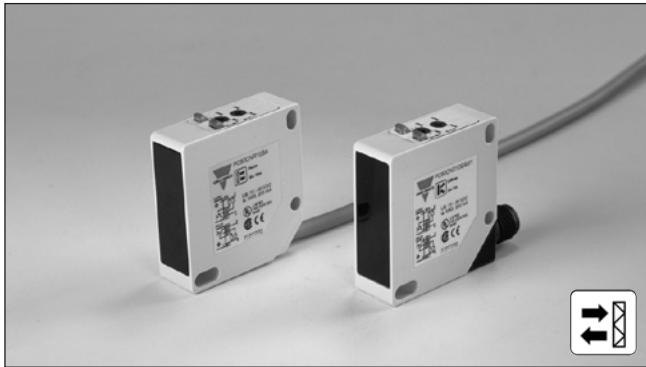


# Photoelectrics

## Retro-reflective, Transistor Output

### Type PC50CNR10BA

CARLO GAVAZZI



- Range: 10 m
- Adjustable sensitivity
- Modulated, infrared light
- Supply voltage: 10 to 30 VDC
- Output: 200 mA, NPN or PNP selectable
- Make and break switching function
- LED for output indication, signal stability and power ON
- Protection: reverse polarity, short-circuit, transients
- Cable and plug versions
- High degree of EMC



## Product Description

The PC50CNR is a family of general purpose retro-reflective sensors in a compact square 17 x 50 x 50 mm reinforced PC/ABS-housing. They are useful in applications where basic sensors provide adequate sensing perfor-

mance. The long sensing range together with sensitivity adjustment gives a very flexible sensor. The DC types are with a transistor output and the configuration is fully programmable (NPN, PNP, NO and NC).

## Ordering Key

**PC50CNR10BAM1**

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

## Type Selection

Housing W x H x D	Range S <sub>n</sub>	Ordering no. NPN & PNP cable Make & break switching	Ordering no. NPN & PNP plug Make & break switching
17 x 50 x 50 mm	10 m	PC 50 CNR 10 BA	PC 50 CNR 10 BAM1

**Note:** Reflectors to be ordered separately

## Specifications

<b>Rated operating distance (S<sub>n</sub>)</b>	10 m, with reflector type ER 4, ref. target	<b>Protection</b>	Short-circuit, reverse polarity, transients
<b>Blind zone</b>	Max. 10 cm	<b>Light source</b>	GaAlAs, LED, 880 nm infrared, modulated
<b>Sensitivity</b>	Adjustable by single-turn potentiometer	<b>Light type</b>	infrared, modulated
<b>Temperature drift</b>	≤ 0.5%/°C	<b>Sensing angle</b>	± 2° at 1/2 range
<b>Hysteresis (H)</b> Differential travel	3-20%	<b>Ambient light</b>	Max. 5'000 lux
<b>Rated operational volt. (U<sub>B</sub>)</b>	10 to 30 VDC (ripple included)	<b>Operating frequency</b>	500 Hz
<b>Ripple (U<sub>rpp</sub>)</b>	≤ 10%	<b>Response time</b>	
<b>Output current</b>		OFF-ON (t <sub>ON</sub> )	≤ 1 ms
Continuous (I <sub>a</sub> )	≤ 200 mA	ON-OFF (t <sub>OFF</sub> )	≤ 1 ms
Short-time (I)	≤ 200 mA, (max. load capacity 100 nF)	<b>Power ON delay (t<sub>v</sub>)</b>	≤ 300 ms
<b>No load supply current (I<sub>o</sub>)</b>	≤ 40 mA	<b>Output function</b>	
<b>Minimum operational current (I<sub>m</sub>)</b>	0.5 mA	NPN and PNP	Switch selectable
<b>OFF-state current (I<sub>r</sub>)</b>	≤ 100 μA	Complementary function	Make and break (NO + NC)
<b>Voltage drop (U<sub>d</sub>)</b>	≤ 2.5 VDC @200 mA	<b>Indication function</b>	
		Output ON	LED, yellow
		Signal stability ON and power ON	LED, green
		<b>Environment</b>	
		Installation category	II (IEC 60664/60664A; 60947-1)
		Pollution degree	3 (IEC 60664/60664A; 60947-1)
		Degree of protection	IP 67 (IEC 60529; 60947-1)

