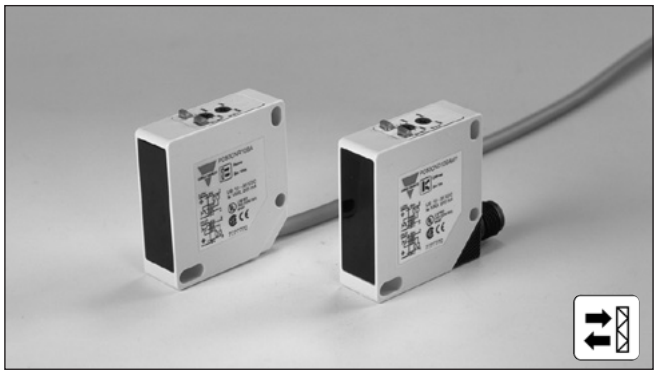
Photoelectrics
Retro-reflective, Polarized, Transistor Output
Type PC50CNP06BA

CARLO GAVAZZI



- **Range: 6 m**
- **Adjustable sensitivity**
- **Modulated, visible red light, polarized**
- **Supply voltage: 10 to 30 VDC**
- **Output: 200 mA, NPN or PNP**
- **Make and break switching function selectable**
- **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 PC50CNP. is a family of general purpose polarized 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

PC50CNP06BAM1

- **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	6 m	**PC 50 CNP 06 BA**	**PC 50 CNP 06 BAM1**

Note: Reflector to be ordered separately

Specifications

Rated operating distance (S_n)	Up to 6 m, with reflector type ER 4, ref. target
Blind zone	Max. 20 cm
Sensitivity	Adjustable by single-turn potentiometer
Hysteresis (H) Differential travel	 3 - 20%
Temperature drift	≤ 0.5%/°C
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)	Max. 100 µA
Voltage drop (U_d)	≤ 2.5 VDC @ 200 mA
Protection	Short-circuit, reverse polarity, transients

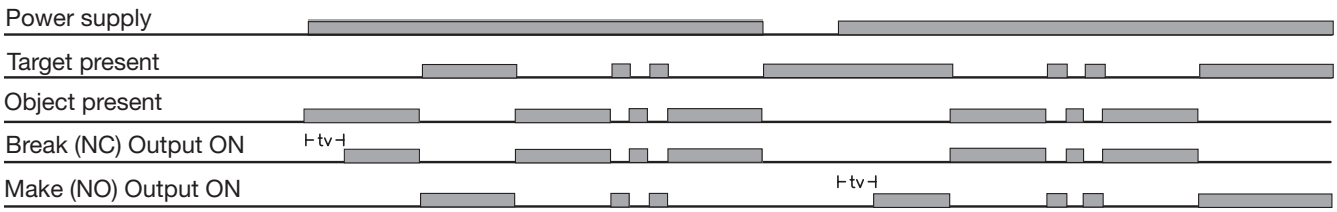
Light source **Light type** **Sensing angle** **Ambient light**	GaAlAs, LED, 660 nm visible red, modulated ± 2° at 1/2 range Max. 5'000 lux
Operating frequency	500 Hz
Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	 ≤ 1 ms ≤ 1 ms
Power ON delay (t_v)	≤ 300 ms
Output function NPN and PNP Complementary 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)
Temperature Operating Storage	 -20° to +60°C (-4° to +140°F) -25° to +80°C (-13° to +176°F)

Specifications (cont.)

