

Photoelectric proximity switches, BGS



Photoelectric proximity switches, energetic



Photoelectric reflex switches

W 260 series standard photoelectric switches for a wide range of applications



The easily accessible terminal chamber electrical connection ensures that the sensor can be connected and commissioned easily and quickly Furthermore, mounting brackets and reflector (WL 260 only) are included in the supply.

Overview of W 260:

- 6 different detection systems in one configuration
 standardised mounting
 - = standardised mounting system,
- DC/AC devices conform to EN 61000-6-3 (interference emission in "residential and commercial areas"),
- comprehensive range of fibreoptic cables covers many applications,
- universal supply voltage.

ble ranges and useful technical features is superbly designed for a wide range of applications.

Six different detection methods are available in one configuration, saving on mounting systems and stockholding.

The W 260 series with its sensi-

The outstanding features are the long ranges and scanning distances of each system.

The sensor, with a variety of adjustable features including teach-in for a fast set-up, is ideally suited to a wide range of applications Glass and stainless steel fibre-optic cables open up new areas of application in restricted environments.

Main industries:

- Plastics technology,
- Materials handling,
- Mechanical engineering,
- Door/gate and, access control.

switches
Photoelectric
fibre-optic switches
(proximity)
Photoelectric
fibre-optic switches

(through-beam)

Through-beam

photoelectric

► The WT 260 photoelectric proximity switch is used for height control in a packaging machine.



▼ CE conformity to EN 61000-6-3 and, therefore, the right choice for residential and commercial applications: the WL 260 photoelectric reflex switch used to monitor the closing edges in automatic door and gate systems.



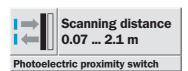




▲ A WT 260 photoelectric proximity switch controlling a commissioning system used in the wood-working industry.

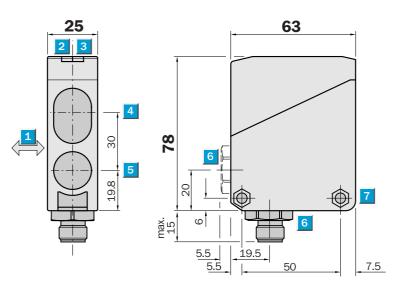
■ WL 260 photoelectric reflex switches with a small light spot are used to ensure reliable mail order operations.

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- Teach-in, ready to operate in less time
- Background suppression:
 Reliable detection of dark objects
 even against light backgrounds
- Terminal chamber or M12 plug, 4-pin
- LED signal indicator green
 Operating reserve/Pre-failure display

Dimensional drawing



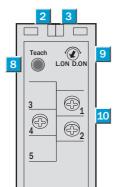




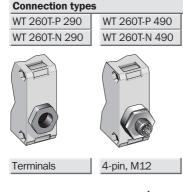
See chapter Accessories	
Cables and connectors	Ī
Mounting systems*)	

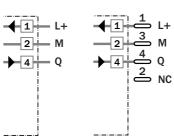
*) Mounting bracket included with delivery





- 6 Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear; or M12 equipment plug bottom (4-pin)
- 7 Through hole Ø 5.2 mm on both sides for M5 hex nut
- Teach-in button (scanning distance setting/background suppression
- Light/dark-switching(L.ON = light-switching, D.ON = dark-switching)
- 10 Terminals

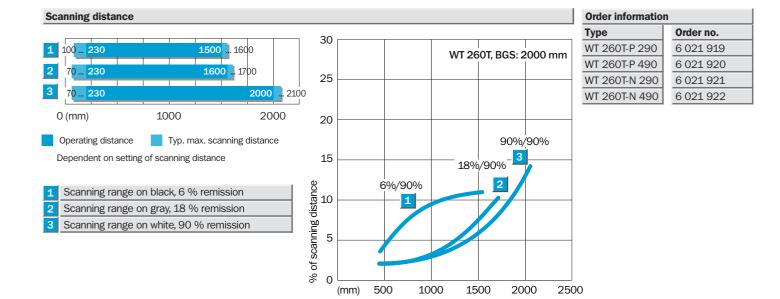




D = Outputs overcurrent and short-

circuit protected

Technical data	WT 260T-	P 290	P 490	N 290	N 490				
Scanning distance, typ. max.	70 mm 2100 mm ¹⁾								
Recommended operating scanning dist.	100 mm 2000 mm ¹⁾								
Scanning distance setting	Automatic, per Teach-in button								
Light source ²⁾	LED, infrared								
Light spot diameter	Approx. 200 mm at 2000 mm								
Aperture angle sender	Approx. 6°								
Supply voltage V _s	10 30 V DC ³⁾								
Ripple ⁴⁾	≤ 10 %								
Current consumption 5)	≤ 55 mA								
Switching outputs	PNP, open collector: Q								
	NPN, open collector: Q								
Output current I _A max.	100 mA								
Light receiver, switching mode	Light-/dark-switching by rotary switch								
Response time ⁶⁾	≤ 5 ms								
Switching frequency max. 7)	100/s								
Connection types	Terminal chamber								
	Plug M12, 4-pin								
VDE protection class ⁸⁾									
Circuit protection 9)	A, B, C, D								
Enclosure rating	IP 67								
Ambient temperature T _A	Operation −25 °C +55 °C								
	Storage − 40 °C + 70 °C								
Weight	Approx. 120 g								
Material	Housing: ABS; Optics: PMMA								
Object with 90 % remission (based on standard white DIN 5033) Average service life 100,000 h	3) Limit values, operation in short circuit protected network max. 8 A 4) Must be within V _S tolerances 5) Without lead	6) With re 7) With lig 8) Refere	ht/dark nce volt	ratio 1:1 age 50 V	DC DC	C = 1	nterferend	and Q plarity protests	sion



