



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# Photoelectrics Retro-reflective, Polarized Type PD30CNP60....SA

CARLO GAVAZZI



- Miniature sensor range
- Range: 6 m
- Sensitivity adjustment by Potentiometer
- Modulated, red light 625 nm, polarized
- 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



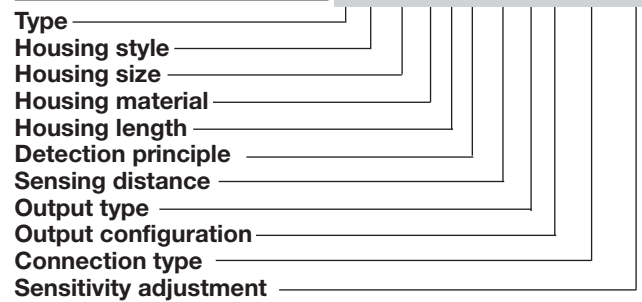
## Product Description

The PD30CNP60 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

**PD30CNP60NAM5SA**



## Type Selection

| Housing<br>W x H x D               | Range<br>S <sub>n</sub> | Connection    | Ordering no.<br>NPN<br>Make and break switching | Ordering no.<br>PNP<br>Make and break switching |
|------------------------------------|-------------------------|---------------|---|---|
| 10 x 30 x 20 mm<br>10 x 30 x 20 mm | 6 m<br>6 m              | Cable<br>Plug | PD 30 CNP 60 NASA<br>PD 30 CNP 60 NAM5SA        | PD 30 CNP 60 PASA<br>PD 30 CNP 60 PAM5SA        |

## Specifications

|  |  |   |  |
|--|--|---|--|
| <b>Rated operating distance (S<sub>n</sub>)</b><br>Ø 80 mm (ER4) reflector<br>ER4060 reflector | ≤ 6 m<br>≤ 4 m                                   | <b>OFF-state current (I<sub>r</sub>)</b>  | ≤ 100 µA                                       |
| <b>Blind zone</b>  | ≤ 100 mm @ Ø80 mm (ER4) and ER4060 reflector     | <b>Voltage drop (U<sub>d</sub>)</b>   | ≤ 2 VDC @ I <sub>e</sub> max                   |
| <b>Sensitivity</b><br>Electrical adjustment<br>Mechanical adjustment                           | 210°<br>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>   | 110 mm @ 1.5 meters                            |
| <b>Output current</b><br>Continuous (I <sub>a</sub> )<br>Short-time (I)                        | ≤ 100 mA<br>≤ 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><br>OFF-ON (t <sub>ON</sub> )<br>ON-OFF (t <sub>OFF</sub> ) | ≤ 0.5 ms<br>≤ 0.5 ms                           |
|  |  | <b>Power ON delay (t<sub>v</sub>)</b>   | ≤ 30 ms  |
|  |  | <b>Output function</b><br>Open collector  | NPN or PNP by sensor type                      |
|  |  | <b>Output switching function</b>  | N.O. and N.C.                                  |

