

# W 34: Sensor technology that does justice to demanding requirements

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



Due to their easy operation, the devices are quickly ready to operate. The screw connections and device plugs, which are rotatable through 90°, provide optimum cable entry in any mounting position. Moreover, the W 34 series is compatible with the W 36 series from a mounting viewpoint. All W34s are available either as a DC or DC/AC option.

#### Overview of W 34:

Very robust housing with very good resistance to chemicals as well as IP 69K.

Very long ranges and high precision, long scanning range.

High insensitivity to ambient light increases the reliability.

User-friendly connection concept offers fast commissioning.

Useful features reduce the number of options and stockholding.

#### Main industries:

- Plant construction (glass production, ceramics, construction),
- Timber industry,
- Lifting and transport technology,
- Chemical industry,
- Door and gate and access control.

Long ranges, fast and easy assembly and independence from the available type of voltage supply are the highlights of the W 34 series of photoelectric switches.

The further prominent features are precise background suppression and insensitivity to ambient light.

The robust plastic housing can even be used in a temperature range of 40°C ... +60°C.

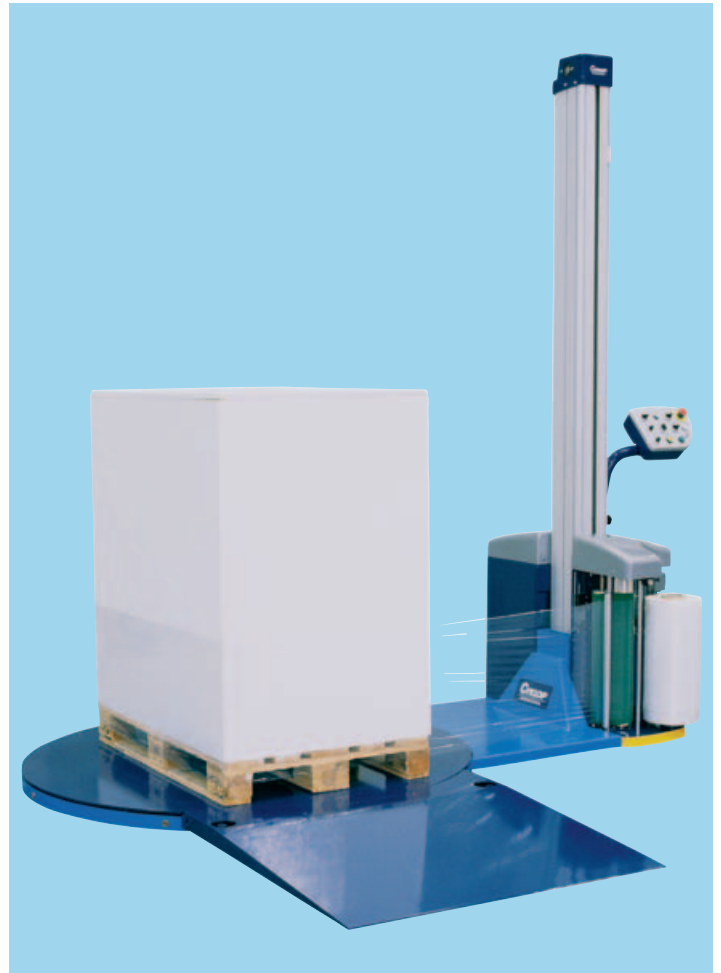
Useful features increase the flexibility and reduce the number of options and stockholding, e.g. selectable light-/dark-switching, NPN/PNP switching.

Alarm output, test input and time delays extend the range of applications.



◀ The WT34 photoelectric proximity switch stands out for its large scanning distance with regard to checking whether second or backward storage bays are occupied.

▼ The WL34 photoelectric reflex switch is impressive with its long range for overhang control on a conveyor system.



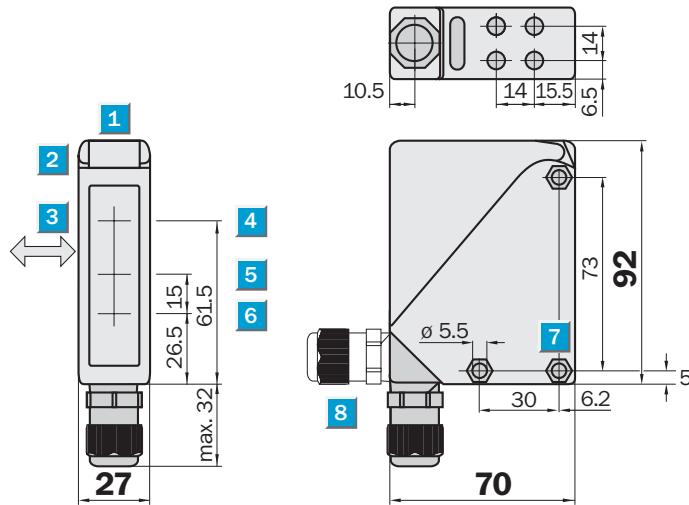
◀ The WT34 photoelectric proximity switch detects the forklift truck and thus stops incoming pallets during loading and unloading at the pallet dispatch station.

▲ Cyklop International uses the WT34 photoelectric proximity switch for setting height detection for standard right-hand wrappers.

**Scanning distance**  
**100 to 1200 mm**  
 Photoelectric proximity switch

- Sturdy plastic housing
- Visible red light
- Background suppression, can be set very precisely
- M16 screw fixing or equipment plug rotatable by 90°
- Test input, time delays and contamination signaling output

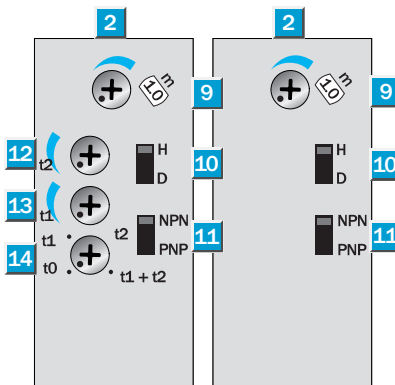
**Dimensional drawing**



**Adjustments possible**

|             |             |
|-------------|-------------|
| WT 34-V 250 | WT 34-V 240 |
| WT 34-B 450 | WT 34-B 440 |
|             | WT 34-V 540 |

- 1** Alignment sight
- 2** LED signal strength indicator
- 3** Standard direction of material being scanned
- 4** Middle of optic axis, sender
- 5** Middle of optic axis, receiver at close range
- 6** Middle of optic axis, receiver at long range
- 7** Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- 8** M16 screw fixing or plug rotatable by 90°
- 9** Scanning distance adjuster
- 10** Light/dark selector
- 11** NPN/PNP selector
- 12** Time control  $t_2$  = OFF-delay
- 13** Time control  $t_1$  = ON-delay
- 14** Time delay selector switch



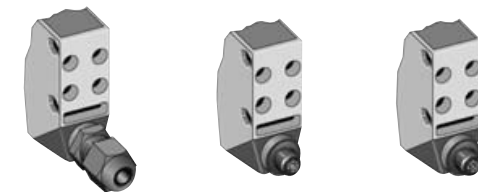
**Connection type**

|             |             |             |
|-------------|-------------|-------------|
| WT 34-V 240 | WT 34-B 440 | WT 34-V 540 |
| WT 34-V 250 | WT 34-B 450 |             |



**See chapter Accessories**

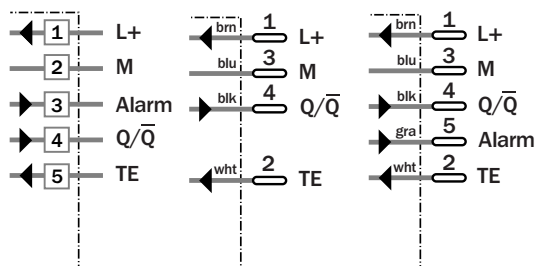
|                       |
|-----------------------|
| Cables and connectors |
| Mounting systems      |
| Special accessories   |