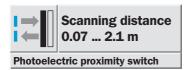
 $^{9)}~~A=V_{s}$ connections reverse-polarity

protected

5) Without load

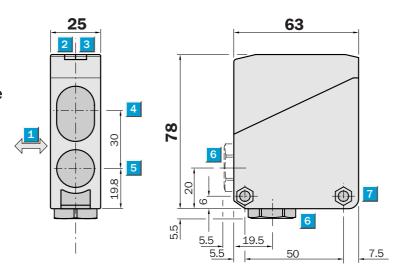
at $T_A = +25$ °C

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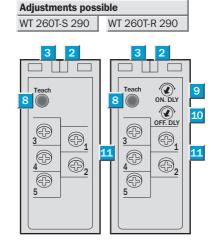


- Universal voltage
- Teach-in, ready to operate in less time
- Background suppression:
 Reliable detection of dark objects
 even against light backgrounds
- Terminal chamber
- Relay output, SPDT, time delays

Dimensional drawing







- 1 Standard direction of material being scanned
- 2 LED signal indicator orange, switching output active
- 3 LED signal indicator green, operating reserve
- 4 Middle of optic axis, receiver
- 5 Middle of optic axis, sender
- 6 Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear;
- 7 Through hole Ø 5.2 mm on both sides for M5 hex nut
- Teach-in button (scanning distance setting/background suppression
- 9 Time control ON delay ton
- Time control OFF delay toff
- 11 Terminals

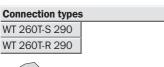


See chapter Accessories

Mounting systems*)

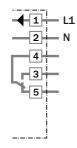
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*) Mounting bracket included with delivery

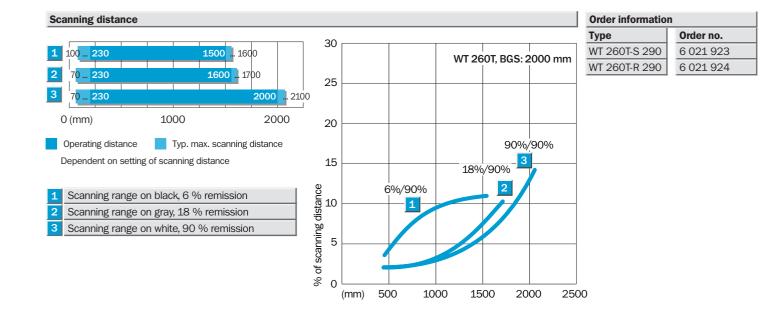




Terminals



Technical data	WT 260T-	S 290 R 290
Coonsing distance has made	70 0400 1)	
Scanning distance, typ. max.	70 mm 2100 mm ¹⁾	
Recommended operating scanning dist.		
Scanning distance setting	Automatic, per Teach-in button	
Light source ²⁾	LED, infrared	
Light spot diameter	Approx. 200 mm at 2000 mm	
Aperture angle sender	Approx. 6°	
Supply voltage V _s ³⁾	12 to 240 V DC	
,	24 to 240 V UC	
Power consumption	≤ 5 VA	
Switching outputs	Relay, SPDT, electrically isolated ⁴⁾	
Switching current I max.	3 A/240 V AC; 3 A/30 V DC ⁵⁾	
Light receiver, switching mode	Light-switching	
Response time	≤ 20 ms	
Switching frequency max. 6)	25/s	
Time delay		
ON delay t _{on}	0.1 10 s, can be connected separately	
OFF delay t _{OFF}	0.1 10 s, can be connected separately	
Connection type	Terminal chamber	
VDE protection class 7)		
Circuit protection 8)	A, C	
Enclosure rating	IP 67	
Ambient temperature T _A	Operation – 25 °C to + 55 °C	
	Storage – 40 °C to + 70 °C	
Weight	Approx. 120 g	
Material	Housing: ABS; Optics: PMMA	
Object with 90 % remission (based on standard white DIN 5033) Average service life 100,000 h at T _A = + 25 °C	 3) ± 10 % 4) Provide suitable spark suppression for inductive or capacitive loads 	5) Usage categorie to EN 60947-1, 15 AC, 13 DC protected 6) With light/dark ratio 1:1 C = Interference suppression 7) Reference voltage 250 V UC





- Reliable detection of dark objects even against light backgrounds
- Scanning distance steplessly adjustable
- Terminal chamber or M12 plug,4-pin or 5-pin
- Test input
- Contamination signaling output

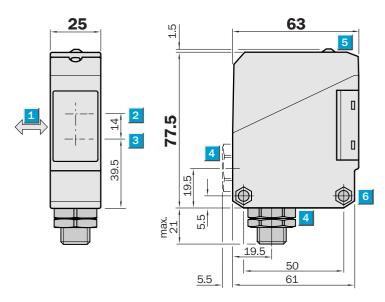




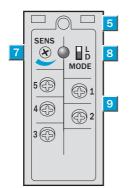
See chapter Accessories Cables and connectors Mounting systems*)

