Photoelectrics
Retro-reflective
Type PD30CNR06....MU



- **Miniature sensor range**
- **Range: 6 m, with reflector**
- **Sensitivity adjustment by Teach-In programming**
- **Modulated, infrared 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)**

Product Description

The PD30CNR06 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

PD30CNR06PPM5MU

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

Type Selection

Housing W x H x D	Range S_n	Connection	Ordering no. NPN Make or break switching	Ordering no. PNP Make or break switching
10 x 30 x 20 mm	6 m	Cable	**PD 30 CNR 06 NPMU**	**PD 30 CNR 06 PPMU**
10 x 30 x 20 mm	6 m	Plug	**PD 30 CNR 06 NPM5MU**	**PD 30 CNR 06 PPM5MU**

Note: Reflectors to be ordered separately

Specifications EN 60947-5-2

Rated operating distance (S_n)	Up to 6 m, with reflector Ø 80 mm (ER4) 4 m on ER4060 reflector
Blind zone	100 mm
Sensitivity	Adjustable by Teach-In
Temperature drift	≤ 0.1%/°C
Hysteresis (H) (differential travel)	≤ 10%
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)
Ripple (U_{rpp})	≤ 10%
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 @ 24 VDC
Minimum operational current (I_m)	0.5 mA
OFF-state current (I_r)	≤ 100 µA
Voltage drop (U_d)	≤ 2.4 VDC @ 100 mA
Protection	Short-circuit, reverse polarity and transients
Light source	GaAlAs, LED, 880 nm

Light type		Infrared, modulated
Sensing angle		± 2°
Ambient light		10,000 lux
Light spot		110 mm @ 1.5 m
Operating frequency		1000 Hz
Response time		
OFF-ON (t_{ON})		≤ 0.5 ms
ON-OFF (t_{OFF})		≤ 0.5 ms
Power ON delay (t_v)		≤ 300 ms
Output function		
NPN and PNP		Preset
NO/NC switching function		Set up by button
Mute function		
Emitter off	0 to 3 sec	0 to 2.5 VDC (NPN) 5 to 30 VDC (PNP)
Emitter ½ power	> 3 sec	0 to 2.5 VDC (NPN) 5 to 30 VDC (PNP)
Operating mode		Not connected
Indication		
Output ON		LED, yellow
Signal stability ON and power ON		LED, green
Environment		
Installation category		III (IEC 60664/60664A; 60947-1)

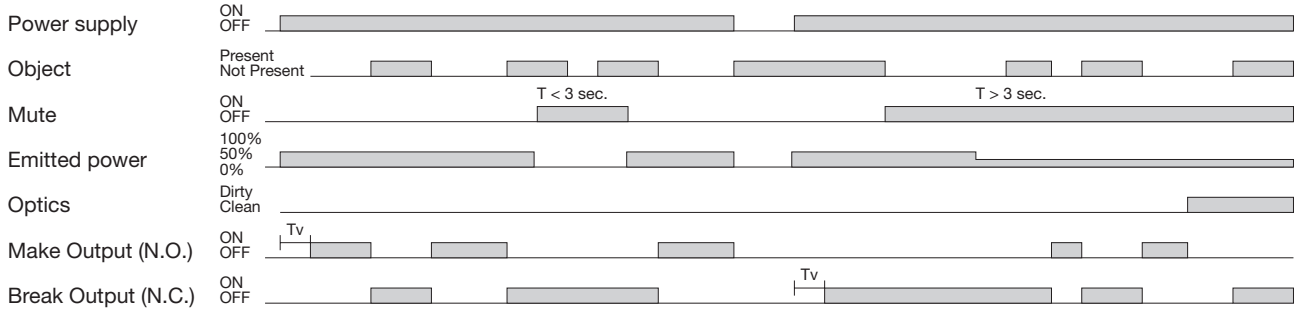
Specifications (cont.) EN 60947-5-2

Pollution degree	3 (IEC 60664/60664A; 60947-1)
Degree of protection	IP 67 (IEC 60529; 60947-1)
Ambient temperature	
Operating	-25° to +55°C (-13° to +131°F)
Storage	-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)

