



Photoelectric sensors  
W14-2, Photoelectric proximity sensor,  
Background suppression

WT14-2P422P01



**Model Name** > [WT14-2P422P01](#)  
**Part No.** > [1041202](#)

**At a glance**

- Emitter LED with infrared light
- Background suppression
- Adjustable sensing range
- High immunity to ambient light
- Rugged plastic housing

**Your benefits**

- Reliable object detection with background suppression
- Quick and easy sensing range adjustment due to 4-speed potentiometer
- Crosstalk and ambient light immunity reduces false trips and downtime
- High availability in the field



*Illustration may differ*



**Features**

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D):          | 17.6 mm x 75.5 mm x 33.5 mm                            |
| Housing design (light emission): | Rectangular, Slim                                      |
| Sensing range max.:              | 20 mm ... 500 mm <sup>1)</sup>                         |
| Sensing range:                   | 80 mm ... 500 mm <sup>2)</sup>                         |
| Type of light:                   | Infrared light                                         |
| Light source:                    | LED <sup>3)</sup>                                      |
| Wave length:                     | 870 nm                                                 |
| Alarm output:                    | -                                                      |
| Health output:                   | -                                                      |
| Adjustment:                      | Potentiometer, 4 turns                                 |
| Light spot size (distance):      | Ø 14 mm (300 mm)                                       |

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

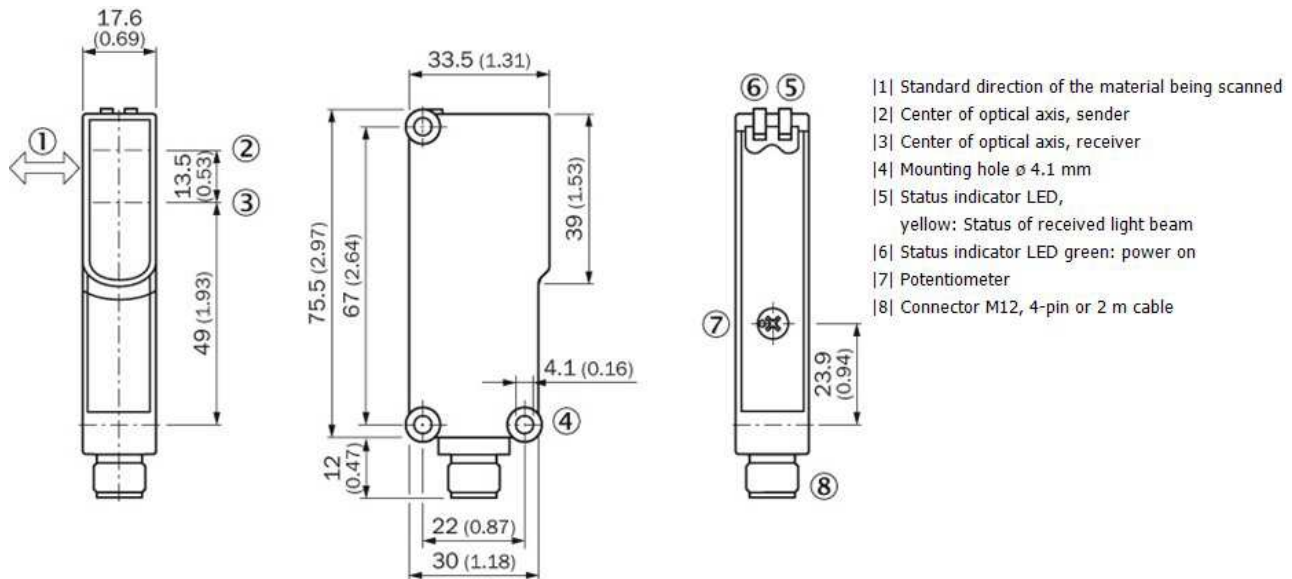
**Mechanics/electronics**

|                                    |                                   |
|------------------------------------|-----------------------------------|
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:                            | 5 V <sub>pp</sub> <sup>2)</sup>   |
| Power consumption:                 | ≤ 30 mA <sup>3)</sup>             |
| Output type:                       | PNP                               |
| Output function:                   | Complementary                     |
| Switching mode:                    | Light/dark switching              |
| Output current I <sub>max.</sub> : | ≤ 100 mA                          |

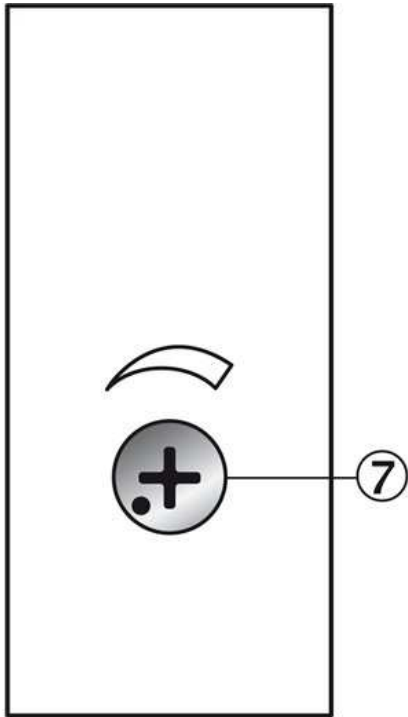
|                                |                              |
|--------------------------------|------------------------------|
| Response time:                 | ≤ 2.5 ms <sup>4)</sup>       |
| Switching frequency:           | 200 Hz <sup>5)</sup>         |
| Connection type:               | Connector M12, 4-pin         |
| Circuit protection:::          | A, C, D <sup>6) 7) 8)</sup>  |
| Weight:                        | 40 g                         |
| Special device:                | ✓                            |
| Housing material:              | ABS, Plastic                 |
| Optics material:               | PMMA                         |
| Enclosure rating:              | IP 67                        |
| Items supplied:                | Mounting bracket BEF-KHP-C01 |
| Ambient operating temperature: | -25 °C ... 60 °C             |
| Ambient storage temperature:   | -40 °C ... 70 °C             |
| UL File No.:                   | NRKH.E181493 & NRKH7.E181493 |

