

# Photoelectrics Diffuse-reflective Type PD30CND10...SA

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- Miniature sensor range
- Range: 1 m
- Sensitivity adjustment by Potentiometer
- Modulated, red light 625 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 PD30CND10 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

PD30CND10NAM5SA

Type	_____
Housing style	_____
Housing size	_____
Housing material	_____
Housing length	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Connection type	_____
Sensitivity adjustment	_____

## Type Selection

Housing W x H x D	Range S <sub>n</sub>	Connection	Ordering no. NPN Make and break switching	Ordering no. PNP Make and break switching
10 x 30 x 20 mm	1000 mm	Cable	PD 30 CND 10 NASA	PD 30 CND 10 PASA
10 x 30 x 20 mm	1000 mm	Plug	PD 30 CND 10 NAM5SA	PD 30 CND 10 PAM5SA

## Specifications

<b>Rated operating distance (S<sub>n</sub>)</b>	Up to 1 m, reference target Kodak test card R27, white, 90% reflective, 200 x 200 mm	<b>OFF-state current (I<sub>r</sub>)</b>	≤ 100 μA
<b>Blind zone</b>	≤ 20 mm @ maximum distance	<b>Voltage drop (U<sub>d</sub>)</b>	≤ 2 VDC @ I <sub>e</sub> max
<b>Sensitivity</b> Electrical adjustment Mechanical adjustment	210° 240°	<b>Protection</b>	Short-circuit, reverse polarity and transients
<b>Temperature drift</b>	≤ 0.2%/°C	<b>Light source</b>	InGaAlP, LED, 625 nm
<b>Hysteresis (H)</b>	5% to 20%	<b>Light type</b>	Red, modulated
<b>Rated operational volt. (U<sub>B</sub>)</b>	10 to 30 VDC (ripple included)	<b>Emitter angle</b>	± 2° @ half sensing distance
<b>Ripple (U<sub>rpp</sub>)</b>	≤ 10%	<b>Light spot</b> 1.5 times the sensing distance	110 mm
<b>Output current</b> Continuous (I <sub>a</sub> ) Short-time (I)	≤ 100 mA ≤ 100 mA (max. load capacity 100 nF)	<b>Ambient light</b>	≤ 10,000 lux
<b>No load supply current (I<sub>o</sub>)</b>	≤ 25 mA @ U <sub>B</sub> max	<b>Operating frequency (f)</b>	≤ 1000 Hz
<b>Minimum operational current (I<sub>m</sub>)</b>	≤ 0.5 mA	<b>Response time</b> OFF-ON (t <sub>ON</sub> ) ON-OFF (t <sub>OFF</sub> )	≤ 0.5 ms ≤ 0.5 ms
		<b>Power ON delay (t<sub>v</sub>)</b>	≤ 30 ms
		<b>Output function</b> Open collector	NPN or PNP by sensor type
		<b>Output switching function</b>	N.O. and N.C.

