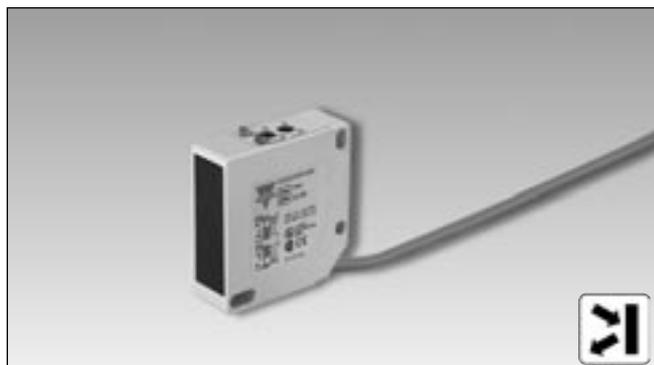# Photoelectrics
Diffuse-reflective, Relay Output
Type PC50CND20RP

CARLO GAVAZZI

- **Range: 2 m**
- **Adjustable sensitivity**
- **Modulated, infrared light**
- **Supply voltage:**
  12 to 240 VDC and 24 to 240 VAC, 50/60 Hz
- **Output: Relay 3 A, 30 VDC, 240 VAC**
- **Make and break switching function**
- **LED-indication for output ON, signal stability and supply ON**
- **Protection: reverse polarity, transients**
- **High EMC immunity**

Product Description

The PC50CND. is a general purpose diffuse-reflective sensor in a compact squared 17 x 50 x 50 mm reinforced PC/ABS-housing. It is useful in applications where basic sensors provide adequate sensing performance. The long sensing range in addition to sensitivity adjustment gives a very flexible sensor. Light and dark operation is switch selectable.

Ordering Key

PC50CND20RP

Type
Housing style
Housing size
Housing material
Housing length
Detection principle
Sensing distance
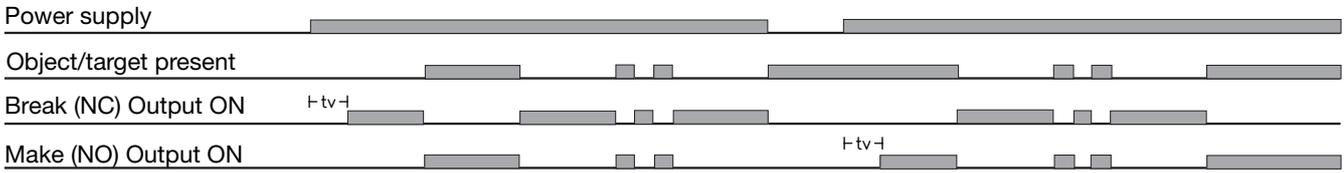Output type
Output configuration

Type Selection

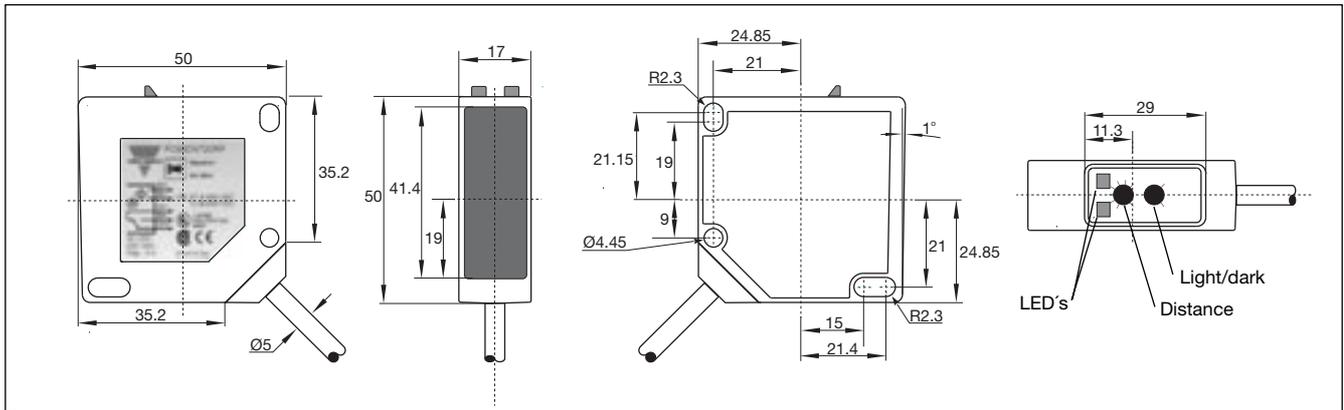| Housing W x H x D	Range (S$_n$)	Ordering no. Make and break switching
17 x 50 x 50 mm	2 m	PC 50 CND 20 RP

Specifications

Rated operating distance (S$_n$)	Up to 2 m, reference target Kodak test card R 27, white, 90% reflectivity, 200 x 200 mm
Blind zone	Typ. 10 cm (max. 30 cm)
Sensitivity	Adj. by single-turn pot. meter
Temperature drift	$\leq 0.5\%/°C$
Hysteresis (H) Differential travel	3-20%
Rated operational volt. (U$_B$)	12 to 240 VDC 24 to 240 VAC, 50 to 60 Hz
Rated operational power	≤ 2.5 VA (relay ON)
Output Contact ratings Resistive loads AC 1 DC 1 Mechanical life (typical) Electrical life (typical)	3 A/250 VAC 3 A/30 VDC (> 10 mA/5 VDC) $\geq 15 \times 10^6$ operations $\geq 1 \times 10^5$ operations at 3 A/240 VAC
Protection	Reverse polarity, transients
Light source	GaAlAs, LED, 880 nm
Light type	Infrared, modulated
Sensing angle	$\pm 2.2°$
Ambient light	Max. 5'000 lux
Operating frequency	20 Hz
Response time OFF-ON (t$_{ON}$) ON-OFF (t$_{OFF}$)	≤ 20 ms ≤ 30 ms

