Plastic Fiber Optic Cables

Introduction

Application Recommendations

1. Many plastic fiber optic cables are available in different core diameters. Larger core diameter cables can carry more light between the sensor and application. These cables will generally offer longer sensing ranges.

   Smaller core diameter cables provide greater resolution and the ability to detect smaller targets.

2. Note that different sensing distances can be achieved depending upon the cable core diameter. These sensing distances must be de-rated for adverse environments.

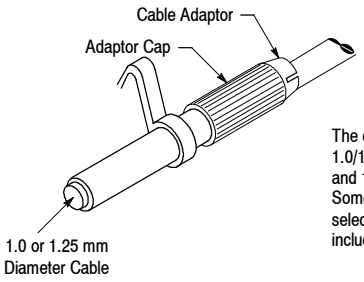
   Longer custom cables will attenuate the light and reduce the operating range. Light loss is approximately 3% per foot for Plastic Fiber Optic cables. Contact your local Rockwell Automation sales office or Allen-Bradley distributor for application assistance.

3. Avoid sharp bends that can permanently deform the cable. Minimum radius bend is listed for each part.
4. Some plastic fiber optic cables can be cut to length. A very sharp right angle cut is essential to provide good performance. The supplied cable cutter Cat. No. 57-127, must be used. Each opening in the cutter can be used only once.
5. Some sensing tips cannot be bent. **Only special sensing tips can be bent as specified.** Bends should only be attempted in the areas shown in the illustrations. Do not exceed the minimum bend radius fo the cable.
6. Plastic fiber optic cables are suitable for applications where the sensor must be isolated from high voltage.
7. X-RAY or GAMMA radiation will cause plastic fibers to eventually become opaque. Custom cables constructed with special optical quartz fibers must be ordered for use in areas with high radiation.
8. Use Transmitted Beam sensing in submerged applications when possible.
9. A plastic fiber optic sensor with a duplex cable can provide Retroreflective or Diffuse sensing depending upon the distance to the target and the sensitivity adjustment on the sensor. If the sensor and cable are to be used for Retroreflective sensing, the sensitivity of the sensor must be adjusted low enough to avoid unwanted diffuse response from the targets to be sensed.
10. **Plastic fiber optic cables have a wide field of view**. A smaller field of view can be achieved by attaching an Extended Range Lens Assembly such as the Cat. No. 63-118 (see page 1-288) to the sensing end of the fiber. These lens assemblies will also increase the available sensing distance.
11. Plastic fiber optics cables can be used in applications where constant motion or flexing of the cable is required. Coiled cables (such as 43PR-NES57VS) are particularly well suited for these applications.
12. Plastic fiber optic cables can be successfully applied in most industrial environments. However, where abrasion or occasional impact to the cable is a concern, glass fiber optic cables may provide more durability.
13. Chemical Resistance: Acid and alkali solvents could damage the Polyethylene Fiber Core. The jacket will offer some washdown protection but long term use in chemical environments could destroy the core material.
14. The maximum temperature rating of standard plastic fiber optic cables is 70°C (158°F) . Custom cables with temperature ratings of 115°C (239°F) are available.

ATTENTION	
	Fiber optic cables are not recommended for explosion-proof applications in hazardous environments. The fiber optic cable can provide a path for explosive fumes to travel from the hazardous area to the safe area.

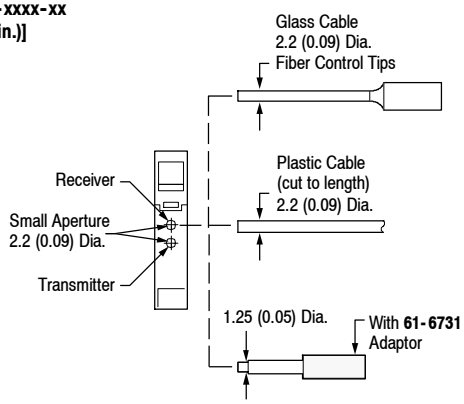
Plastic Fiber Optic Cables for use with Small Aperture Sensors

The plastic fiber optic cables on pages 1-272…1-280 are for use with small aperture sensors. The cables shown on pages 1-277…1-279 require an adaptor (included with the cable).

