

Photoelectrics

Through-beam, Relay Output, Battery Powered

Type PD180CBT30Q/MU

CARLO GAVAZZI



- Industrial doors and gates
- Range 15 m or 30 m
- Modulated, infrared light
- Supply voltage: 12 to 24 VAC/DC (receiver)
- Supply voltage: 2 x 3.6 VDC Lithium batteries (emitter)
- SPST relay output
- SPST relay low battery
- LED for output indication
- Protection: reverse polarity, transients
- Connection, terminal block
- Emitter mute
- CE and UL325 approved



Product Description

The PD180CBT30Q/MU sensor is developed specifically for the domestic and industrial door market. The sensor meets the regulations for industrial doors in Europe and North America. The robust polycarbonate housing allows flexible installation as the lenses are adjustable both in horizontal and vertical direction. The sensor is easy to use and no sensitivity adjustments are necessary. The aspherical 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 or the door function can be activated by a limit switch, magnet sensor or a safety edge profile.

The receiver works with a power-supply from 12 to 24 VAC/DC and the emitter is designed to use 2 x 3.6 V Lithium batteries.

Ordering Key

PD180CBT30Q/MU

Type	_____
Housing style	_____
Housing size	_____
Housing material	_____
Battery operated	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Mute function	_____

Type Selection

Housing size	Range S _n	Ordering no. Emitter	Ordering no. Receiver
180 x 51 x 49 mm	30 m	PD180CBT30MU	PD180CBT30Q

Specifications Emitter

Rated operating dist (S_n)	15 m with jumper not activated 30 m with jumper activated	Protection	Reverse polarity, transients
Rated operational volt. (U_e)	2 x 3.6 VDC Lithium batteries Size AA	Mute input	
Battery lifetime		Normal operation	> 6 KΩ
Jumper not active	15m => 2.5 years	Mute	< 4 KΩ
Jumper active	30m => 1.5 years	Light source	LED, 850 nm
Supply current		Light type	Infrared, modulated
With Mute active (I _o)	Typ. 29 μA	Optical angle	± 5° (using aperture)*

* Without aperture the distance is increased by 30 %

Specifications Receiver

Rated operating dist. (S_n)	15 or 30 m depended on emitter settings	Ambient light	>20.000 LUX
Blind zone	None	Optical angle	± 5° (using aperture)**
Temperature drift	≤ 0.4%/°C	Protection	Reverse polarity, transients
Hysteresis (H)	3 - 20%	Operating frequency (f)	25 Hz
Rated operational volt. (U_e)	Supply class 2 12 to 24 VAC/DC	Response time	OFF-ON (t _{ON}) ≤ 20 ms ON-OFF (t _{OFF}) ≤ 20 ms
Ripple (U_{rip})	≤ 10%	Power ON delay (t_v)	≤ 300 ms
Output current (both outputs) Continuous (I _e)	1 A / 30 VDC 0,5 A / 30 VAC > 100 000 AC11 or DC11	Indication function	LED, green LED, yellow
Lifetime contacts			
No load supply current (I_o) + Battery low alarm	≤ 35 mA DC ≤ 55 mA DC		

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

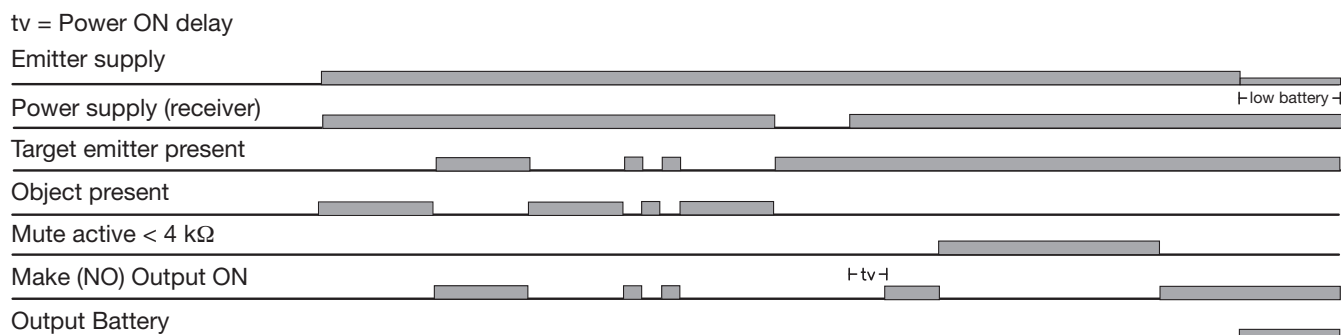
General Specifications

Environment		Rated insulation voltage	50 VDC
Overvoltage category	II (IEC 60664/60664A, 60947-1)	Housing material	
Pollution degree	3 (IEC 60664/60664A, 60947-1)	Front	PC black
Degree of protection	IP 55 (IEC 60529, 60947-1)	Backpart	PC black
Temperature		Connection	
Operating	-25° to +55°C (-13° to +131°F)	Emitter	2 pole terminal block
Storage	-25° to +80°C (-13° to +176°F)	Receiver	6 pole terminal block
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	Weight	
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)	Emitter	270 g
Lens adjustment		Receiver	230 g
Adjustable optics	Horizontal 200° Vertical ±30°	CE-marking	EN12445, EN12453, EN12978
		UL-Approval	cULus UL325, CSA-C22.2 No.247