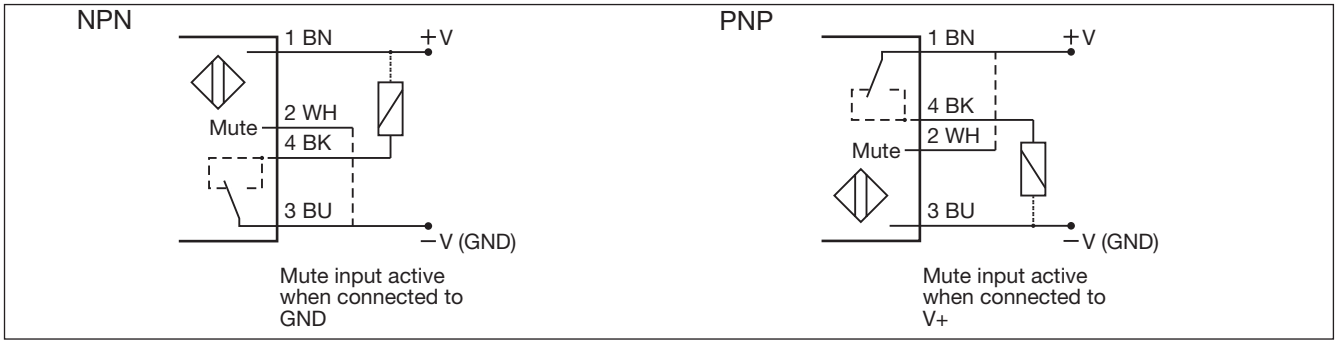
Housing material	
Body	ABS
Front material	PMMA, red
Connection	
Cable	PVC, black, 2 m 4 x 0.14 mm^2, Ø = 3.3 mm
Plug	M8, 4-pin (CON, 54-series)
Weight	With cable: 40 g With plug: 10 g
CE-marking	Yes
Approvals	cULus (UL508)

