




W 36 Photoelectric switches

W 36: Mastering complex tasks reliably

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



electric proximity switch, which also offers adjustable scanning distance and background suppression.

Great demands are often placed on the mechanical endurance of sensors. Suitable enclosure ratings (depending on the type of connection) of IP 65 and IP 67, robust plastic housings, pre-failure signalling output and indicator, and insensitivity to ambient light ensure reliable switching in hostile industrial environments.

Users have long appreciated the benefits of the W 36 series of photoelectric switches. Thanks to their design, the devices can be used both indoors and outdoors, since all DC types are suitable for temperatures ranging from -40 to $+55$ °C and polarising filters also make it possible to detect shiny surfaces. The scanning ranges of the W 36 series speak for themselves: 60 metres for the WS/WE 36 through-beam photoelectric switch, 22 metres for the WL 36 photoelectric reflex switch and 800 mm for the WT 36 photo-

Universal voltage versions, time delay, test input and selectable light- or dark-switching are additional characteristic features of the W 36 series.



◀ Making sure that crates are full: WL 36 photoelectric reflex switches used to count coloured bottles before packaging.



▲ WL 36 sensors used to detect mesh baskets in front of a goods lift.



◀ WL 36 photoelectric reflex switches checking the presence of beer crates before automatic removal of the bottle caps.

► Hot or cold, wet, dry or dusty – WL 36 photoelectric reflex switches are designed for use under hostile operating conditions indoors and outdoors – here they are being used on the roll-up gate of a carwash.

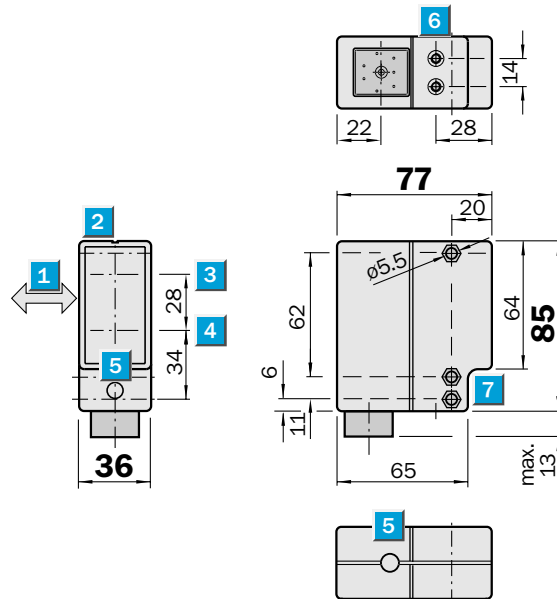


WT 36 Photoelectric proximity switches, infrared light – DC/UC, plug connection

Scanning distance
200...800 mm
Photoelectric proximity switches

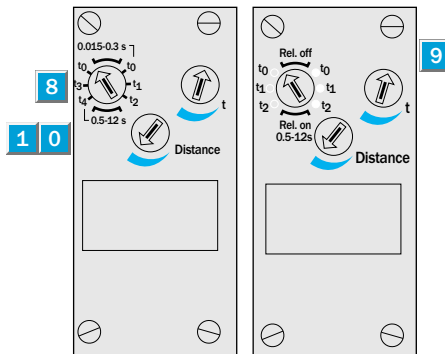
- Robust plastic housing
- Infrared light
- Selectable time delay

Dimensional drawing



Adjustments possible

| | |
|-------------|-------------|
| WT 36-N 410 | WT 36-R 710 |
| WT 36-P 410 | |
| WT 36-N 710 | |
| WT 36-P 710 | |



- 1** Standard direction of the material being scanned
- 2** Alignment sight
- 3** Centre of optical axis, receiver
- 4** Centre of optical axis, sender
- 5** LED signal strength indicator
- 6** M5 threaded mounting hole – 5.5 mm deep
- 7** Mounting holes, recesses on both sides for M5 hex nuts
- 8** Time delay selector switch with DC, time delay and light-/dark-switching selector switches with UC
 - Light-switching
 - Dark-switching
- 9** Time control
- 1 0** Scanning distance adjustment

Switch-selectable time delay

0.015 – 0.3 s with DC only

t_0 without time delay
 t_1 ON-delay
 t_2 OFF-delay

0.5 – 12 s with DC

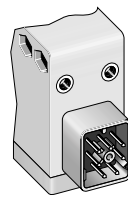
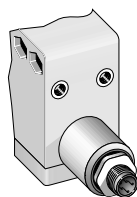
t_0 without time delay
 t_3 ON-delay
 t_4 OFF-delay

0.5 – 12 s with UC

t_0 without time delay
 t_1 ON-delay
 t_2 OFF-delay

Connection types

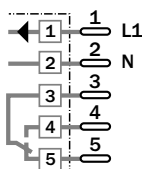
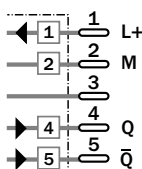
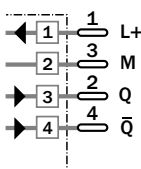
| | | |
|-------------|-------------|-------------|
| WT 36-N 410 | WT 36-N 710 | WT 36-R 710 |
| WT 36-P 410 | WT 36-P 710 | |



