

Photoelectrics

Retro-reflective, Transistor Output

Type PC50CNR10BA

CARLO GAVAZZI



- 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 EMC immunity

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 perfor-

mance. 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

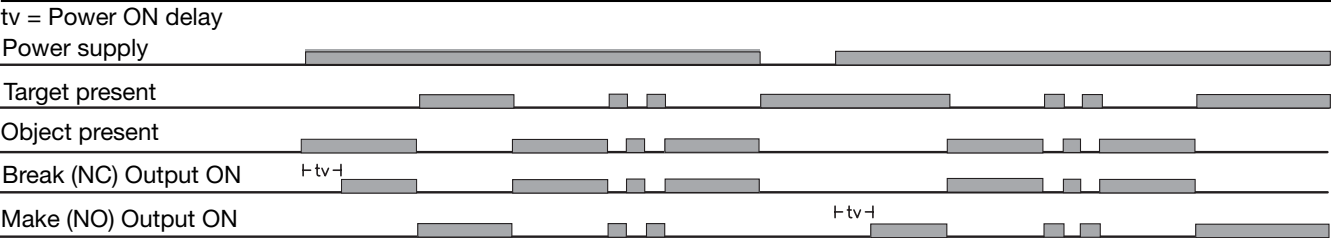
Rated operating distance (S_n)	10 m, with reflector type ER 4, ref. target	Protection	Short-circuit, reverse polarity, transients
Blind zone	Max. 10 cm	Light source	GaAlAs, LED, 880 nm
Sensitivity	Adjustable by single-turn potentiometer	Light type	infrared, modulated
Temperature drift	≤ 0.5%/°C	Sensing angle	± 2° at 1/2 range
Hysteresis (H) Differential travel	3-20%	Ambient light	Max. 5'000 lux
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Operating frequency	500 Hz
Ripple (U_{rpp})	≤ 10%	Response time OFF-ON (t _{ON}) ON-OFF (t _{OFF})	≤ 1 ms ≤ 1 ms
Output current Continuous (I _a) Short-time (I)	≤ 200 mA ≤ 200 mA, (max. load capacity 100 nF)	Power ON delay (t_v)	≤ 300 ms
No load supply current (I_o)	≤ 40 mA	Output function NPN and PNP Complementary function	Switch selectable Make and break (NO + NC)
Minimum operational current (I_m)	0.5 mA	Indication function Output ON Signal stability ON and power ON	LED, yellow LED, green
OFF-state current (I_r)	≤ 100 μA	Environment Installation category	II (IEC 60664/60664A; 60947-1)
Voltage drop (U_d)	≤ 2.5 VDC @200 mA	Pollution degree	3 (IEC 60664/60664A; 60947-1)
		Degree of protection	IP 67 (IEC 60529; 60947-1)