M16, terminals

4-pin, M12

5-pin, M12



| Technical data                                |                             | WT 34- | V 240 | V 250 | B 440 | B 450 | V 540 |  |  |  |  |  |
|---|-----------------------------|--------|-------|-------|-------|-------|-------|--|--|--|--|--|
| <b>Scanning distance</b>                      | 100 to 1200 mm, adjustable  |        |       |       |       |       |       |  |  |  |  |  |
| <b>Light source <sup>1)</sup>, light type</b> | LED; red light              |        |       |       |       |       |       |  |  |  |  |  |
| Light spot diameter                           | Approx. 40 mm at 1200 mm    |        |       |       |       |       |       |  |  |  |  |  |
| <b>Supply voltage <math>V_S</math></b>        | 10 to 30 V DC <sup>2)</sup> |        |       |       |       |       |       |  |  |  |  |  |
| Residual ripple <sup>3)</sup>                 | < 5 $V_{PP}$                |        |       |       |       |       |       |  |  |  |  |  |
| Current consumption <sup>4)</sup>             | ≤ 50 mA                     |        |       |       |       |       |       |  |  |  |  |  |
| <b>Switching outputs</b>                      | PNP or NPN, Q or $\bar{Q}$  |        |       |       |       |       |       |  |  |  |  |  |
| Output current $I_A$ max.                     | 100 mA                      |        |       |       |       |       |       |  |  |  |  |  |
| Response time <sup>5)</sup>                   | ≤ 500 $\mu$ s               |        |       |       |       |       |       |  |  |  |  |  |
| Max. switching frequency <sup>6)</sup>        | 1000/s                      |        |       |       |       |       |       |  |  |  |  |  |
| VMA contamination signalling output           | Alarm, PNP                  |        |       |       |       |       |       |  |  |  |  |  |
| Time delay                                    | Adjustable, 0.5 to 10 s     |        |       |       |       |       |       |  |  |  |  |  |
| <b>Test input »TE«</b>                        | Sender switched off         |        |       |       |       |       |       |  |  |  |  |  |
| Sender off                                    | PNP or NPN: TE to 0 V       |        |       |       |       |       |       |  |  |  |  |  |
| <b>Connection type</b>                        | M16 screw fixing            |        |       |       |       |       |       |  |  |  |  |  |
|   | Plug                        |        |       |       |       |       |       |  |  |  |  |  |
| <b>VDE protection class <sup>7)</sup></b>     | □                           |        |       |       |       |       |       |  |  |  |  |  |
| <b>Circuit protection <sup>8)</sup></b>       | A, B, C                     |        |       |       |       |       |       |  |  |  |  |  |
| <b>Enclosure rating</b>                       | IP 67                       |        |       |       |       |       |       |  |  |  |  |  |
| <b>Ambient temperature</b>                    | Operation -40 °C to +60 °C  |        |       |       |       |       |       |  |  |  |  |  |
|   | Storage -40 °C to +75 °C    |        |       |       |       |       |       |  |  |  |  |  |
| <b>Weight</b>                                 | Approx. 140 g               |        |       |       |       |       |       |  |  |  |  |  |
| <b>Housing material</b>                       | ABS                         |        |       |       |       |       |       |  |  |  |  |  |

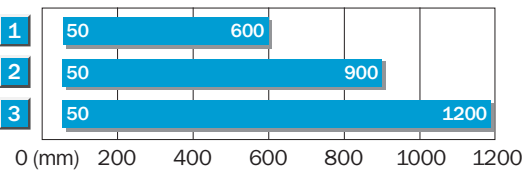
1) Average service life 100,000 h at  $T_A = +25\text{ °C}$   
 2) Limit values

3) May not exceed or fall short of  $V_S$  tolerances  
 4) Without load

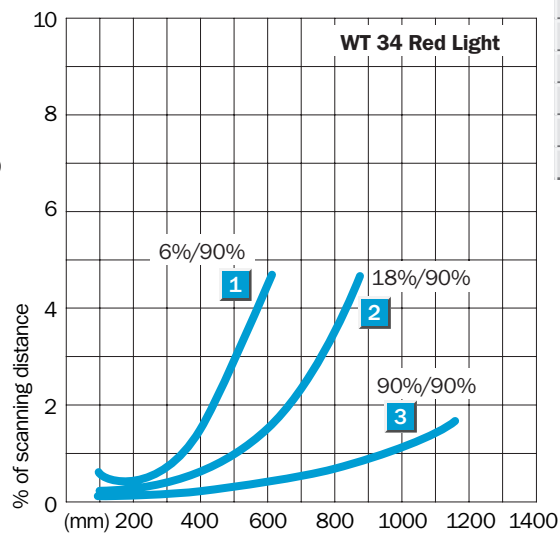
5) Signal flight time with ohmic load  
 6) With light/dark ratio 1:1  
 7) Withstand voltage 50 V DC

8) A =  $V_S$  connections reverse-polarity protected  
 B = Outputs Q and  $\bar{Q}$  short-circuit protected  
 C = Interference pulse suppression

**Scanning distance**




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



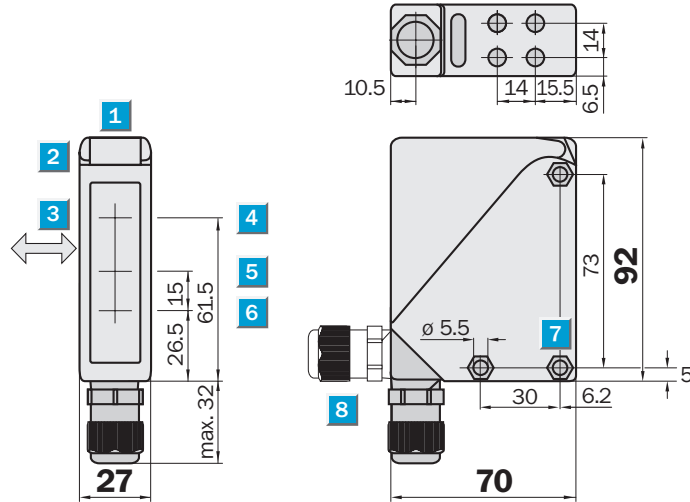
**Order information**

| Type        | Order no. |
|-------------|-----------|
| WT 34-V 240 | 1 019 227 |
| WT 34-V 250 | 1 019 236 |
| WT 34-B 440 | 1 019 237 |
| WT 34-B 450 | 1 019 234 |
| WT 34-V 540 | 1 019 238 |


**Scanning distance**  
**100 to 1200 mm**  
 Photoelectric proximity switch

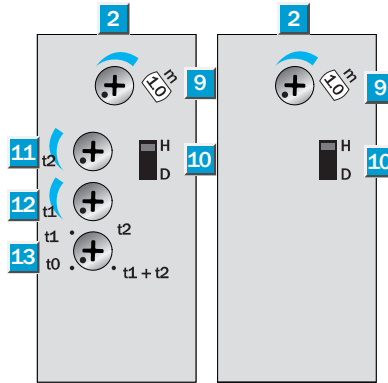
- Universal voltage
- Sturdy plastic housing
- Visible red light
- Background suppression, can be set very precisely
- M16 screw fixing rotatable by 90°
- Time delay

**Dimensional drawing**



**Adjustments possible**

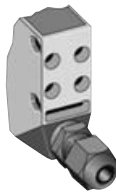
WT 34-R 250      WT 34-R 240



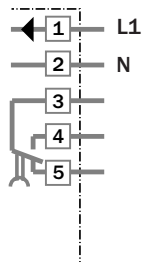
- 1 Alignment sight
- 2 LED signal strength indicator
- 3 Standard direction of material being scanned
- 4 Middle of optic axis, sender
- 5 Middle of optic axis, receiver at close range
- 6 Middle of optic axis, receiver at long range
- 7 Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- 8 M16 screw fixing rotatable by 90°
- 9 Scanning distance adjuster
- 10 Light/dark selector
- 11 Time control  $t_2$  = OFF-delay
- 12 Time control  $t_1$  = ON-delay
- 13 Time delay selector switch

**Connection type**

WT 34-R 240  
WT 34-R 250



M16, terminals



**See chapter Accessories**

- Cables and connectors
- Mounting systems
- Special accessories

| Technical data                                |   | WT 34- | R 240 | R 250 |  |  |  |  |  |  |  |  |
|---|---|--------|-------|-------|--|--|--|--|--|--|--|--|
| <b>Scanning distance</b>                      | 100 to 1200 mm, adjustable                                  |        |       |       |  |  |  |  |  |  |  |  |
| <b>Light source <sup>1)</sup>, light type</b> | LED; red light  |        |       |       |  |  |  |  |  |  |  |  |
| Light spot diameter                           | Approx. 40 mm at 1200 mm                                    |        |       |       |  |  |  |  |  |  |  |  |
| <b>Supply voltage <math>V_S</math></b>        | 12 to 240 V DC <sup>2)</sup> , 24 to 240 V AC <sup>3)</sup> |        |       |       |  |  |  |  |  |  |  |  |
| Power consumption                             | < 2 VA  |        |       |       |  |  |  |  |  |  |  |  |
| <b>Switching output</b>                       | Relay SPDT isolated <sup>4)</sup>                           |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching voltage                        | 250 V AC/120 V DC   |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching current                        | 4 A/250 V AC, 4 A/24 V DC <sup>5)</sup>                     |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching capacity                       | 1000 VA AC/100 W DC   |        |       |       |  |  |  |  |  |  |  |  |
| Response time                                 | ≤ 10 ms   |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching frequency <sup>5)</sup>        | 10/s  |        |       |       |  |  |  |  |  |  |  |  |
| Time delay                                    | Adjustable, 0.5 to 10 s                                     |        |       |       |  |  |  |  |  |  |  |  |
| <b>Connection type</b>                        | M16 screw fixing  |        |       |       |  |  |  |  |  |  |  |  |
| <b>VDE protection class <sup>6)</sup></b>     | □   |        |       |       |  |  |  |  |  |  |  |  |
| <b>Circuit protection <sup>7)</sup></b>       | A, C  |        |       |       |  |  |  |  |  |  |  |  |
| <b>Enclosure rating</b>                       | IP 67   |        |       |       |  |  |  |  |  |  |  |  |
| <b>Ambient temperature</b>                    | Operation -40 °C to +60 °C<br>Storage -40 °C to +75 °C      |        |       |       |  |  |  |  |  |  |  |  |
| <b>Weight</b>                                 | Approx. 140 g   |        |       |       |  |  |  |  |  |  |  |  |
| <b>Housing material</b>                       | ABS   |        |       |       |  |  |  |  |  |  |  |  |

