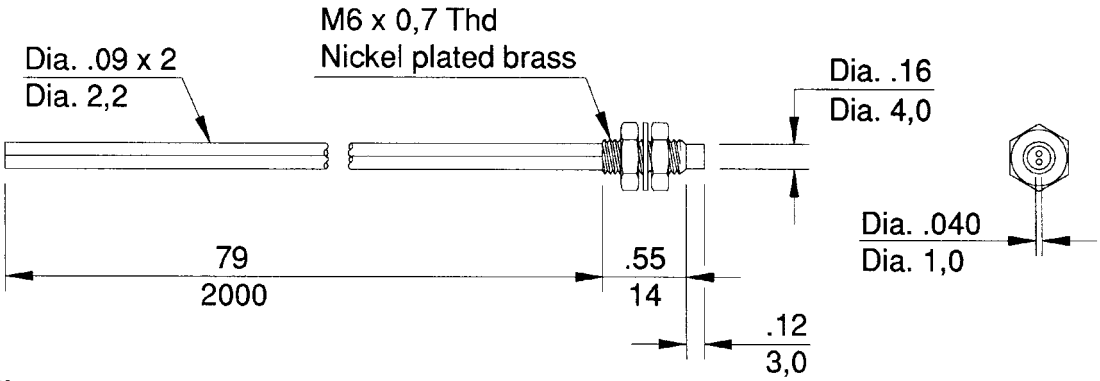
Plastic Fiber Optic Assembly model PBT46U

.04" diameter bifurcated fiber with threaded sensing end

the photoelectric specialist

PBT46U p/n 25967

ISO9002 DOCUMENTED QUALITY



Description

Model PBT46U is a bifurcated plastic fiber optic assembly with an M6 x 0,75mm threaded nickel plated brass sensing end.



The PBT46U operates in the diffuse sensing mode. Sensing light is transmitted and received through the threaded sensing end. Objects are detected by the light they reflect back through the sensing end. Fiber core diameter is .04 inch.

The PBT46U may be used with plastic fiber optic sensors from the following Banner sensor families: D12, OMNI-BEAM, MAXI-BEAM, VALU-BEAM, Q45, PC44, MINI-BEAM, and ECONO-BEAM. See page 2 for further information.

Additional Specifications

SENSING RANGE: A function of the sensor. For further information, see the data sheet packed with the sensor, or refer to the Banner product catalog.

TEMPERATURE EXTREMES: Temperatures below -30°C will cause embrittlement of the plastic materials but will not cause transmission loss. Temperatures above +70°C will cause both transmission loss and fiber shrinkage.

REPEAT BENDING/FLEXING: Life expectancy of plastic fiber optic cable is in excess of one million cycles at bend radii of no less than the minimum (stated at right) and a bend of 90 degrees or less. Avoid stress at the point where the cable enters the sensor ("control end") and at the sensing end tip. Coiled plastic fiberoptic assemblies are recommended for any application requiring reciprocating fiber motion.

OPERATING TEMPERATURE: -30 to +70°C (-20 to +158°F).

CHEMICAL RESISTANCE: The acrylic core of the monofilament optical fiber will be damaged by contact with acids, strong bases (alkalis) and solvents. The polyethylene jacket will protect the fiber from most chemical environments. However, materials may migrate through the jacket with long term exposure. Samples of fiber optic material are available from Banner for testing and evaluation.

MINIMUM BEND RADIUS OF PLASTIC FIBER: 1.0 inch (25 mm)

CONSTRUCTION:
OPTICAL FIBER: acrylic monofilament
PROTECTIVE JACKET: black polyethylene
THREADED END TIP and hardware: nickel plated brass

Fiber Cutting Information

This Banner plastic fiber is designed to be cut by the customer to the length required for the application. To facilitate cutting, a Banner model PFC-2 cutting device is supplied with this fiber. Cut the fiber as follows:

1) Locate the "control end" of the fiber (the unfinished end). Determine the length of fiber required for the application. At the control end of the fiber, separate the two fibers. Lift the top (blade) of the cutter to open the cutting ports. Insert one of the control ends through one of the four *large* cutting ports on the PFC-2 cutter so that the excess fiber protrudes from the back of the cutter.
2) Double-check the fiber length, and close the cutter until the fiber is cut. Using a different cutting port, cut the second control end to the same length as the first. Separate the cut ends for a length of 2 to 3 inches to allow proper attachment to the sensor.
3) Gently wipe the cut ends of the fiber with a clean, dry cloth to remove any contamination. *Do not use solvents or abrasives on any exposed optical fiber. Do not use a cutting port more than once. The blade may tend to dull after one cut.*