4-pin, M 12

7-pin

7-pin



| Accessories | page |
|-------------------|------|
| Cable receptacles | 496 |
| Mounting brackets | 510 |

| Technical data | | WT 36- | N 410 | P 410 | N 710 | P 710 | R 710 | | | | | | |
|---|-----------------------------------|--------|-------|-------|-------|-------|-------|--|--|--|--|--|--|
| Scanning distance | 200...800 mm, adjustable | | | | | | | | | | | | |
| Light source ¹⁾ , light type | LED, infrared light | | | | | | | | | | | | |
| Light spot diameter | Approx. 15 mm at 800 mm | | | | | | | | | | | | |
| Supply voltage V _S | 10...30 V DC ²⁾ | | | | | | | | | | | | |
| | 24...240 V UC (+ 10 % / - 25 %) | | | | | | | | | | | | |
| Ripple ³⁾ | ≤ 5 V _{SS} | | | | | | | | | | | | |
| Current consumption ⁴⁾ | ≤ 50 mA | | | | | | | | | | | | |
| Power consumption | < 2 VA | | | | | | | | | | | | |
| Switching outputs | PNP, Q and \bar{Q} | | | | | | | | | | | | |
| | NPN, Q and \bar{Q} | | | | | | | | | | | | |
| | SPDT, isolated ⁵⁾ | | | | | | | | | | | | |
| Output current I _A max. | 200 mA | | | | | | | | | | | | |
| Max. switching voltage | AC: 250 V / DC: 120 V | | | | | | | | | | | | |
| Switching current | 4 A / 240 V AC or 24 V DC | | | | | | | | | | | | |
| Max. switching capacity | AC: 1000 VA / DC: 100 W | | | | | | | | | | | | |
| Response time ⁶⁾ | 2 ms | | | | | | | | | | | | |
| | 6 ms | | | | | | | | | | | | |
| Max. switching frequency ⁷⁾ | 250/s | | | | | | | | | | | | |
| | 10/s | | | | | | | | | | | | |
| Test input "TE", sender OFF | PNP: Test input to 0 V | | | | | | | | | | | | |
| | NPN: Test input to V _S | | | | | | | | | | | | |
| Connection types | Plug | | | | | | | | | | | | |
| VDE protection class ⁸⁾ | □ | | | | | | | | | | | | |
| Circuit protection ⁹⁾ | A, B, C | | | | | | | | | | | | |
| | A, C | | | | | | | | | | | | |
| Enclosure rating | IP 65 | | | | | | | | | | | | |
| | IP 67 | | | | | | | | | | | | |
| Ambient temperature T _A | Operation - 40 °C...+ 55 °C | | | | | | | | | | | | |
| | Operation - 25 °C...+ 55 °C | | | | | | | | | | | | |
| | Storage - 25 °C...+ 75 °C | | | | | | | | | | | | |
| Weight | Approx. 200 g | | | | | | | | | | | | |
| Housing material | Glass-fibre-reinforced plastic | | | | | | | | | | | | |

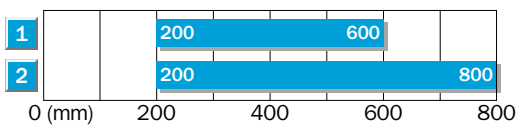
- 1) Average service life 100,000 h at T_A = + 25 °C
- 2) Limit values
- 3) May not exceed or fall short of V_S tolerances

- 4) Without load
- 5) Provide suitable spark suppression for inductive or capacitive loads

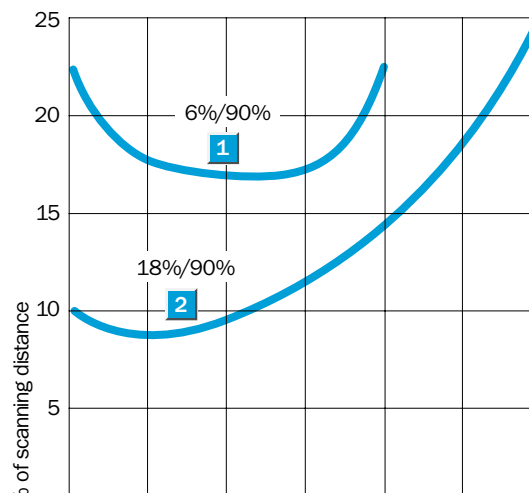
- 6) Signal transit time with resistive load
- 7) With light/dark ratio 1:1
- 8) Reference voltage 50 V DC, 250 V AC

- 9) A = V_S connections reverse-polarity protected
- B = Output Q_N and Q_P short-circuit protected
- C = Interference pulse suppression

Scanning distance




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



Order information

| Type | Part no. |
|-------------|-----------|
| WT 36-N 410 | 1 011 109 |
| WT 36-P 410 | 1 011 108 |
| WT 36-N 710 | 1 006 370 |
| WT 36-P 710 | 1 006 047 |
| WT 36-R 710 | 1 005 927 |

WT 36 Photoelectric proximity switches, infrared light – DC/UC, terminal connection

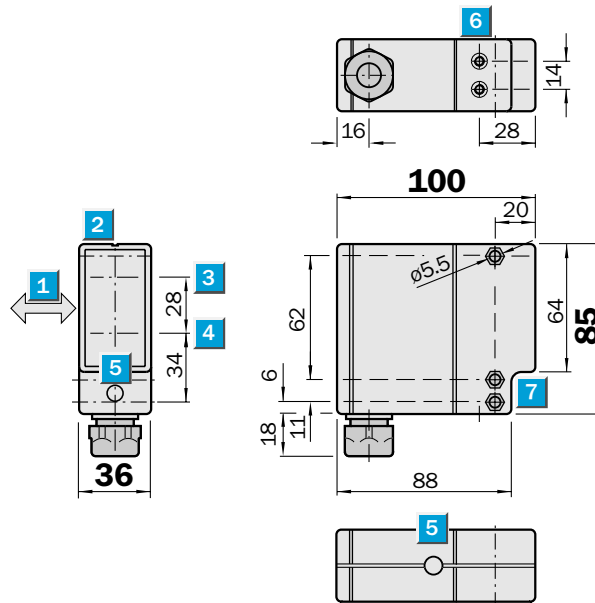

Scanning distance
200...800 mm

Photoelectric proximity switches

- Robust plastic housing
- Infrared
- Adjustable background suppression
- Easily accessible terminal chamber
- Selectable time delay

