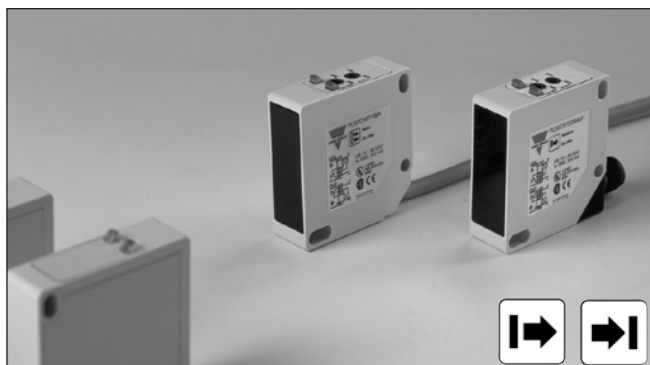


# Photoelectrics Through-beam, Transistor Output Type PC50CNT20B.

CARLO GAVAZZI



- Range: 20 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
- Excellent EMC



## Product Description

The PC50CNT. is a family of general purpose through-beam 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

**PC50CNT20BAM1**

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 <sub>n</sub>	Connection	Ordering no. Receiver NPN & PNP Make & break switching	Ordering no. Emitter
17 x 50 x 50 mm	20 m	Cable	PC 50 CNT 20 BA	PC 50 CNT 20 B
17 x 50 x 50 mm	20 m	Plug	PC 50 CNT 20 BAM1	PC 50 CNT 20 BM1

**Note:** Please order emitter and receiver separately

## Specifications Emitter

Rated operational volt. (U <sub>B</sub> )	10 to 30 VDC	Light source	GaAs LED, 950 nm
Ripple (U <sub>rrp</sub> )	≤ 10%	Light type	Infrared, modulated
Supply current	≤ 50 mA	Optical angle	± 2° at 1/2 range
Protection	Reverse polarity, transients	Indication function	LED, green
		Power supply ON	

## Specifications Receiver

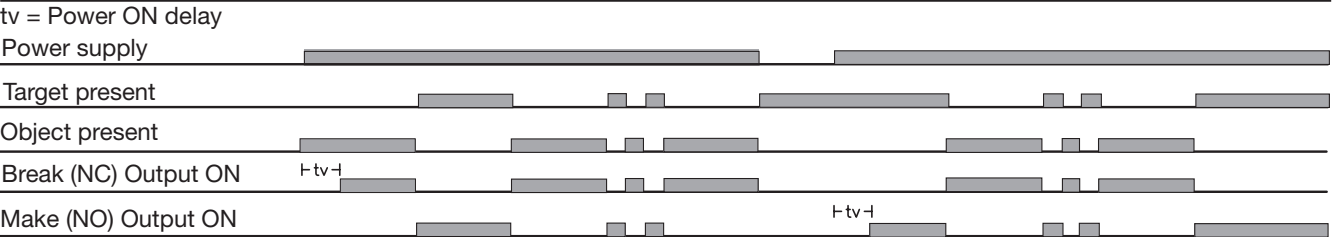
Rated operating dist. (S <sub>n</sub> )	20 m	OFF-state current (I <sub>r</sub> )	≤ 100 μA
Blind zone	None	Voltage drop (U <sub>d</sub> )	≤ 2.5 VDC @ 200 mA
Sensitivity	Adj. by single-turn pot.meter	Protection	Short-circuit, reverse polarity, transients
Temperature drift	≤ 0.5%/°C	Operating frequency (f)	500 Hz
Hysteresis (H)	3 - 20%	Response time	OFF-ON (t <sub>ON</sub> ) ≤ 1 ms ON-OFF (t <sub>OFF</sub> ) ≤ 1 ms
Rated operational volt. (U <sub>B</sub> )	10 to 30 VDC (ripple included)	Power ON delay (t <sub>v</sub> )	≤ 300 ms
Ripple (U <sub>rrp</sub> )	≤ 10%	Output function	NPN and PNP Complementary function
Output current		Indication function	LED, yellow LED, green
Continuous (I <sub>a</sub> )	≤ 200 mA		
Short-time (I)	≤ 200 mA, (max. load capacity 100 nF)		
No load supply current (I <sub>o</sub> )	≤ 40 mA		
Minimum operational current (I <sub>m</sub> )	0.5 mA		



