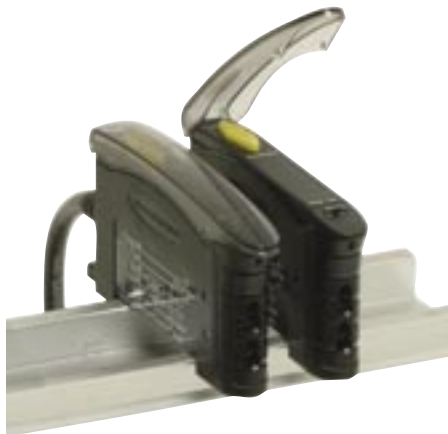# D10 *Expert*™ – Dual Discrete Outputs

Advanced sensor for use with plastic fiber optics

Features

- Easy-to-set automatic *Expert*-style TEACH options* including static, dynamic, and single-point programming plus manual adjustment for fine-tuning

- 16-bit microcontroller and 12-bit Analog-to-Digital converter for high-performance, low-contrast sensing

- Easy-to-read 4-digit display for TEACH and signal strength readout, plus indicators for a continuous readout of operating status (user configurable)

- Two discrete outputs, PNP or NPN

- Four-mode power and speed selection with automatic cross-talk avoidance circuitry

- Selectable OFF-delay options

- Gate input wire can be used to selectively inhibit sensor outputs from switching

- Models available with visible red (680 nm) or visible green (525 nm) sensing beam

- Models available with 2 m or 9 m (6.5' or 30') cable or integral Pico-style quick-disconnect

- Sleek, ultra-slim 10 mm housing, mounts to a standard 35 mm DIN rail

* U.S. Patent #5,808,296

Models

Models		Cables*	Discrete Outputs
Red Beam	**Green Beam**		
D10DNFP	**D10DNFPG**	2 m (6.5') Cable	NPN
D10DNFPQ	**D10DNFPGQ**	6-pin Pico-style QD	
D10DPFP	**D10DPFPG**	2 m (6.5') Cable	PNP
D10DPFPQ	**D10DPFPGQ**	6-pin Pico-style QD	

* 9 m (30') cables are available by adding suffix **"W/30"** to the model number of any cabled sensor (e.g., **D10DNFP W/30**).
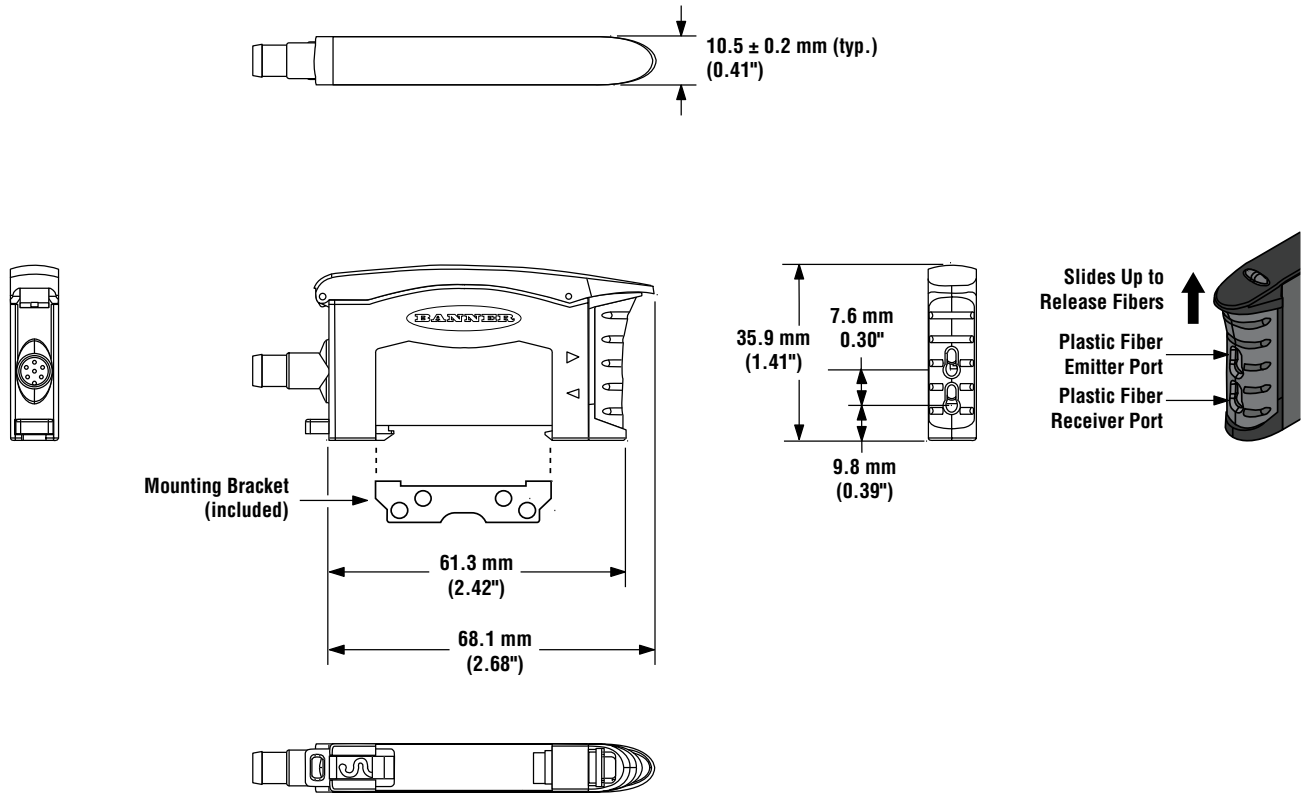A model with a QD connector requires a mating cable (see page 12).
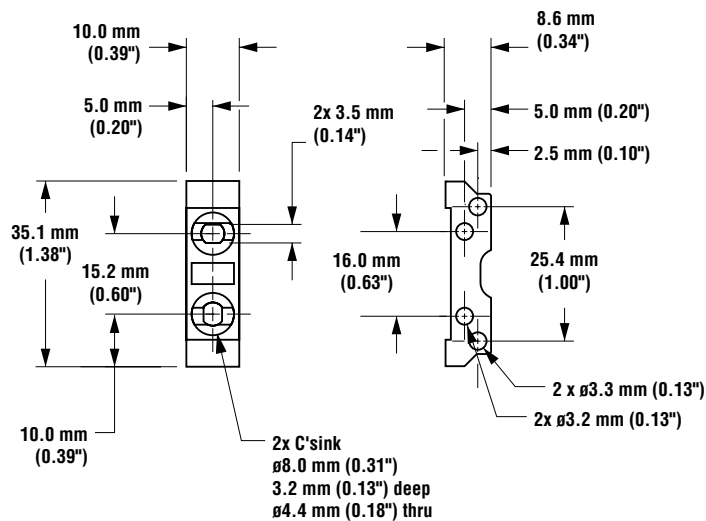
D10 *Expert*™ Dual Discrete Outputs