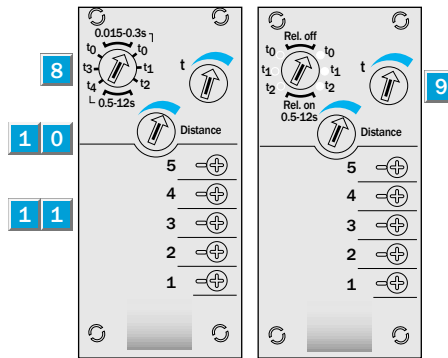


Dimensional drawing



Adjustments possible

| | |
|-------------|-------------|
| WT 36-N 210 | WT 36-R 210 |
| WT 36-P 210 | |



- 1 Standard direction of the material being scanned
- 2 Alignment sight
- 3 Centre of optical axis, receiver
- 4 Centre of optical axis, sender
- 5 LED signal strength indicator
- 6 M5 threaded mounting hole – 5.5 mm deep
- 7 Mounting holes, recesses on both sides for M5 hex nuts
- 8 Time delay selector switch with DC, time delay and light-/dark-switching selector switches with UC
- Light-switching
 Dark-switching
- 9 Time control
- 1 0 Scanning distance adjustment
- 1 1 Terminal connection

Switch-selectable time delay

0.015 – 0.3 s with DC only

t_0 without time delay
 t_1 ON-delay
 t_2 OFF-delay

0.5 – 12 s with DC

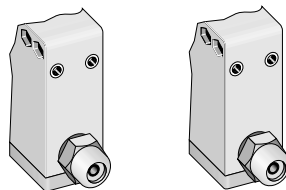
t_0 without time delay
 t_3 ON-delay
 t_4 OFF-delay

0.5 – 12 s with UC

t_0 without time delay
 t_1 ON-delay
 t_2 OFF-delay

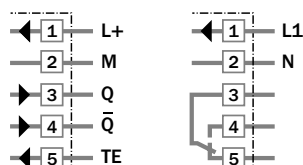
Connection types

| | |
|-------------|-------------|
| WT 36-N 210 | WT 36-R 210 |
| WT 36-P 210 | |



PG 11, terminals

PG 11, terminals



| | |
|--------------------|------|
| Accessories | page |
| Mounting brackets | 510 |

| Technical data | | WT 36- | N 210 | P 210 | R 210 |
|---|-----------------------------------|--------|-------|-------|-------|
| Scanning distance | 200...800 mm, adjustable | | | | |
| Light source ¹⁾ , light type | LED, infrared light | | | | |
| Light spot diameter | Approx. 15 mm at 800 mm | | | | |
| Supply voltage V _S | 10...30 V DC ²⁾ | | | | |
| | 24...240 V UC (+ 10 % / - 25 %) | | | | |
| Ripple ³⁾ | ≤ 5 V _{SS} | | | | |
| Current consumption ⁴⁾ | ≤ 50 mA | | | | |
| Power consumption | < 2 VA | | | | |
| Switching outputs | PNP, Q and \bar{Q} | | | | |
| | NPN, Q and \bar{Q} | | | | |
| | SPDT, isolated ⁵⁾ | | | | |
| Output current I _A max. | 200 mA | | | | |
| Max. switching voltage | AC: 250 V / DC: 120 V | | | | |
| Switching current | 4 A / 240 V AC or 24 V DC | | | | |
| Max. switching capacity | AC: 1000 VA / DC: 100 W | | | | |
| Response time ⁶⁾ | 2 ms | | | | |
| | 6 ms | | | | |
| Max. switching frequency ⁷⁾ | 250/s | | | | |
| | 10/s | | | | |
| Test input "TE", sender OFF | PNP: Test input to 0 V | | | | |
| | NPN: Test input to V _S | | | | |
| Connection types | Terminal connection | | | | |
| VDE protection class ⁸⁾ | <input type="checkbox"/> | | | | |
| Circuit protection ⁹⁾ | A, B, C | | | | |
| | A, C | | | | |
| Enclosure rating | IP 67 | | | | |
| Ambient temperature T _A | Operation - 40 °C...+ 55 °C | | | | |
| | Operation - 25 °C...+ 55 °C | | | | |
| | Storage - 25 °C...+ 70 °C | | | | |
| Weight | Approx. 200 g | | | | |
| Housing material | Glass-fibre-reinforced plastic | | | | |

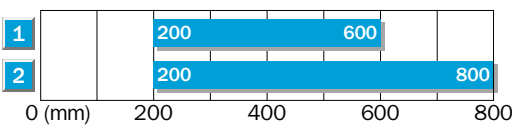
- 1) Average service life 100,000 h at T_A = + 25 °C
- 2) Limit values
- 3) May not exceed or fall short of V_S tolerances

- 4) Without load
- 5) Provide suitable spark suppression for inductive or capacitive loads

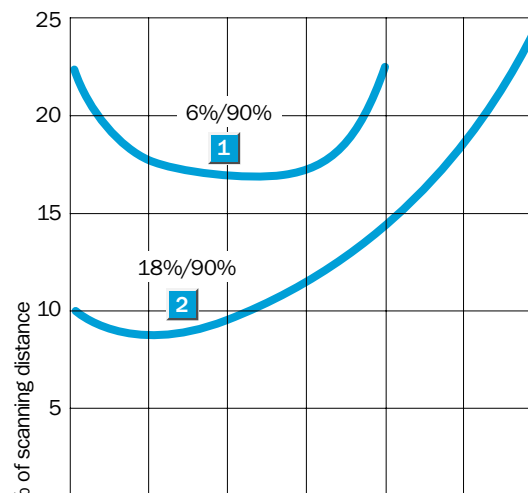
- 6) Signal transit time with resistive load
- 7) With light/dark ratio 1:1
- 8) Reference voltage 50 V DC, 250 V AC

- 9) A = V_S connections reverse-polarity protected
- B = Output Q_N and Q_P short-circuit protected
- C = Interference pulse suppression

Scanning distance



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



Order information

| Type | Part no. |
|-------------|-----------|
| WT 36-N 210 | 1 010 109 |
| WT 36-P 210 | 1 010 108 |
| WT 36-R 210 | 1 010 110 |

