

Photoelectrics

Diffuse-reflective, Background Suppression

Type PC50CNB50BA



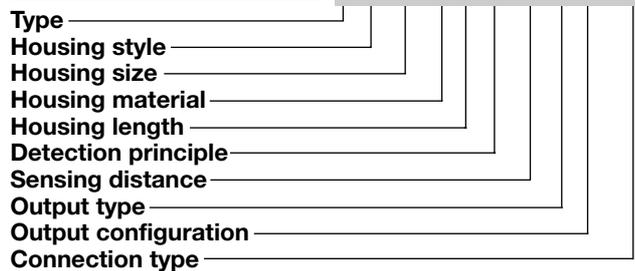
- Range: 500 mm
- Adjustable background suppression 150-500 mm
- Modulated, infrared light
- Supply voltage: 10 to 30 VDC
- Output: 200 mA, NPN or PNP selectable
- Make and break switching function programmable
- LED for output indication, signal stability and power ON
- Protection: reverse polarity, 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 Selection

Housing W x H x D	Range S _n	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

Rated operating distance (S_n)	Up to 500 mm, reference target Kodak test card R 27, white, 90% reflectivity, 200 x 200 mm	Light source	GaAIAs, LED, 880 nm
Blind zone	Max. 50 mm	Light type	Infrared, modulated
Sensitivity	Adjustable by two single-turn potentiometers, coarse and fine	Sensing angle	± 2°
Temperature drift	± 0.5%/°C	Ambient light	Max. 10'000 lux
Hysteresis (H) differential travel	Max. 7%	Operating frequency	250 Hz
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Response time	
Ripple (U_{rpp})	≤ 10%	OFF-ON (t _{ON})	≤ 2 ms
Output current		ON-OFF (t _{OFF})	≤ 2 ms
Continuous (I _a)	≤ 200 mA	Power ON delay (t_v)	< 300 ms
Short-time (I)	≤ 200 mA, (max. load capacity 100 nF)	Output function	
No load supply current (I_o)	≤ 50 mA	NPN and PNP	Switch selectable
Minimum operational current (I_m)	0.5 mA	Complementary switch	Make and break (NO + NC)
OFF-state current (I_r)	≤ 100 μA	Indication function	
Voltage drop (U_d)	≤ 2.5 VDC @ 200 mA	Output ON	LED, yellow
Protection	Short-circuit, reverse polarity, transients	Signal stability ON and power ON	LED, green
		Environment	
		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)
		Temperature	
		Operating	-20° to +60°C (-4° to +140°F)
		Storage	-25° to +80°C (-13° to +176°F)

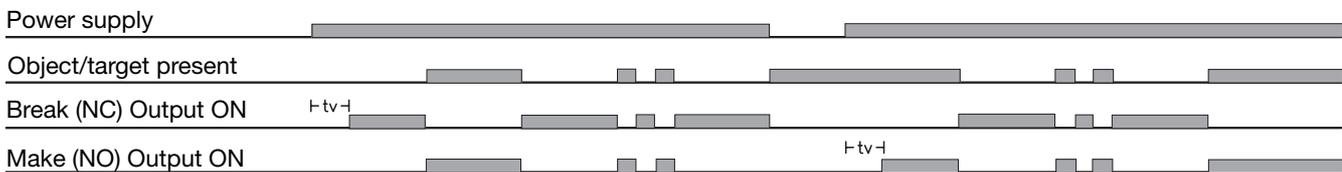


Specifications (cont.)