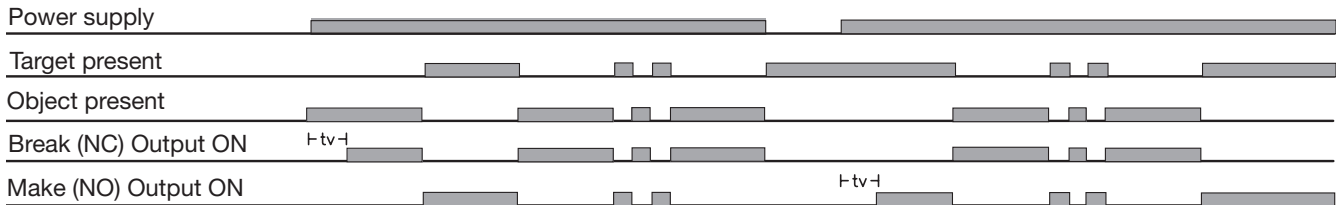


## Specifications (cont.)

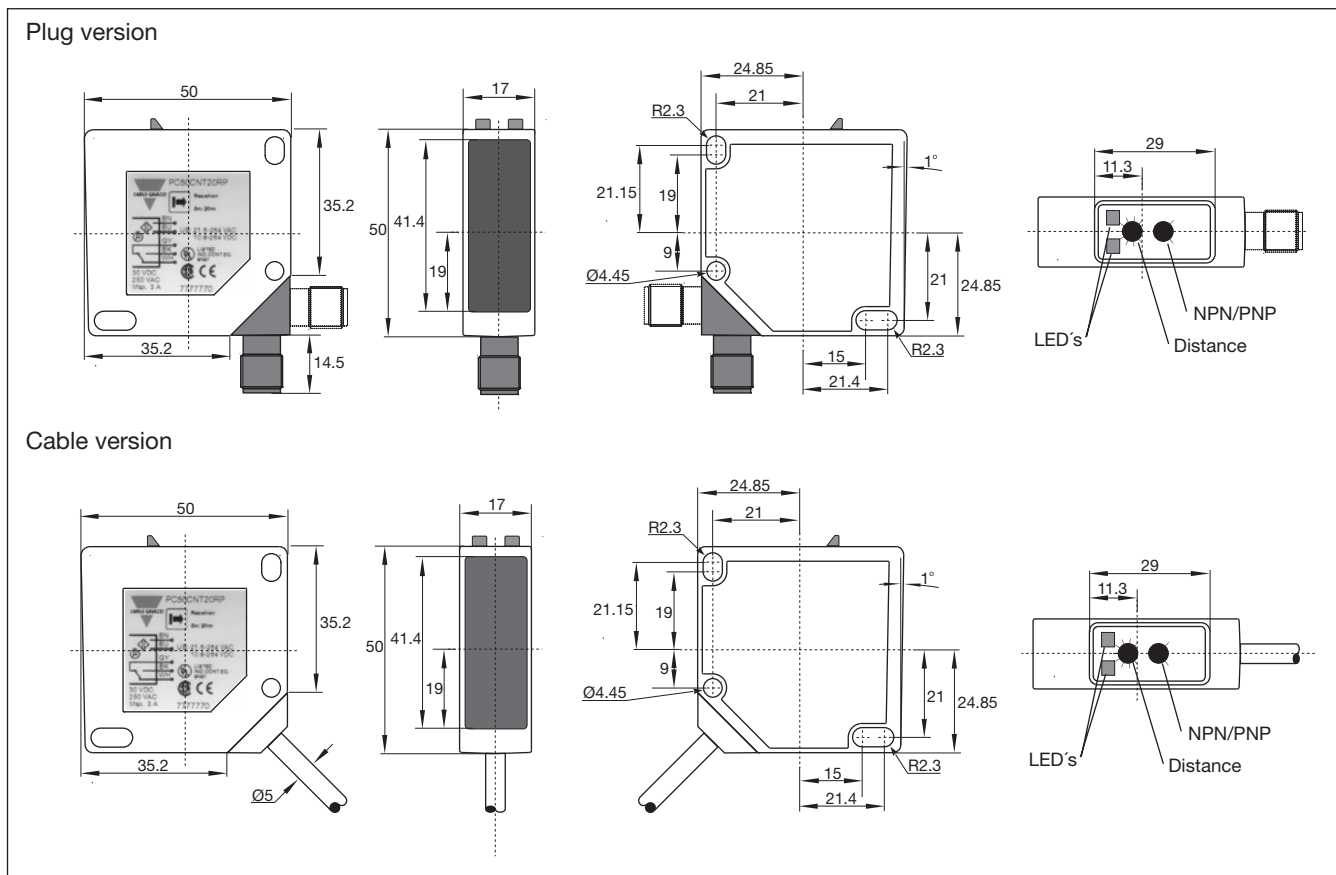
<b>Temperature</b> Operating Storage	-20° to +60°C (-4° to +140°F)	<b>Housing material</b> Body Front glass Mounting bracket	PC/ABS, grey
	-25° to +80°C (-13° to +176°F)		PC black Steel, galvanized
<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	<b>Connection</b> Cable Plug (M1) Cables for plug (M1)	PVC, grey, 2 m, 4 x 0.34 mm <sup>2</sup> PBTP, M12 x 1 CON.1A-series
<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)		<b>Weight</b>
<b>Rated insulation voltage</b>	50 VDC	<b>Approvals</b>	UL, CSA
		<b>CE-marking</b>	Yes

