

Photoelectrics Retro-reflective Type PD30CNR60....SA

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- Miniature sensor range
- Range: 6 m
- Sensitivity adjustment by Potentiometer
- Modulated, infrared light 850 nm
- Supply voltage: 10 to 30 VDC
- Output: 100 mA, NPN or PNP preset
- Make and break switching function
- LED indication for output, stability and power ON
- Protection: reverse polarity, short circuit and transients
- Cable and plug versions
- Excellent EMC performance



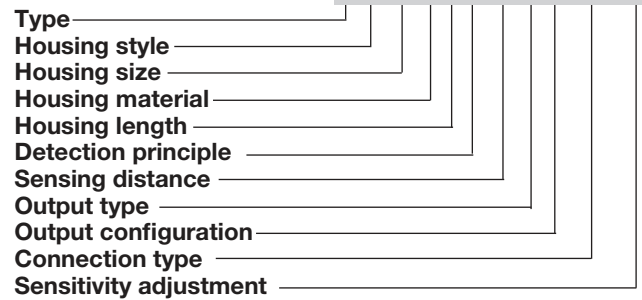
Product Description

The PD30CNR60 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 Potentiometer 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 NO and NC output.

Ordering Key

PD30CNR60NAM5SA



Type Selection

Housing W x H x D	Range S _n	Connection	Ordering no. NPN Make and break switching	Ordering no. PNP Make and break switching
10 x 30 x 20 mm	6 m	Cable	PD 30 CNR 60 NASA	PD 30 CNR 60 PASA
10 x 30 x 20 mm	6 m	Plug	PD 30 CNR 60 NAM5SA	PD 30 CNR 60 PAM5SA

Specifications EN 60947-5-2

Rated operating distance (S_n) Ø 80 mm (ER4) reflector ER4060 reflector	≤ 6 m ≤ 4 m	OFF-state current (I_r)	≤ 100 µA
Blind zone	≤ 100 mm @ Ø80 mm (ER4) and ER4060 reflector	Voltage drop (U_d)	≤ 2 VDC @ I _e max
Sensitivity Electrical adjustment Mechanical adjustment	210° 240°	Protection	Short-circuit, reverse polarity and transients
Temperature drift	≤ 0.2%/°C	Light source	LED, 850 nm
Hysteresis (H)	5% to 20%	Light type	Infrared, modulated
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Emitter angle	± 2° @ half sensing distance
Ripple (U_{rpp})	≤ 10%	Light spot	110 mm @ 1.5 meters
Output current Continuous (I _a) Short-time (I)	≤ 100 mA ≤ 100 mA	Ambient light	≤ 10,000 lux
(max. load capacity 100 nF)		Operating frequency (f)	≤ 1000 Hz
No load supply current (I_o)	≤ 20 mA @ U _B max	Response time OFF-ON (t _{ON}) ON-OFF (t _{OFF})	≤ 0.5 ms ≤ 0.5 ms
Minimum operational current (I_m)	≤ 0.5 mA	Power ON delay (t_v)	≤ 30 ms
		Output function Open collector	NPN or PNP by sensor type
		Output switching function	N.O. and N.C.

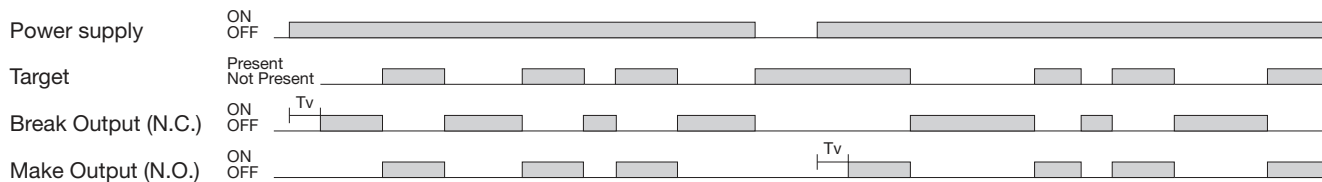


Specifications (cont.)

