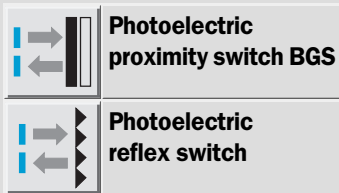


## Product series W8



# W8 series miniature photoelectric switches: Small, fast and secure at close range



enables a fast response time where applications demand it. The autocollimation technology incorporated in the photoelectric switch guarantees that the sensor also reliably detects objects at close range, even when using reflective tape. It also facilitates the use of particularly small apertures.

All models feature a sensitivity adjustment control and selectable light-/dark-switching. Versatility is further enhanced by the inclusion of versions with 2M flying leads or M8 connectors with 3 or 4 pin options. Mounting brackets and reflectors for the photoelectric switches are included in the supply.

**T**he W8 series of miniature photoelectric switches offers features which include autocollimation, background suppression, laser diode and a reflex version for the reliable detection of transparent objects and materials. The standard housing design with integrated M3 threaded mounting holes, enables quick and simple installation possibilities for a wide range of industrial applications.

Whether in storage technology and materials handling, in packaging machinery or vending machines, in the printing or paper handling sector, performance is a critical factor. The range of the photoelectric reflex switch is 3 m. The sensor, which features background suppression, reliably operates up to 300 mm range. A switching frequency of up to 2 kHz

# Photoelectric proximity switch, WTB8, HGA, short range, red light - DC

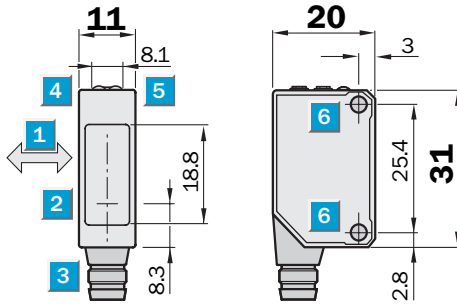
**Scanning distance**  
5 ... 100 mm

Photoelectric proximity switch

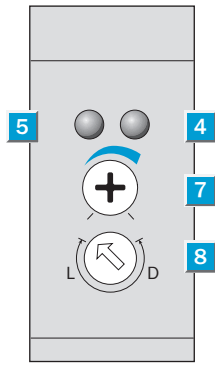
- Background suppression
- For short-range applications
- Light-/dark-switching selectable via rotary switch
- Adjustable sensitivity
- Red light as alignment aid
- Fast installation through integrated M3 mounting thread



### Dimensional drawing



### Adjustments possible

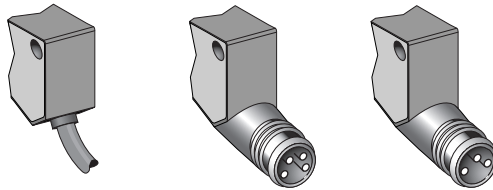


- 1 M3 mounting thread
- 2 Centre optical axis
- 3 Connection
- 4 LED display orange: switching output active
- 5 LED display green: operational status indicator
- 6 Sensitivity control
- 7 Light/dark rotary switch:  
L = light-switching, D = dark-switching

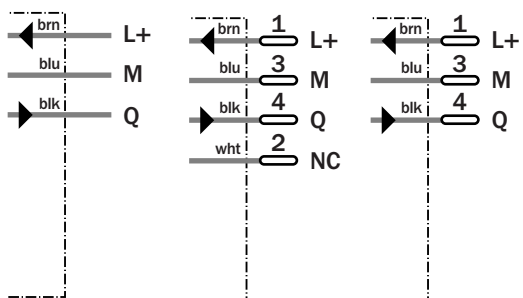


### Connection type

|            |            |            |
|------------|------------|------------|
| WTB8-N1111 | WTB8-N2211 | WTB8-N2111 |
| WTB8-P1111 | WTB8-P2211 | WTB8-P2111 |



|                          |           |           |
|--------------------------|-----------|-----------|
| 3 x 0.18 mm <sup>2</sup> | M8, 4-pin | M8, 3-pin |
|--------------------------|-----------|-----------|



**Accessories**

|                      |
|----------------------|
| Connector, M8, 3-pin |
| Connector, M8, 4-pin |
| Mounting systems     |

