

| | |
|--|---------------------------------------|
| | Photoelectric proximity switches, BGS |
| | Photoelectric reflex switches |
| | Through-beam photoelectric switches |

W18-3: Incorporated application know-how, expanded functionality, high level of equipment availability



In Automation Technology, customers demand optical sensors, which can reliably solve complex applications, which are capable of operating at high processing speeds and which provide a high level of in-service availability under arduous operating conditions. The W18-3 Series is recommended. The W18-3 Series is the result of a vast amount of experience and many years of knowledge gathered from thousands of applications, from which the user can now benefit. Depending upon the task required, the most appropriate sensor can be selected:

With precision background suppression, the WT18-3 Series is ideal for demanding applications. The scanning distance can be simply and quickly adjusted, either via conventional potentiometer or via double Teach buttons, with fine adjustment option. WL18-3, using an auto-collimation optical principle, are designed to optically focus upon the object in a reliable manner and utilising a visually defined small red spot of light.

WS/WE18-3 – ideal for applications where greater system reserve is required.

Further advantage:

- The series W18-3 sensors fulfil the test requirements of

ECOLAB®

The main target industries for the W18-3 Series are:

- Packaging industry,
- Food and confectionery industry,
- Storage and conveying,
- Wood processing.

▼ In a picking warehouse, the goods containers are reliably detected by WT18-3, thus ensuring correct goods throughput.



◀ WT18-3 detects the position of a load carrier in front of the shelf bay and optimises the flow of goods in a high-bay warehouse.



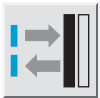
▼ From dark to light: WT18-3 reliably monitors the material supply in a spinning machine.



▶ WT18-3 safely detects the shiny coffee packets on a fully-automatic packaging line.



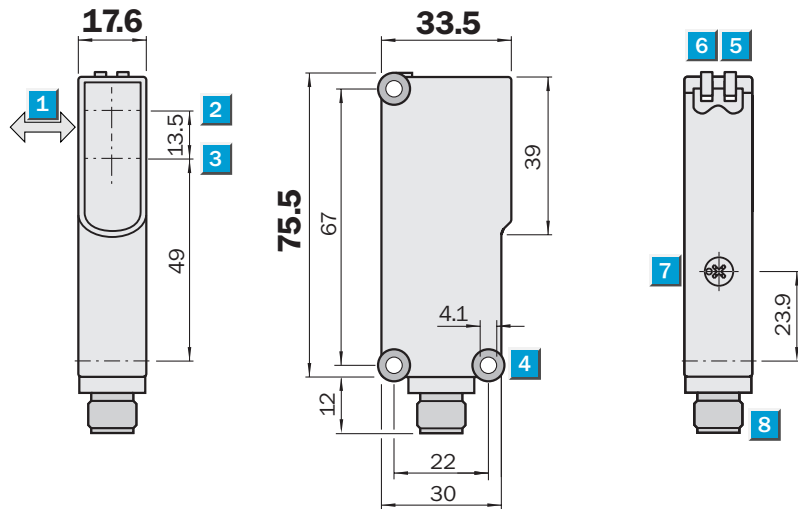
▲ WL18-3 detects the transport hanger and thus enables the smooth throughput of the garments to be washed in a fully-automatic laundry.

 **Scanning distance**
50 ... 600 mm

Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable via potentiometer
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature $-40\text{ °C} \dots +60\text{ °C}$

Dimensional drawing



Adjustments possible

All types

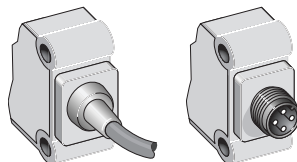


- 1 Standard direction of the material being scanned
- 2 Optical axis sender
- 3 Optical axis receiver
- 4 Mounting hole $\varnothing 4.1\text{ mm}$
- 5 LED indicator, yellow; status of received light beam
- 6 LED indicator, green; power on
- 7 Scanning distance adjustment, Poti 4 turn
- 8 Plug M12, 4-pin or 2 m cable



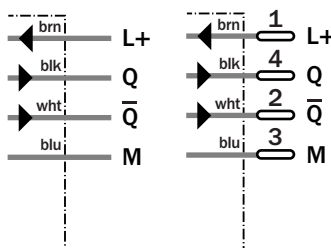
Connection types

| | |
|------------|------------|
| WT18-3P130 | WT18-3P430 |
| WT18-3N130 | WT18-3N430 |



4 x 0.25 mm²

4-pin, M12



See chapter Accessories

- Connectors
- Mounting systems

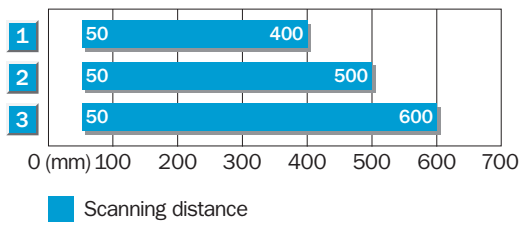
| Technical data | | WT18-3 | P130 | P430 | N130 | N430 | | | | | | | |
|---|-----------------------------------|--------|------|------|------|------|--|--|--|--|--|--|--|
| Scanning distance, adjustable¹⁾ | 50 ... 600 mm, 90 % remission | | | | | | | | | | | | |
| Visible range¹⁾ | 10 ... 600 mm | | | | | | | | | | | | |
| Adjustment | Poti, 4 turn | | | | | | | | | | | | |
| Light source²⁾, light type | LED, visible red light | | | | | | | | | | | | |
| Light spot diameter | 15 mm at 300 mm | | | | | | | | | | | | |
| Supply voltage V_S | 10 ... 30 V DC ³⁾ | | | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{PP} | | | | | | | | | | | | |
| Current consumption ⁵⁾ | < 40 mA | | | | | | | | | | | | |
| Output current I _A max. | < 100 mA | | | | | | | | | | | | |
| Switching outputs | PNP, antivalent | | | | | | | | | | | | |
| | NPN, antivalent | | | | | | | | | | | | |
| Response time ⁶⁾ | < 700 μs | | | | | | | | | | | | |
| Switching frequency max. ⁷⁾ | 700/s | | | | | | | | | | | | |
| Connection types | Cable ⁸⁾ , 2 m, 4 wire | | | | | | | | | | | | |
| | M12 plug, 4-pin | | | | | | | | | | | | |
| VDE protection class cable⁹⁾ | <input type="checkbox"/> | | | | | | | | | | | | |
| Circuit protection¹⁰⁾ | A, B, C | | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C | | | | | | | | | | | | |
| | Storage -40 °C ... +75 °C | | | | | | | | | | | | |
| Weight | With cable, 2 m, approx. 120 g | | | | | | | | | | | | |
| | With M12 plug, approx. 40 g | | | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | | | |

- 1) Object with 90 % remission (according to standard white DIN 5033)
- 2) Average service life 100,000 h at T_A = +25 °C
- 3) Limit values; Operation in short-circuit protected network max. 8 A
- 4) Must be within V_S tolerances
- 5) Without load
- 6) Signal transit time with resistive load
- 7) With light/dark ratio 1:1
- 8) Do not bend below 0 °C
- 9) Reference voltage 50 V DC
- 10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

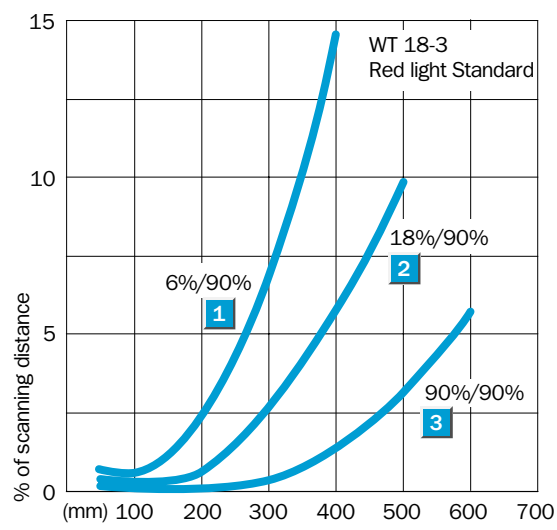
Adjustment via Poti

1. Position the object in the path of the beam.
2. By rotating the potentiometer to the right until the yellow LED illuminates continuously = object is positively detected.
3. If necessary, fine adjustments to the scanning distance can be made to suit the conditions of the application: minimal rotation of the potentiometer to the right = scanning distance will be increased, minimal rotation of the potentiometer to the left = scanning distance will be decreased.

