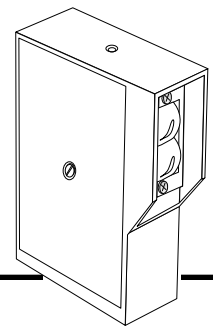
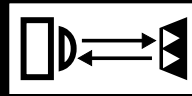


Heavy Duty

Photoelectric Sensors

Retro-Reflective



Photoelectric Sensors

- Non-Polarized
- Modulated LED
- Choice of Outputs
- Diecast Aluminum Housing Epoxy Coated
- Tri-Color LED Indicator
- Optional Plug-In Time Delays
- NEMA 3, 4, 12 & 13 Design
- -20°C to +70°C

These beefed-up sensors are smart as well as tough. Die cast aluminum housings and totally sealed optics help make them ideal for severe environments. All

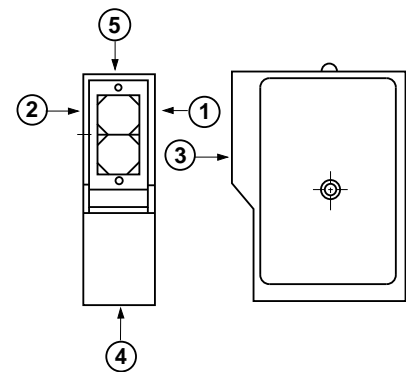
models use a modulated infrared LED emitter and receiver to ignore ambient light. Plug-in time delay modules offer wide flexibility in application options.

Designed for harsh industrial environments, the EP100 Series is especially equipped to alert you to potential problems. When other sensors run into alignment or dirty optic problems, you don't know about it until they fail. The EP100 uses a unique "tri-color" LED to indicate impending problems. When the LED glows:

- Green — stable operation >70% reflected signal strength
- Yellow — marginal operation 40-70% reflected signal strength
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Target Repeatability

For best repeatability, it is recommended to have target travel in direction (1) or (2). Traveling toward lens (3) will result in slightly higher tolerance on switch point. It is not recommended to have target travel in direction (4) and (5).



Supply Voltage	Power Consumption	Output Circuit Type	Model No.	Output Rating	Response Time On/Off	Maximum Switching Frequency	Leakage Current
RELAY OUTPUTS							
120 VAC	1.0 VA	DPDT	EP110-12001*	5A Resistive @ 250 VAC or 30 VDC	15mS/20ms	25 Hz	—
11-30 VDC	70 mA	DPDT	EP110-15001	5A Resistive @ 250 VAC or 30 VDC	15mS/20ms	25 Hz	—
TRANSISTOR OUTPUTS							
120 VAC	1.0 VA	NPN	EP110-12201*	25 mA @ 40 VDC	2mS/2ms	250 Hz	—
11-30 VDC	70 mA	NPN	EP110-15201	25 mA @ 40 VDC	2mS/2ms	250 Hz	—

* UL Listed and CSA Approved

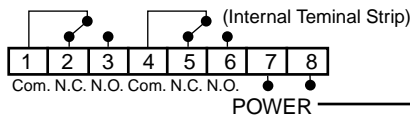
Common Sensor Characteristics

RETROREFLECTIVE HEAVY DUTY SENSORS	
Sensing Range	0-30 ft.*
Standard Retroreflector Target	4" x 4" square reflector
Lens	Glass
Light Source	Modulated Infrared LED
Light/Dark Operate — Selectable	yes
Optional Plug-in Timers	yes
NEMA Enclosure Types	3, 4, 12 & 13
Temperature Range	-20°C to +70°C
UL/CSA Certifications	yes
Sensitivity Adjustment	yes
Optic Heater	no
Cable Entry	1/2" - 14 NPT Conduit
Shipping Weight	18 oz.

