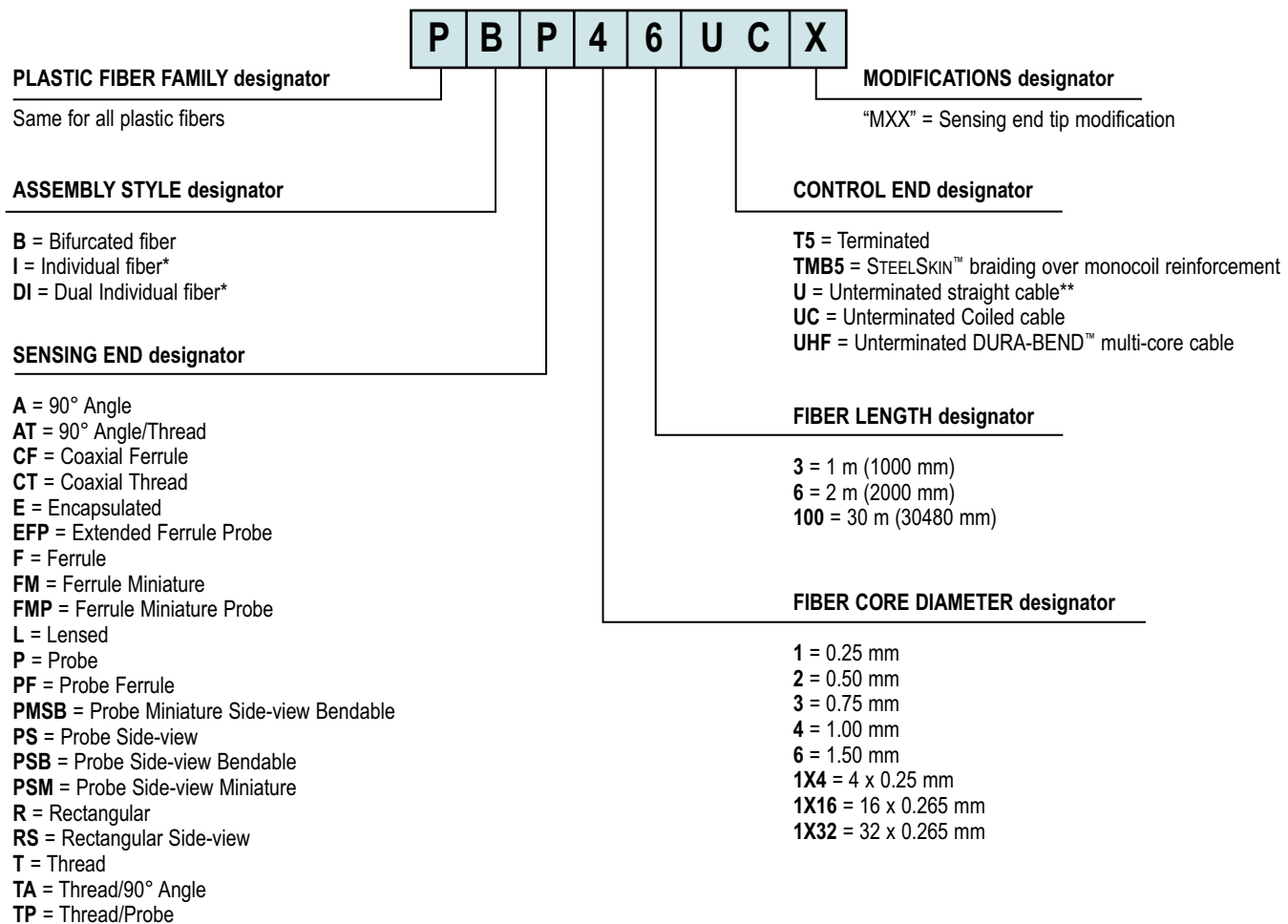


Plastic Fiber Optics

- Provide an economical alternative to glass fiber optics for piping photoelectric sensing light to and from confined areas with suitable environments
- Ideal for detecting small objects
- Withstand repeated flexing and bending
- Available in individual or bifurcated styles*
- Available with optional DURA-BEND™ fibers for improved flexibility in difficult-to-access locations, without the decreased performance to which excessively bent standard plastic fibers optics are prone
- Available with core diameters of 0.25, 0.50, 0.75, 1.0 and 1.5 mm

