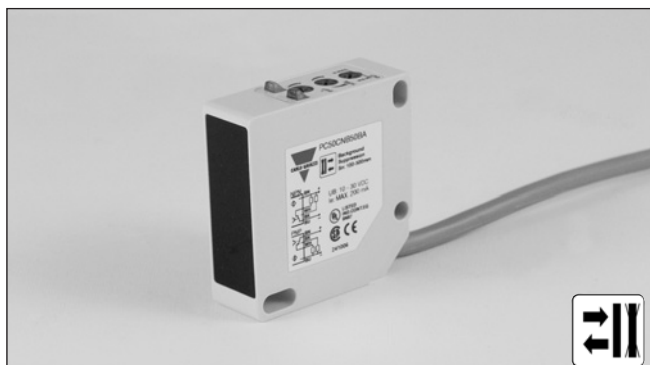


Photoelectrics

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

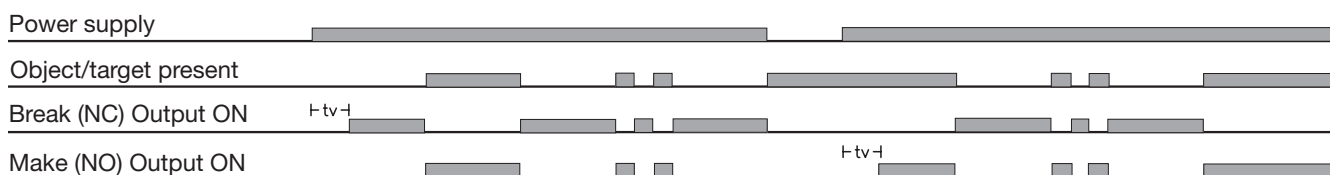
Rated operating distance (S_n)	Up to 500 mm, reference target Kodak test card R 27, 90% white and 18% grey reflectivity, 200 x 200 mm	Protection	Short-circuit, reverse polarity, transients
Blind zone	Max. 120 mm	Light source	GaAlAs, LED, 850 nm
Sensitivity	Adjustable by two single-turn potentiometers, coarse and fine	Light type	Infrared, modulated
Temperature drift	± 0.5%/°C	Sensing angle	± 2°
Hysteresis (H) differential travel	Max. 20% on grey and white	Ambient light	Max. 10'000 lux
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Operating frequency	250 Hz
Ripple (U_{ripple})	≤ 10%	Response time	
Output current		OFF-ON (t _{ON})	≤ 2 ms
Continuous (I _a)	≤ 200 mA	ON-OFF (t _{OFF})	≤ 2 ms
Short-time (I)	(max. load capacity 100 nF)	Power ON delay (t_v)	< 300 ms
No load supply current (I_o)	80 mA @ 10 VDC 40 mA @ 30 VDC	Output function	
Minimum operational current (I_m)	0.5 mA	NPN and PNP	Switch selectable
OFF-state current (I_r)	≤ 100 µA	Complementary switch	Make and break (NO + NC)
Voltage drop (U_d)	≤ 2.5 VDC @ 200 mA	Indication function	
		Output ON	LED, yellow
		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	
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)	Cable	PVC, grey, 2 m, 4 x 0.34 mm ²
		Plug	PBTP, M12 x 1
		Cables for plug (M1)	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		