Operation Diagram

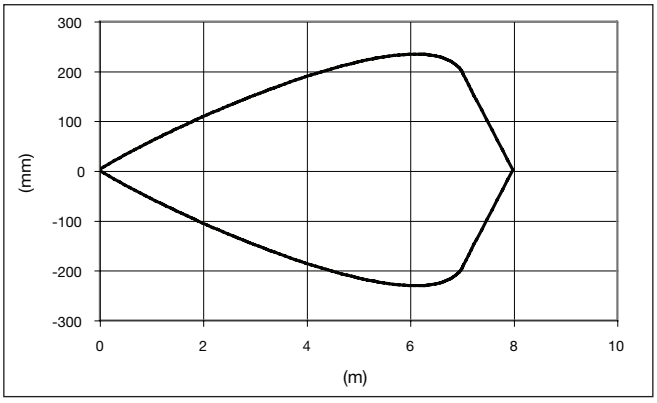
tv = Power ON delay



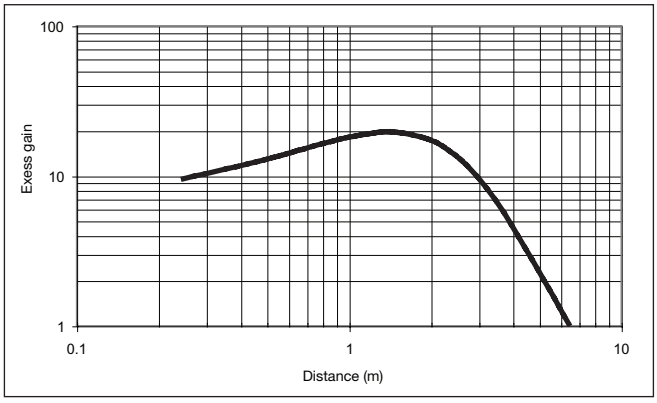
Wiring Diagrams



Detection Diagram



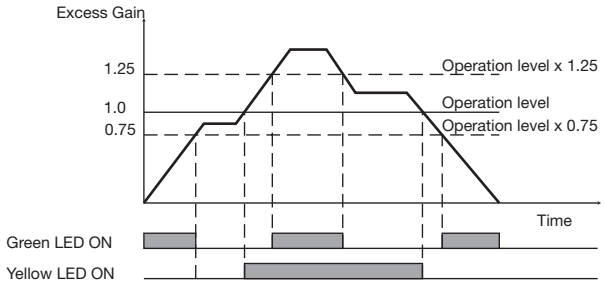
Excess Gain



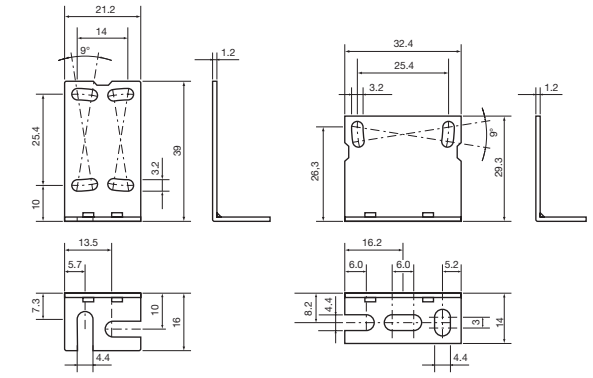
Specifications are subject to change without notice (12.08.2016)

