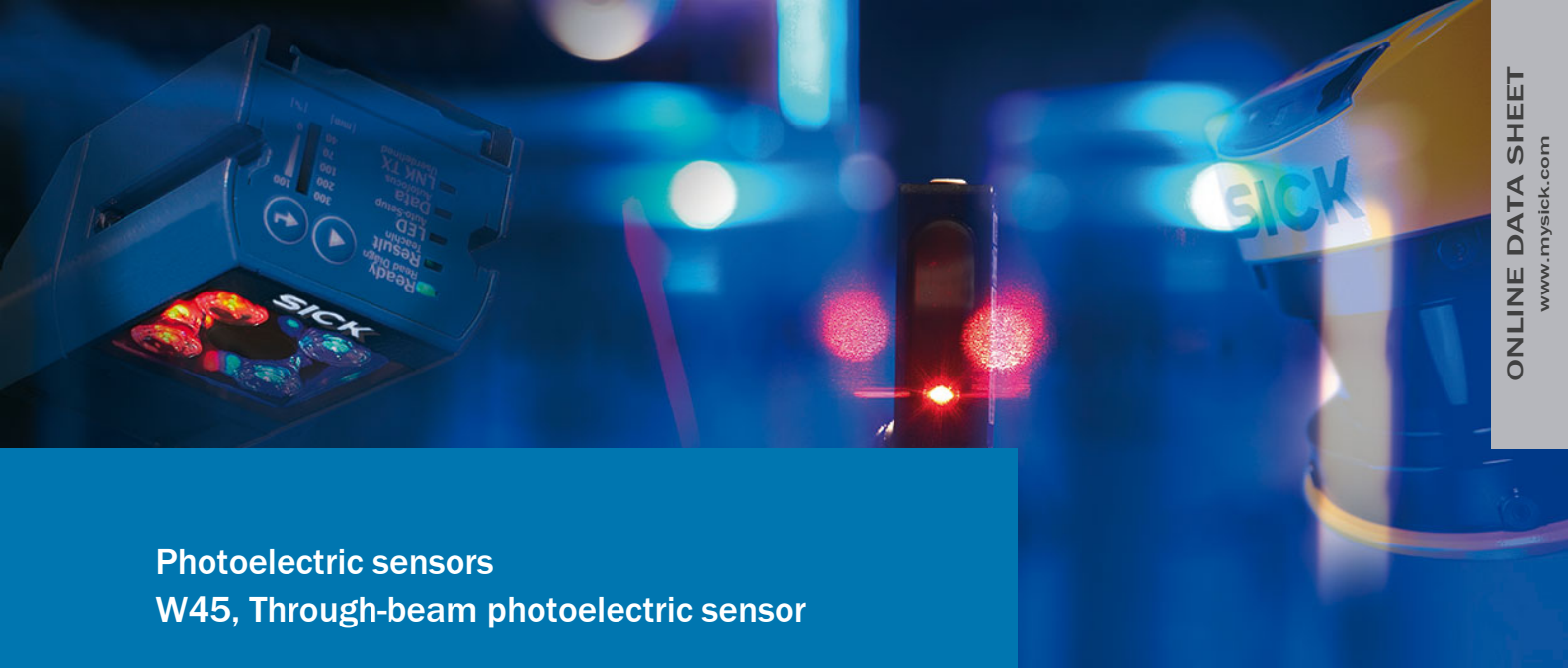




## Photoelectric sensors W45, Through-beam photoelectric sensor

WS/WE45-N650



**Model Name** > [WS/WE45-N650](#)  
**Part No.** > [1010986](#)



*Illustration may differ*

#### At a glance

- Long sensing range
- Rugged metal housing
- Optional: Powerful front lens heating
- Optional test input, time delays and alarm output
- Variants for 10 - 60 V DC or 24 - 240 V DC / 24 - 240 V AC voltage supply

