Photoelectrics
Diffuse-reflective
Type PD30CTD10..SA



- **Miniature sensor range**
- **Range: 1 m**
- **Sensitivity adjustment by top 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**
- **Excellent EMC performance**

Product Description

The PD30CTD10 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

PD30CTD10NASA

- **Type**
- **Housing style**
- **Housing size**
- **Housing material**
- **Housing**
- **Detection principle**
- **Sensing distance**
- **Output type**
- **Output configuration**
- **Sensitivity adjustment**

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	1000 mm	Cable	**PD 30 CTD 10 NASA**	**PD 30 CTD 10 PASA**

Specifications EN 60947-5-2

Rated operating distance (S_n)	Up to 1 m, reference target Kodak test card R27, white, 90% reflective, 200 x 200 mm
Blind zone	≤ 20 mm @ maximum distance
Sensitivity Electrical adjustment Mechanical adjustment	 210° 240°
Temperature drift	≤ 0.2%/°C
Hysteresis (H)	5% to 20%
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)	≤ 25 mA @ U_B max
Minimum operational current (I_m) **OFF-state current** (I_r)	≤ 0.5 mA ≤ 100 µA

Voltage drop (U_d)	≤ 2 VDC @ I_e max
Protection	Short-circuit, reverse polarity and transients
Light source	InGaAlP, LED, 625 nm
Light type	Red, modulated
Emitter angle	± 2° @ half the sensing distance
Light spot 1.5 times the sensing distance	 110 mm
Ambient light	≤ 10,000 lux
Operating frequency (f)	≤ 1000 Hz
Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	 ≤ 0.5 ms ≤ 0.5 ms
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.

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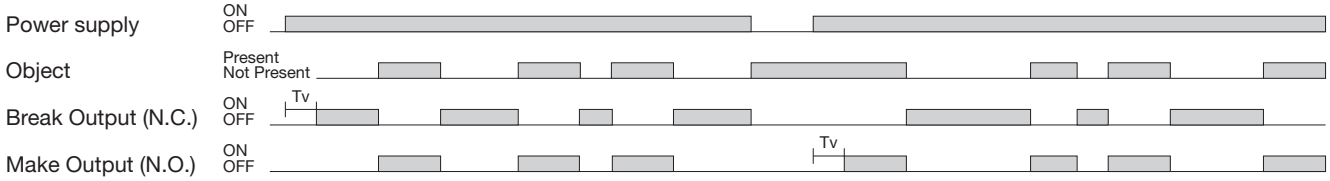
Specifications (cont.)

Indication	
Output ON	LED, yellow
Signal stability ON and Power ON	LED, green. See curve for condition of stability
Environment	
Installation category	III (IEC 60664/60664A; 60947-1)
Pollution degree	3 (IEC 60664/60664A; 60947-1)
Degree of protection	IP 67 (IEC 60529; 60947-1)
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)

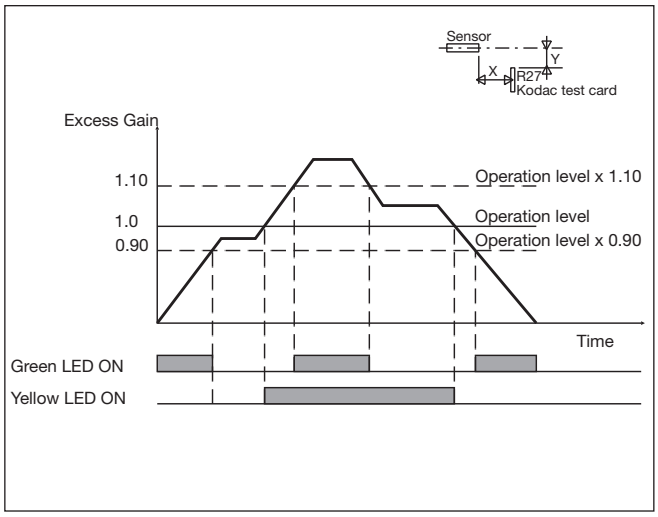
Rated insulation voltage	≤ 500 VAC (rms)
Housing material	
Body	ABS Light Grey
Frontglas	PMMA Red
Trimmer shaft	POM Dark Grey
Connection	PVC, black, 2 m 4 x 0.14 mm², Ø = 3.3 mm
Weight	≤ 50 g
CE-marking	Yes
Approvals	cULus (UL508, CSA C22.2)

