

# Photoelectrics Retro-reflective, Polarized, Transistor Output Type PC50CNP06BAM.

CARLO GAVAZZI



- Range: 6 m
- Adjustable sensitivity
- Modulated, visible red light, polarized
- Supply voltage: 10 to 30 VDC
- Output: 200 mA, NPN or PNP
- Make and break switching function selectable
- LED for output indication, signal stability and power ON
- Protection: reverse polarity, short-circuit, transients
- Cable and plug versions
- High degree of EMC
- Mute input



## Product Description

The PC50CNP. is a family of general purpose polarized 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

performance. 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 **PC50CNP06BAM1MH**

Type	_____
Housing style	_____
Housing size	_____
Housing material	_____
Housing length	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Connection type	_____
Mute input	_____
Mute active level	_____

## Type Selection

Housing W x H x D	Range S <sub>n</sub>	Mute	Ordering no. NPN & PNP cable Make & break switching	Ordering no. NPN & PNP plug Make & break switching
17 x 50 x 50 mm	6 m	High	PC 50 CNP 06 BAMH	PC 50 CNP 06 BAM1MH
17 x 50 x 50 mm	6 m	Low	PC 50 CNP 06 BAML	PC 50 CNP 06 BAM1ML

**Note:** Reflector to be ordered separately

## Specifications

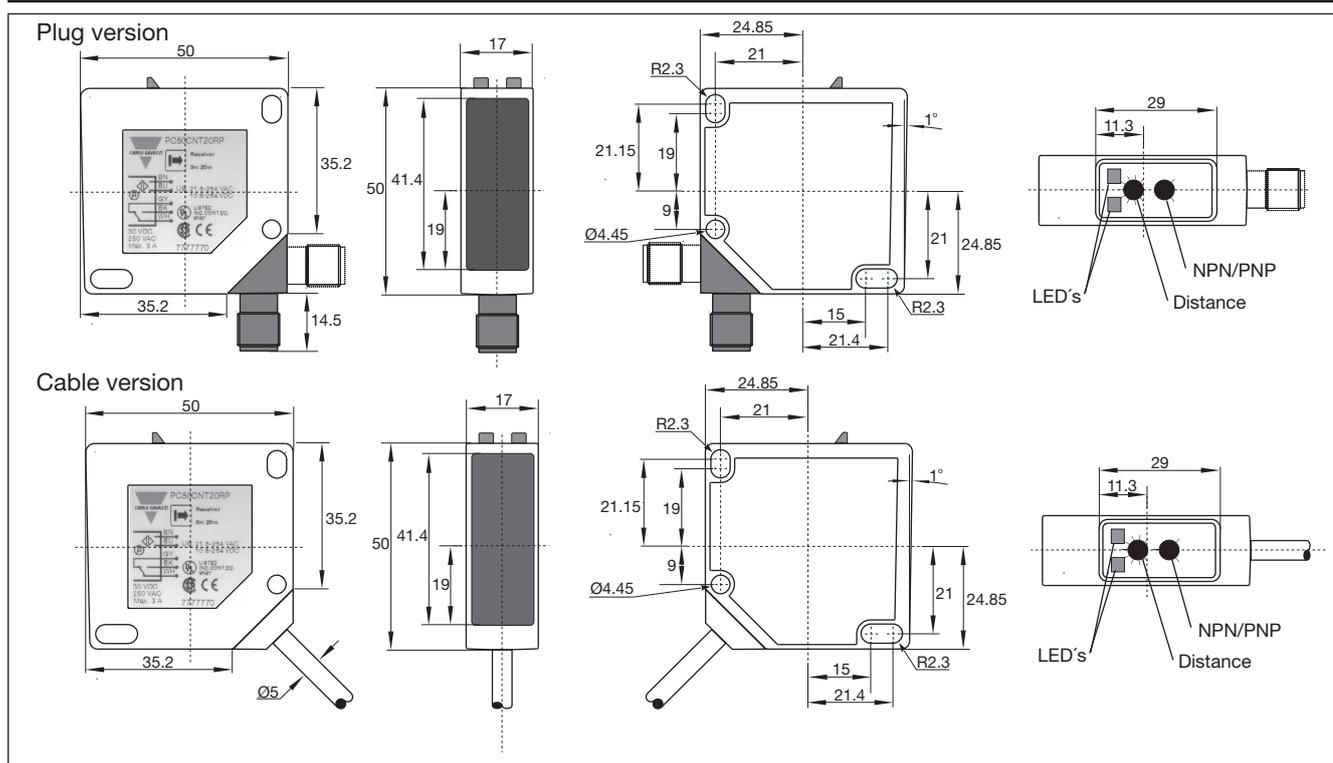
<b>Rated operating distance (S<sub>n</sub>)</b>	Up to 6 m, with reflector type ER 4, ref. target	<b>Voltage drop (U<sub>d</sub>)</b>	≤ 2.5 VDC @ 200 mA
<b>Blind zone</b>	Max. 20 cm	<b>Test input</b>	
<b>Sensitivity</b>	Adjustable by single-turn potentiometer	Impedance	10kΩ
<b>Hysteresis (H)</b>		Voltage	
Differential travel	3 - 20%	Active high	> 8.5 VDC
<b>Temperature drift</b>	≤ 0.5%/°C	Active low	< 3 VDC
<b>Rated operational volt. (U<sub>B</sub>)</b>	10 to 30 VDC (ripple included)	<b>Test input response time</b>	
<b>Ripple (U<sub>rpp</sub>)</b>	≤ 10%	ON-OFF (t <sub>1</sub> )	≤ 200 ms
<b>Output current</b>		ON-OFF (t <sub>2</sub> )	≤ 200 ms
Continuous (I <sub>a</sub> )	≤ 200 mA	<b>Protection</b>	Short-circuit, reverse polarity, transients
Short-time (I)	≤ 200 mA, (max. load capacity 100 nF)	<b>Light source</b>	GaAIAs, LED, 660 nm
<b>No load supply current (I<sub>o</sub>)</b>	≤ 40 mA	<b>Light type</b>	visible red, modulated
<b>Minimum operational current (I<sub>m</sub>)</b>	0.5 mA	<b>Sensing angle</b>	± 2° at 1/2 range
<b>OFF-state current (I<sub>r</sub>)</b>	Max. 100 μA	<b>Ambient light</b>	Max. 5'000 lux
		<b>Operating frequency</b>	500 Hz
		<b>Response time</b>	
		OFF-ON (t <sub>ON</sub> )	≤ 1 ms
		ON-OFF (t <sub>OFF</sub> )	≤ 1 ms