*) Mounting bracket included with delivery

Dimensional drawing



Adjustments possible WT 260-P 260 WT 260-P 460 WT 260-P 560



- 1 Standard direction of material being scanned
 - Middle optic axis, receiver
- 3 Middle optic axis, sender
- 4 Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear; or M12 equipment plug, bottom
- 5 LED signal strength indicator, red
- Through hole Ø 5.2 mm on both sides for M5 hex nut
- Scanning distance control
- 8 Light/dark rotary switch
 - L.ON = light-switching, D.ON = dark-switching
- Terminals



WT 260-P 260 WT 260-P 460 WT 260-P 560



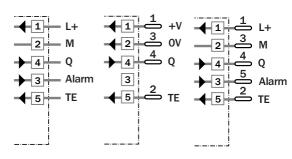




Terminals

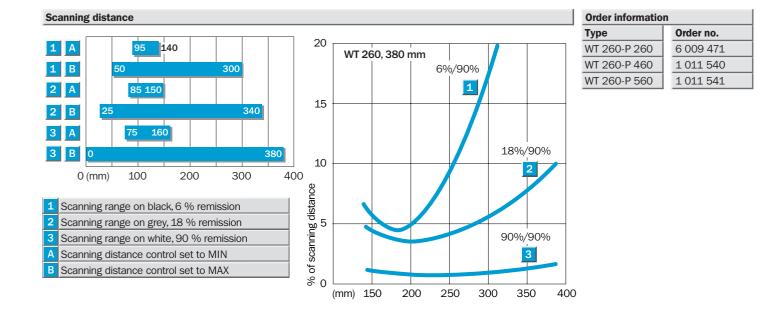
4-pin, M12

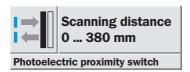
5-pin, M12



Technical data	WT 260-	P 260 P 460 ¹⁾ P 560 ¹⁾	
Scanning distance	Max.: 0 380 mm, adjustable 2)		
	Min.: 75 160 mm, adjustable 2)		
Scanning distance setting	per potentiometer 270°		
Light source ³⁾	LED, infrared		
Light spot diameter	Approx. 17 mm at 300 mm		
Aperture angle sender	Approx. 1,5°		
Supply voltage V _s	10 to 30 VDC ⁴⁾		
Ripple 5)	≤ 5 V _{PP}		
Current consumption 6)	≤ 35 mA		
Switching outputs	PNP, open collector: Q		
Output current I _A max.	100 mA		
Light receiver, switching mode	Light-/dark-switching by rotary switch		
Response time 7)	≤ 2 ms		
Switching frequency max. ⁸⁾	250/s		
Contamination signaling output VMA 9)	Alarm 100 mA, static		
Test input »TE« sender off	PNP: TE to + V _S		
Connection types	Terminal chamber		
Connection types	Plug M12, 4-pin		
	Plug M12, 5-pin		
VDE protection class ¹⁰⁾			
Circuit protection ¹¹⁾	A, B, C, D		
Enclosure rating	IP 66		
Ambient temperature T _A	Operation – 25 °C + 55 °C		
	Storage - 40 °C + 70 °C		
Weight	Approx. 120 g		
Material	Housing: ABS; Optic: PC		
1) Without Al ° (6)	4) Limit values, operation in short circuit	8) With light/dark ratio 1:1	B = Inputs/outputs reverse-polarity
2) Object with 90 % remission (based on	protected network max. 8 A 5) Must be within V ₂ tolerances	9) Operating reserve < 50 %	protected C = Interference suppression

- standard white DIN 5033)
- ³⁾ Average service life 100,000 h at T_A = + 25 °C
- $^{5)}\,$ Must be within V_S tolerances
- 6) Without load
- 7) With resistive load
- ¹⁰⁾ Reference voltage 50 V DC
- $^{11)}$ A = V_s connections reverse-polarity protected
- C = Interference suppression
- D = Outputs overcurrent and shortcircuit protected





- Universal voltage
- Reliable detection of dark objects even against light backgrounds
- Scanning distance steplessly adjustable
- Terminal chamber
- Relay output, SPDT, time delays



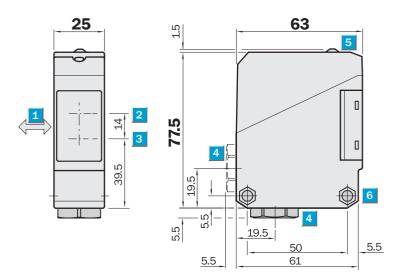


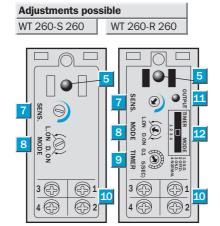
See chapter Accessories

Mounting systems*)

*) Mounting bracket included with delivery

Dimensional drawing





- 1 Standard direction of material being scanned
- 2 Middle of optic axis, receiver
- 3 Middle of optic axis, sender
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear;
- 5 LED signal strength indicator, red
- 6 Through hole Ø 5.2 mm on both sides for M5 hex nut
- 7 Scanning distance control
- 8 Light/dark rotary switch

L.ON = light-switching, D.ON = dark-switching

- 9 Time control
- 10 Terminals
- Red LED status indicator; switching output active
- 12 Time delay selector switch