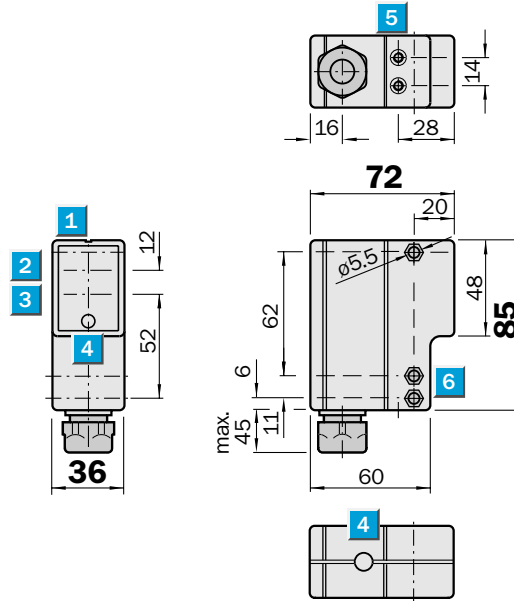
WL 36 Photoelectric reflex switches, red light - DC

Scanning range
22 m

Photoelectric reflex switches

- Robust plastic housing
- Visible red light
- Selectable time delay

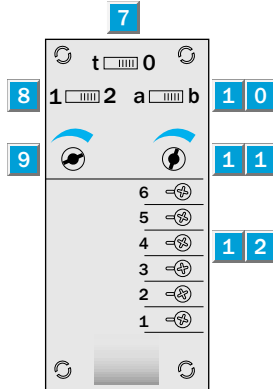
Dimensional drawing



Adjustments possible

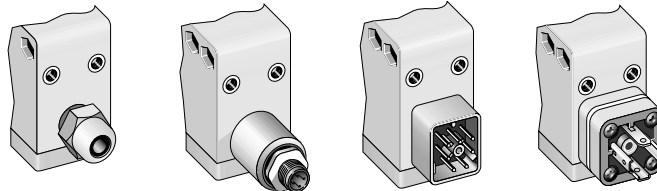
| |
|-------------|
| WL 36-B 230 |
| WL 36-B 430 |
| WL 36-B 730 |
| WL 36-B 330 |

- 1** Alignment sight
- 2** Centre of optical axis, receiver
- 3** Centre of optical axis, sender
- 4** LED signal strength indicator
- 5** M5 threaded mounting hole – 5.5 mm deep
- 6** Mounting holes
recesses on both sides for M5 hex nuts
- 7** ON/OFF timer switch
t = Time ON, 0 = Time OFF
- 8** Time delay
1 ON-delay
2 OFF-delay
- 9** Time control 0.02 to 1 s
- 1 0** Light/dark selector
a = Light-switching, b = Dark-switching
- 1 1** Sensitivity adjustment
- 1 2** Terminal connections

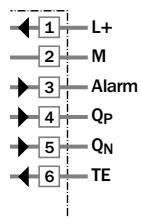


Connection types

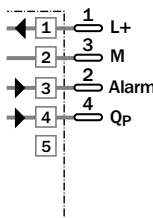
| WL 36-B 230 | WL 36-B 430 | WL 36-B 730 | WL 36-B 330 |
|-------------|-------------|-------------|-------------|
|-------------|-------------|-------------|-------------|



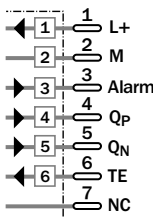
PG 11, terminals



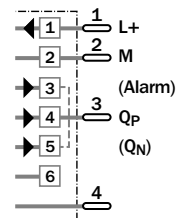
4-pin, M 12



7-pin



3-pin



| Accessories | page |
|-------------------------|------|
| Cable receptacles | 496 |
| Mounting brackets | 510 |
| Reflectors | 520 |
| Attachable heated cover | 556 |



| Technical data | | WL 36- | B 230 | B 430 | B 730 | B 330 |
|---|--|--------|-------|-------|-------|-------|
| Scanning range, max. typ./on reflector | 22 m/PL 80 A | | | | | |
| Sensitivity | Adjustable | | | | | |
| Light source ¹⁾ , light type | LED, red light | | | | | |
| Light spot diameter | Approx. 50 mm at 3 m | | | | | |
| Supply voltage V_S | 10...30 V DC ²⁾ | | | | | |
| Ripple ³⁾ | $\leq 5 V_{SS}$ | | | | | |
| Current consumption ⁴⁾ | ≤ 40 mA | | | | | |
| Switching outputs | PNP: Q_P and NPN Q_N | | | | | |
| | PNP: Q_P | | | | | |
| | PNP: Q_P or NPN Q_N | | | | | |
| Light-/dark-switching | Switch-selectable | | | | | |
| Output current I_A max. | 200 mA | | | | | |
| Response time ⁵⁾ | ≤ 1.25 ms | | | | | |
| Max. switching frequency ⁶⁾ | 400/s | | | | | |
| Pre-failure signalling output | Alarm, PNP, open collector | | | | | |
| Internal resistance | ≥ 1.5 k $\Omega \pm 5\%$ | | | | | |
| Operating condition "correct" ⁷⁾ | Output HIGH ($V_S - 1.5$ V) | | | | | |
| Operating condition "faulty" | Switching periodically at 5/s to V_S | | | | | |
| Test input "TE" | Sender switched off | | | | | |
| Sender OFF | Test input to 0 V | | | | | |
| Connection type | PG cable gland | | | | | |
| | Plug | | | | | |
| VDE protection class ⁸⁾ | <input type="checkbox"/> | | | | | |
| Circuit protection ⁹⁾ | A, B, C | | | | | |
| Enclosure rating | IP 67 | | | | | |
| | IP 65 | | | | | |
| Ambient temperature T_A | Operation -40 °C... $+55$ °C | | | | | |
| | Storage -40 °C... $+70$ °C | | | | | |
| Weight | Approx. 165 g | | | | | |
| Polarising filter | | | | | | |
| Housing material | Glass-fibre-reinforced plastic | | | | | |

