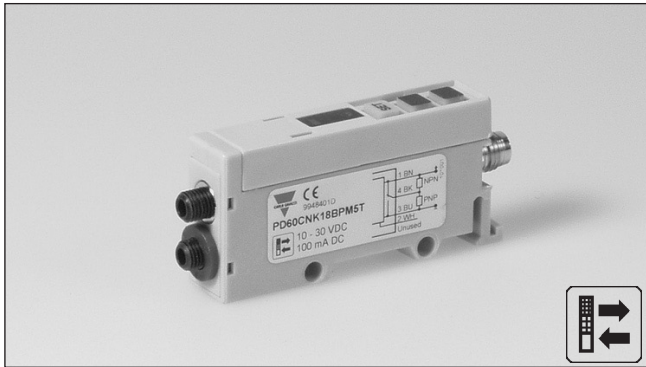


# Photoelectrics, Fibre Optic Sensor Contrast Sensor Type PD 60 CNK 18 BP ..

CARLO GAVAZZI



- Range: 18 mm  $\pm$ 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 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 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<br>W x H x D | Range<br>S <sub>n</sub> | Ordering no.<br>NPN and PNP cable | Ordering no.<br>NPN and PNP plug |
|----------------------|-------------------------|-----------------------------------|----------------------------------|
| 13 x 30 x 60 mm      | 18 mm $\pm$ 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 $\pm$ 2 mm                            | Sunlight                              | 20'000 Lux                                    |
| <b>Temperature drift</b>                       | < 0,4%/°C                                   | <b>Response time</b>                  |   |
| <b>Rated operational volt. (U<sub>B</sub>)</b> | 10 to 30 VDC<br>(ripple included)           | OFF-ON (t <sub>ON</sub> )             | ≤ 25 μs                                       |
| <b>Ripple (U<sub>rpp</sub>)</b>                | ≤ 10%                                       | ON-OFF (t <sub>OFF</sub> )            | ≤ 25 μs                                       |
| <b>Output current</b>                          |   | <b>Power ON delay (t<sub>v</sub>)</b> | ≤ 300 ms                                      |
| Continuous (I <sub>a</sub> )                   | 100 mA                                      | <b>Output function</b>                |   |
| Short-time (I)                                 | 100 mA                                      | NPN and PNP                           | Available (Push-Pull output)                  |
| <b>No load supply current (I<sub>o</sub>)</b>  | 50 mA                                       | <b>Indication function</b>            |   |
| <b>Switching frequency</b>                     | 20 kHz                                      | Insufficient contrast                 | Both green LED and red key flash for 2 s      |
| <b>Voltage drop (U<sub>d</sub>)</b>            |   | Short-circuit output                  | Both green LED and red key flash continuously |
| I <sub>L</sub> = 100 mA                        | ≤ 2 VDC                                     | <b>Environment</b>                    |   |
| I <sub>L</sub> = 10 mA                         | ≤ 1 VDC                                     | Installation category                 | II (IEC 60664/60664A;60947-1)                 |
| <b>Protection</b>                              | Short-circuit, reverse polarity, transients | Pollution degree                      | 3 (IEC 60664/60664A;60947-1)                  |
| <b>Light source</b>                            | White LED                                   | Degree of protection                  | IP 65 (IEC 60529; 60947-1)                    |
| <b>Spot diameter @18 mm</b>                    | 1.5 mm (FDPK01SCC100)                       | <b>Temperature</b>                    |   |
| <b>Modulation frequency</b>                    | 40 kHz                                      | Operating                             | 0° to +40°C (32° to +104°F)                   |
| <b>Ambient light</b>                           |   | Storage                               | -20° to +80°C (-4° to +176°F)                 |
| Incandescent light                             | 10'000 Lux                                  | <b>Vibration</b>                      | 10 to 150 Hz, 0.5 mm/7.5 g (IEC60068-2-6)     |



## Specifications (cont.)

|                                 |  |
|---------------------------------|--|
| <b>Shock</b>                    | 2 x 1 m & 100 x 0.5 m<br>(IEC 60068-2-6, 60068-2-32) |
| <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

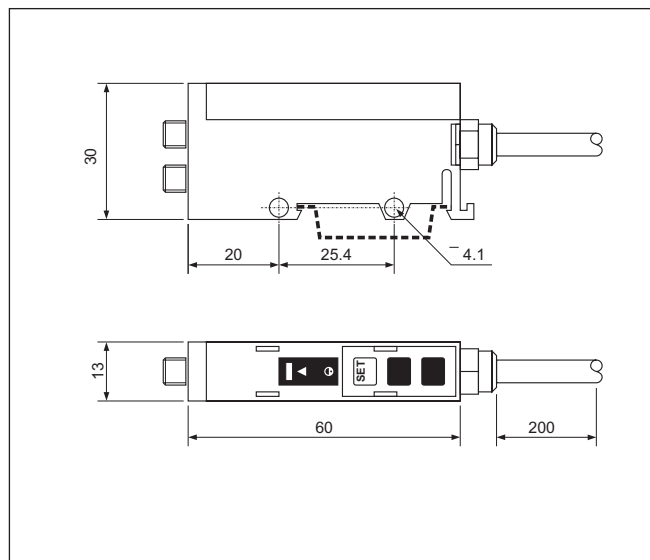
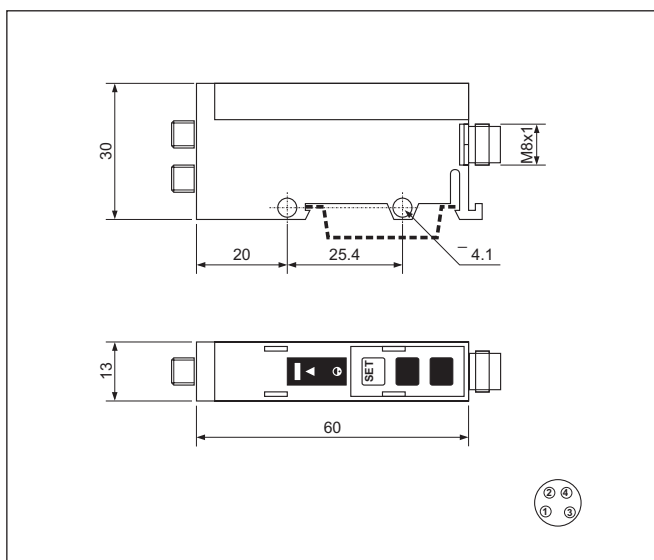
Colour 2  
sec.

Press **SET** for 4 sec.

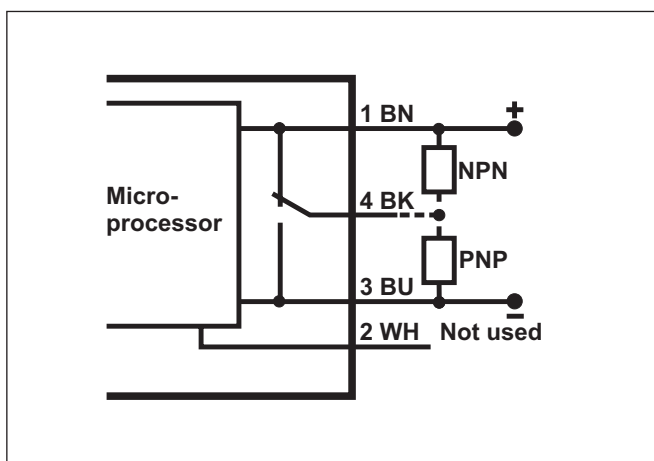
2nd colour has now been learned  
Triangle LED goes OFF

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