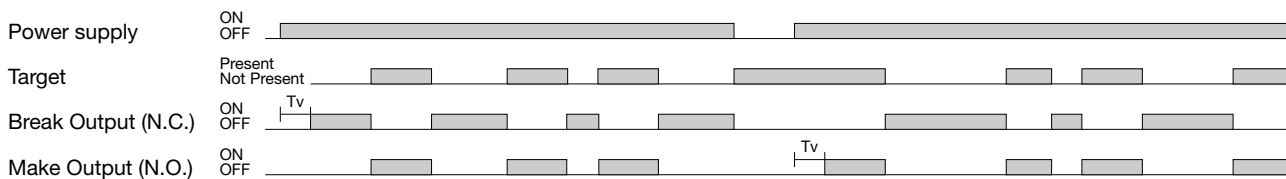


## Specifications (cont.)

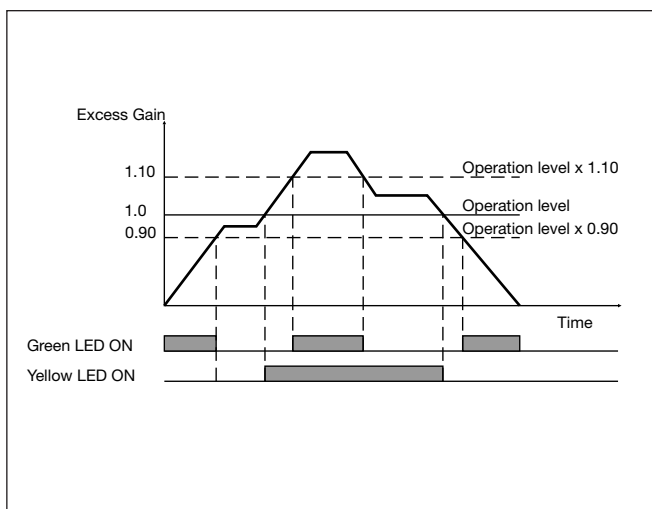
|                                  |  |                                 |  |
|----------------------------------|--|---------------------------------|--|
| <b>Indication</b>                |  | <b>Rated insulation voltage</b> | ≤ 500 VAC (rms)  |
| Output ON                        | LED, yellow  | <b>Housing material</b>         |  |
| 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  |
| <b>Environment</b>               |  | <b>Connection</b>               |  |
| Installation category            | III (IEC 60664/60664A; 60947-1)                                | Cable                           | PVC, black, 2 m<br>4 x 0.14 mm <sup>2</sup> , Ø = 3.3 mm<br>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