Operation Diagram

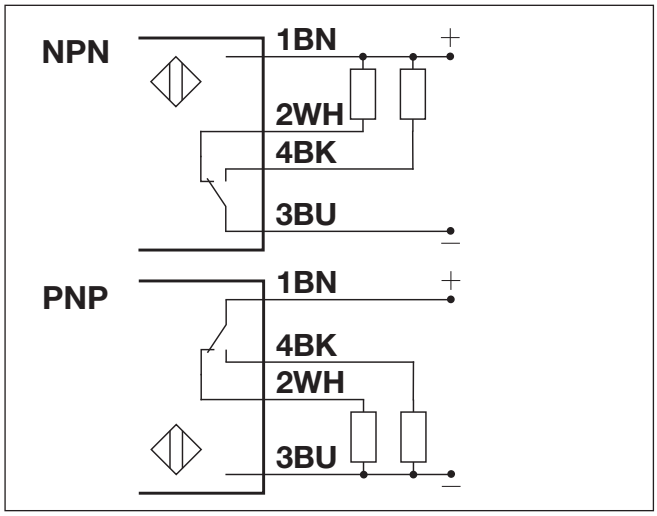
Tv = Power ON delay



Signal Stability Indication



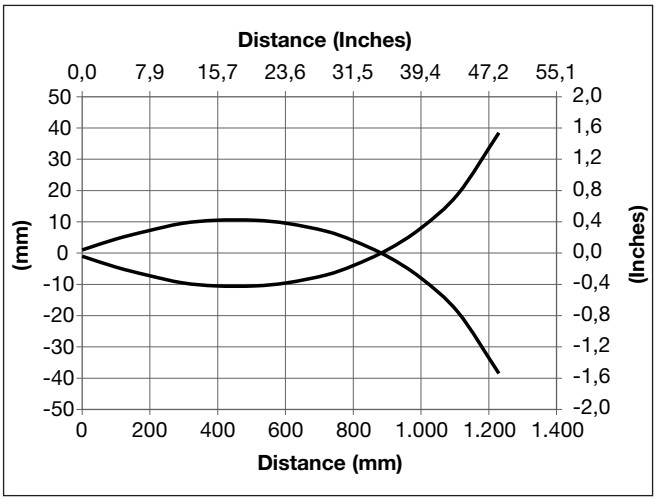
Wiring Diagrams



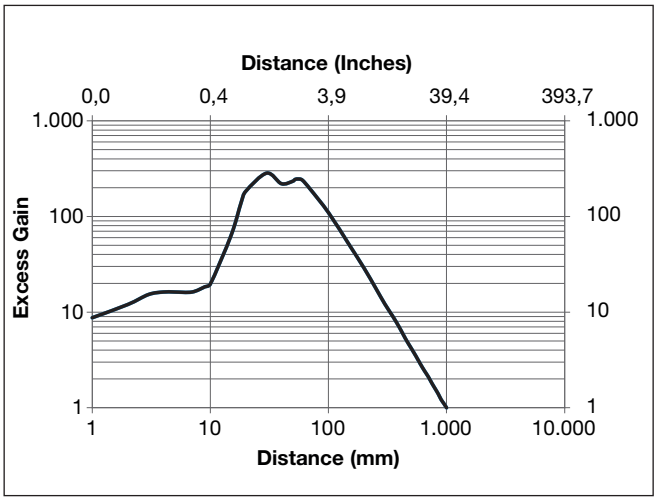
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CARLO GAVAZZI

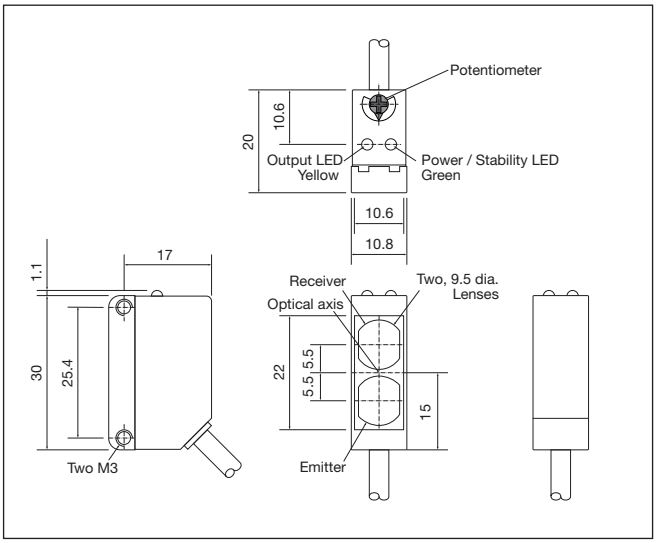
Detection Diagram



Excess Gain

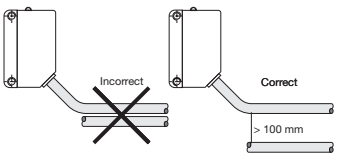


Dimensions

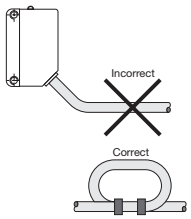


Installation Hints

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

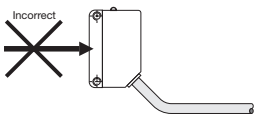


Relief of the cable strain



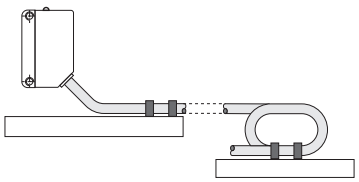
The cable should not be pulled

Protection of the sensing face



A proximity switch should not serve as mechanical stop

Sensor mounted on a mobile carrier



Any repetitive flexing of the cable should be avoided

Accessories

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

Delivery Contents

- Photoelectric switch: PD30CTD10 ....
- Screwdriver
- **Packaging:** Plastic bag

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