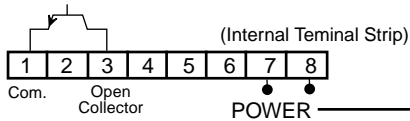
* Using EP175-13900, 4" x 4" square reflector

Circuit Drawings

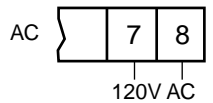
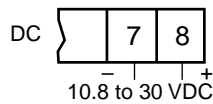
RELAY (DPDT) OUTPUTS



TRANSISTOR (NPN) OUTPUTS

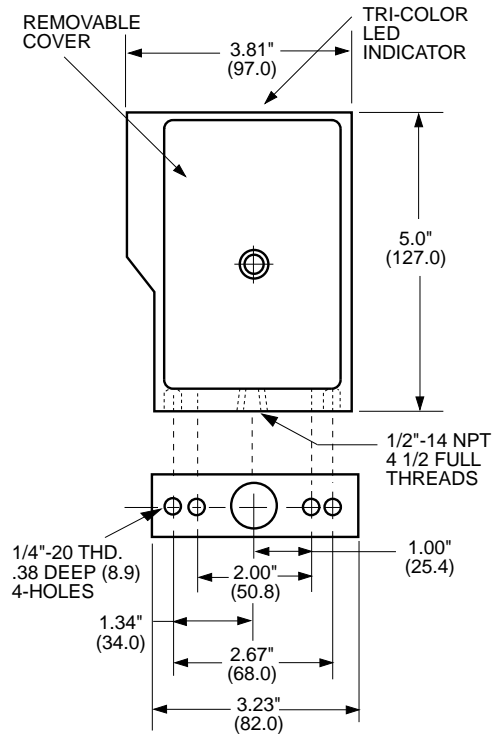


POWER INPUT:

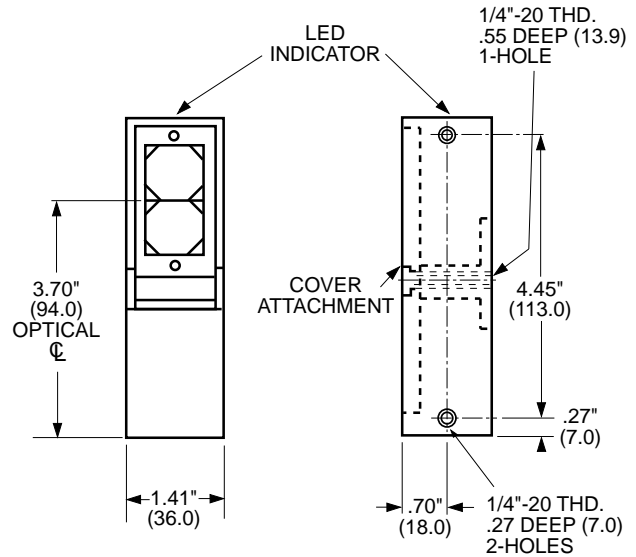


Dimensional Drawings

SIDE & BOTTOM VIEW



FRONT & REAR VIEW



NAMCO

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Mayfield Village, OH 44143

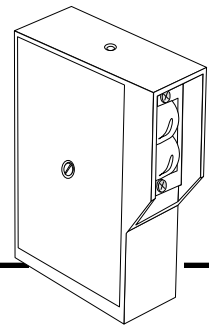
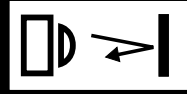
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For technical assistance, call 1-800-NAMTECH

Heavy Duty

Photoelectric Sensors

Diffuse Proximity



Photoelectric Sensors

- Modulated LED
- Choice of Outputs
- Diecast Aluminum Housing Epoxy Coated
- Tri-Color LED Indicator
- Optional Plug-In Time Delays
- NEMA 3, 4, 12 & 13 Design
- -20°C to +70°C

These beefed-up sensors are smart as well as tough. Die cast aluminum housings and totally sealed optics help make them ideal for severe environments. All models use a modulated infrared LED

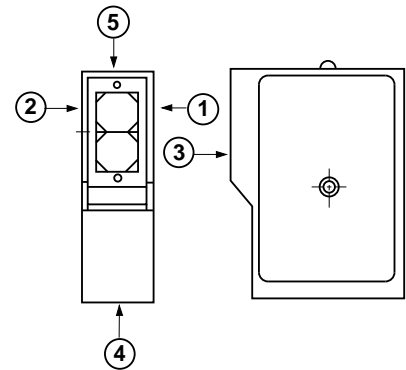
emitter and receiver to ignore ambient light. Plug-in time delay modules offer wide flexibility in application options.

