




W 250: Compact photoelectric switch series for a broad range of applications

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



- WT 250 photoelectric proximity switch with an adjustable scanning distance of 300 to 550 mm and background suppression.

Two supply voltage ranges with interface to permit further processing of sensor signals are available:

low voltage 10...30 V DC with PNP or NPN switching output, with M 12 plug, 4-pin (rotatable by 90°) or connecting cable. The L.ON/D.ON control cable reduces the number of variants by half.

The W 250 series of photoelectric switches is characterised by large scanning ranges, simple handling and a wide variety of application possibilities.

Universal voltage 12...240 V DC and 24...240 V AC, with potential-free relay switching output (SPDT).

The principal areas of application for the W 250 are:

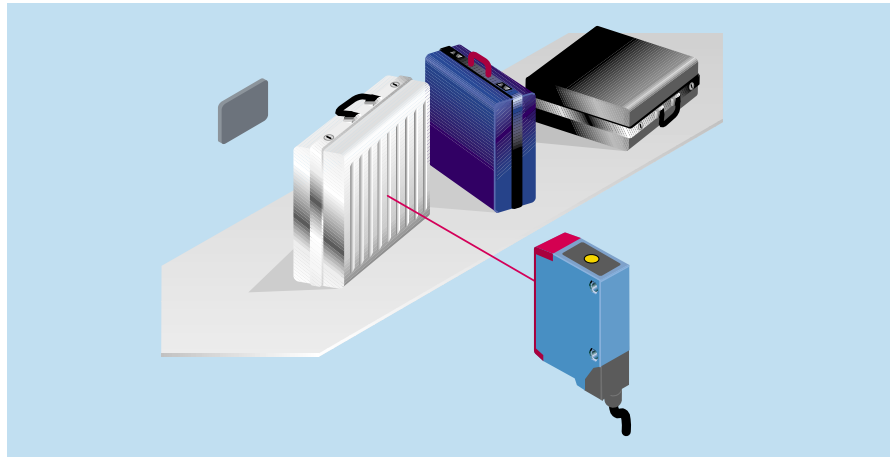
- handling and warehousing systems,
- door and gate control,
- wood working.

The mounting bracket and, for the WL 250, the P 250 reflector are included. In addition, the visible red light of the sender LED also facilitates adjustment and handling.

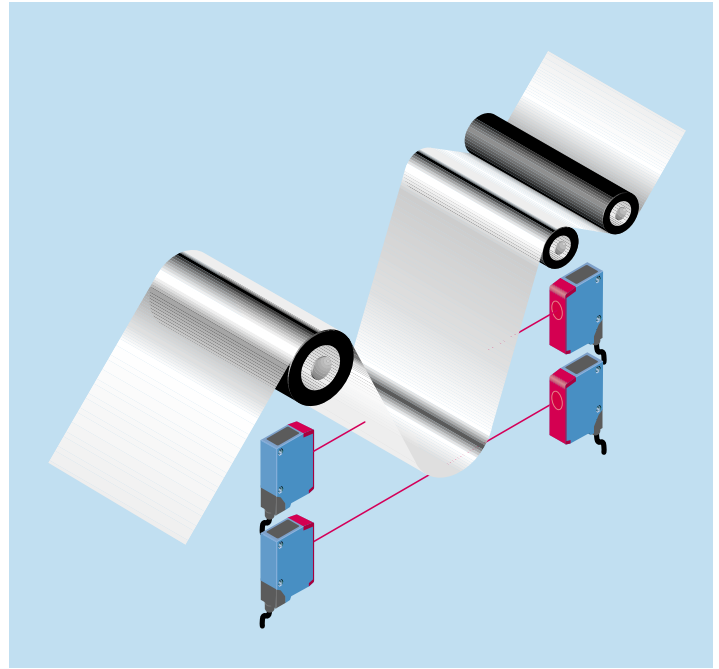
The scanning ranges:

- WS/WE 250 through-beam photoelectric switch: 20 m,
- WL 250 photoelectric reflex switch WL 250: 11 m, with polarising filter,

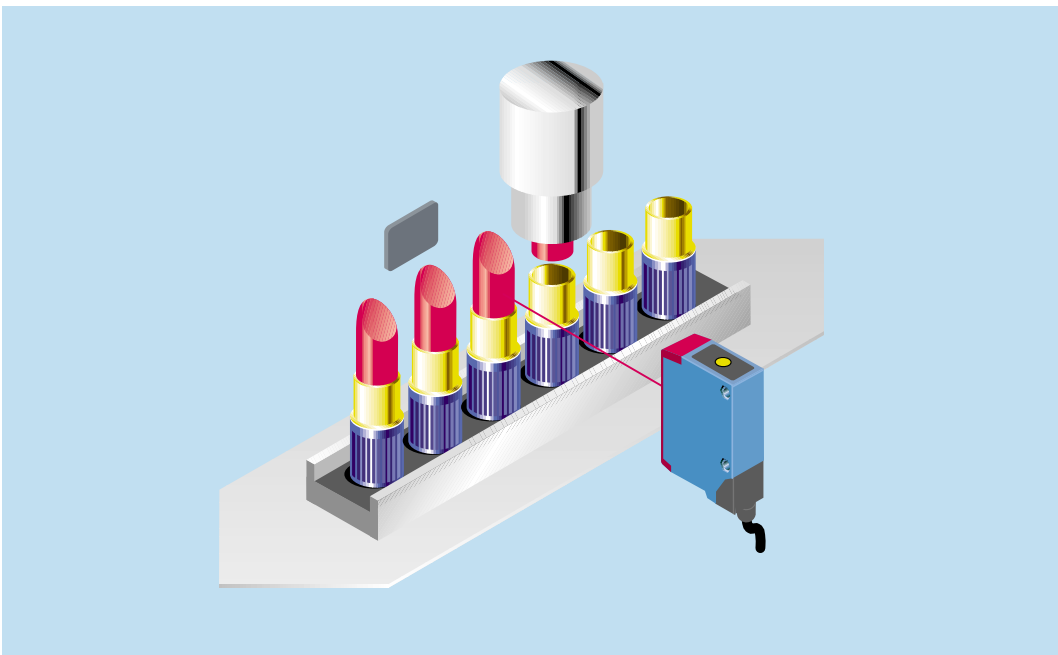
► WL 250 photoelectric reflex switches reliably detect glossy objects on conveyor belts.




▼ Checking heights on a packaging line – the WT 250 is used to solve this problem.



▲ No problems encountered in the continuous production of film and sheet metal runs. Through-beam photoelectric switches are used to monitor material looping to ensure that the tension of the run is correct.



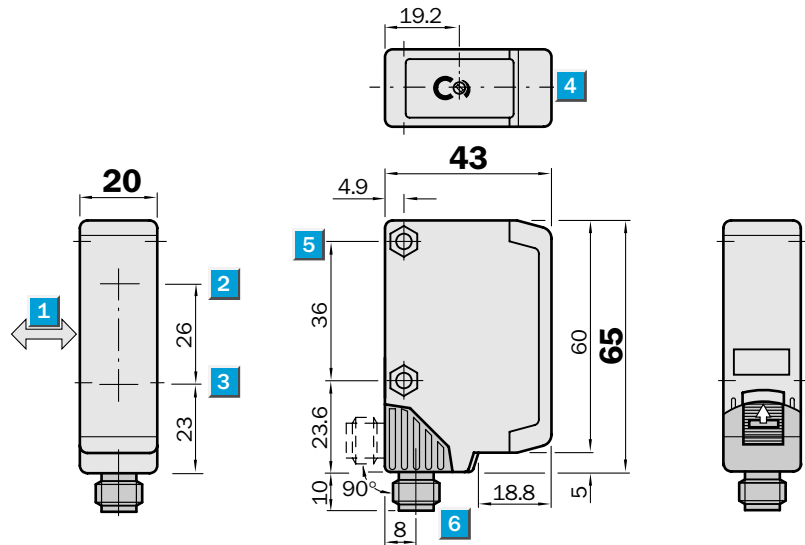
◀ No unpleasant surprises for the consumer. WL 250 photoelectric reflex switches ensure that lipsticks are the right length.


