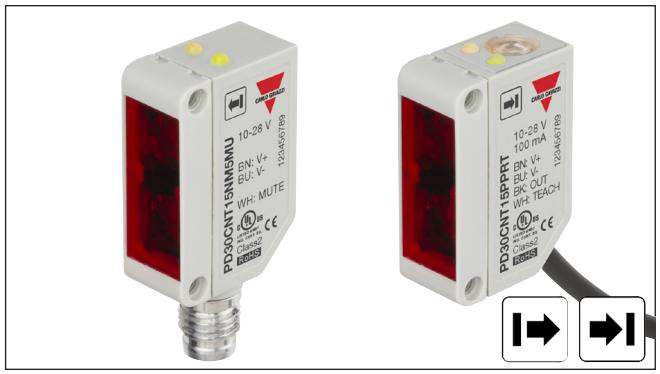
Photoelectrics
Through-beam
Type PD30CNT15....MU/RT



- Miniature sensor range
- Range: 15 m
- Sensitivity adjustment by Teach-In programming
- Modulated, Infraredred light 880 nm
- Supply voltage: 10 to 30 VDC
- Output: 100 mA, NPN or PNP preset
- Make and break switching function programmable
- LED indication for output, stability and power ON
- Protection: reverse polarity, short circuit and transients
- Cable and plug versions
- Excellent EMC performance
- Mute function (Sensor blanking) Emitter
- Remote teach - Receiver

Product Description

The PD30CNT15 sensor family comes in a compact 10 x 30 x 20 mm reinforced PMMA/ABS housing.
The sensors are useful in applications where high-accuracy detection as well as small size is required.
Compact housing and high power LED for excellent performance-size ratio.
The Teach-In function for adjustment of the sensitivity makes the sensors highly flexible. The output type is preset (NPN or PNP), and the output switching function is programmable (NO or NC).
The mute function can be used for testing the sensor for: Malfunctioning, disconnection, optical axis adjustment, dusty and dirty lenses.

Ordering Key

PD30CNT15NPM5RT

- **Type**
- **Housing style**
- **Housing size**
- **Housing material**
- **Housing length**
- **Detection principle**
- **Sensing distance**
- **Output type**
- **Output configuration**
- **Connection type**
- **Remote teach**

Type Selection

Housing W x H x D	Range S_n	Connection	Ordering no. NPN Emitter	Ordering no. NPN Make or break switching	Ordering no. PNP Emitter	Ordering no. PNP Make or break switching
10 x 30 x 20 mm	15 m	Cable	**PD 30 CNT 15 NMU**	**PD 30 CNT 15 NPRT**	**PD 30 CNT 15 PMU**	**PD 30 CNT 15 PPRT**
10 x 30 x 20 mm	15 m	Plug	**PD 30 CNT 15 NM5MU**	**PD 30 CNT 15 NPM5RT**	**PD 30 CNT 15 PM5MU**	**PD 30 CNT 15 PPM5RT**

Note: Emitter, Receiver and Connector to be ordered separately.

Specifications Emitter EN 60947-5-2

Rated operational volt. (U_B)		10 to 30 VDC
Ripple (U_{rpp})		≤ 10%
Supply current		≤ 25 mA
Light Source		GaAlAs, LED, 880 nm
Optical angle		± 2° at ½ range
Light type		Infrared, modulated
Light spot		110 mm @ 1.5 m
Protection		Reverse polarity, transients
Indication function		
Power supply ON		LED, green
Mute function		
Emitter off	0 to 3 sec	0 to 2.5 VDC (NPN) 5 to 30 VDC (PNP)
Emitter half power	> 3 sec	0 to 2.5 VDC (NPN) 5 to 30 VDC (PNP)

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Specifications Receiver EN 60947-5-2

