wiring diagrams are functionally identical.

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Specifications

Sensing Beam

Visible red, 660 nm or Visible green, 525 nm , depending on model

Supply Voltage

10 to 30 V DC (10% max. ripple) at less than 25 mA, exclusive of load

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Output Configuration

Bipolar: 1 current sourcing (PNP) and 1 current sinking (NPN)

Output Rating

100 mA per output with short circuit protection

OFF-state leakage current: < 10 µA sourcing; 200 µA sinking

ON-state saturation voltage:

NPN: 1.6 V at 100 mA
PNP: 2.0 V at 100 mA

Output Protection

Protected against output short-circuit and false pulse on power-up

NOTE: Maximum 100 ms delay on power-up; outputs do not conduct during this time

Output Response Time

Standard models (with crosstalk avoidance circuitry): 500 microseconds

High-speed models: 200 microseconds

Repeatability

Standard models: 95 microseconds

High-speed models: 50 microseconds

Adjustments

12-turn Sensitivity potentiometer with relative position indicator; LO/DO Selection switch; 0 or 40 ms off delay switch

NOTE: Use proper ESD techniques while making adjustments under the cover.

Indicators

Two LEDs: Green and Amber

Green ON steady: Power ON

Amber flashing: Light Sensed Signal strength indicator (Banner's AID™ Alignment Indicating Device—the faster the flash, the more light is received)

Construction

Black ABS/polycarbonate alloy (UL94 V-0 rated) housing, clear polycarbonate cover

Environmental Rating

IP50, NEMA 1

Connections

2 m or 9 m (6.5 ft or 30 ft) attached cable, or 4-pin M8 quick-disconnect fitting; cables for QD models are purchased separately

Certifications

Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM

Operating Conditions

Operating Temperature: –10 °C to +55 °C (+14 °F to +131 °F)

Storage Temperature: –20 °C to +85 °C (–4 °F to +185 °F)

90% at +55 °C maximum relative humidity (non-condensing)

Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

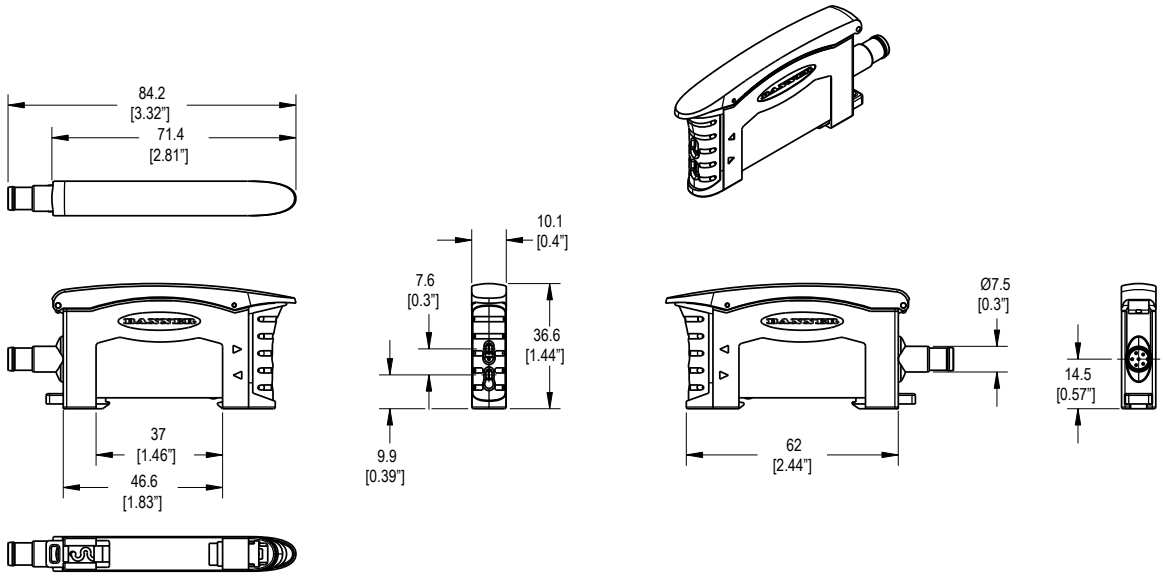
Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	2.0	30	0.5