Scanning distance
10...600 mm

Photoelectric proximity switches

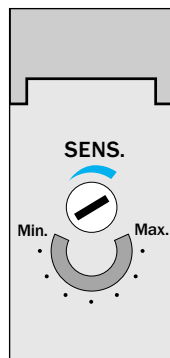
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- M 12 plug rotatable by 90°

Dimensional drawing



Adjustments possible

WT 250-P 162
WT 250-P 460
WT 250-N 162
WT 250-N 460

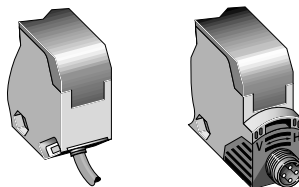


- 1 Standard direction of the material to be scanned
- 2 Transmission axis
- 3 Reception axis
- 4 Red LED signal strength indicator
- 5 Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 6 Connection cable or M 12 plug – 4-pin; plug position rotatable by 90° (V > H), V → vertical final position; H → horizontal final position; can be locked with slider
- 7 Scanning distance adjustment (2 turns), over-turn protected
- 8 Position indicator for scanning distance setting (270°)

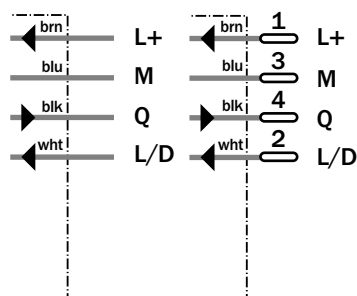


Connection types

WT 250-P 162	WT 250-P 460
WT 250-N 162	WT 250-N 460



4 x 0.18 mm ²	4-pin, M 12
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Accessories	page
Cable receptacles	496
Mounting brackets*	510


* included with delivery



Technical data		WT 250-	P 162	P 460	N 162	N 460						
Scanning distance, adjustable	Max. 10...600 mm ¹⁾											
	Min. 35...110 mm ¹⁾											
Scanning distance, adjustable	Potentiometer, 2 turns, with position indicator											
Light source²⁾, light type	LED, visible red light											
Light spot diameter	Approx. 35 mm at 500 mm											
Angle of dispersion, sender	Approx. 3°											
Supply voltage V_S	10...30 V DC ³⁾											
Residual ripple ⁴⁾	≤ 5 V _{SS}											
Current consumption ⁵⁾	≤ 35 mA											
Switching outputs	PNP, open collector: Q NPN, open collector: Q											
Output current I _A max.	100 mA											
Light receiver, switching type	Light-/dark-switching via control wire:											
	+ V _S = light-switching											
	0 V = dark-switching											
Response time ⁶⁾	≤ 2 ms											
Max. switching frequency ⁷⁾	250/s											
Connection types	Cable PVC, 2 m ⁸⁾											
	4 x 0.18 mm ² , ∅ 3.8 mm											
	Plug M 12, 4-pin, 90° rotatable											
VDE protection class⁹⁾	□											
Circuit protection¹⁰⁾	A, B, C, D											
Enclosure rating	IP 67											
Ambient temperature T_A	Operation - 25 °C...+ 55 °C											
	Storage - 40 °C...+ 70 °C											
Weight	with cable 2 m	Approx. 80 g										
	with plug M 12, 4-pin	Approx. 40 g										
Housing material	Housing: ABS; optics: PC											

- | | | | |
|---|--|---|--|
| 1) 90 % remission of material scanned (based on standard white according to DIN 5033) | 4) May not exceed or fall short of V _S tolerances | 10) A = V _S connections reverse-polarity protected
B = Output Q short-circuit protected
C = Interference pulse suppression
D = Output overcurrent and short-circuit protected | 11) Black = 6 % remission
Gray = 18 % remission
White = 90 % remission |
| 2) Average service life T _A = + 25 °C; LED, red light 100,000 h | 5) Without load | | |
| 3) Limit value | 6) Signal transit time with resistive load | | |
| | 7) With dark/light ratio 1:1 | | |
| | 8) Do not bend below 0 °C | | |
| | 9) Reference voltage 50 V DC | | |

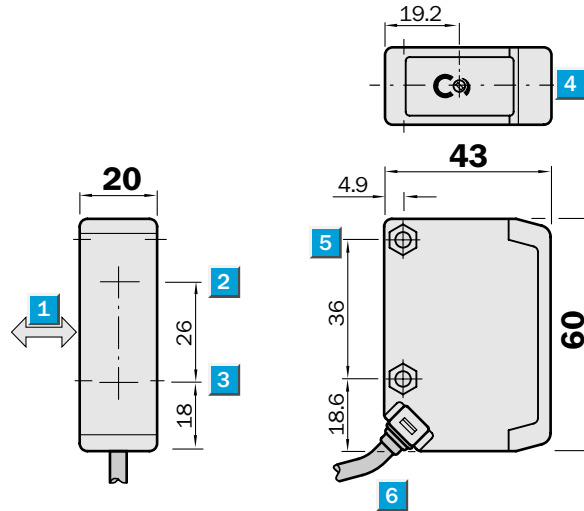
Scanning distance		Order information																																						
<table border="1"> <tr> <td>1</td> <td>A</td> <td>60/65 100/110</td> </tr> <tr> <td>1</td> <td>B</td> <td>40/50 400/450</td> </tr> <tr> <td>2</td> <td>A</td> <td>45/50 100/110</td> </tr> <tr> <td>2</td> <td>B</td> <td>20/30 500/550</td> </tr> <tr> <td>3</td> <td>A</td> <td>35/40 100/110</td> </tr> <tr> <td>3</td> <td>B</td> <td>10/20 550/600</td> </tr> </table> <p>0 (mm) 300 600</p> <p>■ Operating distance ■ Scanning distance, max. typical</p> <table border="1"> <tr> <td>1</td> <td>Scanning range on black¹¹⁾, white background</td> </tr> <tr> <td>2</td> <td>Scanning range on gray¹¹⁾, white background</td> </tr> <tr> <td>3</td> <td>Scanning range on white¹¹⁾, white background</td> </tr> <tr> <td>A</td> <td>Scanning distance control set to MIN</td> </tr> <tr> <td>B</td> <td>Scanning distance control set to MAX</td> </tr> </table>	1	A	60/65 100/110	1	B	40/50 400/450	2	A	45/50 100/110	2	B	20/30 500/550	3	A	35/40 100/110	3	B	10/20 550/600	1	Scanning range on black ¹¹⁾ , white background	2	Scanning range on gray ¹¹⁾ , white background	3	Scanning range on white ¹¹⁾ , white background	A	Scanning distance control set to MIN	B	Scanning distance control set to MAX	<p>30 20 10 0</p> <p>0 200 300 400 500</p> <p>6%/90% 18%/90% 90%/90%</p> <p>1 2 3</p>	<table border="1"> <thead> <tr> <th>Type</th> <th>Part no.</th> </tr> </thead> <tbody> <tr> <td>WT 250-P 162</td> <td>6 010 704</td> </tr> <tr> <td>WT 250-P 460</td> <td>6 010 706</td> </tr> <tr> <td>WT 250-N 162</td> <td>6 010 701</td> </tr> <tr> <td>WT 250-N 460</td> <td>6 010 703</td> </tr> </tbody> </table>	Type	Part no.	WT 250-P 162	6 010 704	WT 250-P 460	6 010 706	WT 250-N 162	6 010 701	WT 250-N 460	6 010 703
	1	A	60/65 100/110																																					
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WT 250-N 162	6 010 701																																							
WT 250-N 460	6 010 703																																							