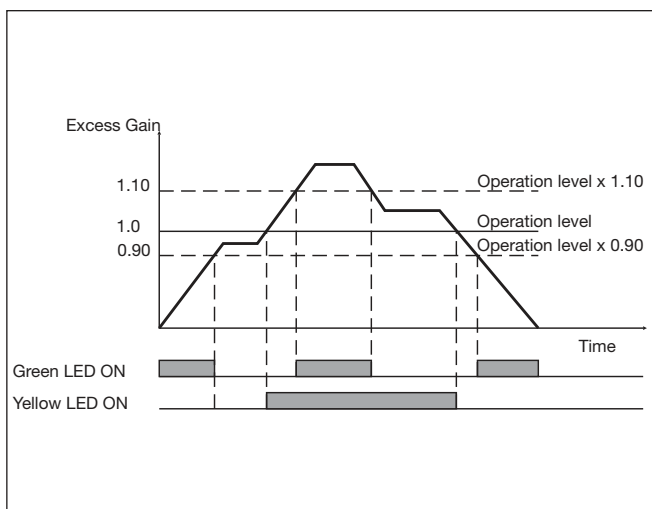
Indication		Rated insulation voltage	≤ 500 VAC (rms)
Output ON	LED, yellow	Housing material	ABS Light Grey PMMA Red POM Dark Grey
Power ON	Signal stability ON and LED, green. See curve for condition of stability		
Environment		Connection	Cable PVC, black, 2 m 4 x 0.14 mm ² , Ø = 3.3 mm M8, 4-pin (CON. 54-series)
Installation category	III (IEC 60664/60664A; 60947-1)	Plug	
Pollution degree	3 (IEC 60664/60664A; 60947-1)	Weight	
Degree of protection	IP 67 (IEC 60529; 60947-1)	Cable version	≤ 50 g
Ambient temperature		Plug version	≤ 20 g
Operating	-25° to +60°C (-13° to +140°F)	CE-marking	Yes
Storage	-40° to +70°C (-40° to +158°F)	Approvals	cULus (UL508 + CSA)
Vibration	10 to 150 Hz, 1.0 mm/15 G (IEC 60068-2-6)		
Shock	30 g / 11ms, 3 pos, 3 neg per axis (IEC 60068-2-6, 60068-2-32)		

