TRI-TRONICS®

Smart Sensing Solutions Since 1954

U.S. EYE®

AC/DC Sensor
with Timer, Relay, or Triac Output

U.S. EYE®

The **U.S. EYE®** Sensors were designed and built by TRI-TRONICS® to answer the demand for economical, high-performance AC sensors. They are available with an optional Contrast Indicator for difficult sensing tasks.

Function Modes:

- ON/OFF – output relay switches for duration of input.
- Type T1, delay timer – offers two options using light/dark switch:
  a) ON delay for product jam or backup detection.
  b) ON delay for product void detection.
- Type T2, one-shot timer – may be used for short, momentary output pulse or in the triggerable mode for stop-motion detection (see Timing Sequence Data Charts).

Contrast Indicator Models
The Contrast Indicator displays a scaled reading of the level of light received by the sensor's photo detector. The more light received, the higher the reading. The U.S. EYE® switches its output when the light level passes the midscale reading of 5.

Fiber Optic Models
Flexible fiber optic light guides are available in sizes small enough to fit into your toughest job sensing sites, with models designed for inaccessible places, detection of extremely small parts, high temperature applications, corrosive environments, or high vibration locations, as well as straight light guides for Beam Break and bifurcated light guides for proximity sensing.

On or Off
Delay Switch

Features

- Easy installation – includes all accessories, mounting bracket, reflector, and hardware.
- Through-beam models include both light source and receiver.
- AC or DC from 24 to 130 volts; relay or triac outputs.
- Output relay contacts are rated at 5 amps.
- High-speed response – limited by the output relay itself. 7ms Beam Make or Beam Break.
- Fiber Optic models available with infrared or red LED light sources.
- Equipped with sensitivity adjustments.
- Red LED indicator showing status of output relay.
- Green LED beam status indicator for easy alignment.
- Switching power supply eliminates failures often caused by power line transients.

Model Selection

U.S. EYE®

With Contrast Indicator	Without Contrast Indicator	Light Source	Max Range	Speed of Response	Output Information
Beam Break Mode Retroreflective (Models Include 78P Reflector)					
UCR-A	UR-A	Infrared	15 ft.	7ms	On/Off Relay
TUCR-A	TUR-A	Infrared	15 ft.	8ms	On/Off Triac
UCR-AT1	UR-AT1	Infrared	15 ft.	7ms	On or Off Delay
UCR-AT2	UR-AT2	Infrared	15 ft.	7ms	One-Shot Motion
Beam Break Opposed Mode (Models Include Both Light Source and Receiver)					
UCT-A	UT-A	Infrared	75 ft.	7ms	On/Off Relay
UCT-AT1	UT-AT1	Infrared	75 ft.	7ms	On or Off Delay
UCT-AT2	UT-AT2	Infrared	75 ft.	7ms	One-Shot Motion
Receiver Replacements		**Light Source Replacements**			
UCT-AR	UT-AR	UT	order replacements separately		
UCT-AT1R	UT-AT1R	UT	order replacements separately		
UCT-AT2R	UT-AT2R	UT	order replacements separately		
Beam Make Mode Proximity Diffused Beam					
UCD-A	UD-A	Infrared	3 ft.	7ms	On/Off Relay
TUCD-A	TUD-A	Infrared	3 ft.	8ms	On/Off Triac
UCD-AT1	UD-AT1	Infrared	3 ft.	7ms	On or Off Delay
UCD-AT2	UD-AT2	Infrared	3 ft.	7ms	One-Shot Motion

Fiberoptic Mode

With Contrast Indicator	Without Contrast Indicator	Light Source	Opposed Range*		Proximity Range*		Speed of Response	Output Information
			With Lens	W/O Lens	With Lens	W/O Lens		
UCF-A	UF-A	Infrared	12 ft.	2 ft.	4 in.	2.5 in.	7ms	On/Off Relay
TUCF-A	TUF-A	Infrared	12 ft.	2 ft.	4 in.	2.5 in.	8ms	On/Off Triac
UCF-AT1	UF-AT1	Infrared	12 ft.	2 ft.	4 in.	2.5 in.	7ms	On or Off Delay
UCF-AT2	UF-AT2	Infrared	12 ft.	2 ft.	4 in.	2.5 in.	7ms	One-Shot Motion
UCFR-A	UFR-A	Red	6 ft.	8 in.	4 in.	1 in.	7ms	On/Off Relay
UCFR-AT1	UFR-AT1	Red	6 ft.	8 in.	4 in.	1 in.	7ms	On or Off Delay
UCFR-AT2	UFR-AT2	Red	6 ft.	8 in.	4 in.	1 in.	7ms	One-Shot Motion

NOTES:
- FIBER OPTIC range tests utilized .125 in. diameter fiber bundles and UAC-15 lenses as indicated.
- PROXIMITY tests utilized a 90% Reflective target. RETROREFLECTIVE tests utilized a 78P reflector.

Features

LENS OR FIBER
See Sensing Ranges for best choice.

BEAM STATUS INDICATOR
Green LED illuminates when beam is established.

SENSITIVITY
Provided on all models.

