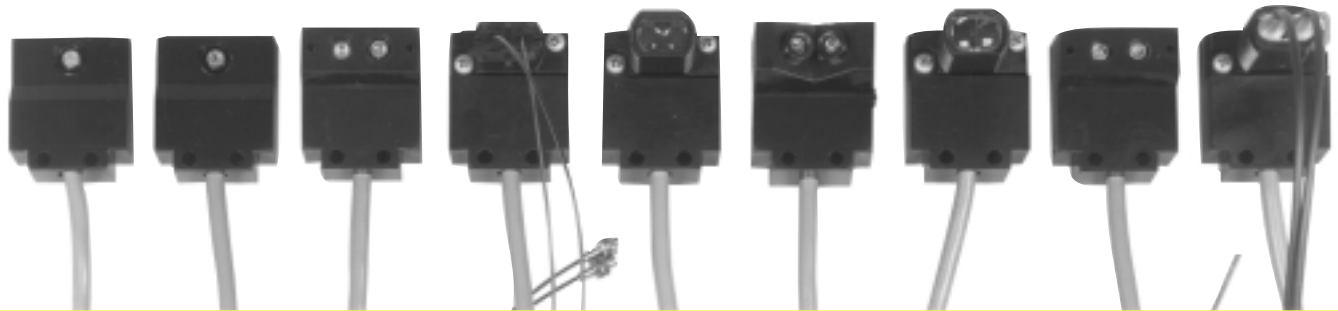




ECONO-BEAM® Sensors

Miniature Self-Contained DC Sensors

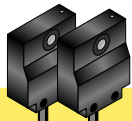


ECONO-BEAM Features

- Small, low cost, self-contained sensors engineered to provide reliable sensing, primarily in straightforward OEM applications
- Simple installation with no adjustments
- 10 to 30V dc operation
- Bipolar outputs (one NPN and one PNP); each output rated at 150 milliamps
- Choose models for light operate or dark operate
- Totally solid-state and epoxy-encapsulated for unlimited life
- Very compact, yet rugged enough to withstand tough sensing environments; rated IP66, NEMA 4X



Due to their small size, right-angle design, and unique shape, this sensor pair is ideal for mounting against the side rails of conveyors for use in flow control and product sensing, and are an excellent choice for use on supermarket checkout stands. They may be bolted face-to-face to form a powerful slot sensor for edgewise sensing of opaque materials or for sensing gear teeth, timing rings, or "flags," with enough excess gain to operate even in the dirtiest sensing environments.



Infrared, 880 nm

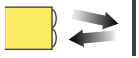
ECONO-BEAM Opposed Mode Emitter (E) and Receiver (R)

Models*	Range	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern
SE61E SE61R	1.8 m (6')	2 m (6.5')	10-30V dc	Bipolar NPN/PNP LO		
SE61E SE61RNC				Bipolar NPN/PNP DO		

*NOTES:

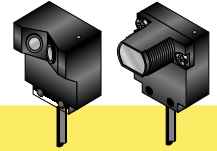
- 9 m (30') cables are available by adding suffix "W/30" to the model number of any cabled sensor (e.g., SE61RNC W/30).
- High-speed models may be ordered by adding suffix "MHS" to the model number of any standard ECONO-BEAM dc sensor (e.g., SE61EMHS). Response time for these sensors decreases to 1 millisecond; faster response comes at the expense of lower excess gain.

ECONO-BEAM Sensors – Miniature Self-Contained DC Sensors



Infrared, 940 nm
Visible red, 650 nm

Mechanical convergent-beam sensor's light source and receiver opto-elements are positioned in the housing so that sensing takes place where the optical patterns cross. The sensing beam is intense at the 0.5" convergent point, excellent for sensing materials of low reflectivity and very small targets such as wire or thread; also effective for reflective sensing in areas where background suppression is a requirement. Visible red models are useful in some high-contrast color registration applications.



ECONO-BEAM Convergent Mode


Models*	Focus	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern
					Performance based on 90% reflectance white test card	
Mechanical Convergent Mode; Infrared 940 nm						
SE612C	12 mm (0.5")	2 m (6.5')	10-30V dc	Bipolar NPN/PNP LO		
SE612CNC				Bipolar NPN/PNP DO		
Convergent Mode; Visible Red 650 nm						
SE612CV	16 mm (0.65")	2 m (6.5')	10-30V dc	Bipolar NPN/PNP LO		
SE612CVNC	Spot Size at Focus: 1.2 mm (0.05")			Bipolar NPN/PNP DO		

***NOTES:**

- 9 m (30') cables are available by adding suffix "W/30" to the model number of any cabled sensor (e.g., SE612C W/30).
- High-speed models may be ordered by adding suffix "MHS" to the model number of any standard ECONO-BEAM dc sensor (e.g., SE612CMHS). Response time for these sensors decreases to 1 millisecond; faster response comes at the expense of lower excess gain.

