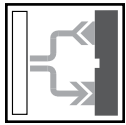


## Introduction to Fiber Optic Cables



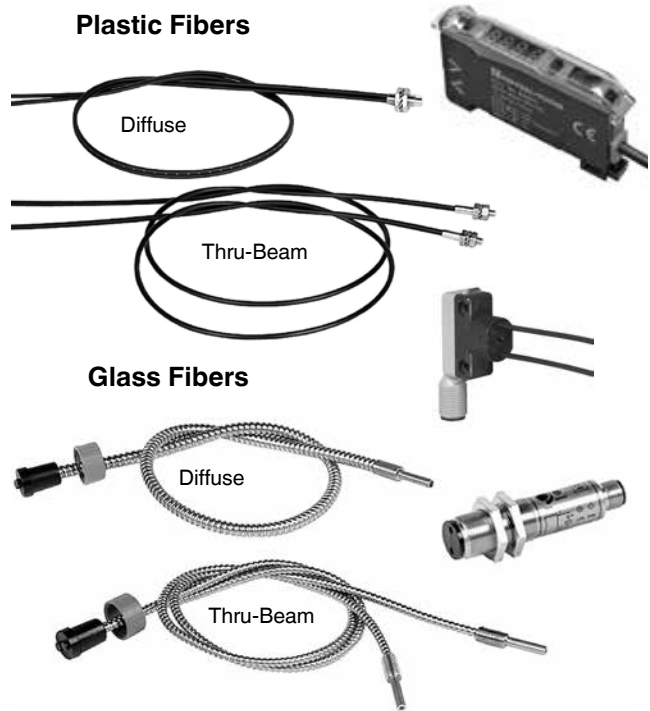
### Fiber Optic Diffuse and Thru-Beam Mode

In applications involving small targets or unfavorable conditions, fiber optic cables may be the sensible solution.

Glass fiber optic cables are constructed from tiny strands of glass that are bundled together inside an application-specific sheath. Plastic fiber optic cables are manufactured from a light conductive plastic monofilament material, which is protected by a PVC jacket.

When attached to the end of certain photoelectric sensors, they guide the light through the cable and out at the sensing head. A separate fiber attached to the receiver returns the light. Pepperl+Fuchs offers both glass and plastic fiber optic cables. The diameter of the glass fiber optic cables is generally larger than plastic and provides a longer sensing range. Pepperl+Fuchs' glass cables can withstand temperatures as high as 900 °F while the plastic cables are rated as high as 221 °F. The plastic cables are typically used due to their small size and narrow beam diameter. This enables easy detection of small parts such as pins on an IC chip. Plastic cables can be "cut-to-length" in the field; therefore, the correct length doesn't have to be specified when ordering. Obtaining the maximum light intensity possible in each application is accomplished by customizing the plastic cables to the shortest possible length. This reduces the inherent "light losses" that occur inside the cable. Pepperl+Fuchs offers three standard types of sheaths: stainless steel, silicone, and PVC.

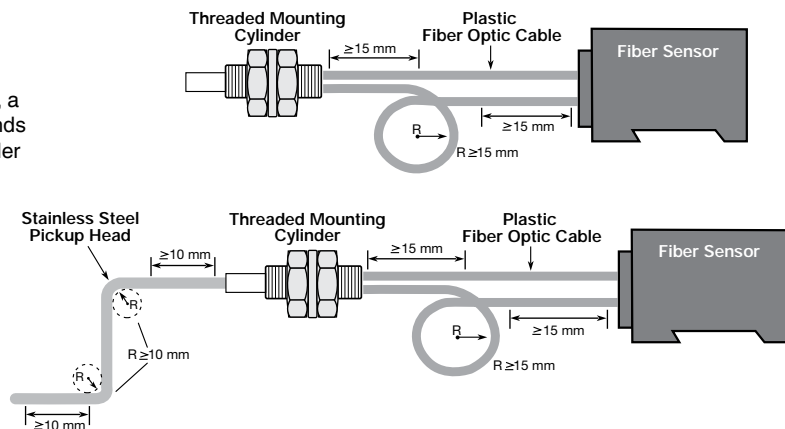
In diffuse mode sensing, a bifurcated cable (2 in 1) is used. Thru-beam requires two individual cables.



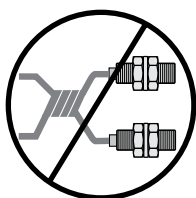
## Mounting and Fitting

When positioning plastic fiber optic cable, a minimum bending radius of 15 mm must be maintained. In addition, a straight section of  $\geq 15$  mm must be maintained at both ends of fiber optic cable between the threaded mounting cylinder and optical sensor.

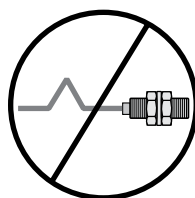
Some fiber optic cables have a flexible stainless steel pickup attached. In such a case, a minimum bending radius of 10 mm must be maintained. Also, to avoid damage to the pickup head light guide, a straight section of 10 mm must be maintained at both ends.



## Please Note!



Do not twist or kink plastic fiber optic cables.



Avoid contact with petroleum or organic solvents.



Excessive pulling will lead to severe damage.

Plastic Fiber Optic Cables

Thru-beam Plastic Fiber Optic Cables

for SU18, SU19, SU17.1, ML17-LL, and MHP-FR Sensors

All thru-beam mode plastic fiber optic cables are sold as pairs.

2  
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Photoelectric Sensors, Standard Sensors, Fiber optic cables

Threaded Cylindrical (cont.)						
Model Number	Cable Length	Fiber Diameter	Sheathing Material	Compatible Sensors	Sensing Range	Dimensions (mm)
HPF-T003	2 m	2.2 mm	Black polyethylene	SU18 High Power	1294 mm	
				SU18 High Speed	213 mm	
				SU19	213 mm	
				SU17.1	1100 mm	
				ML17-LL	123 mm	
				MHP-FR	63 mm	
HPF-T001	2 m	2.2 mm	Black polyethylene	SU18 High Power	2470 mm	
				SU18 High Speed	370 mm	
				SU19	370 mm	
				SU17.1	2100 mm	
				ML17-LL	363 mm	
				MHP-FR	170 mm	
FEF-PLT1	1 m	2.2 mm	Black polyethylene	SU18 High Power	25620 mm	
				SU18 High Speed	2867 mm	
				SU19	2867 mm	
				SU17.1	10488 mm	
				ML17-LL	3528 mm	
				MHP-FR	1300 mm	
FEF-PLT1-L2	2 m	2.2 mm	Black polyethylene	SU18 High Power	22859 mm	
				SU18 High Speed	2558 mm	
				SU19	2558 mm	
				SU17.1	19430 mm	
				ML17-LL	3148 mm	
				MHP-FR	1160 mm	
FEF-PLT1-L5	5 m	2.2 mm	Black polyethylene	SU18 High Power	15853 mm	
				SU18 High Speed	1774 mm	
				SU19	1774 mm	
				SU17.1	13475 mm	
				ML17-LL	2183 mm	
				MHP-FR	804 mm	
FEF-PLT1-L10	10 m	2.2 mm	Black polyethylene	SU18 High Power,	6503 mm	
				SU18 High Speed,	1049 mm	
				SU19	1049 mm	
				SU17.1	5530 mm	
				ML17-LL	1291 mm	
				MHP-FR	476 mm	
KLE-C01-2.2-2.0-K116	2 m	2.2 mm	PVC	SU18 High Power	1500 mm	
				SU18 High Speed	450 mm	
				SU19	450 mm	
				SU17.1	1275 mm	
				ML17-LL	241 mm	
				MHP-FR	99 mm	