



## High Performance Clear Object Sensor

# RETROSMART®

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The **SMARTEYE® RETROSMART®** retroreflective sensor is optimized to detect translucent/transparent containers and shiny objects. You can depend on the **RETROSMART®** sensor's ability to reliably sense any object, regardless of the size or shape, from the leading edge to the trailing edge without false signals, a requirement when the sensing task involves monitoring a conveyor line for jam detection. The sensor's red, narrow light beam assures accuracy in detecting the leading edge of any product to trigger the response, such as filling, capping, labeling, and coding.

Many of today's industrial control functions require a sensor that can provide dependable detection of position or presence of transparent containers. The **RETROSMART®** will provide a single, non-chattering output for each transparent container that passes by, independent of size, shape, empty, or full.

Imagine... just point the **RETROSMART®** sensor's red, narrow light beam at the reflector and push the AUTOSET button one time. Now sit back and watch the sensor flawlessly detect any size PET bottle filled with water, with no need to worry about burn-through or double signals. When the efficiency of an entire production line depends on the performance of a photoelectric sensor, the **RETROSMART®** is the smart choice.



### Features

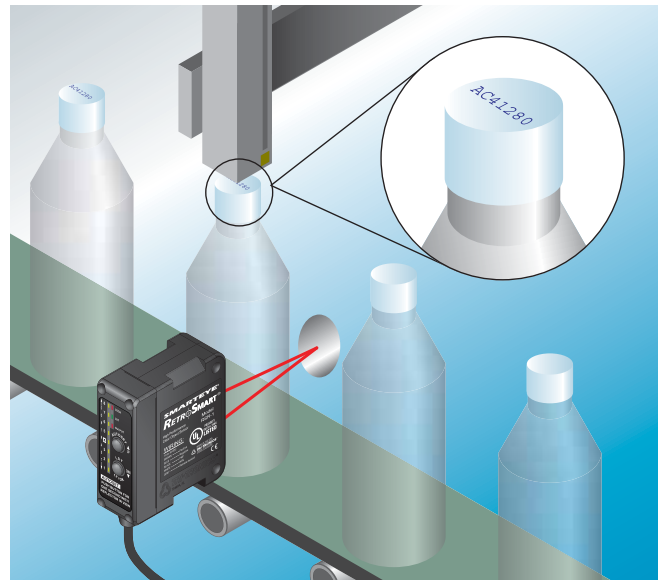
- 100µs response time
- Polarized Retroreflective - from a few inches up to 8 feet
- Remote AUTOSET
- Light State Tracking
- Button lockout
- Cable or quick disconnect versions
- Immune to most ambient light, including strobes

### Benefits

- Reliable and repeatable detection of the clearest and shiniest of materials from leading to trailing edge
- No false triggers
- Easy Remote AUTOSET for hard to reach areas
- Through-hole or bracket mounting for easy installation
- Robust design to improve up-time

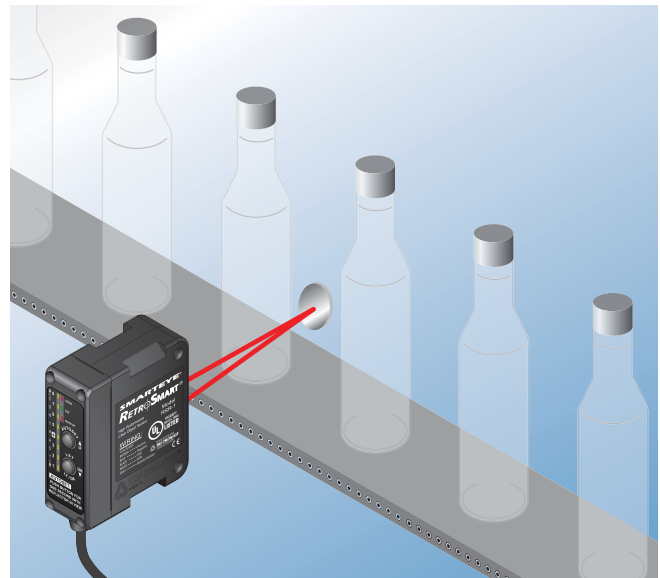
## Trigger Sensor for Code Marking

- Accurate from leading edge to trailing edge.
- No false triggers
- Remove print distortion errors
- Easy setup
- Available with glass lens for ink-jet applications