0.S.D. = One Shot

OFF.D. = OFF delay

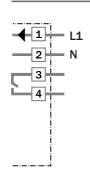
ON.D. = ON delay

Normal = No delay



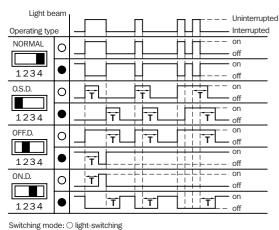


Terminals



Time delays

t = 0.1-5 s



Switching mode: O light-switching

dark-switching

Technical data	WT 260- S 260 R 260		
Scanning distance	max.: 0 380 mm, adjustable 1)		
=	min.: 75 160 mm, adjustable 1)		
Scanning distance setting	per potentiometer 270°		
ight source ²⁾	LED, infrared		
ight spot diameter	Approx. 17 mm at 300 mm		
Aperture angle sender	Approx. 1,5°		
tportare arigio corraci	, 49810/4 230		
Supply voltage V _s ³⁾	12 to 240 V DC		
	24 to 240 V UC		
Current consumption	≤ 5 VA		
Switching outputs	Relay, SPDT, electrically isolated ⁴⁾		
Output current I _A max.	3 A/240 V AC; 3 A/30 V DC ⁵⁾		
Light receiver, switching mode	Light-/dark-switching by rotary switch		
Response time	≤ 20 ms		
Switching frequency max. ⁶⁾	25/s		
Time delay	With LED display: switching output active		
Switch position: "1 0.S.D."	"One shot"		
"2 OFF.D."	OFF delay		
"3 ON.D."	ON delay		
"4 Normal"	No delay		
Delay	Adjustable, 0.1 to 5 s; potentiometer 270°		
Connection type	Terminal chamber		
VDE protection class ⁷⁾			
Circuit protection ⁸⁾	A, C		
Enclosure rating	IP 66		
Ambient temperature T _A	Operation – 25 °C + 55 °C		
	Storage - 40 °C + 70 °C		
Weight	Approx. 120 g		
Material	Housing: ABS; Optic: PC		
¹⁾ Object with 90 % remission (based on	$^{3)}$ \pm 10 % Usage categorie to EN 60947-1,	7) Reference voltage	250 V UC s reverse-polarity
standard white DIN 5033) Average service life 100,000 h at $T_A = +\ 25\ ^{\circ}\text{C}$	4) Provide suitable spark suppression for inductive or capacitive loads 4) Provide suitable spark suppression for inductive or capacitive loads 4) Provide suitable spark suppression for inductive or capacitive loads 4) With light/dark ratio 1:1	protected C = Interference s	uppression
$^{2)}$ Average service life 100,000 h at $T_{A} = +\ 25\ ^{\circ}\text{C}$		protected	
²⁾ Average service life 100,000 h	inductive or capacitive loads ⁶⁾ With light/dark ratio 1:1	protected C = Interference s	
$^{2)}$ Average service life 100,000 h at $T_{\text{A}} = +~25~^{\circ}\text{C}$	inductive or capacitive loads 6) With light/dark ratio 1:1	protected C = Interference s Order information	n
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140	inductive or capacitive loads 6) With light/dark ratio 1:1 20 WT 260, 380 mm 696/9/90%	protected C = Interference s Order information Type	Order no.
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B	inductive or capacitive loads 6) With light/dark ratio 1:1 20 WT 260, 380 mm	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance	inductive or capacitive loads 6) With light/dark ratio 1:1 WT 260, 380 mm 6%/90%	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B	inductive or capacitive loads 6) With light/dark ratio 1:1 20 WT 260, 380 mm 6%/90% 1	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 2 A 85 150 2 B	inductive or capacitive loads 6) With light/dark ratio 1:1 20 WT 260, 380 mm 6%/90% 15	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 85 150 2 A 85 150 2 B 75 160	inductive or capacitive loads 6) With light/dark ratio 1:1 20 WT 260, 380 mm 6%/90% 15 18%/90%	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 2 A 85 150 2 B	inductive or capacitive loads 6) With light/dark ratio 1:1 20 WT 260, 380 mm 6%/90% 15	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 85 150 2 A 85 150 2 B 75 160	20 WT 260, 380 mm 6%/90% 15 18%/90% 2	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 2 A 85 150 2 B 3 A 75 160 3 B 0 0 0 (mm) 100 200	20 WT 260, 380 mm 6%/90% 15 18%/90% 2	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 2 A 85 150 2 B 25 3 A 75 160 3 B 0 0 (mm) 100 200 1 Scanning range on black, 6 % rem	20 WT 260, 380 mm 6%/90% 15 18%/90% 2	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 2 A 85 150 2 B 25 3 A 75 160 3 B 0 0 (mm) 100 200 1 Scanning range on black, 6 % rem 2 Scanning range on grey, 18 % rem	20 WT 260, 380 mm 6%/90% 15 18%/90% 2	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 2 A 85 150 2 B 25 3 A 75 160 3 B 0 0 (mm) 100 200 1 Scanning range on black, 6 % rem 2 Scanning range on grey, 18 % ren 3 Scanning range on white, 90 % rem	20 WT 260, 380 mm 6%/90% 15 18%/90% 2	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473
2) Average service life 100,000 h at T _A = + 25 °C Scanning distance 1 A 95 140 1 B 50 2 A 85 150 2 B 25 3 A 75 160 3 B 0 0 (mm) 100 200 1 Scanning range on black, 6 % rem 2 Scanning range on grey, 18 % rem	inductive or capacitive loads 6) With light/dark ratio 1:1 20 WT 260, 380 mm 6%/90% 15 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 300 400 4	protected C = Interference s Order information Type WT 260-S 260	Order no. 6 009 473

