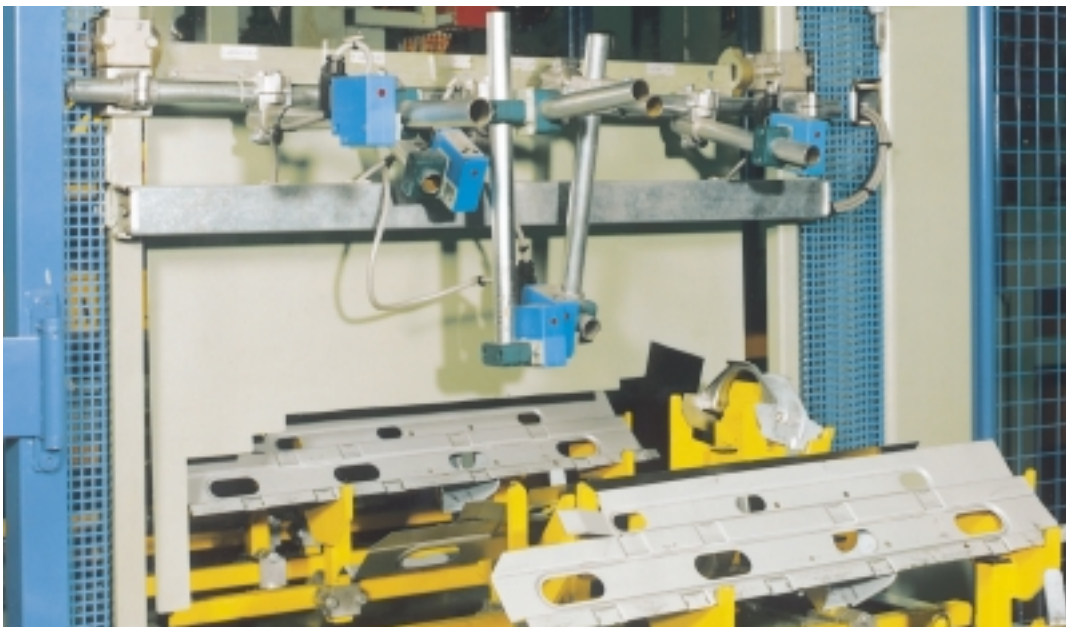
W 30 Photoelectric proximity switches: Clear signals even with low remission

In addition, the sensor offers a range of standard features. These include adjustable light- and dark-switching in the large terminal chamber, switching outputs that can be defined either for PNP, NPN or B configurations, and versions with optional time delay.

Fixed scanning distances of 100, 200 and 305 mm requiring alignment once only; WT 30 sensors can detect even difficult objects. Thanks to their robust housing (with a high enclosure rating of IP 67), these photoelectric proximity switches can also perform their tasks in unpleasant environments. A clear signal is generated for a machine control system even if only a small amount of light is reflected by the object.



◄ Production control in a punching machine – WT 30 photoelectric proximity switches provide the solution.

▼ In a car factory, WT 30 sensors being used to ensure that windscreens are precisely positioned before they are bonded to the vehicle body.

▲ WT 30 used to check the presence of six-packs.

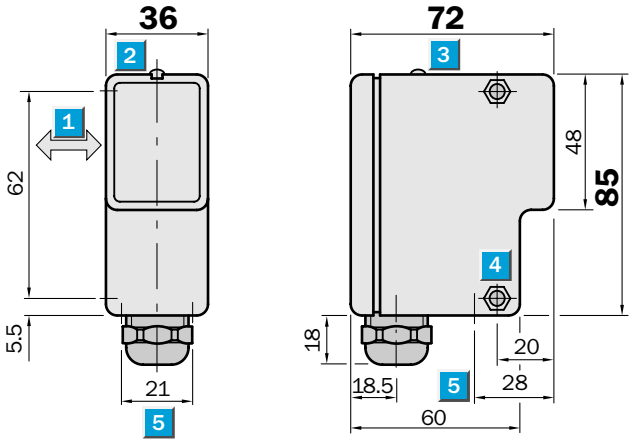
► WT 30 photo-electric proximity switches detecting the location of pallets to control the path of the shrink-wrapper.