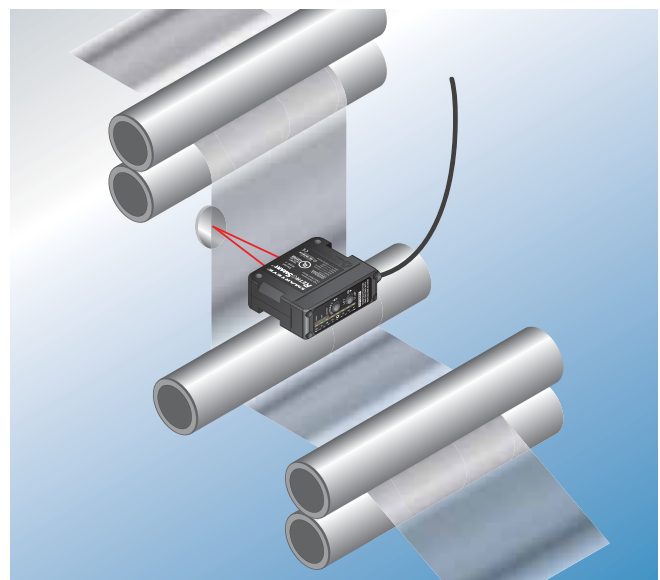
## Detection of Transparent Containers

- Full or empty, no false triggers
- Solid, repeatable performance regardless of the shape, shininess, or transparency
- Works on glass, plastic, acrylic, or clear Mylar films



## Clear Detection Applications

- Clear bottles, vials, food containers (clamshell boxes), syringes, liquids, etc.
- Clear web break/web splice
- Inspection systems for glass bottles, PET bottles, food products, etc.
- No false signals sensing shiny bags, foil webs, or cans



# Features

## AGS

AGS (Automatic Gain Select) is an unique feature that provides automatic digital selection of amplifier gain based upon your sensing requirements.

## AUTOSET ADJUSTMENT

The AUTOSET adjustment routine only requires the push of one button, one time. Even in a dynamic operating condition, with ongoing input events, all you have to do is push the button for a perfect setting.

## EDR®

Another unique feature is the digitally controlled EDR® (Enhanced Dynamic Range) circuit. It prevents dark state saturation and expands the operating range without reducing amplifier gain.

## REMOTE AUTOSET

To remotely AUTOSET the sensor, apply a momentary contact closure from the AUTOSET input wire to negative as shown in the wiring diagram.

## 8 LED DUAL FUNCTION INDICATOR

Contrast Indicator – Provides “at-a-glance” performance data.

## LOCK

When this feature is enabled the sensor becomes tamperproof. *Note: The remote AUTOSET is not affected by the lock.*

## LST

LST (Light State Tracking) automatically adjusts the sensor up in order to maintain a perfect setting. When diminishing conditions occur, as in a dusty environment, or slight misalignment issues, the sensor will "bump" up the gain to compensate for the reduced performance.

## HIGH SPEED

100 microsecond response time f high-speed bottling, filling, or printing applications.