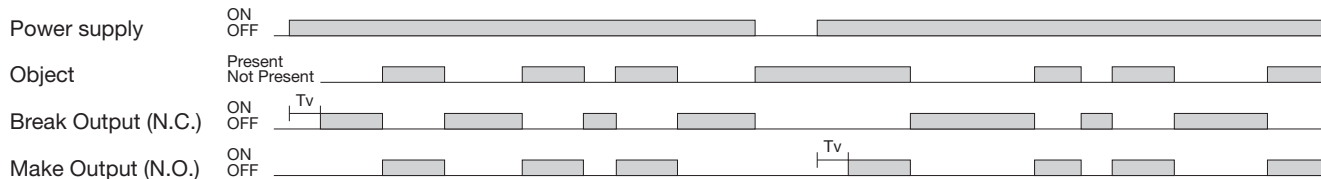


## Specifications (cont.)

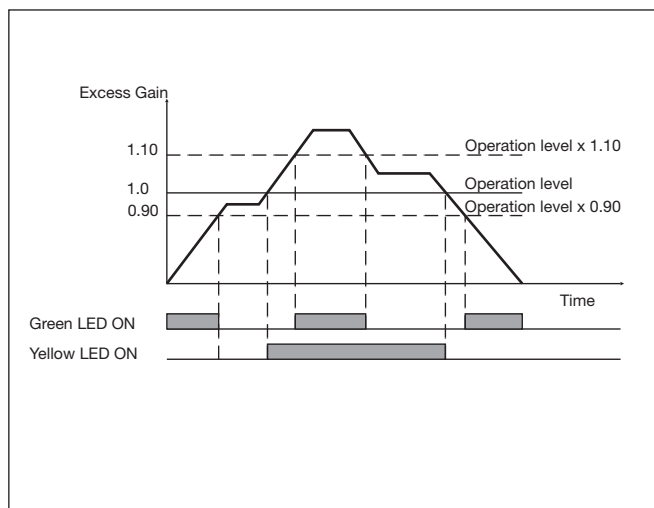
<b>Indication</b>		<b>Rated insulation voltage</b>	≤ 500 VAC (rms)
Output ON	LED, yellow	<b>Housing material</b>	
Power ON	Signal stability ON and LED, green. See curve for condition of stability	Body	ABS Light Grey
		Frontglas	PMMA Red
		Trimmer shaft	POM Dark Grey
<b>Environment</b>		<b>Connection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

