TRI-TRONICS®

Smart Sensing Solutions Since 1954

Mark·Eye® By Tri-Tronics

Opacity Mode Registration Mark Gap Sensor

Opacity Mode Registration Mark Gap Sensor

The **MARK•EYE**® is a registration mark sensor designed to see printed registration marks on most packaging materials on a continuous web. The Mark•Eye utilizes a white LED light source that is optimized to detect printed registration marks on translucent, transparent, and many metallized films and paper. Most packaging materials (except foil) are translucent. Many of the translucent packaging materials allow light to penetrate either the backing material or the registration mark. Because this sensor operates in the opacity sensing mode, the color of the registration mark simply doesn't matter. The one-touch setup enables the sensor to be adjusted with a single push of a button. There is no more guess work, making the operator's adjustment procedure easy.

Features

- One touch AUTOSET
- Two AUTOSET options; background lighter than mark or background darker than mark
- 100μs response time
- Remote AUTOSET; repeats last button pushed
- 15ms pulse stretcher
- Cable or M12 quick disconnect
- Accurate edge detection
- White light LED

Benefits

- Fast & Easy setup minimizes down time
- Accessible in hard to reach areas
- Reliable and repeatable performance
- Consistent detection of mark from startup to full speed, unnoticeable migration
- Simple mounting configurations - through-holes and threaded inserts

How to Specify

1. Select sensor model:
ME = MARK•EYE®

2. White light source:
WL = White LED full spectrum

3. Select Connection:
Blank = 6ft (1.8m) 5-conductor cable
C = Connector, 6in (152mm) pigtail, M12 5-pin

Example: ME WL C

MARK•EYE® ——————
Light Emitter ——————
Connection ——————

Features

LOCATOR TABS
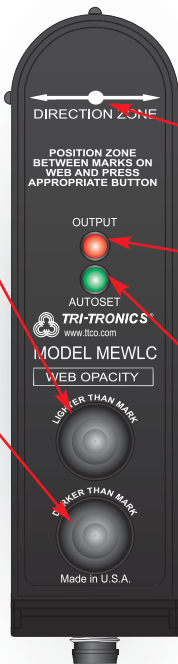Helps to center optics for proper detection of registration marks.

LIGHTER THAN MARK
1. AUTOSET: Press and hold for one second with light background in view.
2. Hold down both buttons for two seconds to change output from Dark ON to Light ON.

DARKER THAN MARK
1. AUTOSET: Press and hold for one second with dark background in view.
2. Hold down both buttons for two seconds to change output from Dark ON to Light ON.

NOTE: Optimized for registration mark sensing.

PULSE STRETCHER: To enable Pulse Stretcher, please refer to Setup Instructions.

DIRECTION ZONE

POSITION ZONE BETWEEN MARKS ON WEB AND PRESS APPROPRIATE BUTTON

OUTPUT

AUTOSET
TRI-TRONICS®
www.ttco.com
MODEL MEWLC
WEB OPACITY
LIGHTER THAN MARK
DARKER THAN MARK
Made in U.S.A.

CENTER of DETECTION
This point marks the exact center of light source and receiver through-beam.

RED LED OUTPUT INDICATOR
Illuminates when output is on.
Flashes when sensor is shorted or overloaded.

GREEN LED AUTOSET
Flashes rapidly during AUTOSET, for about 1/2 a second, and remains illuminated when complete.
Flashes rapidly during AUTOSET, for about one second, and then flashes slowly with red LED Output Indicator four times when AUTOSET is incomplete.

Hardware & Accessories

5-Wire Shielded MicroCable, M12

GSEC-6
6ft (1.8m) cable

GSEC-15
15ft (4.6m) cable

GSEC-25
25ft (7.62m) cable

GRSEC-6
6ft (1.8m) right angle connector

GRSEC-15
15ft (4.6m) right angle connector

GRSEC-25
25ft (7.6m) right angle connector

GSEC-2MU
6.5ft (2.0m) unshielded cable

GSEC-5MU
16.4ft (5.0m) unshielded cable

5-Wire Extension Cable, M12

GX-25
25ft (7.6m) extension cable

White Light Source (Broadband Color Spectrum)
The white light LED light source built into the MARK•EYE® promotes easy detection of the largest variety of color marks printed on the largest variety of colored web materials.
• The best choice for detecting printed registration marks on packaging materials
• The best choice for detecting pale yellow marks on white backgrounds

Specifications

SUPPLY VOLTAGE
- 10 to 30VDC
- Polarity Protected

CURRENT REQUIREMENTS
- 45mA (exclusive of load)

OUTPUT TRANSISTORS
- (1) NPN and (1) PNP output transistor
- Sensor outputs can sink or source up to 150mA (current limit).
- All outputs are continuously short circuit protected.

