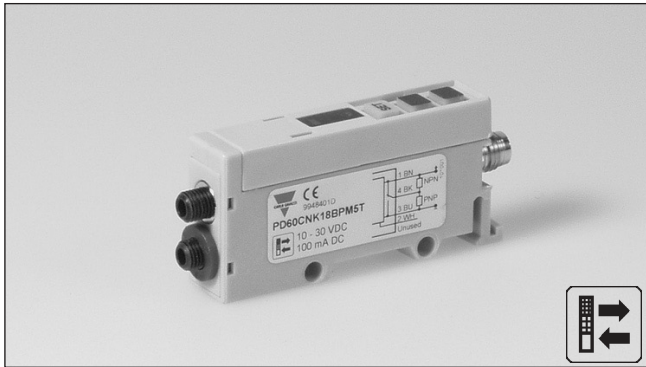# Photoelectrics, Fibre Optic Sensor
Contrast Sensor
Type PD 60 CNK 18 BP ..

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**

CE cUL

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 select-able 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 poly-carbonate 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	Sunlight	20'000 Lux
Temperature drift	< 0,4%/°C	**Response time**	
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	OFF-ON (t_{ON}) ON-OFF (t_{OFF})	≤ 25 µs ≤ 25 µs
Ripple (U_{rpp})	≤ 10%	**Power ON delay** (t_v)	≤ 300 ms
Output current Continuous (I_e) Short-time (I)	 100 mA 100 mA	**Output function** NPN and PNP	 Available (Push-Pull output)
No load supply current (I_o)	50 mA	**Indication function**	
Switching frequency	20 kHz	Insufficient contrast	Both green LED and red key flash for 2 s
Voltage drop (U_d) I_L = 100 mA I_L = 10 mA	 ≤ 2 VDC ≤ 1 VDC	Short-circuit output	Both green LED and red key flash continuously
Protection	Short-circuit, reverse pola-rity, transients	**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)
Light source	White LED	**Temperature**	
Spot diameter @18 mm	1.5 mm (FPDK01SCC100)	Operating Storage	0° to +40°C (32° to +104°F) -20° to +80°C (-4° to +176°F)
Modulation frequency	40 kHz	**Vibration**	10 to 150 Hz, 0.5 mm/7.5 g (IEC60068-2-6)
Ambient light Incandescent light	 10'000 Lux		

CARLO GAVAZZI

Specifications (cont.)

Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)
Rated insulation voltage	50 VAC (rms)
Housing material	
Body	Polycarbonate
Connection	
Cable	PVC, black, 2 m, 4 x 0.25 mm²
Plug	NPB, M8 x 1
Cable for plug (M5)	CONB5A-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
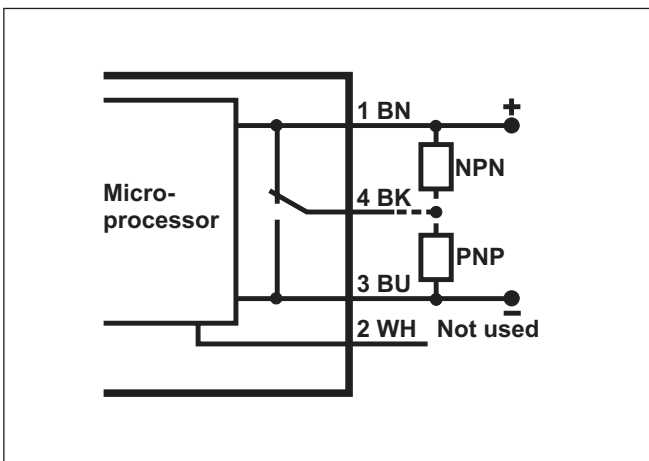Triangle LED goes ON

Colour 2

Press [SET] for 4 sec.