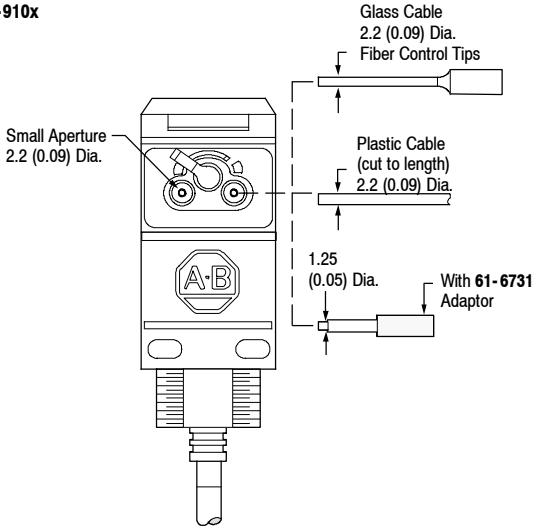


The drawing of the Cat. No. 61-6731 adaptor shows how 1.0/1.25 mm (0.04/0.05 in.) OD fibers (shown on pages 1-277 and 1-279) can be used with most small aperture sensors. Some sensors have adaptors for this purpose included. Product selection pages for each sensor will indicate if an adaptor is included as standard.

45Fxx-xxxx-xx [mm (in.)]



42GxF-910x



Small Aperture Sensors:

42SRF-61xx
42SRF-63xx
with 61-6374 adaptor

45FVL-xxxx
45FSL-xxxx

42GTGF-101x0

42xRF-5x00FO
with 61-6374 adaptor

42GxF-910x

42KL-L2xxx

42SMF-71xx

Note: Sensing Distance

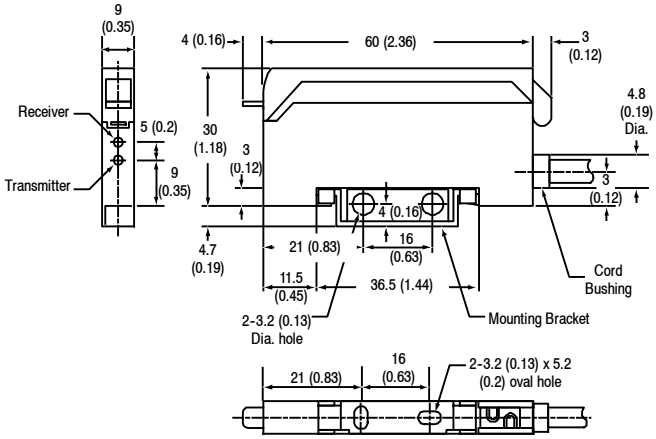
- Due to the variation between fiber optic cables, sensing distance can vary widely
- The sensing distance of bifurcated cables is measured with white paper (90% reflectivity). Other surfaces may be less reflective and therefore would have shorter sensing distances.
- The published numbers are based on extensive testing and are conservative
- The sensing distance of transmitted beam cables is measured from tip to tip
- Application considerations that effect distance
  - Sensor selected
  - Reflectivity of target
  - Environment
  - Accessories such as focusing lens
  - Length of the cable
- The cut of the plastic. Re-cutting the cable with the proper tool (Cat. No. 57-127) will typically give a better surface for the sensor to interface with, allowing a longer sensing distance.
- Bending a bendable tip beyond the minimum bend radius of the cable will reduce sensing distance.
- Consult product support for additional information.

All dimensions indicated are typical. Contact your local Rockwell Automation sales office or Allen-Bradley distributor for exact dimensions.

45FVL Visible Red, Blue, Green or White Plastic Fiber Optic

Self-Teach with Digital Display

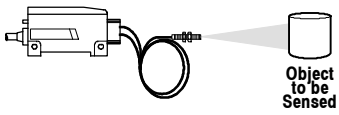
Approximate Dimensions [mm (in.)]



Typical Plastic Fiber Optic Cable Selection

LED	Sensing Mode	Plastic Fiber Diameter [mm (in.)]	Typical Fiber Model	Typical Range
Red	Diffuse (Bifurcated Fiber)	1 (0.040)	43PR-NES57ZS	Refer to the Fiber Optic section on page 1-231.
		0.5 (0.020)	43PR-NJS53ZM	
	Transmitted Beam (Individual Fiber)	1 (0.040)	43PT-NJS56FS	
		0.5 (0.020)	43PT-NBS52FM	
Green	Diffuse (Bifurcated Fiber)	1 (0.040)	43PR-NES57ZS	
	Transmitted Beam (Individual Fiber)		43PT-NJS56FS	
Blue	Diffuse (Bifurcated Fiber)		43PR-NES57ZS	
	Transmitted Beam (Individual Fiber)		43PT-NJS56FS	
White	Diffuse (Bifurcated Fiber)		43PR-NES57ZS	
	Transmitted Beam (Individual Fiber)		43PT-NJS56FS	