Scanning distance




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



Order information

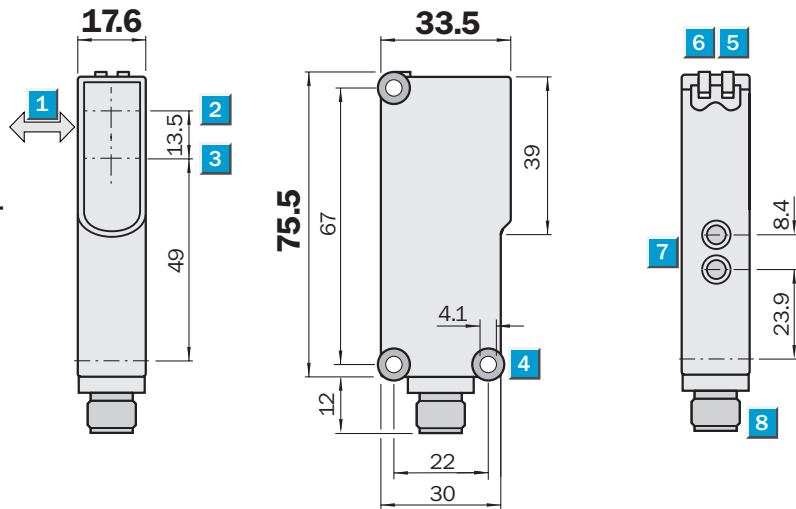
| Type | Order no. |
|------------|-----------|
| WT18-3P130 | 1025895 |
| WT18-3P430 | 1025896 |
| WT18-3N130 | 1025897 |
| WT18-3N430 | 1025898 |

 **Scanning distance**
50 ... 600 mm

Photoelectric proximity switches

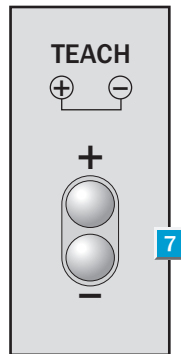
- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable by a Teach-in process using double Teach buttons
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature -40 °C ... +60 °C

Dimensional drawing



Adjustments possible

All types

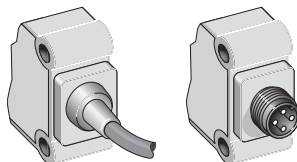


- 1 Standard direction of the material being scanned
- 2 Optical axis sender
- 3 Optical axis receiver
- 4 Mounting hole Ø 4.1 mm
- 5 LED indicator, yellow; status of received light beam
- 6 LED indicator, green; power on
- 7 Scanning distance adjustment, double Teach button
- 8 Plug M12, 4-pin or 2 m cable

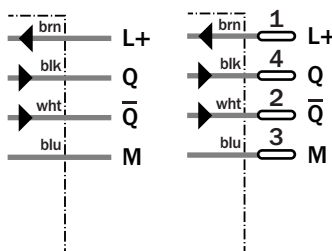


Connection types

| | |
|------------|------------|
| WT18-3P131 | WT18-3P431 |
| | WT18-3N431 |



| | |
|--------------------------|------------|
| 4 x 0.25 mm ² | 4-pin, M12 |
|--------------------------|------------|



See chapter Accessories

| |
|------------------|
| Connectors |
| Mounting systems |

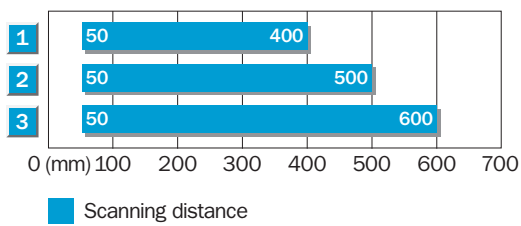
| Technical data | | WT18-3 | P131 | P431 | N431 | | | | | | | |
|---|------------------------------------|--------|------|------|------|--|--|--|--|--|--|--|
| Scanning distance, adjustable ¹⁾ | 50 ... 600 mm, 90 % remission | | | | | | | | | | | |
| Visible range ¹⁾ | 10 ... 600 mm | | | | | | | | | | | |
| Adjustment | Teach-in, via double Teach buttons | | | | | | | | | | | |
| Fine adjustment | Manuel via „+“ and „-“ button | | | | | | | | | | | |
| Light source ²⁾ , light type | LED, visible red light | | | | | | | | | | | |
| Light spot diameter | 15 mm at 300 mm | | | | | | | | | | | |
| Supply voltage V _S | 10 ... 30 V DC ³⁾ | | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{PP} | | | | | | | | | | | |
| Current consumption ⁵⁾ | < 40 mA | | | | | | | | | | | |
| Output current I _A max. | < 100 mA | | | | | | | | | | | |
| Switching outputs | PNP, antivalent | | | | | | | | | | | |
| | NPN, antivalent | | | | | | | | | | | |
| Response time ⁶⁾ | < 700 μs | | | | | | | | | | | |
| Switching frequency max. ⁷⁾ | 700/s | | | | | | | | | | | |
| Connection types | Cable ⁸⁾ , 2 m, 4 wire | | | | | | | | | | | |
| | M12 plug, 4-pin | | | | | | | | | | | |
| VDE protection class cable ⁹⁾ | <input type="checkbox"/> | | | | | | | | | | | |
| Circuit protection ¹⁰⁾ | A, B, C | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C | | | | | | | | | | | |
| | Storage -40 °C ... +75 °C | | | | | | | | | | | |
| Weight | With cable, 2 m, approx. 120 g | | | | | | | | | | | |
| | With M12 plug, approx. 40 g | | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | | |

- 1) Object with 90 % remission (according to standard white DIN 5033)
- 2) Average service life 100,000 h at T_A = +25 °C
- 3) Limit values; Operation in short-circuit protected network max. 8 A
- 4) Must be within V_S tolerances
- 5) Without load
- 6) Signal transit time with resistive load
- 7) With light/dark ratio 1:1
- 8) Do not bend below 0 °C
- 9) Reference voltage 50 V DC
- 10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

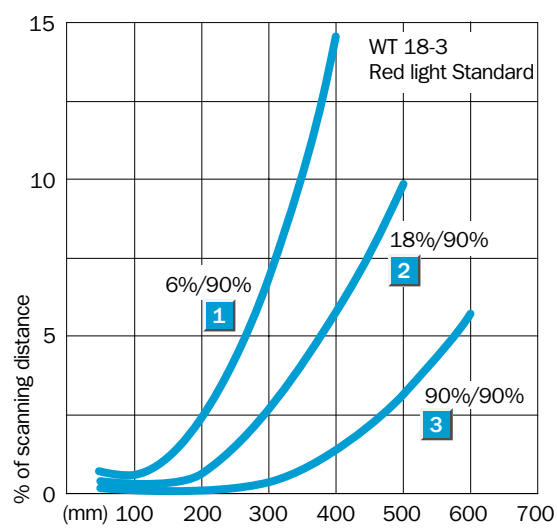
Teach-in procedure via the double Teach buttons

1. Position the object in the path of the beam.
2. Press both buttons simultaneously (**for approx. 2 seconds**) until the yellow LED flashes = object in focus.
In the event of button activation of less than 2 seconds, the Teach command is not effective, therefore providing no protection against further unwanted manipulation.
3. Release buttons; yellow LED illuminates continuously = object is positively detected.
4. Fine adjustments can be made to the scanning distance, when required by the application:
Pressing the „+“ button (**approx. 0.5 sec**) = scanning distance will be increased.
Pressing the „-“ button (**approx. 0.5 sec**) = scanning distance will be decreased.
In the event of button activation less than 0.5 sec, no change to the scanning distance is made.
Upon activation of the button, the yellow LED flashes.
5. The Teach-in scanning distance is stored in the memory.