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Target Repeatability

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Supply Voltage	Power Consumption	Output Circuit Type	Fixed Range			Adjustable Range	Output Rating	Response Time (On/Off)	Maximum Switching Frequency	Leakage Current
			1.0'	2.5'	6.5'					
RELAY OUTPUTS										
120 VAC	1.0 VA	DPDT	EP130-12003*	EP130-12002*	EP130-12001*	—	5A Resistive @ 250 VAC or 30 VDC	20ms/25ms	25 Hz	—
11-30 VDC	70 mA	DPDT	EP130-15003	EP130-15002	EP130-15001	—	5A Resistive @ 250 VAC or 30 VDC	20ms/25ms	25 Hz	—
110/220 VAC	4.0 VA	SPDT	—	—	—	EP130-12004	50 W - 250 VDC 60 VA - 250 VAC	70ms	7 Hz	—
11-30 VDC ± 10%	90 mA	SPDT**	—	—	—	EP130-15004	50 W-250 VDC 60 VA - 250 VAC	70ms	7 Hz	—
TRANSISTOR OUTPUTS										
120 VAC	1.0 VA	NPN	EP130-12203*	EP130-12202*	EP130-12201*	—	25 mA @ 40 VDC	60ms/10ms	60 Hz	—
11-30 VDC	70 mA	NPN	EP130-15203	EP130-15202	EP130-15201	—	25 mA @ 40 VDC	60ms/10ms	60 Hz	—
11-30 VDC ± 10%	90 mA	PNP**	—	—	—	EP130-15004	100mA	70ms	7 Hz	—

* UL Listed and CSA Approved

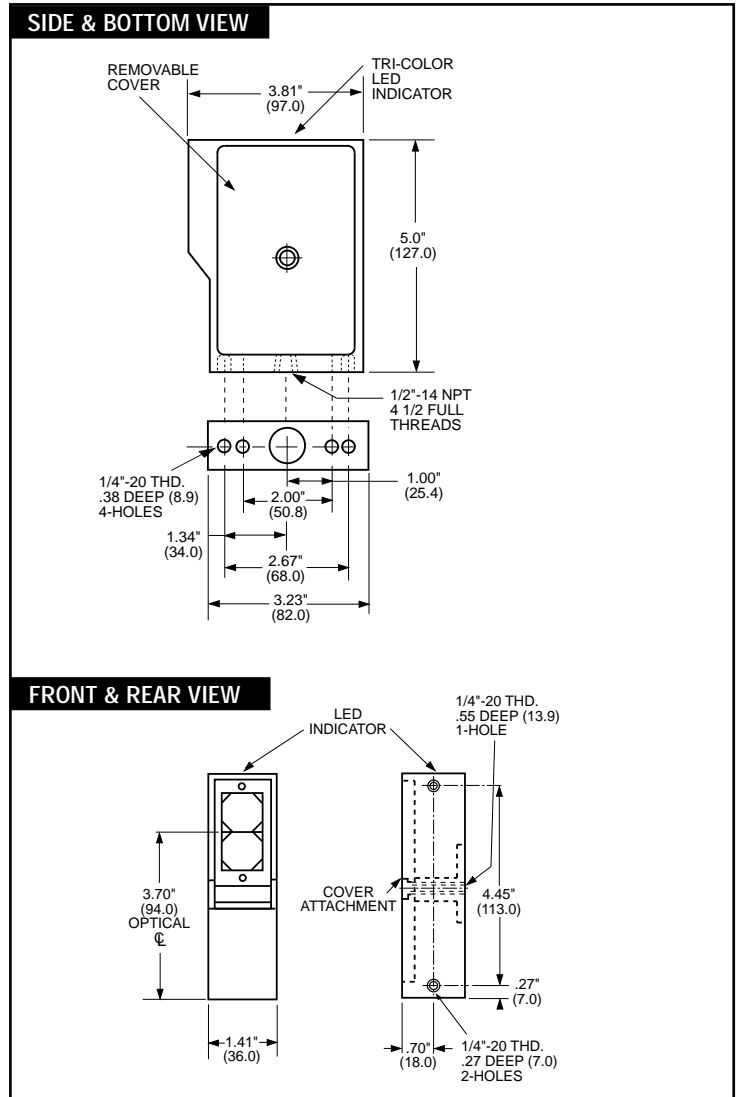
** Relay/Transistor (PNP) outputs on EP130-15004.