#### Your benefits

- Very long sensing range with a high operating reserve at 100 m provides reliable continuous operation
- Rugged metal housing ensures a long service life in harsh industrial environments
- Front lens heating prevents condensation and frost for reliable operation in outdoor applications
- Scope alignment aid ensures easier alignment to long sensing ranges
- Multiple functions for simpler integration of individual systems
- Variants DC voltage and universal AC/DC voltage provides installation flexibility due to same housing



#### Features

|                                  |                                                                          |
|----------------------------------|--------------------------------------------------------------------------|
| Sensor/detection principle:      | Through-beam photoelectric sensor                                        |
| Dimensions (W x H x D):          | 60 mm x 105 mm x 105 mm                                                  |
| Housing design (light emission): | Rectangular                                                              |
| Sensing range max.:              | 0 m ... 350 m                                                            |
| Sensing range:                   | 0 m ... 300 m                                                            |
| Type of light:                   | Infrared light                                                           |
| Light source:                    | LED <sup>1)</sup>                                                        |
| Time type:                       | Time delay off, ON and OFF delay, Switch on delay                        |
| Delay time:                      | 0.015 ... 0.3 s, Adjustable via time delay selector switch: 0.5 ... 12 s |
| Angle of dispersion:             | Ca. 0.9 °                                                                |
| Adjustment:                      | Potentiometer                                                            |
| Light spot size (distance):      | Ø 4.5 m (300 m)                                                          |

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

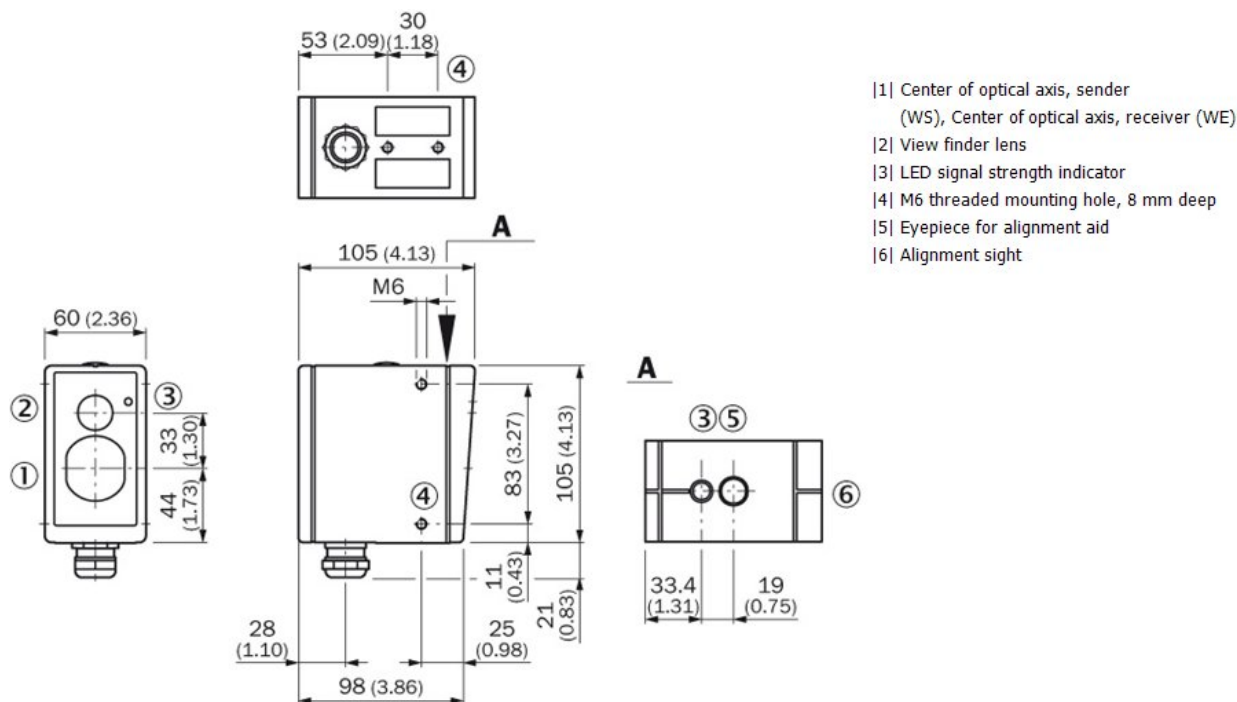
#### Mechanics/electronics

|                 |                                   |
|-----------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 60 V DC <sup>1)</sup> |
| Ripple:         | ≤ 5 Vpp <sup>2)</sup>             |