Scanning distance



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



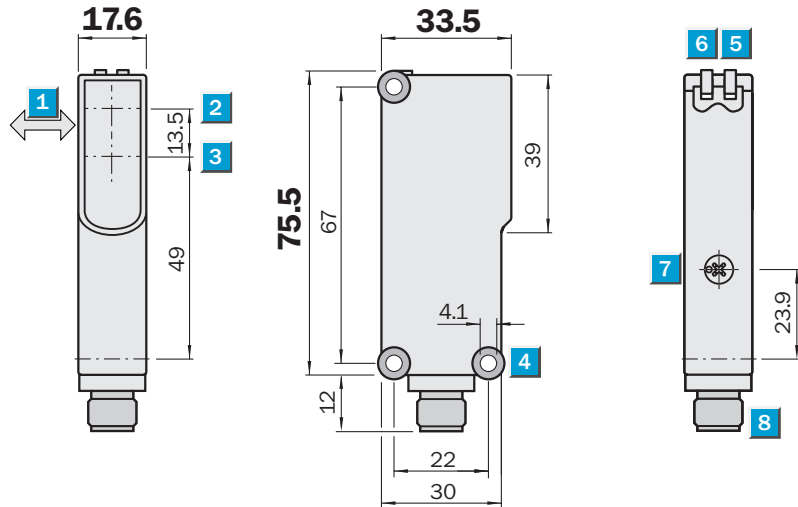
| Order information | |
|-------------------|-----------|
| Type | Order no. |
| WT18-3P131 | 1026034 |
| WT18-3P431 | 1026032 |
| WT18-3N431 | 1026035 |

Scanning distance
50 ... 700 mm

Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable via potentiometer
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature $-40\text{ }^{\circ}\text{C} \dots +60\text{ }^{\circ}\text{C}$

Dimensional drawing



Adjustments possible

All types

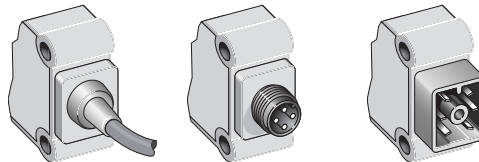


- 1 Standard direction of the material being scanned
- 2 Optical axis sender
- 3 Optical axis receiver
- 4 Mounting hole $\varnothing 4.1\text{ mm}$
- 5 LED indicator, yellow; status of received light beam
- 6 LED indicator, green; power on
- 7 Scanning distance adjustment, Poti 4 turn
- 8 Plug M12, 4-pin or 2 m cable or cubic plug, 6-pin



Connection types

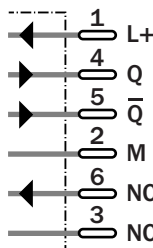
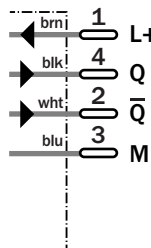
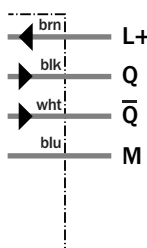
| | | |
|------------|------------|------------|
| WT18-3P110 | WT18-3P410 | WT18-3P610 |
| WT18-3N110 | WT18-3N410 | WT18-3N610 |



4 x 0.25 mm²

4-pin, M12

6-pin



See chapter Accessories

- Connectors
- Mounting systems

| Technical data | | WT18-3 | P110 | P410 | P610 | N110 | N410 | N610 | | | | |
|---|-----------------------------------|--------|------|------|------|------|------|------|--|--|--|--|
| Scanning distance , adjustable ¹⁾ | 50 ... 700 mm, 90 % remission | | | | | | | | | | | |
| Visible range ¹⁾ | 10 ... 700 mm | | | | | | | | | | | |
| Adjustment | Poti, 4 turn | | | | | | | | | | | |
| Light source ²⁾ , light type | LED, infrared light | | | | | | | | | | | |
| Light spot diameter | 20 mm at 400 mm | | | | | | | | | | | |
| Supply voltage V _S | 10 ... 30 V DC ³⁾ | | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{SS} | | | | | | | | | | | |
| Current consumption ⁵⁾ | < 55 mA | | | | | | | | | | | |
| Output current I _A max. | < 100 mA | | | | | | | | | | | |
| Switching outputs | PNP, antivalent | | | | | | | | | | | |
| | NPN, antivalent | | | | | | | | | | | |
| Response time ⁶⁾ | < 700 μs | | | | | | | | | | | |
| Switching frequency max. ⁷⁾ | 700/s | | | | | | | | | | | |
| Connection types | Cable ⁸⁾ , 2 m, 4 wire | | | | | | | | | | | |
| | M12 plug, 4-pin | | | | | | | | | | | |
| | Cubic plug, 6-pin | | | | | | | | | | | |
| VDE protection class cable ⁹⁾ | <input type="checkbox"/> | | | | | | | | | | | |
| Circuit protection ¹⁰⁾ | A, B, C | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | |
| | IP 65 | | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C | | | | | | | | | | | |
| | Storage -40 °C ... +75 °C | | | | | | | | | | | |
| Weight | With cable, 2 m, approx. 120 g | | | | | | | | | | | |
| | With M12 plug, approx. 40 g | | | | | | | | | | | |
| | With cubic plug, approx. 40 g | | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | | |

1) Object with 90 % remission (according to standard white DIN 5033)
 2) Average service life 100,000 h at T_A = +25 °C

3) Limit values; Operation in short-circuit protected network max. 8 A
 4) Must be within V_S tolerances
 5) Without load

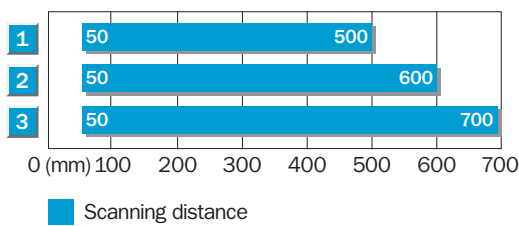
6) Signal transit time with resistive load
 7) With light/dark ratio 1:1
 8) Do not bend below 0 °C
 9) Reference voltage 50 V DC

10) A = V_S connection reverse-polarity protected
 B = Outputs short-circuit protected
 C = Interference pulse suppression

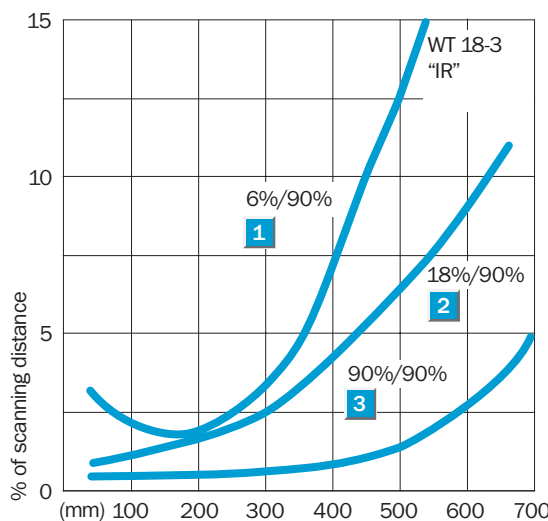
Adjustment via Poti

1. Position the object in the path of the beam.
2. By rotating the potentiometer to the right until the yellow LED illuminates continuously = object is positively detected.
3. If necessary, fine adjustments to the scanning distance can be made to suit the conditions of the application: minimal rotation of the potentiometer to the right = scanning distance will be increased, minimal rotation of the potentiometer to the left = scanning distance will be decreased.