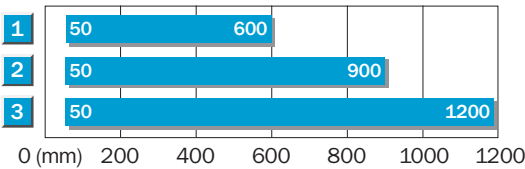
<sup>1)</sup> Average service life 100,000 h at  $T_A = +25\text{ °C}$   
<sup>2)</sup> Limit values  
<sup>3)</sup> ± 10 %

<sup>4)</sup> Provide suitable spark suppression for inductive or capacitive loads  
<sup>5)</sup> Usage category to EN 60947-1, 15 AC, 13 DC

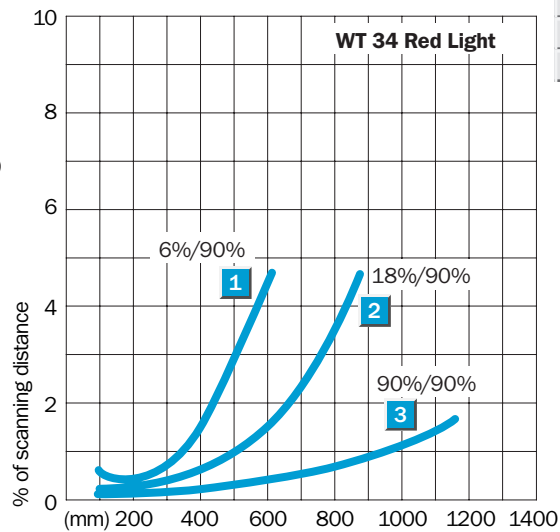
<sup>6)</sup> With light/dark ratio 1:1  
<sup>7)</sup> Withstand voltage 250 V AC/DC

<sup>8)</sup> A =  $V_S$  connections reverse-polarity protected  
 C = Interference pulse suppression

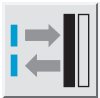
**Scanning distance**



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

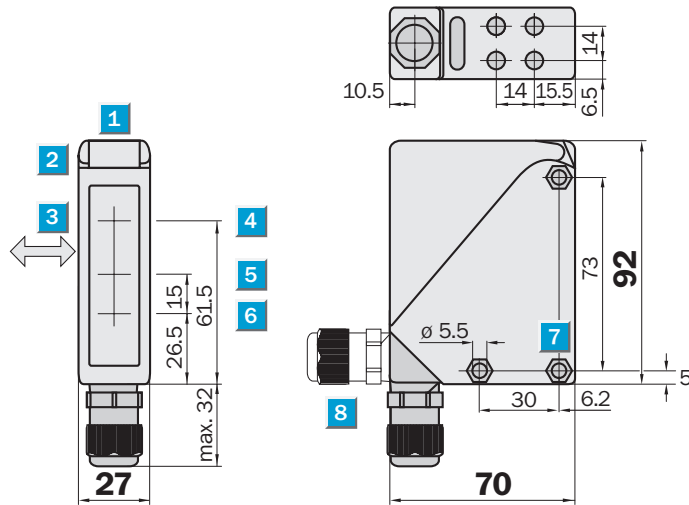


| Order information |           |
|-------------------|-----------|
| Type              | Order no. |
| WT 34-R 240       | 1 019 239 |
| WT 34-R 250       | 1 019 240 |


**Scanning distance**  
**100 to 2500 mm**  
 Photoelectric proximity switch

- Sturdy plastic housing
- Infrared light
- Background suppression, can be set very precisely
- M16 screw fixing or equipment plug rotatable by 90°
- Test input, time delays and contamination signaling output

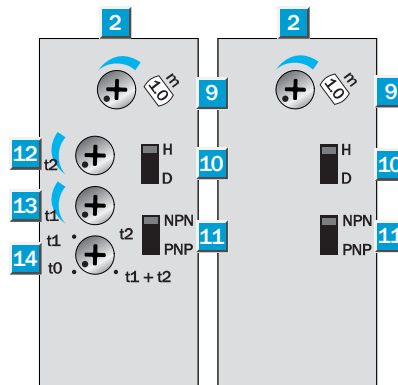
**Dimensional drawing**



**Adjustments possible**

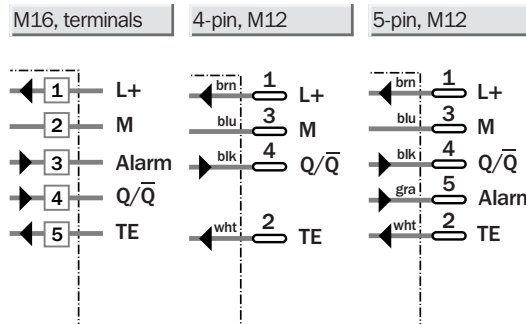
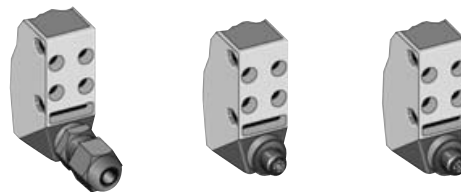
|             |             |
|-------------|-------------|
| WT 34-B 420 | WT 34-B 410 |
| WT 34-V 220 | WT 34-V 210 |
|             | WT 34-V 510 |

- 1 Alignment sight
- 2 LED signal strength indicator
- 3 Standard direction of material being scanned
- 4 Middle of optic axis, sender
- 5 Middle of optic axis, receiver at short range
- 6 Middle of optic axis, receiver at long range
- 7 Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- 8 M16 screw fixing or plug rotatable by 90°
- 9 Sensitivity control
- 10 Light/dark selector
- 11 NPN/PNP selector
- 12 Time control  $t_2$  = OFF-delay
- 13 Time control  $t_1$  = ON-delay
- 14 Time delay selector switch



**Connection type**

|             |             |             |
|-------------|-------------|-------------|
| WT 34-V 210 | WT 34-B 410 | WT 34-V 510 |
| WT 34-V 220 | WT 34-B 420 |             |



**See chapter Accessories**

|                       |
|-----------------------|
| Cables and connectors |
| Mounting systems      |
| Special accessories   |

| Technical data                                |                             | WT 34- | V 210 | V 220 | B 410 | B 420 | V 510 |  |  |  |  |  |
|---|-----------------------------|--------|-------|-------|-------|-------|-------|--|--|--|--|--|
| <b>Scanning distance</b>                      | 100 to 2500 mm, adjustable  |        |       |       |       |       |       |  |  |  |  |  |
| <b>Light source <sup>1)</sup>, light type</b> | LED; infrared               |        |       |       |       |       |       |  |  |  |  |  |
| Light spot diameter                           | Approx. 80 mm at 2500 mm    |        |       |       |       |       |       |  |  |  |  |  |
| <b>Supply voltage <math>V_S</math></b>        | 10 to 30 V DC <sup>2)</sup> |        |       |       |       |       |       |  |  |  |  |  |
| Residual ripple <sup>3)</sup>                 | < 5 V <sub>pp</sub>         |        |       |       |       |       |       |  |  |  |  |  |
| Current consumption <sup>4)</sup>             | ≤ 50 mA                     |        |       |       |       |       |       |  |  |  |  |  |
| <b>Switching outputs</b>                      | PNP or NPN, Q or $\bar{Q}$  |        |       |       |       |       |       |  |  |  |  |  |
| Output current I <sub>A</sub> max.            | 100 mA                      |        |       |       |       |       |       |  |  |  |  |  |
| Response time <sup>5)</sup>                   | ≤ 500 μs                    |        |       |       |       |       |       |  |  |  |  |  |
| Max. switching frequency <sup>6)</sup>        | 1000/s                      |        |       |       |       |       |       |  |  |  |  |  |
| VMA contamination signalling output           | Alarm, PNP                  |        |       |       |       |       |       |  |  |  |  |  |
| Time delay                                    | Adjustable, 0.5 to 10 s     |        |       |       |       |       |       |  |  |  |  |  |
| <b>Test input »TE«</b>                        | Sender switched off         |        |       |       |       |       |       |  |  |  |  |  |
| Sender off                                    | PNP or NPN: TE to 0 V       |        |       |       |       |       |       |  |  |  |  |  |
| <b>Connection type</b>                        | M16 screw fixing            |        |       |       |       |       |       |  |  |  |  |  |
|   | Plug                        |        |       |       |       |       |       |  |  |  |  |  |
| <b>VDE protection class<sup>7)</sup></b>      | □                           |        |       |       |       |       |       |  |  |  |  |  |
| <b>Circuit protection<sup>8)</sup></b>        | A, B, C                     |        |       |       |       |       |       |  |  |  |  |  |
| <b>Enclosure rating</b>                       | IP 67                       |        |       |       |       |       |       |  |  |  |  |  |
| <b>Ambient temperature</b>                    | Operation -40 °C ... +60 °C |        |       |       |       |       |       |  |  |  |  |  |
|   | Storage -40 °C ... +75 °C   |        |       |       |       |       |       |  |  |  |  |  |
| <b>Weight</b>                                 | Approx. 140 g               |        |       |       |       |       |       |  |  |  |  |  |
| <b>Housing material</b>                       | ABS                         |        |       |       |       |       |       |  |  |  |  |  |

