

NEW!



"Small, Rugged and Powerful...  
yet Low in Price"

MINI-EYE™

# Miniature Sensor

MINI-EYE™

2

General Application Photoelectric Sensors



## MINI-EYE™

“Small, Rugged and Powerful...  
yet Low in Price”

The TRI-TRONICS MINI-EYE™ photoelectric sensors are designed to be low in cost and high in value. The sensors are waterproof and are enclosed in a high-impact plastic housing.

Thru-Beam Models utilize a separate light source and receiver for “Beam Make” or “Beam Break” sensing. Recommended for long-range sensing or for use in environments where dust or dirt buildup may cover the lens.

The sensors provide a very narrow beam path from the light source to the receiver and are perfect for sensing small gaps or precise sensing tasks, which is critical when attempting to resolve the exact location of passing objects. The light source requires a simple 2-wire connection and functions independently of other receivers.

Retroreflective Models operate in either the “Beam Make” or “Beam Break” sensing mode and are designed to be used with a prismatic reflector. Detection occurs when the light beam is broken by a passing target or object. The visible, red, polarized model helps to prevent “proxing” or responding to undesirable light reflecting from shiny objects, such as cans, glass and clear plastic. The invisible, infrared light source model is rec-

Our Lowest Cost Sensor that outperforms anything in its price range!

Applications:

- Presence/Absence Detection
- Material Handling
- Counting
- Sorting
- Orientation
- Web Break Detection

ommended for long-range sensing.

Proximity Models are designed for close range sensing tasks and operate by detecting the reflected light from targeted objects. The red LED light source is recommended for detecting transparent objects, such as clear glass or plastic bottles. The invisible infrared LED light source is recommended for general purpose sensing tasks.

All MINI-EYE™ sensors are available with a quick disconnect M8 4-PIN connector or a potted 6' (1.8 m) 4-wire cable, and with a red or infrared LED light source. They are easy to set up and can operate in either the light “ON” or dark “ON” mode. For light “ON” operation, connect the white wire to negative and for dark “ON” operation, simply connect the white wire to positive.

Hands down, the MINI-EYE is a tough little sensor that outperforms anything in its price range!

# Features

- Standard and 18 mm mounting models
- Laser, thru-beam models
- Sensors are available with either infrared (IR) or red LED light source, and either NPN or PNP output transistor
- Fixed Optics - Proximity, Retroreflective, Polarized Retroreflective, and Thru-Beam
- Selectable Light "ON" or dark "ON" operation
- High immunity to ambient light and strobes
- Waterproof with high-impact housing
- High Speed — 600  $\mu$ s; 1.1 ms (opposed mode)
- Potted 6' 4-wire cable or M8 4-PIN connector
- Operates between 10 to 30 VDC (5-volt models available – consult factory for details)
- Reverse polarity protection
- Short circuit protection
- Power-up output suppression
- EMC tested



## Light Source Guidelines

### INVISIBLE INFRARED LIGHT SOURCE (850 nm)

- A. Best choice in most opaque object sensing tasks
- B. Provides longest possible sensing range in either Beam Make or Beam Break sensing modes
- C. Best choice in hostile environments; useful in penetrating lens contamination
- D. Preferred when sensing dark colored objects in the proximity (Beam Make) mode, i.e., black, blue, green, etc.

### RED LED LIGHT SOURCE (633 nm)

- A. Useful when sensing translucent objects in proximity (Beam Make) mode
- B. Can be polarized for retroreflective (Beam Break) sensing to reduce proxing on shiny objects
- C. Visible red LED allows for easy alignment

**NOTE:** Red, laser light source, 650 nm, Class 1



# Fine Tuning Adjustment



18 mm Mounting

Gain (Sensitivity)  
Screwdriver Adjustment  
(Adjustment N/A on Receiver models)

Power "ON" Indicator  
GREEN LED

Output Status Indicator  
RED LED

(N/A on Light Source models)



# Typical Applications

**Opaque Object Detection**

**Gating and Sorting**

**Beam Break Detection**

**Product Inspection and Orientation**

**Cap Detection and Position Ejection**

**Small Parts Detection**

Sensor	Light Source	Receiver
OUT (Red LED)	PWR (Green LED)	OUT (Red LED)
PWR (Green LED)	PWR (Green LED)	PWR (Green LED)
SENS (Screwdriver)	SENS (Screwdriver)	SENS (Screwdriver)



