



# Fiber Optic Cables

Bulletin Numbers 43GR, 43GT, 43PR, 43PT

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# PHOTOSWITCH® Photoelectric Sensors

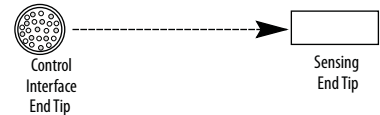
## Glass Fiber Optic Cables

### Application Recommendations



- Many glass fiber optic cables are available with different glass fiber bundle diameters.  
Larger diameter bundles contain more fibers to carry light between the sensor and application. These cables will generally offer longer sensing ranges.  
Smaller diameter bundles provide greater resolution and the ability to detect smaller targets.
- Glass fiber optic cables can be applied in high shock and vibration applications, but secure the cables to prevent excess flexing. Do not use glass cables in applications where they are constantly flexing. They will break. Plastic fiber optic cables provide better performance in these applications.

- Avoid sharp bends. The individual glass fibers in the cable can be broken. Don't exceed the following bend tolerances with PVC sheathed cables:
- Glass fiber optic cables cannot be cut, spliced or repaired.
- Glass fiber optic cables tip cannot be bent. Only special plastic fiber optic cable sensing end tips can be bent as specified in the Selection Guide. When using bendable end tips, bend should not be attempted closer than 19 mm (0.75 in.) to the sensing end of the cable.
- Some applications call for glass fiber optic cables to be used to isolate the sensor from high voltage. Custom cables with special nonconductive components must be ordered for these applications.
- X-RAY or GAMMA radiation will cause glass fibers to eventually become opaque. Custom cables constructed with special optical quartz fibers must be ordered for use in areas with high radiation.
- Use Transmitted Beam sensing in submerged applications when possible. Spiral-wound stainless steel sheathing is generally not suitable for wet applications. Fiber optic cables with PVC sheathing should be used for these applications.
- A glass fiber optic sensor with a bifurcated 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.
- Glass fiber optic cables have a wide field of view, typically 82°. A smaller field of view can be achieved by attaching an Extended Range Lens Assembly to the sensing end of the fiber. These lens assemblies will also increase the available sensing distance. Refer to the Accessories section for more information.
- Most glass fiber optic cables have round sensing tips with the glass fibers arranged in a circular configuration. Other cables such as 43GT-FIS40SL offer sensing tips with a rectangular shaped opening for the glass fibers, referred to as "slotted" cables (see illustration below).  
Use these equivalent diameters to determine the approximate performance of slotted cables.



Slot Dimensions [mm (in.)]	Round Sensing Tip Equivalent Diameter [mm (in.)]
2.5 x 0.5 (0.1 x 0.02)	1.2 (0.046)
0.5 x 2.5 (0.02 x 0.1)	1.2 (0.046)
5.1 x 0.25 (2.0 x 0.01)	1.2 (0.046)
9.7 x 0.8 (0.382 x 0.032)	3.1 (0.125)

Formula:  
Approximate diameter = 1.128 x  $\sqrt{\text{Length} \times \text{Width}}$

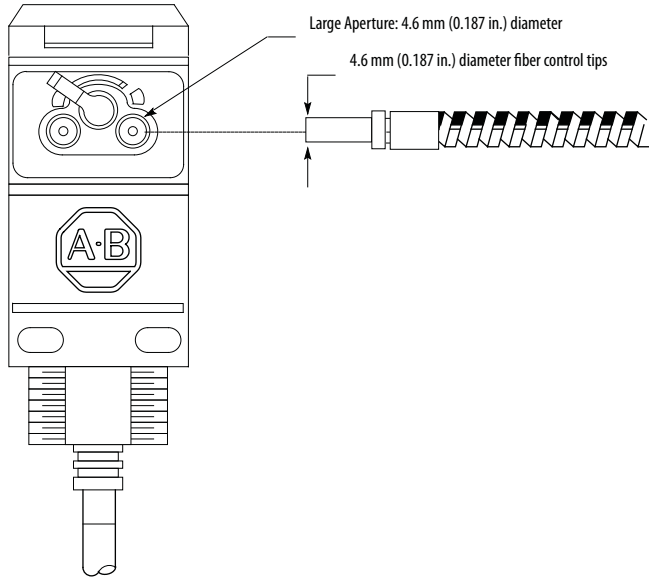
### ATTENTION



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.

**Cables for use with Large Aperture Sensors [4.6 mm (0.187 in.)]**

The fiber optic cables in this section are for use with the large aperture sensors.



**Large Aperture Sensors:**



42SRF-60xx  
42SRF-65xx



42GTGF-100x0  
42GTGF-103x0



42xRx-5x00FO



42GxF-900x



42EF-G1xxA



42KL-G1xxx

**Note:** Nominal 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 range extending lenses
  - Length of the cable
- Consult with product support for additional information.

All dimensions indicated are typical. The 43GR and 43GT fiber optic cables are for use with large aperture sensors.

PHOTOSWITCH® Photoelectric Sensors

43GR Glass Fiber Optic Cables

Threaded Bifurcated Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

43GR Threaded Bifurcated

Cables for use with Large Aperture Sensors [4.6 mm (0.187 in.)]



Approximate Metric / Standard Distances

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

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Diffuse		Brass	3.2 (0.125)	Stainless steel		43GR-TBB25SL
				PVC		43GR-TBB25ML
			1.6 (0.062)	Stainless steel		43GR-TBB15SL
				PVC		43GR-TBB15ML
			4.0 (0.156)	Stainless steel		43GR-TBB30SL
				PVC		43GR-TBB30ML
			2.5 x 0.5 (0.1 x 0.02) E-W Slot	Stainless steel		43GR-TBB40SL
				PVC		43GR-TBB40ML
		Brass	1.6 (0.062)	Stainless steel		43GR-TBS15SL
				PVC		43GR-TBS15ML
		3.2 (0.125)	Stainless steel		43GR-TBS25SL	
			PVC		43GR-TBS25ML	
Stainless steel		2.3 (0.09)	Stainless steel		43GR-TAS20SL	
			PVC		43GR-TAS20ML	
Stainless steel		1.2 (0.046)	Stainless steel		43GR-TFS10SL	
			PVC		43GR-TFS10ML	
Brass		4.6 (0.180)	Stainless steel		43GR-TGB33SL	
			PVC		43GR-TGB33ML	
Brass		3.2 (0.125)	Stainless steel		43GR-XDB25SL	
			PVC		43GR-XDB25ML	
Stainless steel		1.2 (0.046)	Stainless steel		43GR-TCS10SL	
			PVC		43GR-TCS10ML	

Note: Standard length for glass fiber optic cables is 0.91 m (36 in.) from tip to tip.

Threaded Bifurcated Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Diffuse		Brass/ Stainless steel	3.2 (0.125)	Stainless steel		43GR-TMC25SL
				PVC		43GR-TMC25ML
		Stainless steel	3.2 (0.125)	Stainless steel		43GR-TMC15SL
				PVC		43GR-TMC15ML
		Stainless steel	3.2 (0.125)	Stainless steel		43GR-TMS25SL
				PVC		43GR-TMS25ML
	Brass/ Stainless steel		3.2 (0.125)	Stainless steel		43GR-TQC25SL
				PVC		43GR-TQC25ML
	Stainless steel		2.5 x 0.5 (0.1 x 0.02) E-W Slot	Stainless steel		43GR-TQC40SL
				PVC		43GR-TQC40ML
Stainless steel		4.0 (0.156)	Stainless steel		43GR-TRC30SL	
			PVC		43GR-TRC30ML	
Stainless steel		3.2 (0.125)	Stainless steel		43GR-TXC25SL	
			PVC		43GR-TXC25ML	
Stainless steel		3.2 (0.125)	Stainless steel		43GR-THC25SL	
			PVC		43GR-THC25ML	

Note: Standard length for glass fiber optic cables is 0.91 m (36 in.) from tip to tip.

PHOTOSWITCH® Photoelectric Sensors

43GR Glass Fiber Optic Cables

Threaded Bifurcated Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Diffuse		Brass/ Stainless steel	3.2 (0.125)	Stainless steel		43GR-TKC25SL
				PVC		43GR-TKC25ML
		Stainless steel	2.3 (0.09)	Stainless steel		43GR-TTS20SL
				PVC		43GR-TTS20ML
			1.2 (0.046)	Stainless steel		43GR-TTS10SL
				PVC		43GR-TTS10ML
		Stainless steel	51 x 0.25 (2.0 x 0.01) (N-S)	Stainless steel	Characterization not available at time of publication	43GR-TUS46SL
				PVC		43GR-TUS46ML

**Note:** Standard length for glass fiber optic cables is 0.91 m (36 in.) from tip to tip.

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Diffuse		Stainless steel	3.2 (0.125)	Stainless steel		43GR-FAS25SL
	PVC				43GR-FAS25ML	
			3.2 (0.125)	Stainless steel		43GR-FBS25SL
	PVC				43GR-FBS25ML	
			3.2 (0.125)	Stainless steel		43GR-MAS00SL
	PVC				43GR-MAS00ML	
			1.2 (0.046)	Stainless steel		43GR-MDS10SL
	PVC				43GR-MDS10ML	
			1.6 (0.062)	Stainless steel		43GR-MHS15SL
	PVC				43GR-MHS15ML	
			0.7 (0.027)	Stainless steel		43GR-MVS00SL
	PVC				43GR-MVS00ML	
	3.2 (0.125)	Stainless steel		43GR-FIS25SL		
PVC			43GR-FIS25ML			
	4.0 (0.156)	Stainless steel		43GR-FJS30SL		
PVC			43GR-FJS30ML			
	1.2 (0.046)	Stainless steel		43GR-MOS10SL		
PVC			43GR-MOS10ML			

43GR Glass Fiber Optic Cables

Ferrule Bifurcated Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Diffuse		Stainless steel	1.6 (0.062)	Stainless steel		43GR-MQS15SL
		Stainless steel		PVC		43GR-MQS15ML
		Stainless steel	0.7 (0.027)	Stainless steel		43GR-MKS00SL
		Stainless steel		PVC		43GR-MKS00ML
		Stainless steel	3.2 (0.125)	Stainless steel		43GR-FGS25SL
		Stainless steel		PVC		43GR-FGS25ML
		2.3 (0.09)	Stainless steel		43GR-FOS20SL	
			Stainless steel		43GR-FOS20ML	
		2.3 (0.09)	Stainless steel		43GR-FPS20SL	
			PVC		43GR-FPS20ML	
		2.5 x 0.5 (0.1 x 0.02) (E-W)	Stainless steel		43GR-FRS40SL	
			PVC		43GR-FRS40ML	



Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
Diffuse		Aluminum	9.7 x 0.8 (0.382 x 0.032) (E-W)	Stainless Steel	120 mm nominal	43GR-BAA72SL
	PVC			43GR-BAA72ML		
			38.1 x 0.3 (1.5 x 0.01)	Stainless steel		43GR-BCA73SL
	PVC			43GR-BCA73ML		
			25.4 x 0.4 (1.0 x 0.015)	Stainless steel		43GR-BRA79SL
	PVC			43GR-BRA79ML		
			3.9 x 0.5 (0.154 x 0.02)	Stainless steel		43GR-BTA70SL
	PVC			43GR-BTA70ML		

