Photoelectrics, Fibre Optic Sensor
Contrast Sensor
Type PD 60 CNK 18 BP ..

CARLO GAVAZZI

- **Range: 18 mm ±2 mm**
- **Microprocessor controlled and EEPROM parameter storage**
- **Operational voltage 10 - 30 V DC**
- **Output 100 mA, NPN and PNP**
- **Light or dark switching selectable**
- **Cable or M8 standard plug**
- **IP65 protection**
- **cUL and CE approved**
- **Manual contrast set-up**

Product Description

The PD60CNK18BP.. is a fibre optic amplifier made specifically for plastic fibres to detect contrast. The sensor is microprocessor-based and features manual distance setup by keyboard. NO or NC (light or dark mode) output is selectable by wiring. The sensor output is built as a Push-pull output that performs both a NPN and a PNP output, which are fully protected against short-circuit, transients and wrong polarity. The sensor is built in a strong 13 x 30 x 60 mm polycarbonate housing for DIN-rail mounting.

Ordering Key

PD60CNK18BPM5T

Type
Housing style
Housing size
Housing material
Not used
Plastic fibres
Sensing distance mm
Output type
Output configuration
Connection type
Teach-in

Type Selection

Housing W x H x D	Range S_n	Ordering no. NPN and PNP cable	Ordering no. NPN and PNP plug
13 x 30 x 60 mm	18 mm ±2 mm	**PD 60 CNK 18 BP T**	**PD 60 CNK 18 BP M5 T**

| **Fibre** To be ordered separately. | 100 cm fibre w. M18 lens head | **FPDK01SCC100** | |

Specifications

Detection distance	18 mm ±2 mm
Temperature drift	< 0,4%/°C
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)
Ripple (U_{rpp})	≤ 10%
Output current Continuous (I_e) Short-time (I)	100 mA 100 mA
No load supply current (I_o)	50 mA
Switching frequency	20 kHz
Voltage drop (U_d) I_L = 100 mA I_L = 10 mA	≤ 2 VDC ≤ 1 VDC
Protection	Short-circuit, reverse polarity, transients
Light source **Spot diameter** @18 mm **Modulation frequency** **Ambient light** Incandescent light Sunlight	White LED 1.5 mm (FPDK01SCC100) 40 kHz 10'000 Lux 20'000 Lux

Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	≤ 25 µs ≤ 25 µs
Power ON delay (t_v)	≤ 300 ms
Output function NPN and PNP	Available (Push-Pull output)
Indication function Insufficient contrast Short-circuit output	Both green LED and red key flash for 2 s Both green LED and red key flash continuously
Environment Installation category Pollution degree Degree of protection	II (IEC 60664/60664A;60947-1) 3 (IEC 60664/60664A;60947-1) IP 65 (IEC 60529; 60947-1)
Temperature Operating Storage	0° to +40°C (32° to +104°F) -20° to +80°C (-4° to +176°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC60068-2-6)
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)

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Specifications (cont.)

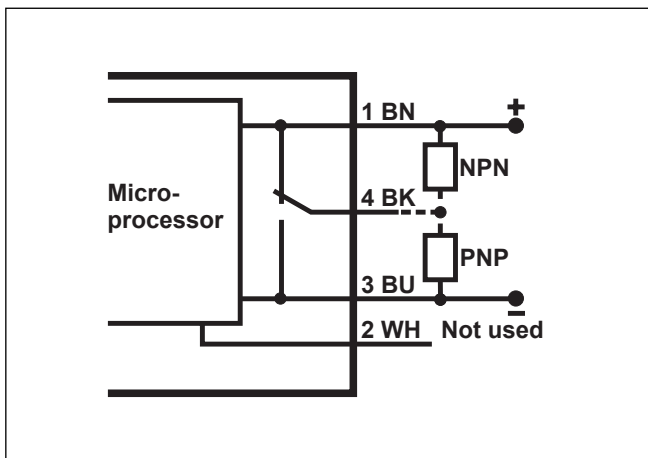|	
Rated insulation voltage	50 VAC (rms)
Housing material	
Body	Polycarbonate
Connection	
Cable	PVC, grey, 2 m, 4 x 0.25 mm²
Plug	NPB, M8 x 1
Cable for plug (M5)	CON65A-series
Weight	24 g
Approvals	cUL
CE-marking	Yes

Programming Function

Teach-in
Colour 1   Press [SET] for 4 sec.

1st colour has now been learned
Triangle LED goes ON

Colour 2   Press [SET] for 4 sec.