Power ON delay (t$_v$)	≤ 300 ms
Output function	Light and dark operation is switch selectable
Indication function Output ON Supply ON, signal stability	LED, yellow LED, green
Environment Overvoltage 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)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 68-2-6)
Shock	2 x 1 m & 100 x 0.5 m (IEC 68-2-32)
Rated insulation voltage	250 VAC (rms)
Housing material Body Front glass Mounting bracket	PC/ABS, grey, reinforced PC black Steel, galvanized
Connection Cable	PVC, grey, 2 m, 5 x 0.34 mm²
Weight	110 g
Approvals	UL, CSA
CE-marking	Yes

CARLO GAVAZZI

Operation Diagram

tv = Power ON delay

Power supply	
Object/target present	
Break (NC) Output ON	⊢tv⊣
Make (NO) Output ON	⊢tv⊣

Dimensions

50
17
24.85
21
35.2
R2.3
29
11.3
21.15
19
41.4
50
19
9
Ø4.45
21
24.85
35.2
1°
15
21.4
R2.3
Ø5
LED´s
Light/dark
Distance

Wiring Diagram

BN — 12-240 VDC
BU — 24 - 240 VAC
GY
BK — 3 A/30 VDC
WH — 3 A/250 VAC
μ

Detection Diagram

Sensor
X
Y
R27
Kodac test card

19.7"   39.4"   59.1"   78.7"   98.4"

(mm)

100 — 3.9"
80 — 3.2"
60 — 2.4"
40 — 1.6"
20 — 0.8"
0 — 0
-20 — -0.8"
-40 — -1.6"
-60 — -2.4"
-80 — -3.2"
-100 — -3.9"

0   500   1000   1500   2000   2500
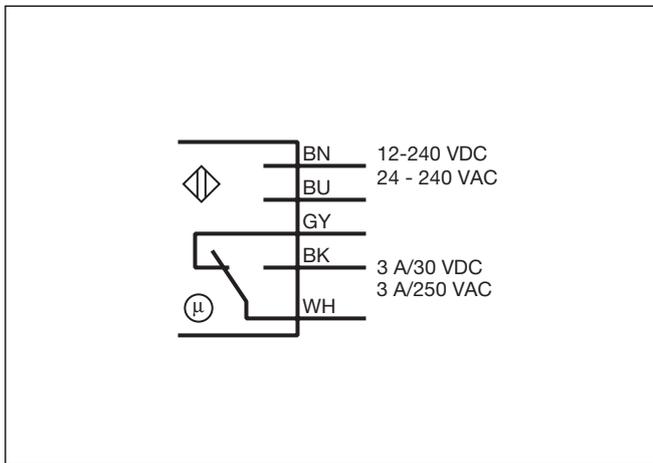
Sensing range (mm)
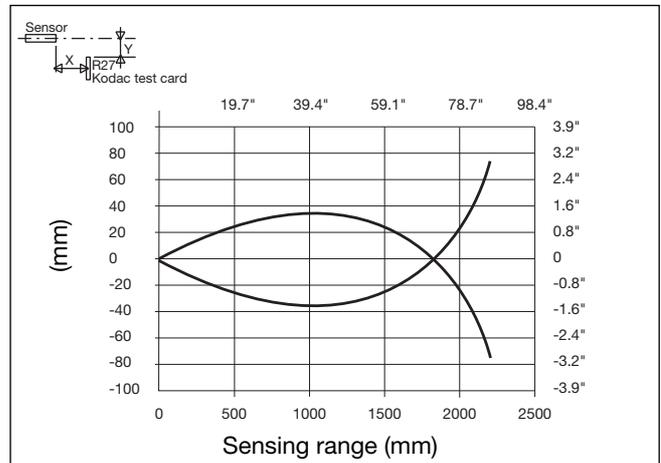
Signal Stability

Excess gain

150%
100%
70%

Time

Green LED ON
Yellow LED ON

Excess Gain

0.394"   3.94"   39.4"   394"

1000

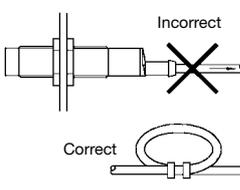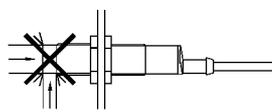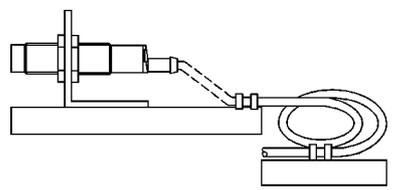Excess gain

100

10

1

1   10   100   1000   10000

Sensing range (mm)

CARLO GAVAZZI

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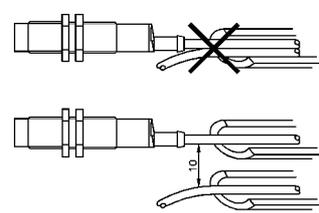
Delivery Contents

- Photoelectric switch: PC50CND..
- Installation instruction
- Mounting bracket APC50-1
- **Packaging:** Cardboard box

Mounting bracket
APC50-1

Accessories

- Screwdriver for adjustment: 77-001

For further information refer to "Accessories"