Scanning distance




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



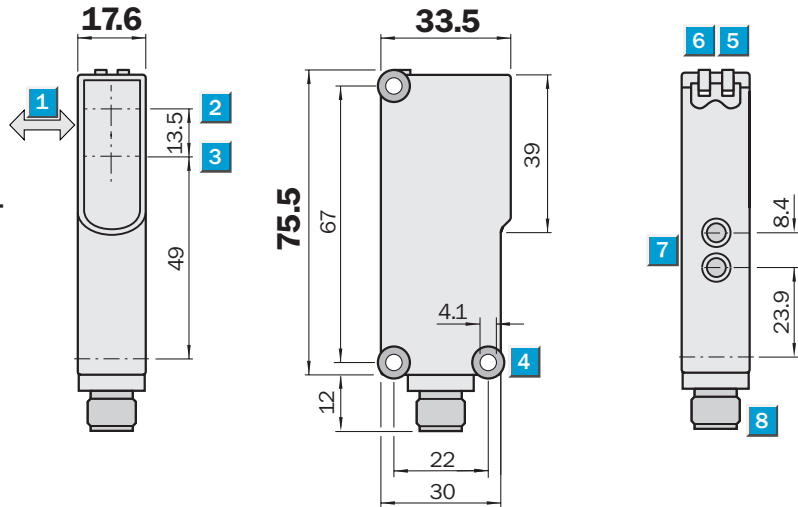
Order information

| Type | Order no. |
|------------|-----------|
| WT18-3P110 | 1025887 |
| WT18-3P410 | 1025889 |
| WT18-3P610 | 1025890 |
| WT18-3N110 | 1025891 |
| WT18-3N410 | 1025893 |
| WT18-3N610 | 1025894 |


Scanning distance
 50 ... 700 mm
 Photoelectric proximity switches

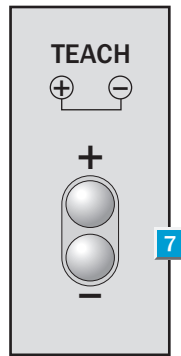
- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable by a Teach-in process using double Teach buttons
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature $-40\text{ }^{\circ}\text{C} \dots +60\text{ }^{\circ}\text{C}$

Dimensional drawing



Adjustments possible

All types



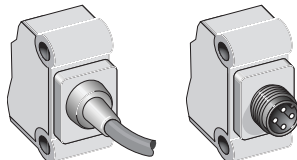
- 1 Standard direction of the material being scanned
- 2 Optical axis sender
- 3 Optical axis receiver
- 4 Mounting hole \varnothing 4.1 mm
- 5 LED indicator, yellow; status of received light beam
- 6 LED indicator, green; power on
- 7 Scanning distance adjustment, double Teach button
- 8 Plug M12, 4-pin or 2 m cable



Connection types

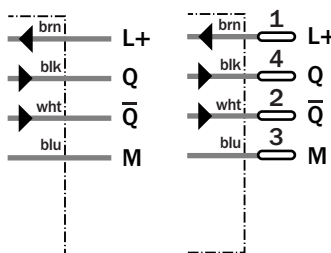
WT18-3P111

WT18-3P411



4 x 0.25 mm²

4-pin, M12



See chapter Accessories

Connectors

Mounting systems

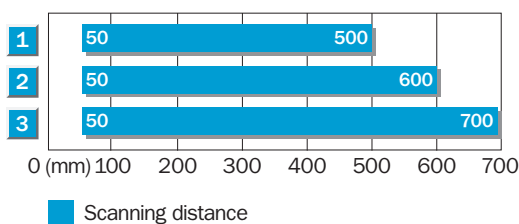
| Technical data | | WT18-3 | P111 | P411 | | | | | | | |
|---|---|--------|------|------|--|--|--|--|--|--|--|
| Scanning distance, adjustable ¹⁾ | 50 ... 700 mm, 90 % remission | | | | | | | | | | |
| Visible range ¹⁾ | 10 ... 700 mm | | | | | | | | | | |
| Adjustment | Teach-in, via double Teach buttons | | | | | | | | | | |
| Fine adjustment | Manuel via „+“ and „-“ button | | | | | | | | | | |
| Light source ²⁾ , light type | LED, infrared light | | | | | | | | | | |
| Light spot diameter | 20 mm at 400 mm | | | | | | | | | | |
| Supply voltage V _S | 10 ... 30 V DC ³⁾ | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{SS} | | | | | | | | | | |
| Current consumption ⁵⁾ | < 55 mA | | | | | | | | | | |
| Output current I _A max. | < 100 mA | | | | | | | | | | |
| Switching outputs | PNP, antivalent NPN, antivalent | | | | | | | | | | |
| Response time ⁶⁾ | < 700 μs | | | | | | | | | | |
| Switching frequency max. ⁷⁾ | 700/s | | | | | | | | | | |
| Connection types | Cable ⁸⁾ , 2 m, 4 wire M12 plug, 4-pin | | | | | | | | | | |
| VDE protection class cable ⁹⁾ | <input type="checkbox"/> | | | | | | | | | | |
| Circuit protection ¹⁰⁾ | A, B, C | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C Storage -40 °C ... +75 °C | | | | | | | | | | |
| Weight | With cable, 2 m, approx. 120 g With M12 plug, approx. 40 g | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | |

1) Object with 90 % remission (according to standard white DIN 5033)
 2) Average service life 100,000 h at T_A = +25 °C
 3) Limit values; Operation in short-circuit protected network max. 8 A
 4) Must be within V_S tolerances
 5) Without load
 6) Signal transit time with resistive load
 7) With light/dark ratio 1:1
 8) Do not bend below 0 °C
 9) Reference voltage 50 V DC
 10) A = V_S connection reverse-polarity protected
 B = Outputs short-circuit protected
 C = Interference pulse suppression

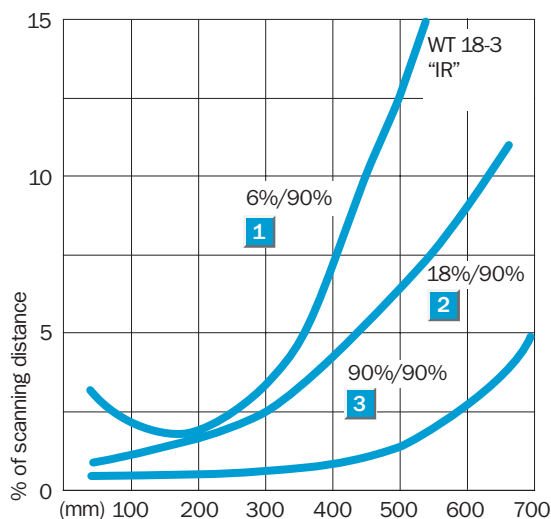
Teach-in procedure via the double Teach buttons

- Position the object in the path of the beam.
- Press both buttons simultaneously (**for approx. 2 seconds**) until the yellow LED flashes = object in focus.
In the event of button activation of less than 2 seconds, the Teach command is not effective, therefore providing no protection against further unwanted manipulation.
- Release buttons; yellow LED illuminates continuously = object is positively detected.
- Fine adjustments can be made to the scanning distance, when required by the application:
 Pressing the „+“ button (**approx. 0.5 sec**) = scanning distance will be increased.
 Pressing the „-“ button (**approx. 0.5 sec**) = scanning distance will be decreased.
 In the event of button activation less than 0.5 sec, no change to the scanning distance is made.
 Upon activation of the button, the yellow LED flashes.
- The Teach-in scanning distance is stored in the memory.