1) Average service life 100,000 h at $T_A = +25$ °C

2) Limit values

3) May not exceed or fall short of V_S tolerances

4) Without load

5) Signal transit time with resistive load

6) With light/dark ratio 1:1

7) Signal reserve $\geq 50\%$

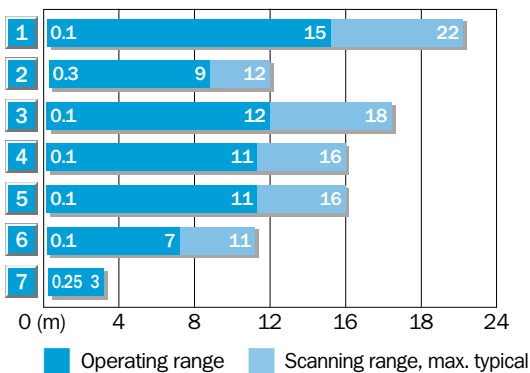
8) Reference voltage 50 V DC

9) A = V_S connections reverse-polarity protected

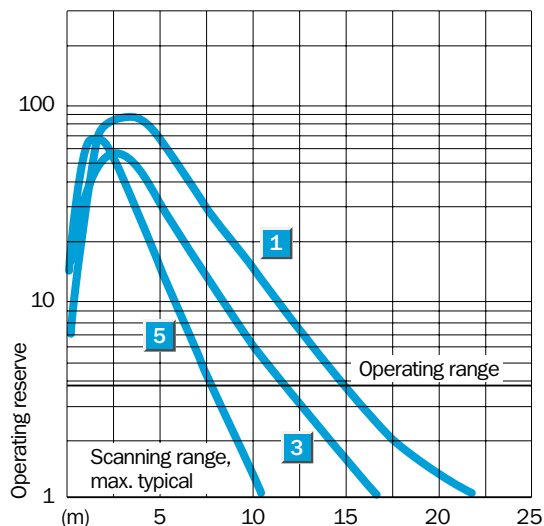
B = Output Q_N and Q_P short-circuit protected

C = Interference pulse suppression

Operating range and operating reserve




| Reflector type | Operating range |
|-------------------|-----------------|
| 1 PL 80 A | 0.1...15.0 m |
| 2 C 110 | 0.3...9.0 m |
| 3 PL 50 A | 0.1...12.0 m |
| 4 PL 40 A | 0.1...11.0 m |
| 5 PL 30 A | 0.1...11.0 m |
| 6 PL 20 A | 0.1...7.0 m |
| 7 Reflective tape | 0.25...3.0 m |



Order information

| Type | Part no. |
|-------------|-----------|
| WL 36-B 230 | 1 005 385 |
| WL 36-B 430 | 1 010 612 |
| WL 36-B 730 | 1 008 848 |
| WL 36-B 330 | 1 005 787 |

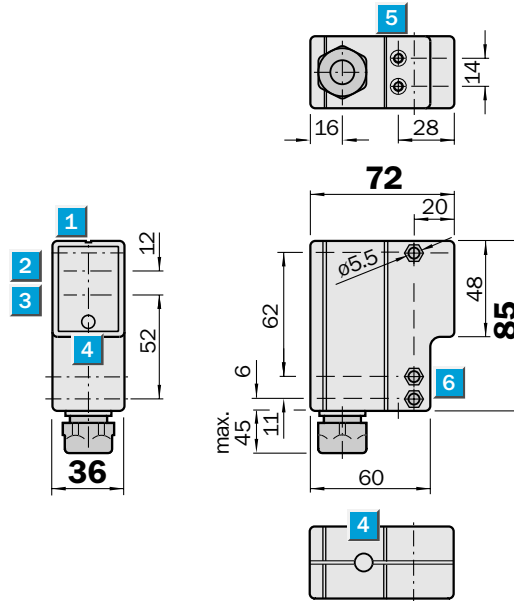
WL 36 Photoelectric reflex switches, red light - UC


Scanning range
22 m

Photoelectric reflex switches

- Robust plastic housing
- Visible red light
- Easily accessible terminal chamber
- Selectable time delay

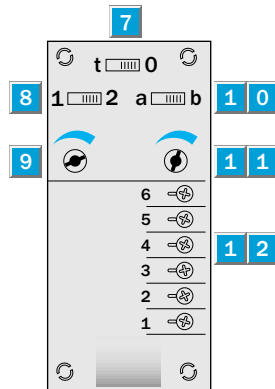
Dimensional drawing



Adjustments possible

WL 36-R 230

WL 36-R 230

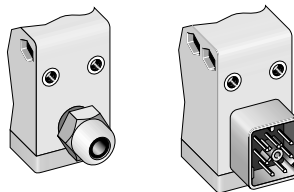


- 1** Alignment sight
- 2** Centre of optical axis, receiver
- 3** Centre of optical axis, sender
- 4** LED signal strength indicator
- 5** M5 threaded mounting hole – 5.5 mm deep
- 6** Mounting holes
recesses on both sides for M5 hex nuts
- 7** ON/OFF timer switch
t = Time ON, 0 = Time OFF
- 8** Time delay
1 ON-delay
2 OFF-delay
- 9** Time control 0.5 to 12 s
- 1 0** Light/dark selector
a = Light-switching, b = Dark-switching
- 1 1** Sensitivity adjustment
- 1 2** Terminal connections

Connection types

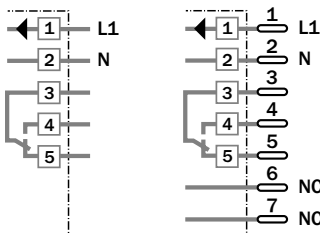
WL 36-R 230

WL 36-R 730



PG 11, terminals

7-pin



| Accessories | page |
|-------------------------|------|
| Cable receptacles | 496 |
| Mounting brackets | 510 |
| Reflectors | 520 |
| Attachable heated cover | 556 |

