

Photoelectrics

Retro-reflective, Industrial Door Market

Type PD86, Polarized, Relay Output, Mute Input

CARLO GAVAZZI



- Range: 12 m @ ER 4 (15 m @ ER100)
- Modulated, visible light, polarized
- Make or break switching function, selectable by DIP-switch
- Active high or active low mute function (switch selectable)
- LED-indication for target detected and power
- Multi supply voltage: 12-24 VDC/VAC, 50/60 Hz
- 86 x 44 x 39 mm reinforced PC/ABS-housing, IP 66
- SPST relay output
- High EMC and ambient light immunity
- CE, UL325 and UL508 approved



Product Description

The PD86 is a powerful polarized retro reflective sensor. The sensor is designed to meet the harsh requirements in industrial door and gate environments. With a sensing distance of 12 m, the sensor is useful in applications where dust and weather conditions

will influence on the sensing distance. The sensor is made of a strong glass reinforced PC housing. With the mute input, the sensor fulfills European and North American regulations for industrial doors.

Ordering Key

PD86CNP12QPMU

Type _____
Housing style _____
Housing size _____
Housing material _____
Not used _____
Detection principle _____
Sensing distance _____
Supply voltage _____
Output Function _____
Mute function _____

Type Selection

Housing
W x H x D

86 x 44 x 39 mm

Range
(S_n)

12 m

Ordering no.

PD86CNP12QPMU

Specifications

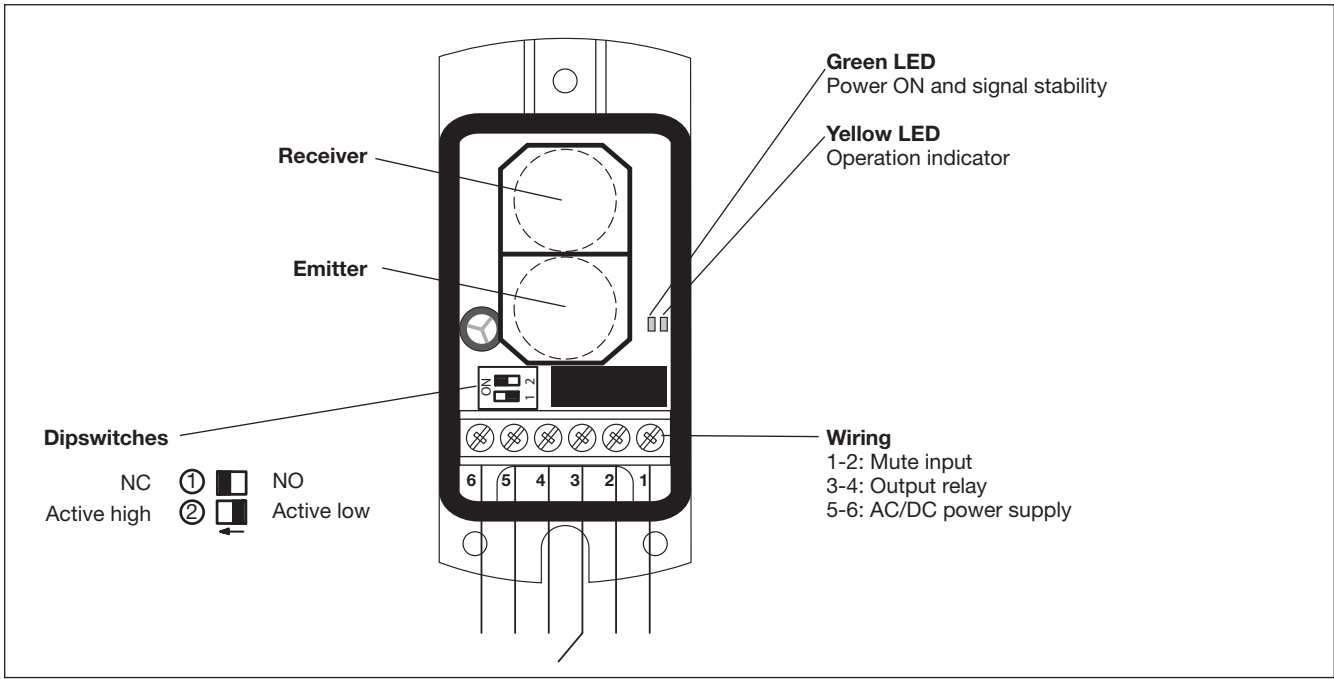
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|---|---|--|-----------------------------------|
| Rated operating dist. (S _n) | 12 m @ ER4 ref. target (0 to 5,000 lux) | Dielectric voltage | 1,000 VAC (rms) (cont./supply) |
| Blind zone | ≤ 0.15 m | Light source | GaAlAs, LED, 660 nm |
| Sensitivity | Fixed | Light type | Visible, modulated |
| Temperature drift | ≤ 0.6 %/°C | Optical angle | ± 1.5° |
| Differential travel (H) Hysteresis | 3 to 20% | Light spot size | 280 mm at 4 m |
| Rated operational volt. (U _B) AC: 45 to 65 Hz | 12-24 VDC, - 15% +20% 12-24 VAC, - 15% +20% | Ambient light | Max. 5,000 lux |
| Rated operational power (Relay ON) | 12 VAC 648 mW 24 VAC 1680 mW 12 VDC 324 mW 24 VDC 840 mW | Operating frequency | 20 Hz |
| Output | | Response time (object related) OFF-ON (t _{ON}) ON-OFF (t _{OFF}) | ≤ 20 ms ≤ 30 ms |
| Contact ratings (AgCdO) | μ (micro gap) | Power ON delay (t _v) | ≤ 300 ms (typ. 100 ms) |
| Resistive loads AC 1 | 0.5 A/30 VAC | DIP-switch Selectable functions | |
| DC 1 | 1 A/30 VDC | Mute input | active high or active low |
| Small inductive loads AC 15 | 0.5 A/50 VAC | Relay output | NO (make) or NC (break) |
| DC 13 | 1 A/30 VDC | Mute function | |
| Mechanical life (typical) | ≥ 1,000 000 cycles | Active high | ≥ 12 VDC/VAC |
| Electrical life (typical) | > 100,000 AC11 or DC11 | Response time | < 45 ms |
| Minimum load power | 1 mW | Hold time | < 70 ms |
| | | Active low | < 6 VDC/VAC |
| | | Response time | < 70 ms |
| | | Hold time | < 45 ms |
| | | Max current | 35 mA @ 24 VDC 70 mA @ 24 VAC |