Operation Diagram

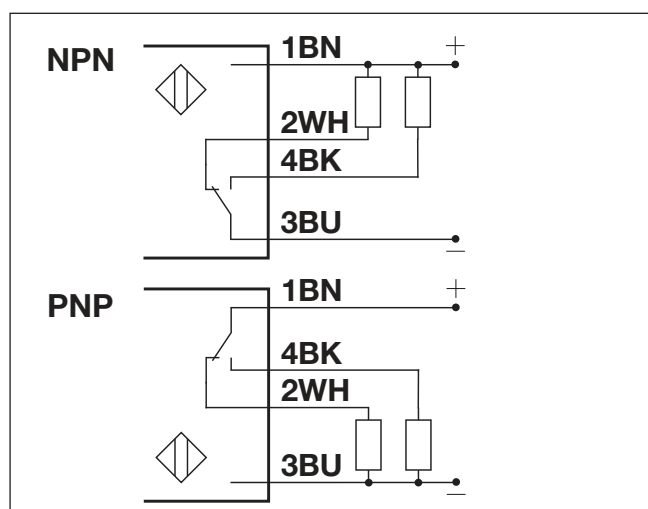
T_v = Power ON delay



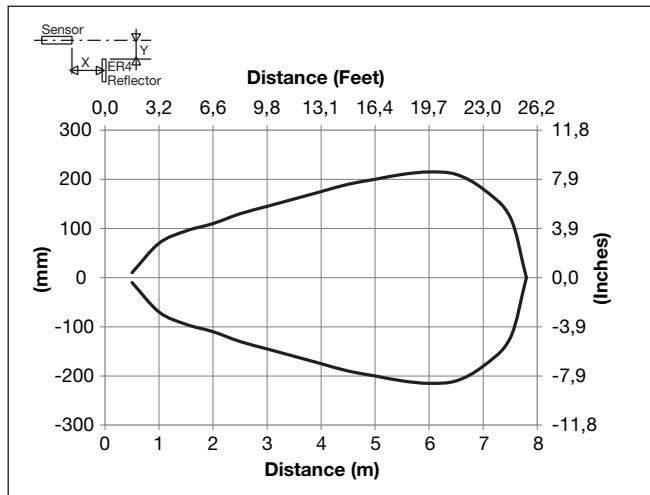
Signal Stability Indication



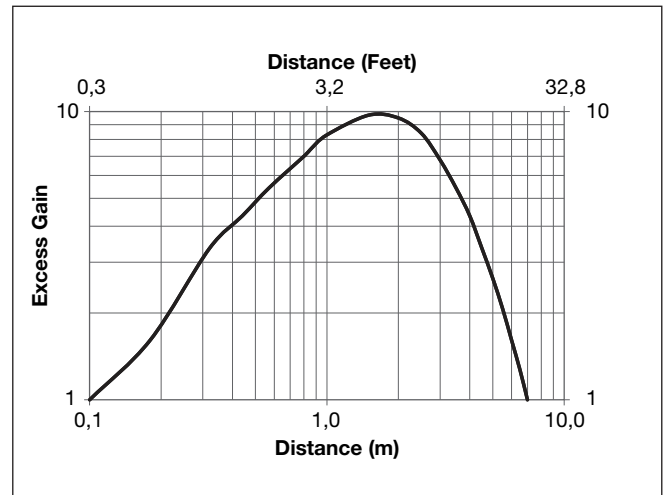
Wiring Diagrams



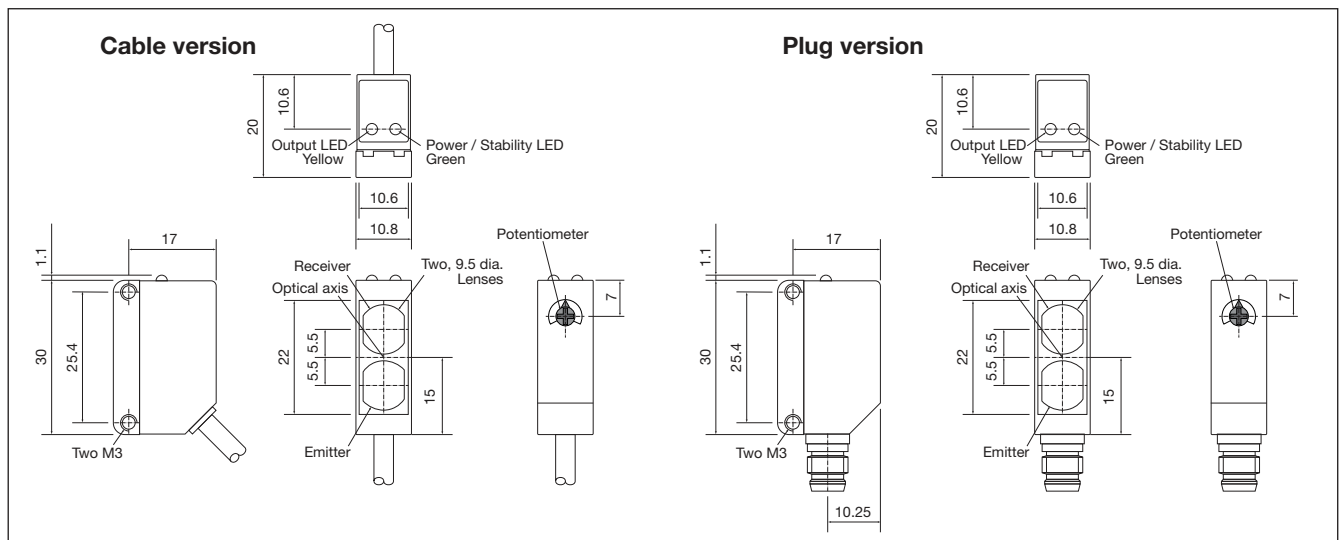
Detection Diagram



Excess Gain



Dimensions



Installation Hints

<p>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</p> <p>Incorrect: Cables bundled together.</p> <p>Correct: Cables separated by > 100 mm.</p>	<p>Relief of the cable strain</p> <p>Incorrect: Cable pulled directly.</p> <p>Correct: Cable with a loop and strain relief.</p> <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p> <p>Incorrect: Cable bent at the sensing face.</p> <p>Correct: Cable bent away from the sensing face.</p> <p>A proximity switch should not serve as mechanical stop</p>	<p>Sensor mounted on a mobile carrier</p> <p>Incorrect: Repetitive flexing of the cable.</p> <p>Correct: Cable secured to the carrier.</p> <p>Any repetitive flexing of the cable should be avoided</p>
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Accessories

- Mounting bracket APD30-MB1 or APD30-MB2 to be purchased separately.

Delivery Contents

- Photoelectric switch: PD30CNR60 ...
- Screwdriver
- **Packaging:** Plastic bag