- Photoelectrics Sensors
- Fiber Optic Sensors**
- Special Purpose Sensors
- Measurement & Inspection Sensors
- Vision
- Wireless
- Indicators
- Safety Light Screens
- Safety Laser Scanners
- Fiber Optic Safety Systems
- Safety Controllers & Modules
- Safety Two-Hand Control Modules
- Safety Interlock Switches
- Emergency Stop Devices

Plastic Fiber Optic Model Key



- FIBER SENSORS
- PLASTIC FIBERS**
- GLASS FIBERS

* All individual plastic fiber optics are sold and used in pairs. Bifurcated fibers are two-way fibers with a single sensing end that both emits and receives light and with dual-control sensor ends that attach separately to the sensor's LED and photodetector.

** Plastic fibers with "U" in the suffix of the model numbers have unterminated control ends; cut them to the required length using the supplied cutter.

Plastic Fiber Optics Specifications

Construction	<p>Optical Fiber: acrylic (PMMA) monofilament, except as noted</p> <p>Protective Jacket: black polyethylene, except as noted</p> <p>Threaded End Tips and Hardware: nickel-plated brass, except as noted</p> <p>Probe End Tips: annealed (bendable) 304 stainless steel</p> <p>Angled End tips: hardened 304 stainless steel</p> <p>Ferrule End Tips: 303 stainless steel</p>
Sensing Range	Refer to the specific fiber optic/sensor combination
Implied Dimensional Tolerance	<p>All dimensions are in millimeters: $x = \pm 2.5$ mm, $x.x = \pm 0.25$ mm and $x.xx = \pm 0.12$ mm, unless specified.</p> <p>"L" = ± 40 mm per meter</p>
Minimum Bend Radius	<p>8 mm for 0.25 mm diameter fibers</p> <p>12 mm for 0.5 mm diameter fibers (except DURA-BEND™)</p> <p>25 mm for 1.0 mm diameter fibers (except DURA-BEND™)</p> <p>38 mm for 1.5 mm diameter fibers</p>
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 and a bend of 90° or less. Avoid stress at the point where the cable enters the sensor ("control end") and at the sensing end tip. Coiled plastic fiber optic assemblies are recommended for any application requiring reciprocating fiber motion.
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.
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.
Operating Temperature	-30° to +70° C, unless otherwise specified

⚠ APPLICATION NOTES AND WARNINGS ⚠

- 1** Plastic fiber assemblies with "U" in the suffix of the model numbers have unterminated control ends (the end that is coupled to the photoelectric sensor). The customer can cut these fiber optic assemblies to the required length using the supplied cutter. Use only the supplied cutter to ensure optimal light coupling efficiency.
- 2** Terminated plastic fiber assemblies are optically ground and polished and cannot be shortened, spliced or otherwise modified.
- 3** Do not subject the plastic fibers to sharp bends, pinching, high tensile loads or high levels of radiation.
- 4** When ordering fiber lengths in excess of 2 m, take into account light signal attenuation due to the additional length.
- 5** Due to their light transmission properties, plastic fiber optics are recommended for use only with visible light fiber optic sensors.
- 6** Use caution when applying fiber optics in hazardous locations. Although fiber optic assemblies are, by themselves, intrinsically safe, the sensor and associated electronics must be LOCATED IN A SAFE ENVIRONMENT. Alternatively, fiber optics may be used with NAMUR sensor model Q45AD9FP (page 196). Fiber optics do not necessarily provide a hermetic seal between a hazardous environment and the safe environment.