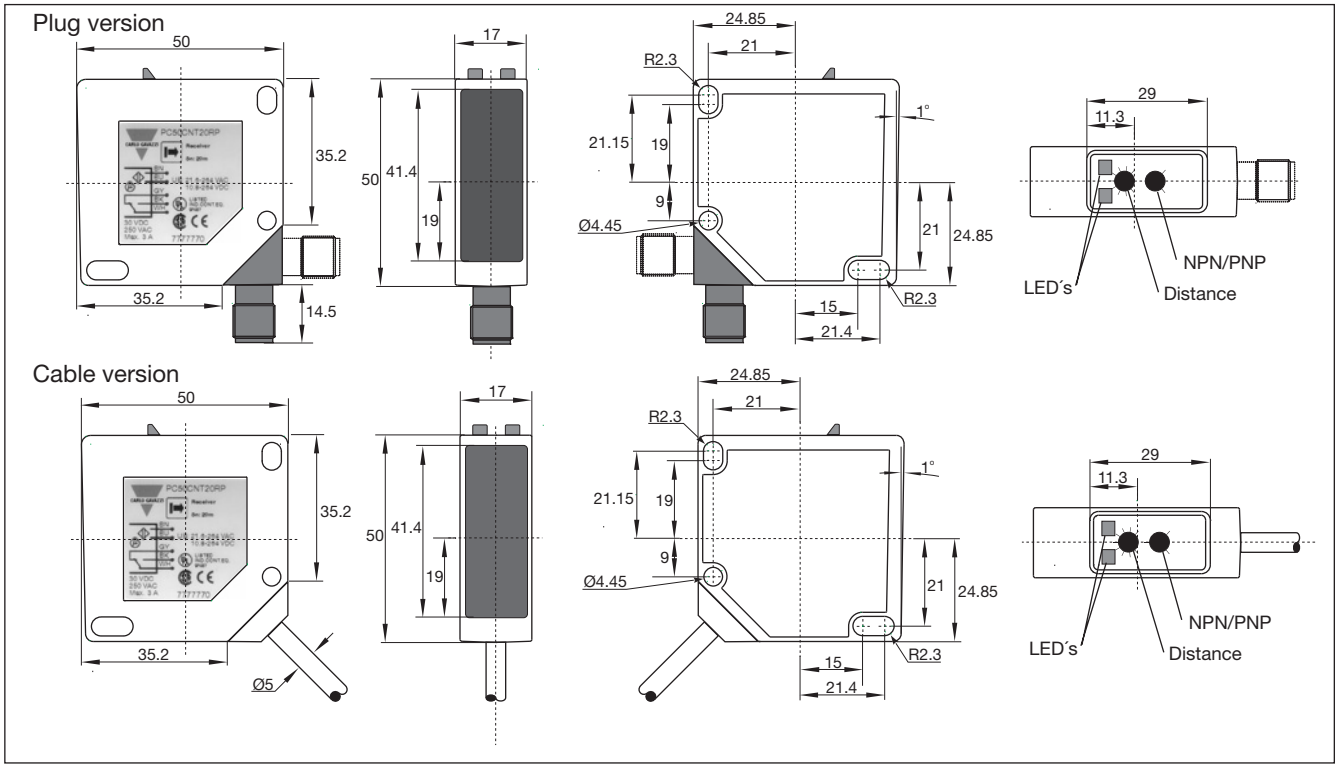
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	**Connection**	
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)	Cable	PVC, grey, 2 m, 4 x 0.34 mm²
		Plug (M1)	PBTP, M12 x 1
		Cables for plug (M1)	CON.1A-series
Rated insulation voltage	50 VDC	**Weight**	110 g
Housing material		**Approvals**	UL, CSA
Body	PC/ABS, grey	**CE-marking**	Yes
Front glass	PMMA, red		
Mounting bracket	Steel, galvanized		

