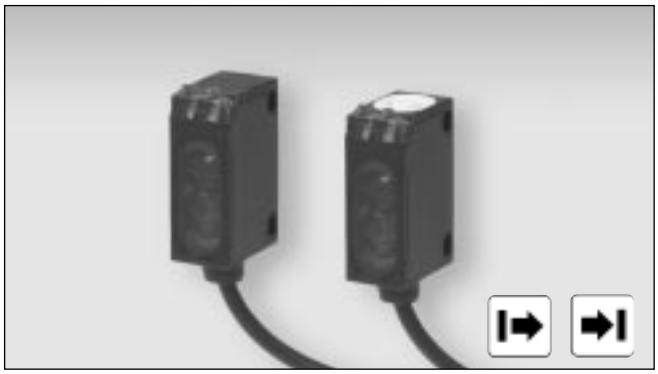
Photoelectrics
Through-beam
Type PD32CNT60



- **Miniature sensor range**
- **Range: 6 m**
- **Sensitivity of receiver adjustable by Teach-In programming**
- **Modulated, red light 660 nm**
- **Supply voltage: 10 to 30 VDC**
- **Output: 100 mA, NPN or PNP preset**
- **Make and break switching function programmable**
- **LED for output indication, signal stability and power ON**
- **Protection: reverse polarity, short circuit and transients**
- **Cable and plug versions**
- **Compact housing**
- **Excellent EMC performance**

Product Description

The PD32CNT60 family comes in a compact reinforced PMMA/ABS-housing. The sensors are useful in applications where high-accuracy detection as well as small size is required. The Teach-In function for adjustinh the sensitivity of the receiver makes the sensors highly flexible. The output type is preset (NPN or PNP), and the output switching function is programmable (NO or NC).

Ordering Key

PD32CNT60PPM5T

- **Type**
- **Housing style**
- **Housing size**
- **Housing material**
- **Housing length**
- **Detection principle**
- **Sensing distance**
- **Output type**
- **Output configuration**
- **Connection type**
- **Teach-In**

Type Selection

Housing **W x H x D**	**Range** **S_n**	**Connection**	**Ordering no.** **Receiver** **NPN & PNP cable** **Make & break switching**	**Ordering no.** **Emitter**
12 x 32 x 20 mm	6 m	Cable Plug Cable Plug	**PD 32 CNT 60 NPT** **PD 32 CNT 60 NPM5T** **PD 32 CNT 60 PPT** **PD 32 CNT 60 PPM5T**	**PD 32 CNT 60** **PD 32 CNT 60 M5**

Specifications Emitter

Rated operational volt. (U_B)	10 to 30 VDC
Ripple (U_{rp})	≤ 10%
Supply current	≤ 25 mA @ 24 VDC
Protection	Reverse polarity, transients

Light source	GaAs LED, 660 nm
Light type	Red, modulated
Beam angle	± 3°
Indication function	
Power supply ON	LED, green

Specifications Receiver

Rated operating distance (S_n)	Up to 6 m
Blind zone	None
Sensitivity	Adjustable by Teach-In (push button or wire)
Temperature drift	≤ 1%/°C
Hysteresis (H) (differential travel)	≤ 10%
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)
Ripple (U_{rpp})	≤ 10%

Output current	
Continuous (I_e)	≤ 100 mA
Short-time (I)	≤ 100 mA (max. load capacity 100 nF)
No load supply current (I_o)	≤ 25 mA @ 24 VDC
Minimum operational current (I_m)	0.5 mA
OFF-state current (I_r)	≤ 100 µA
Voltage drop (U_d)	≤ 2.4 VDC @ 100 mA
Protection	Reverse polarity, short-circuit and transients

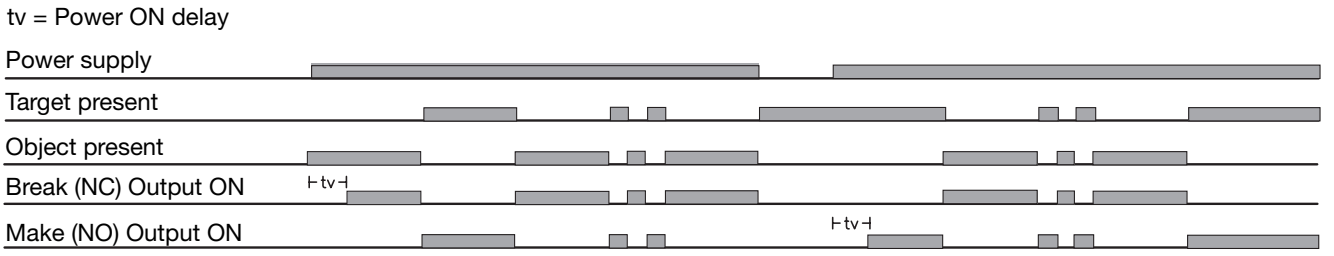
Specifications Receiver (cont.)