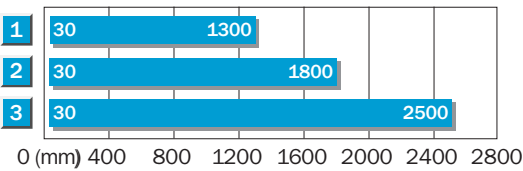
<sup>1)</sup> Average service life 100,000 h at T<sub>A</sub> = +25 °C  
<sup>2)</sup> Limit values

<sup>3)</sup> May not exceed or fall short of V<sub>S</sub> tolerances  
<sup>4)</sup> Without load

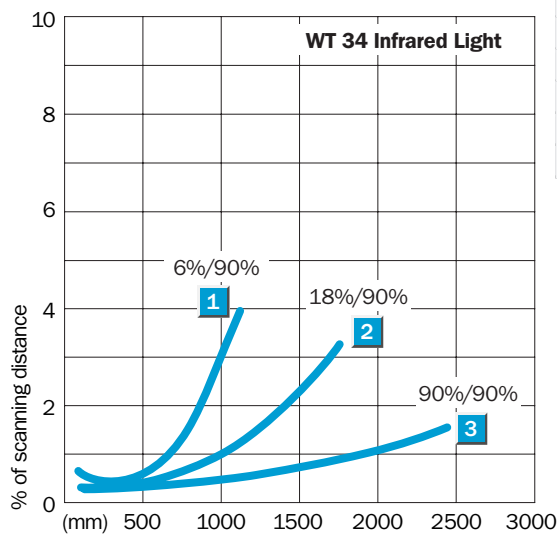
<sup>5)</sup> Signal flight time with ohmic load  
<sup>6)</sup> With light/dark ratio 1:1  
<sup>7)</sup> Withstand voltage 50 V DC

<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected  
 B = Outputs Q and  $\bar{Q}$  short-circuit protected  
 C = Interference pulse suppression

**Scanning distance**



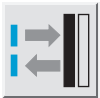
- 1 Scanning distance on black, 6% remission
- 2 Scanning distance on grey, 18% remission
- 3 Scanning distance on white, 90% remission



**Order information**

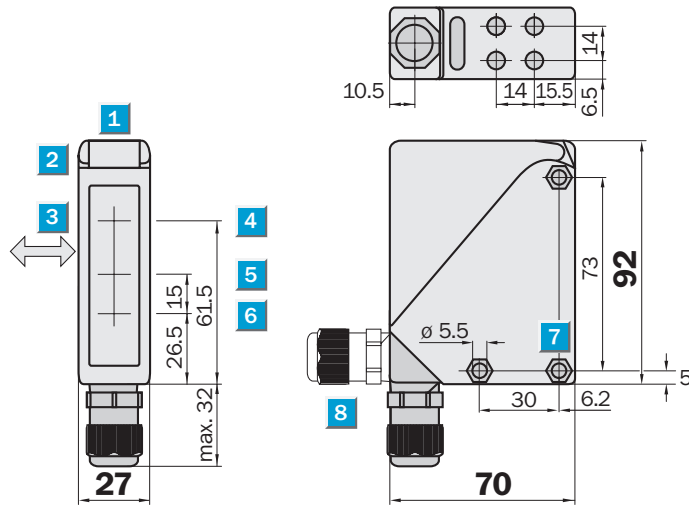
| Type        | Order no. |
|-------------|-----------|
| WT 34-V 210 | 1 019 280 |
| WT 34-V 220 | 1 019 228 |
| WT 34-B 410 | 1 019 229 |
| WT 34-B 420 | 1 019 230 |
| WT 34-V 510 | 1 019 231 |




**Scanning distance**  
**100 to 2500 mm**  
**Photoelectric proximity switch**

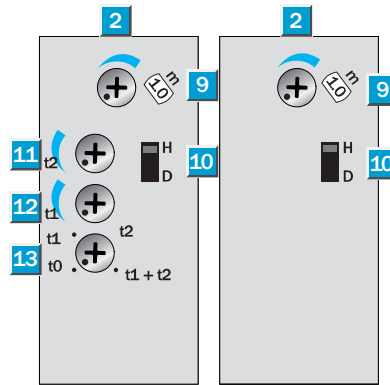
- Universal voltage
- Sturdy plastic housing
- Infrared light
- Background suppression, can be set very precisely
- M16 screw fixing rotatable by 90°
- Time delay

**Dimensional drawing**



**Adjustments possible**

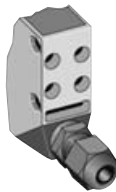
WT 34-R 220      WT 34-R 210



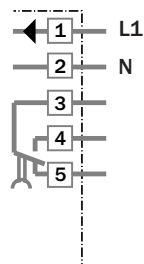
- 1 Alignment sight
- 2 LED signal strength indicator
- 3 Standard direction of the material being scanned
- 4 Middle of optic axis, sender
- 5 Middle of optic axis, receiver at close range
- 6 Middle of optic axis, receiver at long range
- 7 Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- 8 M16 screw fixing rotatable by 90°
- 9 Scanning distance adjuster
- 10 Light/dark selector
- 11 Time control  $t_2$  = OFF-delay
- 12 Time control  $t_1$  = ON-delay
- 13 Time delay selector switch

**Connection type**

WT 34-R 210  
WT 34-R 220



M16, terminals



**See chapter Accessories**

|                       |
|-----------------------|
| Cables and connectors |
| Mounting systems      |
| Special accessories   |

| Technical data                                |   | WT 34- | R 210 | R 220 |  |  |  |  |  |  |  |  |
|---|---|--------|-------|-------|--|--|--|--|--|--|--|--|
| <b>Scanning distance</b>                      | 100 to 2500 mm, adjustable                                  |        |       |       |  |  |  |  |  |  |  |  |
| <b>Light source <sup>1)</sup>, light type</b> | LED; infrared   |        |       |       |  |  |  |  |  |  |  |  |
| Light spot diameter                           | Approx. 80 mm at 2500 mm                                    |        |       |       |  |  |  |  |  |  |  |  |
| <b>Supply voltage V<sub>S</sub></b>           | 12 to 240 V DC <sup>2)</sup> , 24 to 240 V AC <sup>3)</sup> |        |       |       |  |  |  |  |  |  |  |  |
| Power consumption                             | < 2 VA  |        |       |       |  |  |  |  |  |  |  |  |
| <b>Switching output</b>                       | Relay SPDT isolated <sup>4)</sup>                           |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching voltage                        | 250 V AC/120 V DC   |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching current                        | 4 A/250 V AC, 4 A/24 V DC <sup>5)</sup>                     |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching capacity                       | 1000 VA AC/100 W DC   |        |       |       |  |  |  |  |  |  |  |  |
| Response time                                 | ≤ 10 ms   |        |       |       |  |  |  |  |  |  |  |  |
| Max. switching frequency <sup>6)</sup>        | 10/s  |        |       |       |  |  |  |  |  |  |  |  |
| Time delay                                    | Adjustable, 0.5 to 10 s                                     |        |       |       |  |  |  |  |  |  |  |  |
| <b>Connection type</b>                        | M16 screw fixing  |        |       |       |  |  |  |  |  |  |  |  |
| <b>VDE protection class <sup>7)</sup></b>     | □   |        |       |       |  |  |  |  |  |  |  |  |
| <b>Circuit protection <sup>8)</sup></b>       | A, C  |        |       |       |  |  |  |  |  |  |  |  |
| <b>Enclosure rating</b>                       | IP 67   |        |       |       |  |  |  |  |  |  |  |  |
| <b>Ambient temperature</b>                    | Operation -40 °C to +60 °C<br>Storage -40 °C to +75 °C      |        |       |       |  |  |  |  |  |  |  |  |
| <b>Weight</b>                                 | Approx. 140 g   |        |       |       |  |  |  |  |  |  |  |  |
| <b>Housing material</b>                       | ABS   |        |       |       |  |  |  |  |  |  |  |  |

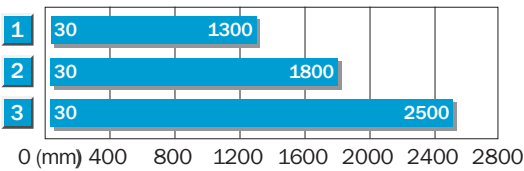
<sup>1)</sup> Average service life 100,000 h at T<sub>A</sub> = +25 °C  
<sup>2)</sup> Limit values

<sup>3)</sup> ± 10 %  
<sup>4)</sup> Provide suitable spark suppression for inductive or capacitive loads

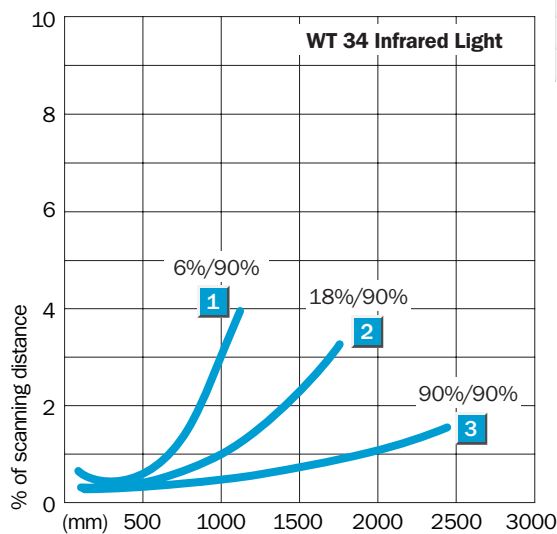
<sup>5)</sup> Usage category to EN 60947-1, 15 AC, 13 DC  
<sup>6)</sup> With light/dark ratio 1:1  
<sup>7)</sup> Withstand voltage 250 V AC/DC