Scanning distance



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

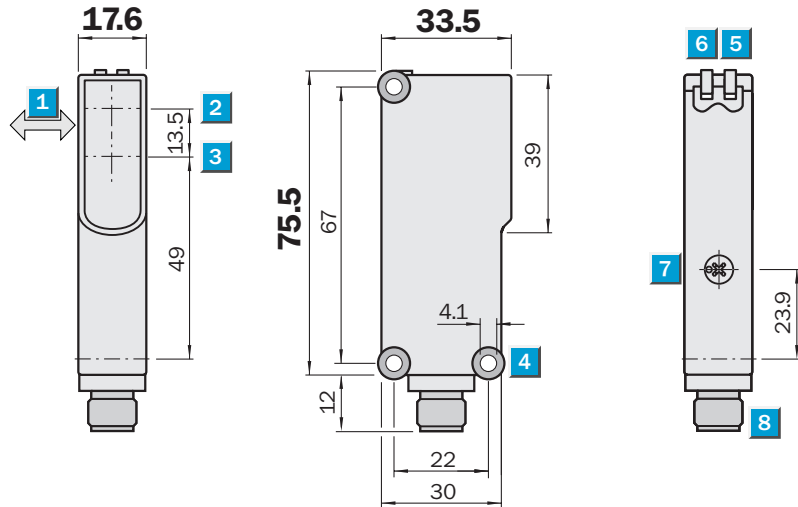


| Order information | |
|-------------------|-----------|
| Type | Order no. |
| WT18-3P111 | 1026033 |
| WT18-3P411 | 1026031 |


Scanning distance
 50 ... 1000 mm
 Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable via potentiometer
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature $-40\text{ }^{\circ}\text{C} \dots +60\text{ }^{\circ}\text{C}$

Dimensional drawing



Adjustments possible

All types



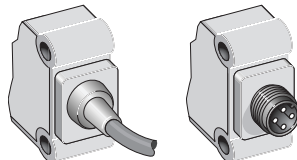
- 1 Standard direction of the material being scanned
- 2 Optical axis sender
- 3 Optical axis receiver
- 4 Mounting hole \varnothing 4.1 mm
- 5 LED indicator, yellow; status of received light beam
- 6 LED indicator, green; power on
- 7 Scanning distance adjustment, Poti 4 turn
- 8 Plug M12, 4-pin or 2 m cable



Connection types

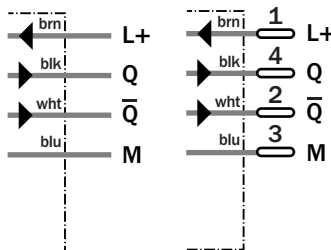
WT18-3P120

WT18-3P420



4 x 0.25 mm²

4-pin, M12



See chapter Accessories

Connectors

Mounting systems

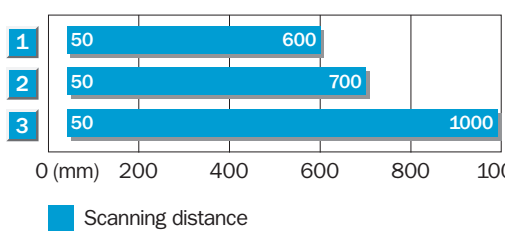
| Technical data | | WT18-3 | P120 | P420 | | | | | | | | |
|---|-----------------------------------|--------|------|------|--|--|--|--|--|--|--|--|
| Scanning distance, adjustable¹⁾ | 50 ... 1000 mm, 90 % remission | | | | | | | | | | | |
| Visible range¹⁾ | 10 ... 1000 mm | | | | | | | | | | | |
| Adjustment | Poti, 4 turn | | | | | | | | | | | |
| Light source²⁾, light type | LED, infrared light | | | | | | | | | | | |
| Light spot diameter | 30 mm at 600 mm | | | | | | | | | | | |
| Supply voltage V_S | 10 ... 30 V DC ³⁾ | | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{SS} | | | | | | | | | | | |
| Current consumption ⁵⁾ | < 55 mA | | | | | | | | | | | |
| Output current I _A max. | < 100 mA | | | | | | | | | | | |
| Switching outputs | PNP, antivalent | | | | | | | | | | | |
| Response time ⁶⁾ | < 700 μs | | | | | | | | | | | |
| Switching frequency max. ⁷⁾ | 700/s | | | | | | | | | | | |
| Connection types | Cable ⁸⁾ , 2 m, 4 wire | | | | | | | | | | | |
| | M12 plug, 4-pin | | | | | | | | | | | |
| VDE protection class cable⁹⁾ | <input type="checkbox"/> | | | | | | | | | | | |
| Circuit protection¹⁰⁾ | A, B, C | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C | | | | | | | | | | | |
| | Storage -40 °C ... +75 °C | | | | | | | | | | | |
| Weight | With cable, 2 m, approx. 120 g | | | | | | | | | | | |
| | With M12 plug, approx. 40 g | | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | | |

- 1) Object with 90 % remission (according to standard white DIN 5033)
- 2) Average service life 100,000 h at T_A = +25 °C
- 3) Limit values; Operation in short-circuit protected network max. 8 A
- 4) Must be within V_S tolerances
- 5) Without load
- 6) Signal transit time with resistive load
- 7) With light/dark ratio 1:1
- 8) Do not bend below 0 °C
- 9) Reference voltage 50 V DC
- 10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

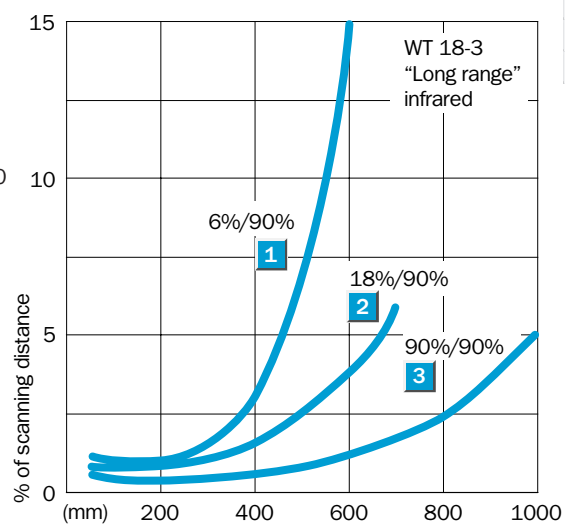
Adjustment via Poti

- Position the object in the path of the beam.
- By rotating the potentiometer to the right until the yellow LED illuminates continuously = object is positively detected.
- If necessary, fine adjustments to the scanning distance can be made to suit the conditions of the application: minimal rotation of the potentiometer to the right = scanning distance will be increased, minimal rotation of the potentiometer to the left = scanning distance will be decreased.