## Operation Diagram

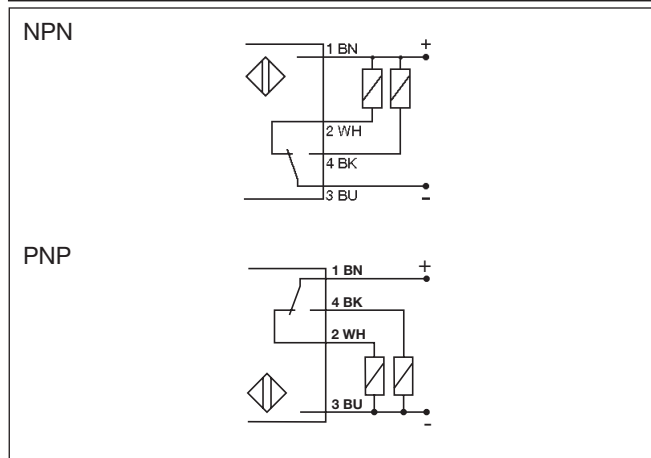
tv = Power ON delay



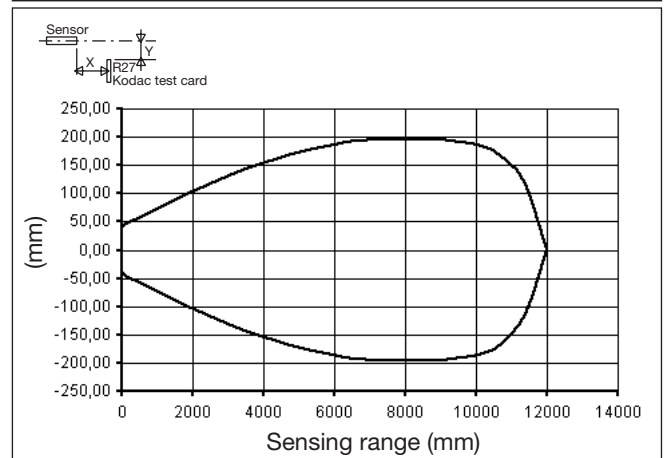
## Dimensions



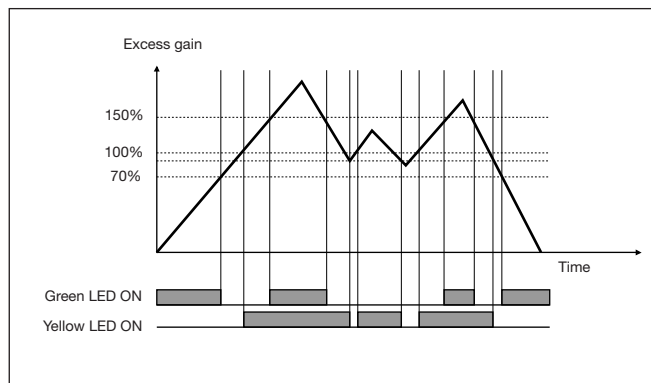
## Wiring Diagrams



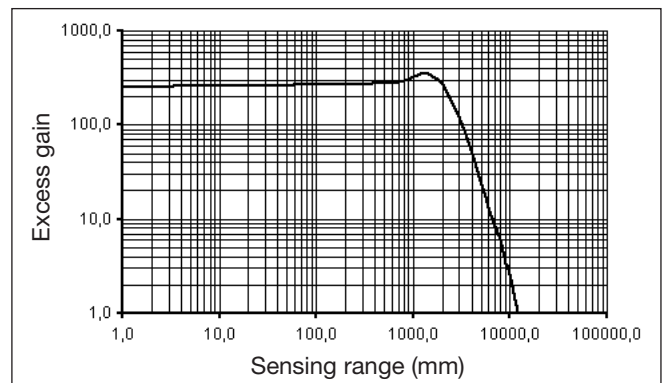
## Detection Diagram



## Signal Stability



## Excess Gain



## Installation Hints

<p>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</p>	<p>Relief of 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>Switch mounted on mobile carrier</p> <p>Any repetitive flexing of the cable should be avoided</p>
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## Delivery Contents

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

## Accessories

- Reflectors: ER-series
- Screwdriver for adjustment: 77-001
- Connector type CON.1A..

For further information refer to "Accessories"

