Photoelectrics
Retro-reflective for Transparent Objects
Type PD30CNG02....RT

- **Miniature sensor range**
- **Range: 2 m, with reflector**
- **Sensitivity adjustment by Teach-In programming**
- **Modulated, red light 617 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**
- **Remote teach features**

Product Description

The PD30CNG02 sensor family comes in a compact 10 x 30 x 20 mm reinforced PMMA/ABS housing.
The sensors are useful in applications where detection of transparent objects are needed.
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).
A remote teach feature allow the sensor to be set up from e.g. a PLC.

Ordering Key

PD30CNG02PPM5RT

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

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	2 m	Cable	**PD 30 CNG 02 NPRT**	**PD 30 CNG 02 PPRT**
10 x 30 x 20 mm	2 m	Plug	**PD 30 CNG 02 NPM5RT**	**PD 30 CNG 02 PPM5RT**

Note: Reflectors to be ordered separately

Specifications EN 60947-5-2

Rated operating distance (S_n)	Up to 2 m, with reflector Ø 80 mm (ER4)
Detection reliability	20% attenuation
Blind zone	10 mm
Sensitivity	Adjustable by Teach-In
Temperature drift	≤ 0.1%/°C Teach settings are valid for teach temperature ± 20°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	inGaAlP, LED, 617 nm
Light type, not polarized	Red, 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}) ON-OFF (t_{OFF})	 ≤ 0.5 ms ≤ 0.5 ms
Power ON delay (t_v)	≤ 300 ms
Output function NPN and PNP NO/NC switching function	 Preset Set up by button
Remote teach function Teach on (push button active) Tamper proof	 0 to 2.5 VDC (NPN) 5 to 30 VDC (PNP) When activated more than 20 sec. the sensor goes into a Tamper proof mode.
Indication Output ON Signal stability ON and power ON	 LED, yellow LED, green

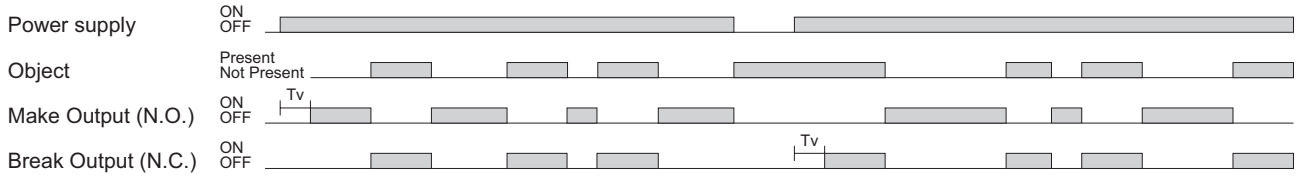
Specifications (cont.) EN 60947-5-2

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 +55°C (-13° to +131°F)
Storage		-40° to +70°C (-40° to +158°F)
Vibration	1	0 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)

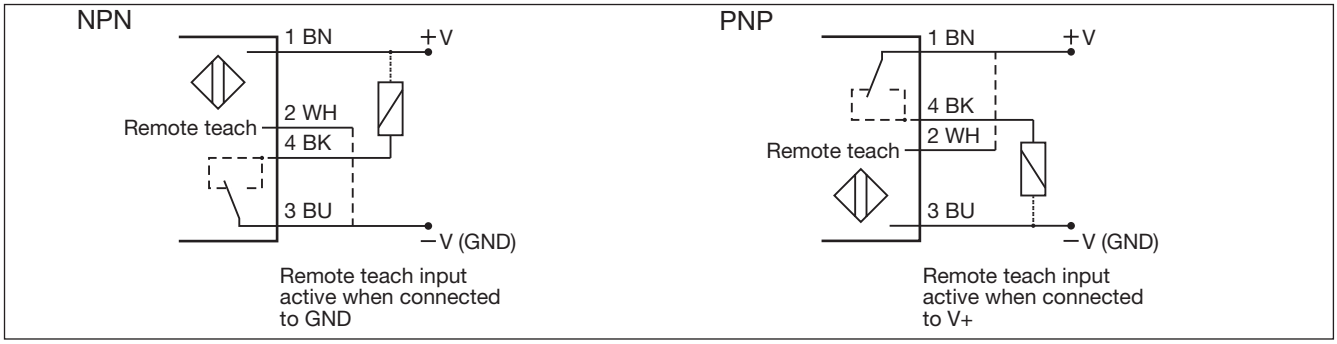
Rated insulation voltage	500 VAC (rms)
Housing material	
Body	ABS
Front material	PMMA, red
Connection	
Cable	PVC, black, 2 m 4 x 0.14 mm², Ø = 3.3 mm
Plug	M8, 4-pin (CON, 54-series)
Weight	With cable: 40 g With plug: 10 g
CE-marking	Yes
Approvals	cULus (UL508)

