

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 its mute input, the sensor fulfils 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	Range (S _n)	Ordering no.
86 x 44 x 39 mm	12 m	PD86CNP12QPMU

Specifications

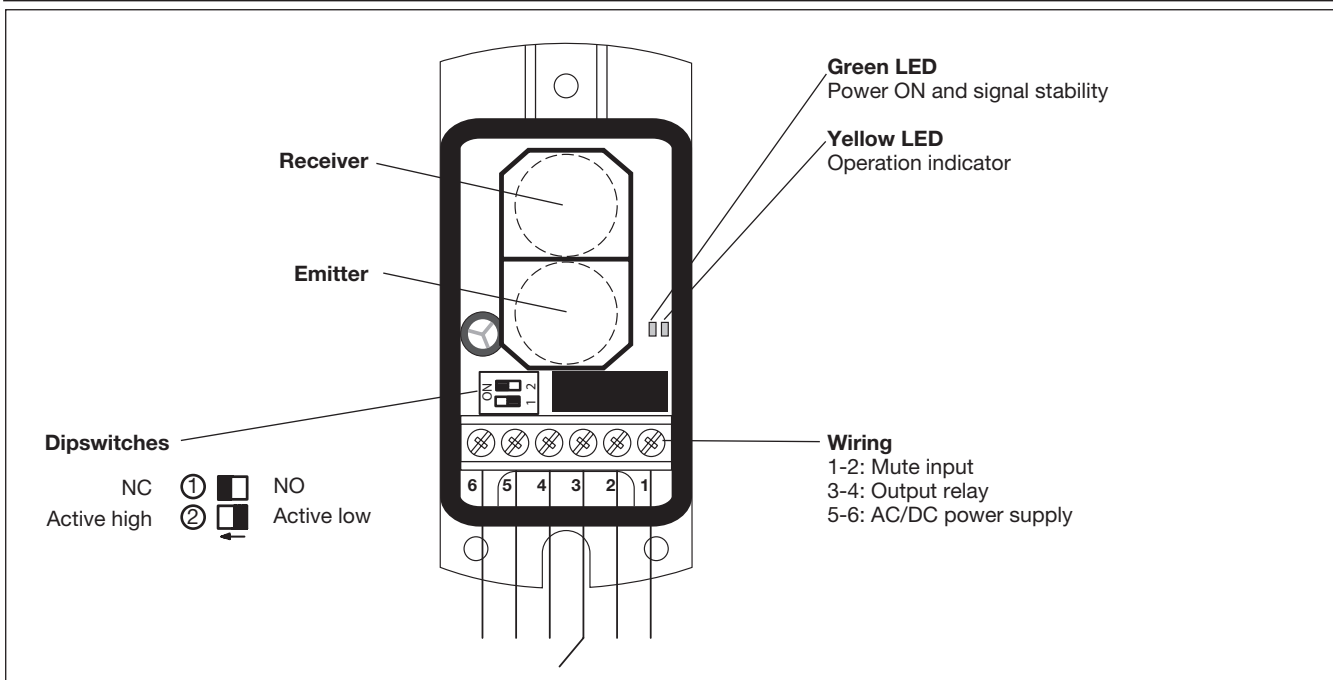
Rated operating dist. (S_n)	12 m @ ER4 ref. target (0 to 5,000 lux)	Dielectric voltage	1,000 VAC (rms) (cont./supply)
Blind zone	≤ 0.15 m	Light source	GaAlAs, LED, 660 nm
Sensitivity	Fixed	Light type	Visible, modulated
Temperature drift	≤ 0.6 %/°C	Optical angle	± 1.5°
Differential travel (H) Hysteresis	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	μ (micro gap)	Response time (object related)	OFF-ON (t _{ON}) ≤ 20 ms ON-OFF (t _{OFF}) ≤ 30 ms
Contact ratings (AgCdO)	AC 1 0.5 A/30 VAC DC 1 1 A/30 VDC	Power ON delay (t_v)	≤ 300 ms (typ. 100 ms)
Resistive loads	AC 15 0.5 A/50 VAC DC 13 1 A/30 VDC	DIP-switch Selectable functions	Mute input active high or active low Relay output NO (make) or NC (break)
Small inductive loads	≥ 1,000 000 cycles > 100,000 AC11 or DC11 1,800 operations per hour	Mute function	Active high ≥ 12 VDC/VAC Response time < 45 ms Hold time < 70 ms Active low < 6 VDC/VAC Response time < 70 ms Hold time < 45 ms
Mechanical life (typical)		Max current	35 mA @ 24 VDC 70 mA @ 24 VAC
Electrical life (typical)			
Minimum load power	1 mW		



Specifications (cont.)

