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Photoelectric Sensors

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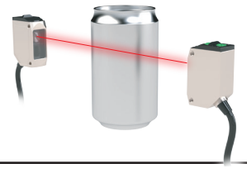
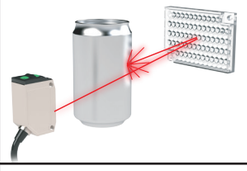
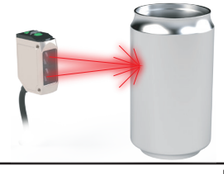
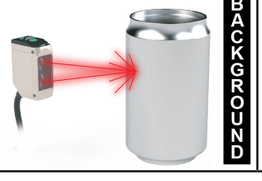
Photoelectric Sensors

Photoelectric sensors, also called photo eyes, detect object presence or distance using light. These sensors use a light source from an emitter and a receiver that detects changes in light intensity reflected or interrupted by the target object. With no physical contract required, photo eyes can detect objects at extremely close range or out to a meter or more, depending on the specific photo eye technology employed.

What type of photoelectric sensor is best for me?

There are many different styles of photoelectric sensors, but really only four basic technologies: through-beam, reflective, diffuse, and background suppression. The chart describes some advantages and disadvantages of each technology.

Type	Operation	Advantages	Disadvantages
Through-beam		• Most accurate • Longest sensing range • Very reliable	• Must install at two points on system: emitter and receiver • Costly - must purchase both emitter and receiver
Reflective		• Cost less than through-beam • Only slightly less accurate than through-beam • Sensing range better than diffuse • Very reliable	• Must install at two points on system: sensor and reflector • Slightly more costly than diffuse • Sensing range less than through-beam
Diffuse		• Only install at one point • Cost less than through-beam or reflective	• Less accurate than through-beam or reflective • More setup time involved
Background Supression		· Effective with reflective backgrounds	• Cost more than diffuse, reflective or through-beam • Most setup time required

For the latest prices, please check AutomationDirect.com.

Photoelectric Sensor Types

Photoelectric sensors allow non-contact detection of objects using red or infrared light, or lasers. A variety of sensor types are available, depending on the target material, sensing distance, and the output signal required for the application.

General Purpose

General purpose photoelectric sensors allow non-contact detection of objects using red or infrared guided light. IP69K sensors are rated for harsh duty (food grade/ washdown) applications.

Clear Object Detection

Clear object detection sensors are a special type of retroreflective photoelectric sensor that can detect transparent objects such as glass or plastic.

Distance Measuring

Distance measuring sensors can measure the distance of objects at long ranges using a time of transit calculation. For shorter distances, high-resolution CMOS technology models offer greater precision using triangulation.

Discrete Distance

Discrete distance sensors are diffuse laser sensors that detect presence via reflected laser light from the target object and use time-of-light distance calculations for background suppression. These sensors operate consistently regardless of the object's material, color, or brightness.

Dark & Shiny Object Detection

Dark objects absorb light instead of reflecting it, making it difficult for standard diffuse photoelectric sensors to detect. Shiny objects overly reflect and can cause objects to be detected more than once. Dark and shiny object detection sensors use blue light, which is less likely to be absorbed by a dark object and is less likely to cause multiple reads or misdetections from shiny objects.

Photoelectric Sensor Types (continued)

Fiber Optic Sensors

Fiber optic sensors typically consist of two devices specified separately: the photoelectric amplifier and the fiber optic cable. The fiber cable includes the optic sensor head and cabling needed to transmit light to and from the amplifier. Because the amplifier is separate from the sensor head, these sensors work well in tight spots and applications with high electrical noise.

Color Sensors

Color sensors use pre-defined reference colors to reliably select colored objects in high-speed automation processes. They are capable of evaluating up to 3 colors simultaneously.

Contrast Sensors

Contrast print mark sensors determine contrast by sensing reflected light to detect the difference in the wavelength of the reflected light between the mark and background.

Fork Sensors

Fork sensors (also called slot sensors or "U" sensors) offer advantages over standard through-beam sensors including identical mechanical/optical axis, operational reliability and repeatability with transmitter and receiver built into the same housing.

Light Grids

Industrial light grids, also known as measuring light curtains, light barriers, or area sensors, are optoelectronic sensors used in industrial automation for a variety of applications. Unlike safety light grids, which focus on protecting personnel from hazardous machinery, industrial light grids focus on object detection, measurement, and control. These non-contact sensors have high accuracy, a fast response time, and are built to withstand harsh industrial environments.