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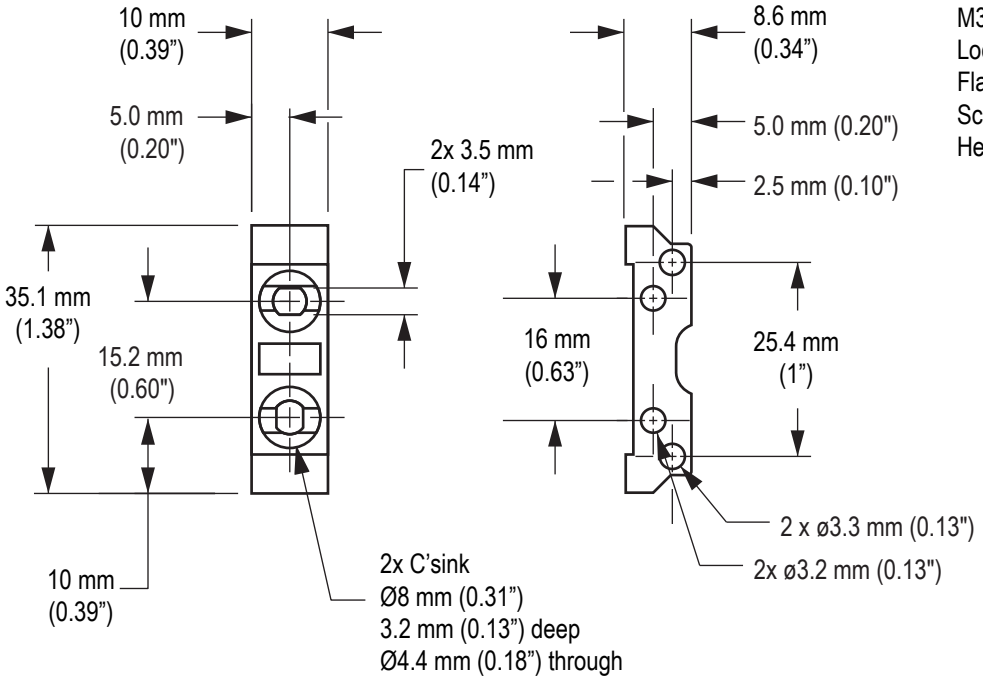
Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

D10 dimensions



Included bracket dimensions



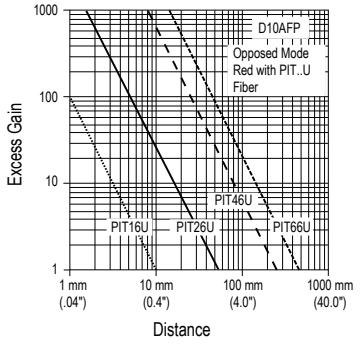
M3 Hardware included:
Lock washer (2)
Flat washer (2)
Screws (2)
Hex nuts (2)

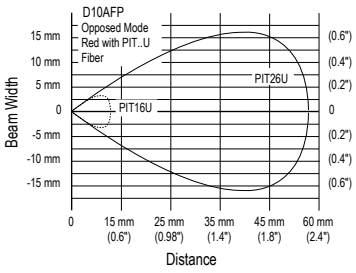
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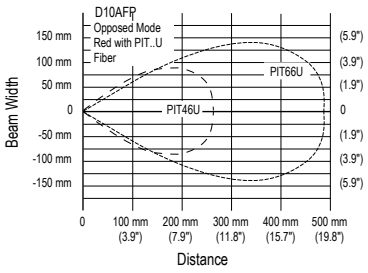
Performance Curves