| Technical data | | WL 36- | R 230 | R 730 | | | | | | | | |
|--|--------------------------------|--------|-------|-------|--|--|--|--|--|--|--|--|
| Scanning range , max. typ./on reflector | 22 m/PL 80 A | | | | | | | | | | | |
| Sensitivity | Adjustable | | | | | | | | | | | |
| Light source¹⁾, light type | LED, red light | | | | | | | | | | | |
| Light spot diameter | Approx. 50 mm at 3 m | | | | | | | | | | | |
| Supply voltage V_S | 24...240 V UC (+ 10 %/– 25 %) | | | | | | | | | | | |
| Power consumption | < 2 VA | | | | | | | | | | | |
| Switching output | SPDT, isolated ²⁾ | | | | | | | | | | | |
| Max. switching voltage | AC: 250 V / DC: 120 V | | | | | | | | | | | |
| Max. switching current | 4 A / 240 V AC or 24 V DC | | | | | | | | | | | |
| Max. switching capacity | AC: 1000 VA / DC: 100 W | | | | | | | | | | | |
| Response time | ≤ 20 ms | | | | | | | | | | | |
| Max. switching frequency ³⁾ | 10/s | | | | | | | | | | | |
| Light-/dark-switching | Switch-selectable | | | | | | | | | | | |
| Connection types | PG cable gland | | | | | | | | | | | |
| | Plug | | | | | | | | | | | |
| VDE protection class⁴⁾ | □ | | | | | | | | | | | |
| Circuit protection⁵⁾ | A, C | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | |
| | IP 65 | | | | | | | | | | | |
| Ambient temperature T_A | Operation – 25 °C...+ 55 °C | | | | | | | | | | | |
| | Storage – 40 °C...+ 70 °C | | | | | | | | | | | |
| Weight | Approx. 165 g | | | | | | | | | | | |
| Polarising filter | | | | | | | | | | | | |
| Housing material | Glass-fibre-reinforced plastic | | | | | | | | | | | |

1) Average service life 100,000 h at T_A = + 25 °C

2) Provide suitable spark suppression for inductive or capacitive loads

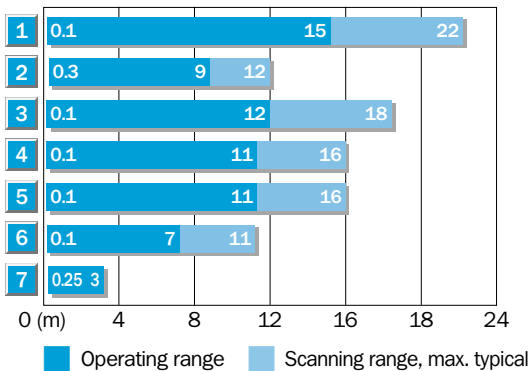
3) With light/dark ratio 1:1

4) Reference voltage 250 V AC

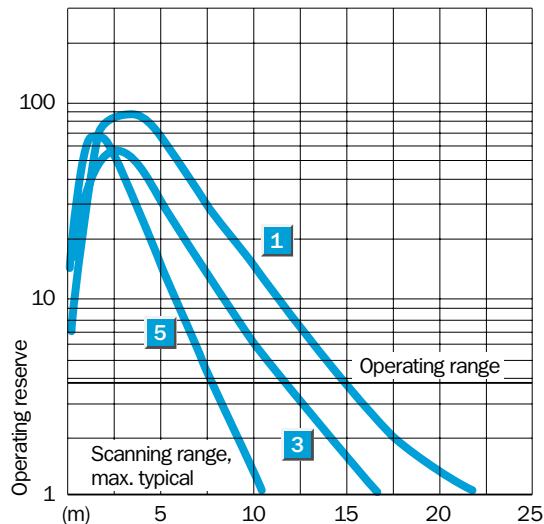
5) A = V_S connections reverse-polarity protected

C = Interference pulse suppression

Operating range and operating reserve



| Reflector type | Operating range |
|-------------------|-----------------|
| 1 PL 80 A | 0.1...15.0 m |
| 2 C 110 | 0.3...9.0 m |
| 3 PL 50 A | 0.1...12.0 m |
| 4 PL 40 A | 0.1...11.0 m |
| 5 PL 30 A | 0.1...11.0 m |
| 6 PL 20 A | 0.1...7.0 m |
| 7 Reflective tape | 0.25...3.0 m |



Order information

| Type | Part no. |
|-------------|-----------|
| WL 36-R 230 | 1 005 387 |
| WL 36-R 730 | 1 008 849 |

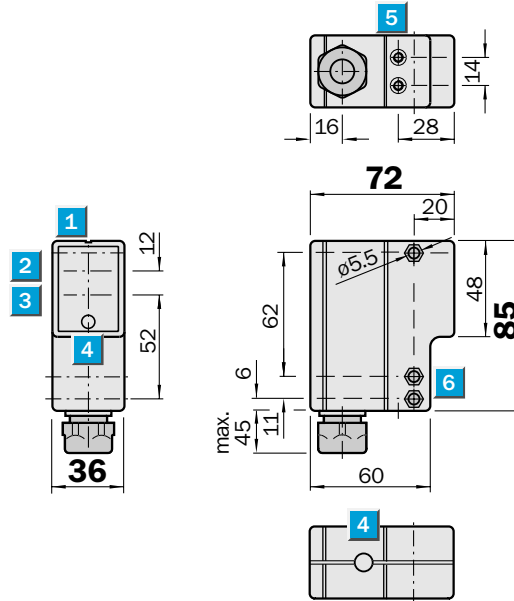
WS/WE 36 Through-beam photoelectric switches, infrared light - DC

Scanning range
60 m

Through-beam photoelectric switches

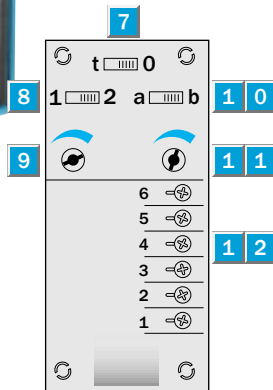
- Robust plastic housing
- Infrared light
- Selectable time delay

Dimensional drawing



Adjustments possible

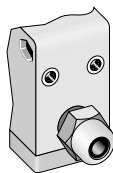
- WS/WE 36-B 230
- WS/WE 36-B 430
- WS/WE 36-B 730



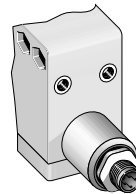
- 1** Alignment sight
- 2** Centre of optical axis, receiver
- 3** Centre of optical axis, sender
- 4** LED signal strength indicator, top and front
- 5** M5 threaded mounting hole – 5.5 mm deep
- 6** Mounting holes
recesses on both sides for M5 hex nuts
- 7** ON/OFF timer switch
t = Time ON, 0 = Time OFF
- 8** Time delay
1 ON-delay
2 OFF-delay
- 9** Time control 0.02 to 1 s
- 1 0** Light/dark selector
a = Light-switching, b = Dark-switching
- 1 1** Sensitivity adjustment
- 1 2** Terminal connections

