

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

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- 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 micro-processor-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 <sub>n</sub>	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** 100 cm fibre w. M18 lens head **FDPK01SCC100**  
To be ordered separately.

## Specifications

<b>Detection distance</b>	18 mm ±2 mm	<b>Response time</b>	
<b>Temperature drift</b>	< 0,4%/°C	OFF-ON (t <sub>ON</sub> )	≤ 25 μs
<b>Rated operational volt. (U<sub>B</sub>)</b>	10 to 30 VDC (ripple included)	ON-OFF (t <sub>OFF</sub> )	≤ 25 μs
<b>Ripple (U<sub>rpp</sub>)</b>	≤ 10%	<b>Power ON delay (t<sub>v</sub>)</b>	≤ 300 ms
<b>Output current</b>		<b>Output function</b>	NPN and PNP
Continuous (I <sub>a</sub> )	100 mA		Available (Push-Pull output)
Short-time (I)	100 mA	<b>Indication function</b>	
<b>No load supply current (I<sub>o</sub>)</b>	50 mA	Insufficient contrast	Both green LED and red key flash for 2 s
<b>Switching frequency</b>	20 kHz	Short-circuit output	Both green LED and red key flash continuously
<b>Voltage drop (U<sub>d</sub>)</b>		<b>Environment</b>	
I <sub>L</sub> = 100 mA	≤ 2 VDC	Installation category	II (IEC 60664/60664A;60947-1)
I <sub>L</sub> = 10 mA	≤ 1 VDC	Pollution degree	3 (IEC 60664/60664A;60947-1)
<b>Protection</b>	Short-circuit, reverse polarity, transients	Degree of protection	IP 65 (IEC 60529; 60947-1)
<b>Light source</b>	White LED	<b>Temperature</b>	
<b>Spot diameter @18 mm</b>	1.5 mm (FDPK01SCC100)	Operating	0° to +40°C (32° to +104°F)
<b>Modulation frequency</b>	40 kHz	Storage	-20° to +80°C (-4° to +176°F)
<b>Ambient light</b>		<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC60068-2-6)
Incandescent light	10'000 Lux	<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)
Sunlight	20'000 Lux		



## Specifications (cont.)

<b>Rated insulation voltage</b>	50 VAC (rms)
<b>Housing material</b>	
Body	Polycarbonate
<b>Connection</b>	
Cable	PVC, black, 2 m, 4 x 0.25 mm <sup>2</sup>
Plug	NPB, M8 x 1
Cable for plug (M5)	CONB5A-series
<b>Weight</b>	24 g
<b>Approvals</b>	cUL
<b>CE-marking</b>	Yes

## Programming Function

**Teach-in**  
Colour 1

Press **SET** for 4 sec.

