Glass Fiber Optic Adapter

This simple adapter allows glass fiber optic cables to be used with standard Comet Series diffuse reflective sensors.

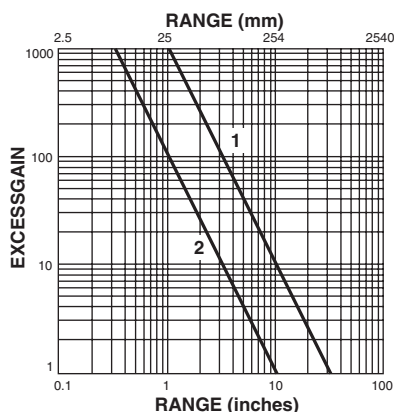## Model Selection — Glass Fiber Optic Adapter

		Sensors	Fibers	Catalog Number
Glass Fiber Optic Adapter with Hex Wrench Patent #5,559,919		Forward Viewing, Diffuse Reflective Sensors (ordered separately, see **Page 5-31**)	Glass Fiber Optic Cables (ordered separately, see **Section 9**) Note: Use only with the E51KF Series Fibers.	**6235A-6501**

▨ Stocked product, typical order quantities guaranteed in stock.

Excess Gain

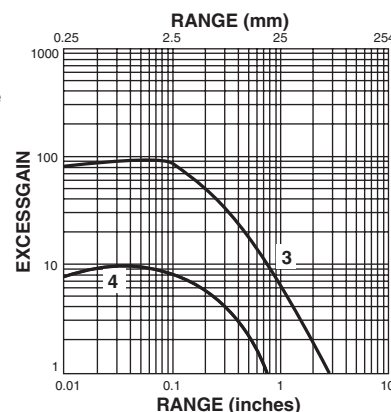**When Using Single Fibers for Thru-Beam Sensing**
(Gain using E51KF823 fibers)
1. 13100A Comet
2. 13106A Comet

When Using Duplex Fibers for Diffuse Reflective Sensing
(Gain using E51KF723 fibers, based on 90% reflective white card)
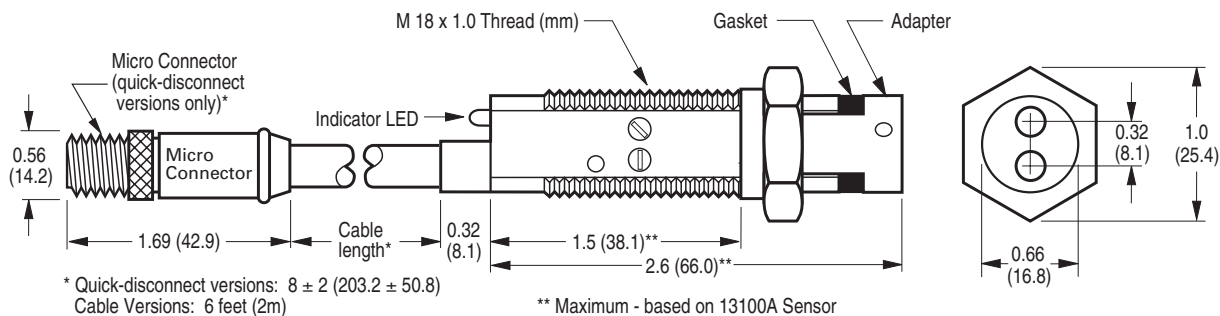3. 13100A Comet
4. 13106A Comet

Specifications — Glass Fiber Optic Adapter

Sensor Specifications	See Comet Series Specifications on **Page 5-37**
Material of Construction	Adapter: 360 Brass; Gasket: Silicone
Vibration (Sensor/Adapter)	30g over 10 Hz to 2 kHz
Shock (Sensor/Adapter)	50g for 10 mS 1/2 sinewave pulse
Enclosure Ratings	NEMA 1 ①

① Note: The adapter will resist the entrance of moisture in the area between the lenses and the fiber ends when properly assembled. However, moisture entry is possible during direct high pressure sprays. Since the Comet Series sensors are rated NEMA 1, 2, 3, 4, 4X, 6, 12 and 13, this will not result in damage to the sensors themselves.

