

# Photoelectrics

## Through-beam, Relay Output

### Type PD98CNT30QMU

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- Domestic garage door control
- Range 15 m or 30 m
- Modulated, infrared light
- Supply voltage: 12 to 24 VAC/DC
- SPDT relay output
- LED for output indication
- Protection: reverse polarity, transients
- Connection, terminal block
- Emitter mute and gain adjustment
- CE and UL325 approved



## Product Description

The PD98CNT30QMU sensor is developed specifically for the domestic and industrial door market. The sensor meets the new regulations for industrial doors in Europe. The compact size of the outdoor sensor allows easy on-wall-mounting without building the sensor into the wall. The sensor is easy to use and no sensitivity adjustments are necessary. The spherical lens design is superior to previous design of sensors with built-in parabolic reflectors that had corrosion and dust problems.

Increased safety by build-in:  
- Sensor test function; the emitter has a built-in test input designed to mute the emitter and thus evaluate the sensor function. Test function is to be activated by the door controller.

High neighbour immunity can be achieved using the synchronization feature.

The sensor works with a power-supply from 12 to 24 VAC/DC. The housing is made of Polycarbonate for maximum lifetime and outstanding impact strength.

## Ordering Key

PD98CNT30QMU

Type	_____
Housing style	_____
Housing size	_____
Housing material	_____
Sensor code	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Mute function	_____

## Type Selection

Housing size	Range S <sub>n</sub>	Ordering no. Receiver + Emitter
98 x 56 x 37 mm	30 m	PD98CNT30QMU

## Specifications Emitter

Rated operational volt. (U <sub>e</sub> )	12 V to 24 VAC/DC	Light source	LED, 880 nm
Ripple (U <sub>rrp</sub> )	≤ 10%	Light type	Infrared, modulated
Supply current	≤ 20 mA	Optical angle	± 5° (using aperture)*
Protection	Reverse polarity, transients	Synchronization	
Control input		Sync. ON	PCB patch** "SYNC" closed
Normal oper.	< 1.5 VAC or < 1 VDC	Sync. OFF	PCB patch** "SYNC" open (factory settings)
Mute	> 3.5 VAC or > 2 VDC		

\* With aperture the distance is reduced by 30 %

\*\* Solder bridge

## Specifications Receiver

<b>Rated operating dist. (S<sub>n</sub>)</b>	30 m with open PCB gain patch** 15 m with closed PCB gain patch** (factory settings)	<b>Ambient light</b>	>20.000 LUX
<b>Blind zone</b>	None	<b>Optical angle</b>	± 5° (using aperture)***
<b>Temperature drift</b>	≤ 0.4%/°C	<b>Protection</b>	Reverse polarity, transients
<b>Hysteresis (H)</b>	3 - 20%	<b>Operating frequency (f)</b>	25 Hz
<b>Rated operational volt. (U<sub>e</sub>)</b>	12 to 24 VAC/DC	<b>Response time</b>	OFF-ON (t <sub>ON</sub> ) ≤ 20 ms ON-OFF (t <sub>OFF</sub> ) ≤ 20 ms
<b>Ripple (U<sub>rp</sub>)</b>	≤ 10%	<b>Power ON delay (t<sub>v</sub>)</b>	≤ 300 ms
<b>Output current</b>		<b>Indication function</b>	
Continuous (I <sub>e</sub> )	1 A / 30 VDC 0,5 A / 30 VAC	Output ON	LED, yellow
Lifetime contacts	> 100 000 AC11 or DC11	<b>Synchronization</b>	
<b>No load supply current (I<sub>o</sub>)</b>	≤ 30 mA	Sync. ON	PCB patch** "SYNC" closed
		Sync. OFF	PCB patch** "SYNC" open (factory settings)

\*\* Solder bridge

\*\*\* With aperture removed the distance and angle will be increased, and the sensor no longer meets ESPE type 2.

## General Specifications

<b>Environment</b>		<b>Rated insulation voltage</b>	50 VDC
Overvoltage category	II (IEC 60664/60664A, 60947-1)	<b>Housing material</b>	
Pollution degree	3 (IEC 60664/60664A, 60947-1)	Front	PC black
Degree of protection	IP 54 (IEC 60529, 60947-1)	Backpart	ABS
<b>Temperature</b>		<b>Connection</b>	
Operating	-20° to +60°C (-4° to +140°F)	Emitter	3 pole terminal block
Storage	-25° to +80°C (-13° to +176°F)	Receiver	5 pole terminal block
<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	<b>Weight</b>	
<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)	Set	185 g
		<b>CE-marking</b>	EN12445, EN12453, EN12978
		<b>UL-Approval</b>	cULus UL325, CSA-C22.2 No.247

## Operation Description

- The sensor shall be mounted with the draininghole facing down.
- The sensor must be mounted with silicone between the sensor and mounting wall to avoid water entering the sensor.
- The cable must be mounted pointing downwards to avoid water entering the sensor (See Dimensions).
- This product can only be used to detect direct interruption between Tx and Rx; it must not be reflected
- The sensors must be mounted on a hard vibration-free surface
- In order to obtain an "ESPE type 2" safety device, the sensors must be connected to a control system fitted with "Photo test"

