

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 _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

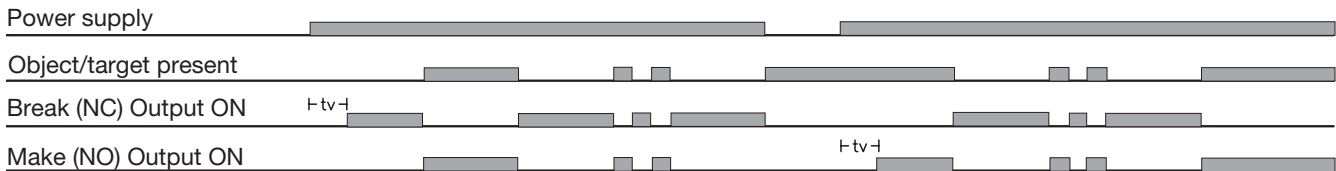
Rated operating distance (S_n)	Up to 500 mm, reference target Kodak test card R 27, 90% white and 18% grey reflectivity, 200 x 200 mm	Voltage drop (U_d)	≤ 2.5 VDC @ 200 mA
Blind zone	Max. 120 mm	Protection	Short-circuit, reverse polarity, transients
Sensitivity	Adjustable by two single-turn potentiometers, coarse and fine	Light source	GaAIAs, LED, 850 nm
Temperature drift	± 0.5%/°C	Light type	Infrared, modulated
Hysteresis (H) differential travel	Max. 20% on grey and white	Sensing angle	± 2°
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Ambient light	Max. 10'000 lux
Ripple (U_{pp})	≤ 10%	Operating frequency	250 Hz
Output current Continuous (I _a) Short-time (I)	≤ 200 mA ≤ 200 mA, (max. load capacity 100 nF)	Response time OFF-ON (t _{ON}) ON-OFF (t _{OFF})	≤ 2 ms ≤ 2 ms
No load supply current (I_o)	80 mA @ 10 VDC 40 mA @ 30 VDC	Power ON delay (t_v)	< 300 ms
Minimum operational current (I_m)	0.5 mA	Output function NPN and PNP Complementary switch	Switch selectable Make and break (NO + NC)
OFF-state current (I_r)	≤ 100 μA	Indication function Output ON Signal stability ON and power ON	LED, yellow LED, green
		Environment Installation category Pollution degree Degree of protection	II (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP 67 (IEC 60529; 60947-1)

Specifications (cont.)

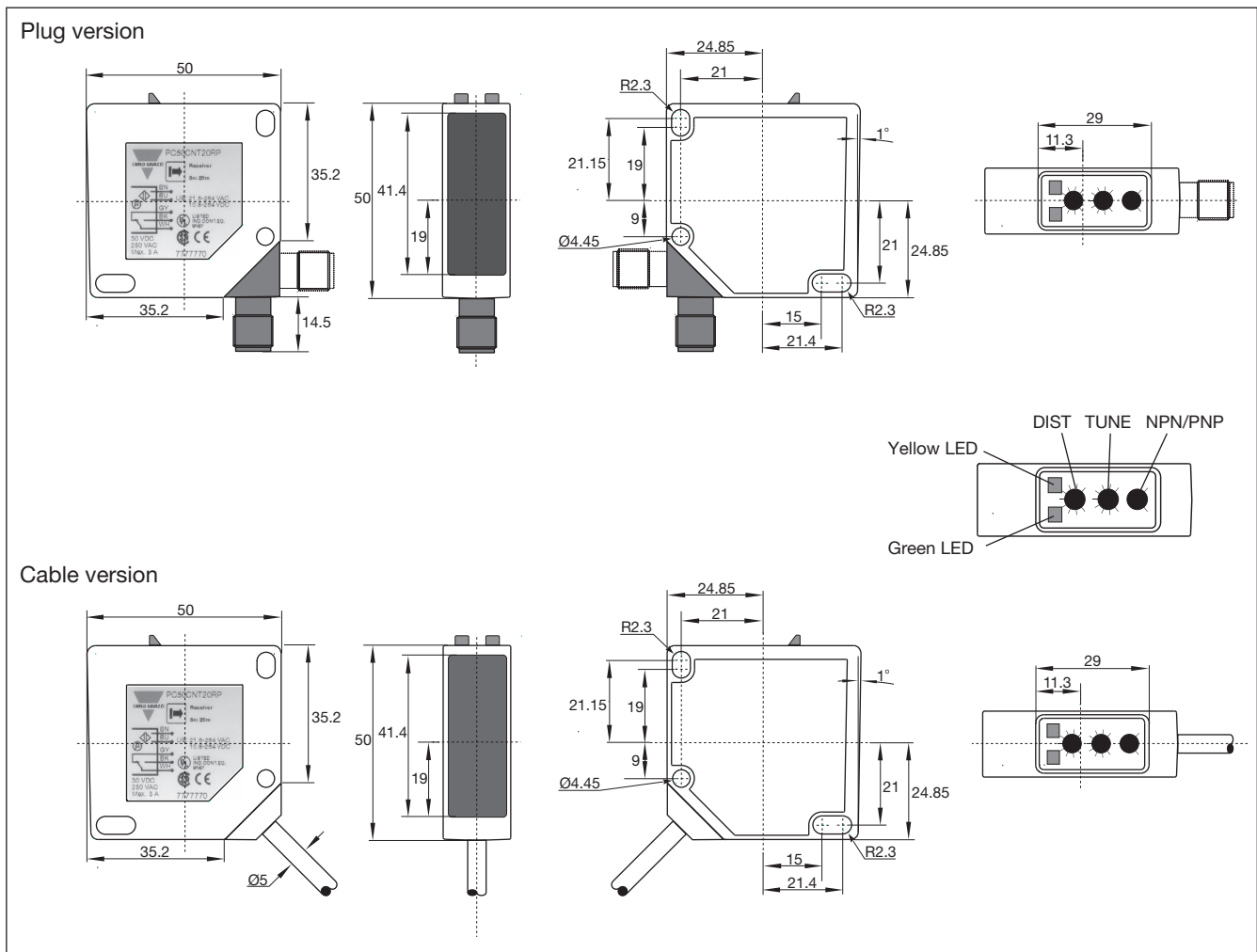
Temperature Operating Storage	-20° to +60°C (-4° to +140°F)	Housing material Body Front glass Mounting bracket	PC/ABS, grey
	-25° to +80°C (-13° to +176°F)		PC black Steel, galvanized
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	Connection Cable Plug Cables for plug (M1)	PVC, grey, 2 m, 4 x 0.34 mm ² PBTP, M12 x 1 CON.14NF.. series
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)		Weight
Rated insulation voltage	50 VAC (rms)	CE-marking	Yes