REMOTE AUTOSET INPUT
- Opto isolated momentary sinking input (10mA)

RESPONSE TIME
- Light/Dark state response = 100µs

LED LIGHT SOURCE
- High intensity white LED
- Pulse modulated

PULSE STRETCHER TIMER
(Selectable)
- Provides minimum of 15 millisecond output duration.

PUSH-BUTTON CONTROL
- Automatic setup routines based on web opacity.
- One push-button setup
- Pushing both buttons simultaneously inverts output.

HYSTERESIS
- Minimal hysteresis promotes detection of low contrast registration marks.

LIGHT IMMUNITY
- Responds to sensor's pulsed modulated light source resulting in high immunity to most ambient light.

INDICATORS
- Green LED flashes when AUTOSET routine is activated and stays illuminated when AUTOSET is completed.
- Red LED illuminates when sensor's output transistors are ON.
  NOTE: The status of the output transistors can be inverted by pushing both buttons simultaneously.

AMBIENT TEMPERATURE
- -40°C to 70°C (-40°F to 158°F)
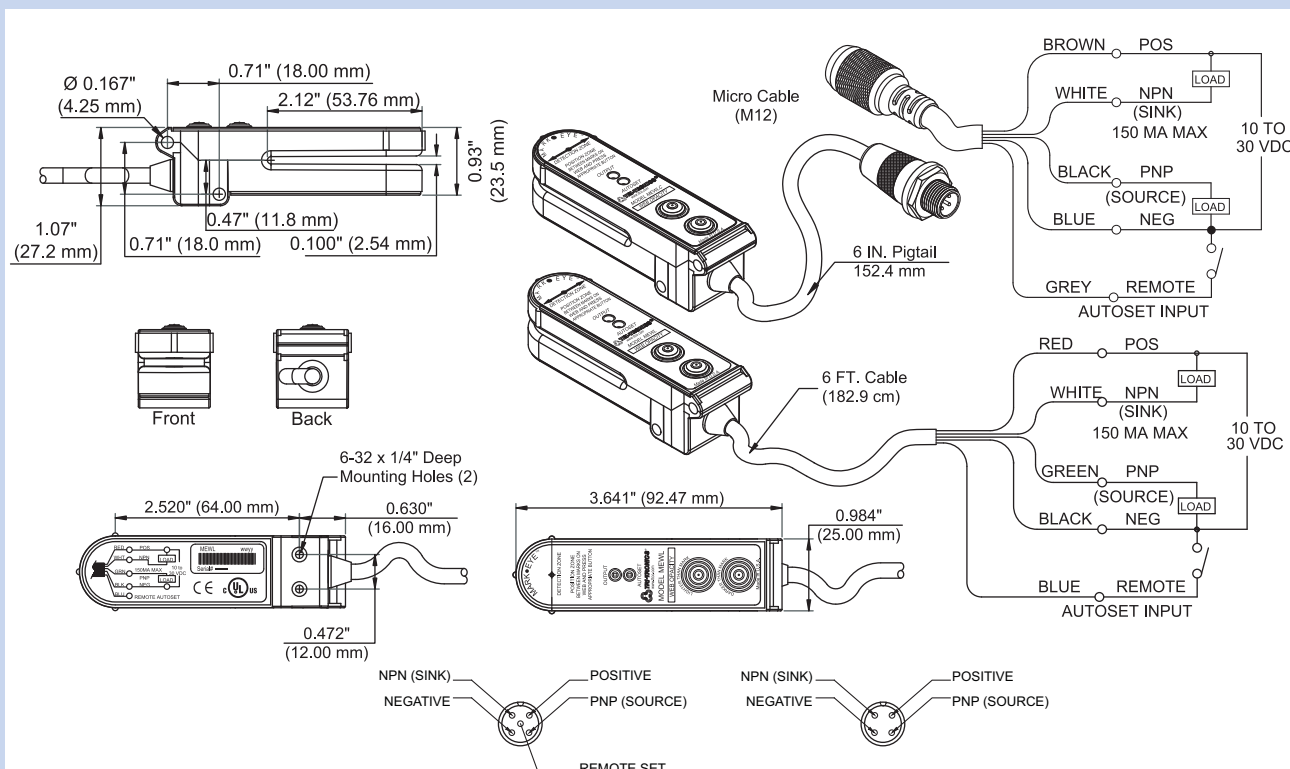
RUGGED CONSTRUCTION
- Chemical resistant high thermoplastic PPS housing
- Waterproof, ratings: NEMA 4 and IP66
- Conforms to heavy industry grade CE and UL requirements

NOTE: Red flashing LED —
Short circuit condition exists

Green flashing LED —
No contrast through web

RoHS Compliant
Product subject to change without notice

Connections and Dimensions

MARK•EYE®