W 36: Mastering complex tasks reliably

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 photoelectric 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.

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.

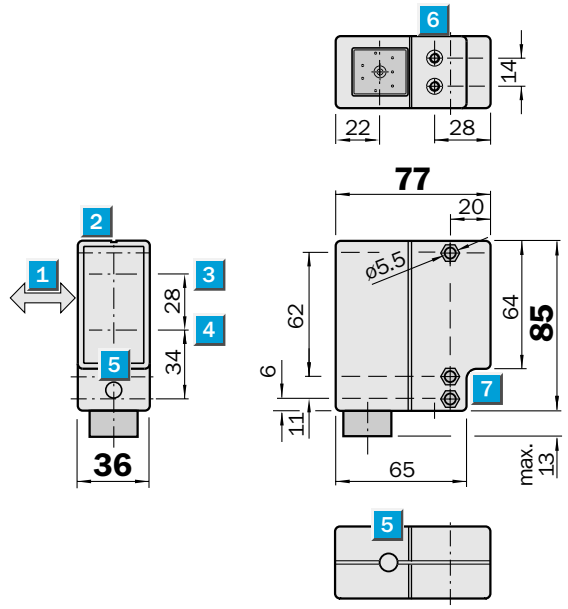
► Hot or cold, wet, dry or dusty – WL 36 photoelectric reflex switches are designed for use under hostile operating conditions indoors and outdoors – here they are being used on the roll-up gate of a carwash.

Scanning distance 200…800 mm

Photoelectric proximity switches

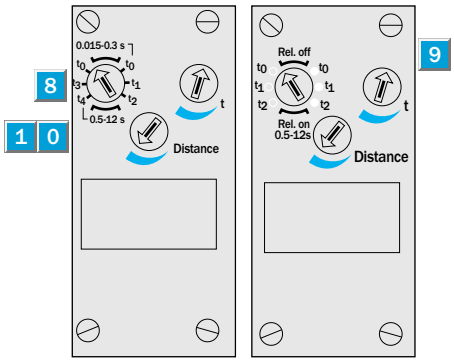
- Robust plastic housing
- Infrared light
- Selectable time delay

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 M 5 threaded mounting hole – 5.5 mm deep
7 Mounting holes, recesses on both sides for M 5 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
10 Scanning distance adjustment

Switch-selectable time delay

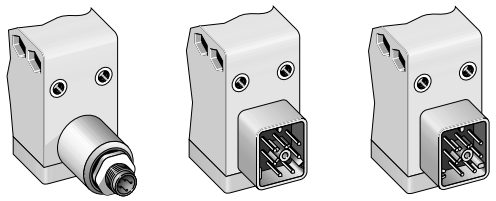
0.015 – 0.3 s with DC only
t_0 without time delay
t_1 ON-delay
t_2 OFF-delay

0.5 – 12 s with DC
t_0 without time delay
t_3 ON-delay
t_4 OFF-delay

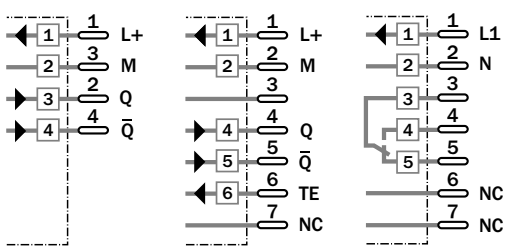
0.5 – 12 s with UC
t_0 without time delay
t_1 ON-delay
t_2 OFF-delay

Connection types

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



4-pin, M 12	7-pin	7-pin

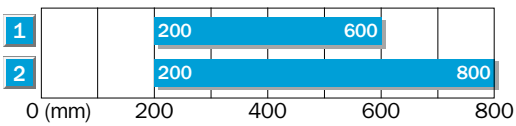


Accessories	page
Cable receptacles	496
Mounting brackets	510

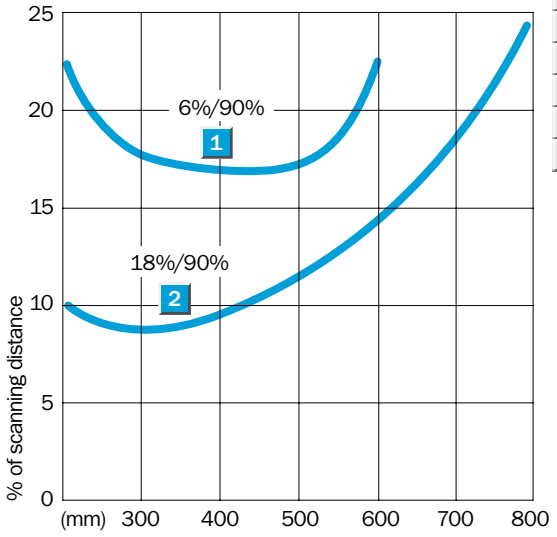
Technical data	WT 36-	N 410	P 410	N 710	P 710	R 710
Scanning distance	200…800 mm, adjustable	■	■	■	■	■
Light source[1], **light type**	LED, infrared light	■	■	■	■	■
Light spot diameter	Approx. 15 mm at 800 mm	■	■	■	■	■
Supply voltage V_S	10…30 V DC[2]	■	■	■	■	
	24…240 V UC (+ 10 % / – 25 %)					■
Ripple[3]	≤ 5 V_{SS}	■	■	■	■	
Current consumption[4]	≤ 50 mA	■	■	■	■	
Power consumption	< 2 VA					■
Switching outputs	PNP, Q and $\overline{Q}$		■		■	
	NPN, Q and $\overline{Q}$	■		■		
	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