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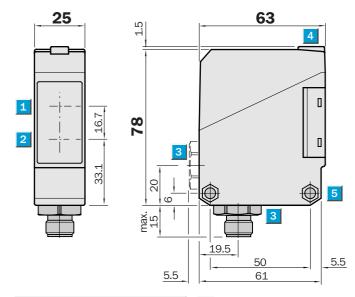
- Infrared light, very high scanning distance
- Terminal chamber or plug
- M12, 4-pin
 Test input





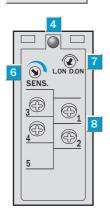
See chapter Accessories Cables and connectors Mounting systems*)

Dimensional drawing



Adjustments possible

WT 260-F 280 WT 260-F 480 WT 260-E 280 WT 260-E 480



- 1 Middle of optic axis, receiver
- Middle of optic axis, sender
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear; or M12 equipment plug, bottom
- 4 LED signal strength indicator, yellow, switching output active
- 5 Through hole Ø 5.2 mm on both sides for M5 hex nut
- 6 Scanning distance adjuster
- Light/dark rotary switch

 L.ON = light-switching, D.ON = dark-switching
 - Terminals

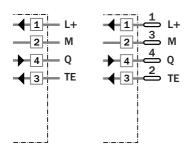
Connection Types

WT 260-F 280 WT 260-F 480 WT 260-E 280 WT 260-E 480



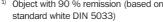


Terminals 4-pin, M12



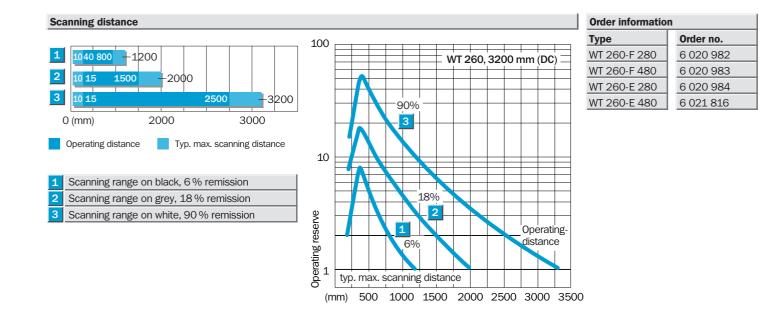
^{*)} Mounting bracket included with delivery

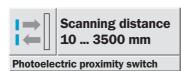
Technical data	WT 260-	F 280 F 480 E 280 E 480	
Scanning distance, typ. max.	10 to 3200 mm, adjustable 1)		
Operating distance	15 to 2500 mm, adjustable 1)		
Scanning distance setting	per potentiometer 270°		
Light source ²⁾	LED, infrared		
Light spot diameter	Approx. 80 mm at 2500 mm		
Aperture angle sender	Approx. 1.8°		
Supply voltage V _s	10 to 30 VDC ³⁾		
Ripple 4)	≤ 5 V _{PP}		
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 mode	Light-/dark-switching by rotary switch		
Response time 6)	≤ 5.0 ms		
Switching frequency max. ⁷⁾	100/s		
Test input »TE« sender off	PNP: TE to + V _S		
	NPN: TE to 0 V		
Connection types	Terminal chamber		
	Plug M12, 4-pin		
VDE protection class 8)			
Circuit protection ⁹⁾	A, B, C, D		
Enclosure rating	IP 67		
Ambient temperature T _A	Operation -25 °C +55 °C		
	Storage − 40 °C + 70 °C		
Weight	Approx. 120 g		
Material	Housing: ABS; Optic: PC		
1) Object with 90 % remission (based on standard white DIN 5033)	3) Limit values, operation in short circuit protected network max. 8 A	With resistive loadWith light/dark ratio 1:1	B = Inputs/outputs reverse-polarity protected



- ²⁾ Average service life 100,000 h at $T_A = +25$ °C
- $^{4)}$ Must be within V_S tolerances
- 5) Without load

- 8) Reference voltage 50 V DC
- $^{9)}$ A = V_s connections reverse-polarity protected
- C = Interference suppression
- D = Outputs overcurrent and short-circuit protected





- Universal voltage
- Infrared light, very high scanning distance
- Terminal chamber
- Relay output, SPDT, time delays
- CE generic emission standard
 EN 61000-6-3 ("Residential and Commercial Areas")



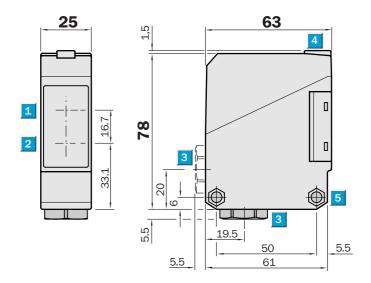


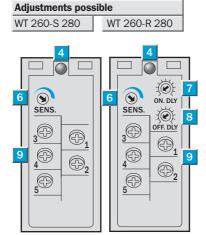
See chapter Accessories

Mounting systems*)

*) Mounting bracket included with delivery

Dimensional drawing





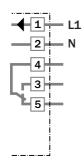
- Middle of optic axis, receiverMiddle of optic axis, sender
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear
- 4 LED signal strength indicator, red
- Through hole Ø 5.2 mm on both sides for M5 hex nut
- 6 Scanning distance adjuster
- Time control ON delay ton
 - Time control OFF delay toff
 - Terminals

