NEW PRODUCT INFO SHEET

AUTOMATION SENSOR SERIES – PHOTOELECTRIC

Internal document

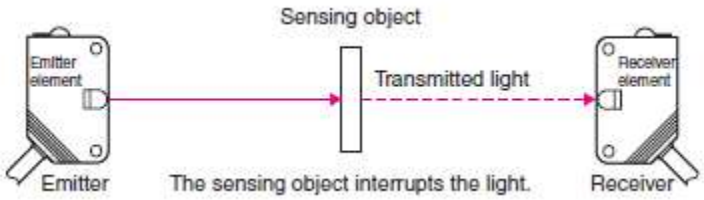
KEY FEATURES

AUTOMATION SENSOR SERIES – PHOTOELECTRIC

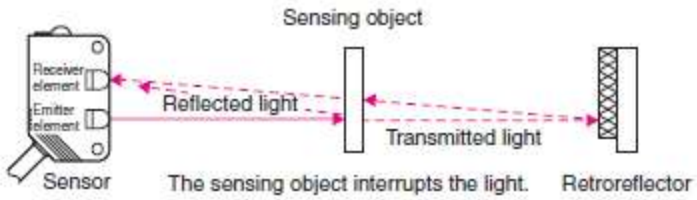
What is it?

The photoelectric sensor is an interface which converts a photonic input to an analogue or digital output. It can be used to detect distance, presence or absence of an object using a light transmitter and a photoelectric receiver. There are three main classifications of a photoelectric sensor shown below. The series that is being presented here is a diffuse reflective sensor which can be used to detect objects up to 40mm away.

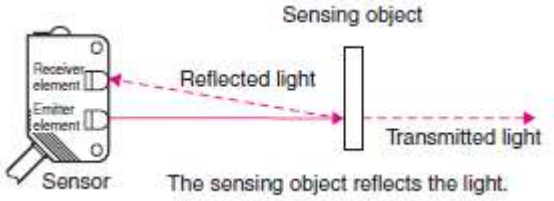
Through-beam Sensors



Retro-reflective Sensors



Diffuse-reflective Sensors



What is the background behind this product?

Electronic sensors have existed in many forms for years. Sensors are the link between conditions in the physical world and electronic equipment that utilize the resulting data to monitor and/or take appropriate action. We are only at the opening chapter of changes that the Internet of Things (IoT) will bring. Sensors will play an expanding role in home (smart home), office, on public thoroughfares as well as in the Industrial Internet of Things (IIoT) or Industry 4.0.

This is the first step of many into sensing technology for Bulgin, mainly aimed around Bulgin's core competencies of design for harsh environments and ingress protection.

APPLICATIONS

Industrial

- Positioning of PCB's on assembly line
- Detecting IC's
- Detecting wafer cassettes
- Absence of capacitors in a tray
- Packaging box detection
- Product detection
- Detecting PCB racks
- etc

The product will complement Bulgin's industrial automation connector range as an industry standard interface.

Who are the competitors?

Panasonic' E-14 is a key competitor for the product with others more indirectly competing. Whilst they do not produce identical products, their features and offerings are similar. A key difference between Bulgin's product and Panasonic's is the rugged metal body of the sensor incorporated in the design. Bulgin's part is also pre-terminated with a 2M wire and an M5 connector for a similar price to Panasonic's PET version with bare wire. Products with similar characteristics include the:

- EX-14 (Panasonic)
- E3FA (Omron)
- SM312 (Turck Banner)
- etc

Why buy it?

- Simple, secure and efficient design
- Only require one sensor for your system as opposed to using other technology, such as retro-reflective or through beam.
- Achieve a watertight and dustproof seal to any standard M5 interface
- Highly robust casing material Stainless Steel 316
- Withstands a high degree of physical impact
  - Vibration tested to 10-50Hz double amplitudes. X,Y. Z. each direction 2 hours
  - Shock and Bump tested to 1000m/s², X.Y.Z each direction 6 times

How about product availability?

- Samples will not typically be available due to cost. However, we do have a small number is absolutely required. – please contact Marketing
- Standard lead time: 10 weeks

Terminology

- MEMS – Microelectromechanical systems
- NEMS – Nanoelectromechanical systems
- Light on operation – The sensors output is only enabled when it receives light
- Dark on operation – The sensors output is always enabled unless it receives light
- NPN - NPN sensors produce a negative signal during an "on" state
- PNP - PNP sensors produce a positive output to industrial controls input

Part no. and Descriptions

Part Number	Description
SLLP3002M5	Light on operation, NPN Output, 2 - 30mm Sensing distance, with M5 termination
SLDP3002M5	Dark on operation, NPN Output, 2 - 30mm Sensing distance, with M5 termination
SLLN3002M5	Light on operation, PNP Output, 2 - 30mm Sensing distance, with M5 termination
SLDN3002M5	Dark on operation, PNP Output, 2 - 30mm Sensing distance, with M5 termination
SLLP4002M5	Light on operation, NPN Output, 2 - 40mm Sensing distance, with M5 termination
SLDP4002M5	Dark on operation, NPN Output, 2 - 40mm Sensing distance, with M5 termination
SLLN4002M5	Light on operation, PNP Output, 2 - 40mm Sensing distance, with M5 termination
SLDN4002M5	Dark on operation, PNP Output, 2 - 40mm Sensing distance, with M5 termination

SLLP3002CL	Light on operation, NPN Output, 2 - 30mm Sensing distance, with Cable termination
SLDP3002CL	Dark on operation, NPN Output, 2 - 30mm Sensing distance, with Cable termination
SLLN3002CL	Light on operation, PNP Output, 2 - 30mm Sensing distance, with Cable termination
SLDN3002CL	Dark on operation, PNP Output, 2 - 30mm Sensing distance, with Cable termination
SLLP4002CL	Light on operation, NPN Output, 2 - 40mm Sensing distance, with Cable termination
SLDP4002CL	Dark on operation, NPN Output, 2 - 40mm Sensing distance, with Cable termination
SLLN4002CL	Light on operation, PNP Output, 2 - 40mm Sensing distance, with Cable termination
SLDN4002CL	Dark on operation, PNP Output, 2 - 40mm Sensing distance, with Cable termination