Product Selection

Sensing Mode	Operating Voltage	Response Time	Output Characteristics		LED	Cat. No.		
			Type	Max Load Current		Cable	Pico	Power Bus (QD required)
 **Field of View:** Refer to Plastic Fiber Optic section page 1-270 **Emitter LED:** Visible red 660 nm, Visible green 565 nm or Visible blue 470 nm Visible white **Indicators:** Orange: Output Green: Stability	12…24V DC ±10%	600 µs	PNP	Output: 100 ma	Red	**45FVL-2LHE-A2**	**45FVL-2LHE-P4**	45FVL-2LHE-C4 ❶
					Green	45FVL-3LHE-A2	45FVL-3LHE-P4	45FVL-3LHE-C4 ❶
					Blue	45FVL-6LHE-A2	45FVL-6LHE-P4	45FVL-6LHE-C4 ❶
					White	**45FVL-5LHE-A2**	45FVL-5LHE-P4	45FVL-5LHE-C4 ❶
			NPN		Red	45FVL-2LGE-A2	45FVL-2LGE-P4	45FVL-2LGE-C4 ❶
					Green	45FVL-3LGE-A2	45FVL-3LGE-P4	45FVL-3LGE-C4 ❶
					Blue	45FVL-6LGE-A2	45FVL-6LGE-P4	45FVL-6LGE-C4 ❶
					White	45FVL-5LGE-A2	45FVL-5LGE-P4	45FVL-5LGE-C4 ❶

❶ PowerBus master/3 conductor QD = 45F-A3C-A2. PowerBus slave/1 conductor QD = 45F-A1C-A2

Cordsets and Accessories

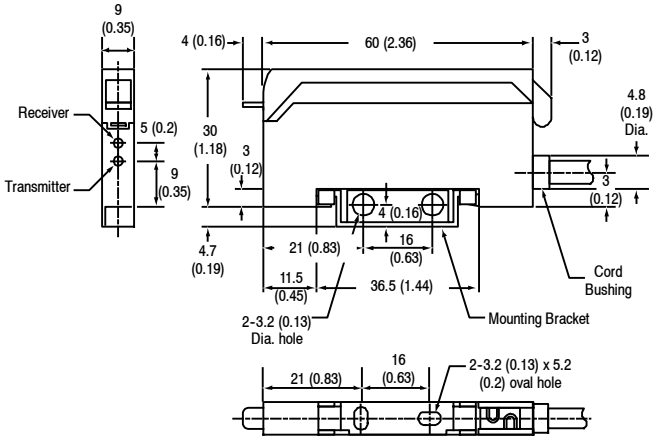
Description	Cat./Page No.	Description	Cat./Page No.
Pico QD Cordset, Straight, 4-pin, 2 m	889P-F4AB-2	PowerBus master/3 conductor QD	45F-A3C-A2
Fiber Optic Cables	1-231	PowerBus slave/1 conductor QD	45F-A1C-A2
Fiber Optic Adaptor Replacements		**PowerBus caps**	
1.25…2.2 mm O.D.	61-6731	Male	45F-AMC
1.00…2.2 mm O.D.	61-6742	Female	45F-AFC
Mounting Assembly	60-2638		

Visit our website: *www.ab.com/catalogs*.
Preferred availability cat. nos. are printed in **bold**.

45FSL Visible Red or White Plastic Fiber Optic

General Purpose DIN Style

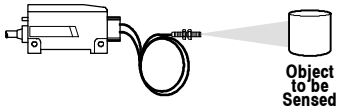
Approximate Dimensions [mm (in.)]



Typical Plastic Fiber Optic Cable Selection

LED	Sensing Mode	Plastic Fiber Diameter [mm (in.)]	Typical Fiber Model	Typical Range
Red	Diffuse (Bifurcated Fiber)	1 (0.040)	43PR-NES57ZS	Refer to the Fiber Optic section on page 1-231.
		0.5 (0.020)	43PR-NJS53ZM	
	Transmitted Beam (Individual Fiber)	1 (0.040)	43PT-NJS56FS	
		0.5 (0.020)	43PT-NBS52FM	
White	Diffuse (Bifurcated Fiber)	1 (0.040)	43PR-NES57ZS	
	Transmitted Beam (Individual Fiber)		43PT-NJS56FS	