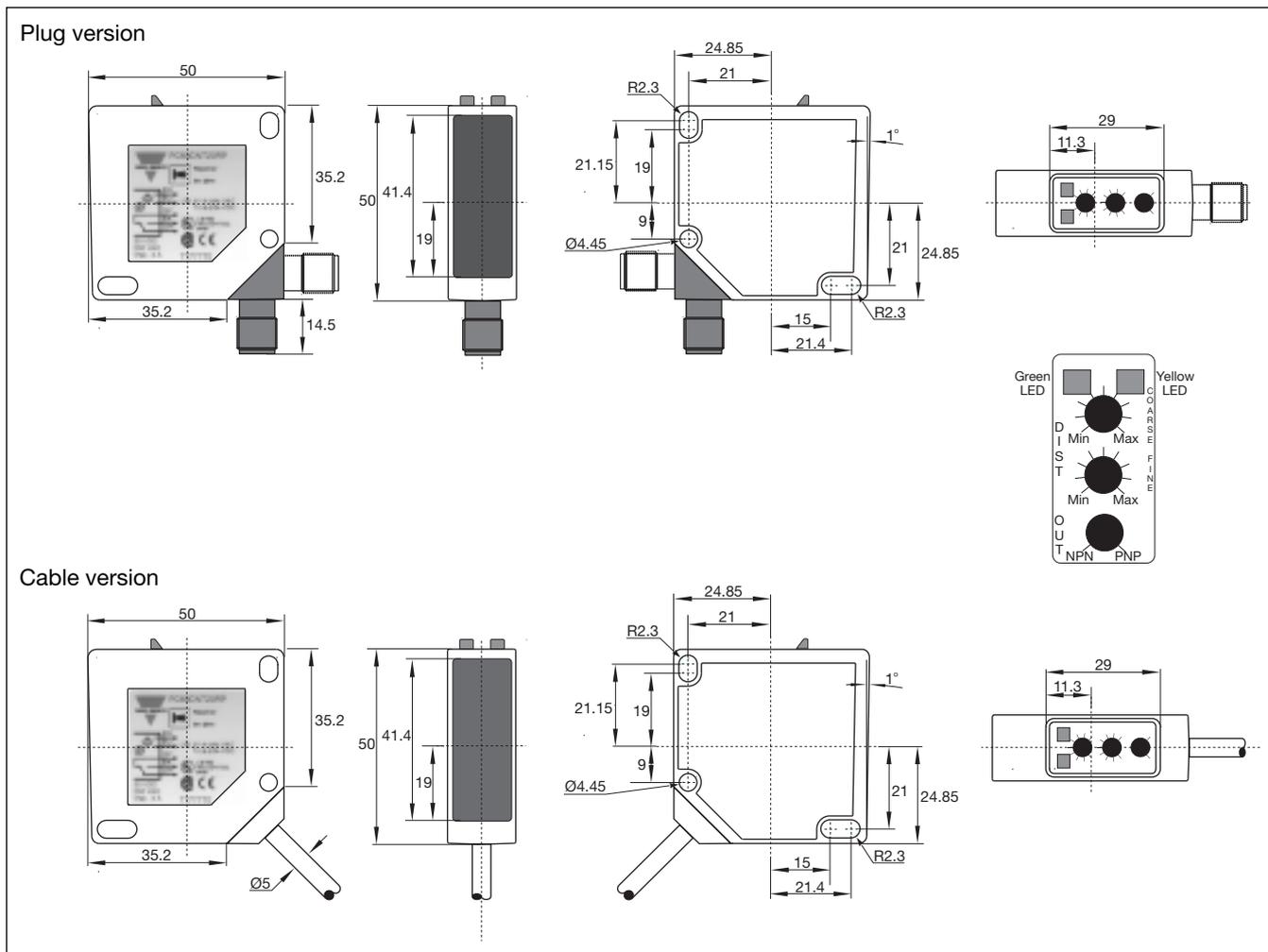
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	Connection	PVC, grey, 2 m, 4 x 0.34 mm ²
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)	Cable Plug Cables for plug (M1)	PBTP, M12 x 1 CON.1-series
Rated insulation voltage	50 VAC (rms)	Weight	130 g
Housing material		CE-marking	Yes
Body	PC/ABS,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

Operation Diagram

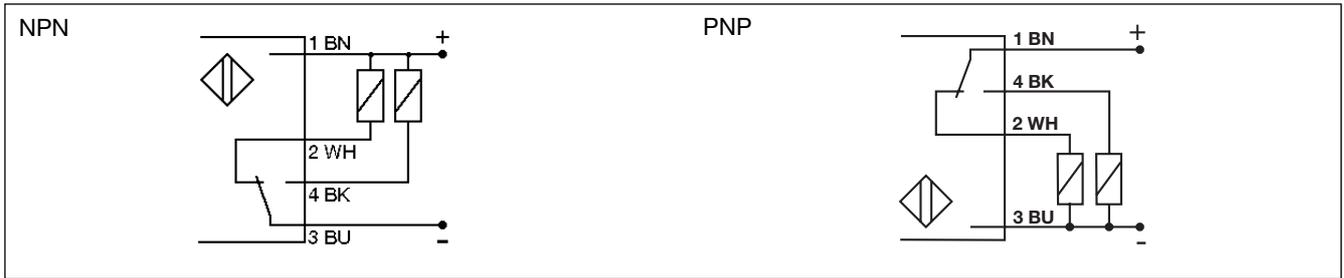
tv = Power ON delay



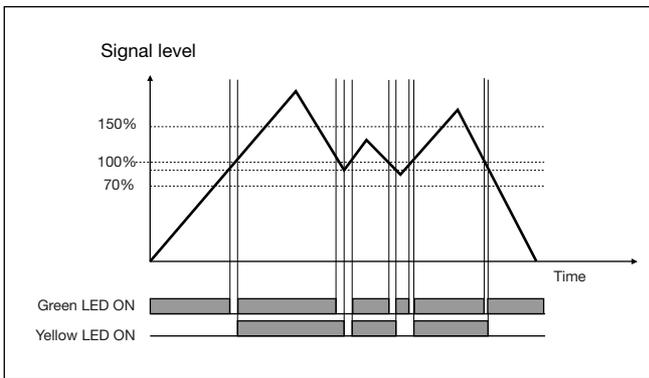
Dimensions



Wiring Diagrams

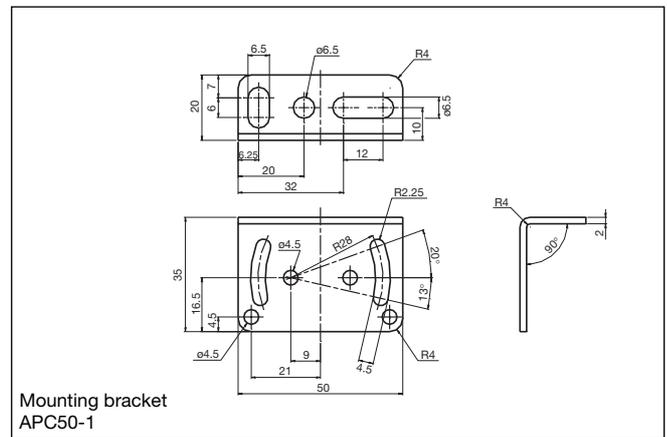


Signal Stability Indication



Delivery Contents

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



Accessories

- Screwdriver for adjustment: 77-001

For further information refer to "Accessories"

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>Incorrect</p> <p>Correct</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>
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