FI22FP Series

Low-Profile, Inline Plastic Fiber Optic Sensor

Features

- Low-profile fiber optic sensors are designed for inconspicuous surface mounting
- 8-segment LED light bar indicates relative received signal strength, sensing contrast, programming status, and diagnostic warnings
- Easy-to-set automatic *Expert*-style TEACH options including static, dynamic, and single-point programming plus manual adjustment for fine-tuning
- Smart power-control algorithms to maximize sensing contrast
- Fast 500-microsecond sensing response
- Programmable 30-millisecond pulse stretcher (OFF delay)
- Extreme programming flexibility via two push buttons or a remote input wire
- Output may be programmed for either light or dark operate
- Bipolar discrete outputs: one current sourcing (PNP) and one current sinking (NPN)
- Visible red (660 nm) light source
- Easy-to-read TEACH and signal strength readout, plus indicators for a continuous readout of operating status

Models

Model	Cable*	Supply Voltage	Output Type	Maximum Range**
FI22FP	2 m (6.5') 5-wire integral cable	10V dc to 30V dc	Bipolar NPN/PNP	**Range varies depending on sensing mode and fiber optic(s) used; see below and page 2 for typical values.** **Opposed Mode** **PIT26U Fiber:** 60 mm (2.36") **PIT46U Fiber:** 260 mm (10.24") **PIT66U Fiber:** 540 mm (21.26") **Diffuse Mode** **PBT26U Fiber:** 15 mm (0.59") **PBT46U Fiber:** 65 mm (2.56") **PBT66U Fiber:** 115 mm (4.53")
FI22FPQ	Integral 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., **FI22FP W/30**). A model with a QD connector requires a mating cable (see page 9).

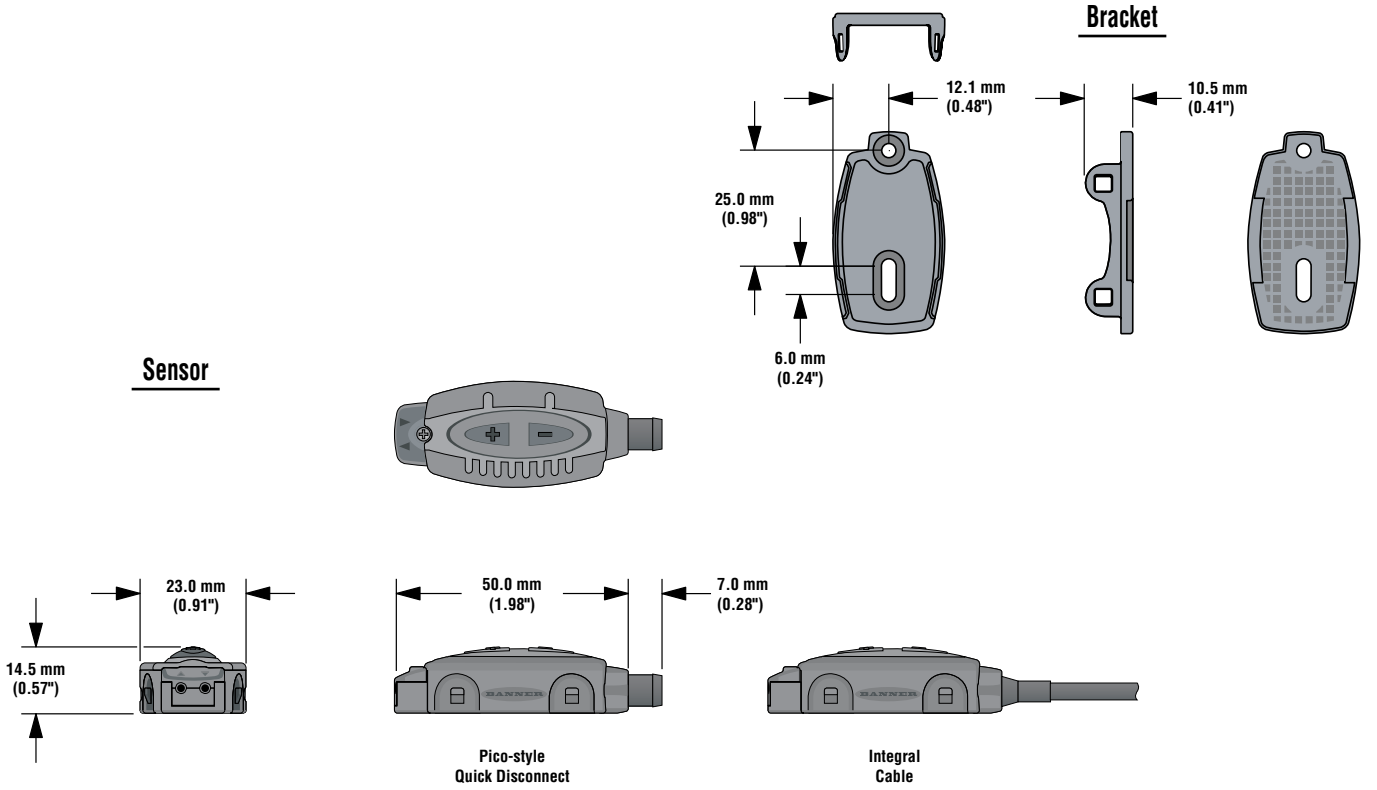
**See page 2 for beam patterns and excess gain curves.