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Signal Stability Indication



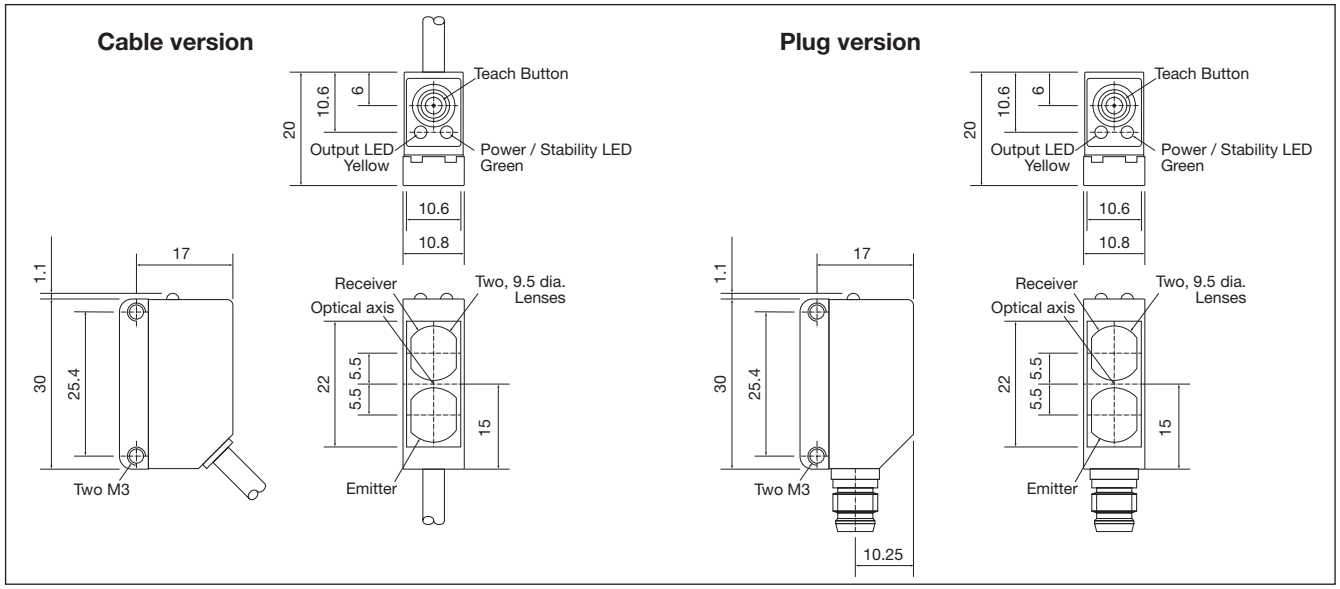
Accessories



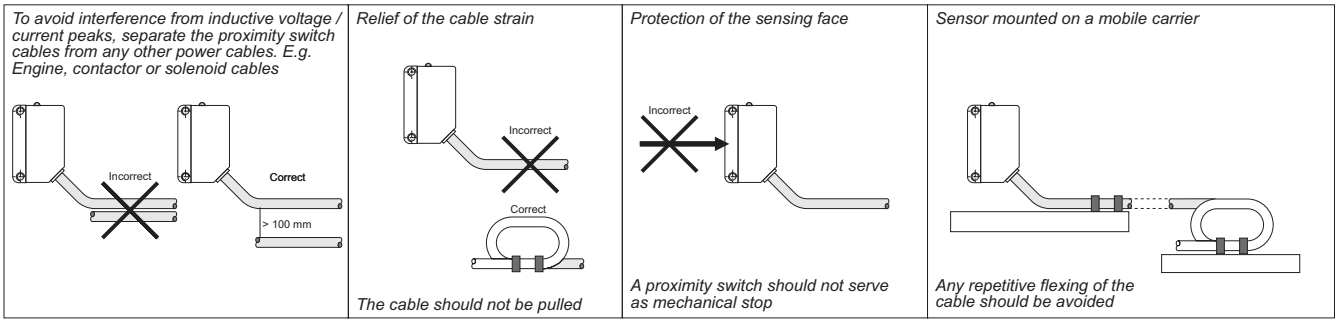
Mounting bracket: APD30-MB1

Mounting bracket: APD30-MB2

Dimensions



Installation Hints



Delivery Contents

- Photoelectric switch: PD 30 CNR 06 ...
- Installation instruction
- Mountingbracket APD30-MB1
- **Packaging:** Cardboard box

Accessories

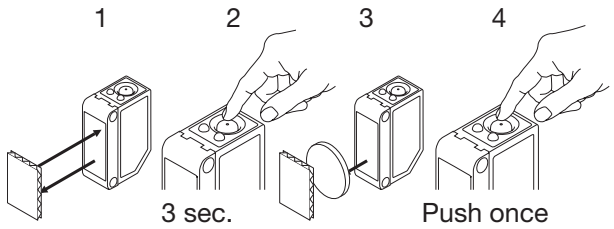
- Reflector is to be purchased separately
- Mounting bracket APD30-MB2 to be purchased separately

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Teach functions

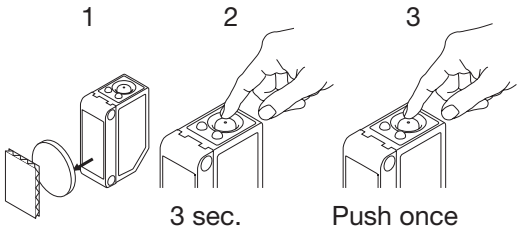
Normal operation, optimized switching point.

1. Line up the sensor with the reflector. 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 sensor and reflector 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)



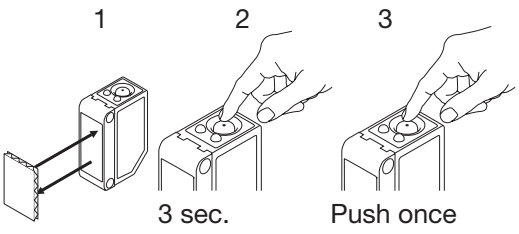
For maximum sensing distance (default setting)

1. Line up the sensor with the reflector, place the object between the sensor and reflector 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)



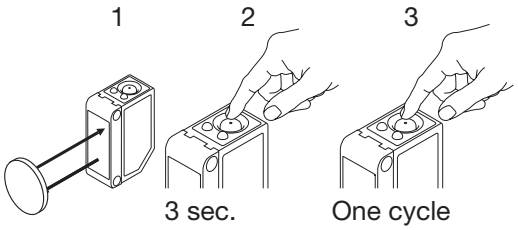
For minimum sensing distance

1. Line up the sensor with the reflector. 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)



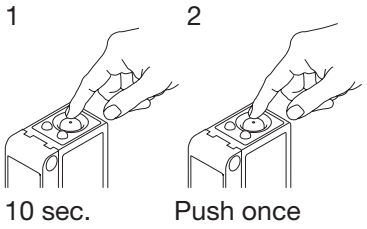
For dynamic set-up (running process)

1. Line up the sensor with the reflector. Green LED is ON, status on the yellow LED is not important.
2. Press the button for 3 second until both LEDs flashes simultaneously.
3. Press the button a second time for at least one second, both LED's flashes fast siultainiously 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 (N.O. or N.C.)

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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RSBS2332A2V23C24HP DLA71DB232P FAA08DW24 GT32S8A RGC3A60A65GGEAFM RSE4012-B RZ3A60D40 BPH CC65/4SA120 DIB01CD4810A EM24DINAV53XE1X GMS-63H 40A RCP1100324VDC CGT-12M-1.0 DMB71DW24 DUA52C724 GMB633PC15 ICB18S30N08PO PA18CAT20M1 RM1A23A50 GFX11 CGMS-12A-120-01 ER 1830 NPAS-1 ICB12L50F06POM1 NRGC-PN RKD2A60D75C WM20AV63H DAC01CM40 DCB51CM24 NRGC-EIP