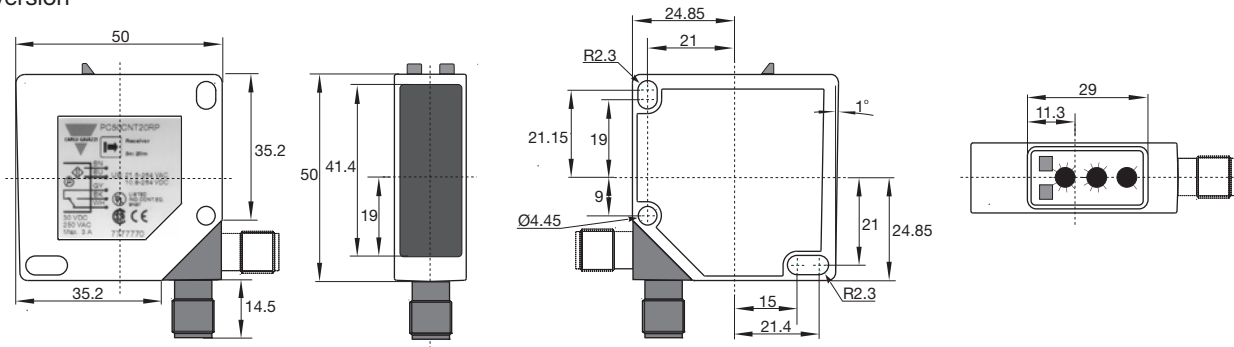
Operation Diagram

tv = Power ON delay

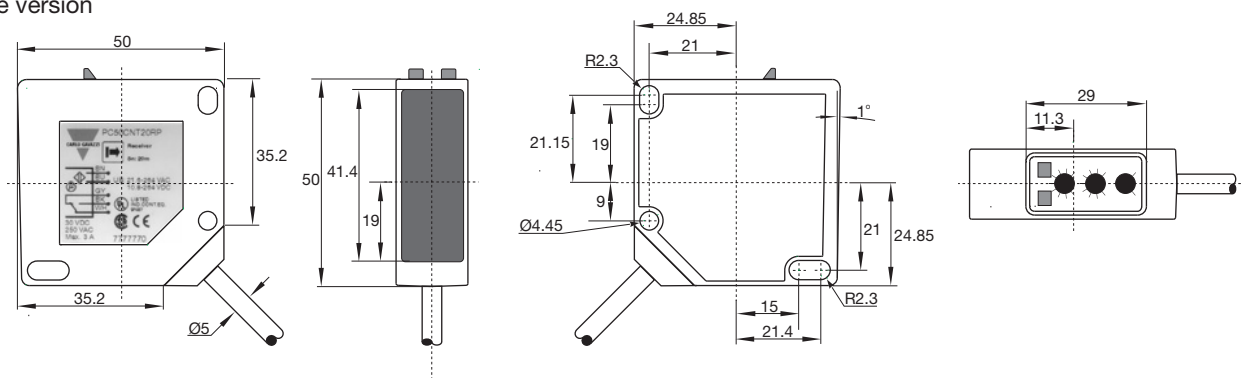


Dimensions

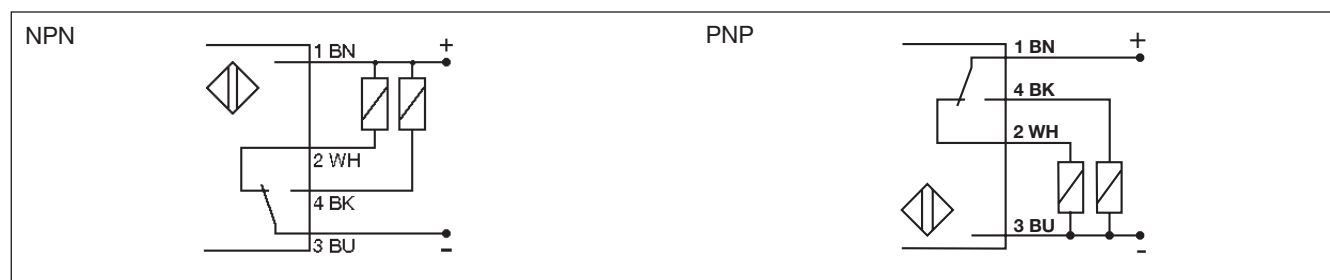
Plug version



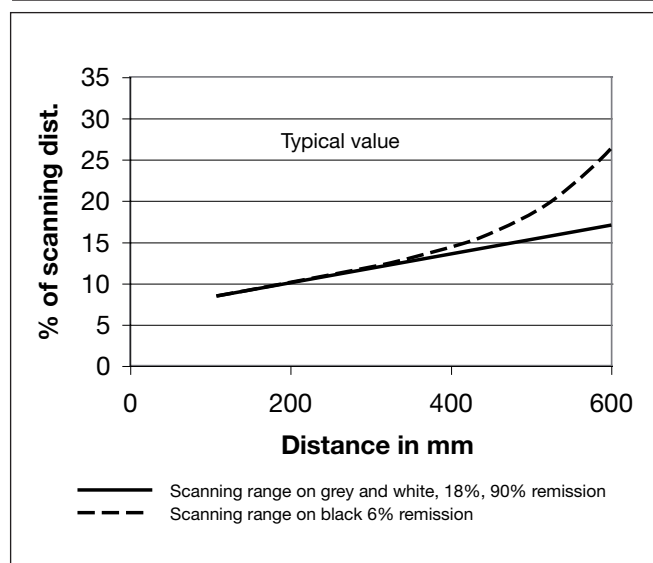
Cable version



Wiring Diagrams

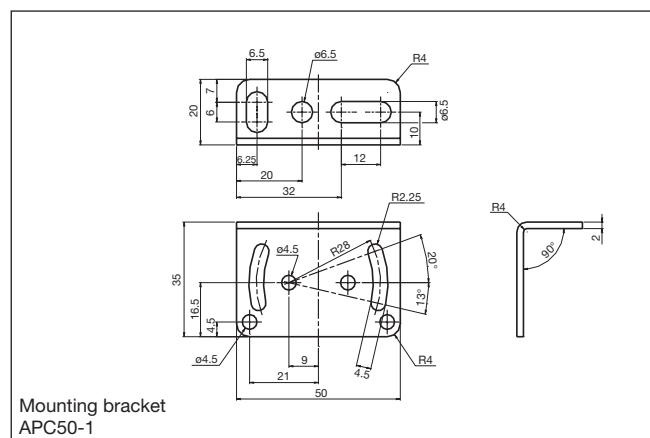


Sensing Conditions



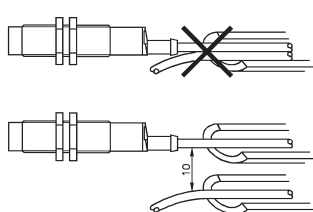
Delivery Contents

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

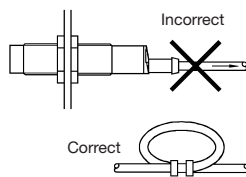


Installation Hints

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

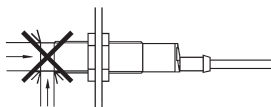


Relief of cable strain



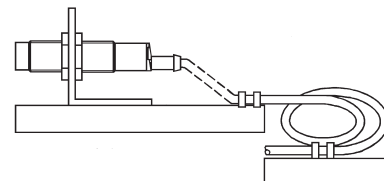
The cable should not be pulled

Protection of the sensing face



A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier



Any repetitive flexing of the cable should be avoided

Accessories

- Screwdriver for adjustment: 77-001

For further information refer to “Accessories”