Rated operating distance (S_n)	15 m, with PD30CNT15 Emitter
Blind zone	None
Sensitivity	Adjustable by Teach-In (push button or wire)
Temperature drift	≤ 0.3%/°C
Hysteresis (H) (differential travel)	≤ 10%
Rated operational volt. (U_B)	10 to 30 VDC
Ripple (U_{rpp})	≤ 10%
Adjustable range resolution	1.5 m to 15 m 3% on distance
Output current Continuous (I_e) Short-time (I)	≤ 100 mA ≤ 100 mA (max. load capacity 100 nF)
No load supply current (I_o)	≤ 30 mA
Minimum operational current (I_m)	0.5 mA
OFF-state current (I_r)	≤ 100 µA
Voltage drop (U_d)	≤ 2.5 VDC @ 100 mA

Protection	Short-circuit, reverse polarity and transients
Sensing angle	± 4°
Ambient light	10,000 lux
Operating frequency	1000 Hz
Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	≤ 0.5 ms ≤ 0.5 ms
Power ON delay (t_v)	≤ 300 ms
Output function NPN and PNP NO/NC switching function	Preset Set up by button
Remote teach "Push button active" Tamper proof	0 to 2.5 VDC (NPN) 5 to 30 VDC (PNP) When activated more than 20 sec. the sensor goes into a Tamper proof mode.
Indication Output ON Signal stability ON and power ON	LED, yellow LED, green

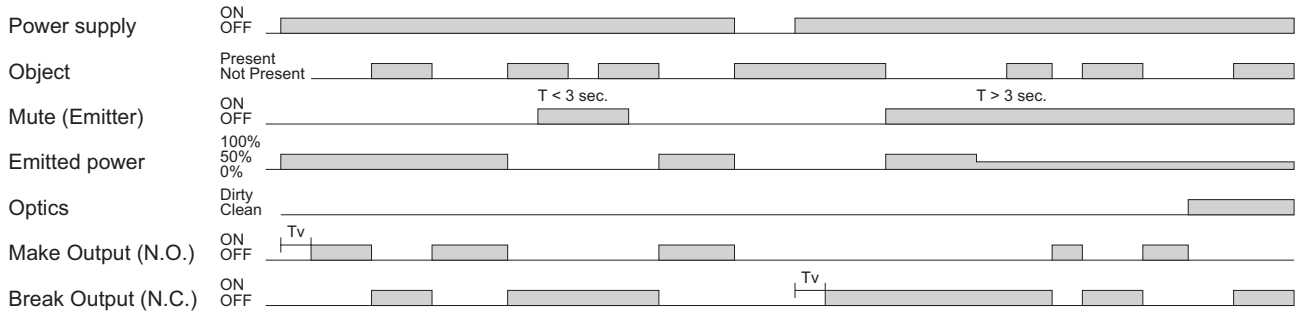
General Specifications EN 60947-5-2

Environment Installation category Pollution degree Degree of protection	III (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP 67 (IEC 60529; 60947-1)
Ambient temperature Operating Storage	-25° to +55°C (-13° to +131°F) -40° to +70°C (-40° to +158°F)
Vibration	10 to 55 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
Shock	30 g / 11ms, 3 pos, 3 neg per axis (IEC 60068-2-6, 60068-2-32)

Rated insulation voltage	500 VAC (rms)
Housing material Body Front material	ABS PMMA, red
Connection Cable Emitter/receiver Plug	PVC, black, 2 m, Ø = 3.3 mm 4 x 0.14 mm² M8, 4-pin (CON.54NF.. series)
Weight (each sensor)	With cable: 40 g With plug: 10 g
CE-marking	Yes
Approvals	cULus (UL508)

Operation Diagram

tv = Power ON delay



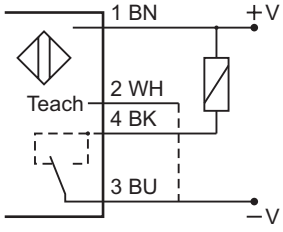
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Wiring Diagrams