## Specifications (cont.)

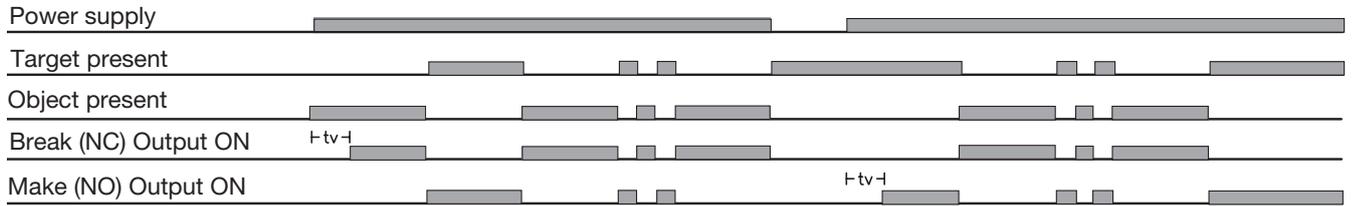
<b>Power ON delay (t<sub>v</sub>)</b>	≤ 300 ms	<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
<b>Output function</b> NPN and PNP Complementary function	Switch selectable Make and break (NO + NC)	<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)
<b>Indication function</b> Output ON Signal stability ON and power ON	LED, yellow LED, green	<b>Rated insulation voltage</b>	50 VDC
<b>Environment</b> Installation category	II (IEC 60664/60664A; 60947-1)	<b>Housing material</b> Body Front glass Mounting bracket	PC/ABS, grey PMMA, red Steel, galvanized
Pollution degree	3 (IEC 60664/60664A; 60947-1)	<b>Connection</b> Cable Plug (M1) Cables for plug (M1)	PVC, grey, 2 m, 5 x 0.34 mm <sup>2</sup> PBTP, M12 x 1 CON.14NF.. series
Degree of protection	IP 67 (IEC 60529; 60947-1)	<b>Weight</b>	110 g
<b>Temperature</b> Operating Storage	-20° to +60°C (-4° to +140°F) -25° to +80°C (-13° to +176°F)	<b>Approvals</b>	UL
		<b>CE-marking</b>	Yes