Scanning distance
10...600 mm

Photoelectric proximity switches

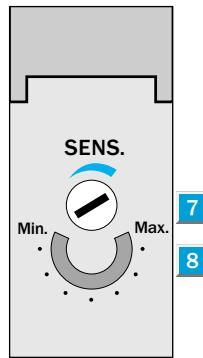
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- Universal current

Dimensional drawing



Adjustments possible

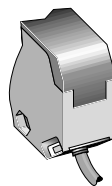
WT 250-S 162



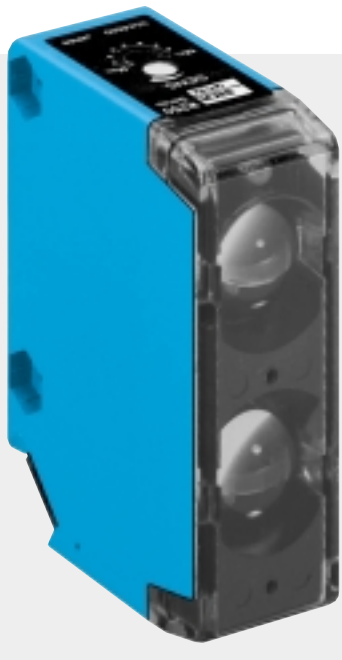
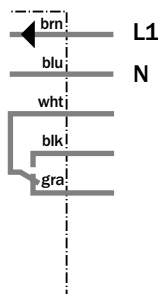
- 1 Standard direction of the material to be scanned
- 2 Transmission axis
- 3 Reception axis
- 4 Red LED signal strength indicator
- 5 Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 6 Connection cable
- 7 Scanning distance adjustment (2 turns), over-turn protected
- 8 Position indicator for scanning distance setting (270°)

Connection type

WT 250-S 162



5 x 0,76 mm²



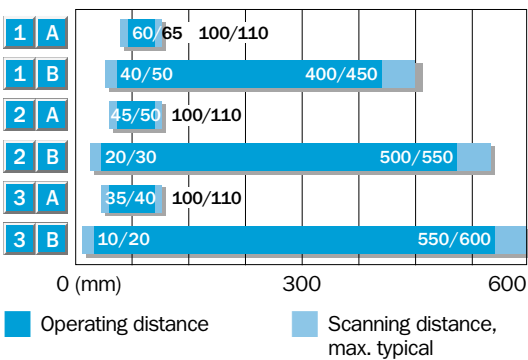
Accessories	page
Mounting brackets*	510

* included with delivery

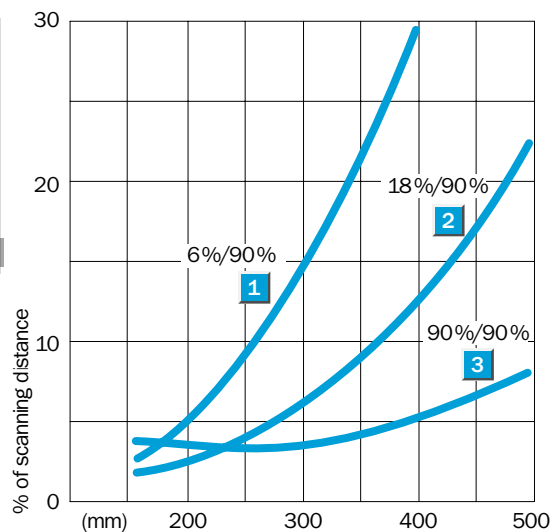
Technical data		WT 250-	S 162										
Scanning distance, adjustable	Max. 10...600 mm ¹⁾												
	Min. 35...110 mm ¹⁾												
Scanning distance, adjustable	Potentiometer, 2 turns, with position indicator												
Light source²⁾, light type	LED, visible red light												
Light spot diameter	Approx. 35 mm at 500 mm												
Angle of dispersion, sender	Approx. 3°												
Supply voltage V_S	10...240 V DC ³⁾												
	24...240 V AC												
Power consumption	≤ 2 VA												
Switching outputs	Relay, SPDT, electrically isolated												
Switching current I _A max. ⁴⁾	3 A/240 V AC; 3 A/30 V DC												
Light receiver, switching type	Light-switching												
Response time	≤ 15 ms												
Max. switching frequency ⁵⁾	33/s												
Connection type	Cable PVC ⁶⁾ , 2 m												
	5 x 0.76 mm ² , ø 6.3 mm												
VDE protection class⁷⁾	<input type="checkbox"/>												
Circuit protection⁸⁾	A, C												
Enclosure rating	IP 67												
Ambient temperature T_A	Operation - 25 °C...+ 55 °C												
	Storage - 40 °C...+ 70 °C												
Weight	Approx. 160 g												
Housing material	Housing: ABS; optics: PC												

- 1) 90 % remission of material scanned (based on standard white according to DIN 5033)
- 2) Average service life T_A = + 25 °C; LED, red light 100,000 h
- 3) ± 10 %
- 4) Ensure spark extinguishing for inductive or capacitive load
- 5) With dark/light ratio 1:1
- 6) Do not bend below 0 °C
- 7) Reference voltage 250 V UC
- 8) A = V_S connections reverse-polarity protected
C = Interference pulse suppression
- 9) Black = 6 % reflectance
Gray = 18 % reflectance
White = 90 % reflectance

Scanning distance



- 1 Scanning range on black¹¹⁾, white background
- 2 Scanning range on gray¹¹⁾, white background
- 3 Scanning range on white¹¹⁾, white background
- A Scanning distance control set to MIN
- B Scanning distance control set to MAX



Order information

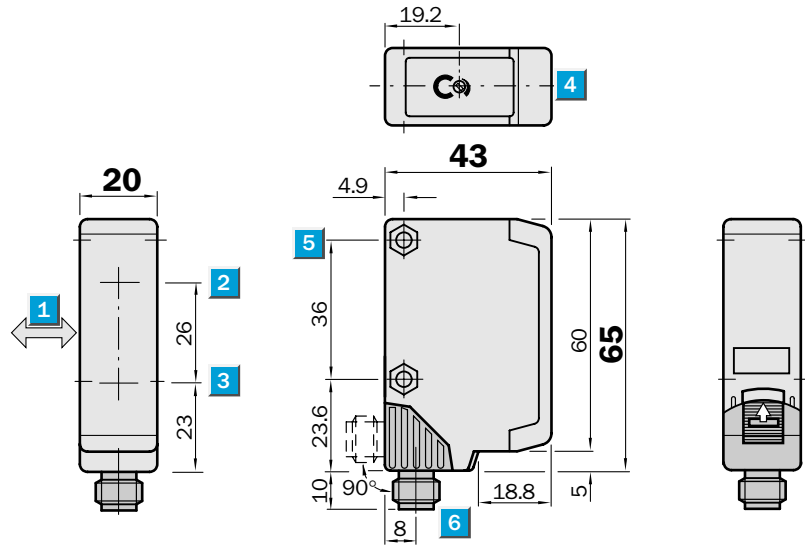
Type	Part no.
WT 250-S 162	6 010 707

Scanning distance
5...310 mm

Photoelectric proximity switches

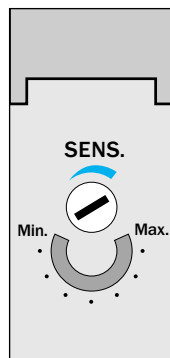
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- M 12 plug rotatable by 90°

