

Photoelectrics Diffuse-reflective Type PD30CTD02..WE

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- Miniature sensor range
- Range: 200 mm - extremely wide angle
- Sensitivity adjustment by top 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
- Excellent EMC performance



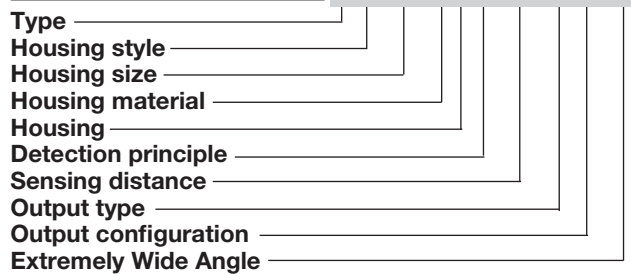
Product Description

The PD30CTD02..WE sensor family comes in a compact 10 x 30 x 20 mm reinforced PMMA/ABS housing. These sensors are designed to detect PCBs despite large holes in the plates. 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

PD30CTD02NAWE



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	200 mm	Cable	PD 30 CTD 02 NAW E	PD 30 CTD 02 PAW E

Specifications

Rated operating distance (S_n)	Up to 200 mm, reference target Kodak test card R27, white, 90% reflective, 200 x 200 mm	Voltage drop (U_d)	≤ 2 VDC @ I _e max
Blind zone	0 mm @ maximum distance	Protection	Short-circuit, reverse polarity and transients
Sensitivity Electrical adjustment Mechanical adjustment	210° 240°	Light source	LED, 850 nm
Temperature drift	≤ 0.2%/°C	Light type	Infrared, modulated
Hysteresis (H)	5% to 20%	Emitter angle	± 15° @ half the sensing distance
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Light spot 0.5 times the sensing distance	54 x 54 mm
Ripple (U_{ripp})	≤ 10%	Ambient light	≤ 10,000 lux
Output current Continuous (I _a) Short-time (I)	≤ 100 mA ≤ 100 mA (max. load capacity 100 nF)	Operating frequency (f)	≤ 1000 Hz
No load supply current (I_o)	≤ 25 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
OFF-state current (I_r)	≤ 100 μA	Output function Open collector	NPN or PNP by sensor type
		Output switching function	N.O. and N.C.

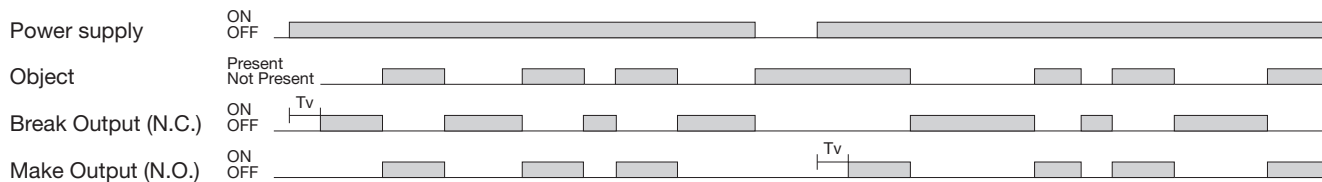


Specifications (cont.)

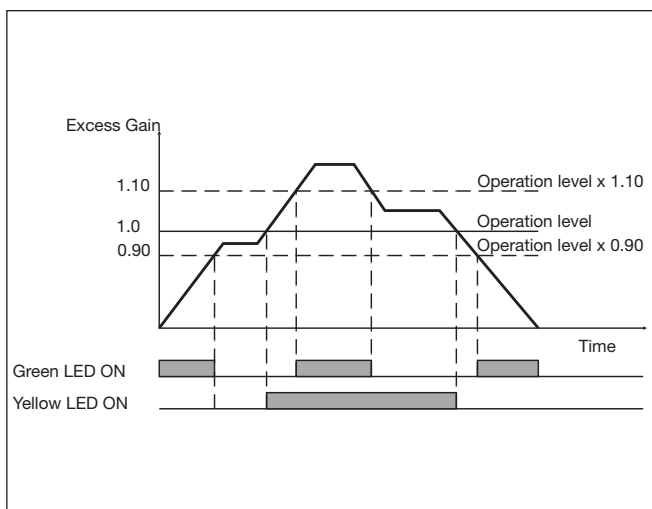
Indication		Rated insulation voltage	≤ 500 VAC (rms)
Output ON	LED, yellow	Housing material	
Signal stability ON and Power ON	LED, green. See curve for condition of stability	Body	ABS Light Grey
		Frontglas	PMMA Red
		Trimmer shaft	POM Dark Grey
Environment		Connection	PVC, black, 2 m 4 x 0.14 mm ² , Ø = 3.3 mm
Installation category	III (IEC 60664/60664A; 60947-1)	Weight	≤ 50 g
Pollution degree	3 (IEC 60664/60664A; 60947-1)	CE-marking	Yes
Degree of protection	IP 67 (IEC 60529; 60947-1)	Approvals	cULus (UL508, CSA C22.2)
Ambient temperature			
Operating	-25° to +60°C (-13° to +140°F)		
Storage	-40° to +70°C (-40° to +158°F)		
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