Light source	GaAlAs, LED, 660 nm
Light type	Infrared, modulated
Sensing angle	± 3°
Ambient light	5,000 lux
Operating frequency	500 Hz
Response time	
OFF-ON (t_{ON})	≤ 1 ms
ON-OFF (t_{OFF})	≤ 1 ms
Power ON delay (t_v)	≤ 300 ms
Output function	
NPN and PNP	Preset
NO/NC switching function	Set up by button
Indication	
Output ON	LED, yellow
Signal stability ON and power ON	LED, green

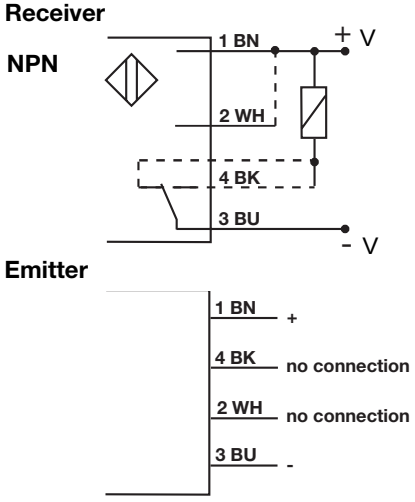
General Specifications

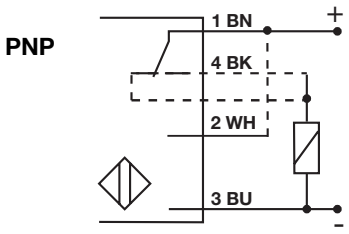
Environment	
Installation category	II (IEC 60664/60664A, 60947-1)
Pollution degree	3 (IEC 60664/60664A, 60947-1)
Degree of protection	IP 67 (IEC 60529, 60947-1)
Ambient temperature	
Operating	-0° to +50°C (-32° to +122°F)
Storage	20° to +80°C (-4° to +176°F)
Vibration	10 to 55 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
Shock	30 g / 11 ms, 3 pos, 3 neg per axis
Rated insulation voltage	500 VAC (rms)
Housing material	
Body	ABS, black
Front glass	PMMA, red
Connection	
Cable	PUR, black, 2 m 4 x 0.14 mm², Ø = 3.6 mm
Plug	M8, 4-pin
Weight	With cable: 40 g With plug: 10 g
CE-marking	Yes
Approval	cUL

Operation Diagram



Wiring Diagrams





Teach input is active when 2 WH wire is connected to V+ (1 BN).

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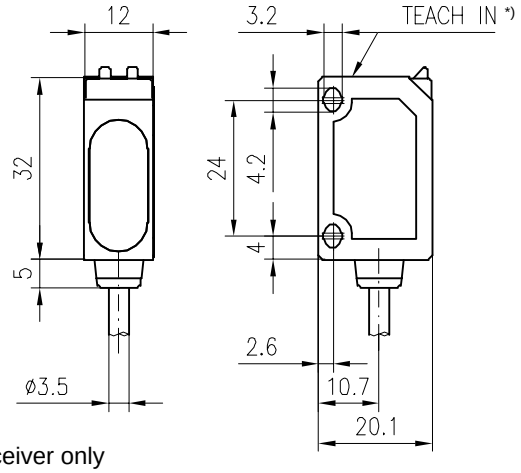
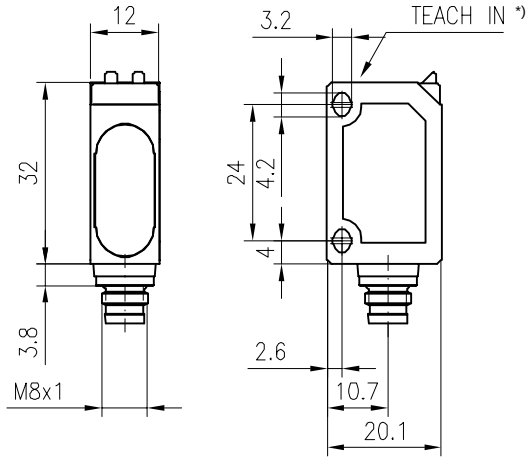
Dimensions