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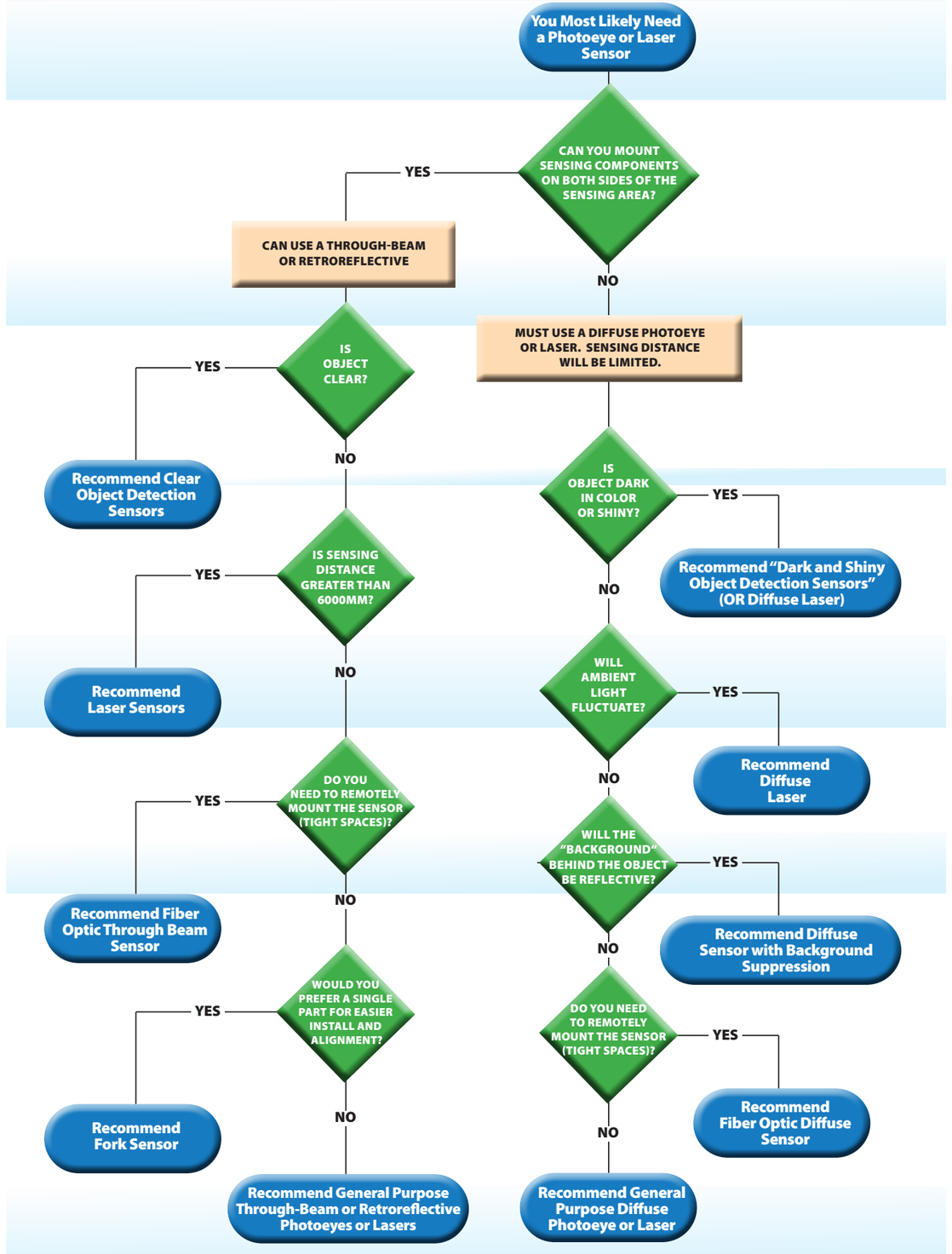
Photoeye/Laser Sensor Selection Decision Tree



General Purpose Photoelectric Sensors

General-purpose photoelectric sensors, in tubular or rectangular body styles, are suitable for many presence sensing applications. They use infrared or visible red light technology and are available in diffuse, diffuse with background suppression, retroreflective, and through-beam sensing styles.

4mm and 5mm Tubular

CONTRINEX D04 and M5 Series Stainless Steel

- 4 and 5mm diameters
- Diffuse and through-beam styles
- IO-Link v1.0 on select PNP models
- Sensing distances up to 600mm
- Stainless steel housing
- IP67 protection rating

Standard Duty · Small Space · IO-Link

8mm Tubular

AUTOMATIONDIRECT HE Series Stainless Steel

- 8mm diameter
- Through-beam sensing style
- 10 kHz switching frequency
- 1m sensing distance
- Stainless steel housing
- IP67 protection rating

Standard Duty · Small Space

ProSense F8 Series Stainless Steel

- 8mm diameter
- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- Sensing distances up to 2.2m
- Stainless steel housing
- IP67 protection rating

Standard Duty · Small Space

For the latest prices, please check AutomationDirect.com.

12mm Tubular

Achieve FDM Series Metal

- 12mm diameter
- Diffuse, polarized retroreflective, and through-beam sensing styles
- Teach function or potentiometer sensitivity adjustment
- Sensing distances up to 4m
- Nickel-plated brass housing
- IP67 protection rating

Standard Duty

CONTRINEX M12 Series Metal

- 12mm diameter
- Diffuse, retroreflective, and through-beam sensing styles
- IO-Link V 1.0 on PNP models
- Sensing distances up to 10m
- Chrome-plated brass housing
- IP67 protection rating

Standard Duty · IO-Link · MADE IN USA

18mm Tubular

Achieve FKL Series Laser Metal

- 18mm diameter
- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- Axial or right-angle optical head models
- Sensing distances up to 50m
- Class 1 and 2 red lasers
- Nickel-plated brass housings
- IP67 protection rating

Standard Duty · Laser · Long Range

AUTOMATIONDIRECT FB Series M18 Plastic

- 18mm diameter
- Diffuse, polarized retroreflective, and through-beam sensing styles
- Potentiometer sensitivity adjustment on diffuse models
- Sensing distances up to 8m
- ABS plastic housing
- IP65 or IP67 protection rating

Standard Duty

18mm Tubular (Continued)

AUTOMATIONDIRECT.COM C18 Series Metal

- 18mm diameter
- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- Axial or right-angle optical head models
- Sensing distances up to 6m
- Chrome-plated brass housing
- IP67 protection rating

Standard Duty

Starting from $63.00

AUTOMATIONDIRECT.COM FF Series Stainless Steel

- 18mm diameter
- Diffuse, polarized retroreflective, and through-beam sensing styles
- Sensing distances up to 20m
- 316L stainless steel housing
- IP68/69K protection rating

Harsh Duty · Food and Beverage · Long Range

Starting from $92.00

AUTOMATIONDIRECT.COM FFRS Series Stainless Steel

- 18mm diameter
- Diffuse with background suppression sensing style
- Sensing distances up to 130mm
- 316L stainless steel housing
- IP68/69K protection rating

Harsh Duty · Food and Beverage

Starting from $110.00

For the latest prices, please check AutomationDirect.com.