Approximate Dimensions — Sensor with Adapter Installed — in Inches (mm) Except Where Noted

* Quick-disconnect versions: 8 ± 2 (203.2 ± 50.8)
  Cable Versions: 6 feet (2m)

** Maximum - based on 13100A Sensor

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Model Selection — Compatible Connector Cables ①

	Voltage Style	Number of Pins	Gauge	Length	Catalog Number			Pin Configuration/Wire Colors (Face View Female Shown)
					PVC Jacket	PUR Jacket	IRR PUR Jacket	
Standard Cables — Micro Style								
Micro Style Straight Female	AC	3-pin 3-wire	22 AWG	6.0 feet (2m)	CSAS3F3CY2202	CSAS3F3RY2202	—	1-Green 2-Red/Black 3-Red/White
		4-pin 4-wire	22 AWG	6.0 feet (2m)	CSAS4F4CY2202	CSAS4F4RY2202	CSAS4F4IO2202	1-Red/Black 2-Red/White 3-Red 4-Green
	DC	4-pin 4-wire	22 AWG	6.0 feet (2m)	CSDS4A4CY2202	CSDS4A4RY2202	CSDS4A4IO2202	1-Brown 2-White 3-Blue 4-Black

|	Voltage Style	Number of Pins	Gauge	Length	Catalog Number	Pin Configuration/Wire Colors (Face View Female Shown)
Standard Cables — Mini Style						
Mini Style Straight Female Current Rating @ 600V 3-pin: 13A	—	3-pin	16 AWG	6 feet (2m)	CSMS3F3CY1602	1-Green 2-Black 3-White

① For a full selection of connector cables, see **Section 10**.

▨ Stocked product, typical order quantities guaranteed in stock.

Wiring Diagrams

AC/DC Models (AC Connection)

*Note: No connection when using thru-beam sources
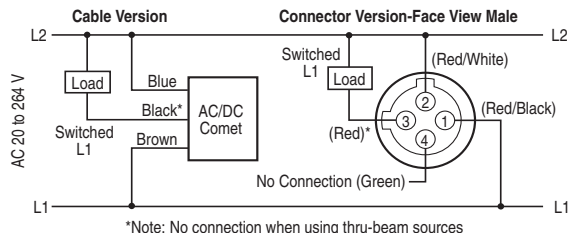
AC Models (AC Connection)

AC/DC Models (DC Connection)

*Note: No connection when using thru-beam sources
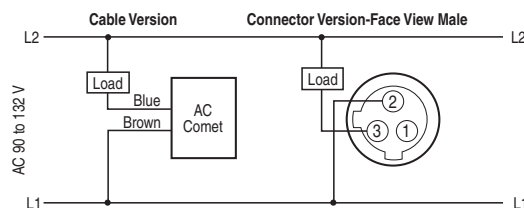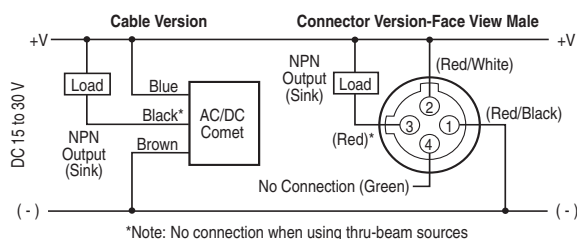
DC Models (DC Connection)

DC Models (DC Connection)

*Note: No connection when using thru-beam sources
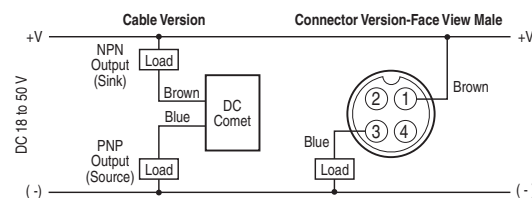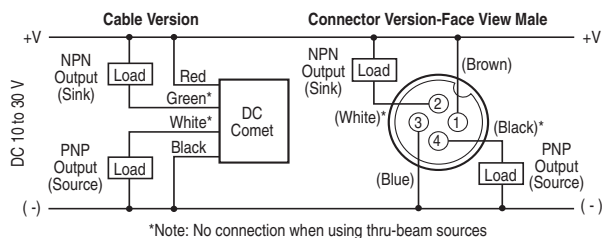
CAUTION: AC/DC connector version sensors use an AC-type connector. Use of DC power with AC-type connectors may not conform with established standards.