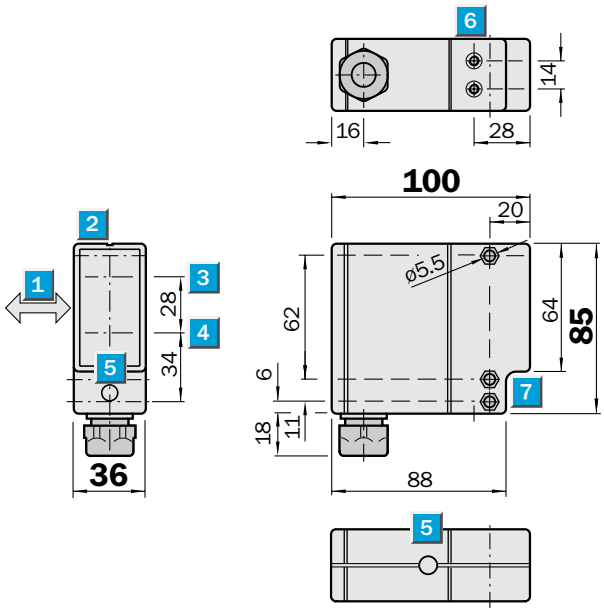
Type	Part no.
WT 36-N 410	1 011 109
WT 36-P 410	1 011 108
WT 36-N 710	1 006 370
WT 36-P 710	1 006 047
WT 36-R 710	1 005 927

Scanning distance 200…800 mm

Photoelectric proximity switches

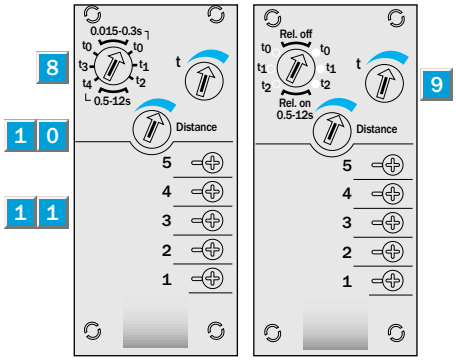
- Robust plastic housing
- Infrared
- Adjustable background suppression
- Easily accessible terminal chamber
- Selectable time delay

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 M 5 threaded mounting hole – 5.5 mm deep
7 Mounting holes, recesses on both sides for M 5 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
10 Scanning distance adjustment
11 Terminal connection

Switch-selectable time delay

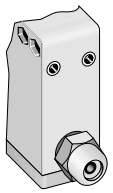
0.015 – 0.3 s with DC only
t_0 without time delay
t_1 ON-delay
t_2 OFF-delay

0.5 – 12 s with DC
t_0 without time delay
t_3 ON-delay
t_4 OFF-delay

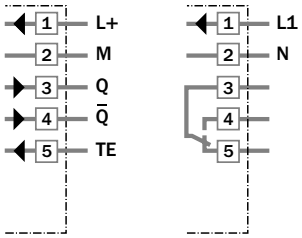
0.5 – 12 s with UC
t_0 without time delay
t_1 ON-delay
t_2 OFF-delay

Connection types

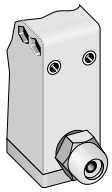
WT 36-N 210 | WT 36-P 210



PG 11, terminals



WT 36-R 210



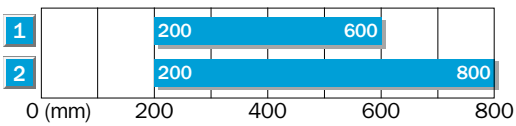
PG 11, terminals

Accessories	page
Mounting brackets	510

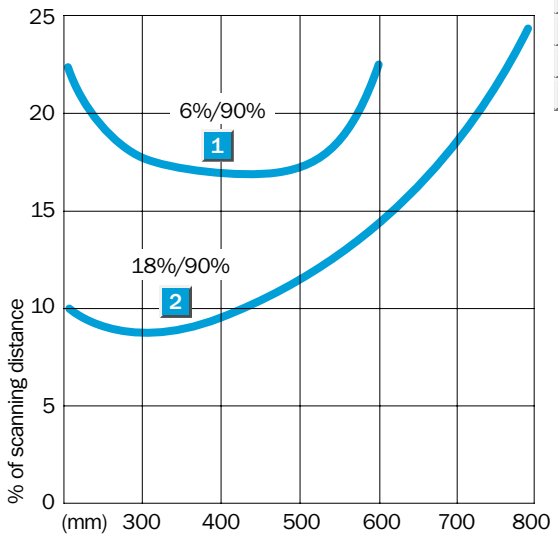
Technical data	WT 36-	N 210	P 210	R 210
Scanning distance	200…800 mm, adjustable	■	■	■
Light source[1], **light type**	LED, infrared light	■	■	■
Light spot diameter	Approx. 15 mm at 800 mm	■	■	■
Supply voltage V_S	10…30 V DC[2]	■	■	
	24…240 V UC (+ 10 % / – 25 %)			■
Ripple[3]	≤ 5 V_{SS}	■	■	
Current consumption[4]	≤ 50 mA	■	■	
Power consumption	< 2 VA			■
Switching outputs	PNP, Q and $\overline{Q}$		■	
	NPN, Q and $\overline{Q}$	■		
	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]	⧈	■	■	■
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