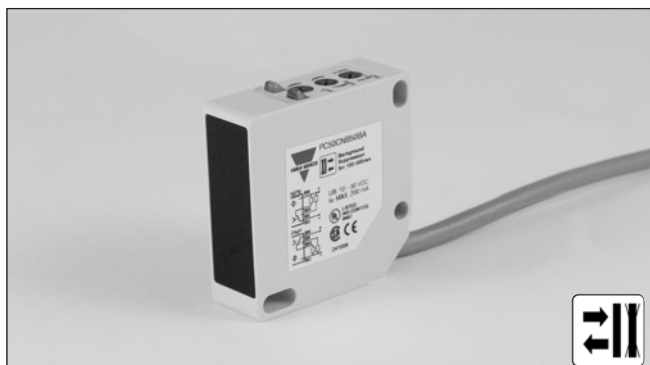


# Photoelectrics

## Diffuse-reflective, Background Suppression

### Type PC50CNB50BA

CARLO GAVAZZI



- Range: 500 mm
- Adjustable background suppression 120-500 mm
- Modulated, infrared light
- Supply voltage: 10 to 30 VDC
- Output: 200 mA, NPN or PNP selectable
- Make and break switching function programmable
- LED for output indication, signal stability and power ON
- Protection: reverse polarity, short circuit, transients
- Cable and plug version
- Color independent detection
- Excellent EMC

## Product Description

The PC50CNB is a family of high accuracy background suppression sensors in a compact square 17 x 50 x 50 mm reinforced PC/ABS-housing. They are useful in applications where color independence or background suppression is necessary. 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

**PC50CNB50BAM1**

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	500 mm	PC 50 CNB 50 BA	PC 50 CNB 50 BAM1

## Specifications

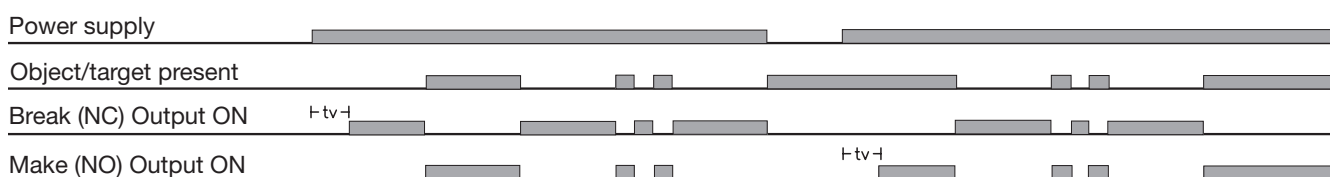
<b>Rated operating distance (S<sub>n</sub>)</b>	Up to 500 mm, reference target Kodak test card R 27, 90% white and 18% grey reflectivity, 200 x 200 mm	<b>Protection</b>	Short-circuit, reverse polarity, transients
<b>Blind zone</b>	Max. 120 mm	<b>Light source</b>	GaAlAs, LED, 850 nm
<b>Sensitivity</b>	Adjustable by two single-turn potentiometers, coarse and fine	<b>Light type</b>	Infrared, modulated
<b>Temperature drift</b>	± 0.5%/°C	<b>Sensing angle</b>	± 2°
<b>Hysteresis (H) differential travel</b>	Max. 20% on grey and white	<b>Ambient light</b>	Max. 10'000 lux
<b>Rated operational volt. (U<sub>B</sub>)</b>	10 to 30 VDC (ripple included)	<b>Operating frequency</b>	250 Hz
<b>Ripple (U<sub>ripple</sub>)</b>	≤ 10%	<b>Response time</b>	
<b>Output current</b>		OFF-ON (t <sub>ON</sub> )	≤ 2 ms
Continuous (I <sub>a</sub> )	≤ 200 mA	ON-OFF (t <sub>OFF</sub> )	≤ 2 ms
Short-time (I)	(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>	80 mA @ 10 VDC 40 mA @ 30 VDC	<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 switch	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)
		<b>Temperature</b>	
		Operating	-20° to +60°C (-4° to +140°F)
		Storage	-25° to +80°C (-13° to +176°F)

## Specifications (cont.)

<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	<b>Connection</b>	PVC, grey, 2 m, 4 x 0.34 mm²
<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)	Cable Plug Cables for plug (M1)	PBTP, M12 x 1 CON.1-series
<b>Rated insulation voltage</b>	50 VAC (rms)	<b>Weight</b>	130 g
<b>Housing material</b>		<b>CE-marking</b>	Yes
Body	PC/ABS, grey		
Front glass	PC black		
Mounting bracket	Steel, galvanized		