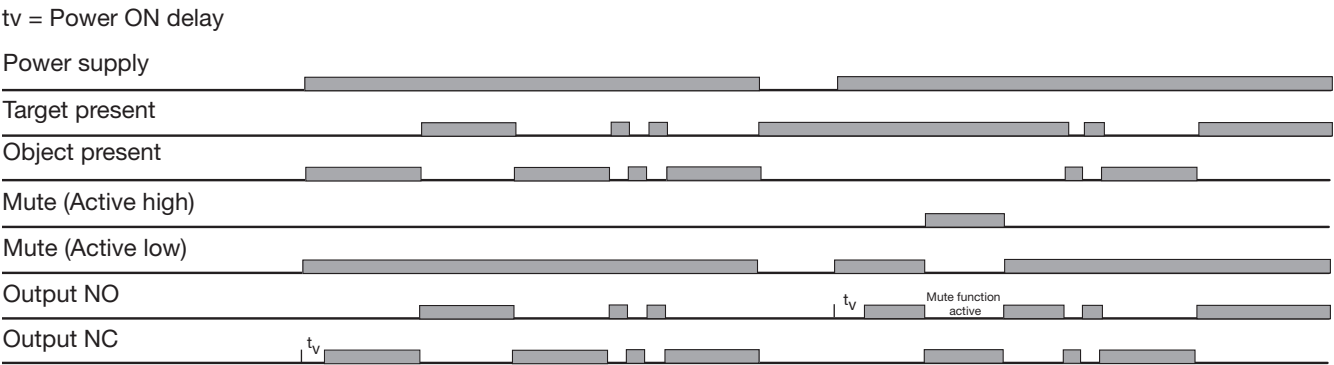
Specifications (cont.)