Common Sensor Characteristics

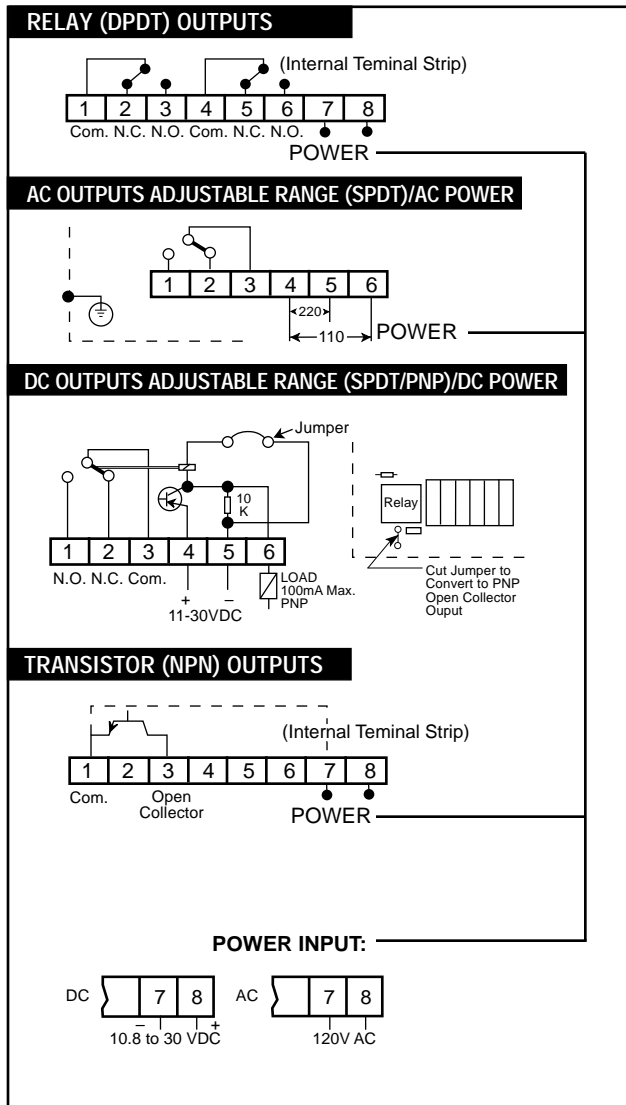
DIFFUSE PROXIMITY HEAVY DUTY SENSORS		
	Fixed Range	Adjustable Range
Sensing Ranges	1.0, 2.5, 6.5 ft.*	100-800 mm Adjustable*
Standard Target	White Bond Paper	
Lens	Glass	
Light Source	Modulated Infrared LED	
Light/Dark Operate — Selectable	yes	
Optional Plug-in Timers	yes	
NEMA Enclosure Type	3, 4, 12 & 13	
Temperature Range	-20°C to +70°C	-20°C to +60°C
UL/CSA Certifications	yes	
Sensitivity Adjustment	yes	
Optic Heater	no	
Cable Entry	1/2" - 14 NPT Conduit	
Shipping Weight	16 oz.	18 oz.

*Using White Bond Paper

Dimensional Drawings



Circuit Drawings



Tolerance vs. Range

For Adjusted Range Diffuse Scanner EP130-12004 & EP130-15004

Adjusted Range	Total Sensing Range From:	Max. Range of White Target When Range is Set On Black Target	
		Black Paper	White Paper
3.94" (100mm)	1.97" to 3.94" (50mm to 100mm)	3.94" (100mm)	4.02" (102mm)
11.80" (300mm)	3.94" to 11.80" (100mm to 300mm)	11.80" (300mm)	12.20" (310mm)
19.68" (500mm)	4.72" to 19.68" (120mm to 500mm)	19.68" (500mm)	21.26" (540mm)
31.50" (800mm)	5.90" to 31.50" (150mm to 800mm)	31.50" (800mm)	31.50" (800mm)



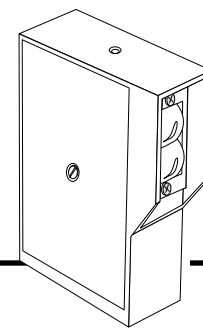
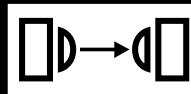
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Heavy Duty

Photoelectric Sensors

Thru-Beam & Fiber Optic



Photoelectric Sensors

- Modulated LED
- Choice of Outputs
- Diecast Aluminum Housing Epoxy Coated
- Tri-Color LED Indicator
- Optional Plug-In Time Delays
- 400 Ft. Range Thru-Beam
- Sealed Heated Optics Thru-Beam
- NEMA 3, 4, 12 & 13 Design
- -20°C to +70°C