Opposed Mode

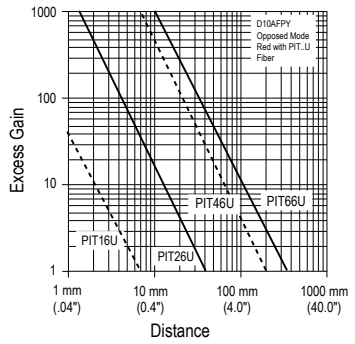
Red Beam Models

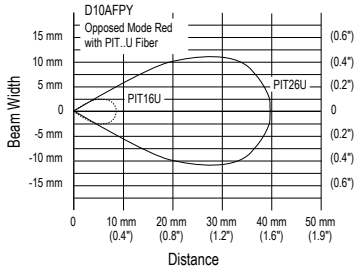


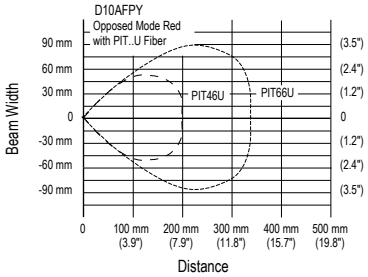




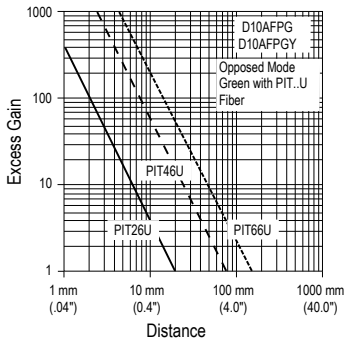
High-Speed Red Beam Models

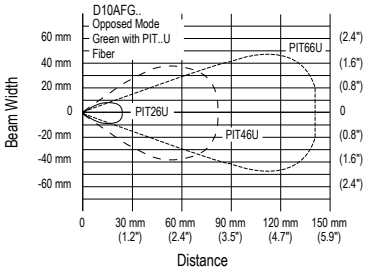






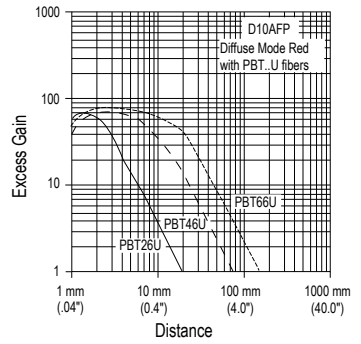
Green Beam Models



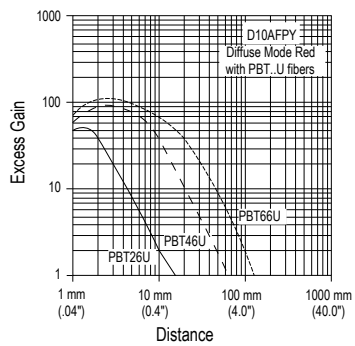


Diffuse Mode

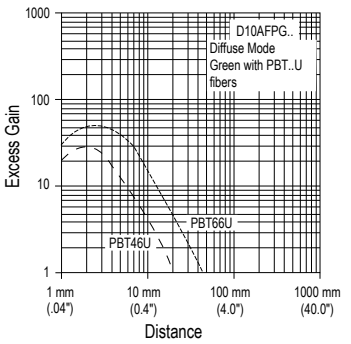
Red Beam Models



High-Speed Red Beam Models



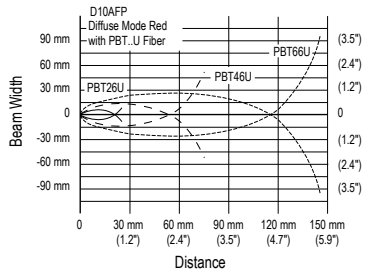
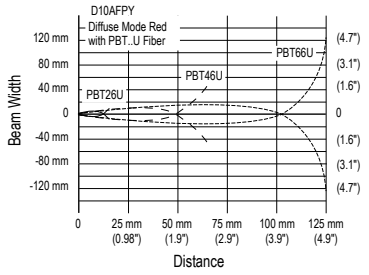
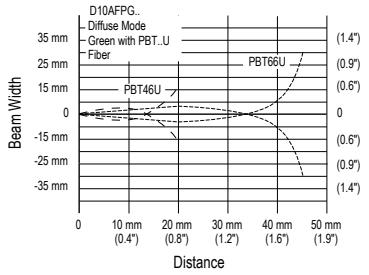
Green Beam Models



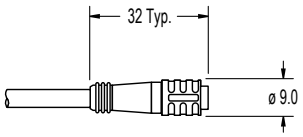
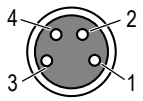
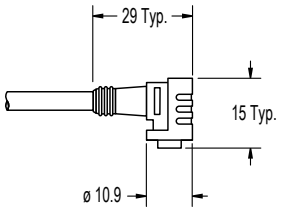
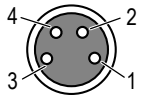
Continued on page 6

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Continued from page 5

Red Beam Models	High-Speed Red Beam Models	Green Beam Models
		

Accessories

4-Pin Single-Ended Snap-on M8 Female Cordsets					
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**	
PKG4-2	2.03 m (6.66 ft)	Straight			1 = Brown 2 = White 3 = Blue 4 = Black
PKW4Z-2	2 m (6.56 ft)	Right-Angle			

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