Characterization on not available at time of publication

43GT Glass Fiber Optic Cables

Threaded Transmitted Beam Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Brass	3.2 (0.125)	Stainless steel		43GT-TBB25SL
				PVC		43GT-TBB25ML
			1.6 (0.062)	Stainless steel		43GT-TBB15SL
				PVC		43GT-TBB15ML
			4.0 (0.156)	Stainless steel		43GT-TBB30SL
				PVC		43GT-TBB30ML
			2.5 x 0.5 (0.1 x 0.02) E-W Slot	Stainless steel		43GT-TBB40SL
				PVC		43GT-TBB40ML
	Stainless steel	3.2 (0.125)	Stainless steel		43GT-TBS25SL	
			PVC		43GT-TBS25ML	
		Stainless steel	0.7 (0.027)	Stainless steel		43GT-TFS00SL
				PVC		43GT-TFS00ML
1.2 (0.046)			Stainless steel		43GT-TFS10SL	
			PVC		43GT-TFS10ML	
	Stainless steel	3.2 (0.125)	Stainless steel		43GT-TYS25SL	
			PVC		43GT-TYS25ML	
	Stainless steel	0.7 (0.027)	Stainless steel		43GT-MRS00SL	
			PVC		43GT-MRS00ML	
		1.2 (0.046)	Stainless steel		43GT-MRS10SL	
			PVC		43GT-MRS10ML	
	Brass/ Stainless steel	1.6 (0.062)	Stainless steel		43GT-TMC15SL	
			PVC		43GT-TMC15ML	
		3.2 (0.125)	Stainless steel		43GT-TMC25SL	
			PVC		43GT-TMC25ML	

Threaded Transmitted Beam Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
		Stainless steel	3.2 (0.125)	Stainless steel		43GT-TMS25SL
				PVC		43GT-TMS25ML
		Stainless steel	4.0 (0.156)	Stainless steel		43GT-TOC30SL
				PVC		43GT-TOC30ML
		Stainless steel	3.2 (0.125)	Stainless steel		43GT-TQC25SL
				PVC		43GT-TQC25ML
			1.6 (0.062)	Stainless steel		43GT-TQC15SL
				PVC		43GT-TQC15ML
			2.5 x 0.5 (0.1 x 0.02) E-W Slot	Stainless steel		43GT-TQC40SL
				PVC		43GT-TQC40ML
		Stainless steel	3.2 (0.125)	Stainless steel		43GT-TQS25SL
				PVC		43GT-TQS25ML
		Brass/ Stainless steel	4.0 (0.156)	Stainless steel		43GT-TRC30SL
				PVC		43GT-TRC30ML

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Stainless steel	4.0 (0.156)	Stainless steel		43GT-TRS30SL
	PVC				43GT-TRS30ML	
			3.2 (0.125)	Stainless steel		43GT-TWC25SL
	PVC				43GT-TWC25ML	
			1.2 (0.046)	Stainless steel		43GT-MUS10SL
	PVC				43GT-MUS10ML	
			3.2 (0.125)	Stainless steel		43GT-TXC25SL
PVC		43GT-TXC25ML				
	3.2 (0.125)	Stainless steel		43GT-THC25SL		
PVC			43GT-THC25ML			
	4.0 (0.156)	Stainless steel		43GT-TJC30SL		
PVC			43GT-TJC30ML			
	3.2 (0.125)	Stainless steel		43GT-TKC25SL		
PVC			43GT-TKC25ML			

Threaded Transmitted Beam Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.	
Transmitted Beam		Stainless steel	4.0 (0.156)	Stainless steel		43GT-TLC30SL	
	PVC				43GT-TLC30ML		
			Stainless steel	1.2 (0.046)	Stainless steel		43GT-MSS10SL
	PVC					43GT-MSS10ML	
			Stainless steel	2.3 (0.090)	Stainless steel		43GT-TTC20SL
	PVC					43GT-TTC20ML	
			Brass/ Stainless steel	2.5 x 0.5 (0.1 x 0.02) (E-W)	Stainless steel		43GT-TZC40SL
			Brass/ Stainless steel	2.5 x 0.5 (0.1 x 0.02) (E-W)	PVC		43GT-TZC40ML
			Stainless steel	51 x 0.25 (2.0 x 0.01) (N-S)	Stainless steel	Characterization not available at time of publication	43GT-TUS46SL
			Stainless steel	51 x 0.25 (2.0 x 0.01) (N-S)	PVC	Characterization not available at time of publication	43GT-TUS46ML

43GT Glass Fiber Optic Cables

Ferrule Transmitted Beam Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Stainless steel	3.2 (0.125)	Stainless steel		43GT-FAS25SL
				PVC		43GT-FAS25ML
			4.0 (0.156)	Stainless steel		43GT-FAS30SL
				PVC		43GT-FAS30ML
		Stainless steel	0.7 (0.027)	Stainless steel		43GT-MBS00SL
				PVC		43GT-MBS00ML
			1.2 (0.046)	Stainless steel		43GT-MBS10SL
				PVC		43GT-MBS10ML
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MCS10SL
				PVC		43GT-MCS10ML
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MDS10SL
				PVC		43GT-MDS10ML
		Stainless steel	1.6 (0.062)	Stainless steel		43GT-MHS15SL
				PVC		43GT-MHS15ML
	Stainless steel	1.6 (0.062)	Stainless steel		43GT-MIS15SL	
			PVC		43GT-MIS15ML	
	Stainless steel	3.2 (0.125)	Stainless steel		43GT-FIS25SL	
			PVC		43GT-FIS25ML	
	Stainless steel	3.2 (0.125)	Stainless steel		43GT-FSS25SL	
			PVC		43GT-FSS25ML	

Ferrule Transmitted Beam Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MMS10SL
				PVC		43GT-MMS10ML
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MOS10SL
				PVC		43GT-MOS10ML
		Stainless steel	0.7 (0.027)	Stainless steel		43GT-MKS00SL
				PVC		43GT-MKS00ML
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-FOS10SL
				PVC		43GT-FOS10ML
		Stainless steel	2.3 (0.09)	Stainless steel		43GT-FOS20SL
				PVC		43GT-FOS20ML
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-FPS10SL
				PVC		43GT-FPS10ML
	Stainless steel	2.3 (0.09)	Stainless steel		43GT-FPS20SL	
			PVC		43GT-FPS20ML	
	Stainless steel	51 x 0.25 (2.0 x 0.01) (N-S)	Stainless steel	130 mm nominal	43GT-FQS46SL	
			PVC		43GT-FQS46ML	
	Stainless steel	2.5 x 0.5 (0.1 x 0.02)	Stainless steel		43GT-FRS40SL	
			PVC		43GT-FRS40ML	

43GT Glass Fiber Optic Cables

Block Transmitted Beam Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
Transmitted Beam		Aluminum	9.7 x 0.8 (0.382 x 0.032) (E-W)	Stainless steel	500 mm nominal	43GT-BAA72SL
				PVC		43GT-BAA72ML
		Aluminum	38 x 0.25 (1.5 x 0.01) (E-W)	Stainless steel	Characterization on not available at time of publication	43GT-BCA73SL
				PVC		43GT-BCA73ML
		Aluminum	9.7 x 0.8 (0.382 x 0.032) (E-W)	Stainless steel		43GT-BEA72SL
				PVC		43GT-BEA72ML

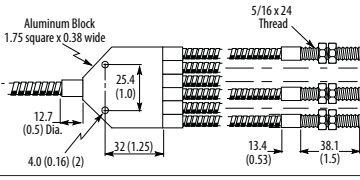
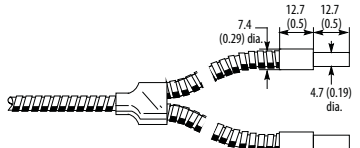


Bifurcated Specialty Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
Transmitted Beam	<p>5/16 x 24 Thread</p> <p>16 (0.63) Dia. Aluminum Junction</p> <p>13.4 (0.53)</p> <p>38.1 (1.5)</p>	Brass	2.8 (0.11)	Stainless steel	Characterization not available at time of publication.	43GR-4TBB22SL
	<p>7.4 (0.29) Dia.</p> <p>12.7 (0.5)</p> <p>12.7 (0.5)</p> <p>4.7 (0.19) dia.</p>	Stainless steel	3.2 (0.125)	Stainless steel	Characterization not available at time of publication.	43GR-2FAS25SL

43GT Glass Fiber Optic Cables

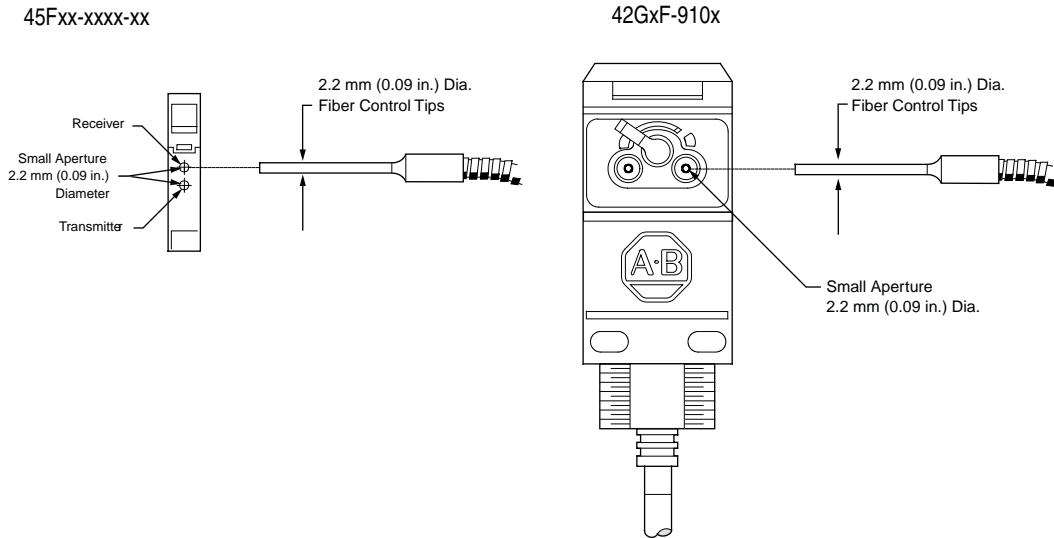
Transmitted Beam Specialty Cables for Large Aperture Sensors [4.6 mm (0.187 in.)]

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
Transmitted Beam		Brass	1.6 (0.062) (x6)	Stainless steel	Characterization not available at time of publication	43GT-6TBB15SL
		Stainless steel	2.3 (0.090) (x2)	Stainless steel	200 mm nominal	43GT-2FAS20SL

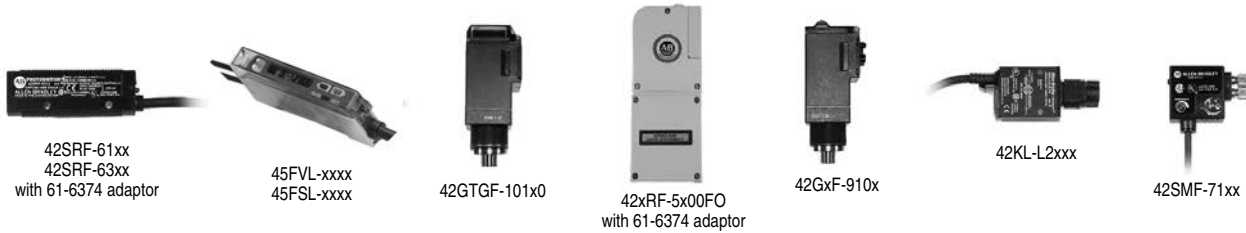
Cables for use with Small Aperture Sensors

[2.2 mm (0.09 in.)]

The glass fiber optic cables cables on pages 1-253...1-258 are for use with small aperture sensors.



Small Aperture Sensors:



**Note:** Nominal Sensing Distance

- Due to the variation between fiber optic cables, sensing distance can vary widely.
- The published numbers are based on extensive testing and are conservative.
- 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 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 range extending lenses
- Consult with product support for additional information.

All dimensions indicated are typical.