Operation Diagram

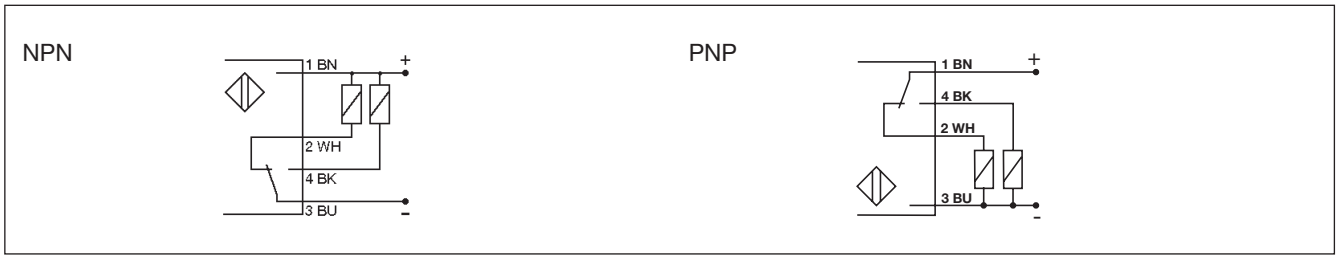
tv = Power ON delay



Dimensions



Wiring Diagrams



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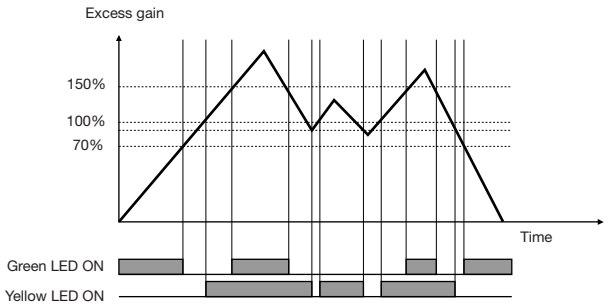
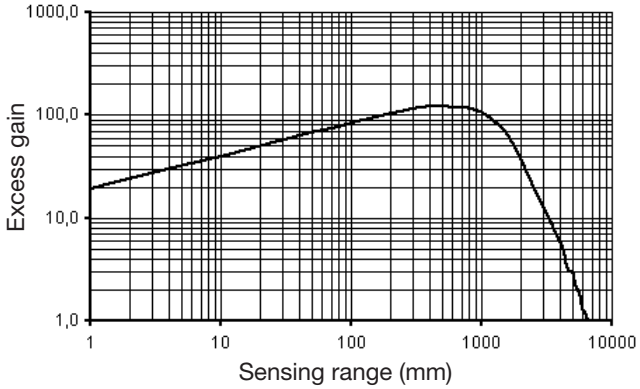
Signal Stability

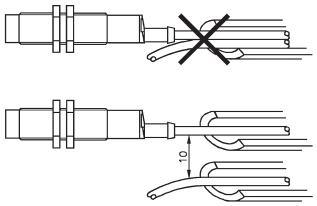


Excess Gain

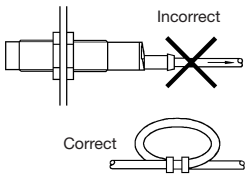


Installation Hints

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

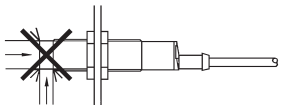


Relief of cable strain



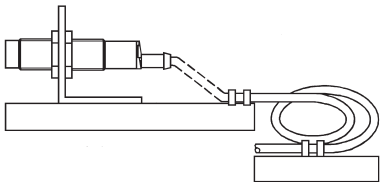
The cable should not be pulled

Protection of the sensing face



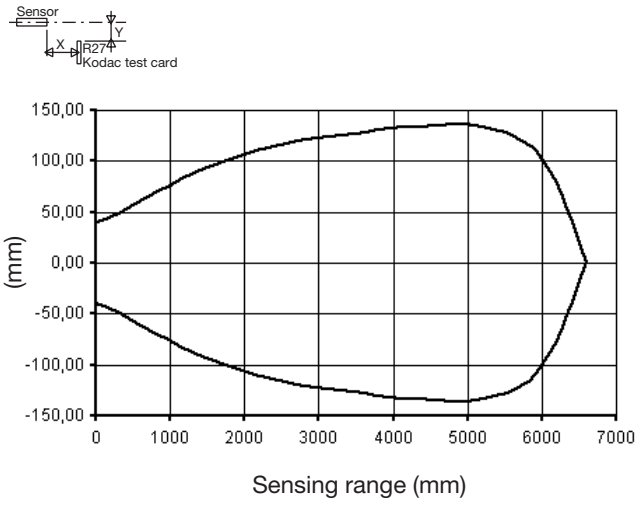
A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier



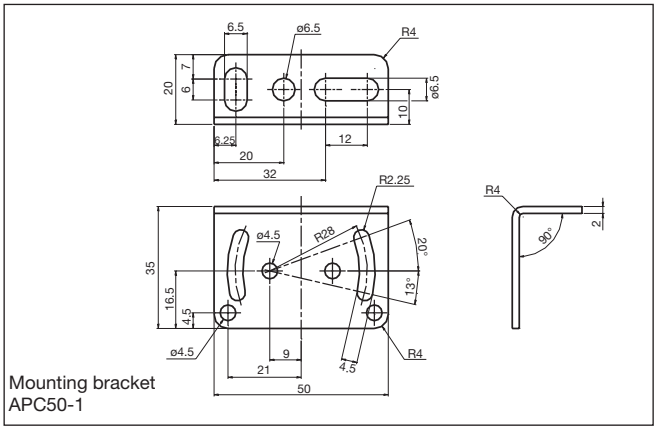
Any repetitive flexing of the cable should be avoided

Detection Diagram



Delivery Contents

- Photoelectric switch: PC50CNP..
- Installation instruction
- Mounting bracket APC50-1
- **Packaging:** Cardboard box



Mounting bracket APC50-1

Accessories

- Reflectors: ER-series
- Screwdriver for adjustment: 77-001
- Connector type CON.1A.. serie.

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