Dimensional drawing



Adjustments possible

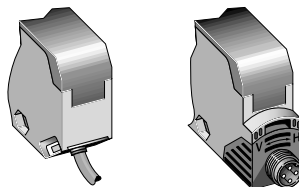
WT 250-P 142
WT 250-P 440
WT 250-N 142
WT 250-N 440



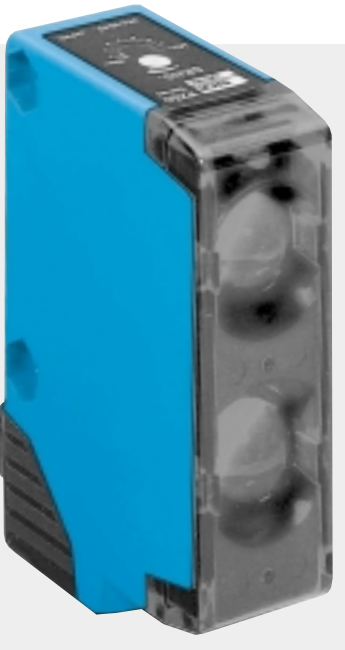
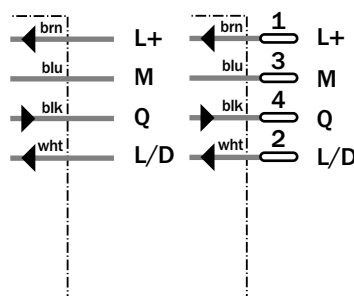
- 1 Standard direction of the material to be scanned
- 2 Transmission axis
- 3 Reception axis
- 4 Red LED signal strength indicator
- 5 Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 6 Connection cable or M 12 plug – 4-pin; plug position rotatable by 90° (V > H),
V → vertical final position
H → horizontal final position; can be locked with slider
- 7 Scanning distance adjustment (2 turns), over-turn protected
- 8 Position indicator for scanning distance setting (270°)

Connection types

WT 250-P 142	WT 250-P 440
WT 250-N 142	WT 250-N 440



4 x 0.18 mm ²	4-pin, M 12
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Accessories	page
Cable receptacles M 12	496
Mounting brackets*	510

* included with delivery

Technical data		WT 250-	P 142	P 440	N 142	N 440
Scanning distance, adjustable	Max. 5...310 mm ¹⁾					
	Min. 15...90 mm ¹⁾					
Scanning distance, adjustable	Potentiometer, 2 turns, with position indicator					
Light source²⁾, light type	LED, visible red light					
Light spot diameter	Approx. 35 mm at 500 mm					
Angle of dispersion, sender	Approx. 3°					
Supply voltage V_S	10...30 V DC ³⁾					
Ripple ⁴⁾	≤ 5 V _{SS}					
Current consumption ⁵⁾	≤ 35 mA					
Switching outputs	PNP, open collector: Q NPN, open collector: Q					
Output current I _A max.	100 mA					
Light receiver, switching type	Light-/dark-switching via control wire:					
	+ V _S = light-switching					
	0 V = dark-switching					
Response time ⁶⁾	≤ 2 ms					
Max. switching frequency ⁷⁾	250/s					
Connection types	Cable PVC, 2 m ⁸⁾ 4 x 0.18 mm ² , ∅ 3.8 mm Plug M 12, 4-pin, 90° rotatable					
VDE protection class⁹⁾	□					
Circuit protection¹⁰⁾	A, B, C, D					
Enclosure rating	IP 67					
Ambient temperature T_A	Operation - 25 °C...+ 55 °C Storage - 40 °C...+ 70 °C					
Weight	with cable 2 m	Approx. 80 g				
	with plug M 12, 4-pin	Approx. 40 g				
Housing material	Housing: ABS; optics: PC					

- 1) 90 % remission of material scanned (based on standard white according to DIN 5033)
- 2) Average service life T_A = + 25 °C; LED, red light 100,000 h
- 3) Limit value
- 4) May not exceed or fall short of V_S tolerances
- 5) Without load
- 6) Signal transit time with resistive load
- 7) With dark/light ratio 1:1, without time level
- 8) Do not bend cable below 0 °C
- 9) Reference voltage 50 V DC
- 10) A = V_S connections reverse-polarity protected
B = Output Q short-circuit protected
C = Interference pulse suppression
D = Output overcurrent and short-circuit protected
- 11) Black = 6 % remission
Gray = 18 % remission
White = 90 % remission


Scanning distance

Configuration	Operating distance (mm)	Scanning distance, max. typical (mm)
1 A	25/35	85/90
1 B	15/25	240/250
2 A	15/20	85/90
2 B	5/20	300/310
3 A	15/20	85/90
3 B	5/10	300/310

- 1 Scanning range on black¹¹⁾, white background
- 2 Scanning range on gray¹¹⁾, white background
- 3 Scanning range on white¹¹⁾, white background
- A Scanning distance control set to MIN
- B Scanning distance control set to MAX

Order information

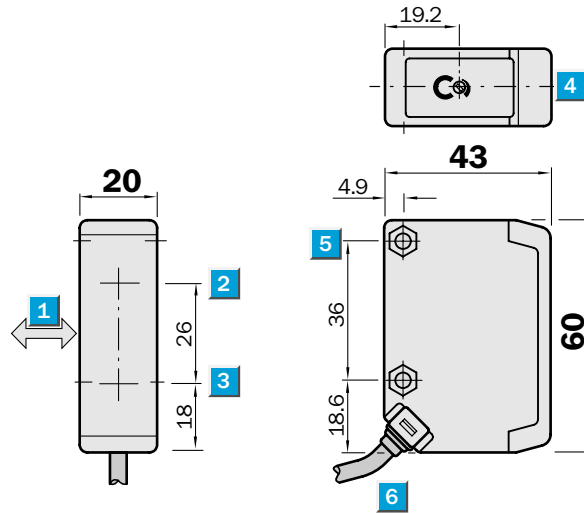
Type	Part no.
WT 250-P 142	6 010 619
WT 250-P 440	6 010 621
WT 250-N 142	6 010 616
WT 250-N 440	6 010 618


Scanning distance
5...310 mm

Photoelectric proximity switches

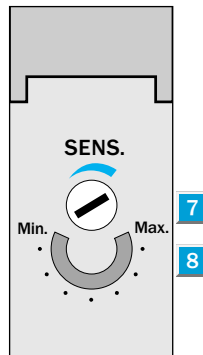
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- Universal current, relay switching output, SPDT

Dimensional drawing



Adjustments possible

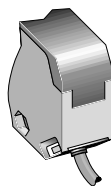
WT 250-S 142



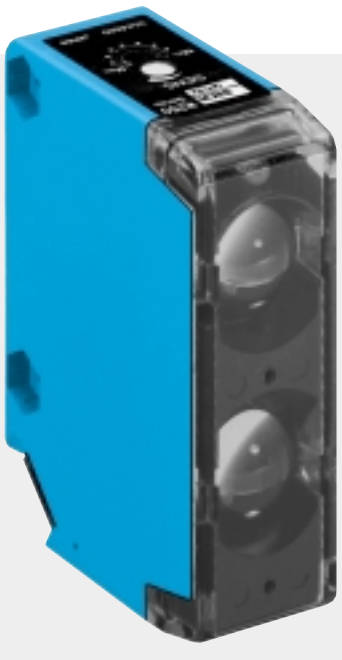
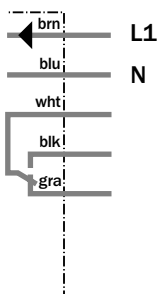
- 1 Standard direction of the material to be scanned
- 2 Transmission axis
- 3 Reception axis
- 4 Red LED signal strength indicator
- 5 Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 6 Connection cable
- 7 Scanning distance adjustment (2 turns), over-turn protected
- 8 Position indicator for scanning distance setting (270°)