Scanning distance



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

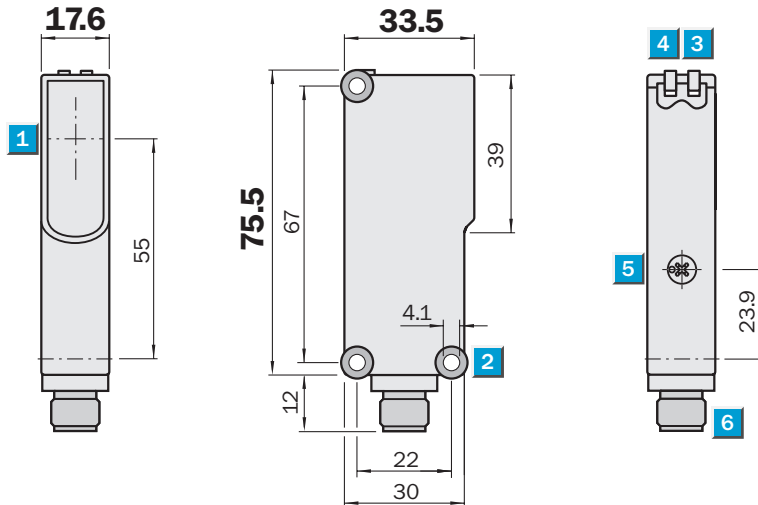


| Order information | |
|-------------------|-----------|
| Type | Order no. |
| WT18-3P120 | 1025904 |
| WT18-3P420 | 1025905 |


Scanning range
 7 m
 Photoelectric reflex switches

- Autocollimation optics; reliable target detection
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature $-40\text{ }^{\circ}\text{C} \dots +60\text{ }^{\circ}\text{C}$
- Test input for system diagnosis (optional)

Dimensional drawing



Adjustments possible

All types

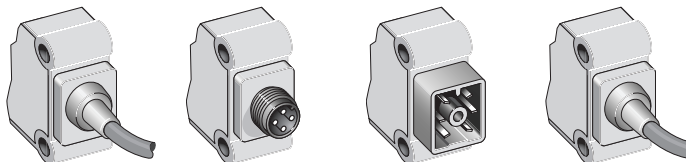


- 1 Middle of optical axis
- 2 Mounting holes $\varnothing 4.1\text{ mm}$
- 3 Status indicator LED, yellow, status of received light beam
- 4 Status indicator LED, green; power on
- 5 Sensitivity control; Poti 270°
- 6 Plug M12, 4-pin or cable 2 m or cubic plug 6 pin



Connection types

| | | | |
|------------|------------|------------|------------|
| WL18-3P130 | WL18-3P430 | WL18-3P630 | WL18-3P730 |
| WL18-3N130 | WL18-3N430 | WL18-3N630 | WL18-3N730 |

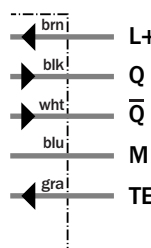
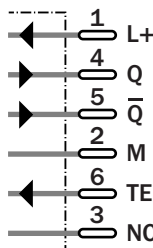
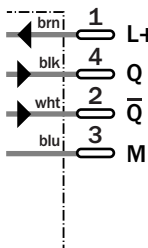
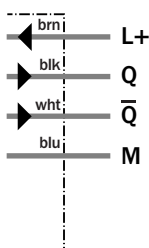


4 x 0.25 mm²

4-pin, M12

6-pin

5 x 0.25 mm²



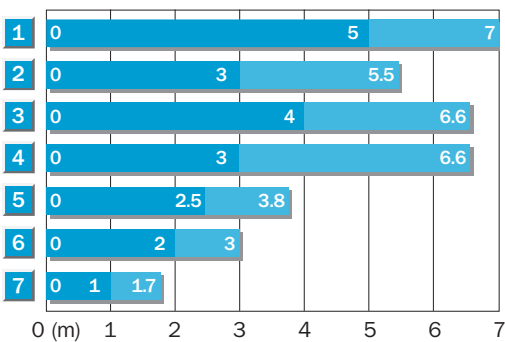
See chapter Accessories

- Connectors
- Reflectors
- Mounting systems

| Technical data | | WL18-3 | P130 | P430 | P630 | P730 | N130 | N430 | N630 | N730 | | |
|---|-----------------------------------|--------|------|------|------|------|------|------|------|------|--|--|
| Scanning range , max. typ./on reflector | 7 m/PL80A | | | | | | | | | | | |
| Sensitivity | Adjustable, via Poti, 270° | | | | | | | | | | | |
| Light source ¹⁾, light type | LED, visible red light | | | | | | | | | | | |
| Angle of dispersion | 4° | | | | | | | | | | | |
| Light spot diameter | 40 mm at 2 m | | | | | | | | | | | |
| Polarising filter | Yes | | | | | | | | | | | |
| Supply voltage V_S | 10 ... 30 V DC ²⁾ | | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{pp} | | | | | | | | | | | |
| Current consumption ⁵⁾ | < 40 mA | | | | | | | | | | | |
| Output current I_A max. | < 100 mA | | | | | | | | | | | |
| Switching outputs | PNP, antivalent | | | | | | | | | | | |
| | NPN, antivalent | | | | | | | | | | | |
| Response time ⁵⁾ | 500 µs | | | | | | | | | | | |
| Switching frequency max. ⁶⁾ | 1000/s | | | | | | | | | | | |
| Test input »TE« | PNP: Sender off; TE to 0 V | | | | | | | | | | | |
| | NPN: Sender off; TE to V+ | | | | | | | | | | | |
| Connection types | Cable ⁷⁾ , 2 m, 4 wire | | | | | | | | | | | |
| | M12 plug, 4-pin | | | | | | | | | | | |
| | Cubic plug, 6-pin | | | | | | | | | | | |
| | Cable, 2 m, 5 wire | | | | | | | | | | | |
| VDE protection class cable ⁸⁾ | <input type="checkbox"/> | | | | | | | | | | | |
| Circuit protection ⁹⁾ | A, B, C | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | |
| | IP 65 | | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C | | | | | | | | | | | |
| | Storage -40 °C ... +75 °C | | | | | | | | | | | |
| Weight | With cable, 2 m, approx. 120 g | | | | | | | | | | | |
| | With M12 plug, approx. 40 g | | | | | | | | | | | |
| | With cubic plug, ca. 40 g | | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | | |

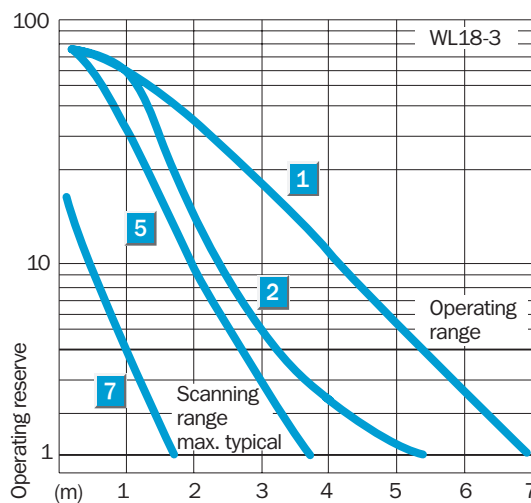
1) Average service life 100,000 h at $T_A = +25 °C$
 2) Limit values; Operation in short-circuit protected network max. 8 A
 3) Must be within V_S tolerances
 4) Without load
 5) Signal transit time with resistive load
 6) With light/dark ratio 1:1
 7) Do not bend below 0 °C
 8) Reference voltage 50 V DC
 9) A = V_S connection reverse-polarity protected
 B = Outputs short-circuit protected
 C = Interference pulse suppression

Scanning range



■ Operating range ■ Scanning range, max. typical

| Reflector type | Operating range |
|---------------------------------|-----------------|
| 1 PL 80 A | 0 ... 5.0 m |
| 2 C 110 | 0 ... 3.0 m |
| 3 PL 50 A | 0 ... 4.0 m |
| 4 PL 40 A | 0 ... 3.0 m |
| 5 PL 30 A | 0 ... 2.5 m |
| 6 PL 20 A | 0 ... 2.0 m |
| 7 Reflective tape Diamond Grade | 0 ... 1.0 m |