<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected  
C = Interference pulse suppression

**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**

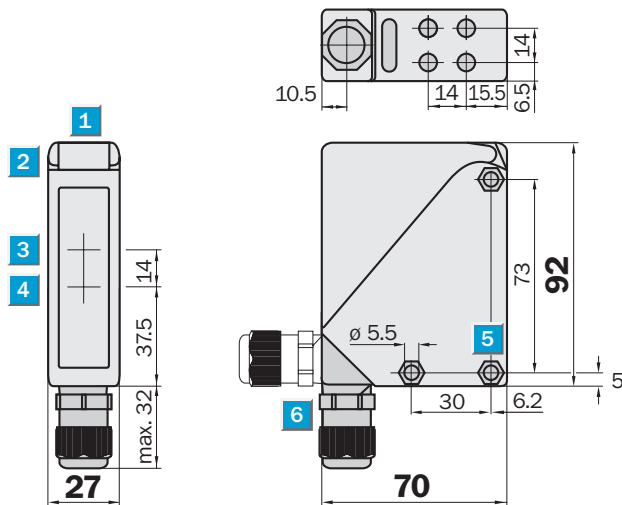
| Type        | Order no. |
|-------------|-----------|
| WT 34-R 210 | 1 019 232 |
| WT 34-R 220 | 1 019 233 |


**Scanning range**  
**22 m**

Photoelectric reflex switch

- Sturdy plastic housing
- High operating reserve in visible red light
- M16 screw fixing or equipment plug rotatable by 90°
- Time delay

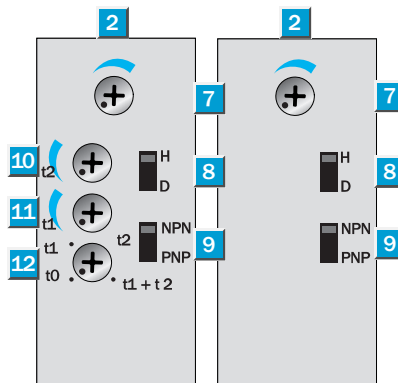
### Dimensional drawing



### Adjustments possible

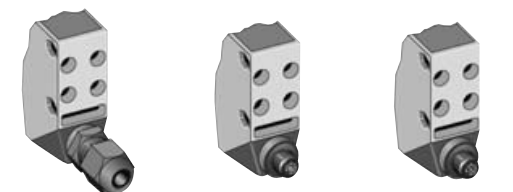
|             |             |
|-------------|-------------|
| WL 34-B 440 | WL 34-B 430 |
| WL 34-V 240 | WL 34-V 230 |
| WL 34-V 540 | WL 34-V 530 |

- 1 Alignment sight
- 2 LED signal strength indicator
- 3 Middle of optic axis, sender
- 4 Middle of optic axis, receiver
- 5 Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- 6 M16 screw fixing or plug rotatable by 90°
- 7 Sensitivity control
- 8 Light/dark selector
- 9 NPN/PNP selector
- 10 Time control  $t_2$  = OFF-delay
- 11 Time control  $t_1$  = ON-delay
- 12 Time delay selector switch



### Connection type

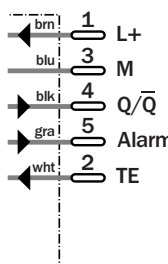
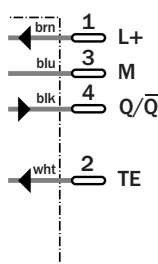
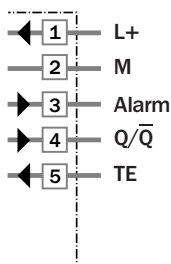
|             |             |             |
|-------------|-------------|-------------|
| WL 34-V 230 | WL 34-B 430 | WL 34-V 530 |
| WL 34-V 240 | WL 34-B 440 | WL 34-V 540 |



M16, terminals

4-pin, M12

5-pin, M12



### See chapter Accessories

- Cables and connectors
- Mounting systems
- Reflectors
- Special accessories

| Technical data                                 | WL 34-   | V 230 | V 240 | B 430 | B 440 | V 530 | V 540 |  |  |  |  |
|--|--|-------|-------|-------|-------|-------|-------|--|--|--|--|
| <b>Scanning range</b> , typ. max./on reflector | 22 m/on PL 80 A  |       |       |       |       |       |       |  |  |  |  |
| Sensitivity                                    | Adjustable   |       |       |       |       |       |       |  |  |  |  |
| <b>Light source<sup>4)</sup>, light type</b>   | LED; red light   |       |       |       |       |       |       |  |  |  |  |
| Light spot diameter                            | Approx. 250 mm at 15 m                                 |       |       |       |       |       |       |  |  |  |  |
| <b>Supply voltage <math>V_S</math></b>         | 10 to 30 V DC <sup>2)</sup>                            |       |       |       |       |       |       |  |  |  |  |
| Residual ripple <sup>3)</sup>                  | < 5 V <sub>pp</sub>                                    |       |       |       |       |       |       |  |  |  |  |
| Current consumption <sup>4)</sup>              | ≤ 50 mA  |       |       |       |       |       |       |  |  |  |  |
| <b>Switching outputs</b>                       | PNP or NPN, Q or $\bar{Q}$                             |       |       |       |       |       |       |  |  |  |  |
| Output current $I_A$ max.                      | 100 mA   |       |       |       |       |       |       |  |  |  |  |
| Response time <sup>5)</sup>                    | ≤ 500 μs   |       |       |       |       |       |       |  |  |  |  |
| Max. switching frequency <sup>6)</sup>         | 1000/s   |       |       |       |       |       |       |  |  |  |  |
| VMA contamination signalling output            | Alarm, PNP   |       |       |       |       |       |       |  |  |  |  |
| Time delay                                     | Adjustable, 0.5 to 10 s                                |       |       |       |       |       |       |  |  |  |  |
| <b>Test input »TE«</b>                         | Sender switched off                                    |       |       |       |       |       |       |  |  |  |  |
| Sender off                                     | PNP or NPN: TE to 0 V                                  |       |       |       |       |       |       |  |  |  |  |
| <b>Connection type</b>                         | M16 screw fixing                                       |       |       |       |       |       |       |  |  |  |  |
|  | Plug   |       |       |       |       |       |       |  |  |  |  |
| <b>VDE protection class<sup>7)</sup></b>       | □  |       |       |       |       |       |       |  |  |  |  |
| <b>Circuit protection<sup>8)</sup></b>         | A, B, C  |       |       |       |       |       |       |  |  |  |  |
| <b>Enclosure rating</b>                        | IP 67  |       |       |       |       |       |       |  |  |  |  |
| <b>Ambient temperature</b>                     | Operation -40 °C to +60 °C<br>Storage -40 °C to +75 °C |       |       |       |       |       |       |  |  |  |  |
| <b>Weight</b>                                  | Approx. 140 g  |       |       |       |       |       |       |  |  |  |  |
| <b>Polarisation filter</b>                     |  |       |       |       |       |       |       |  |  |  |  |
| <b>Housing material</b>                        | ABS  |       |       |       |       |       |       |  |  |  |  |

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

2) Limit values

3) May not exceed or fall short of V<sub>S</sub> tolerances

4) Without load

5) Signal flight time with ohmic load

6) With light/dark ratio 1:1

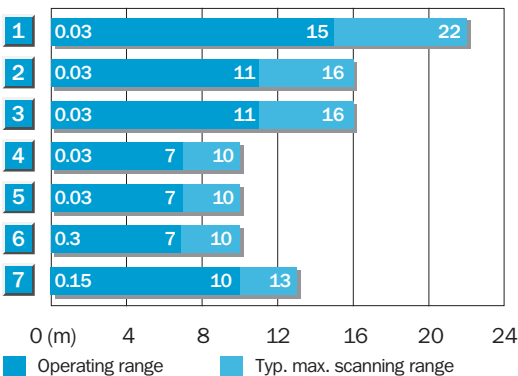
7) Withstand voltage 50 V DC

8) A = V<sub>S</sub> connections reverse-polarity protected

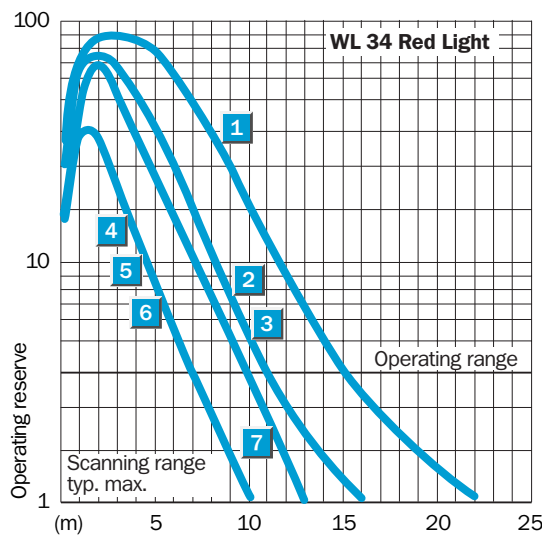
B = Outputs Q and  $\bar{Q}$  short-circuit protected