Scanning distance 100/200/300 mm

Photoelectric proximity switches

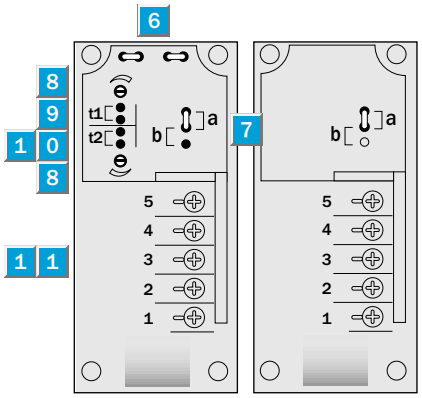
- Infrared light
- Precise background suppression
- Selectable time delays
- Terminal chamber

Dimensional drawing



Adjustments possible

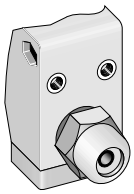
WT 30-02	WT 30-01
WT 30-12	WT 30-11
WT 30-22	WT 30-21



1 Direction of movement of the material being scanned
2 Alignment sight
3 Power indicator
4 Mounting holes on both sides, with recesses for M 5 hex nuts
5 M 5 threaded mounting hole – 5.5 mm deep
6 Holder for jumpers
7 Light-/dark-switching, selected via jumper a = light-switching, b = dark-switching
8 Time control
9 ON-delay t_1
10 OFF-delay t_2
11 Terminal connections

Connection type

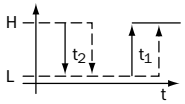
All types



Time delay selected via jumpers

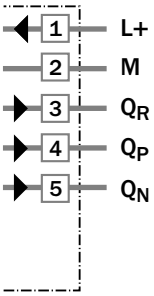
0.04 – 12 s

Jumper t_1 connected:
ON-delay
Jumper t_2 connected:
OFF-delay



Accessories	page
Mounting brackets	510

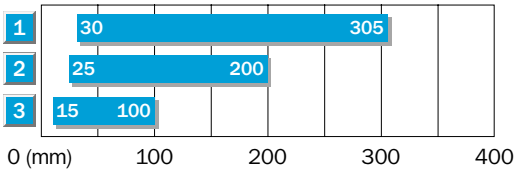
PG 9, terminals



Technical data	WT 30-	01	02	21	22	11	12
Scanning distance	300 mm	■	■				
	200 mm			■	■		
	100 mm					■	■
Light source[1], **light type**	LED, infrared light	■	■	■	■	■	■
Light spot diameter	Approx. 11 mm at 300 mm	■	■				
	Approx. 11 mm at 200 mm			■	■		
	Approx. 3.5 mm at 100 mm					■	■
Supply voltage V_S	10…30 V DC[2]	■	■	■	■	■	■
Ripple[3]	< 10 V_{SS}	■	■	■	■	■	■
Current consumption[4]	≤ 80 mA	■	■	■	■	■	■
Switching outputs	PNP: Q_P and NPN: Q_N	■	■	■	■	■	■
	PNP or NPN: Q_R with current limiting[5]	■	■	■	■	■	■
Light-/dark-switching	Selected via jumper	■	■	■	■	■	■
Time delay	0.04…12 s		■		■		■
Output current I_A max.	250 mA	■	■	■	■	■	■
Response time[6]	≤ 15 ms	■	■	■	■	■	■
Max. switching frequency[7]	30/s	■	■	■	■	■	■
Connection type	PG screw fixing	■	■	■	■	■	■
VDE protection class[8]	⧄	■	■	■	■	■	■
Circuit protection[9]	A, B, C	■	■	■	■	■	■
Enclosure rating	IP 67	■	■	■	■	■	■
Ambient temperature T_A	Operation – 25 °C…+ 55 °C	■	■	■	■	■	■
	Storage – 40 °C…+ 80 °C	■	■	■	■	■	■
Weight	Approx. 210 g	■	■	■	■	■	■
Housing material	Glassfibre-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) Jumper Q_P to Q_N
6) Signal transit time with resistive load
7) With light/dark ratio 1:1
8) Reference voltage 50 V DC
9) A = V_S connections reverse-polarity protected
B = Output Q_P, Q_N, Q_R short-circuit protected
C = Interference pulse suppression

Scanning distance



	1	2	3
Scanning distance on black for[10] WT 30-	01/02	21/22	11/12
Tolerance of max. scanning distance	± 10 mm	± 6 mm	± 4 mm
Difference in scanning distance, black/white	± 5 mm	± 3 mm	± 2 mm