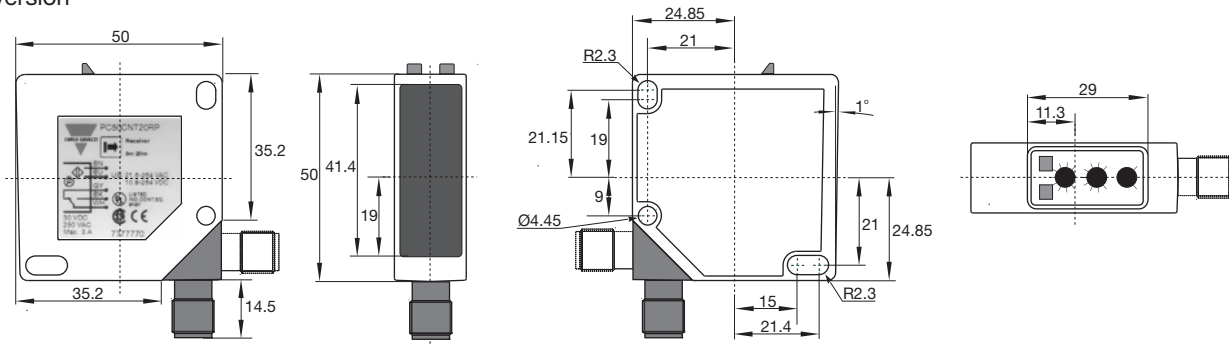
## Operation Diagram

tv = Power ON delay

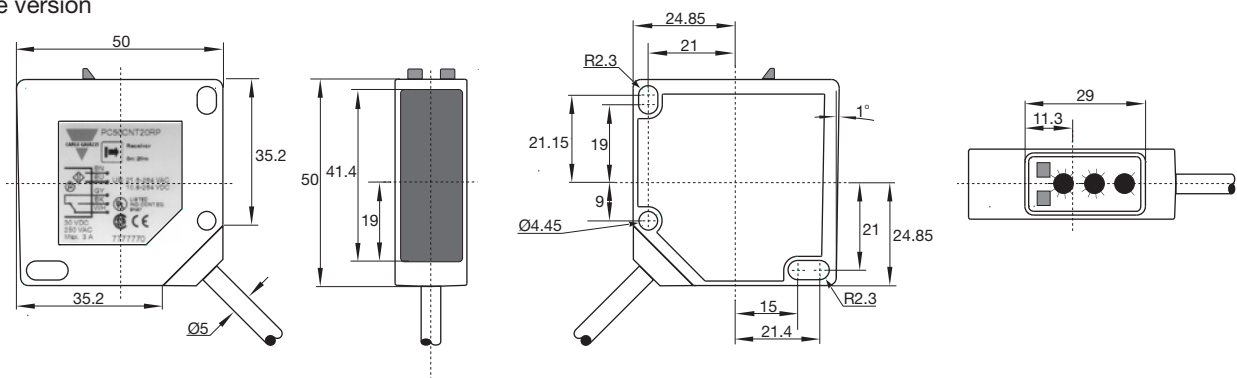


## Dimensions

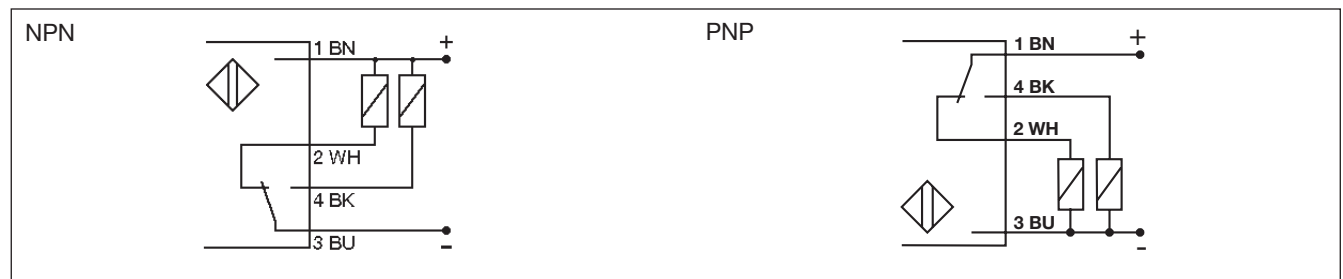
### Plug version



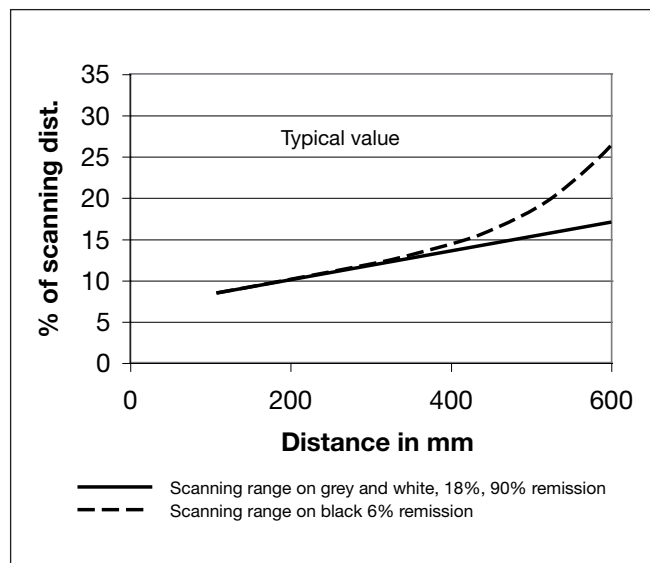
## Cable version



## Wiring Diagrams

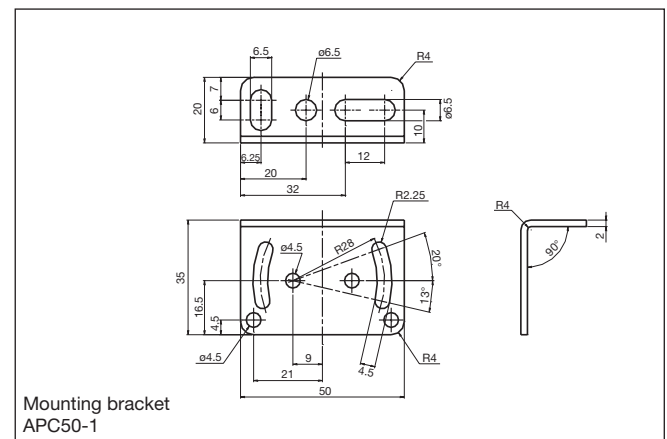


## Sensing Conditions



## Delivery Contents

- Photoelectric switch: PC50 CNB..
- Installation instruction
- Mounting bracket APC50-1
- **Packaging:** Cardboard box



## 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>Incorrect</p> <p>Correct</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>
---	---	---	--

## Accessories

- Screwdriver for adjustment: 77-001

For further information refer to "Accessories"