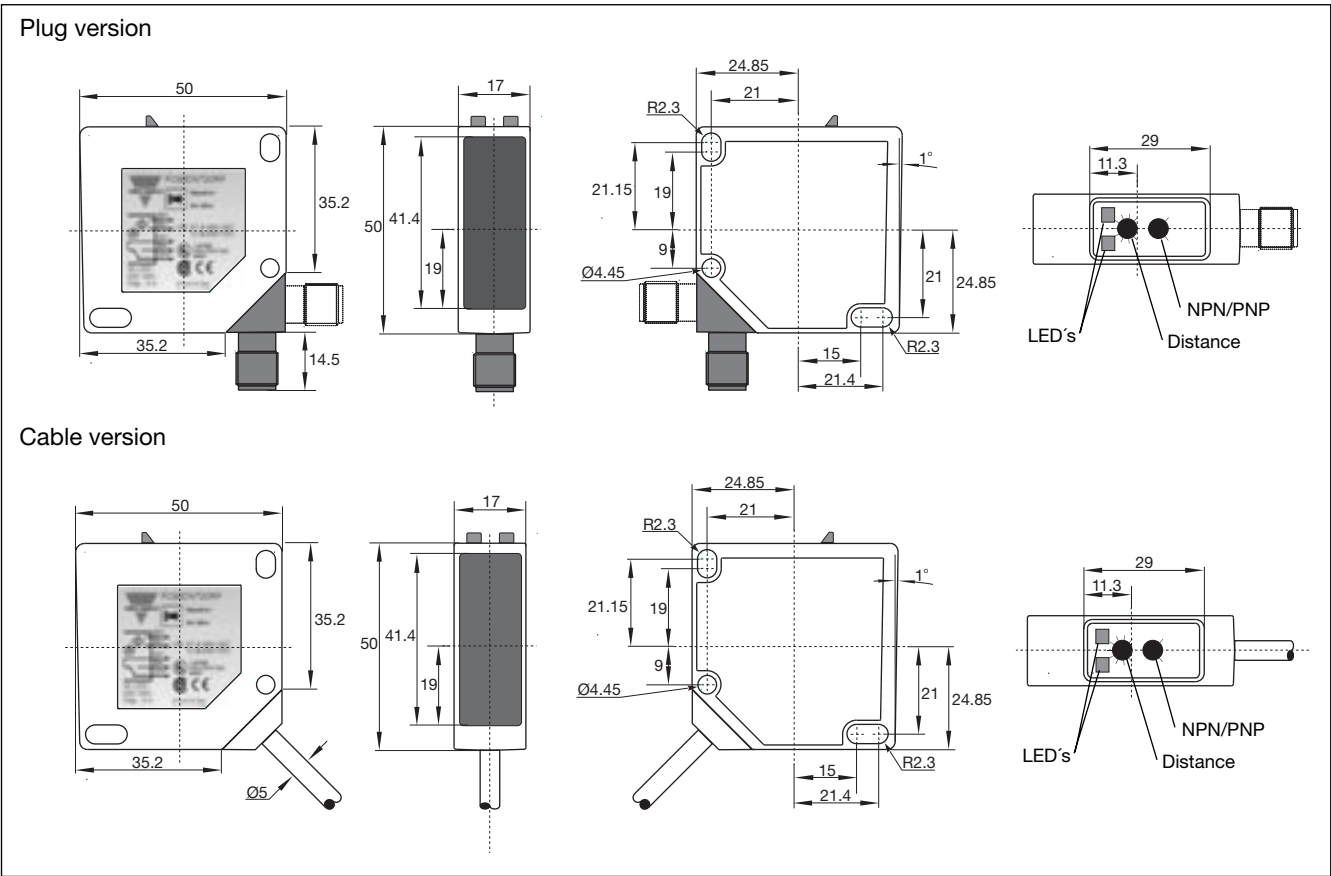
Specifications (cont.)

Temperature	Operating	-20° to +60°C (-4° to +140°F)	Housing material	Body	PC/ABS, grey
	Storage	-25° to +80°C (-13° to +176°F)		Front glass	PC black
Vibration		10 to 150 Hz, 0.5 mm/7.5 g	Connection	Mounting bracket	Steel, galvanized
		(IEC 60068-2-6)		Cable	PVC, grey, 2 m, 4 x 0.34 mm²
Shock		2 x 1 m & 100 x 0.5 m	Weight	Plug (M1)	PBTP, M12 x 1
		(IEC 60068-2-32)		Cables for plug (M1)	CON.1A-series
Rated insulation voltage		50 VDC	Approvals		UL, CSA
			CE-marking		Yes