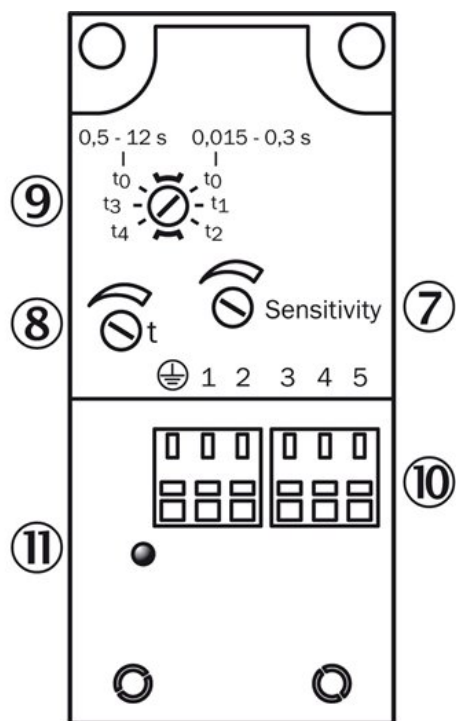
|                                   |                                       |
|-----------------------------------|---------------------------------------|
| Power consumption, sender:        | 250 mA <sup>3)</sup>                  |
| Power consumption, receiver:      | 250 mA <sup>4)</sup>                  |
| Output type:                      | NPN                                   |
| Output function:                  | Complementary                         |
| Switching mode:                   | Light/dark-switching                  |
| Output current I <sub>max</sub> : | 200 mA                                |
| Response time:                    | ≤ 500 μs <sup>5)</sup>                |
| Switching frequency:              | 1,000 Hz <sup>6)</sup>                |
| Connection type:                  | Connector Hirschmann, 6-pin           |
| Circuit protection:::             | A, C, D <sup>7) 8) 9)</sup>           |
| Protection class:                 | I <sup>10)</sup>                      |
| Weight:                           | 1,600 g                               |
| Front screen heating:             | ✓                                     |
| Alarm output:                     | 100 mA, open collector <sup>11)</sup> |
| Special device:                   | -                                     |
| Housing material:                 | Metal                                 |
| Enclosure rating:                 | IP 65                                 |
| Test input sender off:            | TE to VS                              |
| Ambient operating temperature:    | -25 °C ... 55 °C <sup>12)</sup>       |
| Ambient storage temperature:      | -40 °C ... 70 °C                      |

<sup>1)</sup> Limit values    <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances    <sup>3) 4)</sup> Without load    <sup>5)</sup> Signal transit time with resistive load    <sup>6)</sup> With light/dark ratio 1:1    <sup>7)</sup> A = V<sub>S</sub> <sup>11)</sup>  
 connections reverse-polarity protected    <sup>8)</sup> C = interference suppression    <sup>9)</sup> D = outputs overcurrent and short-circuit protected    <sup>10)</sup> Reference voltage 50 V DC  
 Flashes at approx. 5 Hz, switch to VS <sup>12)</sup> Up to 140 °C with cooling plates (see accessories)

