Photoelectrics
Retro-reflective, Transistor Output
Type PC50CNR10BA



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

Product Description

The PC50CNR. is a family of general purpose 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

PC50CNR10BAM1

- **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	10 m	**PC 50 CNR 10 BA**	**PC 50 CNR 10 BAM1**

Note: Reflectors to be ordered separately

Specifications

Rated operating distance (S_n)	10 m, with reflector type ER 4, ref. target
Blind zone	Max. 10 cm
Sensitivity	Adjustable by single-turn potentiometer
Temperature drift	≤ 0.5%/°C
Hysteresis (H) Diffential travel	 3-20%
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)
Ripple (U_{rpp})	≤ 10%
Output current Continuous (I_e) Short-time (I)	 ≤ 200 mA ≤ 200 mA, (max. load capacity 100 nF)
No load supply current (I_o)	≤ 40 mA
Minimum operational current (I_m)	0.5 mA
OFF-state current (I_r)	≤ 100 µA
Voltage drop (U_d)	≤ 2.5 VDC @200 mA
Protection	Short-circuit, reverse polarity, transients

Light source	GaAlAs, LED, 880 nm
Light type	infrared, modulated
Sensing angle	± 2° at 1/2 range
Ambient light	Max. 5'000 lux
Operating frequency	500 Hz
Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	 ≤ 1 ms ≤ 1 ms
Power ON delay (t_v)	≤ 300 ms
Output function NPN and PNP Complementary function	 Switch selectable Make and break (NO + NC)
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)

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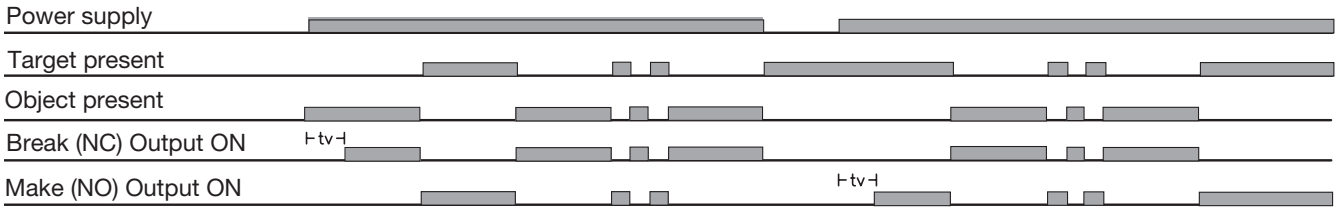
Specifications (cont.)

Temperature	
Operating	-20° to +60°C (-4° to +140°F)
Storage	-25° to +80°C (-13° to +176°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)
Rated insulation voltage	50 VDC
Housing material	
Body	PC/ABS, grey
Front glass	PC black
Mounting bracket	Steel, galvanized

Connection	
Cable	PVC, grey, 2 m, 4 x 0.34 mm^2
Plug (M1)	PBTP, M12 x 1
Cables for plug (M1)	CON.14NF.. series
Weight	
Cable version	185 g
Plug version	102 g
Approvals	UL, CSA
CE-marking	Yes

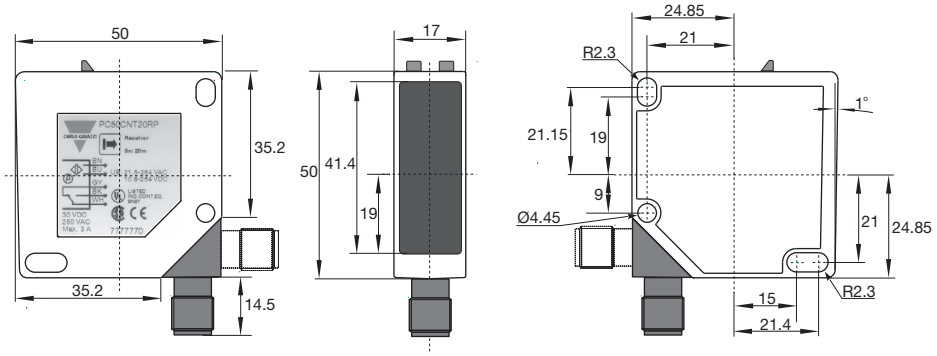
Operation Diagram

tv = Power ON delay

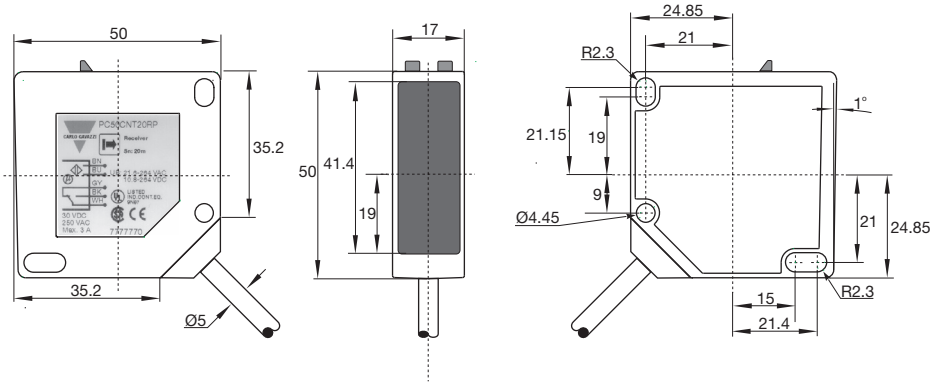


Dimensions

Plug version



Cable version



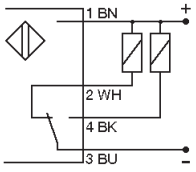
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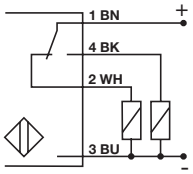
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Wiring Diagrams