PHOTOSWITCH® Photoelectric Sensors

43GR Glass Fiber Optic Cables

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



Approximate Metric / Standard Distances

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

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Brass	2.2 (0.09)	Stainless steel		43GR-TAB20SS
				PVC		43GR-TAB20MS
		Stainless steel	2.2 (0.09)	Stainless steel		43GR-TAS20SS
				PVC		43GR-TAS20MS
		Stainless steel	2.2 (0.09)	Stainless steel		43GR-TBS20SS
				PVC		43GR-TBS20MS
		Stainless steel	1.2 (0.046)	Stainless steel		43GR-XAS10SS
				PVC		43GR-XAS10MS
		Stainless steel	0.7 (0.027)	Stainless steel		43GR-MRS00SS
				PVC		43GR-MRS00MS
		Stainless steel	2.2 (0.09)	Stainless steel		43GR-TMS20SS
				PVC		43GR-TMS20MS

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Stainless steel	1.2 (0.046)	Stainless steel PVC		43GR-TIS10SS 43GR-TIS10MS
		Stainless steel	2.2 (0.09)	Stainless steel PVC		43GR-TQS20SS 43GR-TQS20MS
		Stainless steel	1.2 (0.046)	Stainless steel PVC		43GR-TDS10SS 43GR-TDS10MS
		Stainless steel	1.2 (0.046)	Stainless steel PVC		43GR-MUS10SS 43GR-MUS10MS
		Stainless steel	1.2 (0.046)	Stainless steel PVC		43GR-MSS10SS 43GR-MSS10MS

43GR Glass Fiber Optic Cables

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

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Diffuse		Stainless steel	0.7 (0.027)	Stainless steel	0-200 mm	43GR-MAS00SS
				PVC	0-200 mm	43GR-MAS00MS
		Stainless steel	1.2 (0.046)	Stainless steel	0-200 mm	43GR-MDS10SS
				PVC	0-200 mm	43GR-MDS10MS
		Stainless steel	1.2 (0.046)	Stainless steel	0-200 mm	43GR-FTS10SS
				PVC	0-200 mm	43GR-FTS10MS
		Stainless steel	0.7 (0.027)	Stainless steel	0-200 mm	43GR-MKS00SS
				PVC	0-200 mm	43GR-MKS00MS
		Stainless steel	1.2 (0.046)	Stainless steel	0-200 mm	43GR-MOS10SS
				PVC	0-200 mm	43GR-MOS10MS
	Stainless steel	1.2 (0.046)	Stainless steel	0-200 mm	43GR-MYS10SS	
			PVC	0-200 mm	43GR-MYS10MS	
	Stainless steel	1.2 (0.046)	Stainless steel	0-200 mm	43GR-MJS10SS	
			PVC	0-200 mm	43GR-MJS10MS	

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

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Brass	1.6 (0.062)	Stainless steel	0-1000	43GT-TAB15SS
	PVC			43GT-TAB15MS		
		Stainless steel	1.6 (0.062)	Stainless steel	0-1000	43GT-TAS15SS
	PVC			43GT-TAS15MS		
		Stainless steel	1.6 (0.062)	Stainless steel	0-1000	43GT-TBS15SS
	PVC			43GT-TBS15MS		
		Stainless steel	0.7 (0.027)	Stainless steel	0-200	43GT-XAS10SS
	PVC			43GT-XAS10MS		
		Stainless steel	0.7 (0.027)	Stainless steel	0-200	43GT-MRS00SS
	PVC			43GT-MRS00MS		
		Stainless steel	1.2 (0.046)	Stainless steel	0-200	43GT-TIS10SS
	PVC			43GT-TIS10MS		
		Stainless steel	1.6 (0.062)	Stainless steel	0-1000	43GT-TMS15SS
	PVC			43GT-TMS15MS		
	Stainless steel	1.6 (0.062)	Stainless steel	0-1000	43GT-TQS15SS	
PVC			43GT-TQS15MS			

43GT Glass Fiber Optic Cables

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

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
Transmitted Beam		Stainless steel	1.2 (0.046)	Stainless steel		43GT-TDS10SS
				PVC		43GT-TDS10MS
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MUS10SS
				PVC		43GT-MUS10MS
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MSS10SS
				PVC		43GT-MSS10MS



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

Sensing Mode	Approximate Dimensions [mm (in.)]	Sensing Tip Material	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.	
Transmitted Beam		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MAS10SS	
	PVC				43GT-MAS10MS		
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MDS10SS	
	PVC				43GT-MDS10MS		
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-FTS10SS	
	PVC				43GT-FTS10MS		
		Stainless steel	1.2 (0.046)	Stainless Steel		43GT-MJS10SS	
	PVC				43GT-MJS10MS		
		Stainless steel	1.2 (0.046)	Stainless steel		43GT-MYS10SS	
	PVC				43GT-MYS10MS		
			Aluminum	6.35 x 0.3 (0.25 x 0.012)	Stainless steel	215 mm nominal	43GT-BSA80SS
					PVC		43GT-BSA80MS

# PHOTOSWITCH® Photoelectric Sensors

## Glass Fiber Optic Cables

Large [4.6 mm (0.187 in.)] and Small Aperture Sensors [2.2 mm (0.09 in.)] OD Sensor End Tip

### Additional Cables for Large and Small Aperture Sensors

#### Custom Fiber Optic Cables

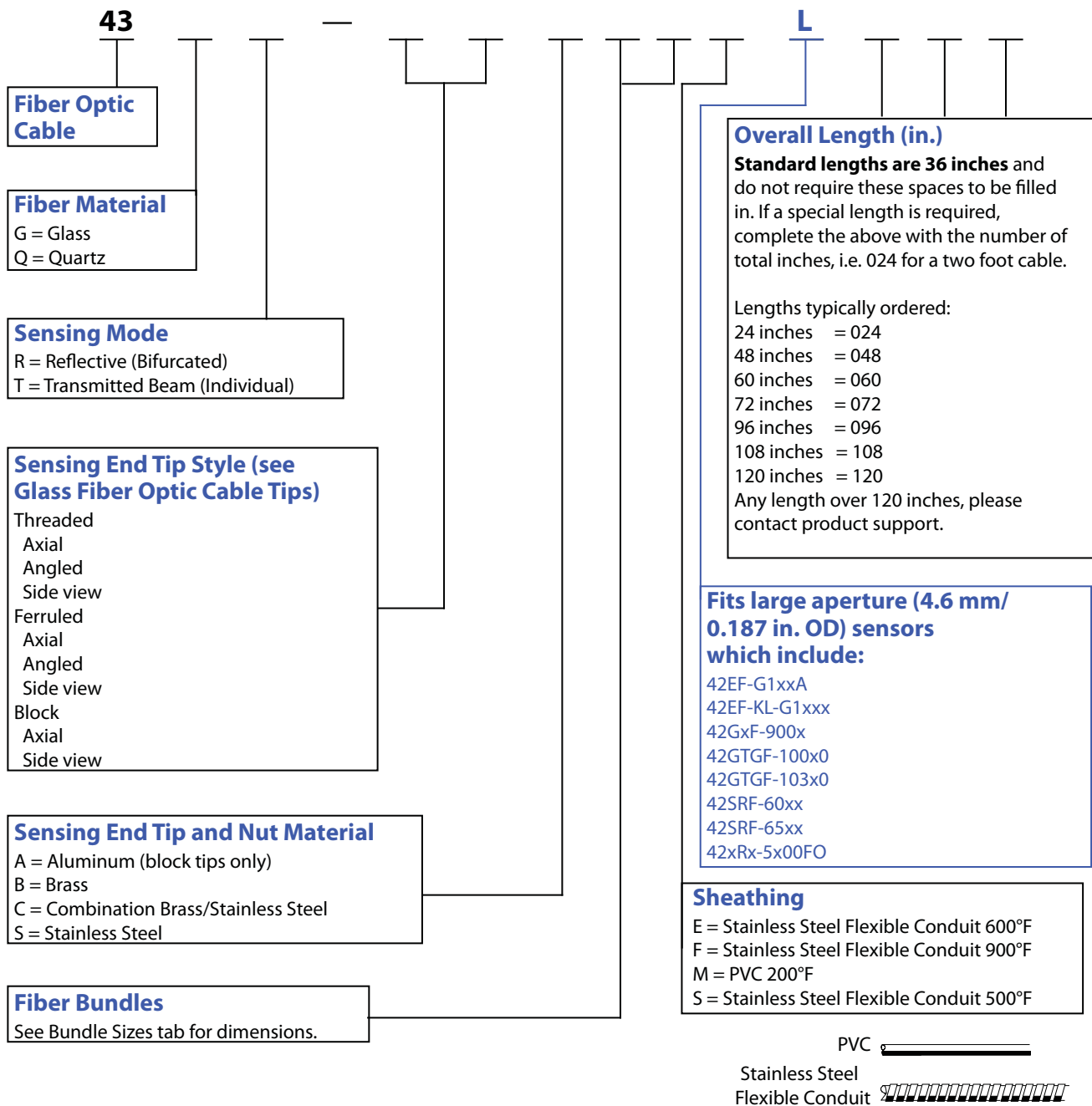
Rockwell Automation/Allen-Bradley can provide custom glass fiber optic cables to meet nearly any application requirement.

Typical cable modifications include:

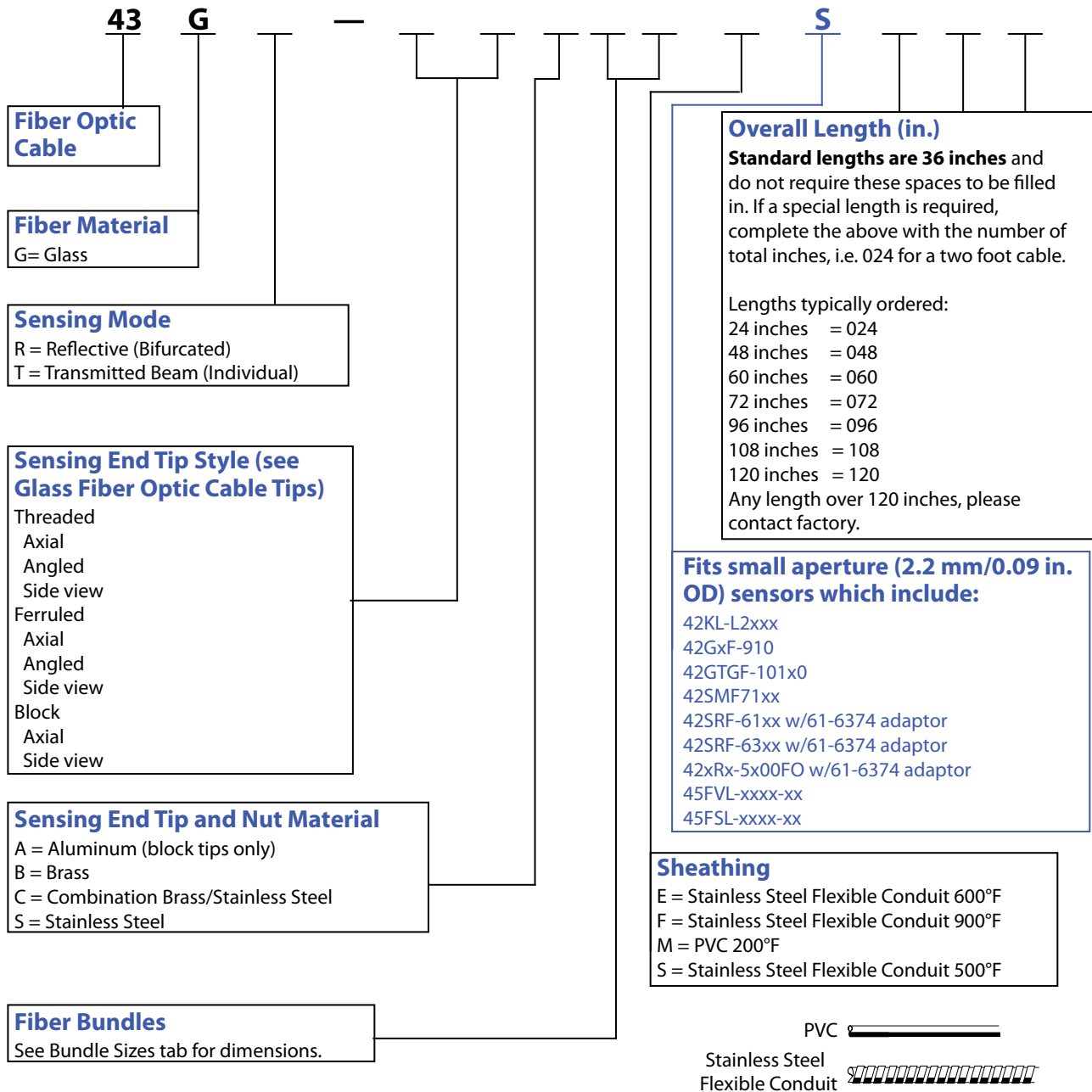
- Custom lengths up to 15.2 m (50 ft)
- Custom temperature ratings up to 482°C (900°F)
- Custom configurations including multiple sensing tips
- Custom sensing end tips—nearly any modification is possible