18mm Tubular (Continued)

AUTOMATIONDIRECT.COM MQ Series AC Powered Plastic

- 18mm diameter
- Diffuse with background suppression sensing style
- 20-253 VAC operating voltage
- Sensing distances up to 100mm
- PBT housing
- IP67 protection rating

Standard Duty · AC Powered

Starting from $81.00

AUTOMATIONDIRECT.COM MV Series AC Powered Plastic

- 18mm diameter
- Diffuse, polarized reflective, and through-beam sensing styles
- 20-253 VAC operating voltage
- Sensing distances up to 16m
- PBT housing
- IP67 protection rating

Standard Duty · AC Powered · Long Range

Starting from $52.00

CONTRINEX M18 Series Plastic

- 18mm diameter
- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- IO-Link v1.0 on PNP models
- Sensing distances up to 30m
- ABS plastic housing
- IP67 protection rating

Standard Duty · Long Range · IO-Link

MADE IN USA

Starting from $27.00

18mm Tubular (Continued)

CONTRINEX M18 Series Stainless Steel

- 18mm diameter
- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- IO-Link v1.0 on PNP models
- Sensing distances up to 30m
- Stainless steel housing
- IP67 protection rating

Standard Duty · Long Range · IO-Link · MADE IN USA

Starting from $47.50

proSense F18 Series 18mm Plastic

- 18mm diameter
- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- Sensing distances up to 25m
- PBT housing
- IP67 protection rating

Standard Duty · Long Range

Starting from $37.00

30mm Tubular

EATON E58 Series Stainless Steel

- 30mm diameter
- Diffuse reflective with background suppression, retroreflective, polarized reflective, and through-beam sensing style
- High excessive gain
- Sensing distances up to 800ft
- 303 stainless steel housing
- IP69 protection rating

Harsh Duty · Food and Beverage · Long Range · AC Powered

Starting from $383.00

For the latest prices, please check AutomationDirect.com.

Rectangular

Achieve FBM Series Plastic

- Diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- IP67 protection rating
- Sensing distances up to 10m
- 20 X 11 X 32.4mm ABS plastic housings

Standard Duty

Starting from $24.00

GREAT DEAL · GREAT DEAL · GREAT DEAL

AUTOMATIONDIRECT GX Series Plastic

- Diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- 18mm diameter threaded lens with mounting hex nut included
- Sensing distances up to 20m
- 52.6 X 19.1 X 36.1mm LCP and PEI plastic housings
- IP67 protection rating

Standard Duty · Long Range

Starting from $56.00

AUTOMATIONDIRECT QM Series Plastic

- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- Sensing distances up to 30m
- 21 X 12.8 X 31.2mm plastic housings
- IP67 protection rating

Standard Duty · Long Range

Starting from $48.50

Rectangular (Continued)

AUTOMATIONDIRECT.COM CX Series Plastic

- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- Sensing distances up to 6m
- 30 X 15 X 30mm plastic housings
- IP65 protection rating

Standard Duty

Starting from $74.00

AUTOMATIONDIRECT.COM FM Series Stainless Steel

- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- IP65/67/68/69K protection rating
- Sensing distances up to 10m
- 21 X 34.8 X 13mm 316L stainless steel housings

Harsh Duty · Food and Beverage

Starting from $57.00

CONTRINEX C23 Series Plastic

- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- IO-Link v1.0 on select models
- Ecolab approved for use in hygienic areas
- Sensing distances up to 25m
- 20 X 10 X 30mm ABS plastic housings
- IP67 protection rating

Standard Duty · Food and Beverage · Long Range · IO-Link

Starting from $37.50

MADE IN USA

IO-Link

EATON Enhanced 50 Series Plastic

- Diffuse, through-beam, and polarized reflective sensing styles
- AC/DC output choices include robust 3A SPDT relays
- Sensing distances up to 500ft
- 73 X 48.5 X 46mm fiberglass-reinforced plastic housings
- IP67 protection rating

Standard Duty · Long Range

Starting from $141.00

For the latest prices, please check AutomationDirect.com.

Rectangular (Continued)

Leuze 28 Series Plastic

- Diffuse, polarized retroreflective, and through-beam sensing styles
- 31.8 X 15 X 57.7mm ABS plastic housings
- Sensing distances up to 10m
- IP67 protection rating

Standard Duty

Starting from $62.00

PROSENSE RW Series Plastic

- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- IP65/67 protection rating
- Sensing distances up to 3m
- Compact 14.4 X 8.1 X 28.1mm ABS plastic housings

Standard Duty

Starting from $52.00

WENGLOR OPT Series Plastic

- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- IO-Link v1.1 compatibility
- Sensing distances up to 20m
- 50 X 50 X 20mm plastic housings
- IP67/68 protection rating