Connection type

WT 250-S 142



5 x 0.76 mm²



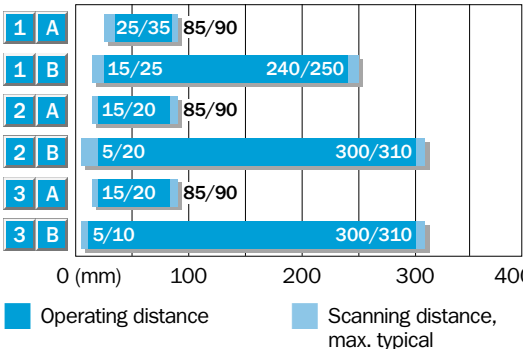
Accessories	page
Mounting brackets*	510

* included with delivery

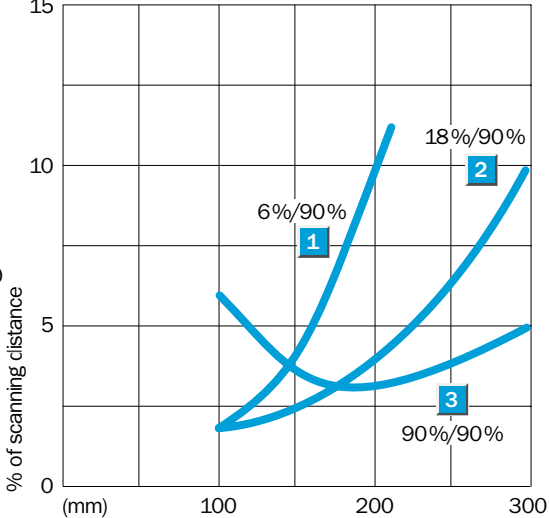
Technical data		WT 250-	S 142										
Scanning distance, adjustable	Max. 5...310 mm ¹⁾												
	Min. 15...90 mm ¹⁾												
Scanning distance, adjustable	Potentiometer, 2 turns, with position indicator												
Light source²⁾, light type	LED, visible red light												
Light spot diameter	Approx. 25 mm at 300 mm												
Angle of dispersion, sender	Approx. 3°												
Supply voltage V_S³⁾	12...240 V DC												
	24...240 V AC												
Power consumption	≤ 2 VA												
Switching outputs	Relay, SPDT, electrically isolated												
Switching current I _A max. ⁴⁾	3 A/240 V AC; 3 A/30 V DC												
Light receiver, switching type	Light-switching												
Response time	≤ 15 ms												
Max. switching frequency ⁵⁾	33/s												
Connection type	Cable PVC ⁶⁾ , 2 m												
	5 x 0.76 mm ² , ø 6.3 mm												
VDE protection class⁷⁾	<input type="checkbox"/>												
Circuit protection⁸⁾	A, C												
Enclosure rating	IP 67												
Ambient temperature T_A	Operation - 25 °C...+ 55 °C												
	Storage - 40 °C...+ 70 °C												
Weight	Approx. 160 g												
Housing material	Housing: ABS; optics: PC												

- 1) 90 % remission of material scanned (based on standard white according to DIN 5033)
- 2) Average service life T_A = + 25 °C; LED, red light 100,000 h
- 3) ± 10 %
- 4) Ensure spark extinguishing for inductive or capacitive load
- 5) With dark/light ratio 1:1
- 6) Do not bend below 0 °C
- 7) Reference voltage 250 V UC
- 8) A = V_S connections reverse-polarity protected
C = Interference pulse suppression
- 9) Black = 6 % remission
Gray = 18 % remission
White = 90 % remission

Scanning distance		Order information	
		Type	Part no.
		WT 250-S 142	6 010 622



1	Scanning range on black ⁹⁾ , white background
2	Scanning range on gray ⁹⁾ , white background
3	Scanning range on white ⁹⁾ , white background
A	Scanning distance control set to MIN
B	Scanning distance control set to MAX

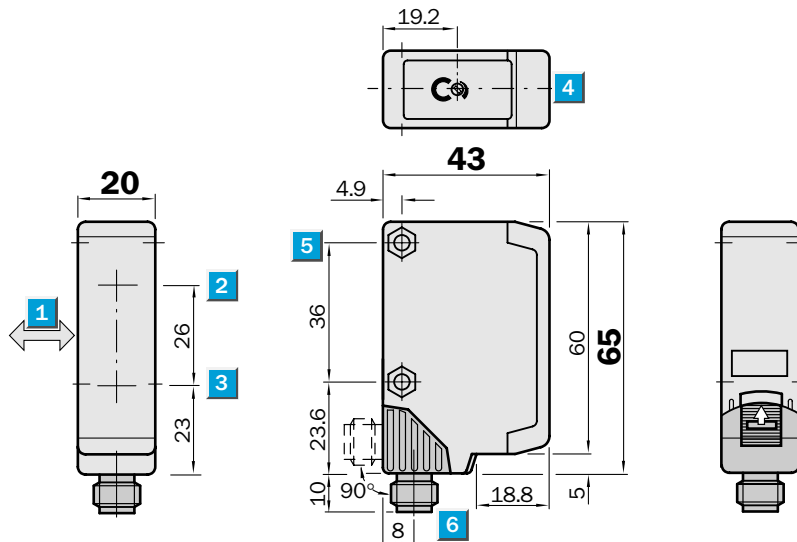


	Scanning range 0.01...13.5 m (PL 80 A)
	Scanning range 0.01...9.0 m (P 250)
Photoelectric reflex switches	

- Polarisation filter, ensuring reliable detection of objects with reflective surfaces
- Robust, compact plastic housing
- Adjustable sensitivity setting (2 turns) with position indicator (270°)
- M 12 plug rotatable by 90°



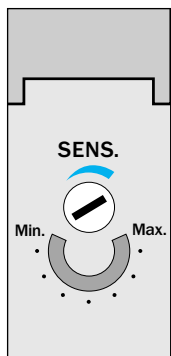
Dimensional drawing



Adjustments possible

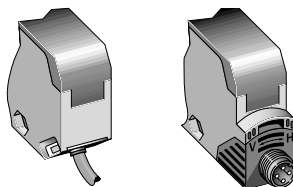
WL 250-P 132
WL 250-P 430
WL 250-N 132
WL 250-N 430

- 1** Reception axis
- 2** Transmission axis
- 3** Red LED signal strength indicator
- 4** Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 5** Connection cable or M 12 plug – 4-pin; plug position rotatable by 90° (V > H), V → vertical final position, H → horizontal final position; can be locked with slider
- 6** Sensitivity adjustment (2 turns), over-turn protection
- 7** Position indicator for sensitivity setting (270°)

