

# Photoelectrics

## Retro-reflective, Relay Output

### Type PC50CNR10RP

CARLO GAVAZZI



- Range: 10 m
- Adjustable sensitivity
- Modulated, infrared light
- Supply voltage:  
12 to 240 VDC and 24 to 240 VAC, 50/60 Hz
- Output: Relay 3 A, 30 VDC, 240 VAC
- Make and break switching function
- LED-indication for output ON, signal stability and supply ON
- High EMC immunity



## Product Description

The PC50CNR. is a general purpose retro-reflective sensor in a compact squared 17 x 50 x 50 mm reinforced PC/ABS-housing. It is useful in applications where basic sensors provide adequate

sensing performance. The long sensing range in addition to sensitivity adjustment gives a very flexible sensor. Light and dark operation is switch selectable.

## Ordering Key

**PC50CNR10RP**

|                      |       |
|----------------------|-------|
| Type                 | _____ |
| Housing style        | _____ |
| Housing size         | _____ |
| Housing material     | _____ |
| Housing length       | _____ |
| Detection principle  | _____ |
| Sensing distance     | _____ |
| Output type          | _____ |
| Output configuration | _____ |

## Type Selection

| Housing<br>W x H x D | Range<br>(S <sub>n</sub> ) | Ordering no.<br>Make and break switching |
|----------------------|----------------------------|--|
| 17 x 50 x 50 mm      | 10 m                       | PC 50 CNR 10 RP                          |

**Note:** Reflectors to be ordered separately

## Specifications

|   |   |                                       |  |
|---|---|---------------------------------------|--|
| <b>Rated operating distance (S<sub>n</sub>)</b> | Up to 10 m, with reflector type ER 4, ref. target   | <b>Response time</b>                  |  |
| <b>Blind zone</b>                               | Max. 10 cm  | OFF-ON (t <sub>ON</sub> )             | ≤ 25 ms                                      |
| <b>Sensitivity</b>                              | Adj. by single-turn pot.meter                       | ON-OFF (t <sub>OFF</sub> )            | ≤ 25 ms                                      |
| <b>Temperature drift</b>                        | ≤ 0.5%/°C   | <b>Power ON delay (t<sub>v</sub>)</b> | ≤ 300 ms                                     |
| <b>Hysteresis (H)</b>                           |   | <b>Output function</b>                | Light or dark operation is switch selectable |
| Differential travel                             | 3-20%   | <b>Indication function</b>            |  |
| <b>Rated operational volt. (U<sub>B</sub>)</b>  | 12-240 VDC<br>24-240 VAC, 50 to 60 Hz               | Output ON                             | LED, yellow                                  |
| <b>Rated operational power</b>                  | ≤ 2.0 VA (relay ON)                                 | Supply ON, signal stability           | LED, green                                   |
| <b>Output</b>                                   |   | <b>Environment</b>                    |  |
| Contact ratings                                 |   | Overvoltage category                  | II (IEC 60664/60664A; 60947-1)               |
| Resistive loads                                 | AC 1 3 A/230 VAC<br>DC 1 3 A/30 VDC (> 10 mA/5 VDC) | Pollution degree                      | 3 (IEC 60664/60664A; 60947-1)                |
| Mechanical life (typical)                       | ≥ 15 x 10 <sup>6</sup> operations                   | Degree of protection                  | IP 67 (IEC 60529; 60947-1)                   |
| Electrical life (typical)                       | ≥ 1 x 10 <sup>5</sup> operations at 3 A/240 VAC     | <b>Temperature</b>                    |  |
| <b>Protection</b>                               | Reverse polarity, transients                        | Operating                             | -20° to +60°C (-4° to +140°F)                |
| <b>Light source</b>                             | GaAlAs, LED, 880 nm                                 | Storage                               | -25° to +80°C (-13° to +176°F)               |
| <b>Light type</b>                               | Infrared, modulated                                 | <b>Vibration</b>                      | 10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)   |
| <b>Sensing angle</b>                            | ± 2° at 1/2 range                                   | <b>Shock</b>                          | 2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)       |
| <b>Ambient light</b>                            | Max. 5'000 lux                                      | <b>Rated insulation voltage</b>       | 250 VAC (rms)                                |
| <b>Operating frequency</b>                      | 20 Hz   | <b>Housing material</b>               |  |
|   |   | Body                                  | PC/ABS, grey, reinforced                     |
|   |   | Front glass                           | PC black                                     |
|   |   | Mounting bracket                      | Steel, galvanized                            |