C = Interference pulse suppression

**Scanning range and operating reserve**




| Reflector type                  | Operating range |
|---------------------------------|-----------------|
| 1 PL 80 A                       | 0.03 to 15 m    |
| 2 PL 50 A                       | 0.03 to 11 m    |
| 3 PL 40 A                       | 0.03 to 11 m    |
| 4 PL 30 A                       | 0.03 to 7 m     |
| 5 PL 20 A                       | 0.03 to 7 m     |
| 6 Diamond Grade (20 cm x 20 cm) | 0.3 to 7 m      |
| 7 C 110                         | 0.15 to 10 m    |



**Order information**

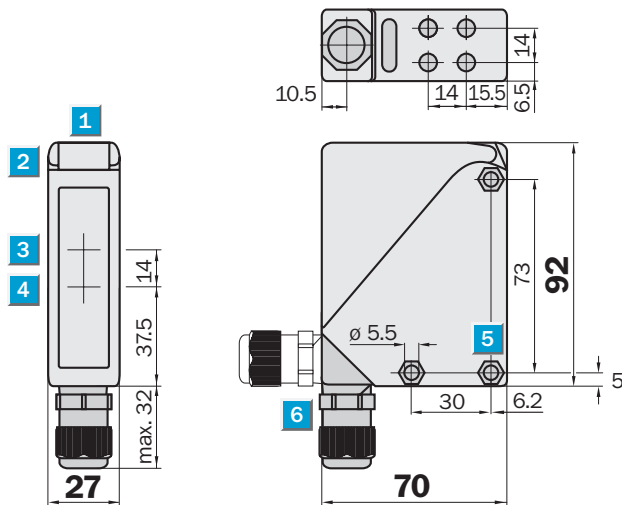
| Type        | Order no. |
|-------------|-----------|
| WL 34-V 230 | 1 019 243 |
| WL 34-V 240 | 1 019 244 |
| WL 34-B 430 | 1 019 245 |
| WL 34-B 440 | 1 019 246 |
| WL 34-V 530 | 1 019 247 |
| WL 34-V 540 | 1 019 248 |


**Scanning range**  
**22 m**

Photoelectric reflex switch

- Universal voltage
- Sturdy plastic housing
- High operating reserve in visible red light
- M16 screw fixing rotatable by 90°
- Time delay

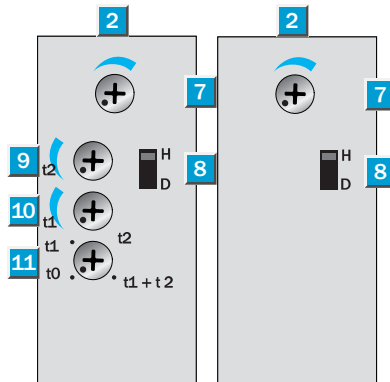
### Dimensional drawing



### Adjustments possible

WL 34-R 240

WL 34-R 230



- 1 Alignment sight
- 2 Led signal strength indicator
- 3 Middle of optic axis, sender
- 4 Middle of optic axis, receiver
- 5 Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- 6 M16 screw fixing rotatable by 90°
- 7 Sensitivity control
- 8 Light/dark selector
- 9 Time control  $t_2$  = OFF-delay
- 10 Time control  $t_1$  = ON-delay
- 11 Time delay selector switch

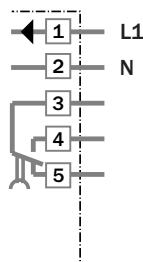
### Connection type

WL 34-R 230

WL 34-R 240



M16, terminals



### See chapter Accessories

Cables and connectors

Mounting systems

Reflectors

Special accessories

| Technical data                                 | WL34-   | R 230 | R 240 |  |  |  |  |  |  |  |  |
|--|---|-------|-------|--|--|--|--|--|--|--|--|
| <b>Scanning range</b> , typ. max./on reflector | 22 m/on PL 80 A   |       |       |  |  |  |  |  |  |  |  |
| Sensitivity                                    | Adjustable  |       |       |  |  |  |  |  |  |  |  |
| <b>Light source <sup>1)</sup>, light type</b>  | LED; red light  |       |       |  |  |  |  |  |  |  |  |
| Light spot diameter                            | Approx. 250 mm at 15 m                                      |       |       |  |  |  |  |  |  |  |  |
| <b>Supply voltage <math>V_S</math></b>         | 12 to 240 V DC <sup>2)</sup> , 24 to 240 V AC <sup>3)</sup> |       |       |  |  |  |  |  |  |  |  |
| Power consumption                              | < 2 VA  |       |       |  |  |  |  |  |  |  |  |
| <b>Switching output</b>                        | Relay SPDT isolated <sup>4)</sup>                           |       |       |  |  |  |  |  |  |  |  |
| Max. switching voltage                         | 250 V AC/120 V DC   |       |       |  |  |  |  |  |  |  |  |
| Max. switching current                         | 4 A/250 V AC, 4 A/100 VA DC <sup>5)</sup>                   |       |       |  |  |  |  |  |  |  |  |
| Max. switching capacity                        | 1000 VA AC/100 W DC   |       |       |  |  |  |  |  |  |  |  |
| Response time <sup>6)</sup>                    | ≤ 10 ms   |       |       |  |  |  |  |  |  |  |  |
| Max. switching frequency <sup>7)</sup>         | 10/s  |       |       |  |  |  |  |  |  |  |  |
| Time delay                                     | Adjustable, 0.5 to 10 s                                     |       |       |  |  |  |  |  |  |  |  |
| <b>Connection type</b>                         | M16 screw fixing  |       |       |  |  |  |  |  |  |  |  |
| <b>VDE protection class <sup>8)</sup></b>      | □   |       |       |  |  |  |  |  |  |  |  |
| <b>Circuit protection <sup>9)</sup></b>        | A, C  |       |       |  |  |  |  |  |  |  |  |
| <b>Enclosure rating</b>                        | IP 67   |       |       |  |  |  |  |  |  |  |  |
| <b>Ambient temperature</b>                     | Operation -40 °C to +60 °C<br>Storage -40 °C to +75 °C      |       |       |  |  |  |  |  |  |  |  |
| <b>Weight</b>                                  | Approx. 140 g   |       |       |  |  |  |  |  |  |  |  |
| <b>Polarisation filter</b>                     |   |       |       |  |  |  |  |  |  |  |  |
| <b>Housing material</b>                        | ABS   |       |       |  |  |  |  |  |  |  |  |

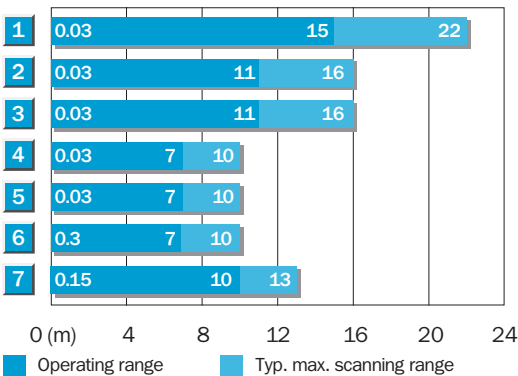
<sup>1)</sup> Average service life 100,000 h at  $T_A = +25\text{ °C}$   
<sup>2)</sup> Limit values  
<sup>3)</sup> ± 10 %

<sup>4)</sup> Provide suitable spark suppression for inductive or capacitive loads  
<sup>5)</sup> Usage category to EN 60947-1, 15 AC, 13 DC

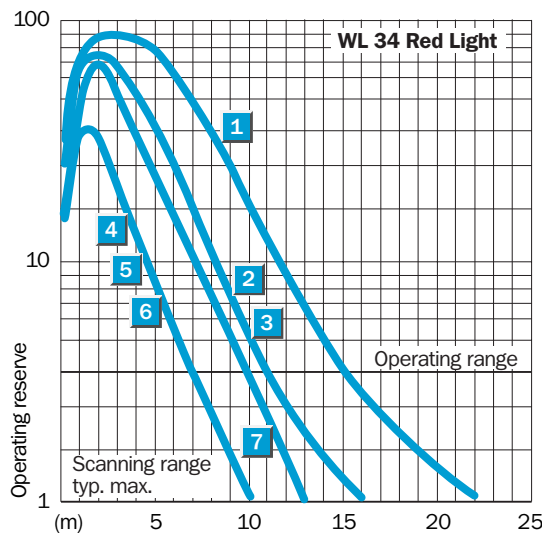
<sup>6)</sup> Signal flight time for ohmic loads  
<sup>7)</sup> With light/dark ratio 1:1  
<sup>8)</sup> Withstand voltage 250 V UC

<sup>9)</sup> A =  $V_S$  connections reverse-polarity protected  
 C = Interference pulse suppression