# Selection Guidelines

18 mm  
Available  
Spring '07

## HOW TO SPECIFY

MODELS		DESCRIPTION	RANGE
STANDARD 18 mm		SHORT RANGE PROXIMITY	
MIVC	MIVC-18	IR, NPN, Connector	6" (152.4 mm)
MIV	MIV-18	IR, NPN, Cabled	6" (152.4 mm)
MRVC	MRVC-18	Red, NPN, Connector	4" (101.6 mm)
MRV	MRV-18	Red, NPN, Cabled	4" (101.6 mm)
PMIVC	PMIVC-18	IR, PNP, Connector	6" (152.4 mm)
PMIV	PMIV-18	IR, PNP, Cabled	6" (152.4 mm)
PMRVC	PMRVC-18	Red, PNP, Connector	4" (101.6 mm)
PMRV	PMRV-18	Red, PNP, Cabled	4" (101.6 mm)
		LONG RANGE PROXIMITY	
MIPC	MIPC-18	IR, NPN, Connector	24" (609.6 mm)
MIP	MIP-18	IR, NPN, Cabled	24" (609.6 mm)
MRPC	MRPC-18	Red, NPN, Connector	16" (406.4 mm)
MRP	MRP-18	Red, NPN, Cabled	16" (406.4 mm)
PMIPC	PMIPC-18	IR, PNP, Connector	24" (609.6 mm)
PMIP	PMIP-18	IR, PNP, Cabled	24" (609.6 mm)
PMRPC	PMRPC-18	Red, PNP, Connector	16" (406.4 mm)
PMRP	PMRP-18	Red, PNP, Cabled	16" (406.4 mm)
		RETROREFLECTIVE	
MIRC	MIRC-18	IR, NPN, Connector	7' (2.1 m)
MIR	MIR-18	IR, NPN, Cabled	7' (2.1 m)
MRRC	MRRC-18	Red, Polarized, NPN, Connector	8' (2.4 m)
MRR	MRR-18	Red, Polarized, NPN, Cabled	8' (2.4 m)
PMIRC	PMIRC-18	IR, PNP, Connector	7' (2.1 m)
PMIR	PMIR-18	IR, PNP, Cabled	7' (2.1 m)
PMRRC	PMRRC-18	Red, Polarized, PNP, Connector	8' (2.4 m)
PMRR	PMRR-18	Red, Polarized, PNP, Cabled	8' (2.4 m)
		THRU-BEAM	
LIGHT SOURCE			
MLSIC	MLSIC-18	Infrared, Connector	65' (20 m)
MLSI	MLSI-18	Infrared, Cabled	65' (20 m)
MLSRC	MLSRC-18	Red, Connector	15' (4.6 m)
MLSR	MLSR-18	Red, Cabled	15' (4.6 m)
RECEIVERS			
MRC	MRC-18	NPN, Connector	DEPENDENT ON LIGHT SOURCE
MR	MR-18	NPN, Cabled	
PMRC	PMRC-18	PNP, Connector	
PMR	PMR-18	PNP, Cabled	
LASER THRU-BEAM			
LIGHT SOURCE			
MLZRC	MLZRC-18	Red, Connector	200' (61 m)
MLZR	MLZR-18	Red, Cabled	200' (61 m)
RECEIVERS			
MLRC	MLRC-18	NPN, Connector	
MLR	MLR-18	NPN, Cabled	
PMLRC	PMLRC-18	PNP, Connector	
PMLR	PMLR-18	PNP, Cabled	

*NOTE:*  
Retroreflective sensors equipped with a red light source are polarized to prevent proxing off shiny objects. Proximity test utilized a 90% reflective white target.

*Retroreflective tests utilized a 3" diam., round reflector, Model AR3.*

*NOTE:* Receivers can be used with either IR or Red Light Sources.

Laser  
Available  
Summer '07



# Accessories

## 4-Wire Nano Cable, M8



GEC-6  
6' (1.8 m) cable with connector



GEC-15  
15' (4.6 m) cable with connector



GEC-25  
25' (7.6 m) cable with connector

RGEC-6  
6' (1.8 m) cable / right angle conn.

RGEC-15  
15' (4.6 m) cable / right angle conn.

GEX-9  
9' (2.7 m) extension cable

Standard  
Mounting



18 mm  
Mounting

## Screw Mount Reflectors



78P  
4.4 in. x 1.9 in.



AR3  
3 in. Diameter

## Optional Mounting Brackets



MB-18  
Mounting Bracket  
(for 18 mm  
mounting models)



MIB-1  
Stainless Bracket  
Assembly

## Prismatic High-Performance Reflectors



AR4060  
1.6" x 2.36"  
40.5 x 60 mm



AR6151  
AR6151G  
(Chemical Resistant  
Glass Cover)  
2.4" x 2.0"  
(61 x 51 mm)



AR-46  
1.8" diameter  
46 mm diameter  
Glue Mount



MIB-2  
Stainless Bracket  
Assembly