Product Selection

Sensing Mode	Operating Voltage	Response Time	Output Characteristics		LED	Cat. No.		
			Type	Max Load Current		Cable	Pico	Power Bus (QD required)
 Object to be Sensed **Field of View:** Refer to Plastic Fiber Optic section page 1-270 **Emitter LED:** Visible red 660 nm, Visible white **Indicators:** Orange: Output, Green: Stability	12…24V DC ±10%	Selectable 250 µs or 500 µs	PNP	Output: 100 ma Stability: 50 ma	Red	**45FSL-2LHE-A2**	**45FSL-2LHE-P4**	45FSL-2LHE-C4 ❶
					White	45FSL-5LHE-A2	45FSL-5LHE-P4	45FSL-5LHE-C4 ❶
			NPN		Red	**45FSL-2LGE-A2**	45FSL-2LGE-P4	45FSL-2LGE-C4 ❶
					White	45FSL-5LGE-A2	45FSL-5LGE-P4	45FSL-5LGE-C4 ❶
		30 µs	PNP		Red	**45FSL-2LWE-A2**	45FSL-2LWE-P4	45FSL-2LWE-C4 ❶
					White	45FSL-5LWE-A2	45FSL-5LWE-P4	45FSL-5LWE-C4 ❶
			NPN		Red	45FSL-2LVE-A2	45FSL-2LVE-P4	45FSL-2LVE-C4 ❶
					White	45FSL-5LVE-A2	45FSL-5LVE-P4	45FSL-5LVE-C4 ❶

❶ PowerBus master/4 conductor QD = 45F-A4C-A2
PowerBus slave/2 conductor QD = 45F-A2C-A2

Cordsets and Accessories

Description	Cat./Page No.	Description	Cat./Page No.
Pico QD Cordset, Straight, 4-pin, 2 m	889P-F4AB-2	PowerBus master/4 conductor QD	45F-A4C-A2
Fiber Optic Cables	1-231	PowerBus slave/2 conductor QD	45F-A2C-A2
Fiber Optic Adaptor Replacements		**PowerBus caps**	
1.25…2.2 mm O.D.	61-6731	Male	45F-AMC
1.00…2.2 mm O.D.	61-6742	Female	45F-AFC
Mounting Assembly	60-2638		

45FPL Visible Red Small Aperture Teachable Fiber Optic

Extended Range with Digital Display

43GR Glass Fiber Optic Cable Selection

Threaded Bifurcated Cables for Small Aperture Sensors [2.2 mm (0.09 in.)]

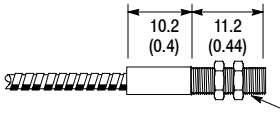
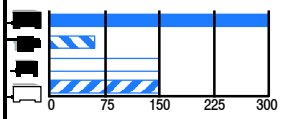

45FPL-xxxx


42KL-L2xxx


45FSL-xxxx

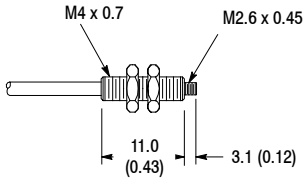
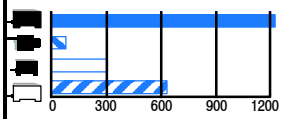
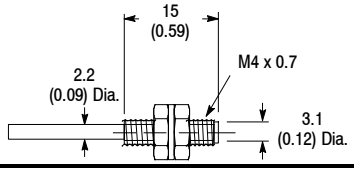
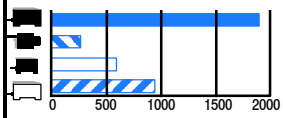

45FVL-xxxx

Approximate Metric / Standard Distances							
0	50	100	150	200	250	300	mm
0	2	4	6	8	10	12	in.

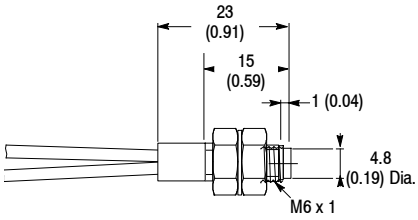
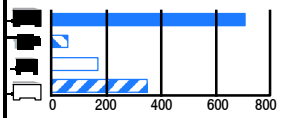
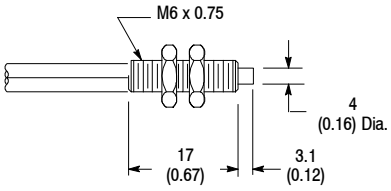
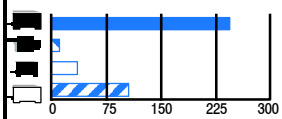
Approximate Dimensions [mm (in.)]	Sensing Tip Material	Fiber Bundle Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm] ❶	Cat. No.
	Brass	2.2 (0.09)	Stainless Steel		**43GR-TAB20SS**

43PT Plastic Fiber Optic Cable Selection

Threaded Transmitted Beam Cables for Small Aperture Sensors [2.2 mm (0.09 in.)]