Operation Diagram

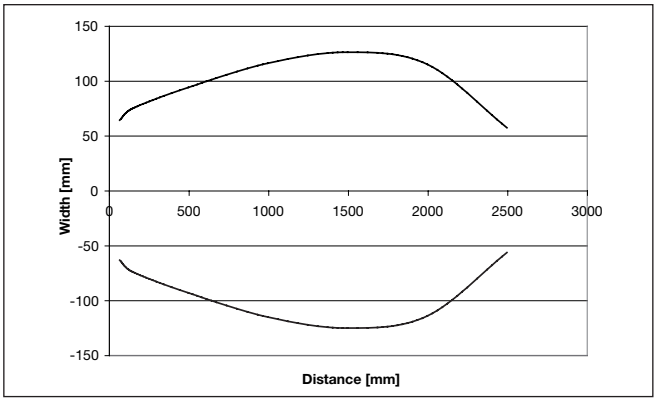
tv = Power ON delay



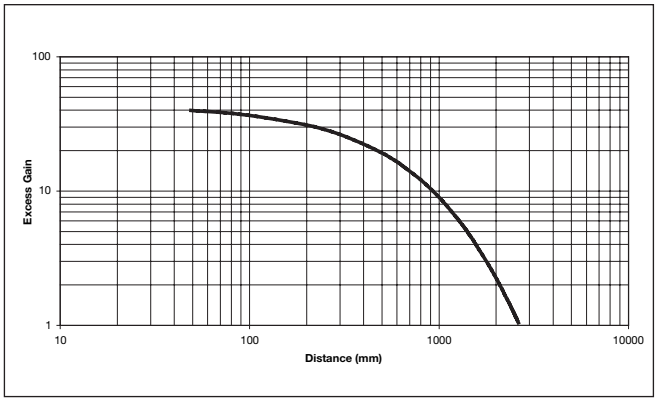
Wiring Diagrams



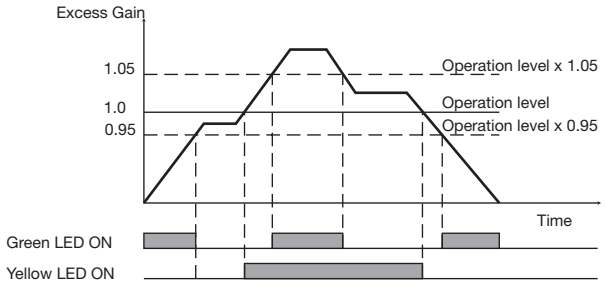
Detection Diagram



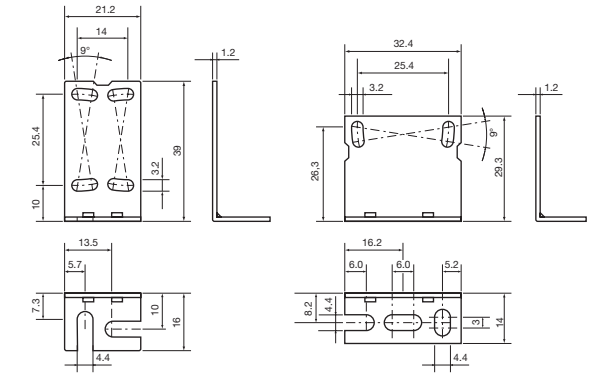
Excess Gain



Signal Stability Indication



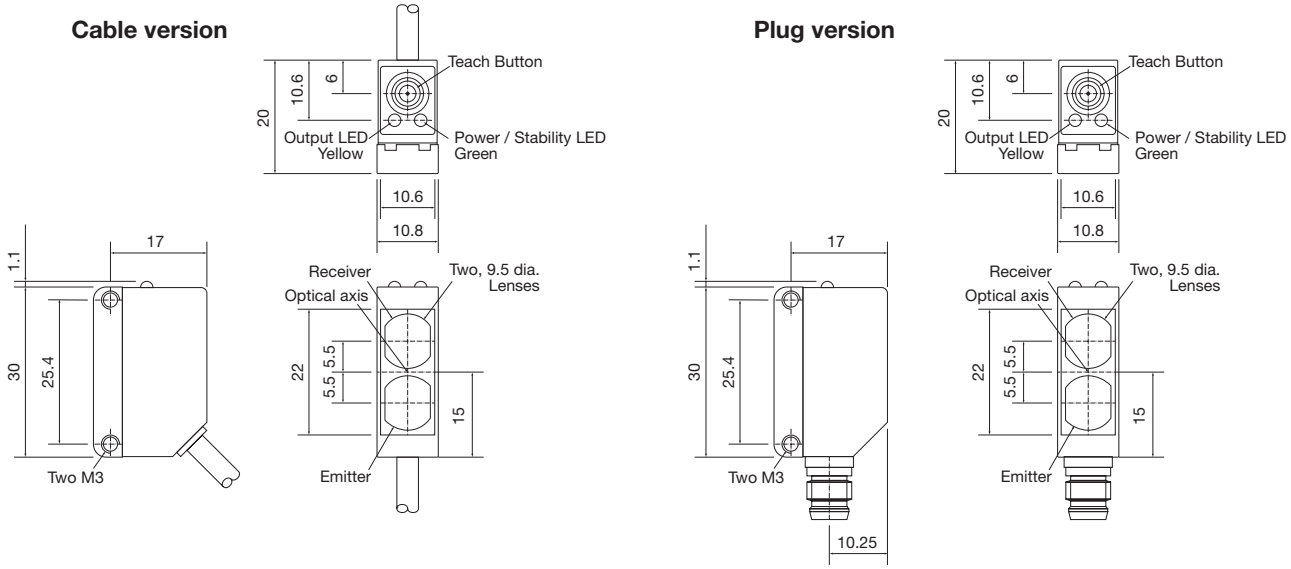
Accessories