TIMER
Timer Range: 0.1 to 15 seconds.

OUTPUT INDICATOR
Red LED illuminates when outputs are ON.

10-LED CONTRAST INDICATOR
Displays a 10 bar LED scaled reading of contrasting light level.

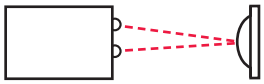
LIGHT/DARK SWITCH
Models with timers have Light/Dark switch behind rear cover.

REMOVABLE STRAIN RELIEF

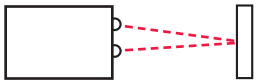
Specifications

U.S. EYE®

RETROREFLECTIVE



PROXIMITY



THRU-BEAM
dual beam for long range

FIBER OPTIC
(Refer to Fiberoptic Light Guide Section)

OPERATING RANGE: 24 to 130 VAC or VDC

POWER CONSUMPTION: 2VA

TEMPERATURE RANGE: -10°C to + 50°C (14°F to 122°F)

OUTPUT:
- SPDT Relay Models: 5 amps @ 120VAC
  Normally de-energized before input occurs.
- Isolated Solid State TRIAC Models: 1 amp at 50 C

RESPONSE TIME: Relax: 7ms light or dark TRIAC: 8ms

TIMER RANGE: 0.1 to 15 seconds

CONTRAST INDICATOR MODELS: Displays a 10 bar LED scaled reading of contrasting light level

LED LIGHT SOURCE WAVELENGTH: Infrared (880nm), Red (660nm)

SENSITIVITY ADJUSTMENT: Provided on all models

BEAM STATUS INDICATOR: Green LED: ON when beam is established

OUTPUT INDICATOR: Red LED: Follows status of output relay
Cabling: 6ft standard, 5-conductor

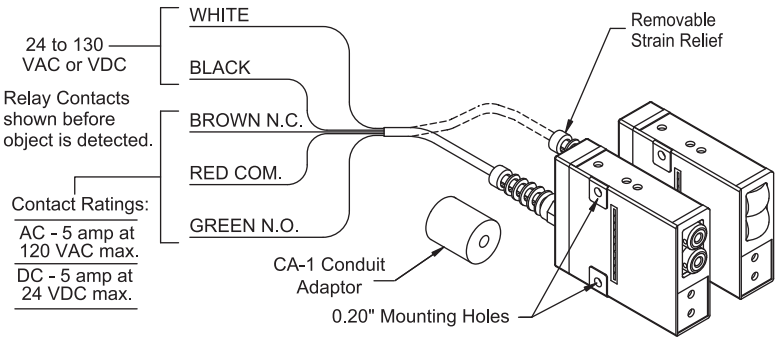
Accessories

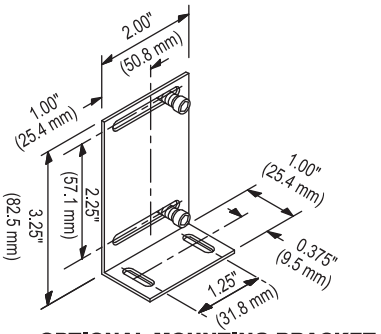
Model #	Miscellaneous
CA-11/2 in.	Conduit Adaptor
FSR-1	Flexible Strain Relief
UMB-1	U.S. Eye Bracket
USB-1	U.S. Eye Sub-Bracket

RoHS Compliant
Product subject to change without notice

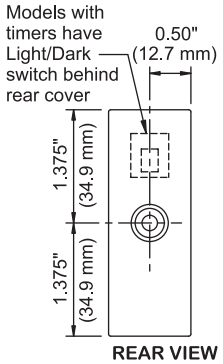
Connections and Dimensions

U.S. EYE

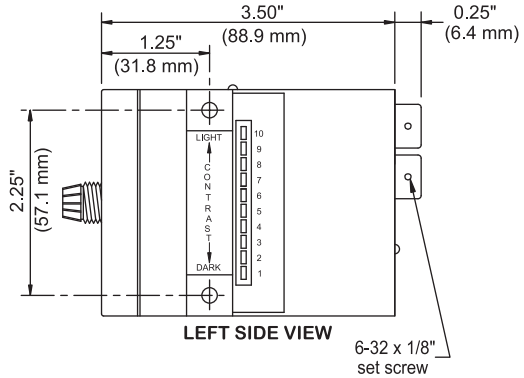




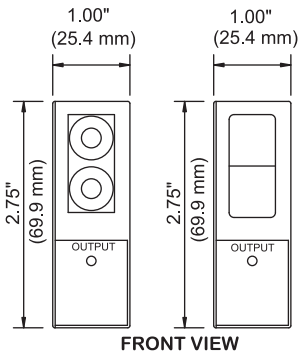
OPTIONAL MOUNTING BRACKET
MODEL UMB-1 WITH HARDWARE



REAR VIEW



LEFT SIDE VIEW



FRONT VIEW

U. S. EYE™ PHOTOELECTRIC SENSOR
(WITH MECHANICAL RELAY or TRIAC OUTPUT)
ALL DIMENSIONS IN BRACKETS ARE METRIC