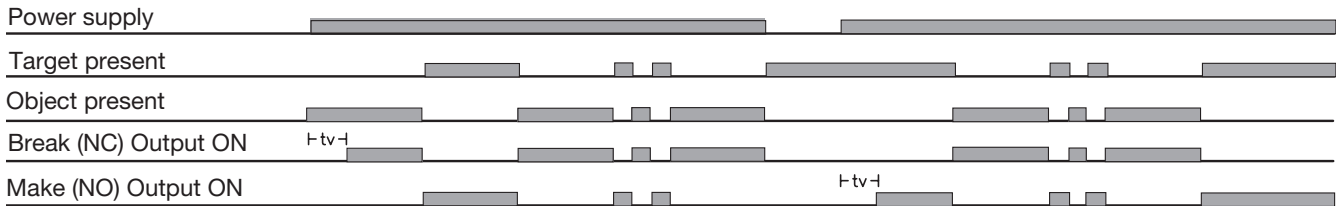


## Specifications (cont.)

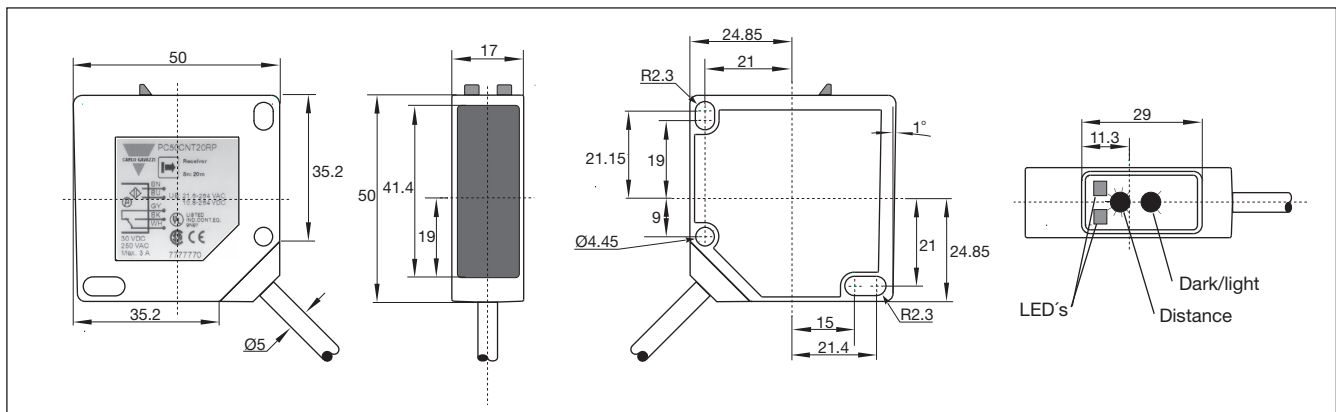
|                     |  |            |         |
|---------------------|--|------------|---------|
| Connection<br>Cable | PVC, grey, 2 m, 5 x 0.34 mm <sup>2</sup> | Approvals  | UL, CSA |
| Weight              | 130 g                                    | CE-marking | Yes     |