Operation Diagram

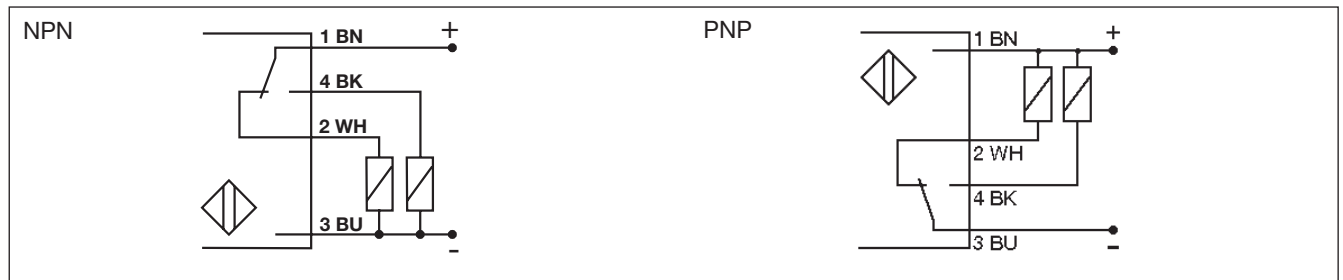
tv = Power ON delay



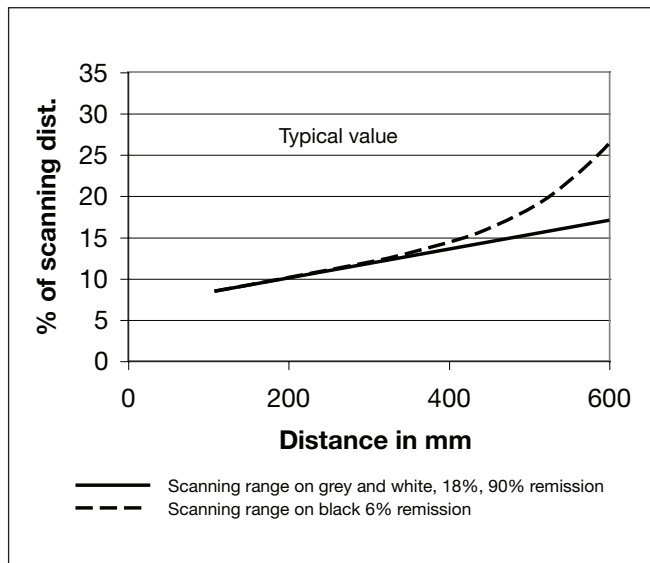
Dimensions



Wiring Diagrams

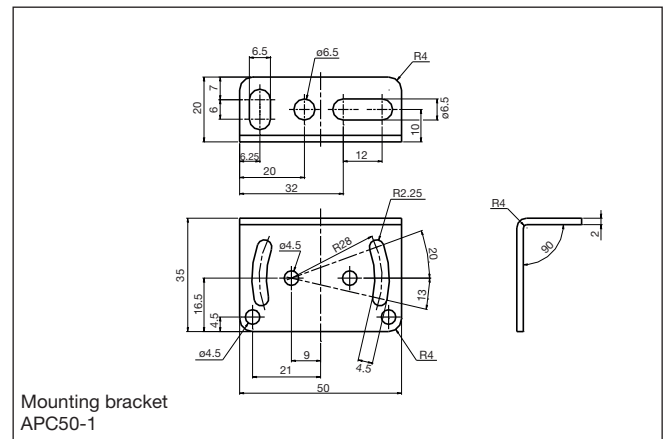


Sensing Conditions



Delivery Contents

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



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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Accessories

- Screwdriver for adjustment: 77-001