Standard Duty · Laser · Long Range · IO-Link

Starting from $95.00

IO-Link

Small Space Rectangular Sensors

Autonics BTF Series Ultra-Thin Flat Plastic

- Diffuse with background suppression and through-beam sensing styles
- Ultra-thin, flat housings are only 3.7mm thick (4.6mm including lens)
- Sensing distances up to 1m
- PBT thermoplastic housings
- IP67 protection rating

Standard Duty · Small Space

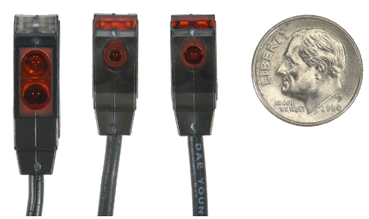
Starting from $80.00

Autonics BTS Series Ultra-Slim Plastic

- Diffuse, retroreflective, and through-beam sensing styles
- Ultra-slim, narrow housings are only 7.2mm wide
- Sensing distances up to 1m
- PBT thermoplastic housings
- IP67 protection rating

Standard Duty · Small Space

Starting from $86.00



Autonics BPS Series Compact Flat Plastic

- Through-beam sensing style
- Low-profile, flat housings are only 7.5mm thick (8.1mm including lens)
- Sensing distances up to 3m
- PBT thermoplastic housings
- IP67 protection rating

Standard Duty · Small Space

Starting from $93.00

proSense F16 Series Die-Cast Zinc

- Diffuse, diffuse with background suppression, polarized retroreflective, and through-beam sensing styles
- Low-profile 8 X 8 X 44mm housings
- Sensing distances up to 2.2m
- Die-cast zinc housings
- IP67 protection rating

Standard Duty · Small Space

Starting from $110.00

For the latest prices, please check AutomationDirect.com.

Clear Object Detection Sensors

Clear-object photoelectric sensors detect presence when a clear object interrupts light rebounding off a fixed reflector (sold separately) or when used as part of a through-beam pair. These sensors use infrared visible, red light, or UV light sources and offer detection ranges up to 4.2 meters.

AUTOMATIONDIRECT FFRL Series Stainless Steel

- 18mm diameter
- Retroreflective for transparent objects
- 316L stainless steel housing
- 1m sensing distance
- IP68/69K protection rating

Harsh Duty · Food and Beverage · Clear Object

Starting from $96.00

CONTRINEX C23 Series Plastic

- Retroreflective for transparent objects
- IO-Link V 1.0 on PNP models
- Models with UV light offer easy sensitivity adjustment
- Sensing distances up to 4200mm
- 20 X 10 X 30mm ABS plastic housings
- Ecolab approved for use in hygienic areas
- IP67 protection rating

Standard Duty · Food and Beverage · Clear Object · IO-Link

Starting from $63.00

IO-Link

AUTOMATIONDIRECT QM Series Plastic

- Retroreflective for transparent objects
- 21 X 12.8 X 31.2mm PA66 plastic housings
- Sensing distances up to 4m
- IP67 protection rating

Standard Duty · Clear Object

Starting from $67.00

wenglor OPT Series Plastic

- Retroreflective for transparent objects
- IO-Link v1.1 compatibility
- Potentiometer sensitivity adjustment
- Sensing distances up to 2.6m
- 50 X 50 X 20mm plastic housings
- IP67/68 protection rating

Standard Duty · Clear Object · IO-Link

Starting from $149.00

IO-Link

Smart IO-Link Sensors

IO-Link

Starting from **$89.00**

CONTRINEX Smart IO-Link Photoelectric Sensors

Contrinex smart IO-Link photoelectric sensors offer advanced functionality beyond a simple switching output. They feature multiple sensing modes and can be configured to provide rich data and diagnostics. Key features include user-configurable outputs, embedded predictive maintenance, and high-speed internal decision-making that eliminates dependence on a centralized PLC.

- Diffuse, diffuse with background suppression, and polarized retroreflective sensing styles
- Sensing distances up to 7000mm [275.59 inches]
- Scaled measurement output via IO-Link provides the target location within the sensing range
- IO-Link v1.1
- Selectable light-on/dark-on operating modes
- One PNP output and one configurable discrete/IO-Link output
- Tubular and rectangular body styles
- 304 stainless steel housings
- IP67 or IP67/68/69K protection ratings

Advanced Sensing and Setup Modes

All sensing and special function modes can be configured through the standard IO-Link connection; setup for advanced modes can be more quickly and intuitively configured using the PocketCodr Suite (paid subscription).

Switch Point

Switch Point Mode defines how the sensor's output is controlled. Single-point switching triggers at a single distance, two-point uses two points to monitor position, and window mode activates the output only within a specific range.

Teach

Teach Mode simplifies sensor setup by allowing it to automatically learn a specific switching point from a target object. This eliminates the need for manual adjustment, making commissioning much faster.

Alarm

Alarm Mode enables the sensor to issue a warning signal when a detected condition is outside a pre-set range. This is often used for predictive maintenance, providing an alert when an object's position or distance deviates, which could indicate a problem.

Counter

Counter Mode allows the sensor to keep a running tally of objects that pass within its detection range. This is useful for production tracking, counting parts on an assembly line, or monitoring inventory.

Output

Output Mode defines the physical switching behavior of the sensor's output signal. The output can be set as either normally open (NO), which sends a signal when an object is present, or normally closed (NC), which sends a signal when no object is present.

Timer

Timer Mode provides precise control over the sensor's output using configurable time delays. This includes delay on, stretch on, and delay+stretch on to manage when a signal activates or deactivates. A one-shot mode also generates a fixed-duration pulse.