Approximate Dimensions [mm (in.)]	Bend Radius [mm (in.)]	Fiber Bundle Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]❶	Cat. No.
	25 (1.0)	1 (0.04)	Polyethylene		**43PT-NJS56FS**
	40 (1.6)	1.5 (0.06)	Polyethylene		**43PT-NAS58FS**

Bifurcated Cables for Small Aperture Sensors [2.2 mm (0.09 in.)]

Approximate Dimensions [mm (in.)]	Bend Radius [mm (in.)]	Fiber Bundle Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]❶	Cat. No.
	40 (1.6)	2 x 1.5 (0.06)	Polyethylene		**43PR-NDS59FS**
	25 (1.0)	2 x 1 (0.04)	Polyethylene		**43PR-NES57ZS**

❶ The sensing distance for the 45FPL is two times the sensing distance for the 45FVL when used in long range mode.

New

43PR Plastic Fiber Optic Cables

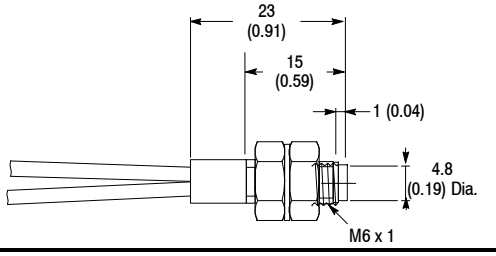
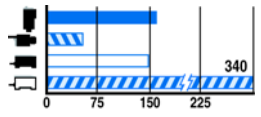
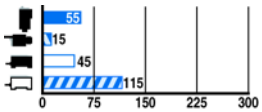
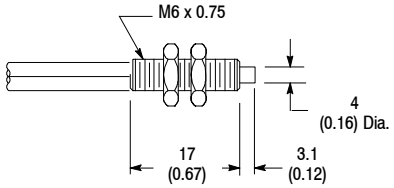
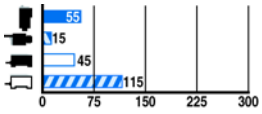
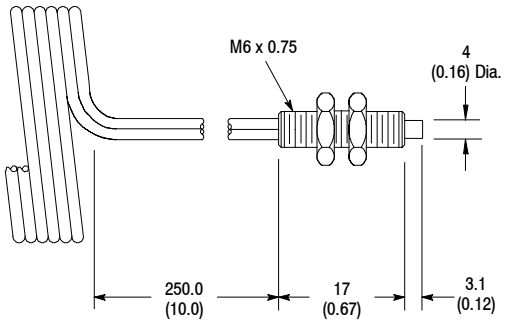
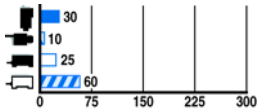
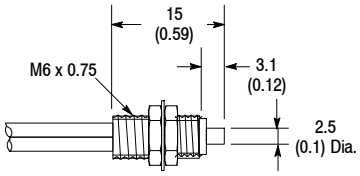
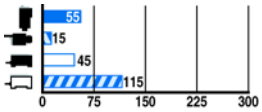
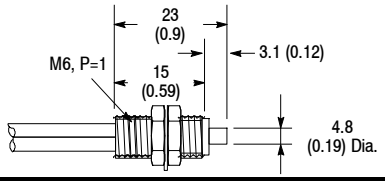
Threaded Bifurcated Cables for Small Aperture Sensors [2.2 mm (0.09 in.)]

The fiber optic cables on pages 1-272...1-279 are for use with small aperture sensors such as follows:

42GxF-910x | 42KL-L2xxx | 45FSL-xxxx | 45FVL-xxxx

Approximate Metric / Standard Distances

0	50	100	150	200	250	300	mm
0	2	4	6	8	10	12	in.