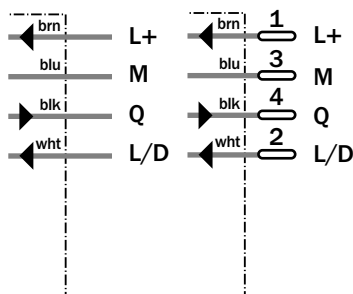


Connection types

WL 250-P 132	WL 250-P 430
WL 250-N 132	WL 250-N 430



4 x 0.18 mm ²	4-pin, M 12
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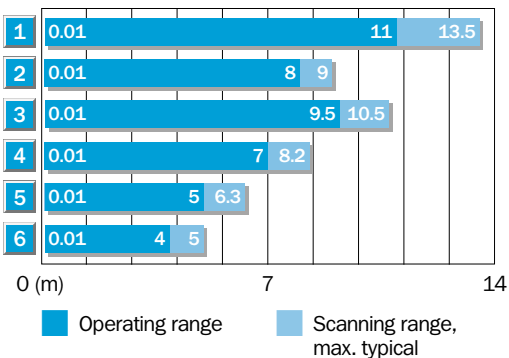
Accessories	page
Cable receptacles	496
Mounting brackets*	510
Reflector P 250**	520
Reflectors	520

* included with delivery
 ** reflector P 250 included with delivery

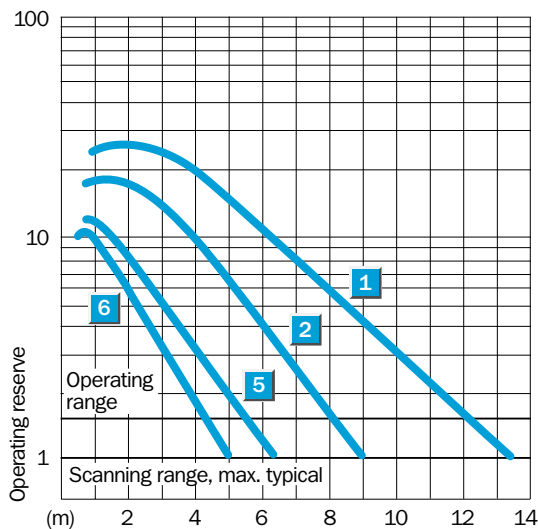
Technical data		WL 250-	P 132	P 430	N 132	N 430						
Scanning range , max. typical/on refl.	0.01...13.5 m/PL 80 A											
	max. typical/on refl. 0.01...9 m/P 250 (included)											
Recommended operating range	0.01...8 m/P 250											
Sensitivity, adjustable	Potentiometer, 2 turns, with position indicator											
Light source¹⁾, light type	LED, visible red light with polarising filter											
Light spot diameter	Approx. 400 mm at 8 m											
Angle of dispersion, sender	Approx. 2.5°											
Supply voltage V_S	10...30 V DC ²⁾											
Residual ripple ³⁾	≤ 5 V _{SS}											
Current consumption ⁴⁾	≤ 35 mA											
Switching outputs	PNP, open collector: Q NPN, open collector: Q											
Output current I _A max.	100 mA											
Light receiver, switching type	Light-/dark-switching via control wire: + V _S = light-switching 0 V = dark-switching											
Response time ⁵⁾	≤ 0.7 ms											
Max. switching frequency ⁶⁾	700/s											
Connection types	Cable PVC, 2 m ⁷⁾ 4 x 0.18 mm ² , ∅ 3.8 mm Plug M 12, 4-pin, 90° rotatable											
VDE protection class⁸⁾	□											
Circuit protection⁹⁾	A, B, C, D											
Enclosure rating	IP 67											
Ambient temperature T_A	Operation - 25 °C...+ 55 °C Storage - 40 °C...+ 70 °C											
Weight	with cable 2 m: Approx. 80 g with plug M 12, 4-pin: Approx. 40 g											
Housing material	Housing: ABS; optics: PMMA											

- 1) Average service life at T_A = + 25 °C; LED, red light 100,000 h
- 2) Limit value
- 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, without time delay
- 7) Do not bend below 0 °C
- 8) Reference voltage 50 V DC
- 9) A = V_S connections reverse-polarity protected
B = Output Q short-circuit protected
C = Interference pulse suppression
D = Output overcurrent and short-circuit protected

Scanning range and operating reserve



Reflector type	Operating range
1 PL 80 A	0.01...11.0 m
2 P 250	0.01...8.0 m
3 PL 50 A or PL 40 A	0.01...9.5 m
4 PL 30 A or PL 31 A	0.01...7.0 m
5 PL 20 A	0.01...5.0 m
6 Reflective tape «Diamond Grade»	0.01...4.0 m



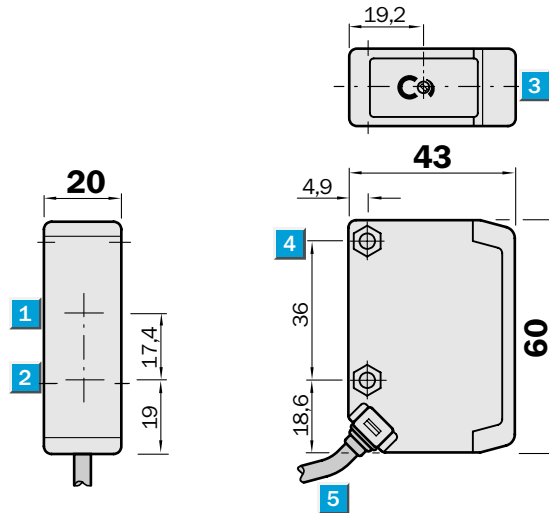
Order information

Type	Part no.
WL 250-P 132	6 010 608
WL 250-P 430	6 010 610
WL 250-N 132	6 010 605
WL 250-N 430	6 010 607

	Scanning range 0.01...13.5 m (PL 80 A)
	Scanning range 0.01...9.0 m (P 250)
Photoelectric reflex switches	

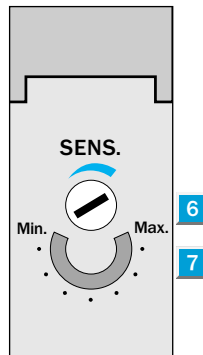
- Polarisation filter, ensuring reliable detection of objects with reflective surfaces
- Robust, compact plastic housing
- Red light LED sender as an alignment aid
- Universal current, relay switching output, SPDT

Dimensional drawing



Adjustments possible

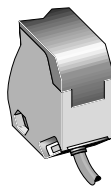
WL 250-S 132



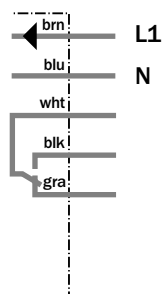
- 1** Reception axis
- 2** Transmission axis
- 3** Red LED signal strength indicator
- 4** Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 5** Connection cable
- 6** Sensitivity adjustment (2 turns), over-turn protection
- 7** Position indicator for sensitivity setting (270°)

Connection type

WL 250-S 132



5 x 0.76 mm²



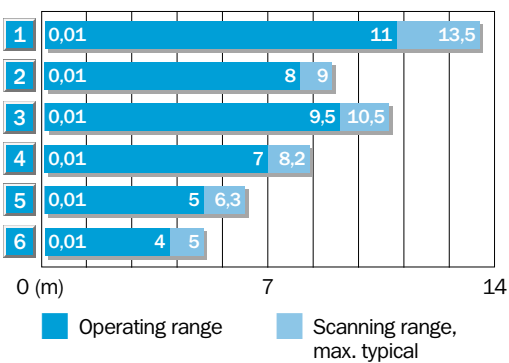
Accessories	page
Mounting brackets*	510
Reflectors**	520