2nd colour has now been learned
Triangle LED goes OFF

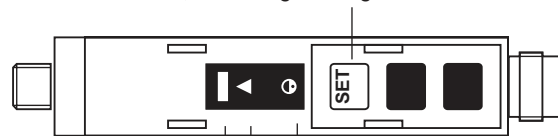Output can be inverted by teaching colour 2 first

Dimensions

Wiring Diagram

Micro-processor

1 BN +
NPN
4 BK
PNP
3 BU
2 WH Not used
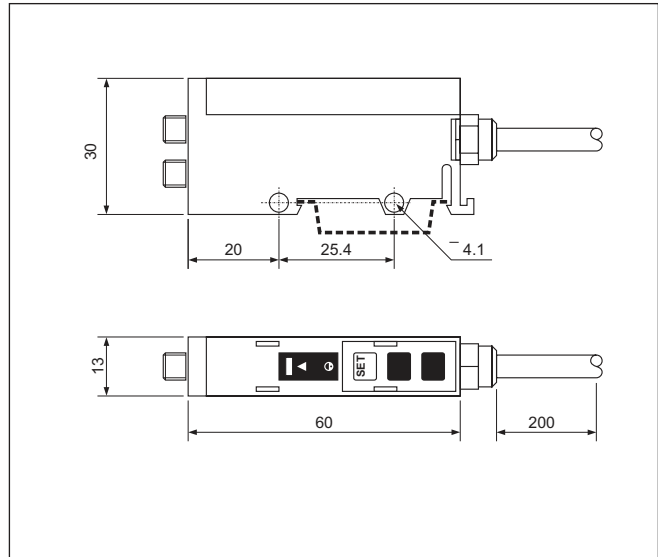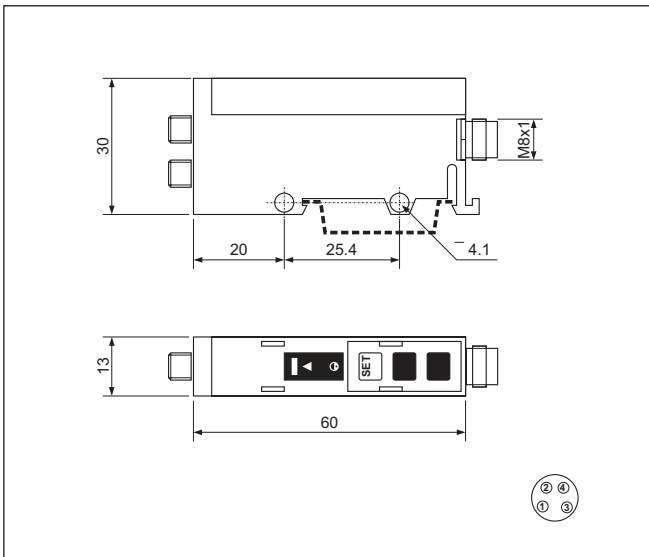
Keyboard and LED

Press for 4 secs:
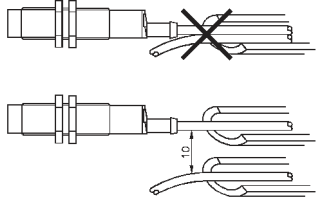1st colour is learned, and triangle LED goes ON
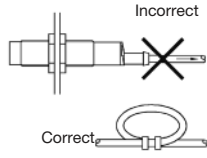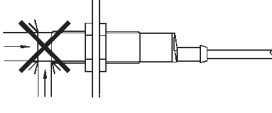
Press for 4 secs again:
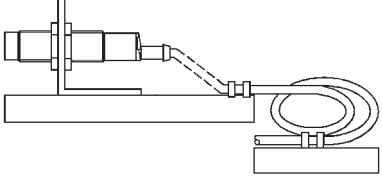2nd colour is learned, and triangle LED goes OFF

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

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

Accessories

- Plastic fibre type FPDK01SCC100

Ø 8   M18 x 100

39,3

57,5

100