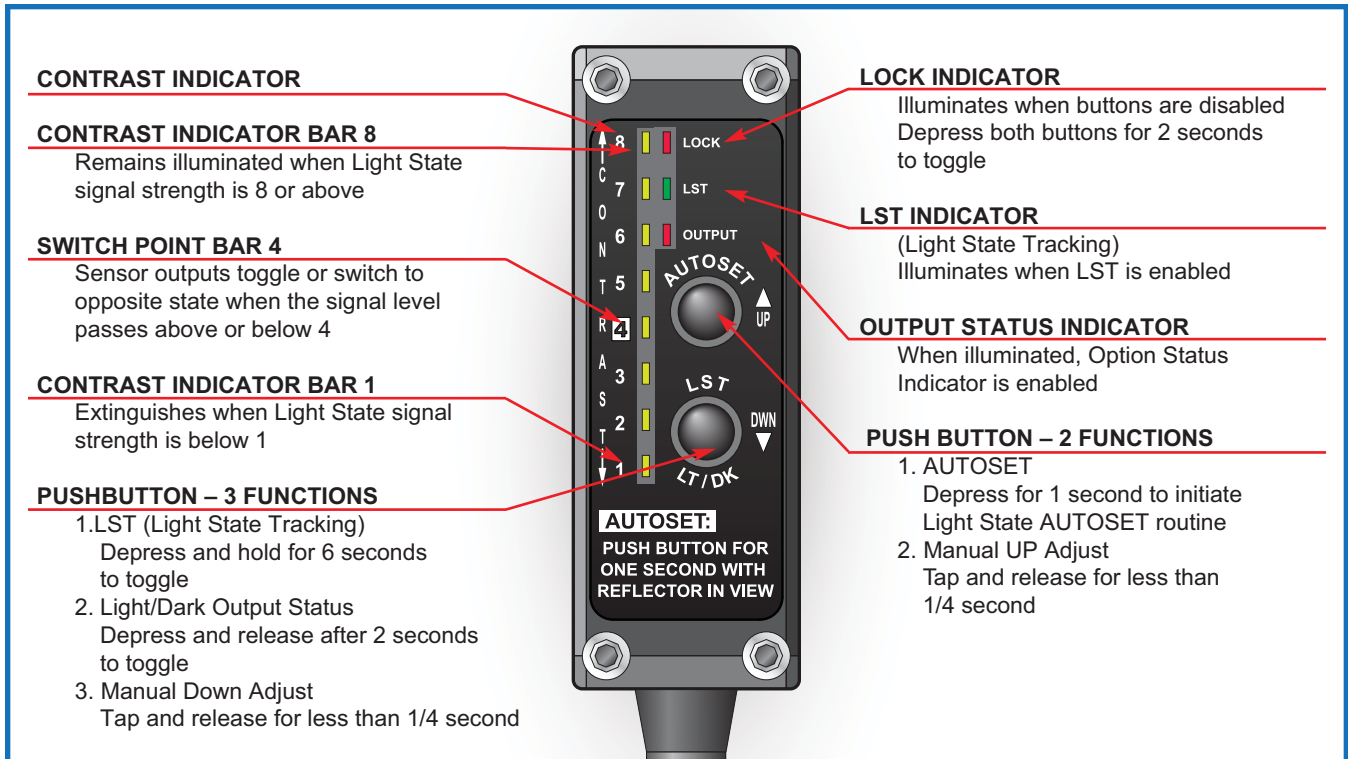
## CONNECTIONS

Built-in 12mm connector or 6' cable.



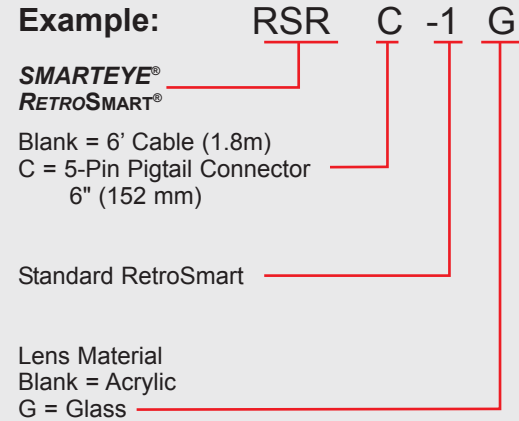
## MOUNTING OPTIONS

Through-hole, or bracket mount.