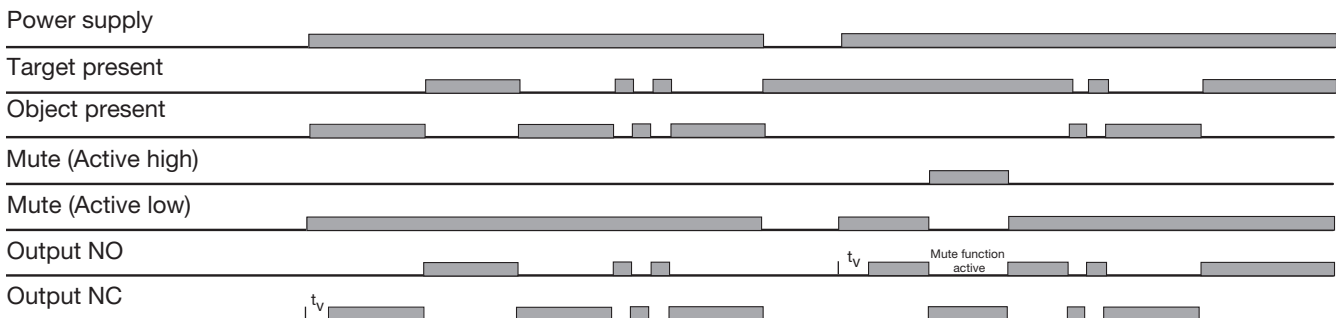
Indication Target detected	LED, yellow	Rated insulation voltage	250 VAC (rms)
Power	LED, green	Housing material	Outer cover PC, grey
Signal	LED, green	Inner cover	PMMA, red
		Backpart	ABS, black
Environment		Kraiburg TC5MLZ or TP5VCZ	Cable outlet
Overvoltage category	III (IEC 60664/60664A; 60947-1)	Connection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