User Data Memory

User Data Memory stores user-defined identification information, such as custom tag names, to simplify asset management and troubleshooting. It also retains essential configuration and service data, enabling automatic parameter transfer for rapid sensor replacement without manual reprogramming.

Temperature

The sensor continuously measures its internal temperature, storing current and minimum/maximum lifetime values, total temperature cycles, and an internal event flag. Temperature can also be assigned to alarms, which trigger on user-defined thresholds. It can also be stored as historical data for trend analysis, providing a complete record of the sensor's operating environment.

Predictive Maintenance

The sensor tracks measurements such as distance or internal temperature over time using the Measurement Histogram Module (MHM). The MHM records start and end values, median, deviation metrics, and target values. Deviations from established patterns trigger real-time alarms, enabling proactive maintenance and preventing minor issues from escalating.

For the latest prices, please check AutomationDirect.com.

PocketCodr Tool

IO-Link

Priced at **$195.00**

PocketCodr PocketCodr Tool

The PocketCodr is a compact, handheld IO-Link master that enables quick configuration and monitoring of IO-Link-enabled devices. It allows parameter setup, device calibration, and real-time data access without programming. With intuitive tools for setup, calibration, and diagnostics, PocketCodr helps ensure reliable sensor performance, allowing issues to be detected and corrected immediately, reducing errors and minimizing downtime.

- Allows precise parameter configuration, reducing errors and misreads
- Real-time monitoring displays live sensor data, detects anomalies, and enables adjustments before faults occur
- Action Widgets (subscription required) provide an intuitive step-by-step configuration for Contrinex Smart Sensors, including teaching setpoints, setting outputs, and defining alarms
- Calibration tools maintain sensor accuracy, even under changing conditions
- Built-in diagnostics allow quick identification and resolution of issues, minimizing downtime

Bluetooth Interface

The PocketCodr connects to IO-Link sensors using the included cable or built-in spring terminals (for sensors with integrated cables). It communicates over Bluetooth with a smartphone or tablet, eliminating the need for a PC connection and allowing configuration and diagnostics before the sensor is installed in the system.

- Adjust parameters, perform teaching routines, and view diagnostics instantly through the mobile app
- Supports on-site setup and troubleshooting

PocketCodr Suite

The PocketCodr Suite plan subscription uses Action Widgets to simplify setup of compatible Contrinex Smart Sensors with intuitive, step-by-step graphical workflows.

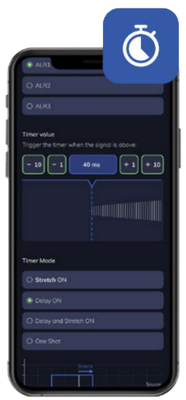
- No-code configuration for compatible Contrinex Smart Sensors
- One-year subscription
- Available for Android and iOS

Priced at **$195.00**

Download on the App Store GET IT ON Google Play

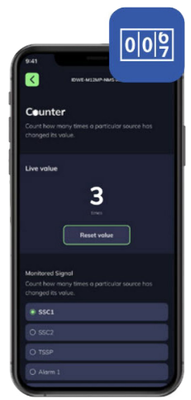
Sample Action Widgets *(Contrinex Smart sensors only, subscription required)*

Timer



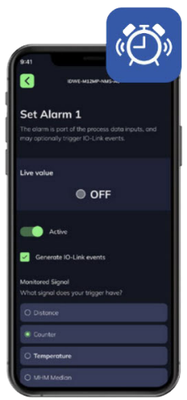
The Timer Action Widget enables precise adjustment of sensor timing functions.

Counter



The Counter Action Widget provides digital tracking of events or objects directly.

Alarm



The Alarm Action Widget allows configuration of threshold alerts and warnings quickly.

Teach

The Teach Action Widget allows the smart sensor to be taught digitally through a graphical interface.

Clear Object Detection Sensors (continued)

EATON Enhanced 50 Series Plastic

- Retroreflective for transparent objects
- NPN/PNP, solid-state relay, or SPDT EM relay outputs
- AC or DC operating voltages
- 45in sensing distance
- 73 X 79.5 X 46mm fiberglass-reinforced plastic housings
- IP67 protection rating

Starting from $232.00

Distance Measuring Sensors

Short-range, high-precision laser sensors measure down to an 8 micrometer resolution using CMOS technology; long-range models use time of flight (measuring transit time of the reflected light) to measure distances up to 100 meters. Employing Class 1 or 2 lasers (depending on model), these DC-powered units support analog outputs of 4-20 mA or 0-10 VDC.

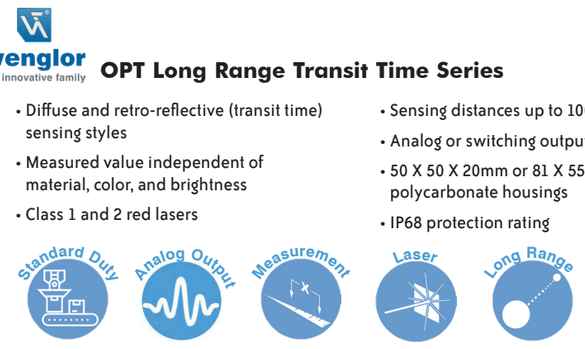
wenglor the innovative family OPT Short Range CMOS Series

- Diffuse laser distance sensing style with CMOS technology
- Class 1 and 2 red lasers
- High resolution down to 8µm
- 4-20 mA or 0-10 VDC output
- Sensing distances up to 350mm
- 50 X 50 X 20mm polycarbonate housings
- High response times down to 660 µs
- IP67 protection rating