Approximate Dimensions [mm (in.)]	Bend Radius [mm (in.)]	Fiber Core Diameter	Sheathing Material	Sensing Distance [mm]	Cat. No.
	40 (1.6)	2 x 1.5 (0.06)	Polyethylene		**43PR-NDS59FS**
	25 (1.0)	2 x 1 (0.04)			43PR-NDS57ZS
	25 (1.0)	2 x 1 (0.04)	Polyethylene		**43PR-NES57ZS**
	25 (1.0)	2 x 1 (0.04)	Polyethylene		43PR-NES57VS
 43PR-NKS61FS has coaxial optics for more precise sensing	25 (1.0)	2 x 1 (0.04)	Polyethylene		43PR-NKS57FS
	20 (0.8)	1 x 0.75 (0.03) 4 x 0.5 (0.02)		Characterization not available at time of publication	43PR-NKS61FS
	2 (0.08)	2 x 0.5 (0.02)	1 R Polyflex	Characterization not available at time of publication	43PR-NKS65YS
	2 (0.08)	2 x 1.0 (0.04)	1 R Polyflex	Characterization not available at time of publication	43PR-NLS65YS

Note: Standard length for plastic fiber optic cables is 2 m (78 in.) tip to tip.

Custom Fiber Optic Cables

Rockwell Automation/Allen-Bradley can provide custom plastic fiber optic cables to meet nearly any application requirement.

Typical cable modifications include:

- Custom lengths are available
- Custom temperature ratings up to 115°C (239°F)
- Custom configurations including multiple sensing tips
- Custom sensing end tips—nearly any modification is possible

For more information contact your local Rockwell Automation sales office or Allen-Bradley distributor.

To Build a Custom Fiber Optic

43 P — S

Fiber Optic Cable

Fiber Material
P = Plastic

Sensing Mode
R = Reflective (Bifurcated)
T = Transmitted Beam (Individual)

Sensing End Tip Style

Threaded	
Axial	page 1-283
Probe	page 1-283
Side view	page 1-283
U-Shaped	page 1-284
Ferrule	
Axial	page 1-284
Side view	page 1-284
Right angle	page 1-284

Sensing End Tip
S = Stainless Steel
U = Plastic U Shape

Fiber Bundles
See pages 1-286 for dimensions.

Overall Length (in.)
Standard lengths are 78 inches and do not require these spaces to be filled in. If shorter lengths are required, the plastic fiber optic cable can be cut to the desired length using the cutting tool provided in the package with the cable.

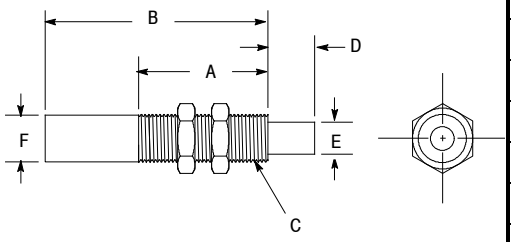
Fits large aperture (0.187 in. OD) sensors which include:
42KL-L2xx
42GxF-910x
42GTGF-101x0
42SMF-71xx
42SRF-61xx w/61-6374 adaptor*
42SRF-63xx w/61-6374 adaptor*
42Fx-Fxxxx
42xRF-5x00FO

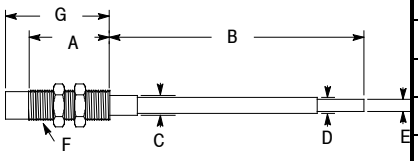
***Adaptors must be ordered separately.**

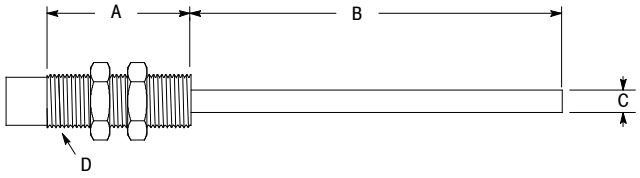
Sheathing
F = Polyethylene 158°F
G = Plastic Coiled
Z = Zipped Plastic
V = Zipped & Coiled
R = Polyflex
H = XPE (cross linked poly) 239°F
Y = Zipped Polyflex

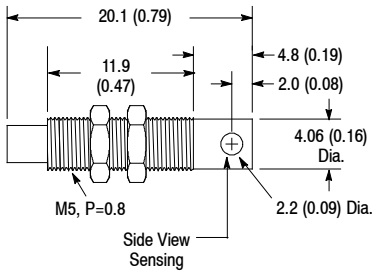
Plastic Fiber Optic Cable Sensing Tips

Use with Configurators on page 1-281 and 1-282.