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

#### To Build a Custom Fiber Optic for a Large Aperture Sensor



To Build a Custom Fiber Optic for a Small Aperture Sensor

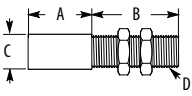


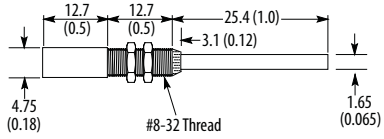
## Glass Fiber Optic Cable Tips

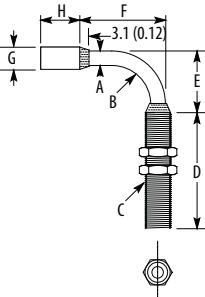
Use with Configurators on page 26 and page 27.

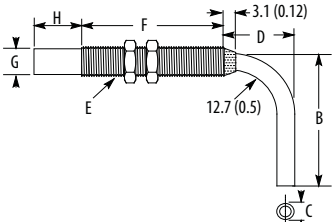
### Glass Fiber Optic Cable Tips

For use with Large and Small Aperture Configurators

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]			
			A	B	C	D
	TA	2.29 (0.09)	10.16 (0.40)	11.18 (0.44)	5.84 (0.23)	M6 x 1 class 6g
	TB	3.2 (0.125)	13.46 (0.53)	38.1 (1.5)	7.92 (0.312)	5/16 x 24 UNF
	TF	3.2 (0.125)	13.46 (0.53)	12.7 (0.5)	4.45 (0.175)	#8-32
	TG	1.2 (0.046)	13.46 (0.53)	38.1 (1.5)	9.53 (0.375)	3/8 x 24 UNF
	TV	4.0 (0.156)	13.46 (0.53)	139.7 (5.5)	7.92 (0.312)	5/16 x 24 UNF
	TY	3.2 (0.125)	13.46 (0.53)	101.6 (4.0)	7.62 (0.3)	5/16 x 24 UNF
	XA	1.2 (0.046)	10.16 (0.40)	12.7 (0.5)	4.75 (0.187)	M4 x 0.7
	XB	1.2 (0.046)	10.16 (0.40)	12.7 (0.5)	4.75 (0.187)	M6 x 0.75
	XD	3.2 (0.125)	13.46 (0.53)	15.24 (0.6)	7.92 (0.312)	5/16 x 24 UNF

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	TA	2.29 (0.09)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]							
			A	B	C	D	E	F	G	H
	TM	3.2 (0.125)	4.75 (0.187)	12.7 (0.5)	5/16 x 24	38.1 (1.5)	20.3 (0.8)	27.9 (1.1)	7.49 (0.295)	15.8 (0.625)
	TO	4.0 (0.156)	5.54 (0.218)	12.7 (0.5)	5/16 x 24	38.1 (1.5)	20.3 (0.8)	27.9 (1.1)	7.49 (0.295)	15.8 (0.625)
	TC	1.2 (0.046)	2.36 (0.093)	6.35 (0.25)	8 - 32	12.7 (0.5)	9.65 (0.38)	15.2 (0.6)	4.45 (0.175)	15.8 (0.625)
	TI	1.2 (0.046)	2.36 (0.093)	3.81 (0.15)	M6 x 0.75	15.2 (0.6)	8.89 (0.35)	12.7 (0.5)	4.75 (0.187)	10.1 (0.40)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]							
			A	B	C	D	E	F	G	H
	TQ	3.2 (0.125)	27.9 (1.1)	4.75 (0.187)	15.75 (0.62)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)	15.8 (0.625)
	TR	3.98 (0.156)	27.9 (1.1)	5.54 (0.218)	18.29 (0.72)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)	15.8 (0.625)
	TW	3.2 (0.125)	40.6 (1.6)	4.75 (0.187)	15.75 (0.62)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)	15.8 (0.625)
	TX	3.2 (0.125)	20.6 (0.81)	4.75 (0.187)	26.9 (1.06)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)	15.8 (0.625)
	TD	1.2 (0.046)	12.7 (0.5)	2.36 (0.093)	8.89 (0.35)	M4 x 0.7	12.7 (0.5)	4.75 (0.187)	10.16 (0.40)	10.1 (0.40)

PHOTOSWITCH® Photoelectric Sensors  
**Glass Fiber Optic Cable Tips**  
 Use with Configurators on page 26 and page 27.

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]		
			A	B	C
	MT	0.70 (0.027)	1.09 (0.043)	2.29 (0.09)	4.83 (0.19)
	MU	1.2 (0.046)	1.65 (0.065)	3.05 (0.12)	6.35 (0.25)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]	Approximate Dimensions [mm (in.)] A
	TH	3.2 (0.125)	4.75 (0.187)
	TJ	4.0 (0.156)	5.54 (0.218)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]	Approximate Dimensions [mm (in.)] A
	TK	3.2 (0.125)	4.75 (0.187)
	TL	4.0 (0.156)	5.54 (0.218)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	MS	1.2 (0.046)

PHOTOSWITCH® Photoelectric Sensors  
**Glass Fiber Optic Cable Tips**  
 Use with Configurators on page 26 and page 27.

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]	Approximate Dimensions [mm (in.)] A
	TT	2.29 (0.09)	3.2 (0.125)
	TZ	2.5 x 0.5 (0.1 x 0.02)	3.94 (0.155)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	TU	51 X 0.3 (2.0 X 0.01)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]	
			A	B
	FA	3.2 (0.125)	12.7 (0.5)	12.7 (0.5)
	FB		12.7 (0.5)	26.9 (1.06)
	FC		12.7 (0.5)	31.7 (1.25)
	FD		12.7 (0.5)	50.8 (2.0)
	FE		35.5 (1.4)	76.2 (3.0)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]	Approximate Dimensions [mm (in.)] A
	MA	0.70 (0.027)	1.09 (0.043)
	MC	1.2 (0.046)	1.65 (0.065)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]			
			A	B	C	D
	MD	1.2 (0.046)	1.65 (0.065)	12.7 (0.5)	4.06 (0.16)	25.4 (1.0)
	MG	1.2 (0.046)	1.65 (0.065)	35.5 (1.4)	7.87 (0.31)	25.4 (1.0)
	MH	1.6 (0.062)	2.36 (0.093)	35.5 (1.4)	7.87 (0.31)	76.2 (3.0)
	MI	1.6 (0.062)	2.36 (0.093)	12.7 (0.5)	7.87 (0.31)	25.4 (1.0)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]	
			A	B
	MB	1.2 (0.046)	1.65 (0.065)	25.4 (1.0)
	MF	1.2 (0.046)	1.65 (0.065)	50.8 (2.0)
	MV	0.70 (0.027)	1.09 (0.043)	12.7 (0.5)

PHOTOSWITCH® Photoelectric Sensors  
**Glass Fiber Optic Cable Tips**  
 Use with Configurators on page 26 and page 27.

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]	Approximate Dimensions [mm (in.)]				
			A	B	C	D	E
	FI	3.2 (0.125)	27.9 (1.1)	20.3 (0.8)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
	FJ	4.0 (0.156)	27.9 (1.1)	25.4 (1.0)	5.54 (0.218)	7.49 (0.295)	15.8 (0.625)
	FK	3.2 (0.125)	27.9 (1.1)	27.9 (1.1)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
	FL	3.2 (0.125)	27.9 (1.1)	35.0 (1.38)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
	FM	3.2 (0.125)	47.7 (1.88)	47.7 (1.88)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
	FT	2.2 (0.09)	12.7 (0.5)	10.16 (0.40)	2.36 (0.093)	4.75 (0.187)	10.4 (0.4)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]		
			A	B	C
	FS	3.2 (0.125)	27.9 (1.1)	20.3 (0.8)	4.75 (0.187)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	ML	1.2 (0.046)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]					
			A	B	C	D	E	F
	MM	1.2 (0.046)	1.65 (0.065)	12.7 (0.5)	4.06 (0.16)	25.4 (1.0)	6.35 (0.25)	3.05 (0.12)
	MO	1.2 (0.046)	1.65 (0.065)	35.5 (1.4)	7.87 (0.31)	25.4 (1.0)	6.35 (0.25)	3.05 (0.12)
	MQ	1.6 (0.062)	2.36 (0.083)	35.5 (1.4)	7.87 (0.31)	25.4 (1.0)	6.35 (0.25)	3.05 (0.12)
	MY	1.2 (0.046)	1.57 (0.062)	10.16 (0.40)	4.83 (0.19)	12.7 (0.5)	4.83 (0.19)	3.05 (0.12)

Approximate Dimensions [mm (in.)]	Code	[mm (in.)]	Approximate Dimensions [mm (in.)]			
			A	B	C	D
	MK	0.70 (0.027)	1.09 (0.043)	25.4 (1.0)	4.83 (0.19)	2.29 (0.09)
	MN	1.2 (0.046)	1.65 (0.065)	12.7 (0.5)	31.7 (1.25)	19 (0.75)

PHOTOSWITCH® Photoelectric Sensors

Glass Fiber Optic Cable Tips

Use with Configurators on page 26 and page 27.

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]	Approximate Dimensions [mm (in.)] A
	FG	3.2 (0.125)	4.75 (0.187)
	FH	4.0 (0.156)	5.54 (0.218)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	MJ	1.2 (0.046)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	FO	2.29 (0.09)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]	Approximate Dimensions [mm (in.)] A
	FP	2.29 (0.09)	3.2 (0.125)
	FR	0.5 x 2.5 (0.2 x 0.01) NS slot	3.94 (0.155)



PHOTOSWITCH® Photoelectric Sensors  
 Glass Fiber Optic Cable Tips  
 Use with Configurators on page 26 and page 27.