* included with delivery
 ** reflector P 250 included with delivery

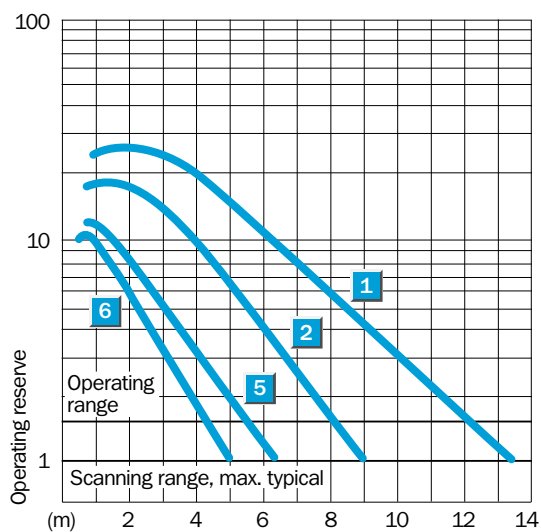
Technical data		WL 250-	S 132												
Scanning range , max. typical/on refl.	0.01...13.5 m/PL 80 A														
	max. typical/on refl. 0.01...9 m/P 250 (included)														
Recommended operating range	0.01...8 m/P 250														
Sensitivity, adjustable	Potentiometer, 2 turns, with position indicator														
Light source¹⁾, light type	LED, visible red light with polarising filter														
Light spot diameter	Approx. 400 mm at 8 m														
Angle of dispersion, sender	Approx. 2.5°														
Supply voltage V_S²⁾	12...240 V DC														
	24...240 V AC														
Power consumption	≤ 2 VA														
Switching outputs	Relay, SPDT, electrically isolated														
Switching current I _A max. ³⁾	3 A/240 V AC; 3 A/30 V DC														
Light receiver, switching type	Light-switching														
Response time	≤ 15 ms														
Max. switching frequency ⁴⁾	33/s														
Connection type	Cable PVC, 2 m ⁵⁾														
	5 x 0.76 mm ² , ø 6.3 mm														
VDE protection class⁶⁾	□														
Circuit protection⁷⁾	A, C														
Enclosure rating	IP 67														
Ambient temperature T_A	Operation - 25 °C...+ 55 °C														
	Storage - 40 °C...+ 70 °C														
Weight	Approx. 160 g														
Housing material	Housing: ABS; optics: PMMA														

- 1) Average service life at T_A = + 25 °C; LED, red light 100,000 h
- 2) ± 10 %
- 3) Ensure spark extinguishing with inductive or capacitive load
- 4) With light/dark ratio 1:1, without time delay
- 5) Do not bend below 0 °C
- 6) Reference voltage 250 V UC
- 7) A = V_S connections reverse-polarity protected
C = Interference pulse suppression

Scanning range and operating reserve



Reflector type	Operating range
1 PL 80 A	0.01...11.0 m
2 P 250	0.01...8.0 m
3 PL 50 A or PL 40 A	0.01...9.5 m
4 PL 30 A or PL 31 A	0.01...7.0 m
5 PL 20 A	0.01...5.0 m
6 Reflective tape «Diamond Grade»	0.01...4.0 m



Order information

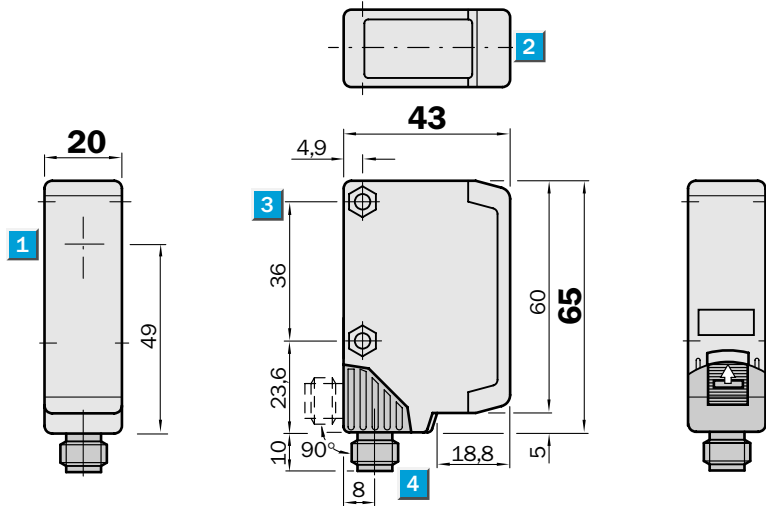
Type	Part no.
WL 250-S 132	6 010 611

Scanning range
25 m

Through-beam photoelectric switches

- Robust, compact plastic housing
- Red light LED sender as an alignment aid
- M 12 plug rotatable by 90°

Dimensional drawing

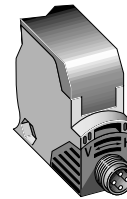
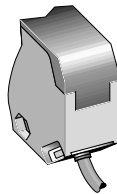


- 1 Centre of optical axis, sender (WS 250), receiver (WE 250)
- 2 Red LED signal strength indicator (only receiver WE 250)
- 3 Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 4 Connection cable or M 12 plug – 4-pin; plug position rotatable by 90° (V > H), V → vertical final position, H → horizontal final position; can be locked with slider



Connection types

WS/WE 250-P 132	WS/WE 250-P 430
WS/WE 250-N 132	WS/WE 250-N 430

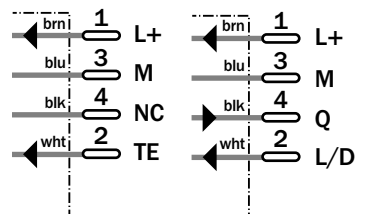
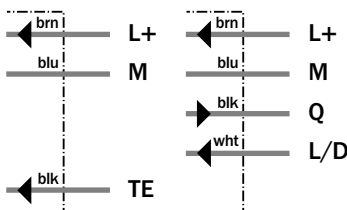


3 x 0.18 m ²	4 x 0.18 m ²
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4-pin, M 12	4-pin, M 12
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Sender	Receiver
WS 250-D 132	WE 250-P 132
	WE 250-N 132

