PD30 Series
Photoelectric Sensors

Diffuse Reflective
Background Suppression
Retro Reflective
Through-Beam
A Miniature Photoelectric Sensor with Outstanding Performance

Featuring a compact housing with a width of only 10 mm, this sensor can operate in narrow spaces with a sensing performance formerly reached only by larger sensors.

The PD30 sensor family combines excellent sensing abilities with an optimized compact housing design. It is the world’s smallest photoelectric sensor with Teach-in mode.

World Standard Housing Design
The compact and robust sensor housing in ABS-PMMA has an outstanding degree of protection against water and dust (IP 67).

High EMC Performance
Advanced microprocessor technology and a compact design ensure excellent EMC performance.

Environmentally Friendly
This lead-free sensor is designed according to the RoHS directive. The highly advanced microprocessor design optimizes power consumption allowing a 20% reduction of energy compared to major competitors. The sensors are packaged in recycled cardboard boxes.

Simplified Setup
Distance and sensing are set up via the teach button or via the remote teach wire (RT-version).

Tamper Resistant
Connection of the remote teach wire to the power supply disables the pushbutton (RT-version), assuring a tamper proof sensor.

Diagnostic Warning
Two options are available, either a ‘dust output’ that monitors the sensing performance and switches on if the sensor gets dirty - or a ‘mute input’ that allows a PLC to perform a check on the application for proper sensing operations.

Space Optimization
The PD30 sensor is the world’s smallest sensor with the longest sensing range, managing distances formerly reached only by larger sensors.

Approvals
EMC directive 89/336/EEC

Electrical and Optical Design
- Optimized aspherical lens design allows for both a wide sensing angle and a long sensing range.
- Advanced microprocessor techniques featuring control of analogue functions for optimized sensing and EMC performances, exceeding the requirements from IEC.
- A sensor optimized for industrial environments.
PD 30 Series Sensors

General Features and Functions

- **Green LED**
  - Target detected
  - Power supply or signal stability

- **Yellow LED**
  - Target detected

- **Built-in Mounting Holes**
  - 2 x M3 for fast mounting
  - Spacing: 25.4 mm (0.1”)

- **Teach-in Button**
  - Distance
  - Sensing overhead
  - NO/NC
  - Setup on the fly

- **4 Pole M8 Plug Connector**
  - to meet most connection requirements

- **4 Wire PVC Cable**
  - Ø 3.3 mm to meet most connection requirements

- **Large Lens**
  - ensures long sensing range

Mute Function (Sensor Blanking)

**Mutual Interference Protection**
When more than one set of through-beam sensors are mounted close to each other, mutual interference might occur. Controlling the mute function from a PLC can form a multiplex system where only one set of sensors is active, thus avoiding neighbouring interference (aka crosstalk).

**Half Mute Function (> 3 Sec.)**

**Aligning Sensors**
When sensors are used over a long distance and are manually aligned, condensation or dust can cause false signals. Activating the half mute function (> 3 sec.) will set the emitter at half power. Aligning the sensor at half power ensures enough energy to make the sensor function properly when switching back to full power.

**Mute Function (Sensor Blanking)**

**Malfunction or Disconnected Sensor**
When a sensor is used in an industrial environment, sensor breakdowns or faults in the connection cable can occur without a fault signal being sent out, for instance to a PLC. Turning the emitter on and off periodically via the mute function (0-3 sec.) checks the sensor function and a malfunction will be detected as early as possible.

**Dust Alarm Output**

**Dirty or Dusty Lenses or Reflectors**
Sensors have to be kept clean in order to avoid down time when used in dirty or dusty environments, such as paper handling conveying systems. The sensor will send an alarm signal on the dust output, if it receives a low level signal for more than 20 ms. This will prevent unnecessary machine stoppages and ensure that dirty sensors are cleaned only when necessary.

**Remote Teach**

**Dynamic Sensor Setup**
Using a sensor for the detection of varied objects may require modification of the sensor settings, for instance distance, detecting overheads etc. Connecting the remote teach input to a PLC enables it to change the sensor settings on the fly. The teach procedure is identical to the one used for manual teach via the teach button.
A sensing distance of 15 m enables the sensor to be used in industrial settings where reliable detection is of primary importance.

The infrared retro-reflective sensor is primarily used in applications where the light beam must be invisible - for instance in entrance systems/doorways.

The sensors detect objects with bright shiny surfaces and with the muting functions, they can be tested to avoid critical breakdowns on conveying systems.

A diffuse-reflective sensor without background suppression measures only energy returned from objects, which makes it ideal for structured surfaces as the sensor detects an average amount of light reflected.

To detect transparent PET bottles, the PD30 sensor features a long range version suitable for supervising the jamming zone on both narrow and wide conveyor belts.

A background suppression sensor detects an object by means of triangulation. It is not colour sensitive as a diffuse-reflective sensor and it is capable of detecting a black object on a white background.

- 2 new mounting brackets
- Stainless steel type 304
- APD 30-MB1 is included in the sensor package

- 6 new types
- 4 pole, M8 connector
- Angled or straight versions
- 2, 5 and 10 m types
## PD 30 Series Sensors

### Selection Guide

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### The PD30 Family

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<tr>
<td>Visible red emitter</td>
<td>20-1000 mm</td>
<td>NO &amp; NC</td>
<td>x</td>
<td></td>
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<td>Cable, 2 m pre-wired</td>
<td>PD30CND10NPDU</td>
<td>PD30CND10PPDU</td>
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<td></td>
<td>20-1000 mm</td>
<td>NO or NC</td>
<td>x</td>
<td></td>
<td></td>
<td>Cable, 2 m pre-wired</td>
<td>PD30CND10NPR</td>
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<tr>
<td>Infrared emitter</td>
<td>0.1-6 m</td>
<td>NO &amp; NC</td>
<td>x</td>
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<td>PD30CR06NPDU</td>
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<td>PD30CR06PPPM5R</td>
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<tr>
<td>Visible red emitter</td>
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<td>NO &amp; NC</td>
<td>x</td>
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<td>Cable, 2 m pre-wired</td>
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<td></td>
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<td>NO or NC</td>
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<td>PD30CP06PPPM5R</td>
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<td><strong>Through-Beam Emitter</strong></td>
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<td>Infrared light</td>
<td>15 m</td>
<td>NO &amp; NC</td>
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<td>PD30CNT15PMU</td>
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<tr>
<td>Infrared light</td>
<td>15 m</td>
<td>NO &amp; NC</td>
<td>x</td>
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<td>PD30CNT15PPDU</td>
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<tr>
<td></td>
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<td>PD30CNT15PPRT</td>
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