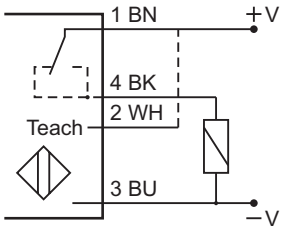
Receiver

NPN



Teach input active when connected to GND

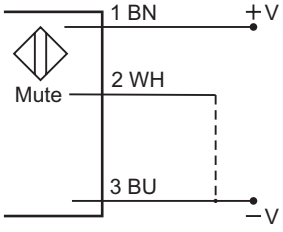
PNP



Teach input active when connected to V+

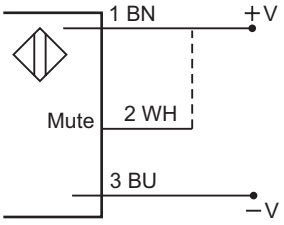
Emitter

NPN



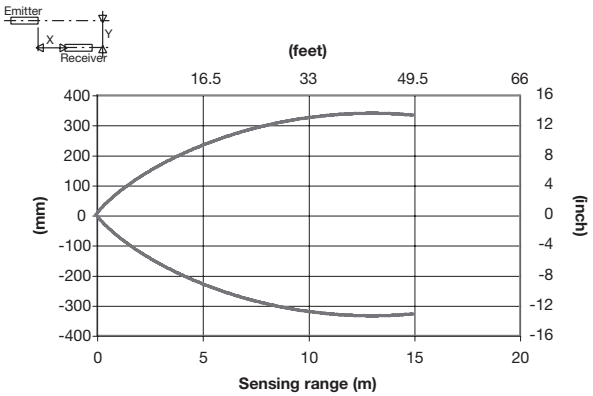
Mute input active when connected to GND

PNP

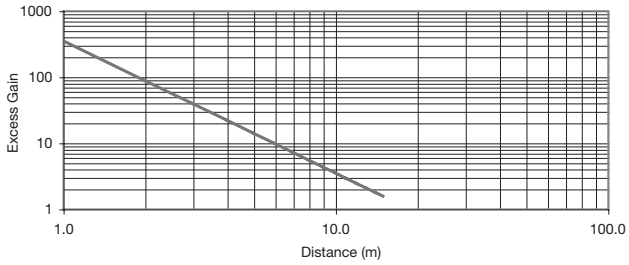


Mute input active when connected to V+

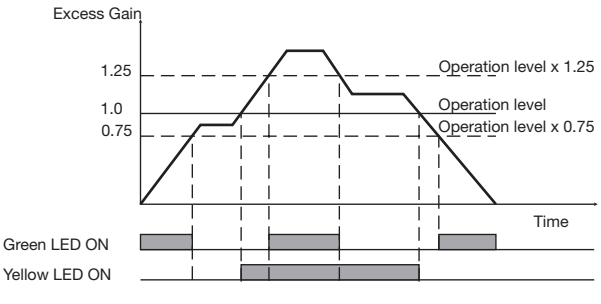
Detection Diagram



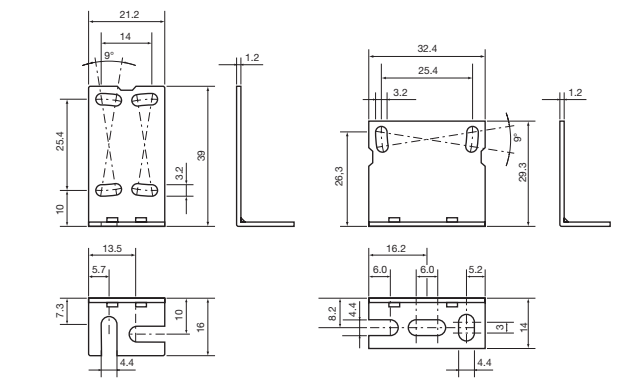
Excess Gain