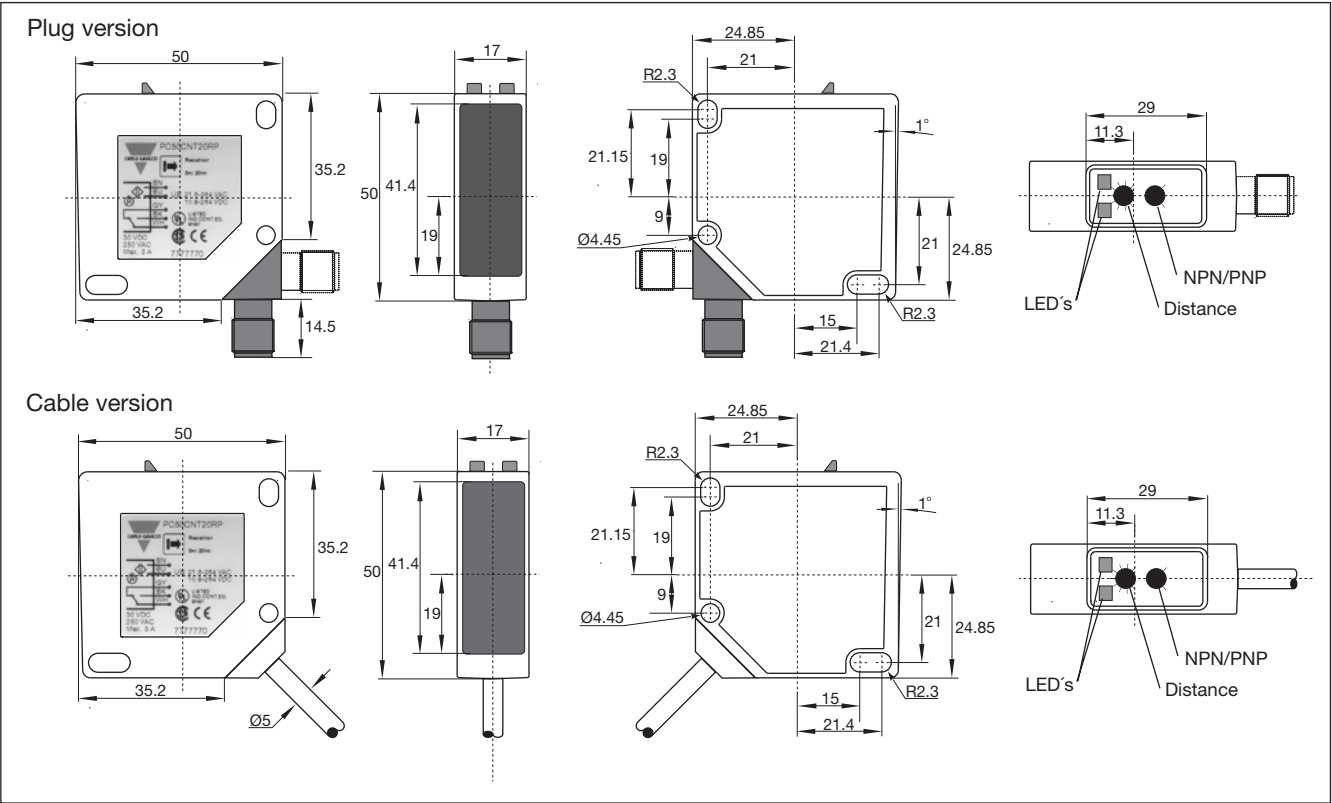
General Specifications

<b>Environment</b>		<b>Housing material</b>	
Overvoltage category	II (IEC 60664/60664A, 60947-1)	Body	PC/ABS, grey
Pollution degree	3 (IEC 60664/60664A, 60947-1)	Front glass	PC black
Degree of protection	IP 67 (IEC 60529, 60947-1)	Mounting bracket	Steel, galvanized
<b>Temperature</b>		<b>Connection</b>	
Operating	-20° to +60°C (-4° to +140°F)	Cable receiver	PVC, grey, 2 m, 4 x 0.25 mm <sup>2</sup>
Storage	-25° to +80°C (-13° to +176°F)	Cable emitter	PVC, grey, 2 m, 2 x 0.25 mm <sup>2</sup>
<b>Vibration</b>		Plug (M1)	PBTP, M12 x 1
<b>Shock</b>		Cables for plug (M1)	CON.1A-series
<b>Rated insulation voltage</b>		<b>Weight</b>	
50 VDC		Emitter	110 g
		Receiver	110 g
		<b>Approvals</b>	
		UL, CSA	
		<b>CE-marking</b>	
		Yes	