Connection types

- WS/WE 36-B 230
- WS/WE 36-B 430
- WS/WE 36-B 730



PG 11, terminals



4-pin, M 12

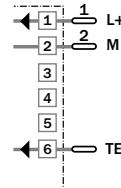
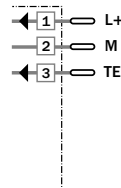
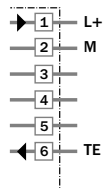


7-pin

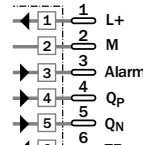
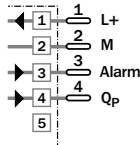
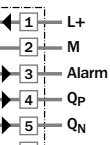


| Accessories | page |
|-------------------------|------|
| Cable receptacles | 496 |
| Mounting brackets | 510 |
| Attachable heated cover | 556 |

Sender



Receiver



| Technical data | | WS/WE 36- | B 230 | B 430 | B 730 |
|--|--|-----------|-------|-------|-------|
| Scanning range, max. typical | 60 m | | | | |
| Sensitivity | Adjustable | | | | |
| Light source¹⁾, light type | LED, infrared light | | | | |
| Light spot diameter | Approx. 1300 mm at 25 m | | | | |
| Supply voltage V_S | 10...30 V DC ²⁾ | | | | |
| Ripple ³⁾ | $\leq 5 V_{SS}$ | | | | |
| Current consumption ⁴⁾ | ≤ 40 mA | | | | |
| Switching outputs | PNP: Q_P and NPN Q_N | | | | |
| | PNP: Q_P | | | | |
| Light-/dark-switching | Switch-selectable | | | | |
| Output current I_A max. | 200 mA | | | | |
| Response time ⁵⁾ | ≤ 2.5 ms | | | | |
| Max. switching frequency ⁶⁾ | 400/s | | | | |
| Pre-failure signalling output | Alarm, PNP, open collector | | | | |
| Internal resistance | ≥ 1.5 k $\Omega \pm 5\%$ | | | | |
| Operating condition "correct" ⁷⁾ | Output HIGH ($V_S - 1.5$ V) | | | | |
| Operating condition "faulty" | Switching periodically at 5/s to V_S | | | | |
| Test input "TE" | Sender switched off | | | | |
| Sender OFF | Test input to 0 V | | | | |
| Connection types | PG cable gland | | | | |
| | Plug | | | | |
| VDE protection class⁸⁾ | <input type="checkbox"/> | | | | |
| Circuit protection⁹⁾ | A, B, C | | | | |
| Enclosure rating | IP 67 | | | | |
| | IP 65 | | | | |
| Ambient temperature T_A | Operation -40 °C...+ 55 °C | | | | |
| | Storage -40 °C...+ 70 °C | | | | |
| Weight | Approx. 160 g | | | | |
| Housing material | Glass-fibre-reinforced plastic | | | | |

1) Average service life 100,000 h at $T_A = +25$ °C

2) Limit values

3) May not exceed or fall short of V_S tolerances

4) Without load

5) Signal transit time with resistive load

6) With light/dark ratio 1:1

7) Signal reserve $\geq 50\%$

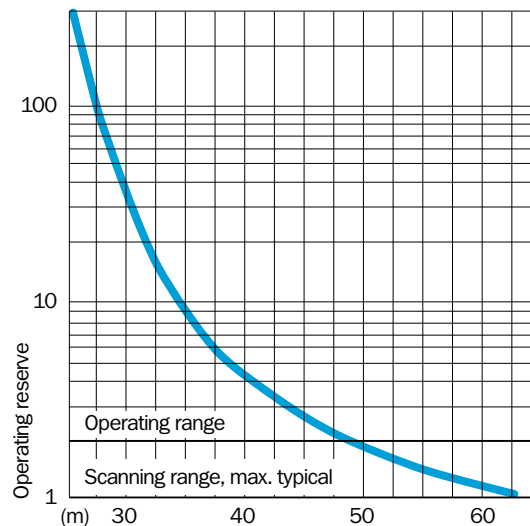
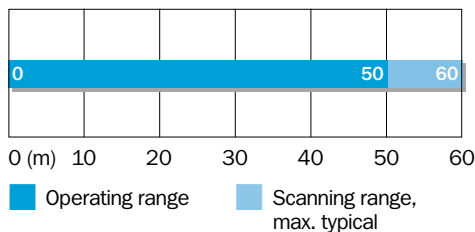
8) Reference voltage 50 V DC

9) A = V_S connections reverse-polarity protected

B = Output Q_N and Q_P short-circuit protected

C = Interference pulse suppression

Operating range and operating reserve



Order information

| Type | Part no. |
|----------------|-----------|
| WS/WE 36-B 230 | 1 010 922 |
| WS/WE 36-B 430 | 1 011 107 |
| WS/WE 36-B 730 | 1 011 114 |

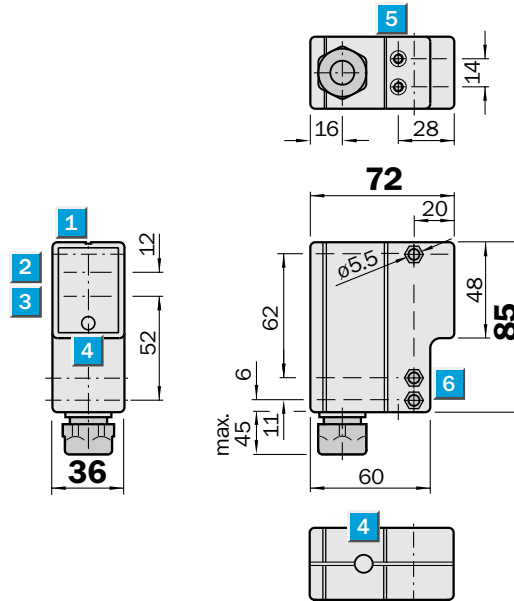
WS/WE 36 Through-beam photoelectric switches, infrared light - UC

