Installation Instructions PHOTOSWITCH®
42FB General Purpose and Analog Output DIN Fiber Optic Sensors

IMPORTANT: SAVE THESE INSTRUCTIONS FOR FUTURE USE.

General Purpose (Digital Output) Sensors

Description

42FB General Purpose DIN Fiber Optic Sensors are useful in general purpose or high speed applications. Standard 250µs versions offer extended sensing ranges. High-speed 30µs versions offer a shorter sensing range, but extremely fast response times for high speed parts counting and assembly applications.

Each sensor can be directly DIN rail mounted. A separate mounting bracket is also included for stand alone mounting. Over 50 compatible standard plastic and small diameter glass fiber optic cables are available, please refer to the Allen-Bradley *Sensors* Catalog.

Features

- Pico quick-disconnect available
- No tools required to attach or remove fiber optic cables
- Dual LED indicators: Output (red), Stability (green)
- Four-turn sensitivity adjustment
- Visible red light source
- DIN rail or separate mount (with supplied bracket)
- Short circuit protection
- Reverse polarity protection
- Transient noise protection
- Switch selectable Light or Dark Operate outputs
- Switch selectable 50ms output off-delay (pulse stretcher)

Indicators

The red output indicator is ON when the detected light level is above a margin of 1.0. The green stability indicator is ON when the sensing application is stable, when the detected light level is below a margin of 0.7 or above a margin of 1.2.

General Specifications

Ambient Temperature	-25°C to +55°C (-13°F to+131°F)
Relative Humidity	85% max
Housing Material	ABS
Operating Environment	NEMA 1 and IP40
Approvals	UL listed and CSA certified, class 2 source required
Weight	80 grams (2.8 oz)
Emitter LED	Visible red 660nm
Connections	3 conductor 500V PVC cable, 2m length 4-pin DC pico style male receptacle

Analog Output Sensors

Description

42FB Analog Output Sensors provide a DC voltage output that is proportional to the amount of transmitted or reflected light detected. This sensor has a fast response time and good temperature linearity as described in the Specifications below.

Each sensor can be directly DIN rail mounted. A separate mounting bracket is also included for stand alone mounting. Over 50 compatible standard plastic and small diameter glass fiber optic cables are available, please refer to the Allen-Bradley *Sensors* catalog.

Features

- Pico quick-disconnect available
- No tools required to attach or remove fiber optic cables
- Red output indicator
- Four-turn sensitivity adjustment
- Visible red light source
- DIN rail or separate mount (with supplied bracket)
- Short circuit protection
- Reverse polarity protection
- Transient noise protection

Indicator

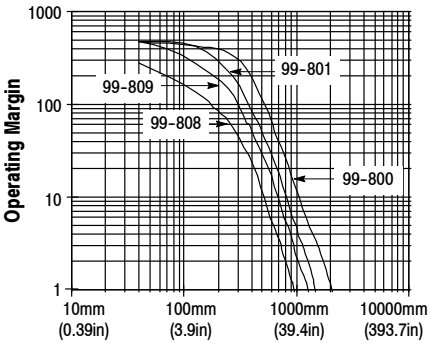
The red output indicator is ON when light is detected. The intensity (brightness) of the indictor increases as more light is detected.

General Specifications

Ambient Temperature	-10°C to +55°C (14°F to+131°F)
Relative Humidity	85% max
Housing Material	ABS
Operating Environment	NEMA 1 and IP40
Approvals	UL listed and CSA certified, class 2 source required
Weight	80 grams (2.8 oz)
Emitter LED	Visible red 660nm
Connections	3 conductor 500V PVC cable, 2m length 4-pin DC pico style male receptacle
Temperature Drift	Less than 0.15% per °C
Output Ripple	50mV typical, 80mV max