NOTE: For connector versions, the pin numbering and color codes shown are typical of several manufacturers. However, variations are possible. In case of discrepancies, rely on function indicated and pin location rather than pin number or color code.

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Specifications

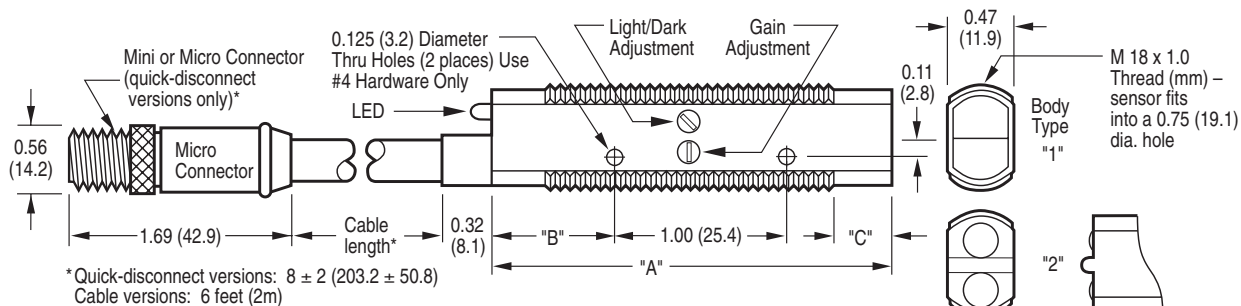|	3-Wire and 4-Wire Sensors			2-Wire Sensors	
	AC/DC Models (AC Operation)	**AC/DC Models (DC Operation)**	**DC-Only Models**	**AC Models**	**DC Models**
Input Voltage	20 to 264V AC, 50/60 Hz	15 to 30V DC (15 to 24V DC above 131°F/55°C)	10 to 30V DC, (10 to 24V DC above 131°F/55°C)	90 to 132V AC, 50/60 Hz	18 to 50V DC
Power Dissipation	1.5W maximum	1.5W maximum	1W maximum	2W maximum	2W maximum
Output Type	VMOS (bi-directional)	NPN (sink)	NPN and PNP (dual outputs)	DMOS	DMOS
Current Switching	300 mA maximum	300 mA maximum	PNP: 100 mA maximum; NPN: 250 mA maximum (NPN: 120 mA maximum above 131°F/55°C)	300 mA	300 mA
Voltage Switching	375V peak maximum	375V peak maximum	30V DC maximum	132V AC maximum	50V DC maximum
Off-State Leakage	250 µA typical; 500µA maximum	250 µA typical; 500 µA maximum	10 µA maximum	1.7 mA maximum	1.5 mA maximum
Surge Current	2A maximum	2A maximum	1A maximum	1A maximum	1A maximum
On-State Voltage Drop	—	1.8V at 10 mA; 3.5V at 300 mA	NPN: 400 mV at 10 mA, 1.5V at 250 mA; PNP: 2.4V at 100 mA	10V AC	8V DC
Response Time	10 mS		1 mS; 3.5 mS (thru-beam)	32 mS	32 mS
Time Delay	Models with Fixed Time Delay Available — Contact Factory				
Short Circuit Protection	Sensor will turn off immediately when short or overload is detected (Indicator LED flashes). Turn power OFF and back ON to reset. **IMPORTANT:** During installation, correct power connections must be made first to ensure fail-safe short circuit protection of outputs.		Sensor will turn off immediately when short or overload is detected (indicator LED flashes). Sensor will reset when short is removed.	Auto reset	Auto reset
Temperature Range	Thru-Beam Source: -4° to +158°F (-20° to +70°C); All others: -40° to +158°F (-40° to +70°C)			-13° to +131°F (-25° to +55°C)	
Light/Dark Operation	Switch selectable				
Enclosure Material	Lens: polycarbonate; Cable jacket: PVC; Body: structural polyurethane foam (do not expose to concentrated acids, alcohols or ketones)				
Cable/Connector	Cable versions: 6-foot cable; Connector versions: male mini and micro connectors (refer to wiring diagrams for number of pins per model) on nominal 8" pigtails				
Vibration and Shock	Vibration: 30g over 10 Hz to 2 kHz; Shock: 100g for 3 mS 1/2 sine wave pulse				
Indicator LED	Lights steady when output is ON; flashes when short circuit protection is in latch condition (except 2-wire models)				
Sunlight Immunity	Perfect Prox: 5,000 foot-candles; All others: 10,000 foot-candles				
Enclosure Ratings	NEMA 1, 2, 3, 4, 4X, 6, 12 and 13 ① NEMA 6P Models Available — Contact Factory				
Approvals	UL and C-UL Recognized (all models), CE Compliant (except 2-wire DC models)				