**Scanning range and operating reserve**




| Reflector type                  | Operating range |
|---------------------------------|-----------------|
| 1 PL 80 A                       | 0.03 to 15 m    |
| 2 PL 50 A                       | 0.03 to 11 m    |
| 3 PL 40 A                       | 0.03 to 11 m    |
| 4 PL 30 A                       | 0.03 to 7 m     |
| 5 PL 20 A                       | 0.03 to 7 m     |
| 6 Diamond Grade (20 cm x 20 cm) | 0.3 to 7 m      |
| 7 C 110                         | 0.15 to 10 m    |



**Order information**

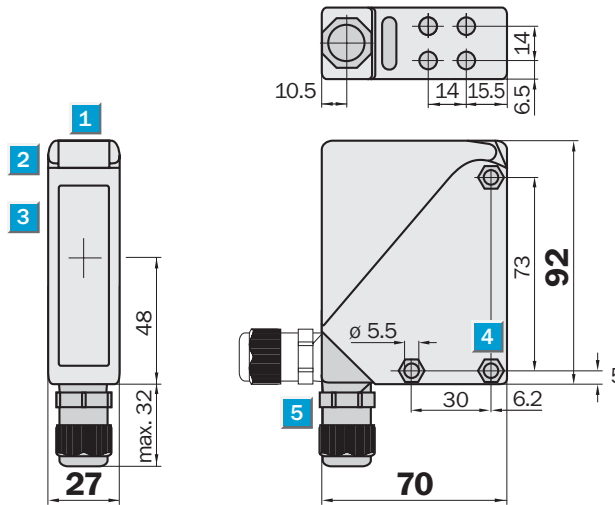
| Type        | Order no. |
|-------------|-----------|
| WL 34-R 230 | 1 019 249 |
| WL 34-R 240 | 1 019 250 |

 **Scanning range**  
0 to 60 m

Through-beam photoelectric switch

- Sturdy plastic housing
- High operating reserve in visible red light
- M16 screw fixing or equipment plug rotatable by 90°
- Time delay

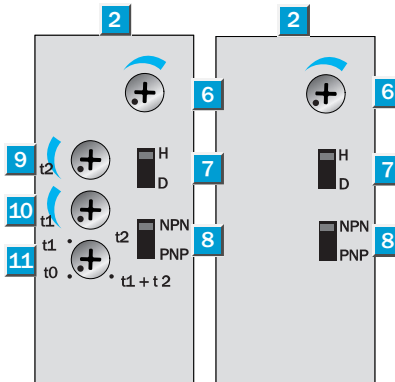
Dimensional drawing



Adjustments possible

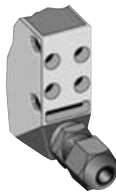
|                |                |
|----------------|----------------|
| WS/WE 34-B 440 | WS/WE 34-B 430 |
| WS/WE 34-V 240 | WS/WE 34-V 230 |
| WS/WE 34-V 540 | WS/WE 34-V 530 |

- 1 Alignment sight
- 2 LED signal strength indicator
- 3 Middle of optic axis
- 4 Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- 5 M16 screw fixing or plug rotatable by 90°
- 6 Sensitivity control
- 7 Light/dark selector
- 8 NPN/PNP selector
- 9 Time control  $t_2$  = OFF-delay
- 10 Time control  $t_1$  = ON-delay
- 11 Time delay selector switch



Connection type

|                |                |                |
|----------------|----------------|----------------|
| WS/WE 34-V 230 | WS/WE 34-B 430 | WS/WE 34-V 530 |
| WS/WE 34-V 240 | WS/WE 34-B 440 | WS/WE 34-V 540 |



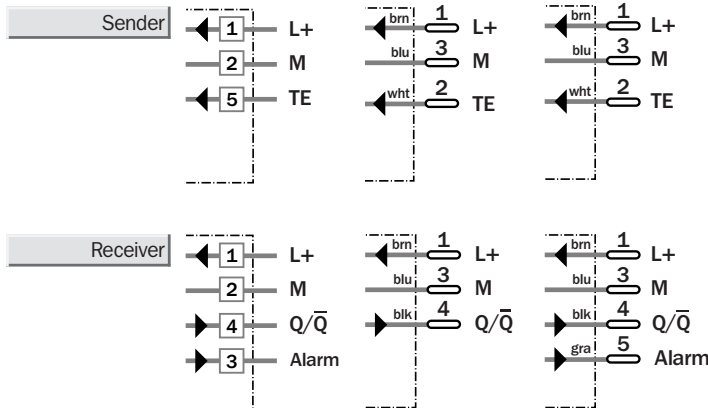
M16, terminals

4-pin, M12

5-pin, M12

See chapter Accessories

- Cables and connectors
- Mounting systems
- Special accessories



| Technical data                                | WS/WE 34-                   | V 230 | V 240 | B 430 | B 440 | V 530 | V 540 |  |  |  |  |
|---|-----------------------------|-------|-------|-------|-------|-------|-------|--|--|--|--|
| <b>Scanning range, typ. max.</b>              | 0 to 60 m                   |       |       |       |       |       |       |  |  |  |  |
| Sensitivity                                   | Adjustable                  |       |       |       |       |       |       |  |  |  |  |
| <b>Light source <sup>1)</sup>, light type</b> | LED; red light              |       |       |       |       |       |       |  |  |  |  |
| Light spot diameter                           | Approx. 700 mm at 50 m      |       |       |       |       |       |       |  |  |  |  |
| Angle of dispersion/reception                 | 1°/2.5°                     |       |       |       |       |       |       |  |  |  |  |
| <b>Supply voltage V<sub>S</sub></b>           | 10 to 30 V DC <sup>2)</sup> |       |       |       |       |       |       |  |  |  |  |
| Residual ripple <sup>3)</sup>                 | < 5 V <sub>pp</sub>         |       |       |       |       |       |       |  |  |  |  |
| Current consumption <sup>4)</sup>             |                             |       |       |       |       |       |       |  |  |  |  |
| Sender  | ≤ 50 mA                     |       |       |       |       |       |       |  |  |  |  |
| Receiver                                      | ≤ 40 mA                     |       |       |       |       |       |       |  |  |  |  |
| <b>Switching output</b>                       | PNP or NPN, Q or $\bar{Q}$  |       |       |       |       |       |       |  |  |  |  |
| Output current I <sub>A</sub> max.            | 100 mA                      |       |       |       |       |       |       |  |  |  |  |
| Response time <sup>5)</sup>                   | ≤ 500 μs                    |       |       |       |       |       |       |  |  |  |  |
| Max. switching frequency <sup>6)</sup>        | 1000/s                      |       |       |       |       |       |       |  |  |  |  |
| VMA contamination signalling output           | Alarm, PNP                  |       |       |       |       |       |       |  |  |  |  |
| Time delay                                    | Adjustable, 0.5 to 10 s     |       |       |       |       |       |       |  |  |  |  |
| <b>Test input »TE«</b>                        | Sender switched off         |       |       |       |       |       |       |  |  |  |  |
| Sender off                                    | PNP or NPN: TE to 0 V       |       |       |       |       |       |       |  |  |  |  |
| <b>Connection type</b>                        | M16 screw fixing            |       |       |       |       |       |       |  |  |  |  |
|   | Plug                        |       |       |       |       |       |       |  |  |  |  |
| <b>VDE protection class<sup>7)</sup></b>      | □                           |       |       |       |       |       |       |  |  |  |  |
| <b>Circuit protection<sup>8)</sup></b>        | A, B, C                     |       |       |       |       |       |       |  |  |  |  |
| <b>Enclosure rating</b>                       | IP 67                       |       |       |       |       |       |       |  |  |  |  |
| <b>Ambient temperature</b>                    | Operation -40 °C to +60 °C  |       |       |       |       |       |       |  |  |  |  |
|   | Storage -40 °C to +75 °     |       |       |       |       |       |       |  |  |  |  |
| <b>Weight</b>                                 | Approx. 140 g               |       |       |       |       |       |       |  |  |  |  |
| <b>Housing material</b>                       | ABS                         |       |       |       |       |       |       |  |  |  |  |

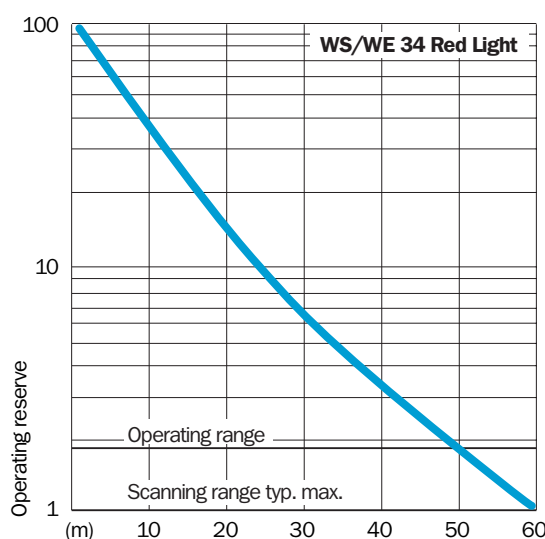
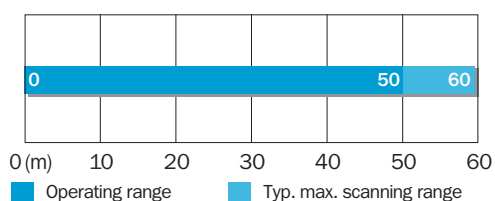
<sup>1)</sup> Average service life 100,000 h at T<sub>A</sub> = +25 °C  
<sup>2)</sup> Limit values