Cable version

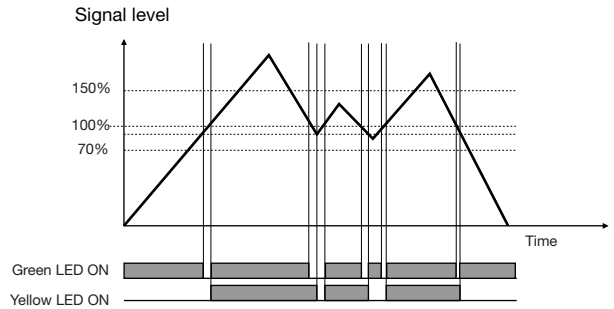


Plug version



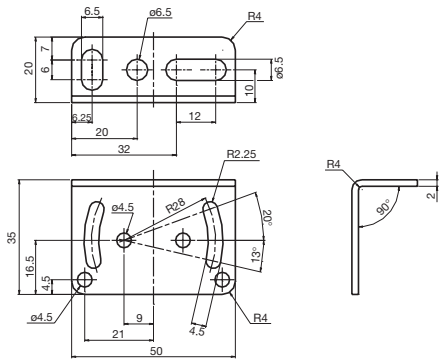
*) Receiver only

Signal Stability Indication



Accessories

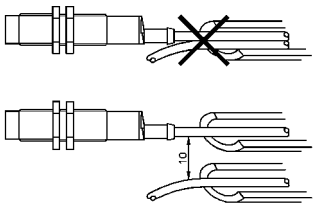
Mounting bracket APD32-MB1



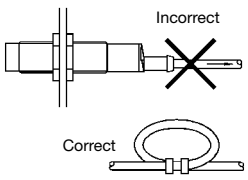
For further information refer to “Accessories”

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

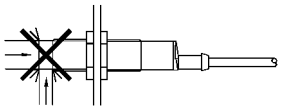


Relief of cable strain



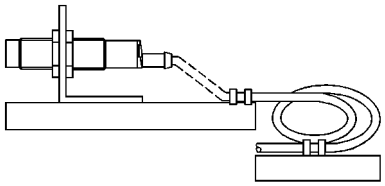
The cable should not be pulled

Protection of the sensing face



A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier



Any repetitive flexing of the cable should be avoided

Delivery Contents

- Photoelectric switch: PD 32 CNT 60 ...
- Installation instruction
- **Packaging:** Cardboard box

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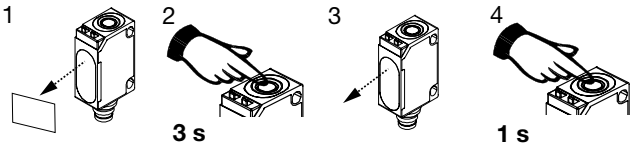
Adjustment

Sensitivity adjustment, with static object

1. Line up the sensor with the object. Yellow LED and green LED are ON.
2. Press the button for 3 s until both LED's flash simultaneously (the first switching point is stored).
3. Place the object outside the detection area.
4. Press the button for 1 s.
   a) The green LED flashes and stays ON: the second switching point is stored, and the sensor is ready to operate.
   b) Both LED's flash simultaneously: the sensor cannot detect the object, no switching points are stored.



Sensitivity adjustment, with only one object

1. Line up the sensor with the object. Yellow LED and green LED are ON.
2. Press the button for 3 s until both LED's flash simultaneously (the first switching point is stored).
3. Leave the object in the detection area, press the button for 1 s. The green LED flashes and stays on: the second switching point is stored, and the sensor is ready to operate.

Sensitivity adjustment, with a running process

1. Line up the sensor with the object. Green LED is ON. At this stage the status of the yellow LED can be ignored.
2. The running process must be the only "object" within the detection area. Press the button for 3 s until both LED's flash simultaneously.

   3 s
3. Press the button for at least the duration of one process cycle.

   1 cycle

   a) The green LED flashes and stays ON: both switching points have been stored, and the sensor is ready to operate.
   b) Both LED's flash simultaneously: the sensor cannot detect the object, no switching points are stored.

Programming of make and break switching function

1. Press the button for 13 s. **13 s**
   Both LED's flash alternately.
2. Release the button: the green LED flashes.
3. While the green LED flashes, the output is inverted each time the button is pressed. This is indicated by the yellow LED.
   When the button is not pressed for 10 s, the current output function is stored.
   The sensor is now ready for operation.

Default setting

1. No object in the detection area: Press the button for 3 s, until both LED's flash simultaneously. **3 s**
2. No object in the detection area:
   Press the button for 1 s. **1 s**
   The sensor is set to maximum sensitivity.

NB! The Teach Input (2 WH) will work similarly to the push button, active High.