Starting from $886.00

wenglor the innovative family OPT Long Range Transit Time Series

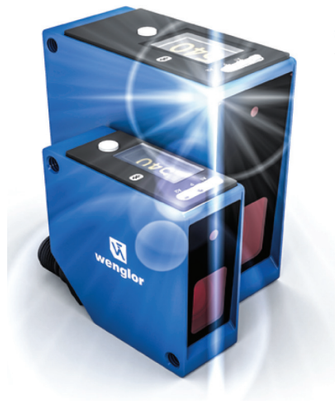
- Diffuse and retro-reflective (transit time) sensing styles
- Measured value independent of material, color, and brightness
- Class 1 and 2 red lasers
- Sensing distances up to 100m
- Analog or switching output options
- 50 X 50 X 20mm or 81 X 55 X 30mm polycarbonate housings
- IP68 protection rating



Starting from $443.00

For the latest prices, please check AutomationDirect.com.

High Precision Distance Sensing for Less!



wenglor the innovative family OPT25 Laser Triangulation Series

Wenglor OPT25 series laser sensors offer our best-in-class distance sensing for ranges within 1 meter. They are IO-Link v1.1 compatible, employ a Class 1 red or Class 2 blue laser, and use triangulation to measure distances with extreme accuracy.

Powered by Wenglor's proprietary TripleA technology, the Wenglor OPT25 series ensures precise distance readings regardless of object material, color, or shape, even in demanding environments with fluctuating light and temperature conditions. They can even detect flat objects directly in front of a background.

Blue laser light models provide enhanced performance for red-hot or organic surfaces, polished metals, shiny plastics, or dark paints. The shorter wavelength blue laser light does not penetrate as deeply into the surface, resulting in high accuracy.

Sensor configuration varies by model, with options including a teach-in button, an easy-to-read OLED display, or the intuitive Wenglor weCon Bluetooth app.

Starting from $830.00

- Diffuse laser distance sensing style
- Red Class 1 lasers or blue Class 2 lasers for dark and shiny object detection
- Only 0.08% linearity deviation from the measuring range
- Teach-in, OLED, IO-Link, or Bluetooth configuration options (depending on model)
- Up to 2500/s measuring rate
- Reproducibility up to 0.8µm
- 4-20 mA or dual PNP/NPN output options
- Sensing distances up to 1000 mm
- 50 X 50 X 20mm or 71 X 63 X 30mm anodized aluminum housings
- IP67 protection rating

FREE Wenglor weCon App

The Wenglor weCon app enables mobile settings and data transfer for distance sensors. Users can effortlessly configure sensors via the free Bluetooth app.

- Easily adjust Wenglor distance sensors directly from a smartphone or tablet
- Monitor sensor readings, diagnostics, and device status in real-time
- Available for Android and iOS

GET IT ON Google Play Download on the App Store

Discrete Distance Sensors

Discrete distance sensors are diffuse laser sensors that detect presence via reflected laser light from the target object and use time-of-light distance calculations for background suppression. These sensors operate consistently regardless of the object's material, color, or brightness.

wenglor OPT Short Range CMOS Series

- Diffuse laser distance sensing style with CMOS technology
- Measured value independent of material, color, and brightness
- 60-660mm sensing distance
- 50 X 50 X 20mm polycarbonate housings
- IP68 protection rating

Standard Duty · Laser

Starting from $443.00

wenglor OPT Transit Time Series

- Diffuse and retro-reflective (transit time) sensing style
- Measured value independent of material, color, and brightness
- Sensing distances up to 3m
- 50 X 50 X 20mm polycarbonate or plastic housings
- IP68 protection rating

Standard Duty · Laser

Starting from $295.00

wenglor OPT Compact Transit Time Series

- Diffuse and retro-reflective (transit time) sensing style
- Measured value independent of material, color, and brightness
- Sensing distances up to 1m
- 32 X 22 X 12mm polycarbonate or plastic housings
- IP67 protection rating

Standard Duty · Laser

Starting from $243.00

For the latest prices, please check AutomationDirect.com.

Dark and Shiny Object Detection Sensors

Dark and shiny object detection photoelectric sensors detect presence of objects that other sensors fail to detect or erroneously detect multiple times because they are either very dark or shiny.

wenglor OPT Series Blue Light

- Diffuse with background suppression sensing style
- Potentiometer sensitivity adjustment
- IO-Link V1.1
- Sensing distances up to 400mm
- 50 X 20 X 50mm or 32 X 12 X 16mm plastic housings
- IP67/68 protection rating

Standard Duty · Dark and Shiny · IO-Link

Starting from $111.00

IO-Link

Fiber Optic Sensors

Fiber optic sensors provide a remotely mounted electronics and optics package with fiber optic extensions to the sensing area, perfect for extremely tight locations, or where even low power electronics are not allowed. Glass and cuttable plastic fiber optic cables are also available (sold separately), with sensing distances up to 1800mm.