① **NOTE:** These products conform to NEMA tests as indicated, however, some severe washdown applications can exceed these NEMA test specifications. For questions about a specific application, contact Eaton's Cutler-Hammer Sensor Applications Department at 1-800-426-9184.

Approximate Dimensions in Inches (mm) Except Where Noted

Mini or Micro Connector (quick-disconnect versions only)*

0.125 (3.2) Diameter Thru Holes (2 places) Use #4 Hardware Only

LED

Light/Dark Adjustment

Gain Adjustment

0.47 (11.9)

0.11 (2.8)

M 18 x 1.0 Thread (mm) – sensor fits into a 0.75 (19.1) dia. hole

Body Type "1"

Micro Connector

0.56 (14.2)

1.69 (42.9)

Cable length*

0.32 (8.1)

"B"

1.00 (25.4)

"C"

"A"

*Quick-disconnect versions: 8 ± 2 (203.2 ± 50.8)
Cable versions: 6 feet (2m)

"2"

"3"

"4"

"5"

"6"

0.6 (15.2)

"D"

0.5 (12.7)

Catalog Number	Dimensions in Inches (mm)				Adjustments		Body Type
	A	B	C	D	Light/Dark	Gain	
11100A	2.20 (56)	0.65 (17)	0.25 (6)	N/A	No	No	2
11100R	2.55 (65)	0.65 (17)	0.60 (15)	0.20 (5)	No	No	4
11102A	2.75 (70)	0.65 (17)	1.10 (28)	N/A	No	No	1
12100A	2.20 (56)	0.65 (17)	0.25 (6)	N/A	Yes	Yes	2
12100R	2.55 (65)	0.65 (17)	0.60 (15)	0.20 (5)	Yes	Yes	4
12102A	2.60 (66)	0.60 (15)	0.29 (7)	N/A	Yes	Yes	1
13100A, 13106A	2.20 (56)	0.65 (17)	0.25 (6)	N/A	Yes	Yes	2
13100R, 13106R	2.55 (65)	0.65 (17)	0.60 (15)	0.20 (5)	Yes	Yes	4
13101A, 13104A	2.60 (66)	0.60 (15)	0.25 (6)	N/A	Yes	No	1
13102A, 13103A, 13105A, 13108A	2.60 (66)	0.60 (15)	0.25 (6)	N/A	Yes	Yes	1
13104R	3.02 (77)	0.60 (15)	1.10 (28)	0.20 (5)	Yes	No	6
14100A, 14102A	2.60 (66)	0.60 (15)	0.29 (7)	N/A	Yes	Yes	1
14101R, 14102R	3.00 (76)	0.60 (15)	0.70 (18)	0.20 (5)	Yes	Yes	5
14101A	2.64 (67)	0.60 (15)	0.29 (7)	N/A	Yes	Yes	1
15100A, 15101A	2.87 (73)	0.60 (15)	0.60 (15)	N/A	Yes	Yes	3

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