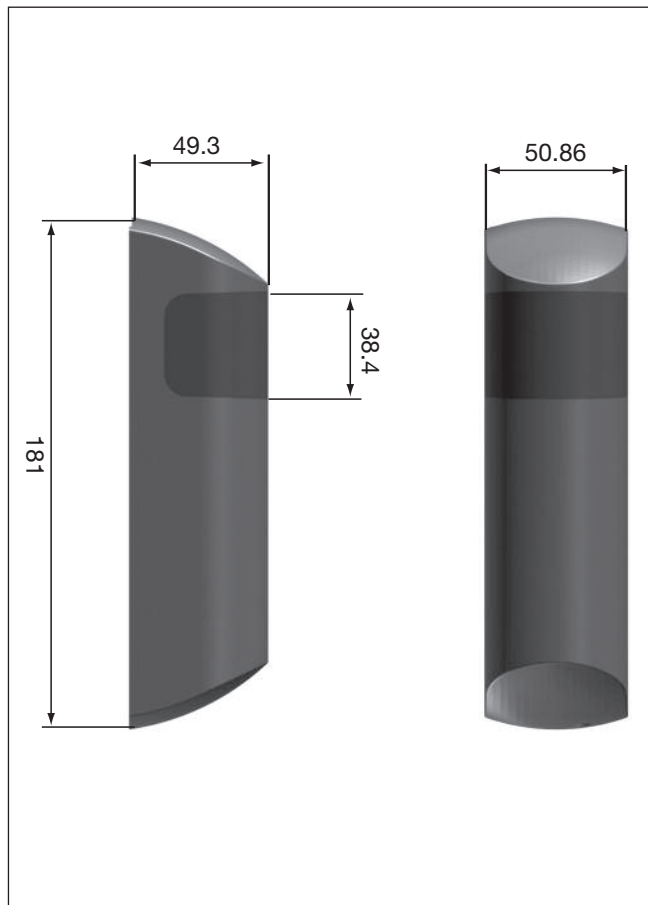
Operation Description

- The sensor shall be mounted with the draining hole facing down.
- 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" or similar sensor verification function.

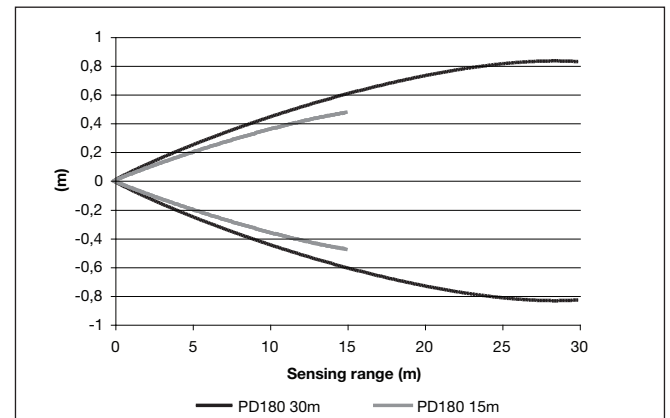
Operation Diagram



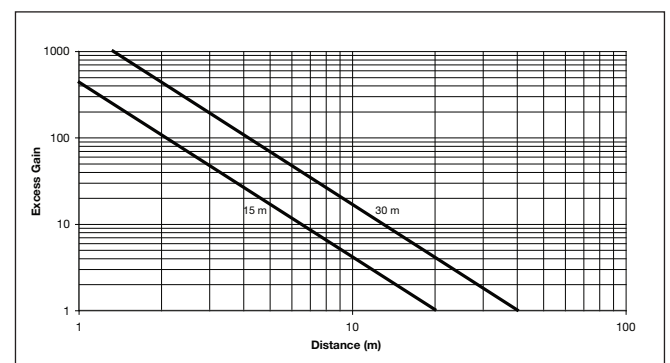
Dimensions



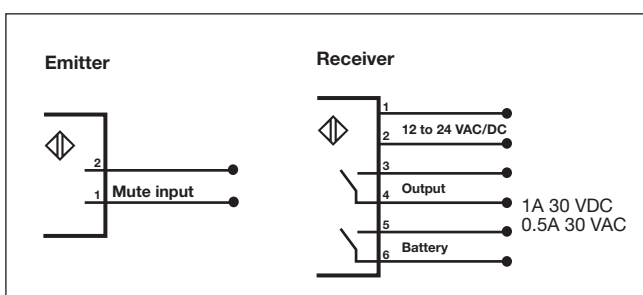
Detection Diagram



Excess Gain



Wiring Diagram



Delivery Contents

- PD180 emitter or receiver (separate box)
- Installation instruction in emitter box
- **Packaging:** Cardboard box
- 2 x 3 screws for raw plugs $\varnothing 2.9 \times 25$ DIN 7981C
- 2 x 3 raw plugs for 8 mm hole
- 2 x 1 Strain releif
- 2 x 2 Screws for strain releif M3 x 12 mm
- 2 x 1 Cable gland

Installation Hints

To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables	Relief of cable strain The cable should not be pulled	Protection of the sensing face A proximity switch should not serve as mechanical stop	Switch mounted on mobile carrier Any repetitive flexing of the cable should be avoided
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