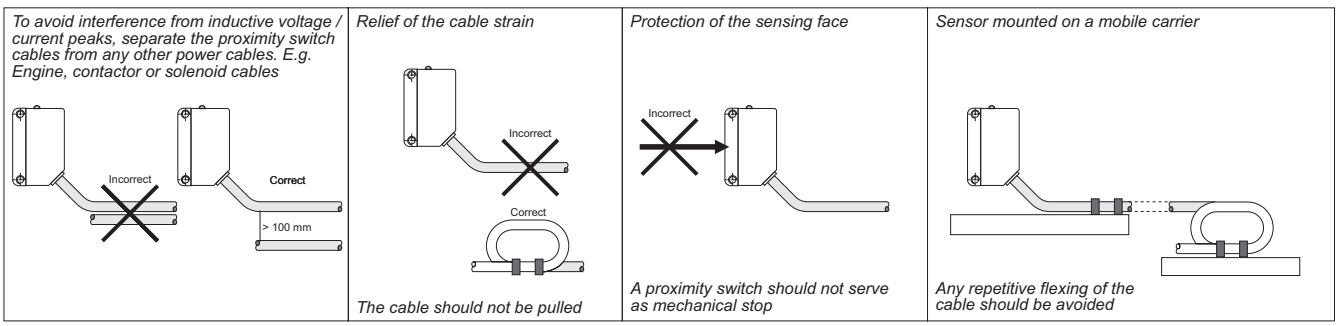
Mounting bracket: APD30-MB1

Mounting bracket: APD30-MB2

Dimensions



Installation Hints



Delivery Contents

- Photoelectric switch: PD 30 CNG 02...RT
- Installation instruction
- Mountingbracket APD30-MB1
- **Packaging:** Cardboard box

Accessories

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