

Photoelectrics

Diffuse-reflective, Background Suppression

Type PD40CNB08

CARLO GAVAZZI



- Range: 80 mm
- Adjustable background suppression 15-80 mm
- Modulated, visible red light
- Supply voltage: 10 to 30 VDC
- Output: 100 mA, NPN or PNP
- Make and break switching function selectable
- LED for output indication
- Protection: reverse polarity, short circuit, transients
- Cable and plug version

Product Description

The PD40CNB is a family of accurate background suppression sensors in a compact square 20 x 32 x 10 mm reinforced ABS-housing. They are useful in applications where background suppression is

necessary. The sensing range together with sensitivity adjustment gives a very flexible sensor. They are with a NPN or PNP transistor output and the configuration is programmable NO and NC

Ordering Key

PD40CNB08PPM5

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	Connection	Ordering no. NPN Make & break switching	Ordering no. PNP Make & break switching
20 x 32 x 10 mm	80 mm	Cable	PD40 CNB 08 NP	PD 40 CNB 08 PP
20 x 32 x 10 mm	80 mm	Plug	PD40 CNB 08 NPM5	PD 40 CNB 08 PPM5

Specifications

Rated operating distance (S_n)	80 mm	Response time	
Blind zone	None	OFF-ON (t _{ON})	≤ 1 ms
Sensitivity	Adjustable by multiturn potentiometer	ON-OFF (t _{OFF})	≤ 1 ms
Temperature drift	± 0.1%/°C	Power ON delay (t_v)	< 250 ms
Hysteresis (H) differential travel	2% (typical value)	Output function	Selectable Make or break switching
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Indication function Target detected	LED, yellow
Ripple (U_{ripp})	≤ 10%	Environment	
Output current Continuous (I _a)	≤ 100 mA	Installation category	II (IEC 60664/60664A; 60947-1)
No load supply current (I_o)	≤ 25 mA	Pollution degree	3 (IEC 60664/60664A; 60947-1)
Minimum operational current (I_m)	0.5 mA	Degree of protection	IP 67 (IEC 60529; 60947-1)
OFF-state current (I_r)	≤ 1 μA	Temperature	
Voltage drop (U_d)	≤ 2.0 VDC @ 100 mA	Operating	-0° to +50°C (-32° to +122°F)
Protection	Short-circuit, reverse polarity, transients	Storage	-20° to +80°C (-4° to +176°F)
Light source	LED, 644 nm	Rated insulation voltage	550 V/50 Hz
Light type	Visible red light, modulated	Housing material	
Light spot size	18 mm at 80 mm	Body	ABS, grey
Ambient light (sunlight)	Max. 10'000 lux	Front glass	PMMA, red
Operating frequency	500 Hz	Mounting bracket	Steel, galvanized



Specifications (cont.)

Connection

Cable
 Plug (M5) pigtail

 Cables for plug (M5)