| Technical specifications             |   | WTB8- | N1111 | N2111 | N2211 | P1111 | P2111 | P2211 |  |  |  |  |  |
|--------------------------------------|---|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|
| <b>Scanning distance typ. max.</b>   | 5 ... 100 mm  |       |       |       |       |       |       |       |  |  |  |  |  |
| Adjustment of operating distance     | Potentiometer   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Light source, light type</b>      | LED, red light, 650 nm <sup>1)</sup>  |       |       |       |       |       |       |       |  |  |  |  |  |
| Light spot diameter                  | Approx. 6 mm at 100 mm distance   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Supply voltage V<sub>s</sub></b>  | DC 10 ... 30 V <sup>2)</sup>  |       |       |       |       |       |       |       |  |  |  |  |  |
| Ripple                               | ± 10 %  |       |       |       |       |       |       |       |  |  |  |  |  |
| Power consumption                    | ≤ 30 mA <sup>3)</sup>   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Switching outputs</b>             | NPN: open collector: Q  |       |       |       |       |       |       |       |  |  |  |  |  |
|                                      | PNP: open collector: Q  |       |       |       |       |       |       |       |  |  |  |  |  |
| Signal voltage PNP HIGH / LOW        | V <sub>s</sub> - 1.8 V / approx. 0 V  |       |       |       |       |       |       |       |  |  |  |  |  |
| Signal voltage NPN HIGH / LOW        | Approx. V <sub>s</sub> / < 1.8 V  |       |       |       |       |       |       |       |  |  |  |  |  |
| Switching mode                       | Light-/dark-switching via rotary switch   |       |       |       |       |       |       |       |  |  |  |  |  |
| Output current I <sub>a</sub> max    | 100 mA  |       |       |       |       |       |       |       |  |  |  |  |  |
| Response time                        | ≤ 0.5 ms <sup>4)</sup>  |       |       |       |       |       |       |       |  |  |  |  |  |
| Switching frequency                  | 1,000 Hz <sup>5)</sup>  |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Connection type</b>               | Cable, PVC, 2 m <sup>6)</sup>   |       |       |       |       |       |       |       |  |  |  |  |  |
|                                      | Connector, M8, 3-pin  |       |       |       |       |       |       |       |  |  |  |  |  |
|                                      | Connector, M8, 4-pin  |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>VDE protection class</b>          | ◆   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Circuit protection</b>            | V <sub>s</sub> connections reverse-polarity protected<br>/ In-/outputs short-circuit protected<br>/ Outputs overcurrent and short-circuit protected |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Enclosure rating</b>              | IP 67   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Ambient temperature operation</b> | -25 °C ... +55 °C   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Ambient temperature storage</b>   | -40 °C ... +70 °C   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Weight</b>                        | Ca 50 g   |       |       |       |       |       |       |       |  |  |  |  |  |
|                                      | Ca 10 g   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Housing material</b>              | ABS, PMMA   |       |       |       |       |       |       |       |  |  |  |  |  |
| <b>Included with delivery</b>        | Mounting bracket BEF-W100-A   |       |       |       |       |       |       |       |  |  |  |  |  |

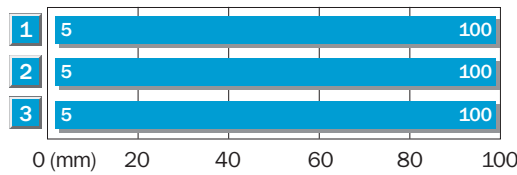
<sup>1)</sup> Average service life 100,000 h at T<sub>a</sub> = +25 °C

<sup>2)</sup> Limit values, reverse-polarity protected operation in short-circuit protected network max. 8 A

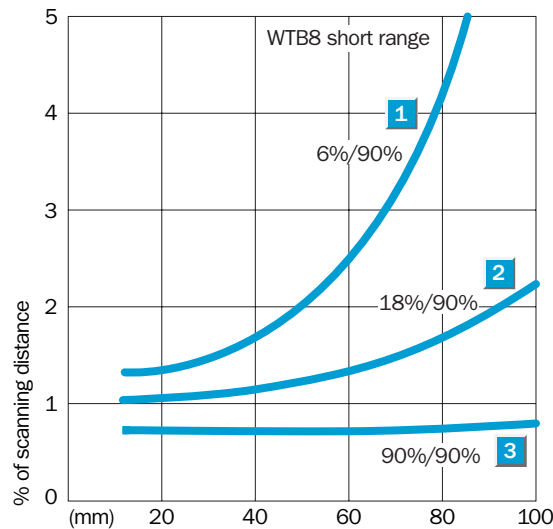
<sup>3)</sup> Without load

<sup>4)</sup> Signal transit time with resistive load  
<sup>5)</sup> With light/dark ratio 1:1  
<sup>6)</sup> Do not bend below 0 °C

**Scanning distance**



- 1 Scanning distance on black, 6 % remission
- 2 Scanning distance on grey, 18 % remission
- 3 Scanning distance on white, 90 % remission



**Ordering information**

| Type       | Part Number |
|------------|-------------|
| WTB8-N1111 | 6 033 210   |
| WTB8-N2111 | 6 033 212   |
| WTB8-N2211 | 6 033 214   |
| WTB8-P1111 | 6 033 211   |
| WTB8-P2111 | 6 033 213   |
| WTB8-P2211 | 6 033 215   |

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