| | | | |
|--|--|---|--|
| Indication Target detected Power Signal | LED, yellow LED, green LED, green | Rated insulation voltage | 250 VAC (rms) |
| Environment Overvoltage category Pollution degree Degree of protection | III (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP 66 (IEC 60529; 60947-1) | Housing material Outer cover Inner cover Backpart Cable outlet | PC, grey PMMA, red ABS, black Kraiburg TC5MLZ or TP5VCZ |
| Temperature Operating Storage | -25° to +60°C (-76° to +140°F) -35° to +80°C (-31° to +176°F) | Connection Screw terminal One entry | 6 x 1.5 mm² terminal block for cable 3 to 6.5 mm |
| Vibration | 10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6) | Weight | 110 g |
| Shock | 2 x 1 m & 100 x 0.5 m (IEC 60068-2-32) | UL-Approval | UL325, UL508 |
| | | CE-marking | Yes EN12453, EN12445, EN12978 |

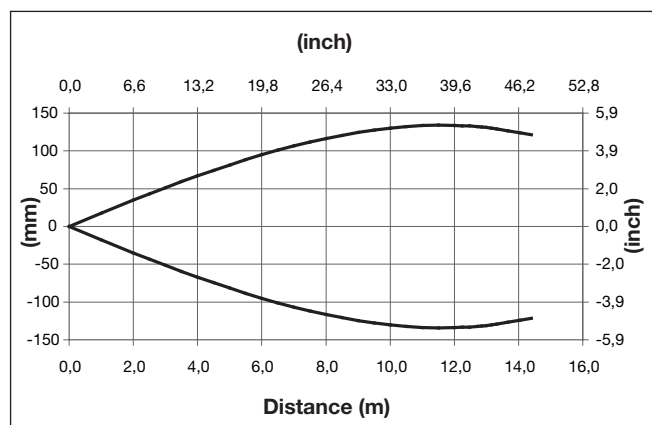
Wiring Diagram



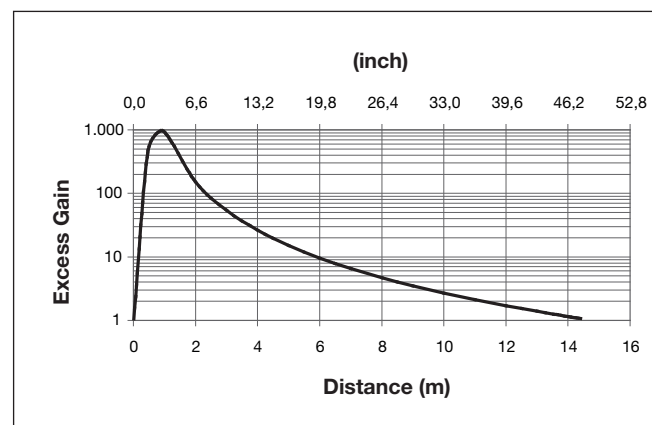
Operation Diagram



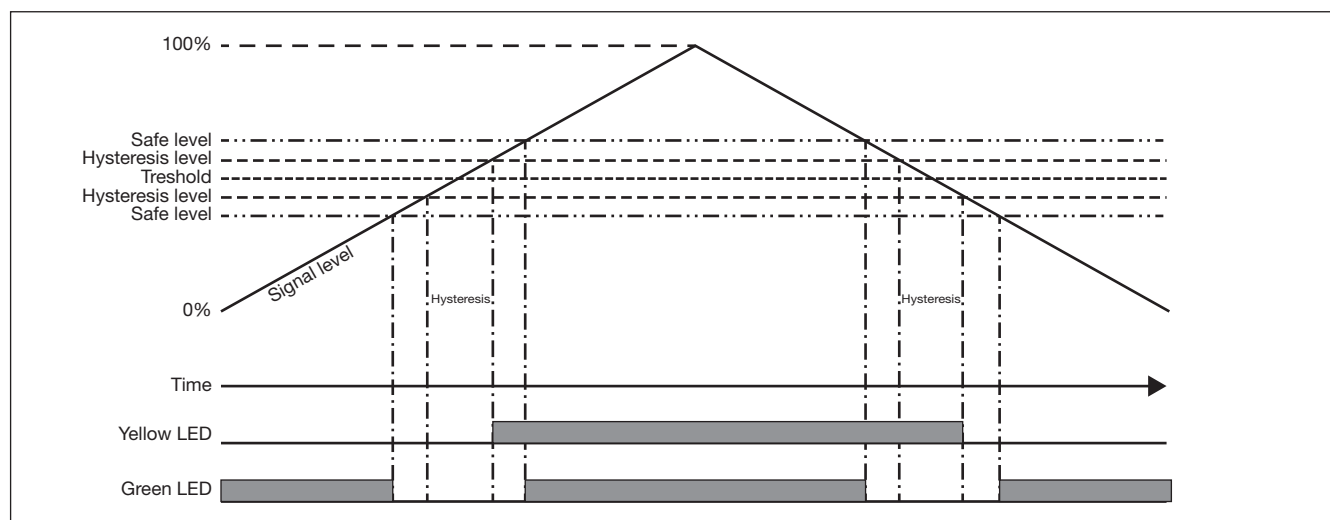
Detection Diagram