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	FQ	51 x 0.3 (2.0 x 0.01) NS slot

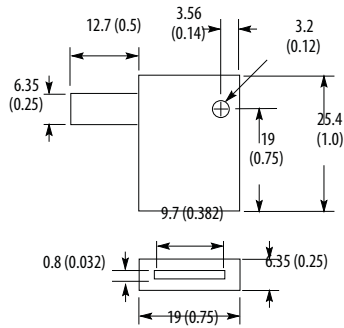
Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	BA	9.7 x 0.8 (0.382 x 0.032) (EW)

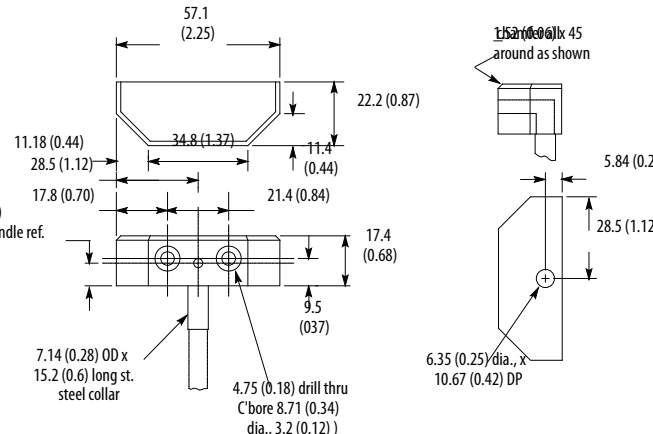
Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	BC	38.1 x 0.3 (1.5 x 0.01)

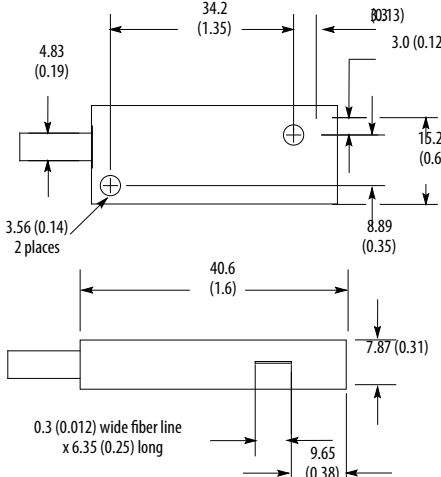
Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	BR	25.4 x 0.4 (1.0 x 0.015)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	BT	3.9 x 0.5 (0.154 x 0.02)

PHOTOSWITCH® Photoelectric Sensors  
**Glass Fiber Optic Cable Tips**  
 Use with Configurators on page 26 and page 27.

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	BE	"9.7 x 0.8 (0.382 x 0.032) (EW)"

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	BP	2.79 x 2.79 (0.11 x 0.11)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	BS	0.3 x 6.35 (0.012 x 0.25) NS slot

Glass Fiber Optic Cable Tip Bundle Sizes

These bundle size codes are used with the configurators.

Glass Fiber Bundle with Cylindrical Sensing End Tips

Code	Diameter		Arrangement	2.2 mm Control End Tip		4.6 mm Control End Tip	
	mm	in.		Transmitted Beam	Bifurcated	Transmitted Beam	Bifurcated
0	0.70	0.027	Randomized	X	X	X	X
5	0.81	0.032	Randomized	X	X	X	X
10	1.20	0.046	Randomized	X	X	X	X
15	1.57	0.062	Randomized	X	X	X	X
20	2.29	0.09	Randomized		X	X	X
22	2.79	0.11	Randomized			X	X
25	3.20	0.125	Randomized			X	X
30	4.00	0.156	Randomized			X	X
33	4.57	0.18	Randomized				X
35	5.59	0.22	Randomized				X
40	2.5 x 0.5	0.10 x 0.02	E-W Slot	X	X	X	X
41	0.5 x 2.5	0.02 x 0.10	N-S Slot	X	X	X	X
45	22 x 0.5	0.875 x 0.02	Randomized			X	X
46	51 x 0.3	2.0 x 0.01	N-S Slot			X	X

X = Suitable for use with glass fiber bundle.

Glass Fiber Bundle with Block Sensing End Tips

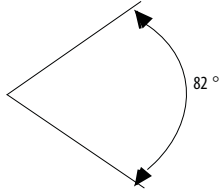
Code	Diameter	
	mm	in.
70	3.9 x 0.5	0.154 x 0.020
72	9.7 x 0.8	0.382 x 0.320
73	38 x 0.25	1.50 x 0.010
74	51 x 0.25	2.00 x 0.010
77	0.4 x 0.25	0.154 x 0.010
78	0.3 x 0.25	0.110 x 0.110
79	25.4 x 0.4	1.00 x 0.015
80	6.4 x 0.3	0.25 x 0.012

**Note:** Typical fiber optic cable construction is normally randomized. Other options, such as half or shimmed half moon, are available. Please contact your local Rockwell Automation sales office or Allen-Bradley distributor.

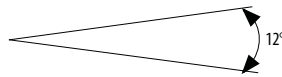
Extended Range Lens Assemblies

Extended range assemblies provide greater sensing range and reduce the field of view for detecting smaller objects at a greater distance. Without the extended range lens assembly the field of view is a divergent beam of 82°, leaving the end of the fiber optic cable tip. With the extended range lens the beam is reduced to 12°, thus permitting the sensing of smaller objects.

Fiber Optic Field of View Standard Fibers (Without Extended Range Lens Assembly)



Fiber Optic Field of View Standard Fibers (With Extended Range Lens Assembly)



Adjustable Fixed Focus Sensing Lens

Consult your local Rockwell Automation sales office or Allen-Bradley distributor for special applications. All the lens assemblies shown can provide fixed focus sensing with glass fiber optic cables. The distance between the lens and sensing tip can be adjusted, thus varying the focal point and spot size. An example of this using the Cat. No. 60-1844 lens is shown as follows:

mm (in.)	Spot Size Diameter [mm (in.)]	Focus Range
0	31.8 (1.25)	127 (5)
2.54 (0.1)	12.7 (0.5)	51...89 (2...3.5)
5.08 (0.2)	7.62 (0.3)	38...51 (1.5...2)
7.62 (0.3)	5.08 (0.2)	33...38 (1.3...1.5)
10.16 (0.4)	3.81 (0.1)	28...33 (1.1...1.3)

It is necessary to reduce the sensitivity of the sensor when using lens assemblies with bifurcated cables to avoid detecting the rear surface of the adaptor lens.

Description	Approximate Dimensions [mm (in.)]	Additional Information	Cat. No.
Extended range lens assembly—260°C (500°F)		One Cat. No. = One Lens Assembly—Sensing end tips with a 4.74 mm (0.187 in.) diameter	60-1844
Extended range lens assembly—260°C (500°F)		One Cat. No. = One Lens Assembly—Sensing tips with 4.74 mm (0.187 in.) diameter	60-2559
Extended range lens assembly—260°C (500°F)		One Cat. No. = One Lens Assembly—Sensing end tips with 5/16 x 24 threads	60-2323
Adaptor kit for series 5000 green line sensors		One Cat. No. = One Lens Assembly	61-5550
Glass fiber optic cable bracket		—	60-2696
Fiber optic cable lens extender		A range extending lens for ColorSight 9000.	60-2738



### 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 for 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 1-289) 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-NE557VS) 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.

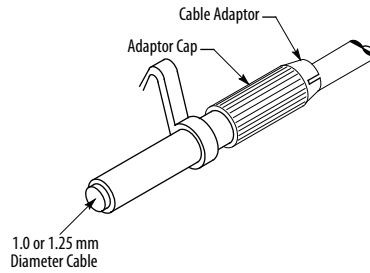
# PHOTOSWITCH® Photoelectric Sensors

## Plastic Fiber Optic Cables

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

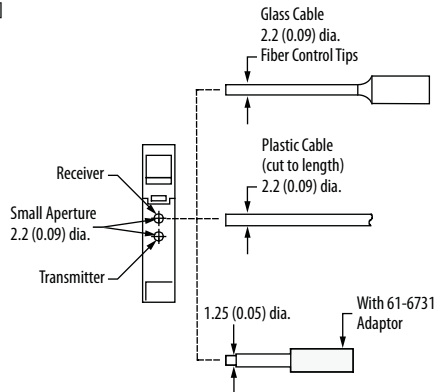
#### Plastic Fiber Optic Cables for use with Small Aperture Sensors

The plastic fiber optic cables in this section are for use with small aperture sensors. The cables shown on these pages require an adaptor (included with the cable).

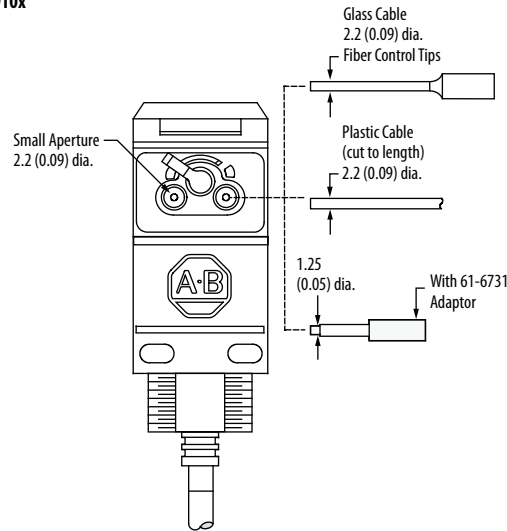


The drawing of the Cat. No. 61-6731 adaptor shows how 1.0/1.25 mm (0.04/0.05 in.) OD fibers can be used with most small aperture sensors. Some sensors have adaptors for this purpose included. Product selection pages for each sensor will indicate if an adaptor is included as standard.

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



#### 42GxF-910x



#### Small Aperture Sensors



#### 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 range extending lenses
  - Length of the cable
- Consult with product support for additional information.

All dimensions indicated are typical. The 43GR and 43GT fiber optic cables are for use with large aperture sensors.



Approximate Metric / Standard Distances

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

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

PHOTOSWITCH® Photoelectric Sensors

43PR Plastic Fiber Optic Cables

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

Sensing Mode	Approximate Dimensions [mm (in.)]	Bend Radius	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance [mm]	Cat. No.
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-PES53FS
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-PFS53FS
		25 mm (1.0 in.)	2 x 1 (0.04)	Polyethylene		43PR-PIS57ZS
		25 mm (1.0 in.)	2 x 1 (0.04)	Polyethylene		43PR-PIS57VS
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-PJS53ZS
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-PJS53VS



Sensing Mode	Approximate Dimensions [mm (in.)]	Bend Radius	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
I	<p>43GR-FAS25SL</p>	25 mm (1.0 in.)	2 x 1 (0.04)	Polyethylene	Characterization not available at time of publication.	43PR-RAS57ZS
<b>Specialty Cables for Small Aperture Sensors [2.2 mm (0.09 in.)]</b>						
		25 mm (1.0 in.)	2 x 1 (0.04)	Polyethylene	Characterization not available at time of publication.	43PR-SBS57ZS
		25 mm (1.0 in.)	2 x 1 (0.04)	Polyethylene	Characterization not available at time of publication.	43PR-SCS57ZS
		25 mm (1.0 in.)	1 (0.04)	Polyethylene	The sensing distance is the width of the gap (11.9 mm). The target must cross the optical axis between the two prongs of the fork.	43PR-UAA56MS

43PT Plastic Fiber Optic Cables

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

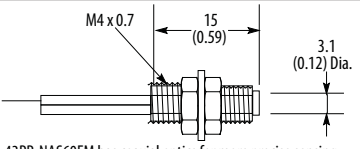
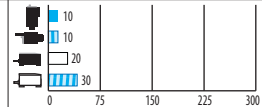
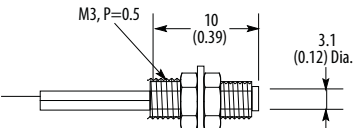
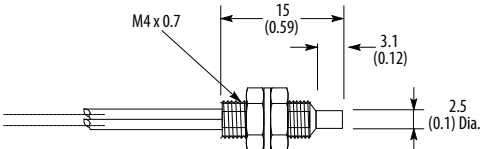
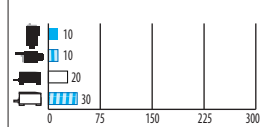
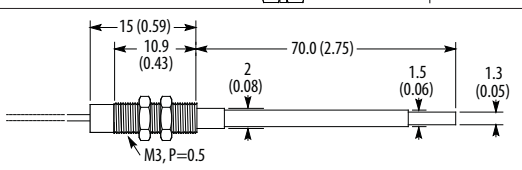
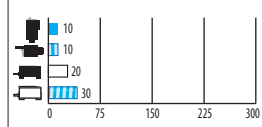
Sensing Mode	Approximate Dimensions [mm (in.)]	Bend Radius	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
Transmitted Beam (Individual Fiber Optic)		25 mm (1.0 in.)	1 (0.04)	Polyethylene		43PT-NJS56FS
		25 mm (1.0 in.)	1 (0.04)	Polyethylene		43PT-NJS56GS
		40 mm (1.6 in.)	1.5 (0.06)	Polyethylene		43PT-NAS58FS
		2 mm (0.08 in.)	1.0 (0.04)	1 R Polytex	Characterization not available at time of publication.	43PT-NAS66RS
		15 mm (0.6 in.)	0.5 (0.02)	Polyethylene		43PT-PAS52FS
	15 mm (0.6 in.)	0.5 (0.02)	Polyethylene		43PT-PBS52FS	