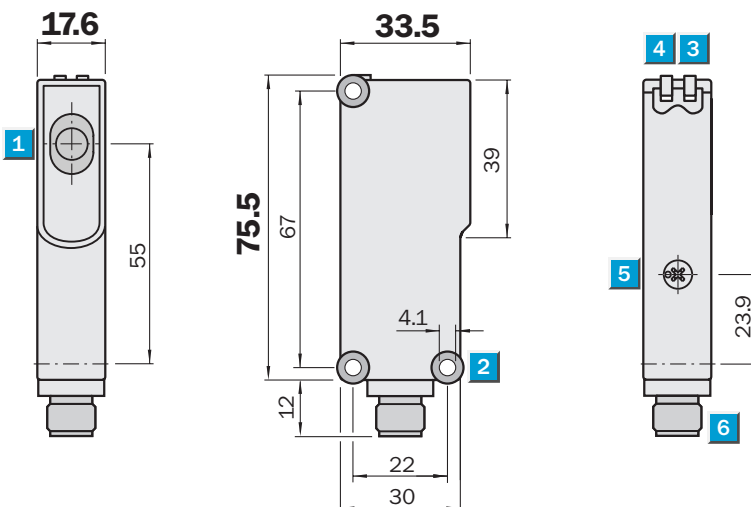
Order information

| Type | Order no. |
|------------|-----------|
| WL18-3P130 | 1025909 |
| WL18-3P430 | 1025911 |
| WL18-3P630 | 1025912 |
| WL18-3P730 | 1026029 |
| WL18-3N130 | 1025913 |
| WL18-3N430 | 1025915 |
| WL18-3N630 | 1025916 |
| WL18-3N730 | 1026030 |

| | |
|-------------------------------|------------------------------|
| | Scanning range 7 m |
| Photoelectric reflex switches | |

- Autocollimation optics; reliable target detection
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature $-40\text{ °C} \dots +60\text{ °C}$
- Test input for system diagnosis (optional)

Dimensional drawing



Adjustments possible

All types



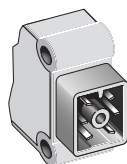
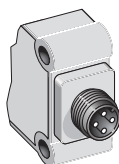
- 1 Middle of optical axis
- 2 Mounting holes $\varnothing 4.1\text{ mm}$
- 3 Status indicator LED, yellow, status of received light beam
- 4 Status indicator LED, green; power on
- 5 Sensitivity control; Poti 270°
- 6 Plug M12, 4-pin or cubic plug 6-pin



Connection types

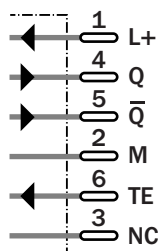
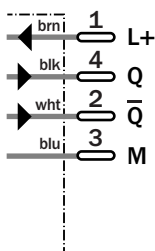
WL18-3P480

WL18-3P680



4-pin, M12

6-pin



See chapter Accessories

Connectors

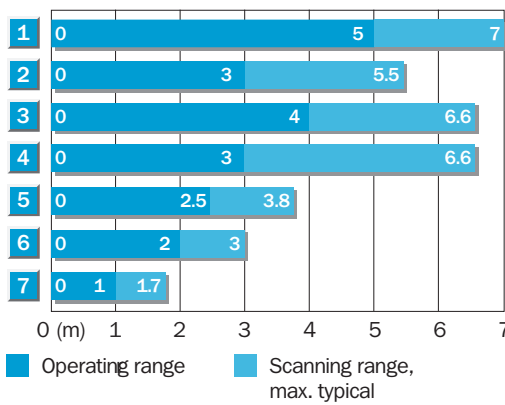
Reflectors

Mounting systems

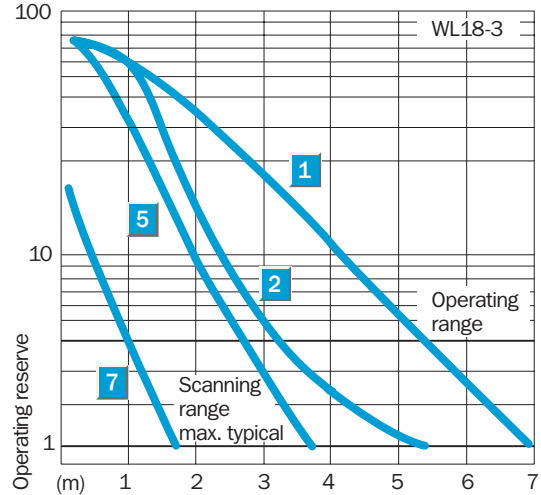
| Technical data | | WL18-3 | P480 | P680 | | | | | | | | |
|---|------------------------------|--------|------|------|--|--|--|--|--|--|--|--|
| Scanning range , max. typ./on reflector | 7 m/PL80A | | | | | | | | | | | |
| Sensitivity | Adjustable, via Poti, 270° | | | | | | | | | | | |
| Light source ¹⁾, light type | LED, visible red light | | | | | | | | | | | |
| Angle of dispersion | 1,8° | | | | | | | | | | | |
| Light spot diameter | 40 mm at 2 m | | | | | | | | | | | |
| Polarising filter | No | | | | | | | | | | | |
| Supply voltage V_S | 10 ... 30 V DC ²⁾ | | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{pp} | | | | | | | | | | | |
| Current consumption ⁵⁾ | < 40 mA | | | | | | | | | | | |
| Output current I_A max. | < 100 mA | | | | | | | | | | | |
| Switching outputs | PNP, antivalent | | | | | | | | | | | |
| Response time ⁵⁾ | 500 µs | | | | | | | | | | | |
| Switching frequency max. ⁶⁾ | 1000/s | | | | | | | | | | | |
| Test input »TE« | PNP: Sender off; TE to 0 V | | | | | | | | | | | |
| Connection types | M12 plug, 4-pin | | | | | | | | | | | |
| | Cubic plug, 6-pin | | | | | | | | | | | |
| VDE protection class cable ⁷⁾ | <input type="checkbox"/> | | | | | | | | | | | |
| Circuit protection ⁸⁾ | A, B, C | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | |
| | IP 65 | | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C | | | | | | | | | | | |
| | Storage -40 °C ... +75 °C | | | | | | | | | | | |
| Weight | With M12 plug, approx. 40 g | | | | | | | | | | | |
| | With cubic plug, ca. 40 g | | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | | |

- 1) Average service life 100,000 h at $T_A = +25 °C$
- 2) Limit values; Operation in short-circuit protected network max. 8 A
- 3) Must be within V_S tolerances
- 4) Without load
- 5) Signal transit time with resistive load
- 6) With light/dark ratio 1:1
- 7) Do not bend below 0 °C
- 8) Reference voltage 50 V DC
- 9) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

Scanning range



| Reflector type | Operating range |
|---------------------------------|-----------------|
| 1 PL 80 A | 0 ... 5.0 m |
| 2 C 110 | 0 ... 3.0 m |
| 3 PL 50 A | 0 ... 4.0 m |
| 4 PL 40 A | 0 ... 3.0 m |
| 5 PL 30 A | 0 ... 2.5 m |
| 6 PL 20 A | 0 ... 2.0 m |
| 7 Reflective tape Diamond Grade | 0 ... 1.0 m |