Connection types

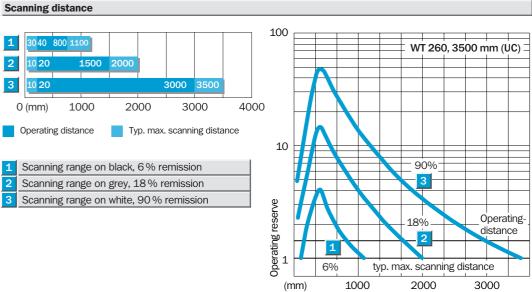
WT 260-S 280 WT 260-R 280

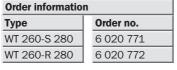


Terminals



Technical data	WT 260-	S 280 R 280	
Scanning distance, typ. max.	10 to 3500 mm, adjustable 1)		
Operating distance	20 to 3000 mm, adjustable 1)		
Scanning distance setting	per potentiometer 270°		
Light source ²⁾	LED, infrared light		
Light spot diameter	Approx. 95 mm at 3000 mm		
Aperture angle sender	Approx. 1.7°		
Supply voltage V _S ³⁾	12 to 240 V DC		
	24 to 240 V AC		
Power consumption	≤ 5 VA		
Switching output	Relay, SPDT, electrically isolated ⁴⁾		
Switching current I max	3 A/240 V AC; 3 A/30 V DC ⁵⁾		
Light receiver, switching mode	Light-switching		
Response time	≤ 20 ms		
Switching frequency max. 6)	25/s		
Time delays			
ON delay t _{on}	0.1 to 10 s, can be connected separately		
OFF delay t _{OFF}	0.1 to 10 s, can be connected separately		
Connection type	Terminal chamber		
CE generic emission standard	Level EN 61000-6-3		
	("Residential and Commercial Areas")		
VDE protection class 7)			
Circuit protection 8)	A, C		
Enclosure rating	IP 67		
Ambient temperature T _A	Operation -25°C $+55^{\circ}\text{C}$		
	Storage $-40 ^{\circ}\text{C} \dots + 70 ^{\circ}\text{C}$		
Weight	Approx. 120 g		
Material	Housing: ABS; Optics: PC		
$^{1)}$ Object with 90 % remission (based on standard white DIN 5033) $^{2)}$ Average service life 100,000 h at $T_{\rm A}=+25~{\rm ^{\circ}C}$	 ³⁾ ± 10 % ⁴⁾ Provide suitable spark suppression for inductive or capacitive loads 	 Usage categorie to EN 60947-1, 15 AC, 13 DC With light/dark ratio 1:1 Reference voltage 250 V UC 	$^{8)}$ A = V _s connections reverse-polarity protected C = Interference suppression
Comming distance			01





SENSICK CATALOGUE 823



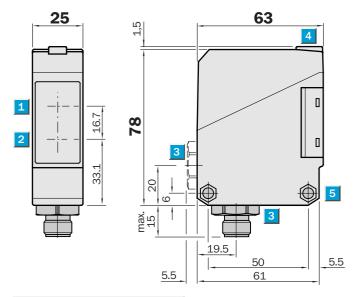
- Sensitivity, adjustable
- Terminal chamber or plug M12, 4-pin
- Test input





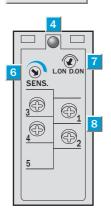
See chapter Accessories Cables and connectors Mounting systems*)

Dimensional drawing



Adjustments possible

WT 260-F 270 WT 260-F 470 WT 260-E 270 WT 260-E 470



- Middle of optic axis, receiver
 - Middle of optic axis, sender
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear; or M12 equipment plug, bottom
- 4 LED signal strength indicator, yellow, switching output active
- 5 Through hole Ø 5.2 mm on both sides for M5 hex nut
- 6 Scanning distance adjuster
- Light/dark rotary switch
- L.ON = light-switching, D.ON = dark-switching
- Terminals