## Dimensional drawing

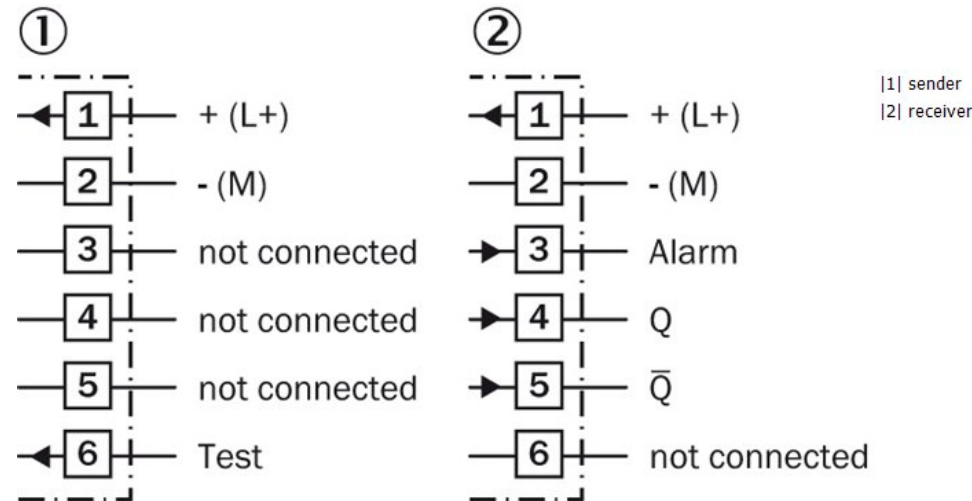


Adjustments possible



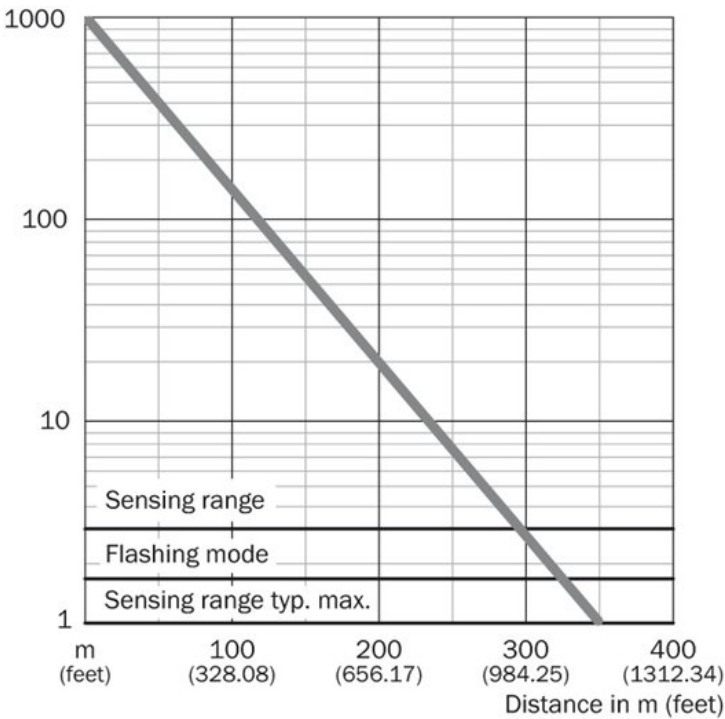
- |7| Sensitivity adjustment
- |8| Time control
- |9| time delay selector switch
- |10| terminal strip
- |11| Status indicator

Connection diagram

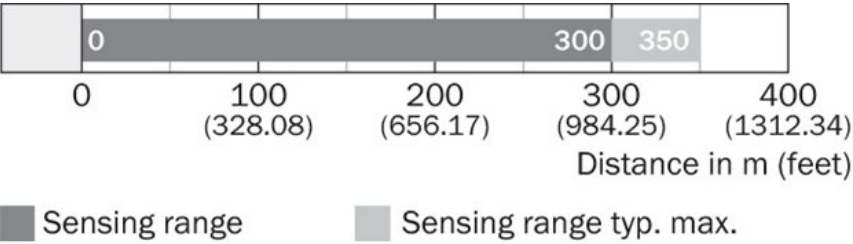


- |1| sender
- |2| receiver

Characteristic curve



Sensing range diagram



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