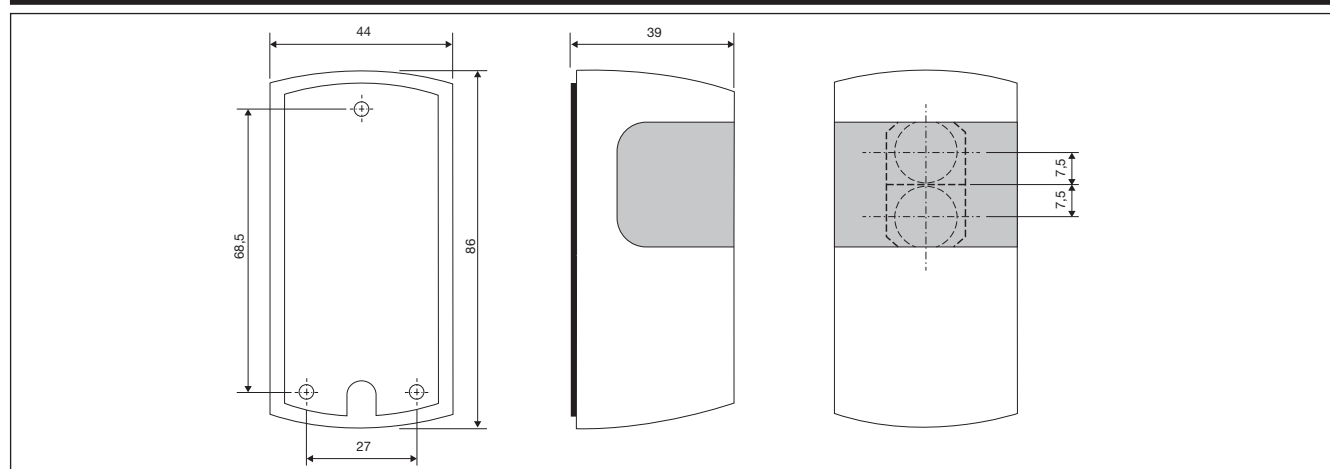
Excess Gain



LED



Dimensions





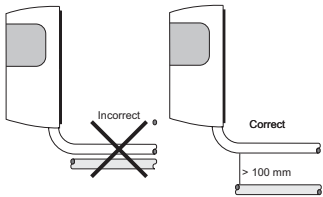
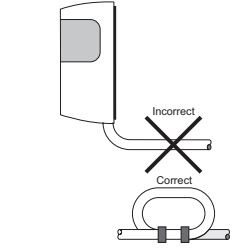
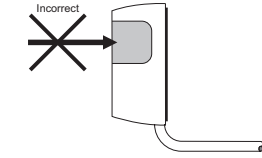
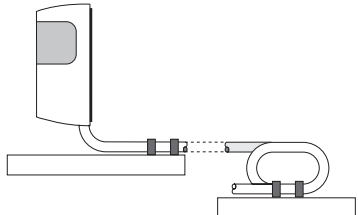
Delivery Contents

- Photoelectric switch: PD86CNP12QPMU
- Screws and rawlplugs
- Installation instruction
- **Packaging:** Cardboard box

Accessories

- Reflectors: ER series

Installation Hints

| | | | |
|---|---|---|--|
| <p><i>To avoid interference from inductive voltage / current peaks, separate the proximity switch cables from any other power cables. E.g. Engine, contactor or solenoid cables</i></p>  | <p><i>Relief of the cable strain</i></p>  <p><i>The cable should not be pulled</i></p> | <p><i>Protection of the sensing face</i></p>  <p><i>A proximity switch should not serve as mechanical stop</i></p> | <p><i>Sensor mounted on a mobile carrier</i></p>  <p><i>Any repetitive flexing of the cable should be avoided</i></p> |
|---|---|---|--|

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