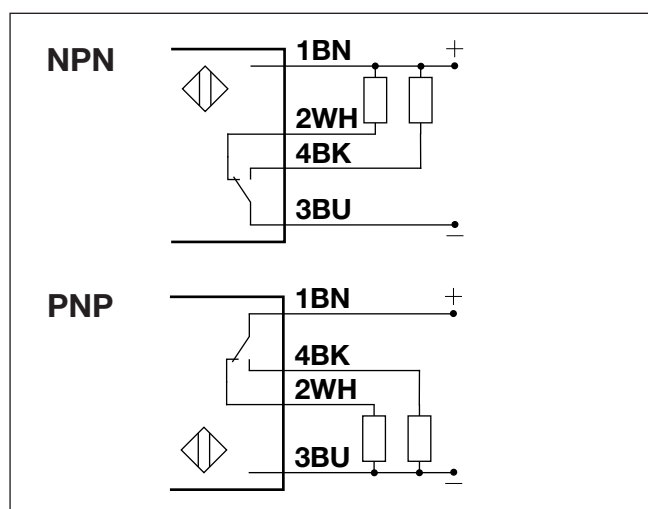
tv = Power ON delay



## Signal Stability Indication

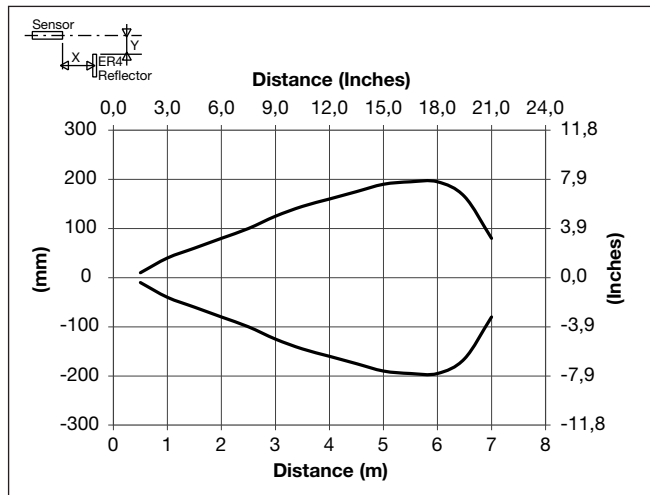


## Wiring Diagrams

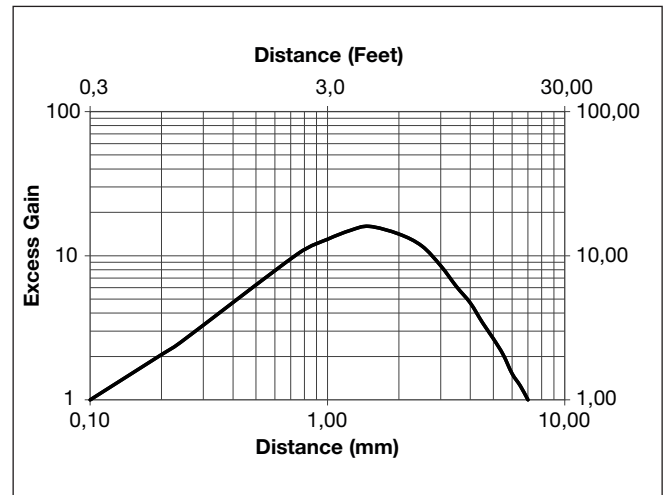




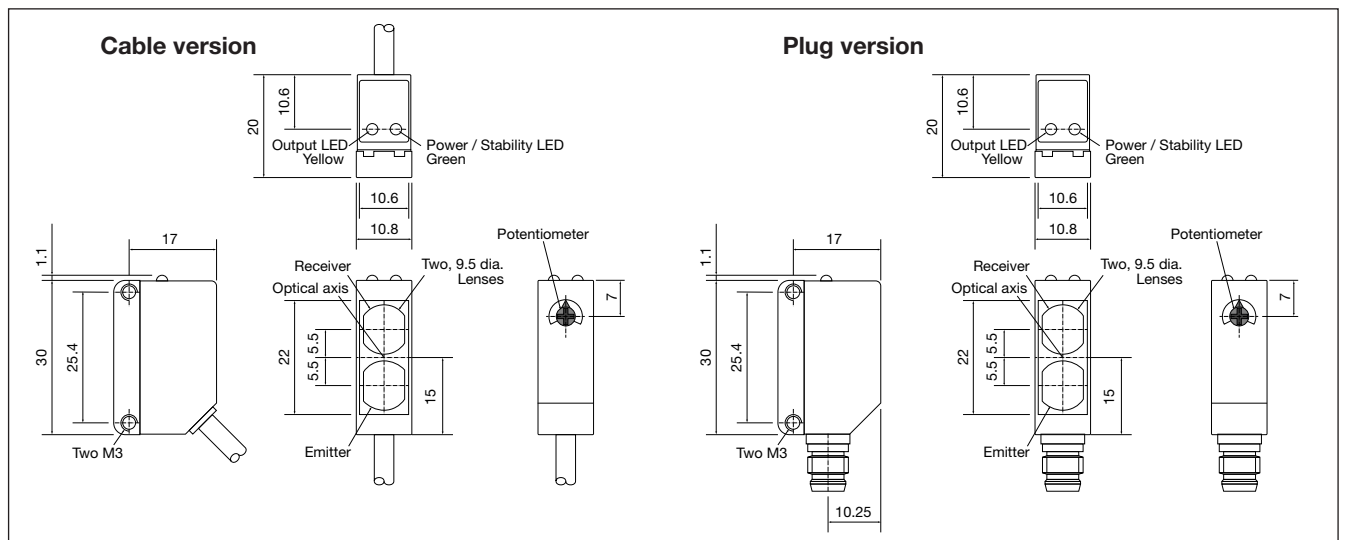
### Detection Diagram



### 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>Relief of the cable strain</p> <p>The cable should not be pulled</p> | <p>Protection of the sensing face</p> <p>A proximity switch should not serve as mechanical stop</p> | <p>Sensor mounted on a mobile carrier</p> <p>Any repetitive flexing of the cable should be avoided</p> |
|--|---|---|--|

### Accessories

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

### Delivery Contents

- Photoelectric switch: PD30CNP60 ...
- Screwdriver
- Packaging: Plastic bag