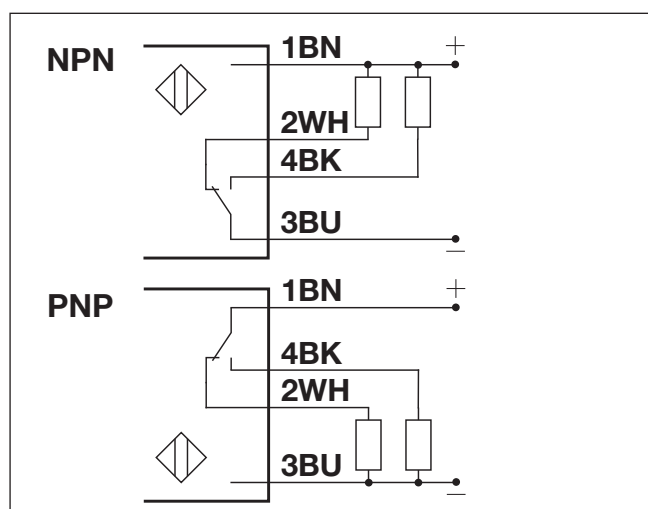
Tv = Power ON delay



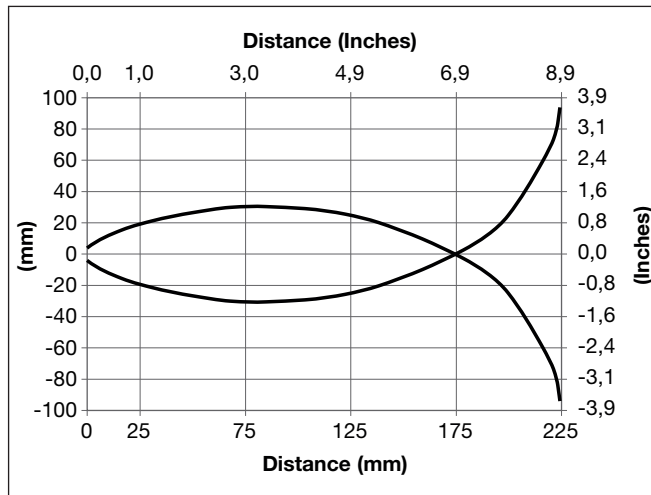
Signal Stability Indication



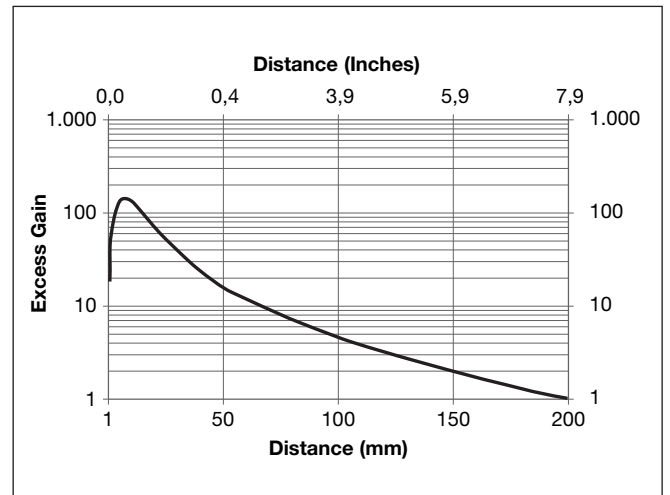
Wiring Diagrams



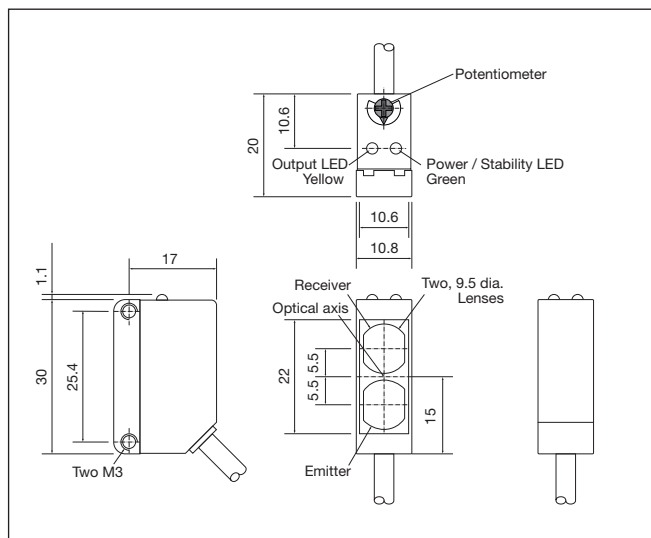
Detection Diagram



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 > 100 mm.</p>	<p>Relief of the cable strain</p> <p>Incorrect: Cable pulled. Correct: Cable with strain relief loop.</p> <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p> <p>Incorrect: Sensing face blocked. Correct: Sensing face clear.</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 mobile carrier with strain relief. Incorrect: Sensor mounted on a mobile carrier with repetitive flexing.</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: PD30CTD02..WE
- Screwdriver
- Packaging: Plastic bag