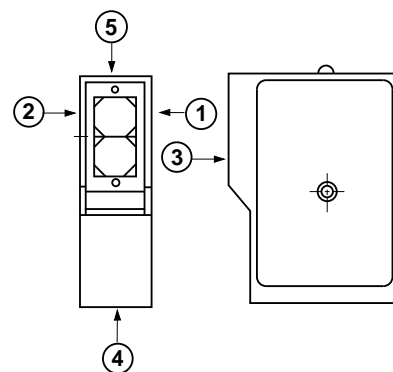
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Supply Voltage	Power Consumption	Output Circuit Type	Thru-Beam		Fiber Optic	Output Rating	Response Time On/Off	Maximum Switching Frequency	Leakage Current
			Emitter	Receiver					
110/220 VAC	3.5 VA	—	EP120-12501	—	—	—	—	—	—
24 VDC ± 10%	35 mA	—	EP120-15501	—	—	—	—	—	—
RELAY OUTPUTS									
120 VAC	1.0 VA	DPDT	—	—	EP140-12001	5A Resistive @ 250 VAC or 30 VDC	20mS/25ms	25 Hz	—
110/220 VAC	4.5 VA	SPDT	—	EP120-12701	—	50W - 250 VDC 60 VA - 250 VAC	30mS/150ms	6 Hz	—
11-30 VDC	70 mA	DPDT	—	—	EP140-15001	5A Resistive @ 250 VAC or 30 VDC	20mS/25ms	20 Hz	—
24 VDC ± 10%	100 mA	SPDT**	—	EP120-15701	—	50W - 250 VDC 60 VA - 250 VAC	—	20 Hz	—
TRANSISTOR OUTPUTS									
11-30 VDC	70 mA	NPN	—	—	EP140-15201	25 mA @ 40 VDC	6mS/10ms	60 Hz	—
24 VDC ± 10%	100 mA	PNP**	—	EP120-15701	—	100 mA	—	100 Hz	—

* UL Listed

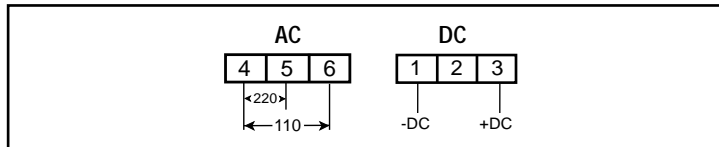
** Relay/Transistor (PNP) outputs on EP120-15701

Common Sensor Characteristics

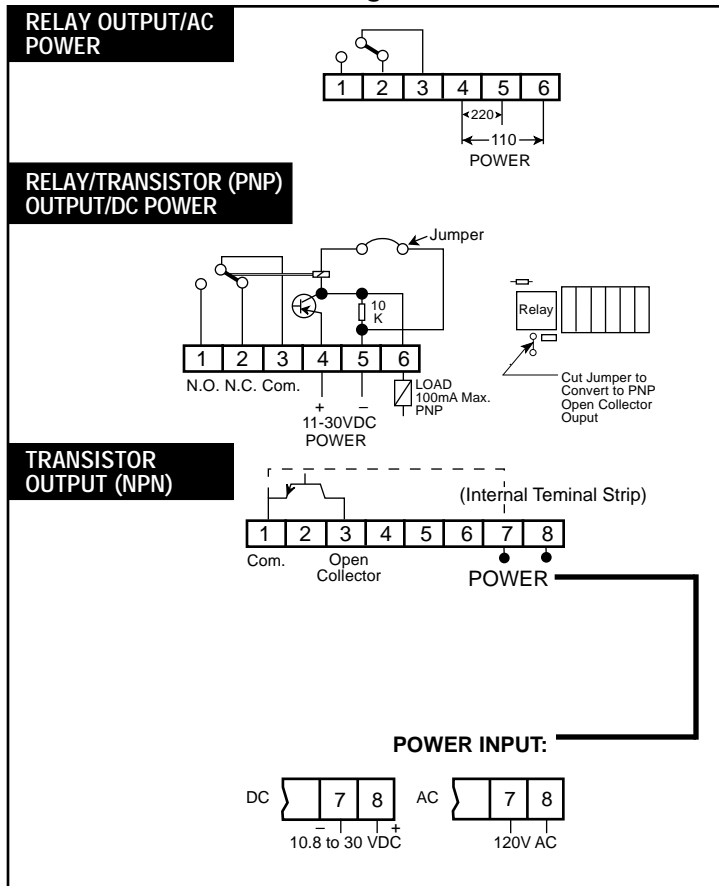
THRU-BEAM & FIBER OPTIC HEAVY DUTY SENSORS		
	Thru-Beam	Fiber Optic
Sensing Range	0-400 ft.	See Photoelectric Accessories section
Lens	Glass	
Light Source	Modulated Infrared LED	
Light/Dark Operate — Selectable	no	yes
Optional Plug-in Timers*	yes	
NEMA Enclosure Type	3, 4, 12 & 13	
Temperature Range	-30°C to +60°C	-20°C to +70°C
UL/CSA Certifications	no	yes
Sensitivity Adjustment	no	yes
Optic Heater	yes	no
Cable Entry	1/2" - 14 NPT Conduit	
Shipping Weight	18 oz.	20 oz.