Sender	Receiver
WS 250-D 430	WE 250-P 430
	WE 250-N 430



Accessories	page
Cable receptacles	496
Mounting brackets*	510

* included with delivery

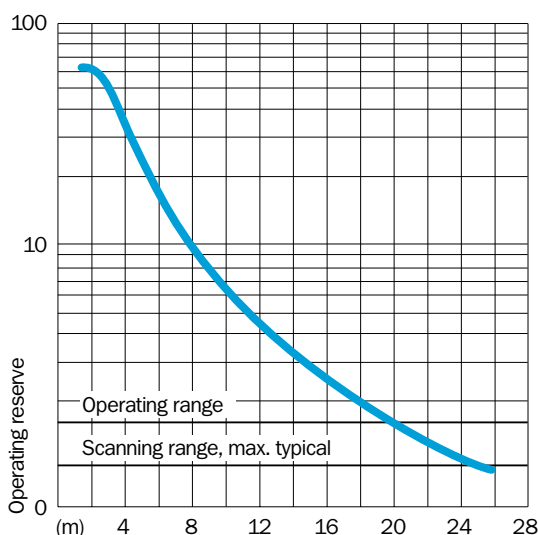
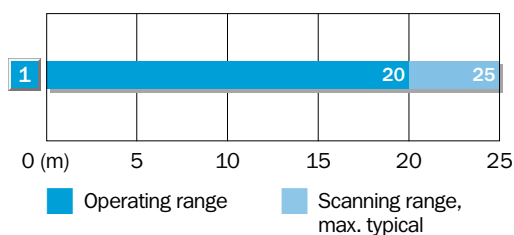
Technical data		WS/WE 250-	P 132	P 430	N 132	N 430
Scanning range, max. typical	25 m					
Operating range	20 m					
Light source¹⁾, light type	LED, visible red light					
Light spot diameter	Approx. 1.5 m at 20 m					
Angle of dispersion, sender	Approx. 4°					
Reception angle	Approx. 20°					
Supply voltage V_S	10...30 V DC ²⁾					
Ripple ³⁾	≤ 5 V _{SS}					
Current consumption ⁴⁾						
sender	≤ 20 mA					
receiver	≤ 35 mA					
Switching outputs	PNP, open collector: Q					
	NPN, open collector: Q					
Output current I _A max.	100 mA					
Light receiver, switching type	Light-/dark-switching via control wire:					
	+ V _S = light-switching					
	0 V = dark-switching					
Response time ⁵⁾	≤ 1 ms					
Max. switching frequency ⁶⁾	500/s					
Test input "TE" sender off	PNP, NPN; TE to 0 V					
Connection types	Cable PVC ⁷⁾ , 2 m					
sender WS	3 x 0.18 mm ² , ∅ 3.8 mm					
receiver WE	4 x 0.18 mm ² , ∅ 3.8 mm					
	Plug M 12, 4-pin, 90° rotatable					
VDE protection class⁸⁾	□					
Circuit protection⁹⁾						
sender	A, B					
receiver	A, B, C, D					
Enclosure rating	IP 67					
Ambient temperature T_A	Operation - 25 °C...+ 55 °C					
	Storage - 40 °C...+ 70 °C					
Weight						
with cable 2 m	Approx. 150 g					
with plug M 12, 4-pin	Approx. 70 g					
Housing material	Housing: ABS; optics: PC					

- 1) Average service life at T_A = + 25 °C; LED, red light 100,000 h
- 2) Limit value
- 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) Do not bend below 0 °C
- 8) Reference voltage 50 V DC

- 9) A = V_S connections reverse-polarity protected
- B = Output Q short-circuit protected
- C = Interference pulse suppression
- D = Output overcurrent protected

Operating range and operating reserve



Order information

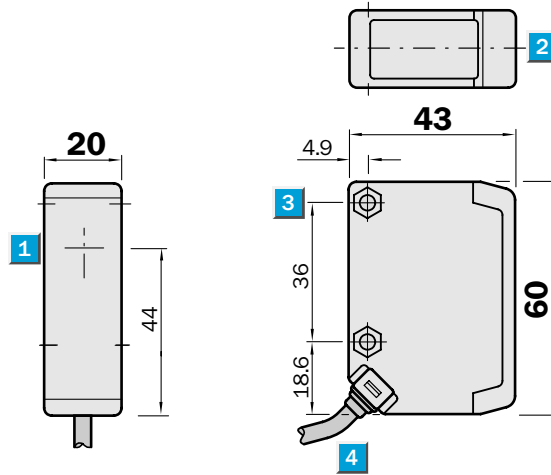
Type	Part no.
WS/WE 250-P 132	6 010 600
WS/WE 250-P 430	6 010 602
WS/WE 250-N 132	6 010 597
WS/WE 250-N 430	6 010 599

 **Scanning range**
25 m

Through-beam photoelectric switches

- Robust, compact plastic housing
- Red light LED sender as an alignment aid
- Universal voltage, relay switching output, SPDT

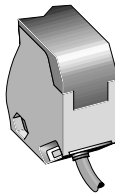
Dimensional drawing



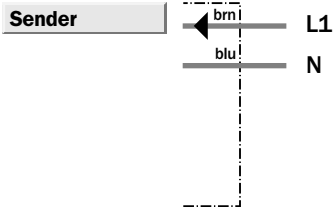
- 1 Centre of the optical axis, sender (WS 250), receiver (WE 250)
- 2 Red LED signal strength indicator (only receiver WE 250)
- 3 Through borehole \varnothing 4.2 mm, for M 4 hexagon nut on both sides
- 4 Connection cable

Connection type

WS/WE 250-S 132



2 x 0.76 mm²
WS 260 - U 132

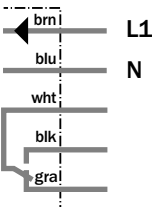


Accessories	page
Mounting brackets*	510

Receiver

5 x 0.76 mm ² WE 260 - S 132
--

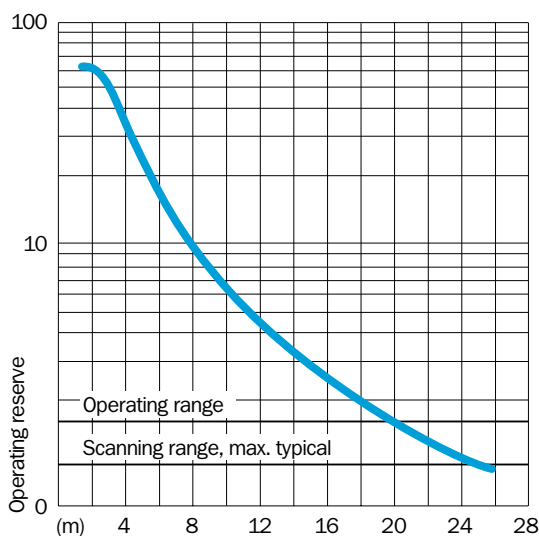
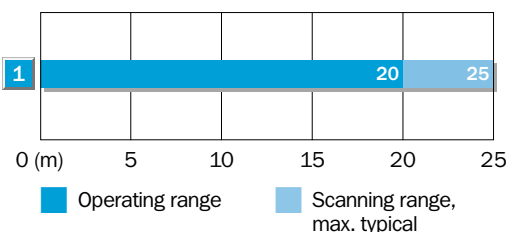
* included with delivery



Technical data		WS/WE 250-	S 132										
Scanning range , max. typical	25 m												
Operating range	20 m												
Light source¹⁾, light type	LED, visible red light												
Light spot diameter	Approx. 1.5 m at 20 m												
Angle of dispersion, sender	Approx. 4°												
Reception angle	Approx. 20°												
Supply voltage V_s²⁾	12...240 V DC												
	24...240 V AC												
Power consumption													
sender	≤ 2 VA												
receiver	≤ 2 VA												
Switching outputs	Relay, SPDT, electrically isolated												
Switching current I_A max. ³⁾	3 A/240 V AC; 3 A/30 V DC												
Light receiver, switching type	Light-switching												
Response time	≤ 15 ms												
Max. switching frequency ⁴⁾	33/s												
Connection types	Cable PVC ⁵⁾ , 2 m												
sender WS	2 x 0.76 mm ² , ∅ 6.3 mm												
receiver WE	5 x 0.76 mm ² , ∅ 6.3 mm												
VDE protection class⁶⁾	<input type="checkbox"/>												
Circuit protection⁷⁾	A, C												
Enclosure rating	IP 67												
Ambient temperature T_A	Operation - 25 °C...+ 55 °C												
	Storage - 40 °C...+ 70 °C												
Weight	Approx. 290 g												
Housing material	Housing: ABS; optics: PC												

- 1) Average service life at $T_A = + 25 °C$; LED, red light 100,000 h
- 2) ± 10%
- 3) Ensure spark extinguishing with inductive or capacitive load
- 4) With light/dark ratio 1:1
- 5) Do not bend below 0 °C
- 6) Reference voltage 250 V UC
- 7) A = V_s connections reverse-polarity protected
C = Interference pulse suppression

Operating range and operating reserve



Order information

Type	Part no.
WS/WE 250-S 132	6 010 603