## Operation Diagram

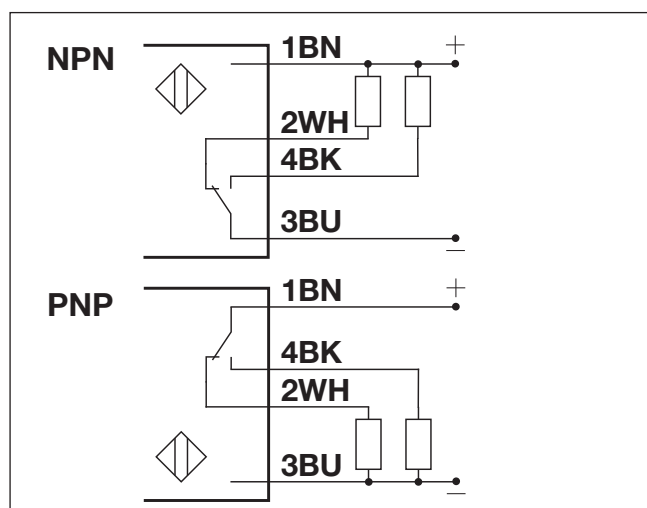
Tv = Power ON delay



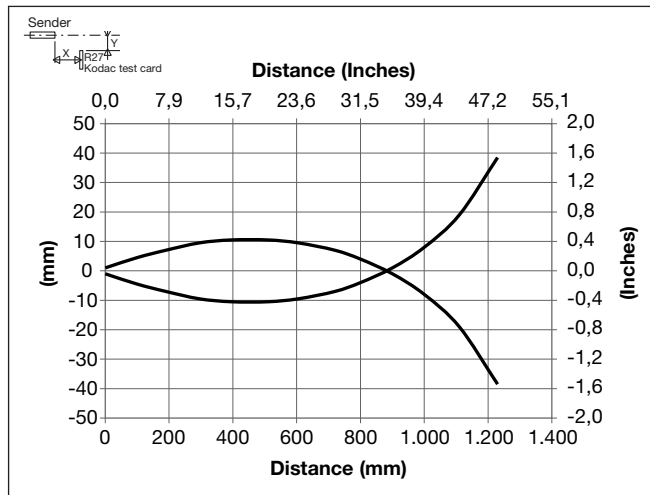
## Signal Stability Indication



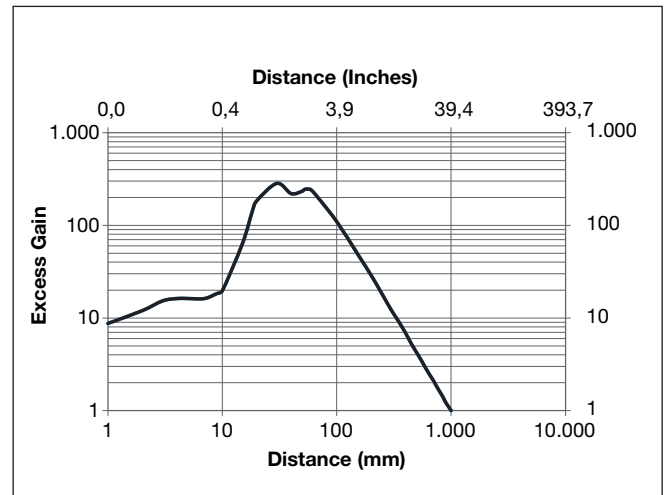
## Wiring Diagrams



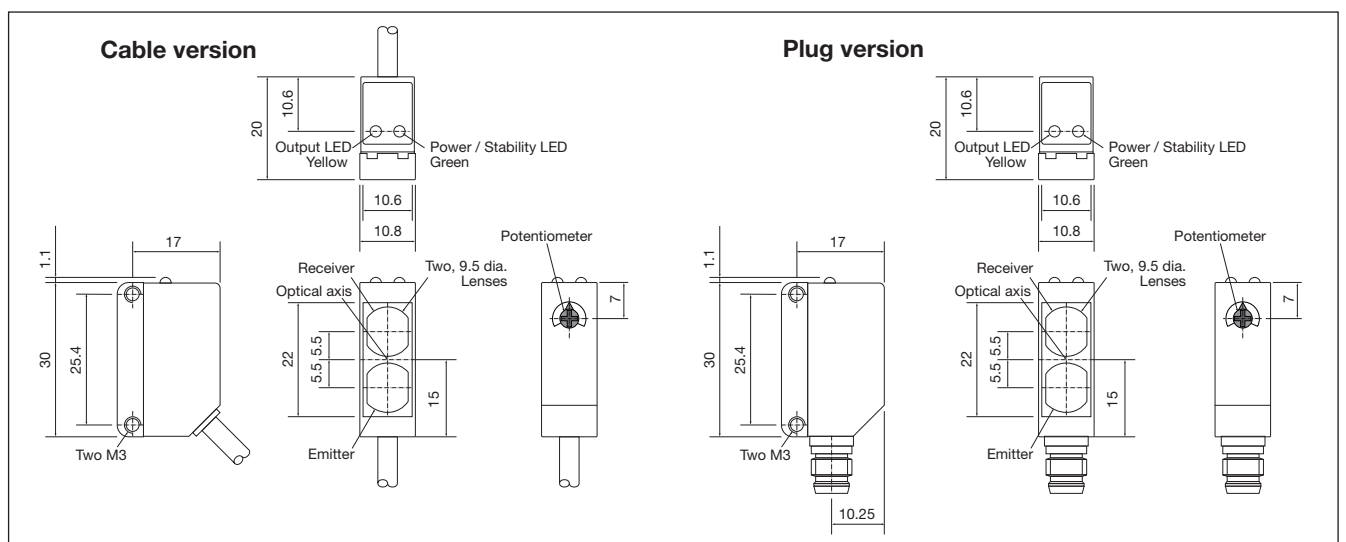
### Detection Diagram



### 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. Correct: Cables separated by &gt; 100 mm.</p>	<p>Relief of the cable strain</p> <p>Incorrect: Cable pulled. Correct: Cable looped back.</p> <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p> <p>Incorrect: Cable used as a stop. 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>Correct: Sensor mounted on a carrier with a loop. Incorrect: Repeated flexing of the cable.</p> <p>Any repetitive flexing of the cable should be avoided</p>
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### Delivery Contents

- Photoelectric switch: PD30CND10 ...
- Screwdriver
- **Packaging:** Plastic bag

### Accessories

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