Connection types

WT 260-F 270 WT 260-F 470 WT 260-E 470





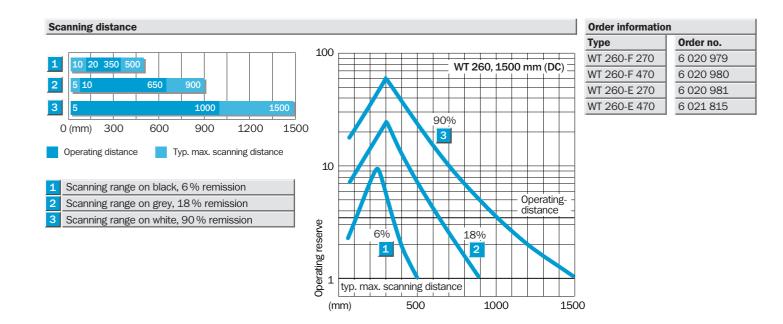
Terminals 4-pin, M12

1 L+ 1 3 M 2 M 2 4 Q 4 Q 4 2 Q 4 3 TE 4 3 TE

^{*)} Mounting bracket included with delivery

Technical data	WT 260-	F 270 F 470 E 270 E 470
Scanning distance, typ. max.	15 to 1500 mm, adjustable 1)	
Operating distance	5 to 1000 mm, adjustable 1)	
Scanning distance setting	per potentiometer 270°	
Light source ²⁾	LED, visible red light	
Light spot diameter	Approx. 45 mm at 1000 mm	
Aperture angle sender	Approx. 2.5°	
Supply voltage V _S	10 to 30 V DC ³⁾	
Ripple 4)	≤ 5 V _{PP}	
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 mode	Light-/dark-switching by rotary switch	
Response time ⁶⁾	≤ 0.5 ms	
Switching frequency max. 7)	1000/s	
Test input »TE« sender off	PNP: TE to + V _S	
·	NPN: TE to 0 V	
Connection types	Terminal chamber	
	Plug M12, 4-pin	
VDE protection class ⁸⁾		
Circuit protection 9)	A, B, C, D	
Enclosure rating	IP 67	
Ambient temperature T _A	Operation – 25 °C + 55 °C	
	Storage − 40 °C + 70 °C	
Weight	Approx. 120 g	
Material	Housing: ABS; Optics: PC	
¹⁾ Object with 90 % remission (based on	3) Limit values, operation in short circuit	$^{6)}$ With resistive load B = Inputs/outputs reverse-polarity
standard white DIN 5033)	protected network max. 8 A	7) With light/dark ratio 1:1 protected 8) Reference voltage 50 V DC C Interference suppression
	7/ IVILIST DE WITHIN V. TOIERANCES	9 Reference Voltage 50 V DC (= Interterence clinnrection

- 2) Average service life 100,000 h at T_A = + 25 °C
- 4) Must be within V_S tolerances
- 5) Without load
- 8) Reference voltage 50 V DC
- $^{9)}$ A = V_s connections reverse-polarity protected
- C = Interference suppression
- D = Outputs overcurrent and shortcircuit protected





- Universal voltage
- Sensitivity, adjustable
- **■** Terminal chamber
- Relay output, SPDT, time delays
- CE generic emission standard
 EN 61000-6-3 ("Residential and Commercial Areas")



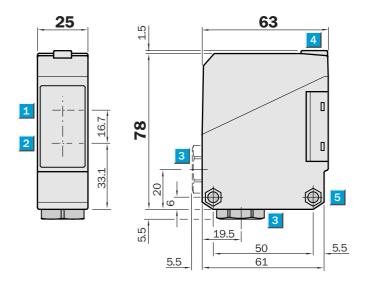


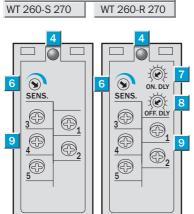
See chapter Accessories

Mounting systems*)

*) Mounting bracket included with delivery

Dimensional drawing





- Middle of optic axis, receiver
 Middle of optic axis, sender
 Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear
 LED signal strength indicator, red
- LED signal strength indicator, red
 Through hole Ø 5.2 mm on both sides for M5 hex nut
 - Scanning distance adjusterTime control ON delay t_{on}
 - Time control OFF delay t_{OFF}
 - Terminals

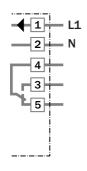


Adjustments possible

WT 260-S 270 WT 260-R 270

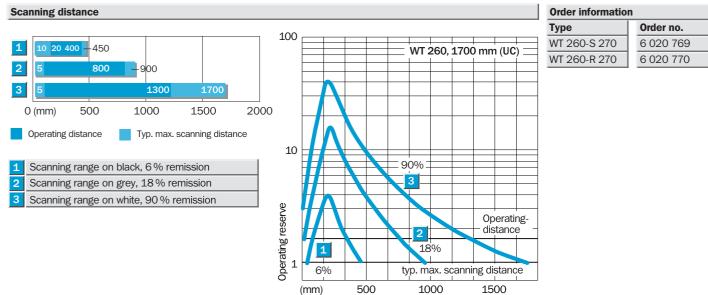


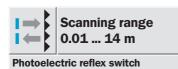
Terminals



Technical data	WT 260-	S 270 R 270	
Seenning distance two may	5 to 1700 mm, adjustable 1)		
Scanning distance, typ. max.			
Operating distance	5 to 1300 mm, adjustable 1)		
Scanning distance setting	per potentiometer 270°		
Light source ²⁾	LED, visible red light		
Light spot diameter	Approx. 60 mm at 1300 mm		
Aperture angle sender	Approx. 1.8°		
Supply voltage V _S ³⁾	12 to 240 V DC		
	24 to 240 V AC		
Power consumption	≤ 5 VA		
Switching output	Relay, SPDT, electrically isolated 4)		
Switching current I max.	3 A/240 V AC; 3 A/30 V DC ⁵⁾		
Light receiver, switching mode	Light-switching		
Response time	≤ 20 ms		
Switching frequency max. 6)	25/s		
Time delay			
ON delay t _{on}	0.1 to 10 s, can be connected separately		
OFF delay t _{OFF}	0.1 to 10 s, can be connected separately		
Connection type	Terminal chamber		
CE generic emission standard	Level EN 61000-6-3		
	("Residential and Commercial Areas")		
VDE protection class 7)			
Circuit protection ⁸⁾	A, C		
Enclosure rating	IP 67		
Ambient temperature T _A	Operation – 25 °C + 55 °C		
	Storage – 40 °C + 70 °C		
Weight	Approx. 120 g		
Material	Housing: ABS; Optics: PC		
Object with 90% remission (based on standard white DIN 5033)	 3) ± 10 % 4) Provide suitable spark suppression for 	5) Usage categorie to EN 60947-1, 15 AC, 13 DC	$^{8)}$ A = V_s connections reverse-polarity protected