Signal Stability Indication



Accessories



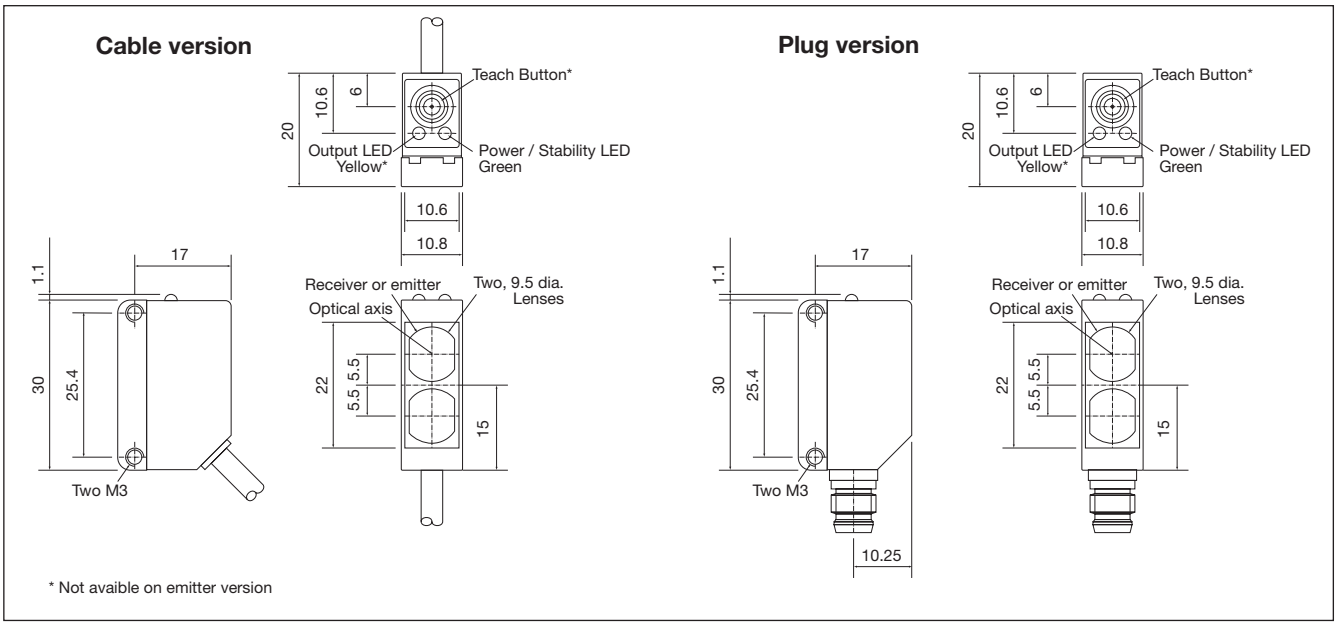
Mounting bracket: APD30-MB1

Mounting bracket: APD30-MB2

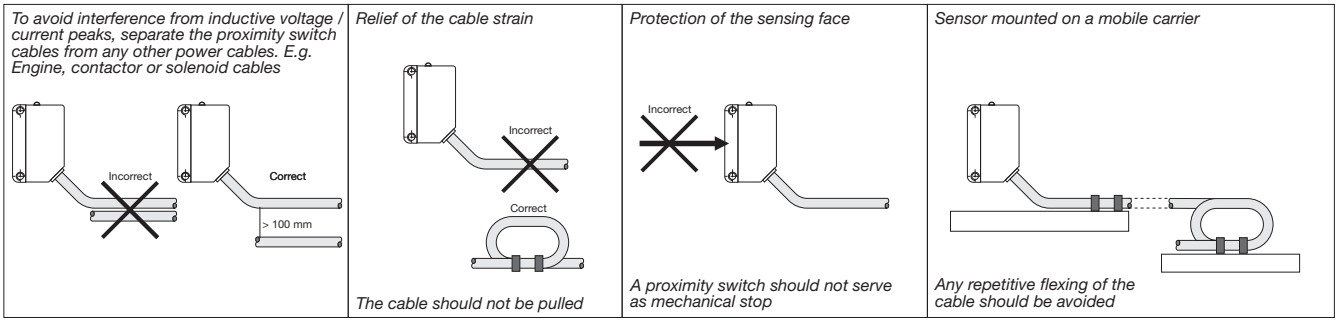
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Dimensions



Installation Hints



Delivery Contents

- Photoelectric switch: PD 30 CNT 15 ...
- Installation instruction
- Mountingbracket APD30-1
- **Packaging:** Cardboard box

Accessories

- Mounting bracket APD30-2 to be purchased separately
- Connector type CONG 5A../CON. 54NF.. series.