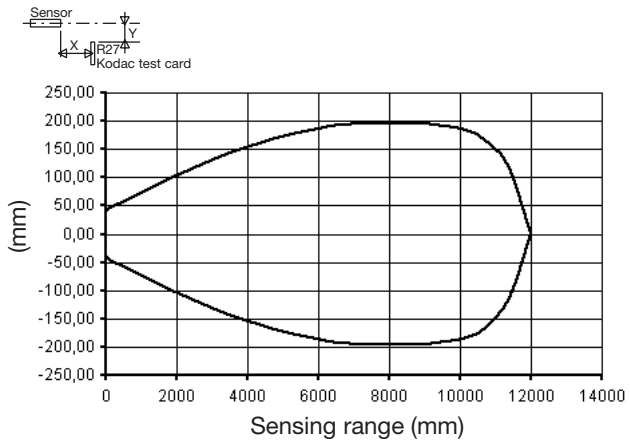
NPN



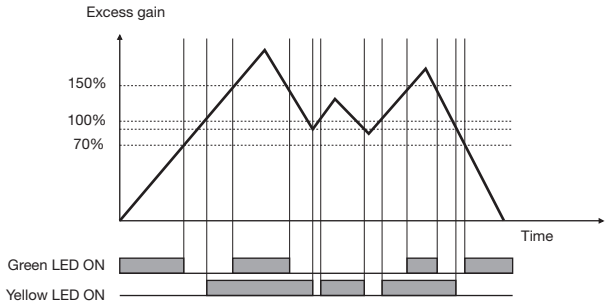
PNP



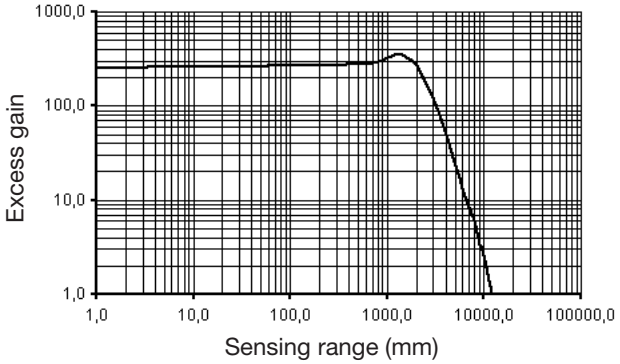
Detection Diagram



Signal Stability

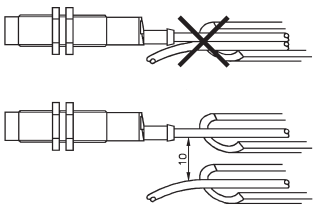


Excess Gain

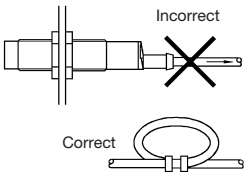


Installation Hints

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

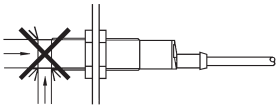


Relief of cable strain



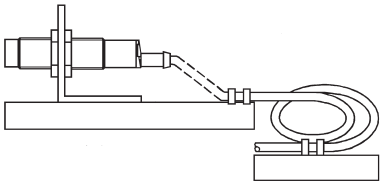
The cable should not be pulled

Protection of the sensing face



A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier



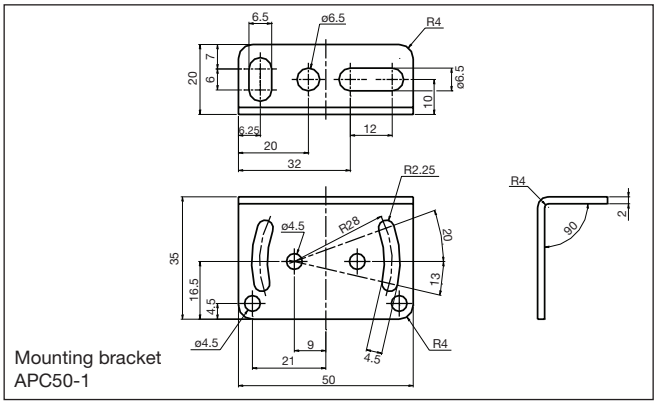
Any repetitive flexing of the cable should be avoided

Delivery Contents

- Photoelectric switch: PC50CNR..
- Installation instruction
- Mounting bracket APC50-1
- **Packaging:** Cardboard box

Accessories

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



Mounting bracket APC50-1

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