<sup>3)</sup> May not exceed or fall short of V<sub>S</sub> tolerances  
<sup>4)</sup> Without load

<sup>5)</sup> Signal flight time for ohmic loads  
<sup>6)</sup> With light/dark ratio 1:1  
<sup>7)</sup> Withstand voltage 50 V DC

<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected  
 B = Outputs Q and  $\bar{Q}$  short-circuit protected  
 C = Interference pulse suppression

**Operating range and operating reserve**



**Order information**

| Type           | Order no. |
|----------------|-----------|
| WS/WE 34-V 230 | 1 019 253 |
| WS/WE 34-V 240 | 1 019 251 |
| WS/WE 34-B 430 | 1 019 254 |
| WS/WE 34-B 440 | 1 019 255 |
| WS/WE 34-V 530 | 1 019 256 |
| WS/WE 34-V 540 | 1 019 252 |

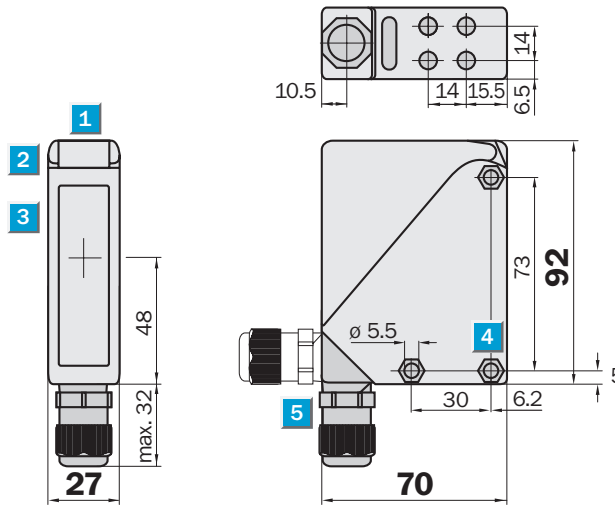


**Scanning range**  
0 to 60 m

Through-beam photoelectric switch

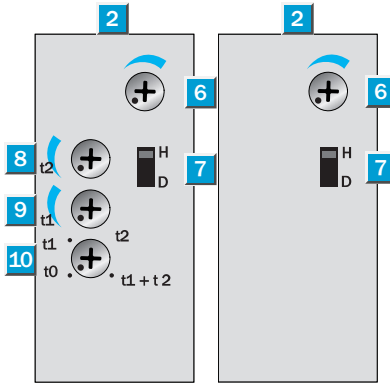
- Universal voltage
- Sturdy plastic housing
- High operating reserve in visible red light
- M16 screw fixing rotatable by 90°
- Time delay

**Dimensional drawing**



**Adjustments possible**

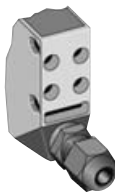
|                |                |
|----------------|----------------|
| WS/WE 34-R 240 | WS/WE 34-R 230 |
|----------------|----------------|



- 1 Alignment sight
- 2 LED signal strength indicator
- 3 Middle of optic axis
- 4 Mounting hole Ø 5.5 mm, for M5 hexagon nuts on both sides
- 5 M16 screw fixing rotatable by 90°
- 6 Sensitivity control
- 7 Light/dark selector
- 8 Time control  $t_2$  = OFF-delay
- 9 Time control  $t_1$  = ON-delay
- 10 Time delay selector switch

**Connection type**

|                |
|----------------|
| WS/WE 34-R 230 |
| WS/WE 34-R 240 |

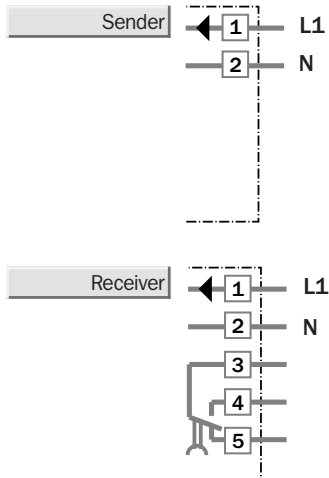


M16, terminals



**See chapter Accessories**

- Cables and connectors
- Mounting systems
- Special accessories



| Technical data                                |   | WS/WE 34- | R 230 | R 240 |  |  |  |  |  |  |  |
|---|---|-----------|-------|-------|--|--|--|--|--|--|--|
| <b>Scanning range, typ. max.</b>              | 0 to 60 m   |           |       |       |  |  |  |  |  |  |  |
| Sensitivity                                   | Adjustable  |           |       |       |  |  |  |  |  |  |  |
| <b>Light source <sup>1)</sup>, light type</b> | LED; red light  |           |       |       |  |  |  |  |  |  |  |
| Light spot diameter                           | Approx. 700 mm at 50 m                                      |           |       |       |  |  |  |  |  |  |  |
| Angle of dispersion/angle of reception        | 1°/2.5°   |           |       |       |  |  |  |  |  |  |  |
| <b>Supply voltage V<sub>S</sub></b>           | 12 to 240 V DC <sup>2)</sup> , 24 to 240 V AC <sup>3)</sup> |           |       |       |  |  |  |  |  |  |  |
| Power consumption                             | < 2 VA  |           |       |       |  |  |  |  |  |  |  |
| <b>Switching output</b>                       | Relay SPDT isolated <sup>4)</sup>                           |           |       |       |  |  |  |  |  |  |  |
| Max. switching voltage                        | 250 V AC/120 V DC   |           |       |       |  |  |  |  |  |  |  |
| Max. switching current                        | 4 A/250 V AC, 4 A/100 W DC <sup>5)</sup>                    |           |       |       |  |  |  |  |  |  |  |
| Max. switching capacity                       | 1000 VA AC/100 VA DC  |           |       |       |  |  |  |  |  |  |  |
| Response time                                 | 10 ms   |           |       |       |  |  |  |  |  |  |  |
| Max. switching frequency <sup>6)</sup>        | ≤ 10/s  |           |       |       |  |  |  |  |  |  |  |
| Time delay                                    | Adjustable, 0.5 to 10 s                                     |           |       |       |  |  |  |  |  |  |  |
| <b>Connection type</b>                        | M16 screw fixing  |           |       |       |  |  |  |  |  |  |  |
| <b>VDE protection class <sup>7)</sup></b>     | □   |           |       |       |  |  |  |  |  |  |  |
| <b>Circuit protection <sup>8)</sup></b>       | A, C  |           |       |       |  |  |  |  |  |  |  |
| <b>Enclosure rating</b>                       | IP 67   |           |       |       |  |  |  |  |  |  |  |
| <b>Ambient temperature</b>                    | Operation -40 °C to +60 °C<br>Storage -40 °C to +75 °C      |           |       |       |  |  |  |  |  |  |  |
| <b>Weight</b>                                 | Approx. 140 g   |           |       |       |  |  |  |  |  |  |  |
| <b>Housing material</b>                       | ABS   |           |       |       |  |  |  |  |  |  |  |

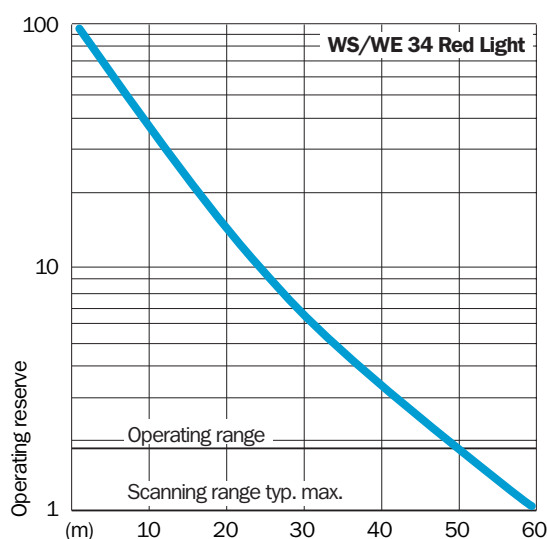
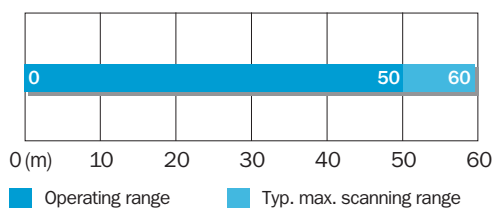
<sup>1)</sup> Average service life 100,000 h at T<sub>A</sub> = +25 °C  
<sup>2)</sup> Limit values  
<sup>3)</sup> ± 10 %

<sup>4)</sup> Provide suitable spark suppression for inductive or capacitive loads  
<sup>5)</sup> Usage category to EN 60947-1, 15 AC, 13 DC

<sup>6)</sup> With light/dark ratio 1:1  
<sup>7)</sup> Withstand voltage 250 V UC

<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected  
 C = Interference pulse suppression

**Operating range and operating reserve**



**Order information**

| Type           | Order no. |
|----------------|-----------|
| WS/WE 34-R 230 | 1 019 257 |
| WS/WE 34-R 240 | 1 019 258 |