* Refer to Photoelectric Accessories section

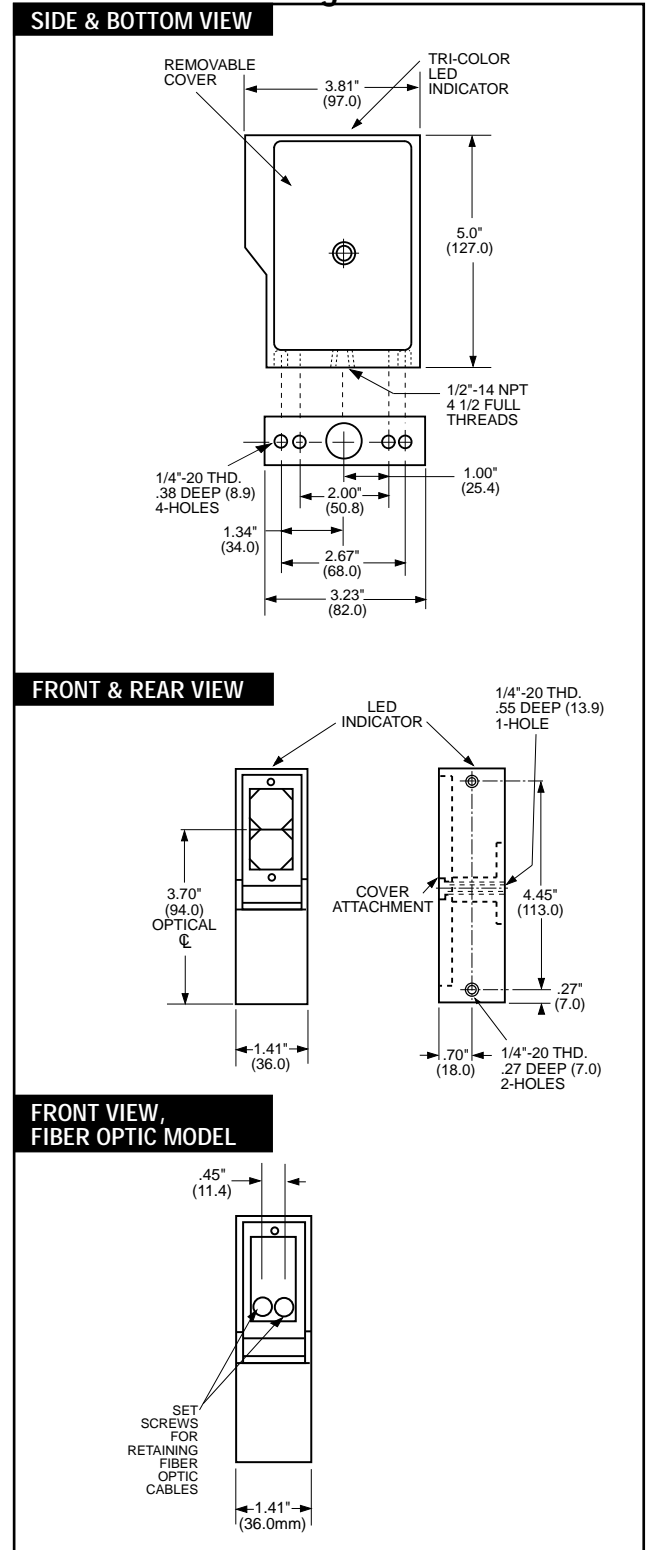
Emitter Circuit Drawings



Receiver Circuit Drawings



Dimensional Drawings



Photoelectric Sensors



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