Specifications

Required Fiber-Optic Cable	Banner P-Series plastic fibers
Sensing Beam	Visible red, 680 nm, or Visible green, 525 nm, depending on model
Supply Voltage and Current	12 to 24V dc (10% maximum ripple) at less than 65 mA, exclusive of load
Supply Protection Circuitry	Protected against reverse polarity and transient voltage
Output Configuration	2 NPN or 2 PNP, depending on model
Output Rating	150 mA maximum load **OFF-state leakage current:** < 10 µA at 24V dc **ON-state saturation voltage: NPN** < 1.5V at 150 mA load **PNP** < 2.5V at 150 mA load
Output Protection Circuitry	Protected against false pulse on power-up and continuous short-circuit
Output Response Time	Programmable, 50 microseconds, 200 microseconds, 1 millisecond, 2.5 milliseconds NOTE: < 1 second delay on power-up; outputs do not conduct during this time.
Adjustments	Push-button or remote programming of response time, OFF-delay, light/dark operate, and display
Indicators	Four-digit digital display plus LED indicators for active channel, push-button lockout, OFF-delay and light/dark operate selection; 2 yellow output indicators
Construction	Black ABS/polycarbonate alloy (UL94 V-0 rated) housing, clear polycarbonate cover
Environmental Rating	NEMA 1, IEC IP50
Connections	PVC-jacketed 2 m or 9 m (6.5' or 30') 6-wire integral cable or integral 6-pin Pico-style quick-disconnect
Operating Conditions	**Temperature:** -20° to +55°C (-4° to +131°F) **Storage Temperature:** -20° to +80°C (-4° to +175°F) **Max. Rel. Humidity:** 90% @ 50°C (non-condensing)

Number of Devices, Stacked	Ambient Temperature Rating	Load Specification
3	55°C	150 mA
7	50°C	50 mA
10	45°C	50 mA

Installation	35 mm DIN rail or included mounting bracket
Certifications	CE c**UL**us

Dimensions

10.5 ± 0.2 mm (typ.)
(0.41")

**Mounting Bracket
(included)**

**61.3 mm
(2.42")**

**68.1 mm
(2.68")**

**35.9 mm
(1.41")**

**7.6 mm
0.30"**

**9.8 mm
(0.39")**

**Slides Up to
Release Fibers**

**Plastic Fiber
Emitter Port**

**Plastic Fiber
Receiver Port**

Included Bracket Dimensions

**10.0 mm
(0.39")**

**5.0 mm
(0.20")**

**35.1 mm
(1.38")**

**15.2 mm
(0.60")**

**10.0 mm
(0.39")**

**2x 3.5 mm
(0.14")**

**2x C'sink
ø8.0 mm (0.31")
3.2 mm (0.13") deep
ø4.4 mm (0.18") thru**

**8.6 mm
(0.34")**

5.0 mm (0.20")

2.5 mm (0.10")

**16.0 mm
(0.63")**

**25.4 mm
(1.00")**

2 x ø3.3 mm (0.13")

2x ø3.2 mm (0.13")

M3 Hardware included:
  Lock Washer (2)
  Flat Washer (2)
  Screws (2)
  Hex Nuts (2)