PVC, grey, 2 m, 4 x 0.25 mm²
 Santaprene,
 M5 x 1, 15 cm cable
 CONG5A-series

Weight

Cable
 Plug

46 g
 13 g

CE-marking

Yes

Operation Diagram

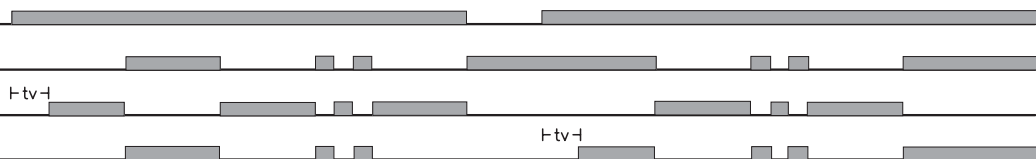
tv = Power ON delay

Power supply

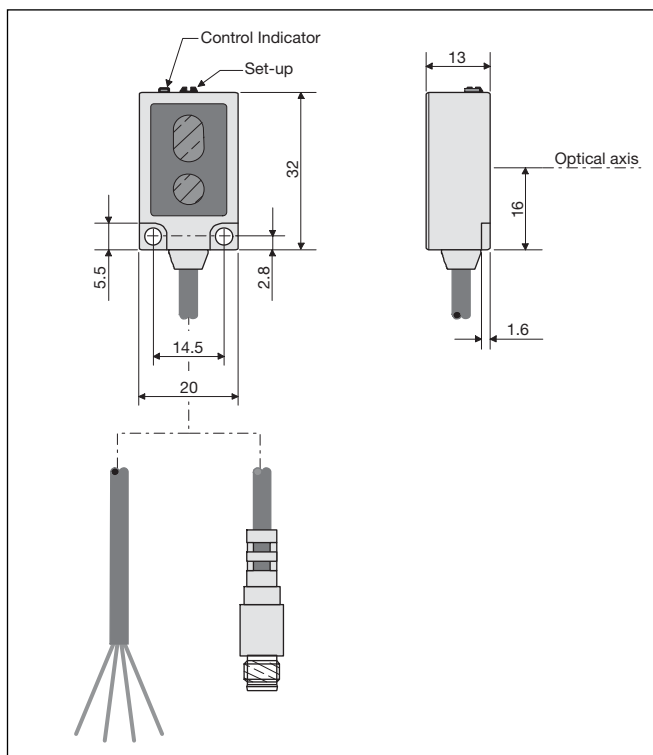
Object/target present

Break (NC) Output ON

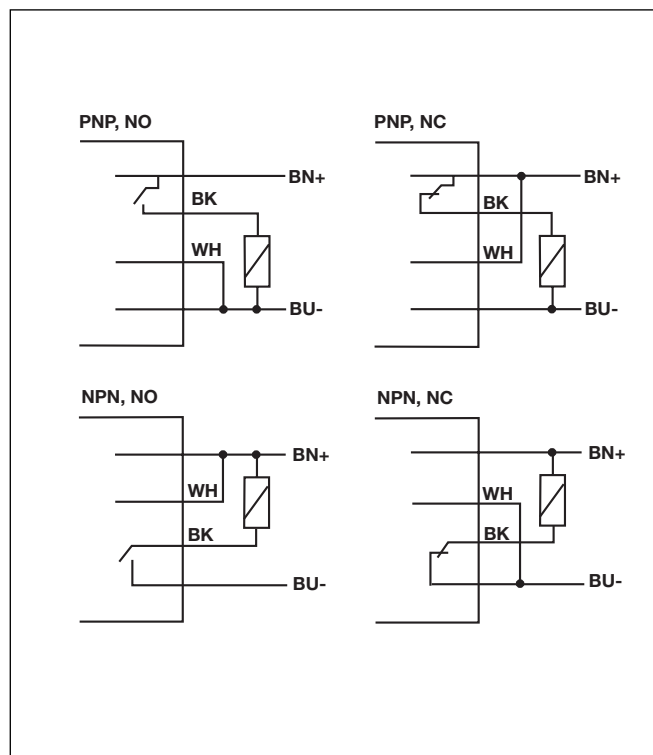
Make (NO) Output ON



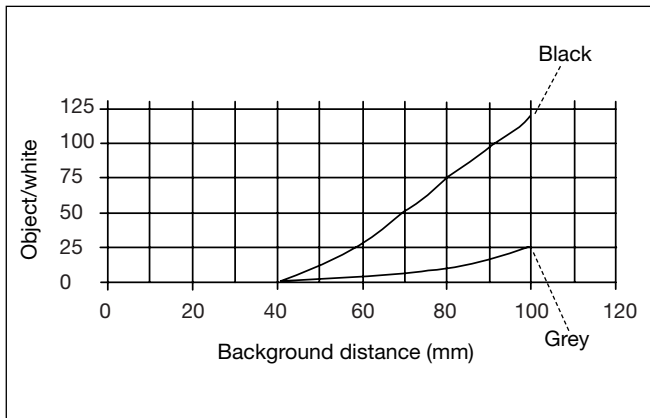
Dimensions



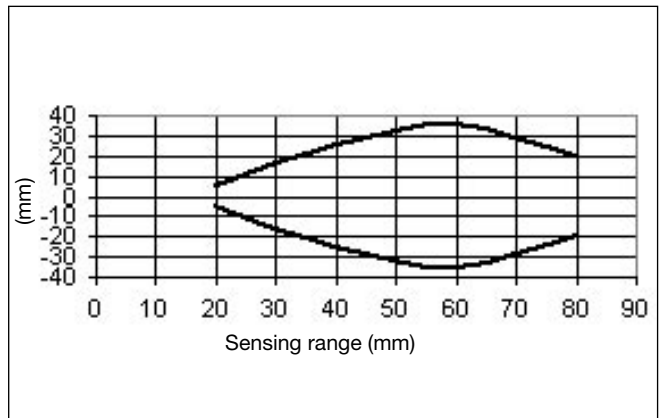
Wiring Diagrams



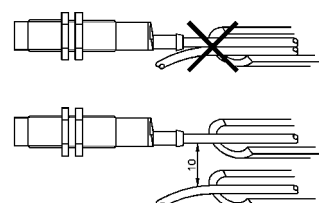
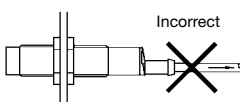
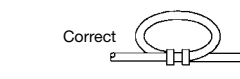
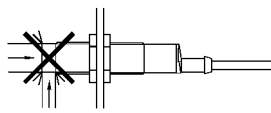
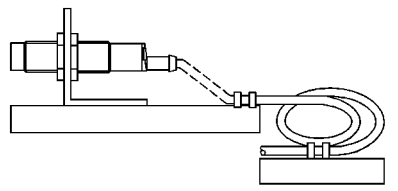
Detection Object vs. white Background



Detection Diagram



Installation Hints

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

- Photoelectric switch: PD40 CNB..
- Installation instruction
- Mounting bracket
- **Packaging:** Cardboard box

Accessories

- Screwdriver for adjustment: 77-001
- Connector type CONG5A..

For further information refer to "Accessories"