PFC-2 Cutting Device



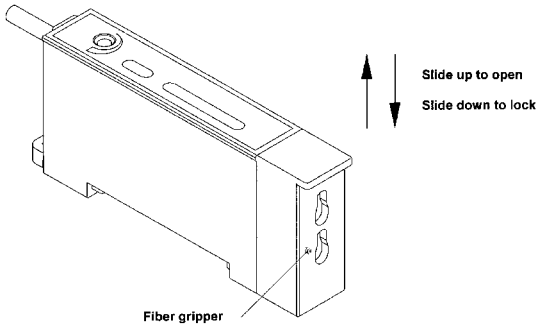
Fiber Installation Instructions

D12 Series

D12 Series sensors for use with plastic fiber optic assemblies include sensors with the letters **FP** in their model number suffix.

Install the plastic fiber optic assembly(s) as follows:

1) Prepare the sensor ends of the fibers (see page 1, bottom).
2) Unlock (slide up) the fiber gripper.
3) Gently insert the prepared plastic fiber sensor ends into the ports as far as they will go. Slide the fiber gripper down to lock.

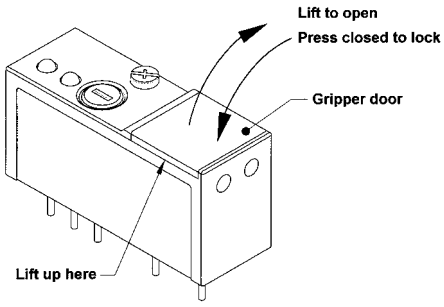


PC44 Series

PC44 Series sensors for use with plastic fiber optic assemblies include sensors with the letters **FP** in their model number suffix.

Install the plastic fiber optic assembly(s) as follows:

1) Prepare the sensor ends of the fibers (see page 1, bottom).
2) Raise (liftup) the fiber gripper door.
3) Gently insert the prepared plastic fiber sensor ends into the ports as far as they will go. Lower the fiber gripper to lock.

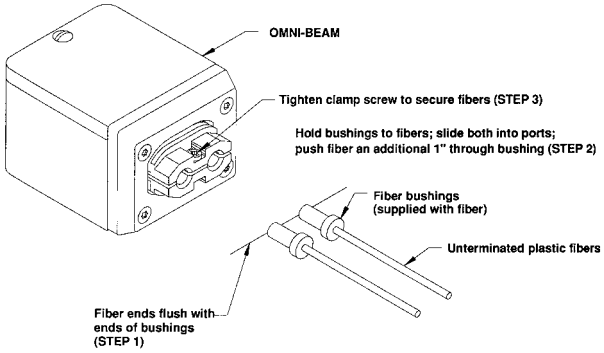


OMNI-BEAM, MAXI-BEAM, VALU-BEAM, Q45 Series

OMNI-BEAM, MAXI-BEAM, VALU-BEAM, and Q45 Series sensors for use with plastic fiber optic assemblies include sensors with the letters **FP** in their model number suffix.

Install the plastic fiber optic assembly(s) as follows:

1) Prepare the sensor ends of the fibers (see page 1, bottom).
2) Loosen the clamp screw on the sensor face.
3) Follow steps 1-3 in the drawing, right.

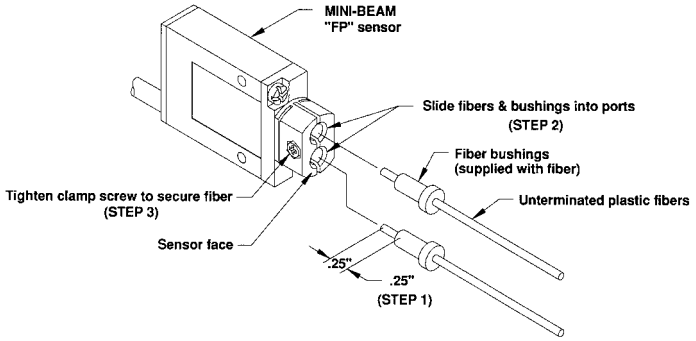


MINI-BEAM, ECONO-BEAM

MINI-BEAM and ECONO-BEAM sensors for use with plastic fiber optic assemblies include sensors with the letters **FP** in their model number suffix.

Install the plastic fiber optic assembly(s) as follows:

1) Prepare the sensor ends of the fibers (see page 1, bottom).
2) Loosen the clamp screw on the sensor face.
3) Follow steps 1-3 in the drawing, right.



Banner Engineering Corp. 9714 Tenth Ave. No., Minneapolis, MN 55441 Telephone: (612) 544-3164 FAX: (612) 544-3213