Order information

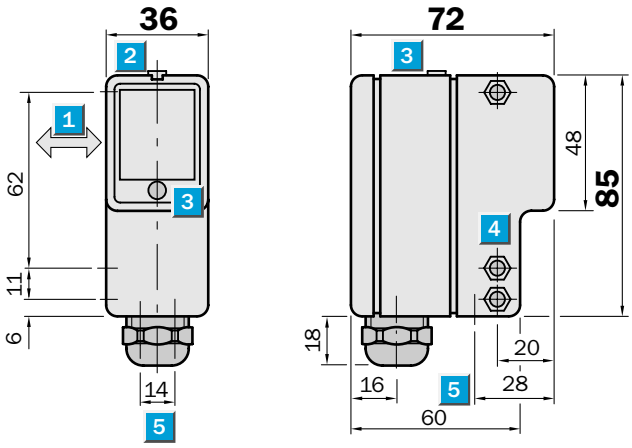
Type	Part no.
WT 30-01	1 004 179
WT 30-02	1 004 180
WT 30-21	1 004 585
WT 30-22	1 004 586
WT 30-11	1 004 489
WT 30-12	1 004 490

Scanning distance 100…2000 mm

Photoelectric proximity switches

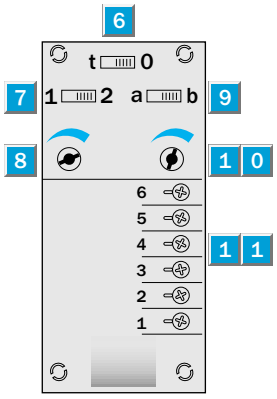
- Infrared light
- Photoelectric proximity switch, energetic
- Selectable time delay
- Terminal chamber or plug

Dimensional drawing



Adjustments possible

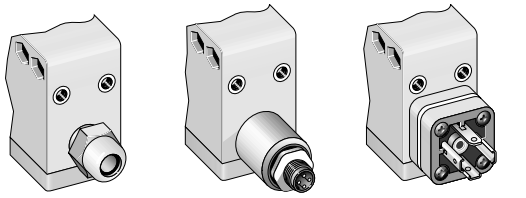
WT 32-B 230
WT 32-B 430
WT 32-B 330



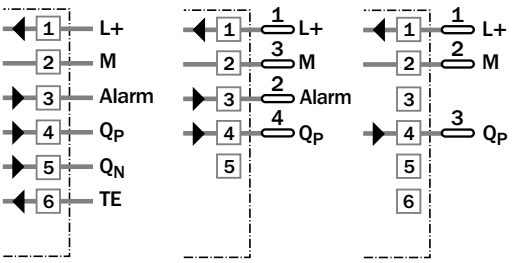
1 Standard direction of the material being scanned
2 Alignment sight
3 LED signal strength indicator
4 Mounting holes, recesses on both sides for M 5 hex nuts
5 M 5 threaded mounting hole – 5.5 mm deep
6 ON/OFF timer switch
t = Time ON, 0 = Time OFF
7 Time delay
1 ON-delay
2 OFF-delay
8 Time control 0.02 to 1 s
9 Light/dark selector
a = Light-switching
b = Dark-switching
1 0 Scanning distance adjustment
1 1 Terminal connections

Connection types

WT 32-B 230 | WT 32-B 430 | WT 32-B 330



PG 11, terminals | 4-pin, M 12 | 3-pin



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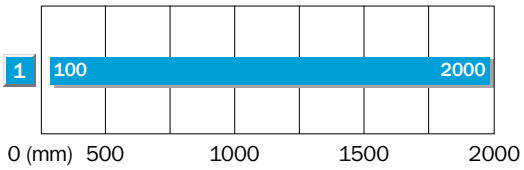
Mounting brackets	510