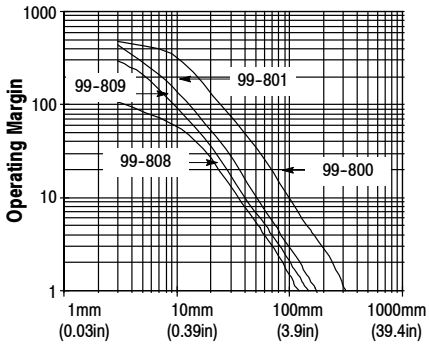
Typical Response Curves—General Purpose

Retroreflective



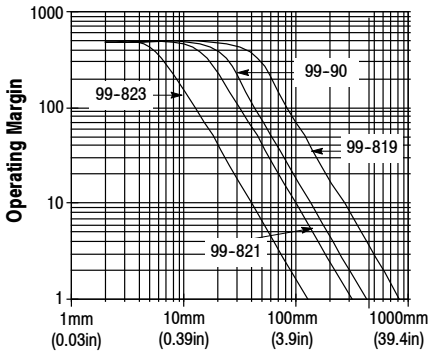
Distance to 76mm Reflector Model 92-39

Diffuse



Distance to White Target

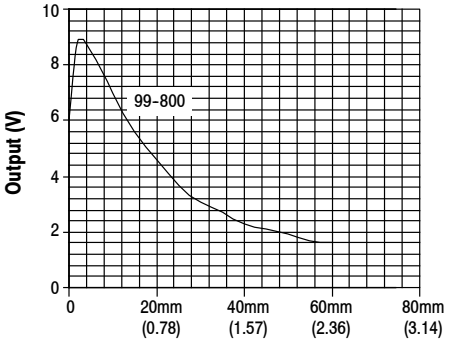
Transmitted Beam



Operating Distance

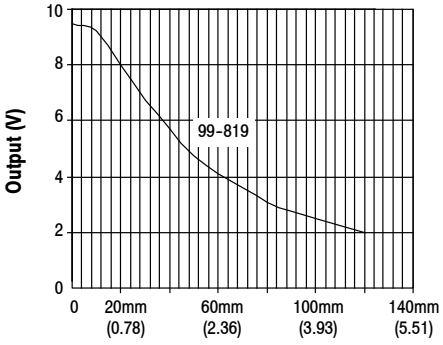
Typical Response Curves—Analog

Diffuse with White Paper



Distance

Transmitted Beam

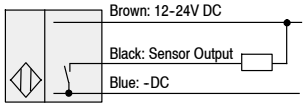


Distance

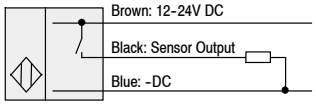
Wiring

42FB-F2L _ _ -A2

NPN Output
Cable

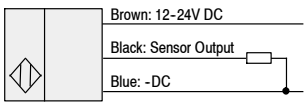


PNP Output

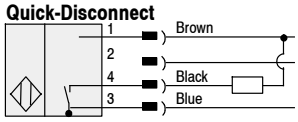


42FB-F2J _ _ -A2

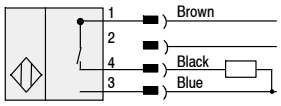
Analog Sensor



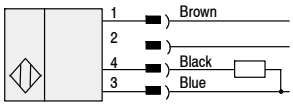
NPN Output
Quick-Disconnect



PNP Output



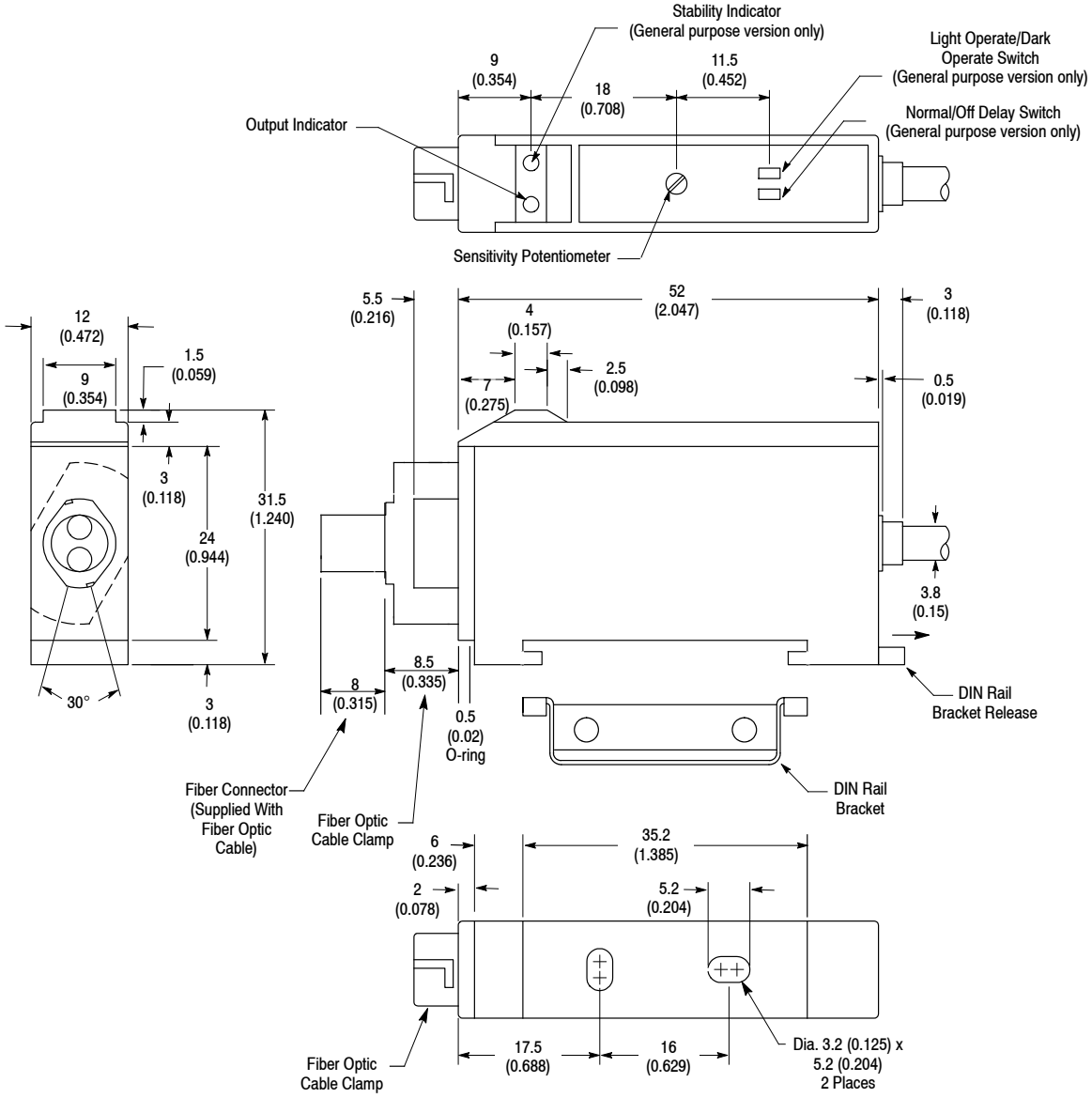
Analog Sensor



Pico

Note: Details regarding connection of Allen-Bradley Bulletin 42FB photoelectric sensors to Allen-Bradley programmable controllers can be found in publication 42-2.0.

Dimensions—mm (inches)



Visible Red Fiber Optic

Operating Voltage	Supply Current	Output Energized	Output Characteristics			Response Time	Catalog Number
			Type	Max Load Current	Max Leakage Current		Cable
12-24V DC ±10%	25mA	Light/Dark Selectable	NPN	100mA	0.5mA	250µs	42FB-F2LNA-A2
							42FB-F2LNA-P4
	30mA		PNP				42FB-F2LPA-A2
							42FB-F2LPA-P4
	25mA		NPN			30µs	42FB-F2LNAQ-A2
							42FB-F2LNAQ-P4
	30mA		PNP				42FB-F2LPAQ-A2
							42FB-F2LPAQ-P4
12-24V DC ±5% 2% ripple max		Proportional to the amount of light detected	1V to 8V Analog	3mA	—	At least 1V/ms	42FB-F2JKA-A2
							42FB-F2JKA-P4

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