- 1. Select Sensor:**  
SMARTEYE® RETROSMART®
- 2. Select Cable or Connector:**  
Blank = 6 foot (1.8m)  
C = 6 inch (152mm) pigtail with 5-pin connector (*accessory cable required*)
- 3.** 1 = Standard RetroSmart
- 4. Select Lens Material:**  
Blank = Acrylic  
G = Chemical Resistant Glass Window

*NOTE: All models include AR6151 high performance prismatic reflector.*



## Hardware & Accessories

Extension Cable and Bracket Selection Guide

### Cables

#### 5-Wire Shielded MicroCable, M-12

- GSEC-6**  
6' (1.8m) cable with connector

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- GSEC-15**  
15' (4.6m) cable with connector

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- GSEC-25**  
25' (7.62m) cable with connector

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- GRSEC-6**  
6' (1.8m) cable/right angle connector

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- GRSEC-15**  
15' (4.6m) cable/right angle connector

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- GRSEC-25**  
25' (7.6m) cable/right angle connector

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- GPSEC-15**  
15' (4.6m) cable with connector, non-metallic shell

#### 5-Wire Unshielded Cable, M-12, Low Cost

- GSEC-2MU**  
5.5' (2.0m) cable with connector

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- GSEC-5MU**  
16.4' (5.0m) cable with connector

#### 5-Wire Extension Cable, M-12

- GX-25**  
25' (7.6m) extension cable

### Reflectors

#### Screw Mount

- AR4060**  
1.6" x 2.36" (40.5 x 60mm)

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- AR6151**  
2.4" x 2.0" (61 x 51mm)

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

#### Glue Mount

- AR46**  
1.8" diam. (46mm diam.)

#### Economical Reflective Discs with Adhesive Backing

- PRD1**  
1" x .03" (25mm x .75mm)

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- PRD2**  
2" x .03" (50mm x .75mm)

*Note: See page 5-5 in the Accessories section for a full listing of reflectors.*

### Mounting Bracket



**SEB-4**  
Stainless Steel  
Mounting Bracket

# Specifications

## SUPPLY VOLTAGE

- 10 to 30 VDC
- Polarity Protected

## CURRENT REQUIREMENTS

- 50mA (exclusive of load)

## OUTPUT TRANSISTORS

- (1) NPN and (1) PNP output transistor:  
NPN: Sink up to 150mA  
PNP: Source up to 150mA
- Continuous short-circuit protection
- Outputs protected from pulsing during power up

## REMOTE AUTOSET INPUT

- Opto-isolated momentary sinking input (10mA)

## RESPONSE TIME

- Light State = **100** microseconds
- Dark State = **100** microseconds

## LED LIGHT SOURCE

- Red 660 nm
- Pulse Modulated

## PUSH BUTTON CONTROL

- “One-Touch” AUTOSET pushbutton setup
- Tweak adjustments with “up” or “down” buttons
- LST (Light State Tracking) Enable/Disable
- Light “ON”/Dark “ON” selection

## RANGE

- Optimum from 6 in. to 8 ft. (15.24 cm to 2.4m) distance to the AR6151 reflector

## HYSTERESIS

- Two bars as displayed on Contrast Indicator  
Light State Switch = 5  
Dark State Switch = 3

## LIGHT IMMUNITY

- Responds to sensor’s pulse-modulated light source, resulting in high immunity to most ambient light, including high intensity strobes



## DIAGNOSTIC INDICATORS

- Contrast Indicator - Display scaled reading of sensor’s response to contrasting light levels (light vs. dark) on an 8- bar LED display
- Red LED Indicator - LOCK
- Green LED Indicator - LST (Light State Tracking)
- Red LED Indicator - OUTPUT

*NOTE: If Output LED flashes, a short circuit condition exists.*

## AMBIENT TEMPERATURE

- -40°C to 70°C (-40°F to 158°F)

## RUGGED CONSTRUCTION

- Chemical resistant, high-impact polycarbonate housing
- Waterproof ratings: NEMA 4, IP66

RoHS Compliant  
Product subject to change without notice

## Connections and Dimensions

## SMARTEYE® RETROSMART®