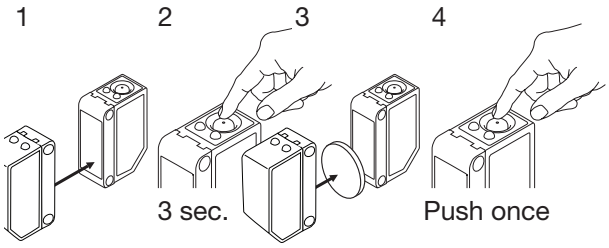
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Teach functions

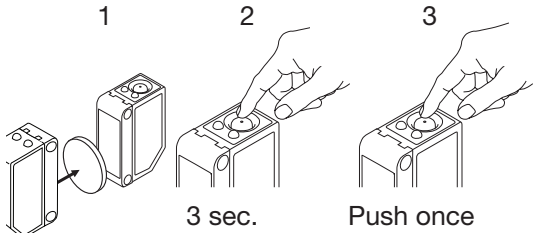
Normal operation, optimized switching point

1. Line up the emitter and receiver. Yellow LED and Green LED are ON.
2. Press the button for 3 seconds until both LEDs flashes simultaneously.
   (The first switch point is stored)
3. Place the object between the emitter and receiver in the detection zone.
4. Press the button once and the sensor is ready to operate (Green LED ON, Yellow LED ON)
   (The second switch point is stored)



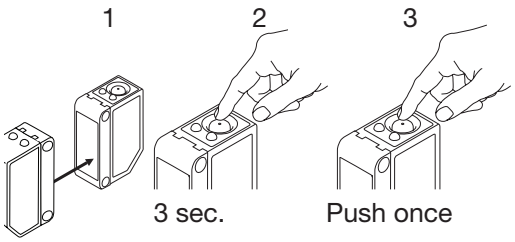
For maximum sensing distance (default setting)

1. Line up the emitter and receiver, place the object between the emitter and receiver in the detection zone. Yellow LED is OFF and Green LED is ON.
2. Press the button for 3 seconds until both LEDs flashes simultaneously.
   (The first switch point is stored)
3. Press the button a second time and the sensor is ready to operate (Green LED ON, Yellow LED ON)
   (The second switch point is stored)



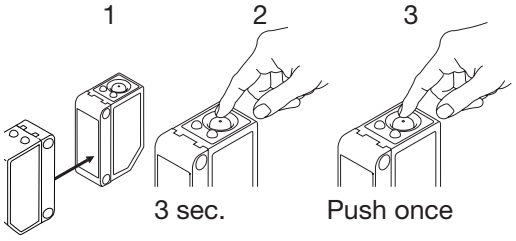
For minimum sensing distance (Transparent or semi-transparent objects)

1. Line up the emitter and receiver. Yellow LED and Green LED are ON.
2. Press the button for 3 seconds until both LEDs flashes simultaneously.
   (The first switch point is stored)
3. Press the button a second time and the sensor is ready to operate (Green LED ON, Yellow LED ON)
   (The second switch point is stored)



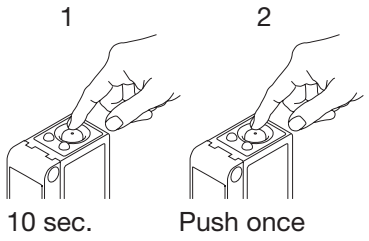
For dynamic set-up (running process)

1. Line up the emitter and receiver. Green LED is ON, status on the yellow LED is not important.
2. Press the button for 3 second until both LEDs flashes simultaneously.
   (The first switch point is stored)
3. Press the button a second time and keep the button pressed for at least one process cycle, release the button and the sensor is ready to operate (The second switch point is stored)



For make or break set-up

1. Press the button for 10 seconds, until the green LEDs flashes.
2. While the green LED flashes, the output is inverted each time the button is pressed. Yellow LED indicates N.O. function selected.
   If the button is not pressed within the next 10 seconds, the current output is stored.



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