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

Sensing Mode	Approximate Dimensions [mm (in.)]	Bend Radius	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
Transmitted Beam (Individual Fiber Optic)		25 mm (1.0 in.)	1 (0.04)	Polyethylene		43PT-NJS56FS
		25 mm (1.0 in.)	1 (0.04)	Polyethylene		43PT-NJS56GS
		40 mm (1.6 in.)	1.5 (0.06)	Polyethylene		43PT-NAS58FS
		2 mm (0.08 in.)	1.0 (0.04)	1 R Polytex	Characterization not available at time of publication.	43PT-NAS66RS
		15 mm (0.6 in.)	0.5 (0.02)	Polyethylene		43PT-PAS52FS
	15 mm (0.6 in.)	0.5 (0.02)	Polyethylene		43PT-PBS52FS	

### 43PR Plastic Fiber Optic Cables

Threaded Bifurcated Miniature Cables for Small Aperture Sensors (adaptor required)

Sensing Mode	Approximate Dimensions [mm (in.)]	Bend Radius	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
	 <p>43PR-NAS60FM has coaxial optics for more precise sensing</p>	25 mm (1.0 in.)	2 x 1 (0.04)	Polyethylene		43PR-NAS57ZM
		15 mm (0.6 in.)	1 x 0.5 (0.02) 4 x 0.25 (0.01)	Polyethylene	Characterization not available at time of publication.	43PR-NAS60FM
		2 mm (0.08 in.)	2 x 0.25 (0.01)	1 R Polytex	Characterization not available at time of publication.	43PR-NBS63YM
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-NFS53FM
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-PHS53ZM

Ferrule Bifurcated Miniature Cables for Small Aperture Sensors (adaptor required)

Sensing Mode	Approximate Dimensions [mm (in.)]	Bend Radius	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-CBS53ZM
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene		43PR-AAS53ZM
		15 mm (0.6 in.)	2 x 0.5 (0.02)	Polyethylene	Characterization not available at time of publication.	43PR-VBS53ZM

### 43PT Plastic Fiber Optic Cables

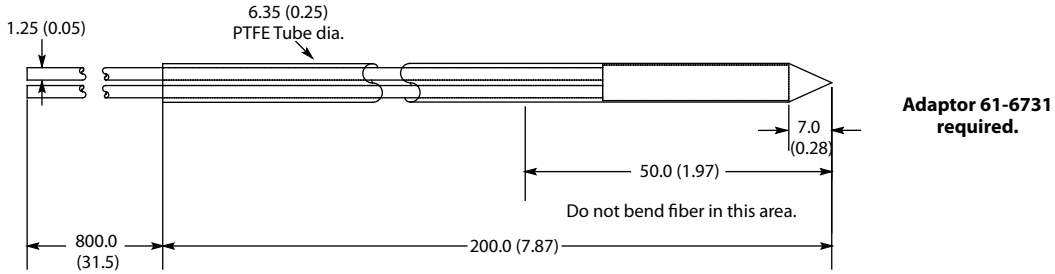
Threaded Transmitted Beam Miniature Cables for Small Aperture Sensors (adaptor required)

Sensing Mode	Approximate Dimensions [mm (in.)]	Bend Radius	Fiber Diameter [mm (in.)]	Sheathing Material	Sensing Distance	Cat. No.
I		25 mm (1.0 in.)	1.0 (0.04)	Polyethylene		43PT-NBS56FM
		15 mm (0.6 in.)	0.5 (0.02)	Polyethylene		43PT-NBS52FM
		2 mm (0.08 in.)	0.5 (0.02)	1 R Polytex	Characterization not available at time of publication.	43PT-NBS64RM
		15 mm (0.6 in.)	0.5 (0.02)	Polyethylene		43PT-PCS52FM

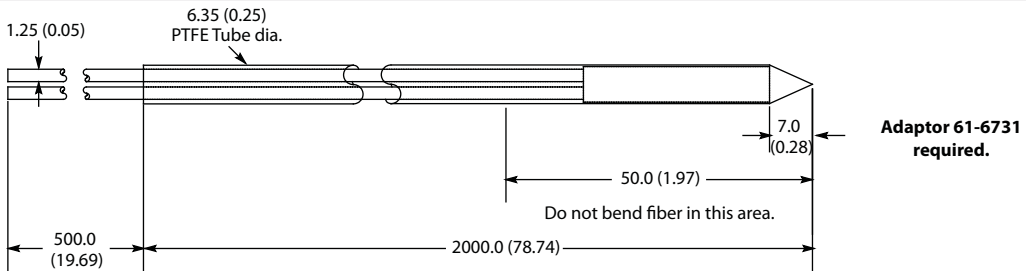
#### Ferrule Transmitted Beam Miniature Cables for Small Aperture Sensors (adaptor required [2.2 mm (0.09 in.)])

		15 mm (0.6 in.)	0.5 (0.02)	Polyethylene	Characterization not available at time of publication.	43PT-VCS52FM
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Sensing Tip Material	Fiber Diameter [mm (in.)]	Sheathing Material	Nominal Sensing Ref.	Cat. No.
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PTFE	1.25 (0.049) x 2	PTFE	NA	99-193-1
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PTFE	2.2 (0.09) x 2	PTFE	NA	99-197-1
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## Plastic Fiber Optic Cables

### Additional Cables for Small Aperture Sensors [2.2 mm (0.09 in.)] OD Sensor End Tip

#### Additional Cables for Small Aperture Sensors

##### Custom Fiber Optic Cables

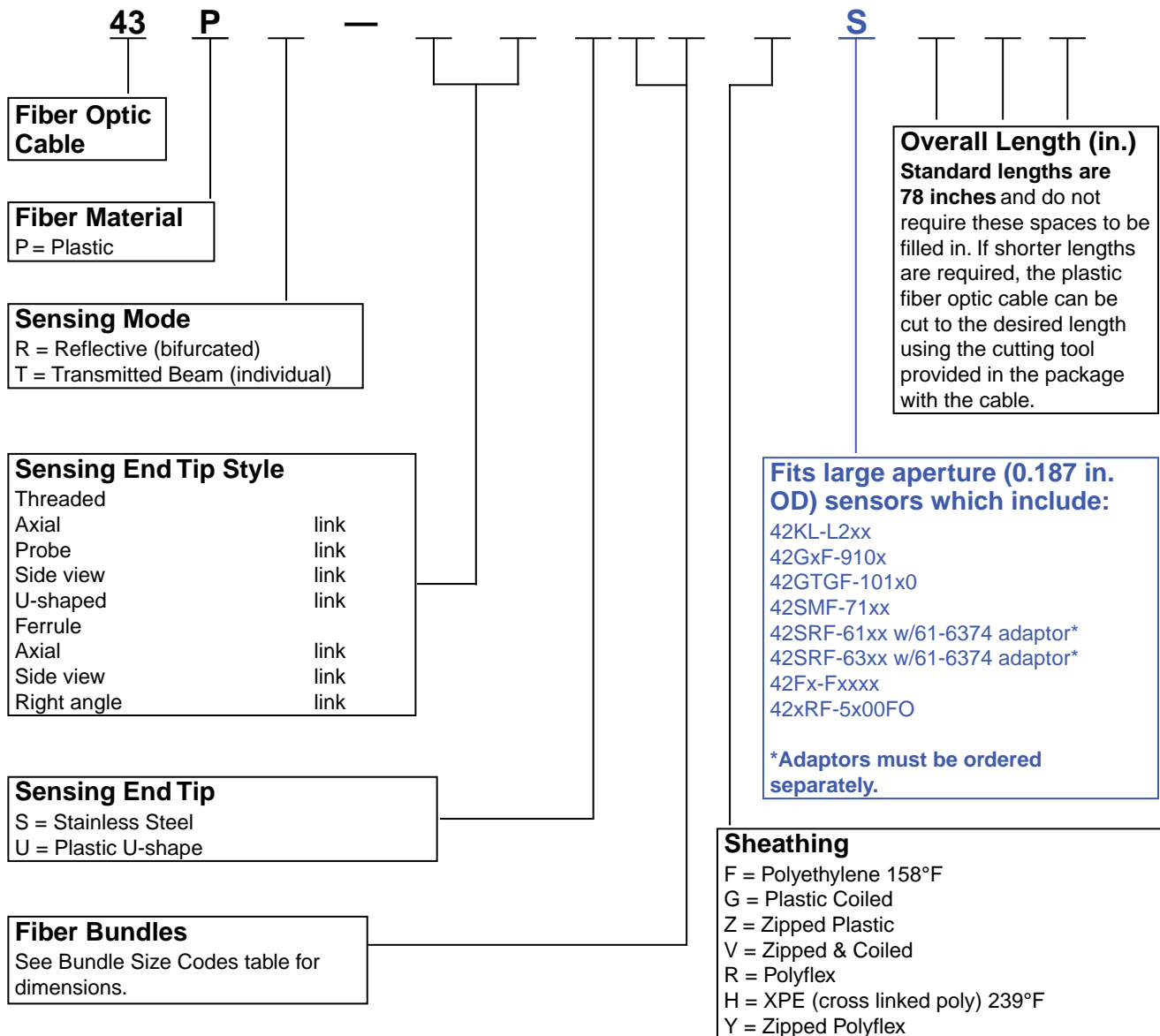
Rockwell Automation/Allen-Bradley can provide custom plastic fiber optic cables to meet nearly any application requirement.

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 for a Small Aperture Sensor [2.2 mm (0.09 in.) OD Sensor End Tip]