Technical data	WT 32-	B 230	B 330	B 430
Scanning distance	100…2000 mm, adjustable	■	■	■
Light source[1], **light type**	LED, infrared light	■	■	■
Light spot diameter	Approx. 60 mm at 2,000 mm	■	■	■
Supply voltage V_S	10…30 V DC[2]	■	■	■
Ripple[3]	< 5 V_{SS}	■	■	■
Current consumption[4]	≤ 80 mA	■	■	■
Switching outputs	PNP: Q_P and NPN: Q_N	■		
	PNP: Q_P or NPN: Q_N		■	■
Light-/dark-switching	Switch-selectable	■	■	■
Output current I_A max.	200 mA	■	■	■
Response time[5]	≤ 5.6 ms[6]	■	■	■
Pre-failure signalling output VMA	Alarm, PNP, open collection	■		■
Operating condition "correct"[7]	Output HIGH (V_S – 1.5 V)	■		■
Operating condition "faulty"	Periodic switching to V_S (5/s)	■		■
Test input "TE"	Sender switched off	■		
Sender OFF	Test input to 0 V	■		
Connection types	PG cable gland	■		
	Plug		■	■
VDE protection class[8]	⧈	■	■	■
Circuit protection[9]	A, B, C	■	■	■
Enclosure rating	IP 65		■	
	IP 67	■		■
Ambient temperature T_A	Operation – 25 °C…+ 55 °C	■	■	■
	Storage – 40 °C…+ 70 °C	■	■	■
Weight	Approx. 165 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) Without time delay
7) Signal reserve ≥ 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

Scanning distance



1 Scanning distance on white, 90 % remission

Order information

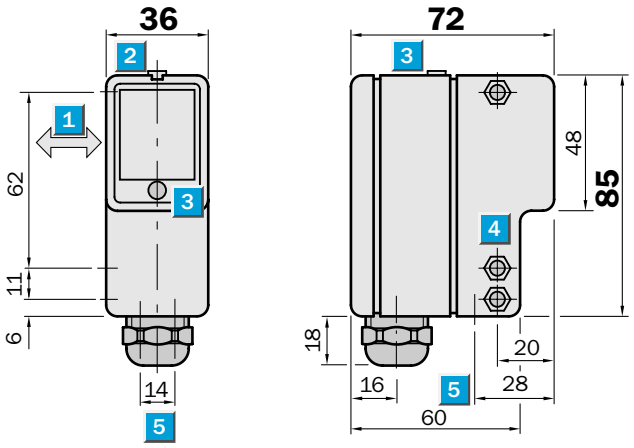
Type	Part no.
WT 32-B 230	1 007 397
WT 32-B 330	1 007 411
WT 32-B 430	1 011 110

Scanning distance 100…2000 mm

Photoelectric proximity switches

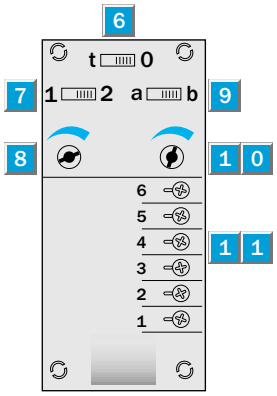
- Infrared light
- Photoelectric proximity switch, energetic
- Selectable time delay
- Terminal chamber

Dimensional drawing



Adjustments possible

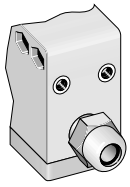
WT 32-R 230



1 Standard direction of the material being scanned
2 Alignment sight
3 LED signal strength indicator
4 Mounting holes, recesses on both sides for M 5 hex nuts
5 M 5 threaded mounting hole – 5.5 mm deep
6 ON/OFF timer switch
t = Time ON, 0 = Time OFF
7 Time delay
1 ON-delay
2 OFF-delay
8 Time control 0.5 to 12 s
9 Light/dark selector
a = Light-switching
b = Dark-switching
1 0 Scanning distance adjustment
1 1 Terminal connections

Connection type

WT 32-R 230



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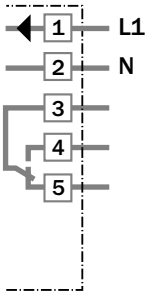
Mounting brackets	510

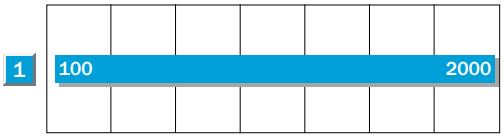
PG 11, terminals



Technical data	WT 32-	R 230
Scanning distance	100…2000 mm, adjustable	
Light source[1], **light type**	LED, infrared light	
Light spot diameter	Approx. 60 mm at 2,000 mm	
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[3]	≤ 20 ms	
Light-/dark-switching	Switch-selectable	
Time delay	0.5…12 s	
Connection type	PG cable gland	
VDE protection class[4]	⧈	
Circuit protection[5]	A, C	
Enclosure rating	IP 67	
Ambient temperature T_A	Operation – 25 °C…+ 55 °C	
	Storage – 40 °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) 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

Scanning distance



1 Scanning distance on white, 90 % remission

Order information

Type	Part no.
WT 32-R 230	1 007 413