## Dimensions

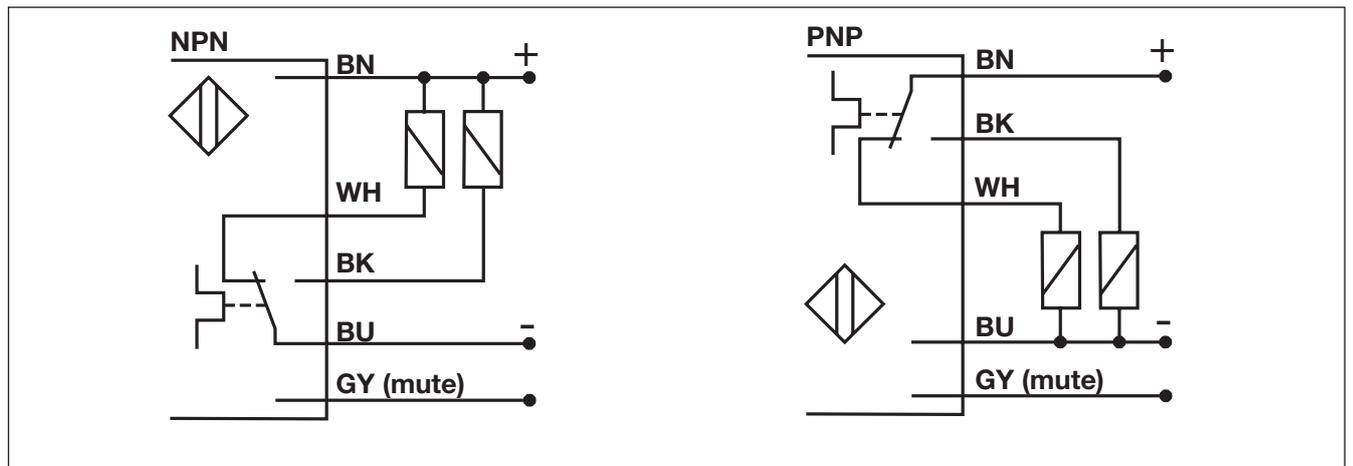


## Operation Diagram

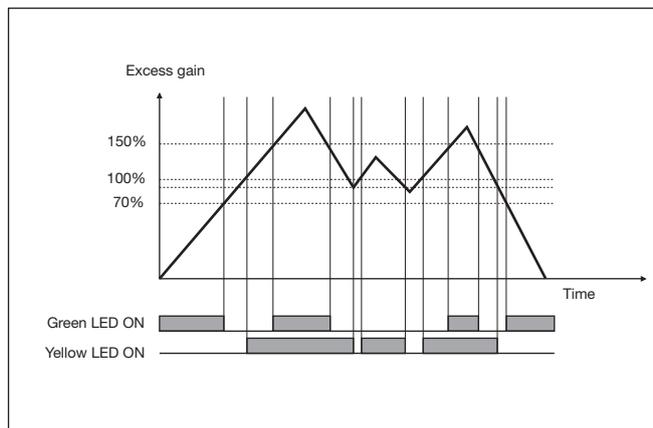
tv = Power ON delay



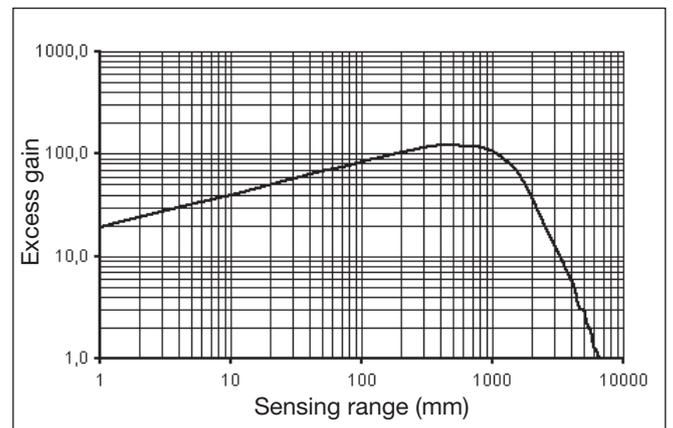
## Wiring Diagrams



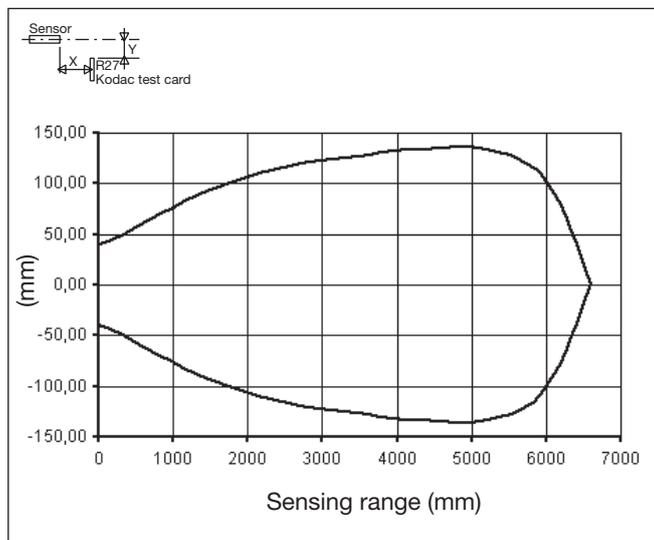
## Signal Stability



## Excess Gain

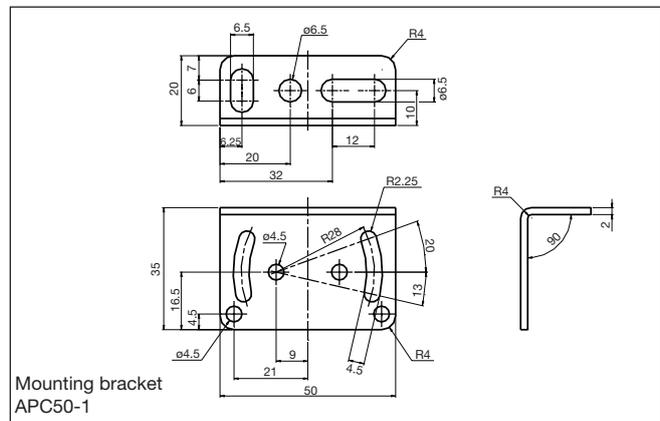


## Detection Diagram



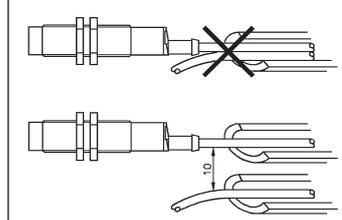
## Delivery Contents

- Photoelectric switch: PC50CNP..
- Installation instruction
- Mounting bracket APC50-1
- **Packaging:** Cardboard box

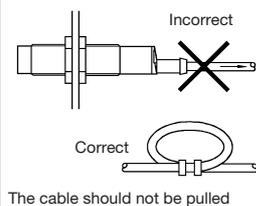


## Installation Hints

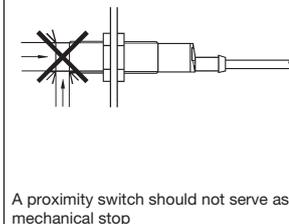
To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables



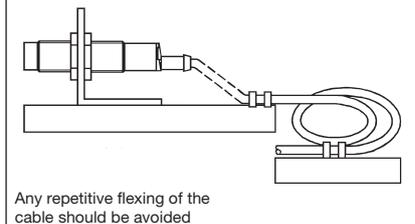
Relief of cable strain



Protection of the sensing face



Switch mounted on mobile carrier



## Accessories

- Reflectors: ER-series
- Screwdriver for adjustment: 77-001
- Connector type CON.14NF.. series.