1st colour has now been learned  
Triangle LED goes ON

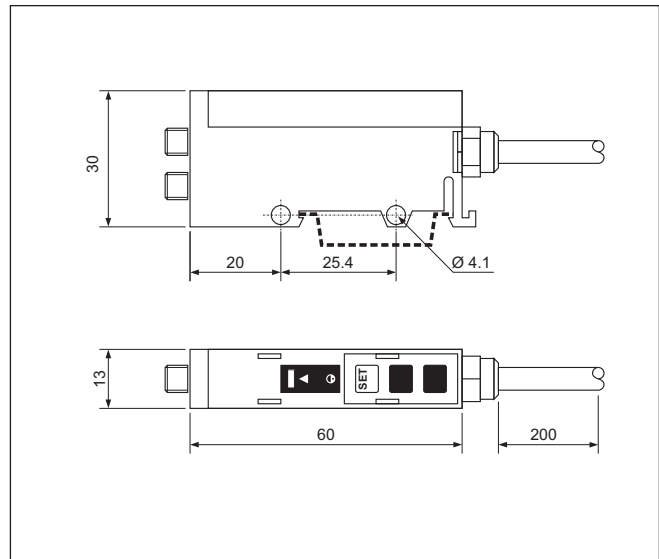
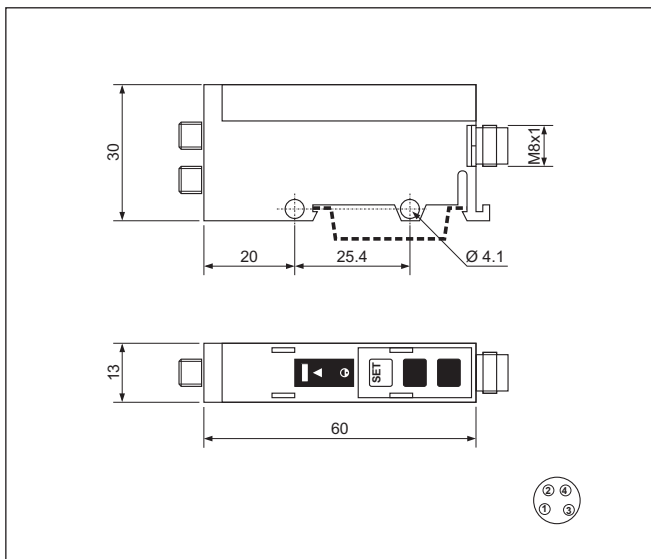
Colour 2

Press **SET** for 4 sec.

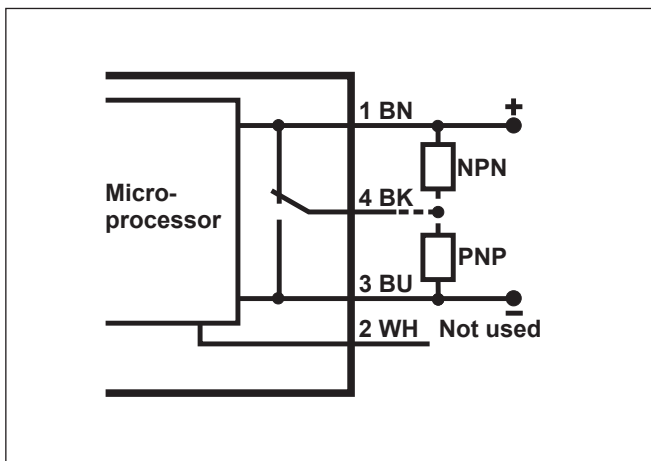
2nd colour has now been learned  
Triangle LED goes OFF

Output can be inverted by teaching colour 2 first

## Dimensions



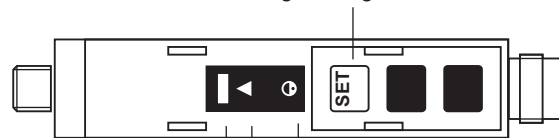
## Wiring Diagram



## Keyboard and LED

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

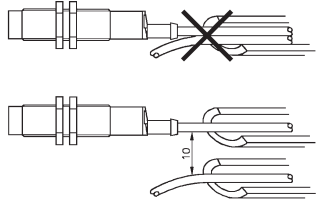
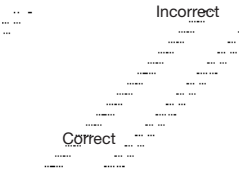
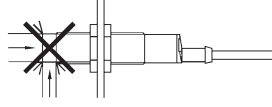
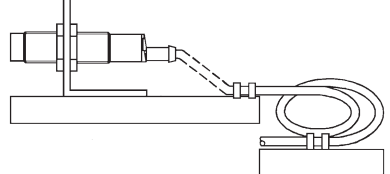
Press for 4 secs again:  
2nd colour is learned, and triangle LED goes OFF



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

\* Short-circuit output:  
both green LED and red key flash continuously

## 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><b>Incorrect</b></p>  <p><b>Correct</b></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: PD60CNK18BP..
- Installation instruction
- **Packaging:** Cardboard box

## Accessories

- Plastic fibre type FPDK01SCC100

For further information refer to “Accessories”