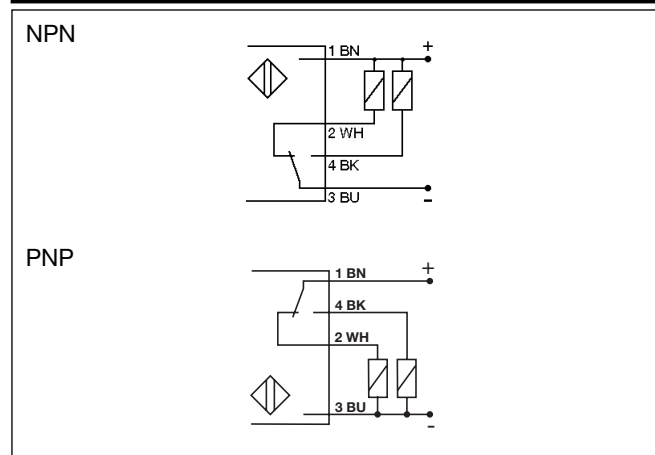
Operation Diagram



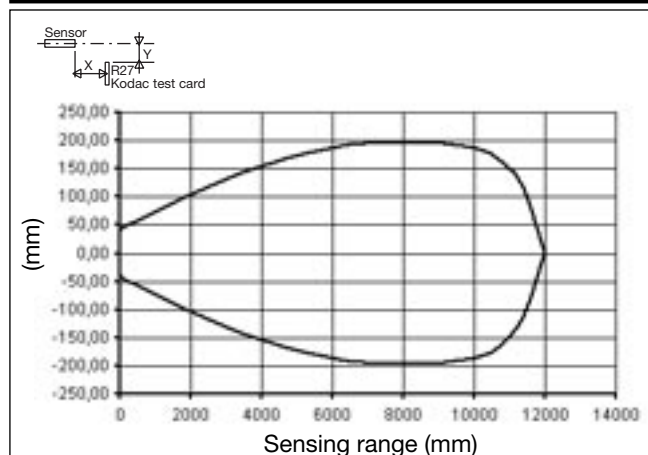
Dimensions



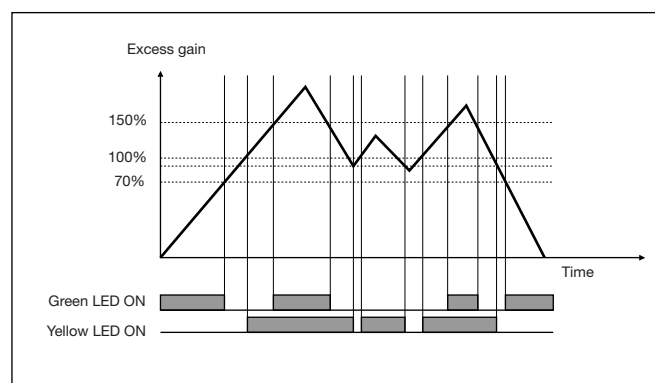
Wiring Diagrams



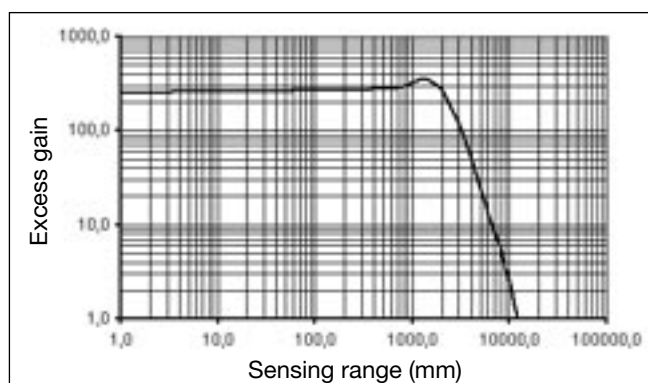
Detection Diagram



Signal Stability

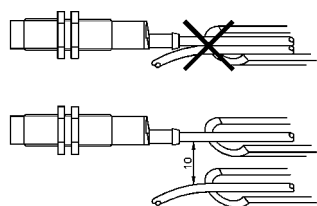


Excess Gain

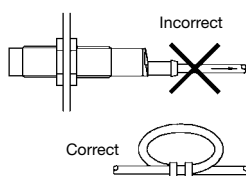


Installation Hints

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

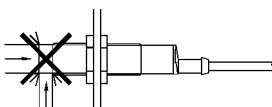


Relief of cable strain



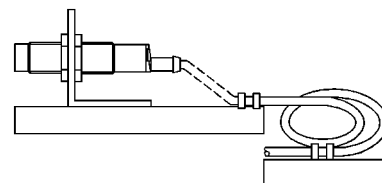
The cable should not be pulled

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.1A..

For further information refer to “Accessories”