1) Limit values, operation in short-circuit protected network max. 8 A<sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances<sup>3)</sup> Without load<sup>4)</sup> Signal transit time with resistive load<sup>5)</sup> With light/dark ratio 1:1<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected<sup>7)</sup> C = interference suppression<sup>8)</sup> D = outputs overcurrent and short-circuit protected

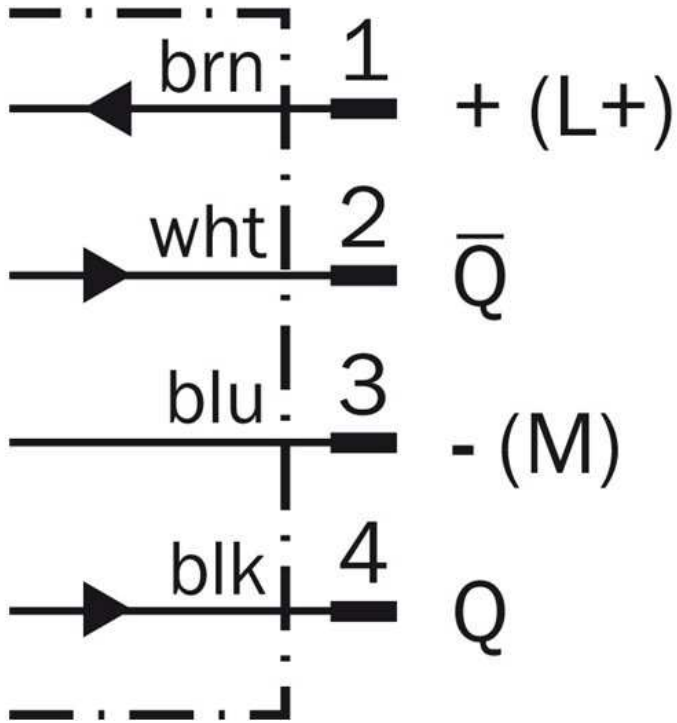
## Dimensional drawing



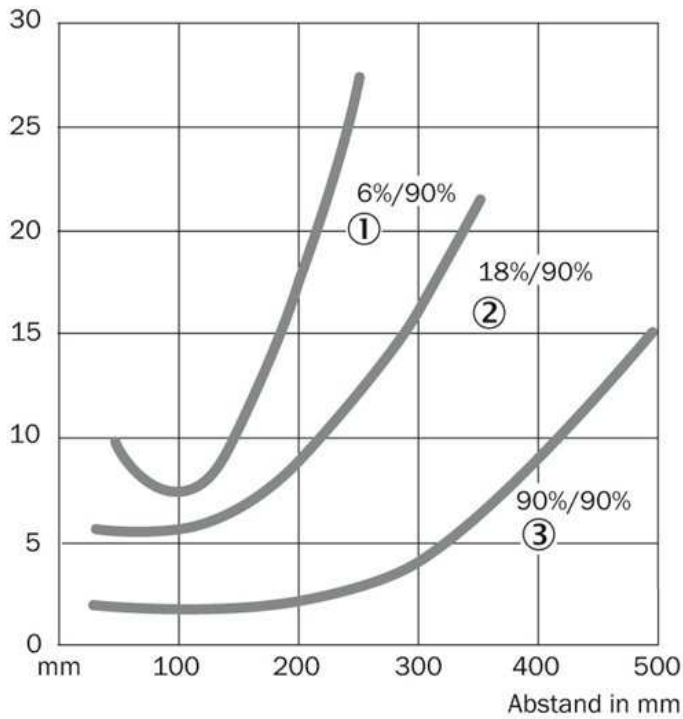
Adjustments possible



Connection diagram

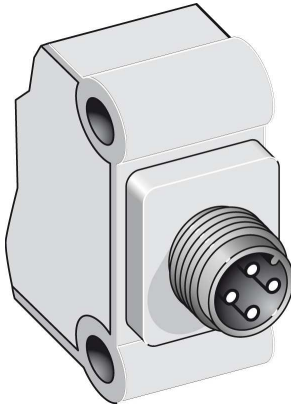


## Characteristic curve

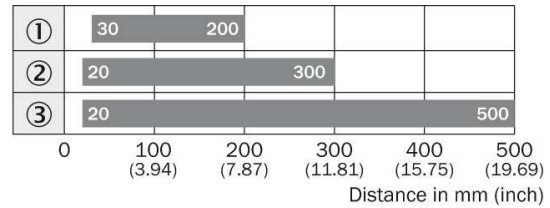


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

## Connection type



## Sensing range diagram



■ Sensing range

- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

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