Operation Diagram



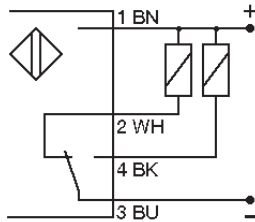
Dimensions



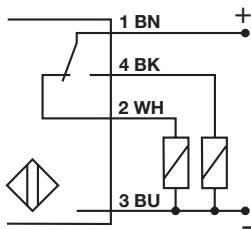
## Wiring Diagrams

Receiver

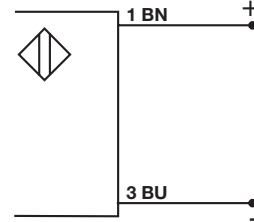
NPN



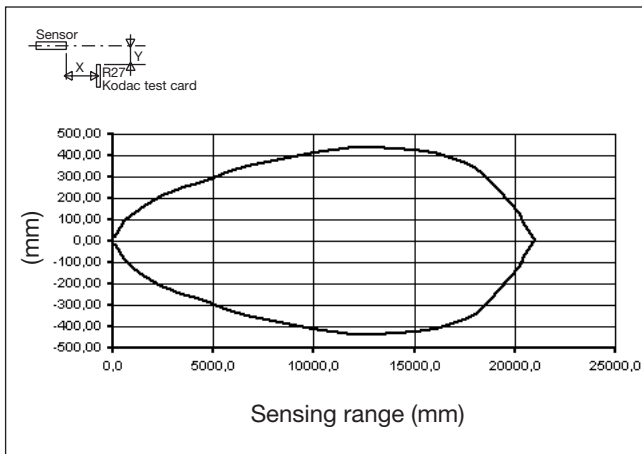
PNP



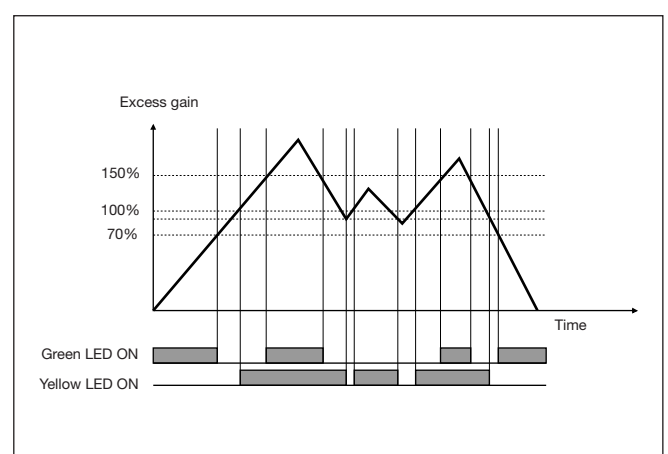
Emitter



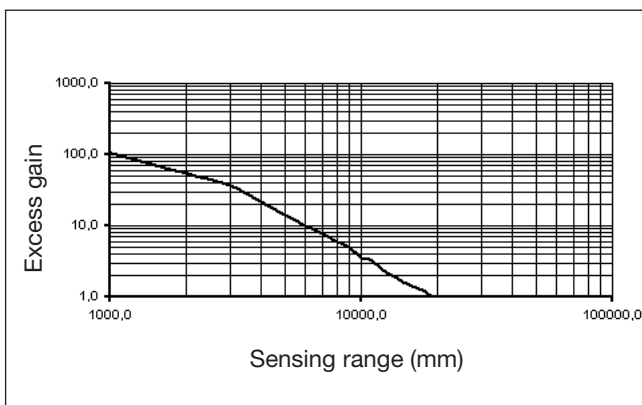
## Detection Diagram



## Signal Stability

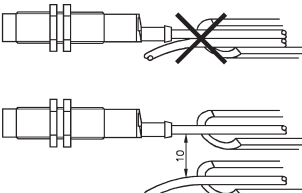
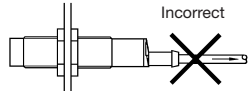

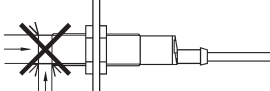
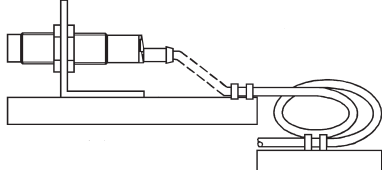


## Excess Gain





Installation Hints

<p>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</p> 	<p>Relief of cable strain</p> <p>Incorrect</p>  <p>Correct</p>  <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p>  <p>A proximity switch should not serve as mechanical stop</p>	<p>Switch mounted on mobile carrier</p>  <p>Any repetitive flexing of the cable should be avoided</p>
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Delivery Contents

- Photoelectric switch: PC50CNT..
- Installation instruction
- Mounting bracket APC50-1
- **Packaging:** Cardboard box

Accessories

- Screwdriver 77.001
- Connector type CON.1A.. serie