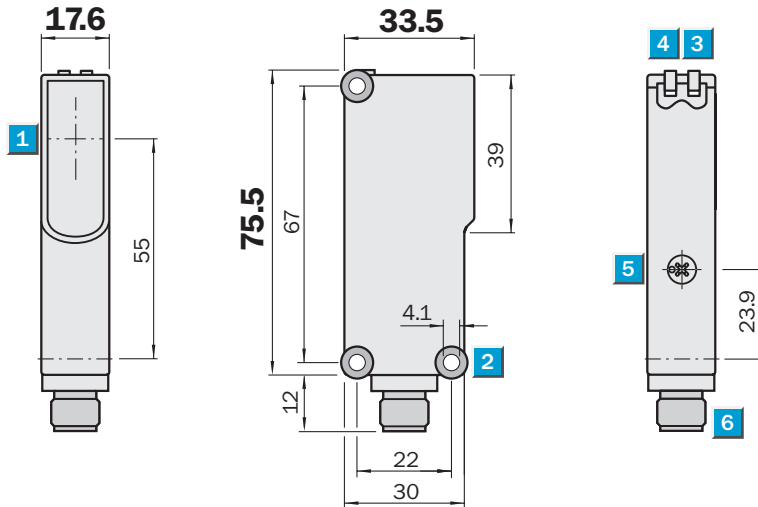
| Order information | |
|-------------------|-----------|
| Type | Order no. |
| WL18-3P480 | 1025917 |
| WL18-3P680 | 1025918 |

Scanning range
20 m

Through-beam photoelectric switches

- Insensitive to external light sources (HF lamps)
- Permissible ambient operating temperature -40 °C ... +60 °C
- Test input; for device diagnosis
- Rugged plastic housing

Dimensional drawing



Adjustments possible

All types



- 1 Middle of optical axis
- 2 Mounting holes Ø 4.1 mm
- 3 Status indicator LED, yellow, status of received light beam
- 4 Status indicator LED, green; power on
- 5 Sensitivity control; Potentiometer 270° on WE
- 6 Plug M12, 4-pin or cable 2 m or cubic plug 6-pin



Connection types

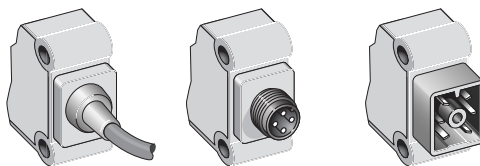
WS/WE18-3P130

WS/WE18-3P430

WS/WE18-3P630

WS/WE18-3N130

WS/WE18-3N630

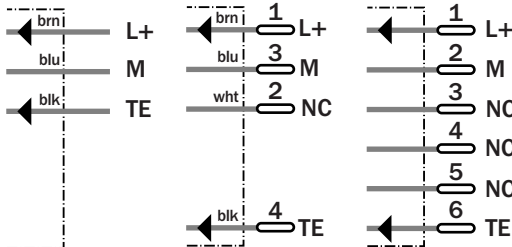


3 x 0.25 mm²

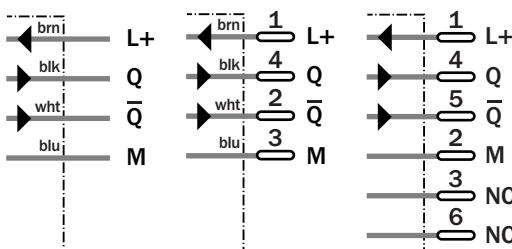
4-pin, M12

6-pin

Sender



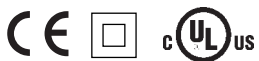
Receiver



See chapter Accessories

Connectors

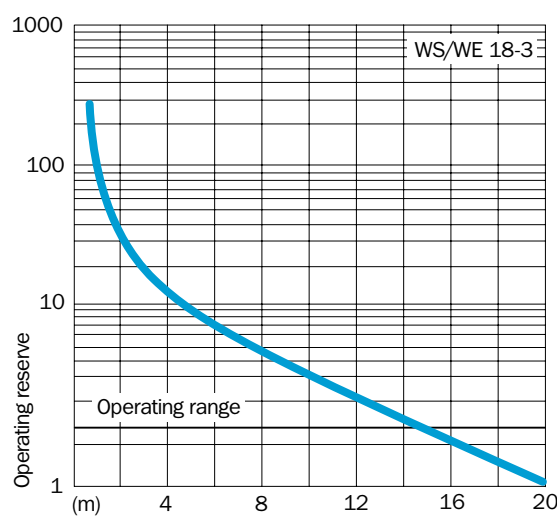
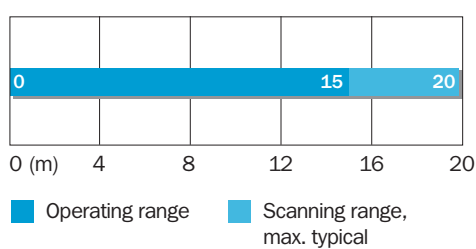
Mounting systems



| Technical data | | WS/WE18-3 | P130 | P430 | P630 | N130 | N630 | | | | | | |
|---|--|-----------|------|------|------|------|------|--|--|--|--|--|--|
| Scanning range , max. typ. | 0 ... 20 m | | | | | | | | | | | | |
| Sensitivity | Adjustable, via Poti, 270° | | | | | | | | | | | | |
| Light source ¹⁾ , light type | LED, visible red light | | | | | | | | | | | | |
| Light spot diameter | 450 mm at 15 m | | | | | | | | | | | | |
| Angle of dispersion | Approx. 1,5° | | | | | | | | | | | | |
| Angle of reception | Approx. 2° | | | | | | | | | | | | |
| Supply voltage V _S | 10 ... 30 V DC ²⁾ | | | | | | | | | | | | |
| Residual ripple ⁴⁾ | < 5 V _{pp} | | | | | | | | | | | | |
| Current consumption ⁴⁾ | Sender < 45 mA Receiver < 35 mA | | | | | | | | | | | | |
| Output current I _A max. | < 100 mA | | | | | | | | | | | | |
| Switching outputs | PNP, antivalent NPN, antivalent | | | | | | | | | | | | |
| Response time ⁵⁾ | 500 μs | | | | | | | | | | | | |
| Switching frequency max. ⁶⁾ | 1000/s | | | | | | | | | | | | |
| Test input »TE« Sender off | TE to 0 V (WS) | | | | | | | | | | | | |
| Connection types | Cable ⁷⁾ , 2 m, 4 wire M12 plug, 4-pin Cubic plug, 6-pin | | | | | | | | | | | | |
| VDE protection class cable ⁸⁾ | <input type="checkbox"/> | | | | | | | | | | | | |
| Circuit protection ⁹⁾ | A, B, C | | | | | | | | | | | | |
| Enclosure rating | IP 67 IP 65 | | | | | | | | | | | | |
| Ambient temperature | Operation -40 °C ... +60 °C Storage -40 °C ... +75 °C | | | | | | | | | | | | |
| Weight | With cable, 2 m, approx. 120 g With M12 plug, approx. 40 g With cubic plug, ca. 40 g | | | | | | | | | | | | |
| Housing material | ABS | | | | | | | | | | | | |

1) Average service life 100,000 h at T_A = +25 °C
 2) Limit values; Operation in short-circuit protected network max. 8 A
 3) Must be within V_S tolerances
 4) Without load
 5) Signal transit time with resistive load
 6) With light/dark ratio 1:1
 7) Do not bend below 0 °C
 8) Reference voltage 50 V DC
 9) A = V_S connection reverse-polarity protected
 B = Outputs short-circuit protected
 C = Interference pulse suppression

Scanning range and operating reserve



| Order information | |
|-------------------|-----------|
| Type | Order no. |
| WS/WE18-3P130 | 1025922 |
| WS/WE18-3P430 | 1025923 |
| WS/WE18-3P630 | 1025924 |
| WS/WE18-3N130 | 1025925 |
| WS/WE18-3N630 | 1025926 |