## Operation Diagram

t<sub>v</sub> = Power ON delay

Power supply

Target emitter present

Object present

Break (NC) Output ON

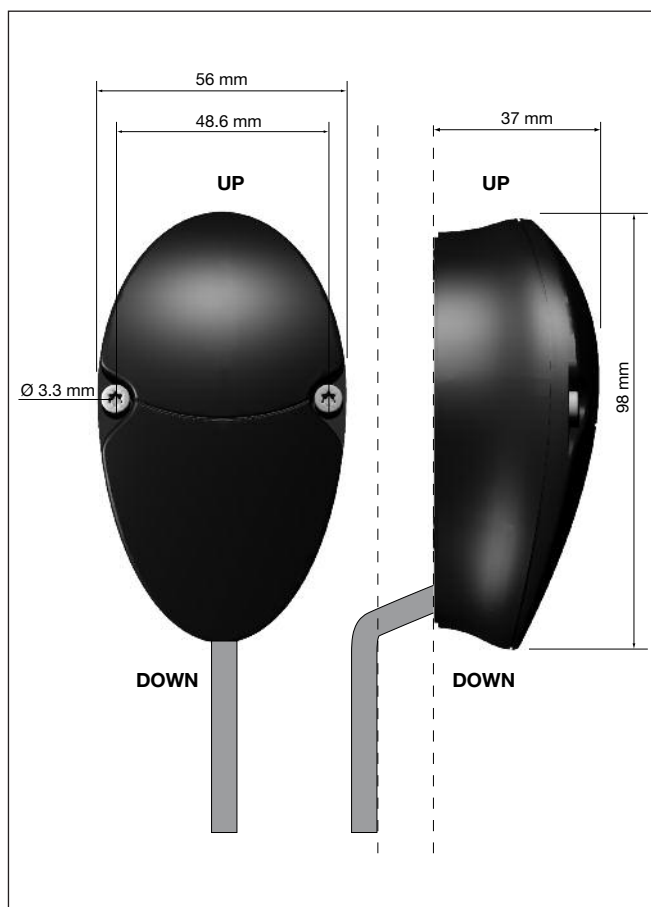
Make (NO) Output ON

Mute active &gt;3.5 VAC OR &gt; 2 VDC

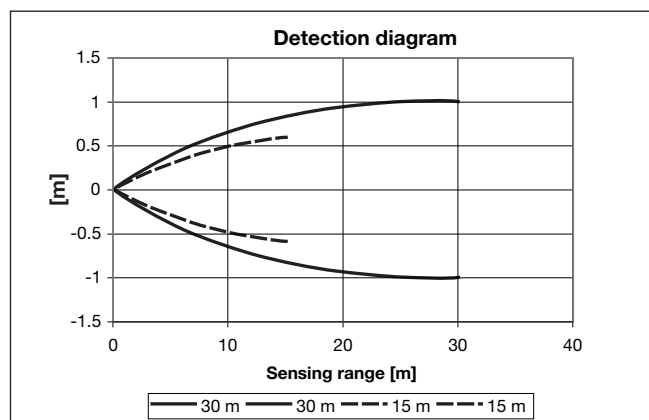
PD98

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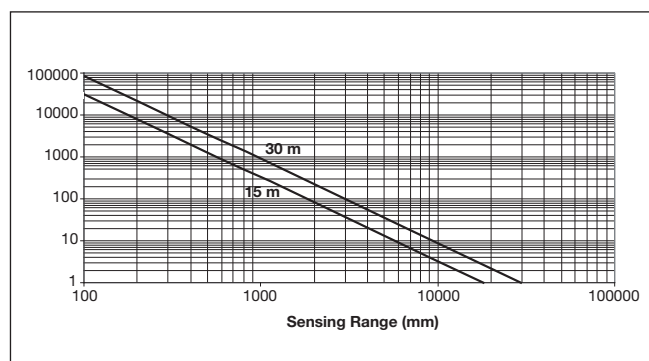
## Dimensions



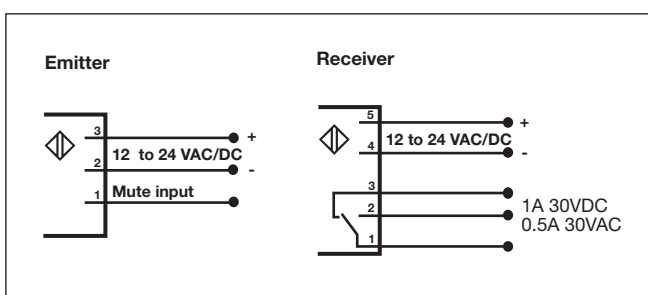
## Detection Diagram



## Excess Gain



## Wiring Diagram



## Delivery Contents

- PD98 emitter & receiver
- Installation instruction
- **Packaging:** Cardboard box
- 4 pcs 3 x 14 mm self cutting screws for top mounting
- 4 pcs screws for raw plugs
- 4 pcs raw plugs

## Installation Hints