## Operation Diagram

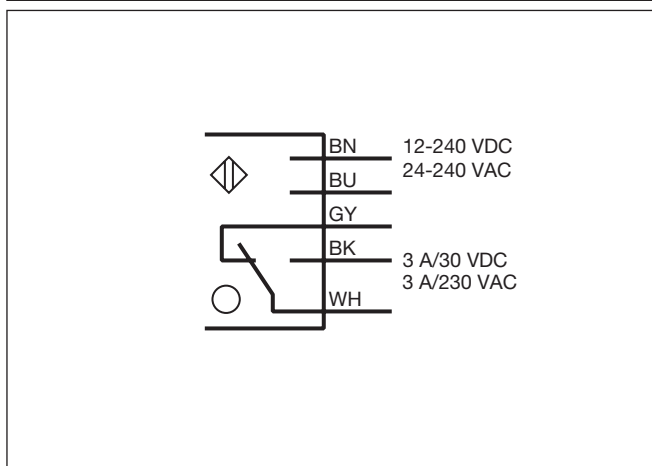
tv = Power ON delay



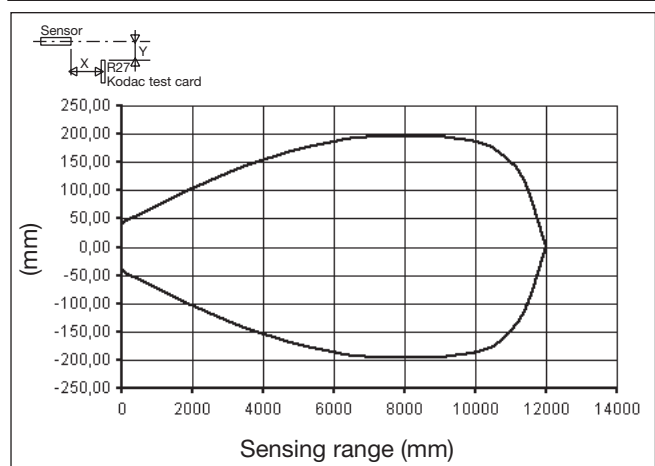
## Dimensions



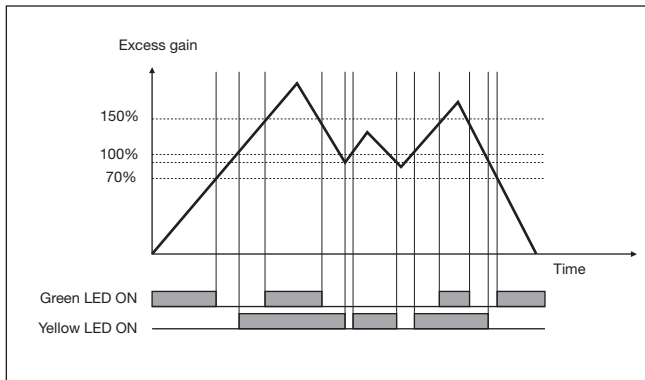
## Wiring Diagram



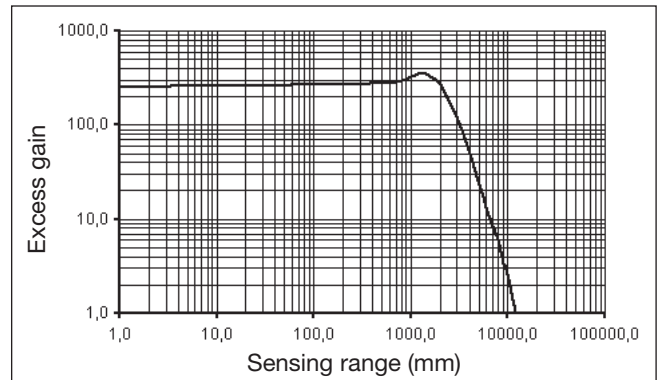
## Detection Diagram



## Signal Stability



## Excess Gain



## Installation Hints

|  |  |  |   |
|--|--|--|---|
| <p><i>To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables</i></p> | <p><i>Relief of cable strain</i></p> <p>The cable should not be pulled</p> | <p><i>Protection of the sensing face</i></p> <p>A proximity switch should not serve as mechanical stop</p> | <p><i>Switch mounted on mobile carrier</i></p> <p>Any repetitive flexing of the cable should be avoided</p> |
|--|--|--|---|

## Delivery Contents

- Photoelectric switch: PC50CNR..
- Installation instruction
- Mounting bracket APC50-1
- **Packaging:** Cardboard box

## Accessories

- Reflectors: ER-series
- Screwdriver for adjustment: 77-001