**Custom Fiber Optic Cables**

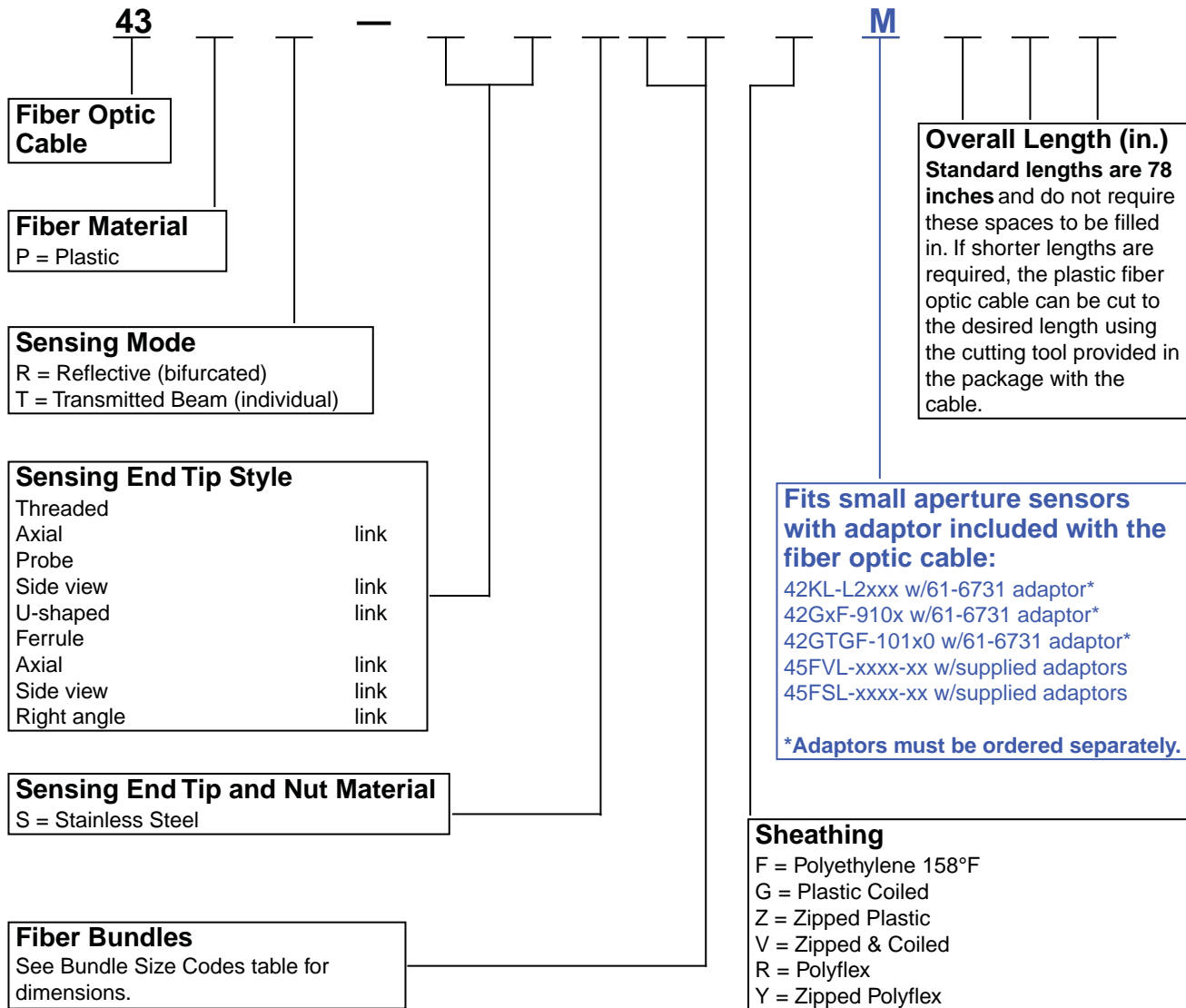
Rockwell Automation/Allen-Bradley can provide custom plastic fiber optic cables to meet nearly any application requirement.

Typical cable modifications include:

- Custom lengths are available
- Custom temperature ratings up to 70°C (158°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 for a Small Aperture Sensors [1.0/1.25 mm (0.04/0.05 in.)] OD Sensor End Tip



PHOTOSWITCH® Photoelectric Sensors  
**Plastic Fiber Optic Cable Sensing Tips**  
 Use with Configurators on page 48 and page 49.

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm]	Approximate Dimensions [mm (in.)]					
			A	B	C	D	E	F
	NA	0.50	14.9 (0.59)	—	M4, P=0.7	0.51 (0.02)	3.0 (0.12)	—
	NB	0.50	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	1.50	13.9 (0.55)	23.1 (0.91)	M6, P=1	1.02 (0.04)	4.8 (0.19)	—
	NE	1.00	17.0 (0.67)	—	M6, P=0.75	3.05 (0.12)	4.06 (0.16)	—
	NF	0.50	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	1.00	11.9 (0.47)	—	M4, P=0.7	3.05 (0.12)	—	—
	NK	0.50	11.9 (0.47)	—	M6, P=0.75	3.05 (0.12)	2.54 (0.10)	—
	NL	0.50	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 [mm (in.)]	Code	Standard Bundle [mm]	Approximate Dimensions [mm (in.)]						
			A	B	C	D	E	F	G
	PA	0.50	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	0.50	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	0.50	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	0.50	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	0.50	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	0.50	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	0.50	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 [mm (in.)]	Code	Standard Bundle [mm]	Approximate Dimensions [mm (in.)]			
			A	B	C	D
	PC	0.50	14.9 (0.59)	14.9 (0.59)	0.76 (0.03)	M3, P=0.5
	PI	1.00	17.0 (0.67)	88.9 (3.5)	2.54 (0.1)	M6, P=0.75
	PJ	0.50	11.4 (0.45)	88.9 (3.5)	1.27 (0.05)	M3, P=0.5
	PK	1.00	17.0 (0.67)	88.9 (3.5)	1.27 (0.05)	M6, P=0.75
	PL	0.50	10.9 (0.43)	88.9 (3.5)	0.86 (0.034)	M3, P=0.5

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	SA	1.00

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	VC	0.5 (0.02)

PHOTOSWITCH® Photoelectric Sensors  
**Plastic Fiber Optic Cable Sensing Tips**  
 Use with Configurators on page 48 and page 49.

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	SB	1.0 (0.04)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	SC	1.0 (0.04)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	RA	1.0 (0.04)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	VA	0.5 (0.02)


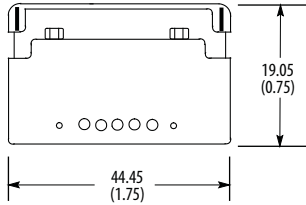

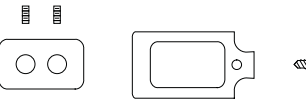

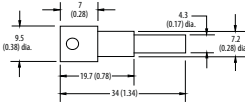
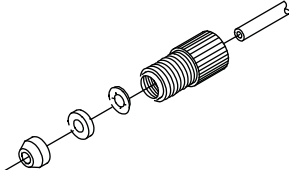
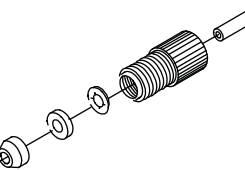
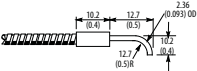
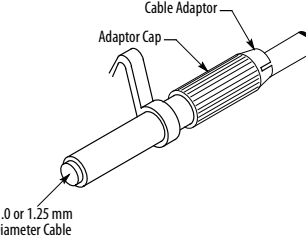
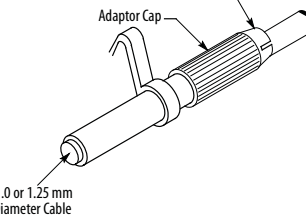
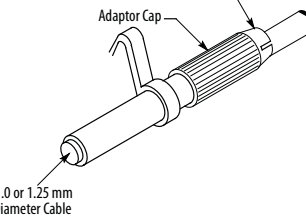
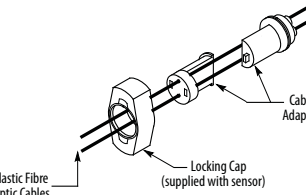
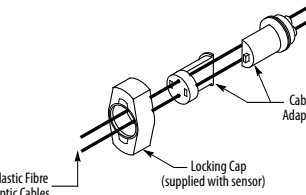
Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	AA	0.5 (0.02)

Approximate Dimensions [mm (in.)]	Code	Standard Bundle [mm (in.)]
	CA	1.0 (0.04)

PHOTOSWITCH® Photoelectric Sensors  
**Plastic Fiber Optic Cable Tip Bundle Sizes**  
 Use with Configurators on page 48 and page 49.


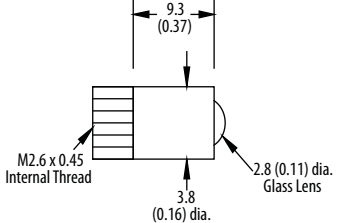
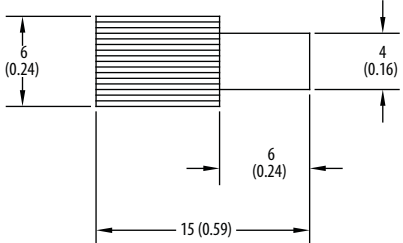
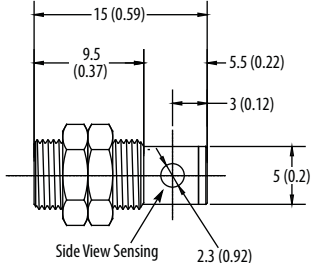
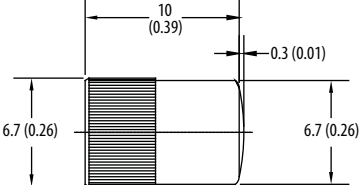
These bundle size codes are used with the configurators.

<b>Code</b>	<b>Diameter [mm]</b>	<b>Bend Radius [mm (in.)]</b>	<b>Arrangement</b>
52	0.50	15 (0.6)	Single
53	0.50	15 (0.6)	Pair Zipped
56	1.00	25 (1.0)	Single
57	1.00	25 (1.0)	Pair Zipped
58	1.50	40 (1.6)	Single
59	1.50	40 (1.6)	Pair
60	0.50 x 1; 0.25 x 4	15 (0.6)	Coaxial
61	0.75 x 1; 0.50 x 4	20 (0.8)	Coaxial
64	0.50	2 (0.08)	Single Flexible
65	0.50	2 (0.08)	Pair Flexible
66	1.00	2 (0.08)	Single Flexible
67	1.00	2 (0.08)	Pair Flexible

Description	Approximate Dimensions [mm (in.)]	Quantity	Cat. No.		
 <p>Cutting Tool for plastic fiber optic cable. For use with all cutable cables. One cutter tool is packaged with each fiber optic cable.</p>		—	57-127		
 <p>Molded fiber optic adaptor kit to be used with Type 42DRF and Type 42MRF Series 5000.</p>		—	61-6310		
 <p>Control end adaptor kit for 2.3 mm (0.09 in.) OD plastic fiber optic cable. Use with Series 9000, 10,000, 5000, and 6000.</p>		Two per package.	61-6374		
 <p>Control end adaptor kit for Series 7000.</p>		Two per package.	129-125-5		
 <p>A 1.25 mm outer jacket adaptor for use with the 42FA and 42FT (included with sensor) and MiniSight, Series 9100, and 10,000 (adaptor not included).</p>				—	61-6731
<p>A 1.0 mm outer jacket adaptor for use with 45FVL/45FSL.</p>		—	61-6742		
<p>A 2.2 mm outer jacket adaptor for use with the 42FB (included with sensor).</p>			—	61-6733	

Lenses (one per package)

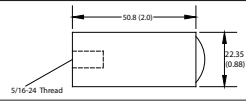
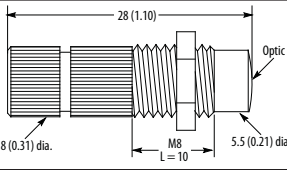
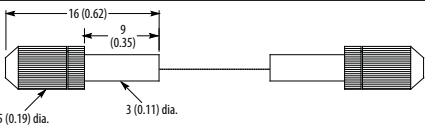
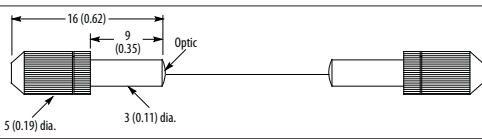
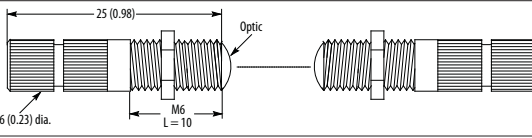
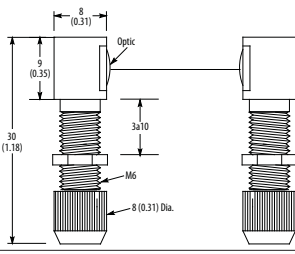
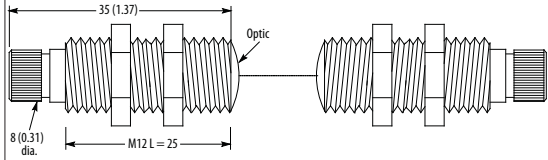
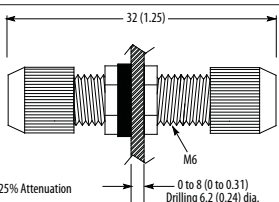
Lenses (one per package)

	Description	Approximate Dimensions [mm (in.)]	Cat. No.
	<p>The range extender lens adaptor for 1 mm (0.04 in.) dia. transmitted beam plastic cable.</p>		63-118
	<p>The fixed focus lens adaptor used with reflective cables with 4 mm (0.16 in.) x 0.7 pitch threaded sensing tips. The housing is plastic and one cat. no. equals one adaptor.</p>		60-2646
	<p>A right angle lens adaptor used with transmitted beam cables with 4 mm (0.16 in.) x 0.7 pitch threaded sensing tips. The housing is metal and one cat. no. equals one adaptor.</p>		60-2648
	<p>A range extender lens adaptor used with transmitted beam cables with 4 mm (0.16 in.) x 0.7 pitch threaded sensing tips. The housing is metal and one cat. no. equals one adaptor.</p>		60-2652

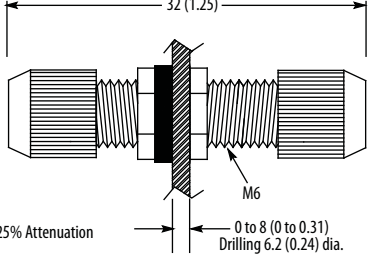
General Specifications

Mechanical	
Housing Material	Nickel-plated brass
Acceptable Fiber	2.2 mm (0.08 in.) outer diameter
Fiber Optic Cable	Bifurcated = 99-854 Individual = 99-850
Environmental	
Operating Temperature [C (F)]	-25...+60° (-13...+140°)

Approximate Dimensions [mm (in.)]

