

ECONO-BEAM™ model SE612CX

Miniature Self-contained Convergent Mode Photoelectric Sensor



The Banner model SE612CX ECONO-BEAM is a miniature modulated dc sensor engineered to provide reliable sensing performance primarily in OEM applications where optical contrast is high and where low cost is important. ECONO-BEAM sensors are totally self-contained: no external amplification is required. ECONO-BEAMs employ state-of-the-art SMD circuitry which is totally solid-state and epoxy-encapsulated for unlimited life.

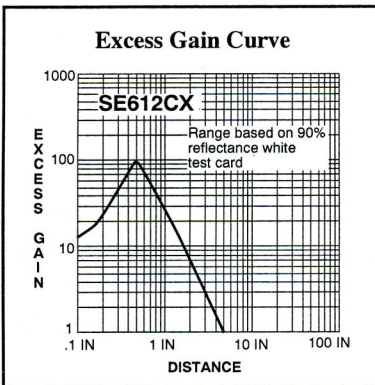
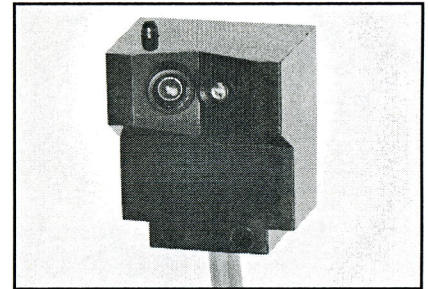
The SE612CX is a mechanical convergent beam sensor that detects an object by sensing its own light reflected by the object. The light source and receiver opto-elements are positioned in the housing so that sensing takes place in the area where the optical patterns cross.

The sensing beam is intense at the 0.5" convergent point. This enables the SE612CX to sense materials of low reflectivity such as wire or thread. Mechanical convergence is also effective for reflective sensing in applications where background suppression is required.

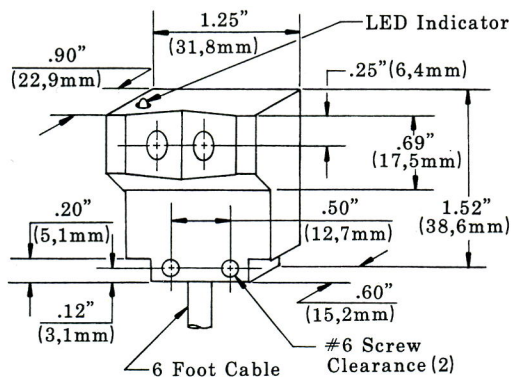
The output configuration of this sensor offers both NPN (current sinking) and PNP (current sourcing) transistor switches, each rated at 150mA.

Leakage current and saturation voltage are both very low for easy interfacing to PLCs and other solid-state circuitry, including Banner logic modules (see hookup information). ECONO-BEAMs are protected against false pulse on power-up and voltage polarity reversal. A red indicator LED on top of the sensor lights whenever the ECONO-BEAM senses its own modulated light.

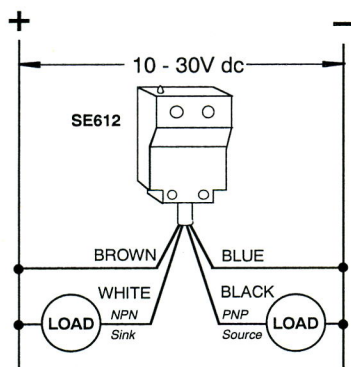
ECONO-BEAMs are constructed in molded Lexan® housings and meet NEMA 1, 3, 4, 12, and 13 ratings.



Dimension Drawing



SE612CX General Hookup Diagram



Specifications, ECONO-BEAM SE612CX

SUPPLY VOLTAGE: 10 to 30V dc (10% maximum ripple), at less than 20 milliamps, exclusive of load.

OUTPUT CONFIGURATION: one current sinking (NPN) and one current sourcing (PNP) open collector transistor. Outputs conduct when the sensor "sees" a light condition (LIGHT OPERATE). DARK OPERATE output is available by special order.

OUTPUT RATING: 150 milliamps each output. OFF-state leakage current less than 1 microamp. Output saturation voltage (NPN output) less than 200 millivolts at 10mA and less than 1 volt at 150mA. Output saturation voltage (PNP output) less than 1 volt at 10mA and less than 2 volts at 150mA.

CIRCUIT PROTECTION: protected against false output on power-up and power supply polarity reversal.

RESPONSE TIME: less than 10 milliseconds ON and OFF. NOTE: there is a 100 millisecond delay on power-up. Sensor outputs are non-conducting during this time.

REPEATABILITY: 0.4 milliseconds.

BEAM: infrared, 880 nanometers.

FOCUS POINT is 0.5 inches (12,7 mm) in front of the lens.

INDICATOR LED: top-mounted red LED indicator lights whenever the sensor "sees" its modulated light source.

CONSTRUCTION: Totally encapsulated in housing of molded or Lexan™ for protection against moisture, vibration, and corrosion. NEMA ratings 1, 3, 4, 12, and 13.

CABLE: PVC-jacketed 4-conductor cable (6-foot length) standard.

OPERATING TEMPERATURE RANGE: 0 to +50 degrees C (+32 to +122 degrees F).