2nd colour has now been learned
Triangle LED goes OFF

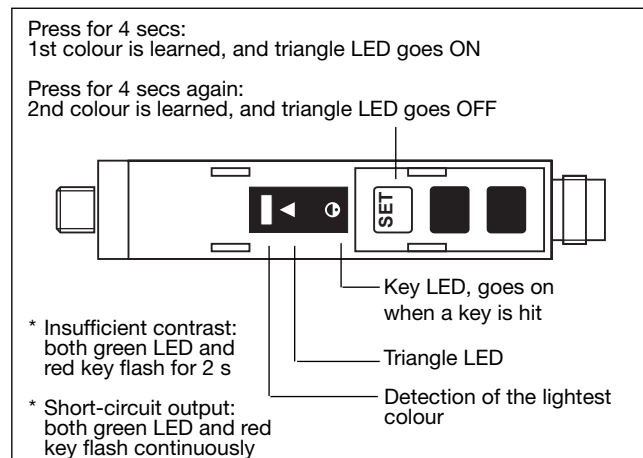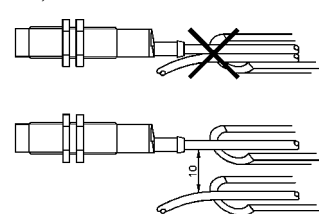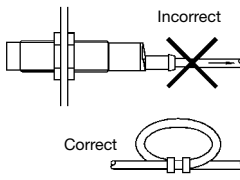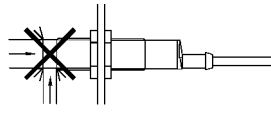Output can be inverted by teaching colour 2 first

Dimensions
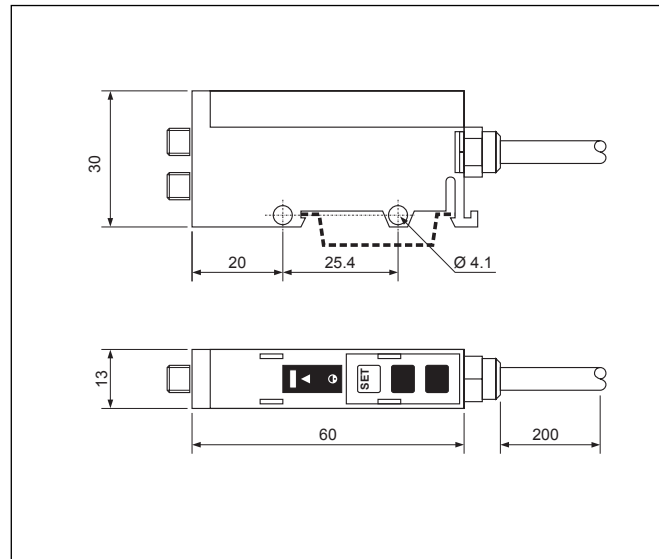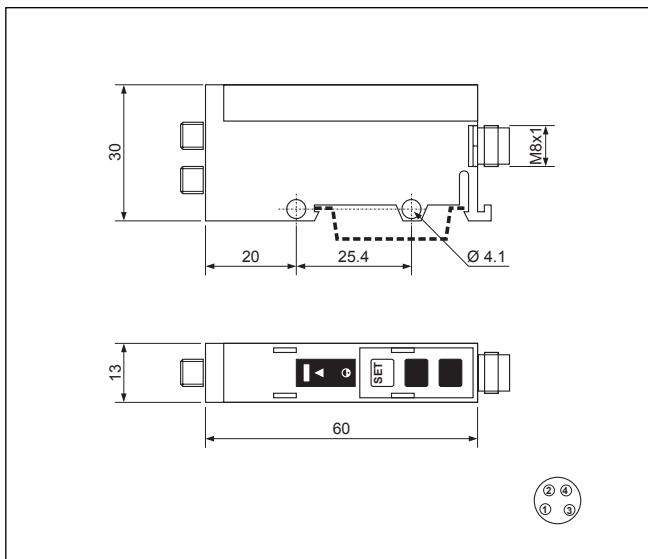
Wiring Diagram

Keyboard and LED

Press for 4 secs:
1st colour is learned, and triangle LED goes ON

Press for 4 secs again:
2nd colour is learned, and triangle LED goes OFF

Key LED, goes on when a key is hit

Triangle LED

Detection of the lightest colour

* Insufficient contrast:
  both green LED and red key flash for 2 s

* Short-circuit output:
  both green LED and red key flash continuously
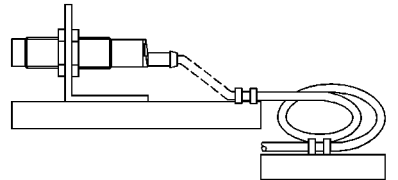
Specifications are subject to change without notice (08.04.02)

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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: PD60CNK18BP..
• Installation instruction
• **Packaging:** Cardboard box

Accessories

• Plastic fibre type FPDK01SCC100

For further information refer to "Accessories"