Approximate Dimensions	Code	Standard Bundle [mm]	Approximate Dimensions [mm (in.)]					
			A	B	C	D	E	F
	NA	0.5	14.9 (0.59)	—	M4, P=0.7	0.51 (0.02)	3.0 (0.12)	—
	NB	0.5	9.9 (0.39)	—	M3, P=0.5	NA	—	—
	NC	0.25	11.9 (0.47)	—	M4, P=0.7	3.05 (0.12)	1.02 (0.04)	—
	ND	1.5	13.9 (0.55)	23.1 (0.91)	M6, P=1	1.02 (0.04)	4.8 (0.19)	—
	NE	1.0	17.0 (0.67)	—	M6, P=0.75	3.05 (0.12)	4.06 (0.16)	—
	NF	0.5	11.9 (0.47)	—	M4, P=0.7	3.05 (0.12)	2.54 (0.10)	—
	NG	0.75	10.9 (0.43)	14.9 (0.59)	M3, P=0.5	NA	—	3.05 (0.12)
	NJ	1.0	11.9 (0.47)	—	M4, P=0.7	3.05 (0.12)	—	—
	NK	0.5	11.9 (0.47)	—	M6, P=0.75	3.05 (0.12)	2.54 (0.10)	—
	NL	0.5	14.9 (0.59)	23.1 (0.91)	M6, P=1	4.8 (0.19)	6.1 (0.24)	6.1 (0.24)

Approximate Dimensions	Code	Standard Bundle [mm]	Approximate Dimensions [mm (in.)]						
			A	B	C	D	E	F	G
	PA	0.5	14.9 (0.59)	35.0 (1.38)	2.54 (0.1)	1.02 (0.04)	0.76 (0.03)	M4, P=0.7	—
	PB	0.5	14.9 (0.59)	69.8 (2.75)	2.54 (0.1)	1.02 (0.04)	0.76 (0.03)	M4, P=0.7	—
	PD	0.5	9.9 (0.39)	69.8 (2.75)	2.03 (0.08)	1.02 (0.04)	0.76 (0.03)	M3, P=0.5	—
	PE	0.5	14.9 (0.59)	35.0 (1.38)	2.54 (0.1)	1.52 (0.06)	1.27 (0.05)	M6, P=1	23.1 (0.91)
	PF	0.5	14.9 (0.59)	69.8 (2.75)	2.54 (0.1)	1.52 (0.06)	1.27 (0.05)	M6, P=1	23.1 (0.91)
	PG	0.5	14.9 (0.59)	69.8 (2.75)	2.54 (0.1)	1.52 (0.06)	1.27 (0.05)	M4, P=0.7	—
	PH	0.5	10.9 (0.43)	69.8 (2.75)	2.03 (0.08)	1.52 (0.06)	1.27 (0.05)	M3, P=0.5	14.9 (0.59)

Approximate Dimensions	Code	Standard Bundle [mm]	Approximate Dimensions [mm (in.)]			
			A	B	C	D
	PC	0.5	14.9 (0.59)	14.9 (0.59)	0.76 (0.03)	M3, P=0.5
	PI	1.0	17.0 (0.67)	88.9 (3.5)	2.54 (0.1)	M6, P=0.75
	PJ	0.5	11.4 (0.45)	88.9 (3.5)	1.27 (0.05)	M3, P=0.5
	PK	1.0	17.0 (0.67)	88.9 (3.5)	1.27 (0.05)	M6, P=0.75
	PL	0.5	10.9 (0.43)	88.9 (3.5)	0.86 (0.034)	M3, P=0.5

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm]
	SA	1.0

Fiber Optic Cable Cross Reference

Cat. No.	Cat. No.
99-1000-1	43GR-TAS20ML
99-1003-1	43GR-XDB25SL
99-108	43PT-PLS52FS
99-109	43PT-PLS52GS
99-110	43PR-PJS53ZS
99-116-1	43GT-MIS15SL
99-161-1	43GR-TAB20SS
99-181-1	43GT-TWC25SL
99-184-1	43GT-2FAS20SL
99-201-1	43GR-FOS20ML
99-206-1	43GR-FPS20SL
99-214-1	43GR-FJS30SL
99-222-1	43GR-TMC25SL
99-224-1	43GR-TMC15SL
99-238-1	43GR-FGS25SL
99-275-1	43GR-TFS10ML
99-279-1	43GR-MUS10ML
99-283-1	43GR-MSC10ML
99-290-1	43GR-MHS15SL
99-291-1	43GR-MHS15ML
99-294-1	43GR-BCA73SL
99-300-1	43GR-TBS25SL
99-30-1	43GR-FAS25SL
99-301-1	43GR-TBS25ML
99-302-1	43GR-TBB30SL
99-304-1	43GR-TQC25SL
99-308-1	43GR-TRC30SL
99-31-1	43GR-FAS25ML
99-315-1	43GR-TKC25ML
99-32-1	43GR-TBB25SL
99-330-1	43GR-TTS20SL
99-33-1	43GR-TBB25ML
99-34-1	43GR-FIS25SL
99-350-1	43GR-FRS40SL
99-35-1	43GR-FIS25ML
99-36-1	43GR-BAA72SL
99-37-1	43GR-BAA72ML
99-39-1	43GR-MKS00ML
99-400-1	43GT-FOS20SL
99-408-1	43GT-FPS10SL
99-424-1	43GT-TMC15SL
99-426-1	43GT-TOC30SL
99-436-1	43GT-FAS30SL
99-453-1	43GT-TJC30ML
99-458-1	43GT-MBS10SL
99-46-1	43GR-TXC25SL