AUTOMATIONDIRECT.COM DFT Series Plastic

- Sensing distances and styles are dependent on the optical fiber
- Compact 10 X 31 X 60mm PAT housings
- Teach-in sensitivity adjustment
- Bar graph signal-strength indicator
- IP64 protection rating

Standard Duty · Small Space

Starting from $202.00

AUTOMATIONDIRECT.COM DFP Series Plastic

- Sensing distances and styles are dependent on the optical fiber
- Compact 10 X 31 X 60mm PBT housings
- Potentiometer sensitivity adjustment
- IP64 protection rating

Standard Duty · Small Space

Starting from $128.00

Fiber Optic Sensors (continued)

wenglor the innovative family OPT Series Plastic

- Diffuse and through-beam sensing styles
- Sensing distances are dependent on the optical fiber
- Plastic housings in various sizes
- IO-Link available on select units
- Teach-in sensitivity adjustment
- Bar graph signal-strength indicator
- IP65 or IP50 protection rating

Standard Duty | Small Space | IO-Link

Starting from $120.00

IO-Link

Micro Detectors SSF Series 18mm Tubular Plastic

- 18mm diameter
- Sensing distances and styles are dependent on the optical fiber
- Teach-in sensitivity adjustment
- PBT housings
- IP67 protection rating

Standard Duty | Small Space

Starting from $62.00

Color Sensors

Color sensors are used for colored object detection, quality control, and print accuracy applications. The Wenglor OPT2023 color sensor can evaluate up to three colors simultaneously and has a variety of mounting accessories.

wenglor the innovative family OPT2023 Color Series

- Capable of evaluating up to three colors simultaneously
- White light source
- Three switching outputs
- 40mm sensing distance
- 50 X 50 X 20mm plastic housing
- IP68 protection rating

Standard Duty | Color and Contrast

Starting from $440.00

For the latest prices, please check AutomationDirect.com.

Contrast Sensors

Contrast print mark sensors determine contrast by detecting the difference in the wavelength of reflected light from the mark and background. Contrast sensors offer detection ranges up to 40mm, with quick-disconnect termination.

wenglor the innovative family OPT Series Plastic

- 12 to 18mm sensing distance
- White light emission
- Teach-in sensitivity adjustment
- 54.5 X 27 X 16mm plastic housings
- IP67 protection rating

Standard Duty | Color and Contrast

Starting from $143.00

DATALOGIC THE VISION IS YOURS S8 Series Stainless Steel

- 6 to 12mm sensing distance
- RGB light emission
- Teach-in sensitivity adjustment
- 42 X 28 X 15mm 316L stainless steel housings
- IP69K protection rating

Harsh Duty | Food and Beverage | Color and Contrast

Priced at $130.00

DATALOGIC THE VISION IS YOURS S8 Series Plastic

- 6 to 12mm sensing distance
- RGB light emission
- Teach-in sensitivity adjustment
- 42 X 25 X 14mm ABS plastic housings
- IP67 protection rating

Standard Duty | Color and Contrast

Starting from $94.00

DATALOGIC THE VISION IS YOURS TL Series Metal

- 6 to 12mm sensing distance
- RGB light emission
- Teach-in sensitivity adjustment
- 81.5 X 31.9 X 60.7mm aluminum housings
- IP67 protection rating

Standard Duty | Color and Contrast

Starting from $178.00

Fork Sensors

Fork sensors (also called slot sensors) use through-beam photoelectric technology to detect objects passing through the slot. The rugged one-piece housing keeps the emitter and receiver in alignment, and a convenient, single-cable connection is provided. A variety of light sources are available for specialty sensing applications, with sensing distances up to 250mm.

AUTOMATIONDIRECT PS Series Metal

- U-frame models in fork openings from 5 to 220mm
- L-frame models in fork openings from 60 to 160mm
- Visible red, infrared, and laser light options
- Up to 5 kHz switching frequency
- Light-on/Dark-on selectable
- Rugged one-piece die-cast zinc housings
- Models for clear object and liquid detection
- IP67 protection rating

Standard Duty · Laser · Clear Object

AUTOMATIONDIRECT PS Series Stainless Steel

- U-frame models in 50 or 60mm fork openings
- Visible red light
- Complementary Light-on/Dark-on outputs
- 3 kHz switching frequency
- Rugged one-piece stainless steel housings
- IP69K protection rating

Harsh Duty · Food and Beverage

di-soric OGU Series Metal

- U-frame models in fork openings from 5 to 250mm
- Standard, high-resolution, power, or speed sensor modes
- Visible red and infrared light options
- Up to 14 kHz switching frequency
- Light-on/Dark-on selectable
- Sensitivity adjustment via potentiometer or IO-Link
- IO-Link v1.1 compatibility
- 10 to 30 VDC operating voltage
- IP67 protection rating

Standard Duty · Laser · IO-Link

IO-Link

For the latest prices, please check AutomationDirect.com.

Light Grids

Light grids are multi-beam arrays of photoeyes used to detect presence anywhere within the controlled height of the sensor array. These sensors are perfect for detecting various sized and shaped objects at random positions as they pass through the (2D) target area (not for use as safety light curtains).

Detection Light Grids

Micro Detectors

Micro Detectors CX0 Series Light Grids

Micro Detectors CX0 series detection light grids are easy to install and feature a fast response time with high accuracy and repeatability.

- Operating distance up to 6m
- 160 and 320mm detection heights
- 5 or 10mm resolution
- 16.8-30 VDC operating voltage
- Discrete PNP output
- Teach-in sensitivity adjustment
- Painted aluminum housings
- IP67 protection rating

Micro Detectors BX Series Light Grids

Micro Detectors BX80 series detection light grids feature rugged thermoplastic housings and are designed for industrial applications such as conveyor belt monitoring, packaging machines, and access control.

- Operating distance up to 2m
- 70mm detection height
- 6mm resolution
- 12-24 VDC operating voltage
- Discrete NPN or PNP output
- Adjustable sensitivity
- Plastic housings
- IP67 protection rating

ProSense

ProSense FLG Series Light Grids

ProSense FLG series light grids offer a cost-effective solution for object detection, featuring a simple setup with no programming required. They have no dead zone on the full detection height and are suitable for a variety of applications, such as material handling, counting, and warehousing.