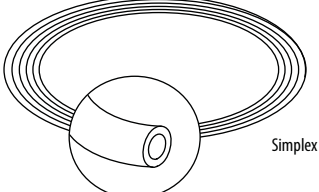
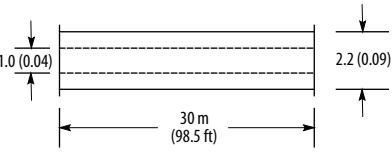

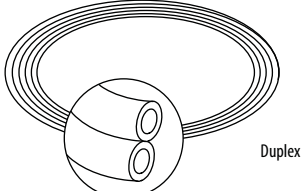
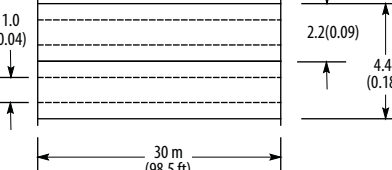
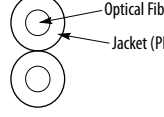
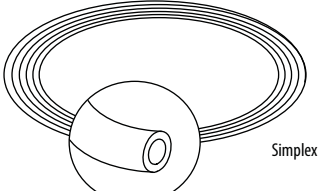
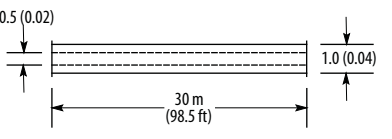
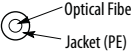
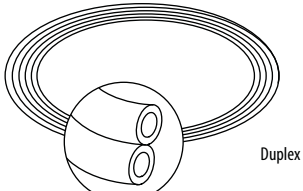
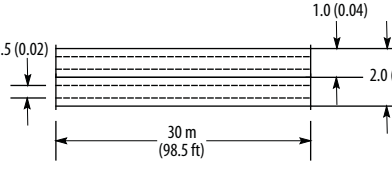
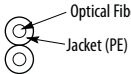
Description	Approximate Dimensions [mm (in.)]	Nominal Sensing Distance [mm (in.)]	Cat. No.
A range extending lens for ColorSight 9000.		114 (4.5)	60-2738
A lens for diffuse sensing. It accepts a 2.2 mm plastic bifurcated fiber optic cable. One cat. no. includes one lens assembly.		70 (2.75)	60-2745
A range extending lens for transmitted beam sensing. It accepts a 2.2 mm plastic individual fiber optic cable. One cat. no. includes two lens assemblies.		200 (7.87)	60-2746
A range extending lens for transmitted beam sensing. It accepts a 2.2 mm plastic individual fiber optic cable. One cat. no. includes two lens assemblies.		800 (31.49)	60-2747
A range extending lens for transmitted beam sensing. It accepts a 2.2 mm plastic individual fiber optic cable. One cat. no. includes two lens assemblies.		1200 (47.24)	60-2748
A range extending lens for transmitted beam sensing. It accepts a 2.2 mm plastic individual fiber optic cable. One cat. no. includes two lens assemblies.		1200 (47.24)	60-2749
A range extending lens for transmitted beam sensing. It accepts a 2.2 mm plastic individual fiber optic cable. One cat. no. includes two lens assemblies.		4000 (157.48)	60-2750
A splicer for a single 2.2 mm plastic fiber optic cable. One cat. no. includes two splicers.		—	60-2751

Note: Nominal sensing reference is included to aid in the selection of fiber optic lens assemblies.

Description	Approximate Dimensions [mm (in.)]	Nominal Sensing Distance [mm (in.)]	Cat. No.
<p>A splicer for a single 2.2 mm plastic fiber optic cable. One cat. no. includes two splicers.</p>		<p>—</p>	<p>60-2751</p>

**Note:** Nominal sensing reference is included to aid in the selection of fiber optic lens assemblies.

Unterminated Plastic Fiber Optic Cables

Description	Approximate Dimensions [mm (in.)]	Cat. No.
	 <p>Single Fiber</p> 	<p>99-850</p>
	 <p>Zipped</p> 	<p>99-854</p>
	 <p>Single Fiber</p> 	<p>99-852</p>
	 <p>Zipped</p> 	<p>99-853</p>

The above cat. nos. are unterminated simplex (individual) and duplex (dual) plastic fibers.

These plastic fiber optic cables can be used with plastic fiber optic sensors and require no control end tip to interface to the sensor.

A cutting tool for these unterminated plastic fiber optic cables is packaged with the fiber cable.



PHOTOSWITCH® Photoelectric Sensors  
Plastic Fiber Optic Cables Cross Reference

Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
99-1000-1	43GR-TAS20ML	99-461-1	43GT-MMS10ML	99-721-1	43GT-MIS15ML
99-1003-1	43GR-XDB25SL	99-477-1	43GT-TFS00ML	99-722-1	43GT-TMS25ML
99-108	43PT-PLS52FS	99-479-1	43GT-MUS10ML	99-723-1	43GT-TMS15MS
99-109	43PT-PLS52GS	99-487-1	43GT-MRS10ML	99-751-1	43GR-XAS10SS
99-110	43PR-PJS53ZS	99-490-1	43GT-MHS15SL	99-752-1	43GR-TIS10SS
99-116-1	43GT-MIS15SL	99-491-1	43GT-MHS15ML	99-753-1	43GR-FTS10SS
99-161-1	43GR-TAB20SS	99-494-1	43GT-BCA73SL	99-755-1	43GR-TDS10SS
99-181-1	43GT-TWC25SL	99-495-1	43GT-BCA73ML	99-794-1	43GR-BRA79SL
99-184-1	43GT-2FAS20SL	99-500-1	43GT-TBS25SL	99-800	43PR-NDS59FS
99-201-1	43GR-FOS20ML	99-50-1	43GT-FAS25SL	99-801	43PR-NDS57ZS
99-206-1	43GR-FPS20SL	99-501-1	43GT-TBS25ML	99-802	43PR-NAS57ZM
99-214-1	43GR-FJS30SL	99-502-1	43GT-TBB30SL	99-803	43PR-NAS60FM
99-222-1	43GR-TMC25SL	99-504-1	43GT-TQC25SL	99-804	43PR-NKS57ZS
99-224-1	43GR-TMC15SL	99-505-1	43GT-TQC25ML	99-805	43PR-NKS61FS
99-238-1	43GR-FGS25SL	99-508-1	43GT-TRC30SL	99-806	43PR-NFS53FM
99-275-1	43GR-TFS10ML	99-51-1	43GT-FAS25ML	99-808Z	43PR-NGS53ZM
99-279-1	43GR-MUS10ML	99-52-1	43GT-TBB25SL	99-809Z	43PR-NGS55ZM
99-283-1	43GR-MS10ML	99-530-1	43GT-TTC20SL	99-810	43PR-PES53FS
99-290-1	43GR-MHS15SL	99-53-1	43GT-TBB25ML	99-811	43PR-PFS53FS
99-291-1	43GR-MHS15ML	99-54-1	43GT-FIS25SL	99-814	43PR-CBS53ZM
99-294-1	43GR-BCA73SL	99-55-1	43GT-FIS25ML	99-816	43PR-AAS53ZM
99-300-1	43GR-TBS25SL	99-56-1	43GT-BAA72SL	99-818	43PR-VBS53ZM
99-30-1	43GR-FAS25SL	99-57-1	43GT-BAA72ML	99-819	43PT-NAS58FS
99-301-1	43GR-TBS25ML	99-58-1	43GT-MKS00SL	99-820	43PT-NBS56FM
99-302-1	43GR-TBB30SL	99-59-1	43GT-MKS00ML	99-821	43PT-NBS54FM
99-304-1	43GR-TQC25SL	99-614-1	43GR-MQS15SL	99-822	43PT-NBS52FM
99-308-1	43GR-TRC30SL	99-623-1	43GR-2FAS25SL	99-823	43PT-PAS52FS
99-31-1	43GR-FAS25ML	99-626-1	43GT-6TBB15SL	99-825	43PT-PCS52FM
99-315-1	43GR-TKC25ML	99-643-1	43GR-4TBB22SL	99-827	43PT-CBS56FS
99-32-1	43GR-TBB25SL	99-68-1	43GR-MVS00ML	99-828	43PT-SAS56FS
99-330-1	43GR-TTS20SL	99-69-1	43GT-TMC25SL	99-833	43PR-SCS57ZS
99-33-1	43GR-TBB25ML	99-700-1	43GR-TBS20MS	99-838	43PR-SBS57ZS
99-34-1	43GR-FIS25SL	99-701-1	43GR-TBS15ML	99-85-1	43GR-TGB33SL
99-350-1	43GR-FRS40SL	99-702-1	43GR-TAS20MS	99-90	43PT-NJS56FS
99-35-1	43GR-FIS25ML	99-704-1	43GR-TAS20SS	99-900	43PR-RAS57ZS
99-36-1	43GR-BAA72SL	99-705-1	43GR-TMS25ML	99-91	43PT-NJS56GS
99-37-1	43GR-BAA72ML	99-706-1	43GR-TMS20MS	99-92	43PT-PKS56FS
99-39-1	43GR-MKS00ML	99-708-1	43GR-TQS20MS	99-93	43PT-PKS56GS

PHOTOSWITCH® Photoelectric Sensors  
 Plastic Fiber Optic Cables Cross Reference

Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
99-400-1	43GT-FOS20SL	99-710-1	43GT-TBS15MS	99-94	43PR-NES57ZS
99-408-1	43GT-FPS10SL	99-714-1	43GT-TAS15SS	99-95	43PR-NES57VS
99-424-1	43GT-TMC15SL	99-714-1	43GT-TAS15SS	99-951-1	43GT-XAS10SS
99-426-1	43GT-TOC30SL	99-715-1	43GT-TFS10ML	99-952-1	43GT-TIS10SS
99-436-1	43GT-FAS30SL	99-716-1	43GT-TOS30ML	99-953-1	43GT-FTS10SS
99-453-1	43GT-TJC30ML	99-717-1	43GT-TQS25ML	99-955-1	43GT-TDS10SS
99-458-1	43GT-MBS10SL	99-718-1	43GT-TQS15MS	99-96	43PR-PI57ZS
99-46-1	43GR-TXC25SL	99-720-1	43GT-TRS30ML	99-97	43PR-PI57VS



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<http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>

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