FI22FP Low-Profile Inline Plastic Fiber Optic Sensor

Specifications

Sensing Beam	660 nm visible red
Supply Voltage	10 to 30V dc (10% max. ripple) @ less than 32 mA exclusive of load
Supply Protection Circuitry	Protected against reverse polarity, over voltage, and transient voltages
Delay at Power Up	250 milliseconds max.; outputs do not conduct during this time
Output Configuration	Bipolar: 1 current sourcing (PNP) and 1 current sinking (NPN)
Output Rating	100 mA maximum load @25° C (derate 1 mA per °C increase) **OFF-state leakage current:** < 50 µA at 30V dc **ON-state saturation voltage:** **NPN:** < 200 mV @ 10 mA and 1V @ 100 mA load **PNP:** < 1.5V @ 10 mA and 2.0V @ 100 mA load
Output Protection	Protected against output short-circuit, continuous overload, transient over-voltages, and false pulse on power up
Output Response Time	500 microseconds
Repeatability	100 microseconds
Adjustments	2 push buttons and remote wire • Expert Teach programming (two-point static, dynamic, and single-point static) • Manually adjust (+/–) thresholds (from buttons only) • LO/DO and Off Delay configurable (from buttons or remote wire) • Push-button lockout (from remote wire only)
Indicators	**8-segment red bargraph:** Light-to-dark signal difference relative to taught condition (single-point TEACH), or Sensing contrast (two-point TEACH) **Green LED:** Power On **Yellow LED:** Output conducting
Construction	PC/ABS blend plastic housing; polycarbonate cover
Environmental Rating	IP67, NEMA 6
Connections	5-conductor 2 m (6.5') PVC cable, 9 m (30') PVC cable, or 6-pin integral Pico-style quick-disconnect
Operating Conditions	**Temperature:** -10° to +55°C **Relative Humidity:** 90% @ 50° C (non-condensing)
Certifications	CE cULus

Sensor and Bracket Dimensions



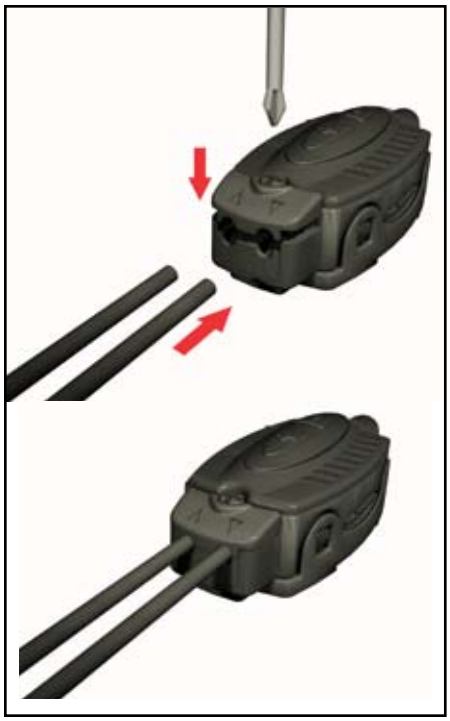


Figure 6. Installing plastic optical fiber into the FI22FP fiber ports

Installing the Optical Fibers

To install fibers:

1. Use a small Phillips screwdriver to loosen set screw, as shown in Figure 6.
2. Insert prepared fiber ends (2.2 mm diameter) into emitter and receiver ports, as far as they will go.
3. Holding fibers in place, tighten screw to lock in securely.