- 0.1-10m operating distance
- 220 to 1580mm detection heights
- 20 or 40mm resolution
- 24 VDC operating voltage
- Discrete NPN or PNP output
- Rugged aluminum housings
- IP67 protection rating

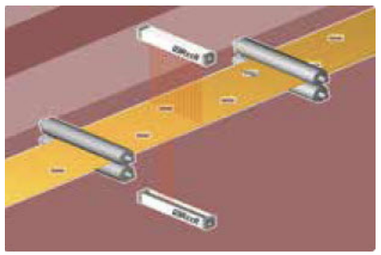
Detection Light Grids (cont.)

REER

ReeR Micron Series Light Grids with Push-Pull Complementary Outputs

ReeR Micron series light grids with push-pull complementary outputs provide a simple way to determine whether or not an object is present in the light grid's field of view. The outputs can be used to activate or stop a machine, or trigger an alarm.

- 0-10m operating distance
- 120 to 740mm detection heights
- 10 or 30mm resolution
- 24 VDC operating voltage
- Software configurable
- Rugged anodized aluminum housings
- IP65/67 protection rating



Quality Control: verification of presence/absence/position of holes

Measuring Light Grids

Micro Detectors

Micro Detectors CX2 Series Light Grids

The blanking function of the CX2 series provides flexible configuration options by allowing the height of the active optic window to be adapted to an application by eliminating pairs of beams.

- Operating distance up to 6m
- Detection height up to 960mm
- 5 or 10mm resolution
- Parallel beams and floating crossbeams with variable amplitude
- 16.8-30 VDC operating voltage
- PNP NO/NC configurable output
- 4-20 mA or 0-10 VDC output
- Painted aluminum housings
- IP67 protection rating

For the latest prices, please check AutomationDirect.com.

Measuring Light Grids (cont.)

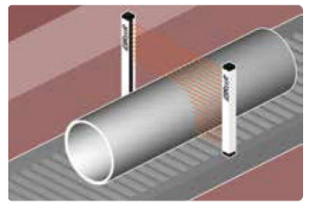
REER

ReeR Micron Series Light Grids with Analog Outputs

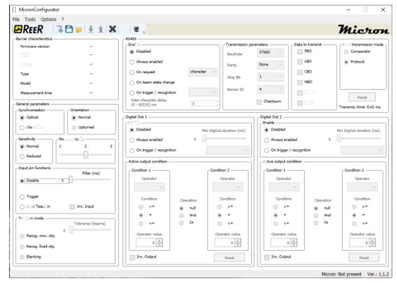
ReeR Micron series light grids with analog outputs are compact sensing devices for precision measurement and positioning tasks. They are configurable via easy-to-use software that offers an extensive parameter selection.

- 0-10m operating distance
- 270 to 1490mm detection heights
- 10 or 30mm resolution
- 24 VDC operating voltage
- Two 4-20 mA outputs
- Two discrete push-pull outputs
- Software configurable
- Rugged anodized aluminum housings
- IP65/67 protection rating

Height Measurement



Measurement and Identification



Configurator Software

IO-Link

REER

ReeR Micron Series Light Grids with IO-Link Compatibility

ReeR Micron series IO-Link compatible light grids are versatile industrial devices for precise object detection, measurement, and identification. They offer flexible setup with protected heights and beam spacings to suit a variety of applications.

- 0-10m operating distance
- 270 to 1490mm detection heights
- 10 or 30mm resolution
- 24 VDC operating voltage
- Output via IO-Link v1.1.2
- Configurable via IO-Link
- Rugged anodized aluminum housings
- IP65/67 protection rating

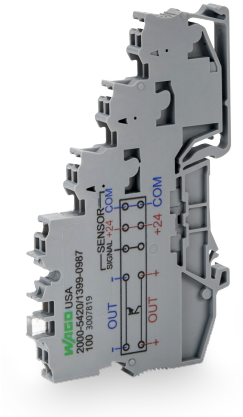
Sensor Accessories

AUTOMATIONDIRECT.com Sensor Tester

AutomationDirect sensor testers save time by determining if a sensor is functional before installation. This unit is lightweight and compact so it can be stored in a desk drawer and carried in a pocket. It includes a rechargeable battery and micro-USB charging cable.

- Fast field check of various DC sensor types
- LED and acoustic indicator
- Current supply to 100mA
- Includes rechargeable battery
- Universal micro-USB charger port

Priced at $86.00



WAGO PNP/NPN Converter

The WAGO PNP/NPN converter adapts discrete signals between PNP and NPN logic types.

- Terminal block design for easy installation
- Easy selection simplifies setup
- Ensures sensor/controller compatibility

Priced at $58.00

di-soric Patch Cable Signal Converters

di-soric patch cable signal converters are inline devices designed for discrete sensors. They feature a compact design for quick, easy retrofitting and can be added to sensors with M8 or M12 quick-disconnect connections. Built to operate reliably across a wide temperature range, they are ideal for a variety of industrial applications. Models include:

- Antivalence (Complementary Outputs): Provides two outputs that operate in opposite states for flexible monitoring
- PNP/NPN Conversion: Adapts sensor outputs to match PNP or NPN systems
- Inverter: Reverses a sensor's output state (Normally Open/Normally Closed)
- Pulse Stretcher: Extends short pulses to ensure reliable detection and processing
- AND/OR Logic: Combines two sensor inputs into a single output, either when both are active (AND) or when either is active (OR)

Starting from $27.00