Scanning range
60 m

Through-beam photoelectric switches

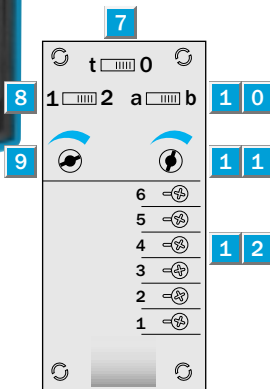
- Robust plastic housing
- Infrared light
- Easily accessible terminal chamber
- Selectable time delay

Dimensional drawing



Adjustments possible

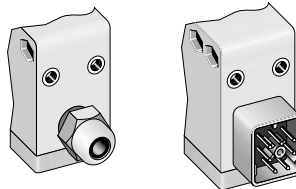
WS/WE 36-R 230
WS/WE 36-R 730



- 1** Alignment sight
- 2** Centre of optical axis, receiver
- 3** Centre of optical axis, sender
- 4** LED signal strength indicator, top and front
- 5** M5 threaded mounting hole – 5.5 mm deep
- 6** Mounting holes
recesses on both sides for M5 hex nuts
- 7** ON/OFF timer switch
t = Time ON, 0 = Time OFF
- 8** Time delay
1 ON-delay
2 OFF-delay
- 9** Time control 0.5 to 12 s
- 1 0** Light/dark selector
a = Light-switching, b = Dark-switching
- 1 1** Sensitivity adjustment
- 1 2** Terminal connections

Connection types

WS/WE 36-R 230 WS/WE 36-R 730

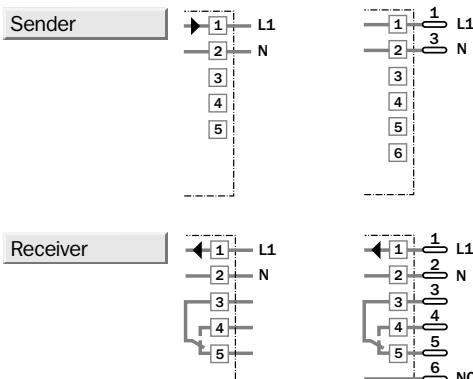


PG 11, terminals

7-pin



| Accessories | page |
|-------------------------|------|
| Cable receptacles | 496 |
| Mounting brackets | 510 |
| Attachable heated cover | 556 |



| Technical data | | WS/WE 36- | R 230 | R 730 | | | | | | | | |
|--|--------------------------------|-----------|-------|-------|--|--|--|--|--|--|--|--|
| Scanning range , max. typ./on reflector | 60 m | | | | | | | | | | | |
| Sensitivity | Adjustable | | | | | | | | | | | |
| Light source¹⁾, light type | LED, infrared light | | | | | | | | | | | |
| Light spot diameter | Approx. 1300 mm at 25 m | | | | | | | | | | | |
| Supply voltage V_S | 24...240 V UC (+ 10 %/– 25 %) | | | | | | | | | | | |
| Power consumption | < 2 VA | | | | | | | | | | | |
| Switching output | SPDT, isolated ²⁾ | | | | | | | | | | | |
| Max. switching voltage | AC: 250 V / DC: 120 V | | | | | | | | | | | |
| Max. switching current | 4 A / 240 V AC or 24 V DC | | | | | | | | | | | |
| Max. switching capacity | AC: 1000 VA / DC: 100 W | | | | | | | | | | | |
| Response time | ≤ 20 ms | | | | | | | | | | | |
| Max. switching frequency ³⁾ | 10/s | | | | | | | | | | | |
| Light-/dark-switching | Switch-selectable | | | | | | | | | | | |
| Connection types | PG cable gland | | | | | | | | | | | |
| | Plug | | | | | | | | | | | |
| VDE protection class⁴⁾ | □ | | | | | | | | | | | |
| Circuit protection⁵⁾ | A, C | | | | | | | | | | | |
| Enclosure rating | IP 67 | | | | | | | | | | | |
| | IP 65 | | | | | | | | | | | |
| Ambient temperature T_A | Operation – 25 °C...+ 55 °C | | | | | | | | | | | |
| | Storage – 40 °C...+ 70 °C | | | | | | | | | | | |
| Weight | Approx. 160 g | | | | | | | | | | | |
| Housing material | Glass-fibre-reinforced plastic | | | | | | | | | | | |

1) Average service life 100,000 h at T_A = + 25 °C

3) With light/dark ratio 1:1

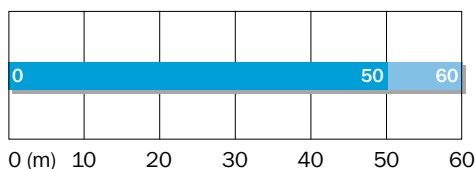
5) A = V_S connections reverse-polarity protected

2) Provide suitable spark suppression for inductive or capacitive loads

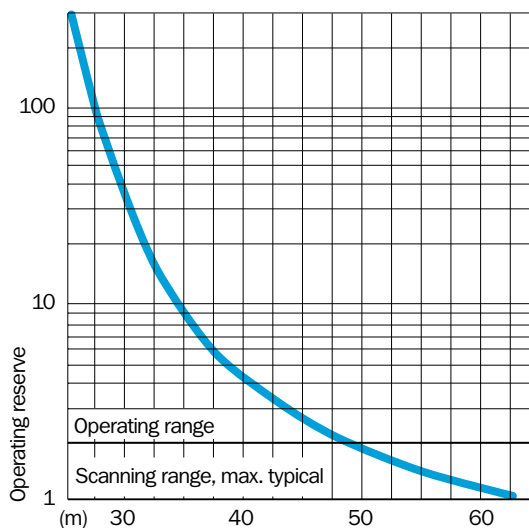
4) Reference voltage 250 V AC

C = Interference pulse suppression

Operating range and operating reserve



Operating range Scanning range, max. typical



Order information

| Type | Part no. |
|----------------|-----------|
| WS/WE 36-R 230 | 1 010 978 |
| WS/WE 36-R 730 | 1 010 980 |