Wiring Diagram

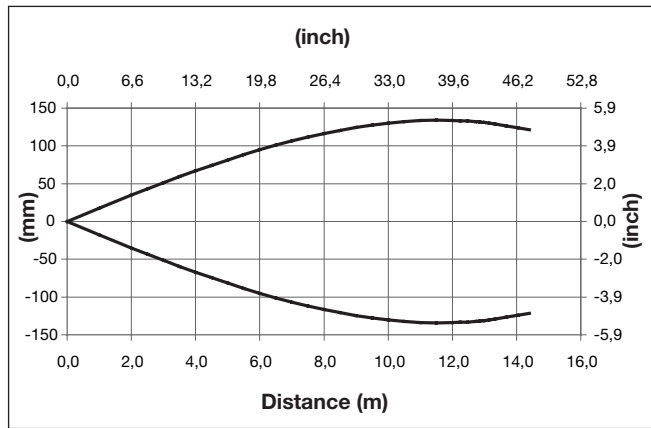


Operation Diagram

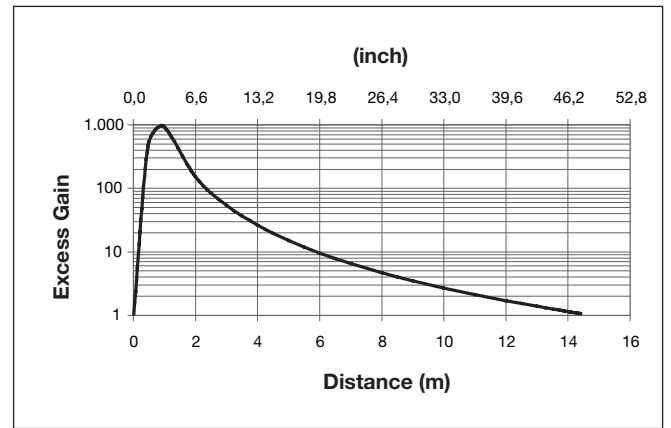
t_v = Power ON delay



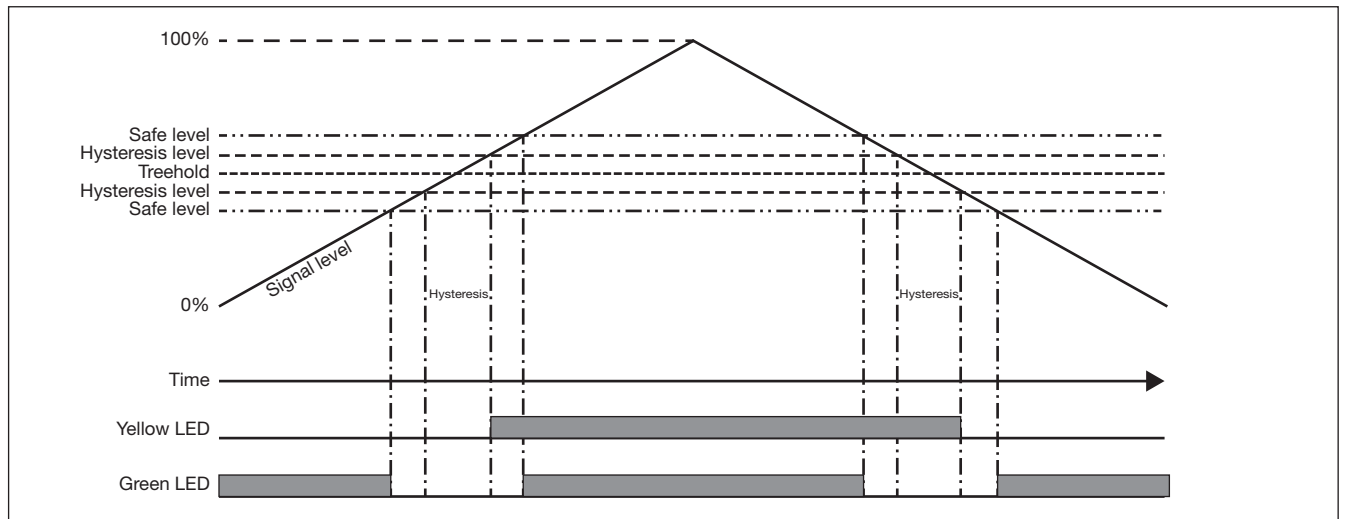
Detection Diagram



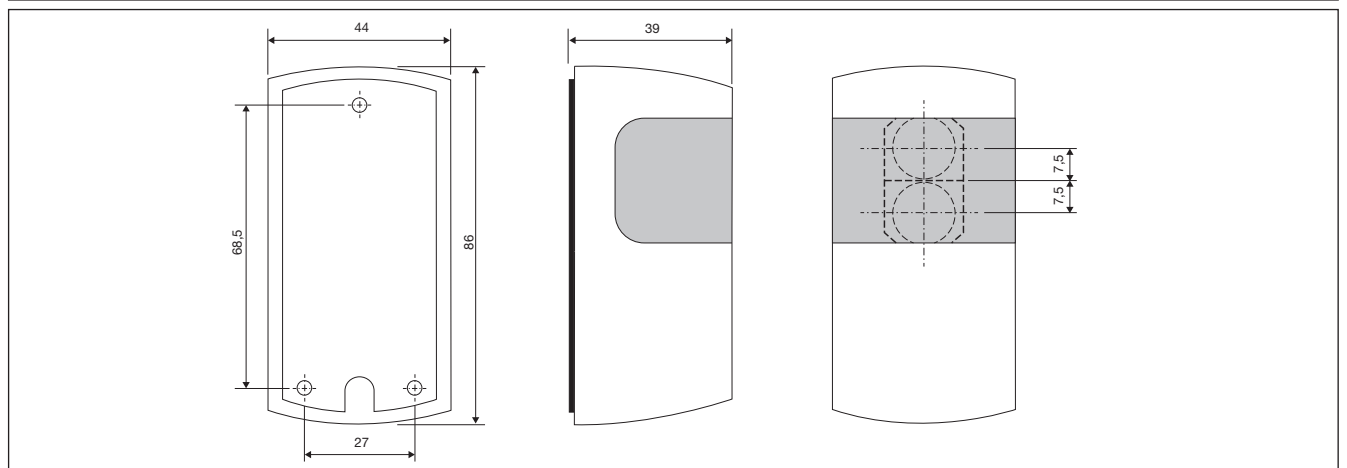
Excess Gain



LED



Dimensions



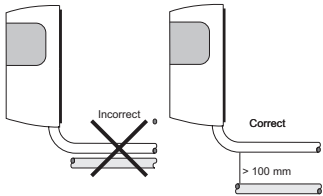
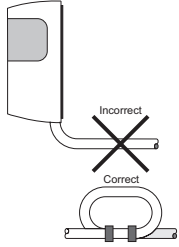
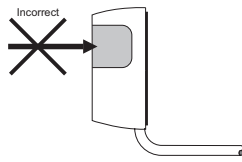
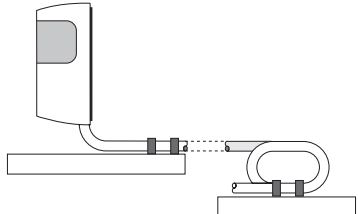
Delivery Contents

- 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>Incorrect</p> <p>Correct</p> <p>> 100 mm</p>	<p><i>Relief of the cable strain</i></p>  <p>Incorrect</p> <p>Correct</p> <p><i>The cable should not be pulled</i></p>	<p><i>Protection of the sensing face</i></p>  <p>Incorrect</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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