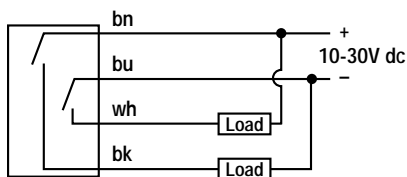
ECONO-BEAM Sensors – Miniature Self-Contained DC Sensors

ECONO-BEAM DC Specifications

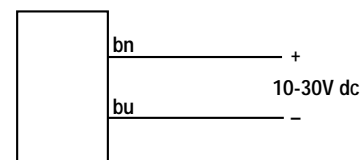
Supply Voltage and Current	10 to 30V dc (10% maximum ripple) at less than 20 mA (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	Bipolar: One current sourcing (PNP) and one current sinking (NPN) open-collector transistor
Output Rating	150 mA maximum each output Off-state leakage current less than 1 microamp Output saturation voltage (PNP output) less than 1 volt at 10 mA and less than 2 volts at 150 mA Output saturation voltage (NPN output) less than 200 millivolts at 10 mA and less than 1 volt at 150 mA
Output Protection Circuitry	Protected against false pulse on power-up
Output Response Time	Less than 10 milliseconds ON and OFF; independent of signal strength (NOTE: 100 millisecond delay on power-up: outputs do not conduct during this time.) MHS Models: 1 millisecond (Faster response comes at the expense of lower excess gain.)
Repeatability	0.4 ms; MHS models 0.06 ms; independent of signal strength.
Indicators	All models except emitter-only units have a top-mounted LED indicator that lights whenever the receiver "sees" its modulated light source.
Construction	Reinforced thermoplastic polyester (models LV, CV, F and FP) or polycarbonate (other models) housing, totally encapsulated for protection against moisture, vibration and corrosion.
Environmental Rating	Meets NEMA standards 1, 3, 3S, 4, 4X, 12, and 13; IEC IP66
Connections	PVC-jacketed 4-wire 2 m (6.5') or 9 m (30') cables
Operating Conditions	Temperature: 0° to +50°C (+32° to 122°F) Maximum relative humidity: 90% at 50°C (non-condensing)
Certifications	

ECONO-BEAM DC Hookups

All Sensors Except Emitters



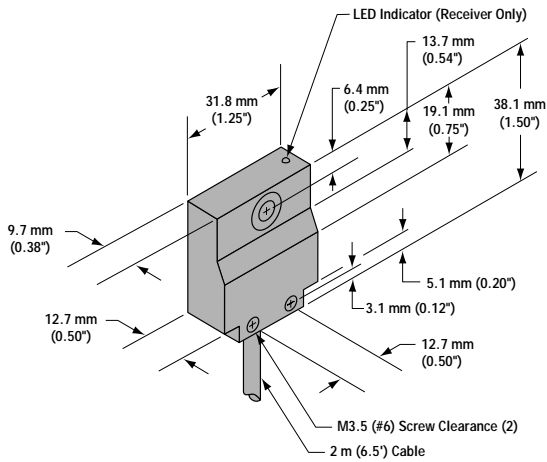
SE61E Emitters



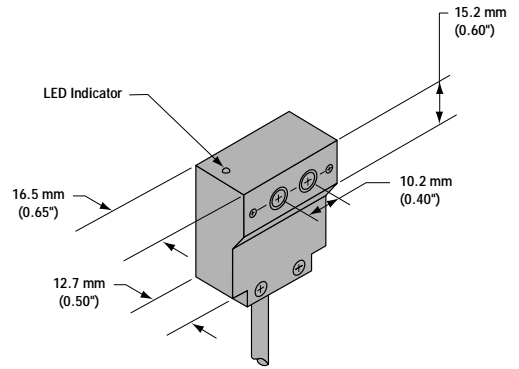
ECONO-BEAM Sensors – Miniature Self-Contained DC Sensors

ECONO-BEAM DC Dimensions

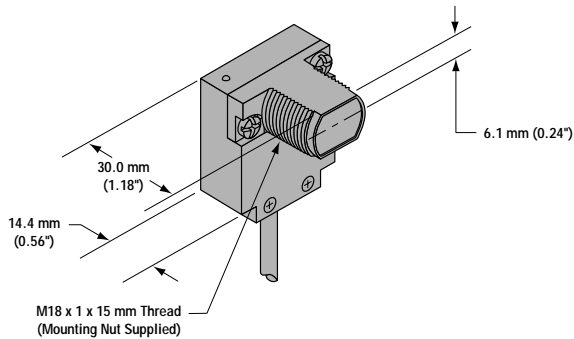
**Opposed Mode
(model suffix E & R)**



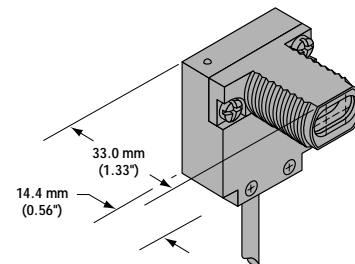
**Diffuse & Divergent Mode
(model suffix D & W)**



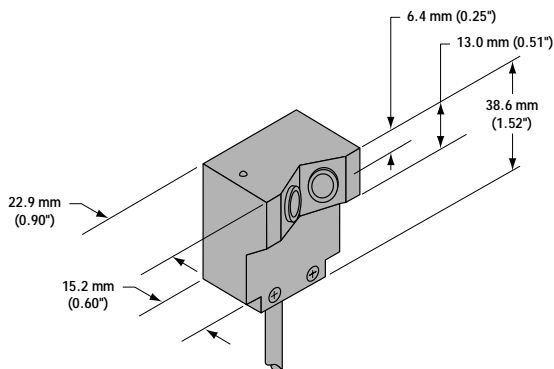
**Retroreflective & Convergent Mode
(model suffix LV & CV)**



**Glass Fiber Optic
(model suffix F)**



**Mechanical Convergent Mode
(model suffix C)**



**Plastic Fiber Optic
(model suffix FP)**