Cat. No.	Cat. No.
99-461-1	43GT-MMS10ML
99-477-1	43GT-TFS00ML
99-479-1	43GT-MUS10ML
99-487-1	43GT-MRS10ML
99-490-1	43GT-MHS15SL
99-491-1	43GT-MHS15ML
99-494-1	43GT-BCA73SL
99-495-1	43GT-BCA73ML
99-500-1	43GT-TBS25SL
99-50-1	43GT-FAS25SL
99-501-1	43GT-TBS25ML
99-502-1	43GT-TBB30SL
99-504-1	43GT-TQC25SL
99-505-1	43GT-TQC25ML
99-508-1	43GT-TRC30SL
99-51-1	43GT-FAS25ML
99-52-1	43GT-TBB25SL
99-530-1	43GT-TTC20SL
99-53-1	43GT-TBB25ML
99-54-1	43GT-FIS25SL
99-55-1	43GT-FIS25ML
99-56-1	43GT-BAA72SL
99-57-1	43GT-BAA72ML
99-58-1	43GT-MKS00SL
99-59-1	43GT-MKS00ML
99-614-1	43GR-MQS15SL
99-623-1	43GR-2FAS25SL
99-626-1	43GT-6TBB15SL
99-643-1	43GR-4TBB22SL
99-68-1	43GR-MVS00ML
99-69-1	43GT-TMC25SL
99-700-1	43GR-TBS20MS
99-701-1	43GR-TBS15ML
99-702-1	43GR-TAS20MS
99-704-1	43GR-TAS20SS
99-705-1	43GR-TMS25ML
99-706-1	43GR-TMS20MS
99-708-1	43GR-TQS20MS
99-710-1	43GT-TBS15MS
99-714-1	43GT-TAS15SS
99-714-1	43GT-TAS15SS
99-715-1	43GT-TFS10ML
99-716-1	43GT-TOS30ML
99-717-1	43GT-TQS25ML
99-718-1	43GT-TQS15MS
99-720-1	43GT-TRS30ML

Cat. No.	Cat. No.
99-721-1	43GT-MIS15ML
99-722-1	43GT-TMS25ML
99-723-1	43GT-TMS15MS
99-751-1	43GR-XAS10SS
99-752-1	43GR-TIS10SS
99-753-1	43GR-FTS10SS
99-755-1	43GR-TDS10SS
99-794-1	43GR-BRA79SL
99-800	43PR-NDS59FS
99-801	43PR-NDS57ZS
99-802	43PR-NAS57ZM
99-803	43PR-NAS60FM
99-804	43PR-NKS57ZS
99-805	43PR-NKS61FS
99-806	43PR-NFS53FM
99-808Z	43PR-NGS53ZM
99-809Z	43PR-NGS55ZM
99-810	43PR-PES53FS
99-811	43PR-PFS53FS
99-814	43PR-CBS53ZM
99-816	43PR-AAS53ZM
99-818	43PR-VBS53ZM
99-819	43PT-NAS58FS
99-820	43PT-NBS56FM
99-821	43PT-NBS54FM
99-822	43PT-NBS52FM
99-823	43PT-PAS52FS
99-825	43PT-PCS52FM
99-827	43PT-CBS56FS
99-828	43PT-SAS56FS
99-833	43PR-SCS57ZS
99-838	43PR-SBS57ZS
99-85-1	43GR-TGB33SL
99-90	43PT-NJS56FS
99-900	43PR-RAS57ZS
99-91	43PT-NJS56GS
99-92	43PT-PKS56FS
99-93	43PT-PKS56GS
99-94	43PR-NES57ZS
99-95	43PR-NES57VS
99-951-1	43GT-XAS10SS
99-952-1	43GT-TIS10SS
99-953-1	43GT-FTS10SS
99-955-1	43GT-TDS10SS
99-96	43PR-PIS57ZS
99-97	43PR-PIS57VS

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