- 2) Average service life 100,000 h at T_A = + 25 °C
- inductive or capacitive loads
- 6) With light/dark ratio 1:1
- 7) Reference voltage 250 V UC
- $C = Interference \ suppression \\$





- Polarizing filter providing reliable detection even of objects with shiny surfaces
- Sensitivity, adjustable
- Terminal chamber or plug M12, 4-pin
- Test input

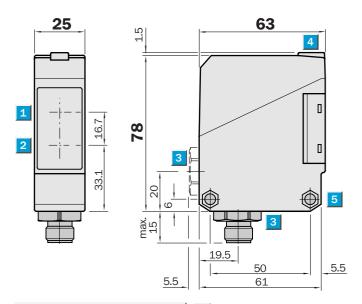




See chapter Accessories Cables and connectors Mounting systems*) Reflectors ***)

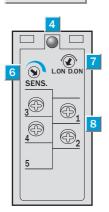
- *) Mounting bracket included with delivery
- **) Reflector P 250 included with delivery

Dimensional drawing



Adjustments possible

WL 260-F 270 WL 260-F 470 WL 260-E 270 WL 260-E 470



- 1 Middle of optic axis, receiver
 - Middle of optic axis, sender
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear; or M12 equipment plug, bottom
- 4 LED signal strength indicator, yellow, switching output active
- 5 Through hole Ø 5.2 mm on both sides for M5 hex nut
- Sensitivity control
- Light/dark rotary switch
- L.ON = light-switching, D.ON = dark-switching
- Terminals

Connection types

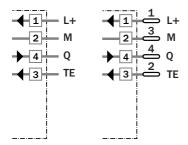
WL 260-F 270 WL 260-E 270 WL 260-F 470 WL 260-E 470





Terminals

4-pin, M12

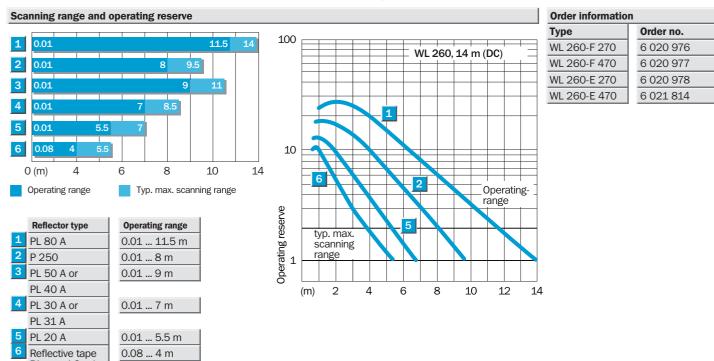


Technical data	WL 260-	F 270 F 470 E 270 E 470	
Scanning range, typ. max/on reflector	0.01 to 14 m/PL 80 A		
typ. max/on reflector	0.01 to 9.5 m/P 250 (included)		
Operating range	0.01 to 8 m/P 250		
Sensitivity	Adjustable, potentiometer 270°		
Light source ¹⁾	LED, visible red light		
	With polarizing filter		
Light spot diameter	Approx. 240 mm at 8 m		
Aperture angle sender	Approx. 1.7°		
Supply voltage V _s	10 to 30 V DC ²⁾		
Ripple ³⁾	≤ 5 V _{PP}		
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 mode	Light-/dark-switching by rotary switch		
Response time 5)	≤ 1.5 ms		
Switching frequency max. 6)	333/s		
Test input »TE« sender off	PNP: TE to + V _s		
	NPN: TE to 0 V		
Connection types	Terminal chamber		
	Plug M12, 4-pin		
VDE protection class 7)			
Circuit protection ⁸⁾	A, B, C, D		
Enclosure rating	IP 67		
Ambient temperature T _A	Operation – 25 °C + 55 °C		
	Storage – 40 °C + 70 °C		
Weight	Approx. 120 g		
Material	Housing: ABS; Optics: PMMA		
Average service life 100,000 h	3) Must be within V _S tolerances	7) Reference voltage 50 V DC	C = Interference suppression

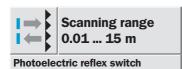
 $^{1)}$ Average service life 100,000 h at $T_A = +25$ °C

Diamond Grade

- Limit values, operation in short circuit protected network max. 8 A
- $^{3)}$ Must be within V_{S} tolerances
- 4) Without load
- ⁵⁾ With resistive load
- 6) With light/dark ratio 1:1
- 7) Reference voltage 50 V DC
- $^{8)}$ A = V_s connections reverse-polarity protected
 - B = Inputs/outputs reverse-polarity protected
- C = Interference suppression
- D = Outputs overcurrent and shortcircuit protected



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- Universal voltage
- Polarizing filter providing reliable detection even of objects with shiny surfaces
- Terminal chamber
- Relay output, SPDT, time delays
- CE generic emission standard
 EN 61000-6-3 ("Residential and Commercial Areas")

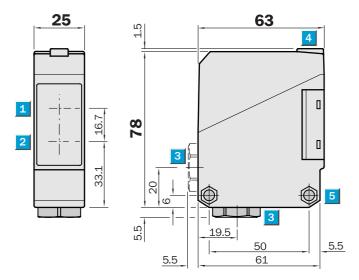


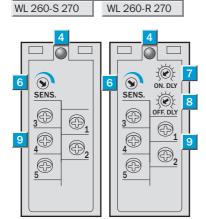


See chapter Accessories Mounting systems*) Reflectors ***)

- *) Mounting bracket included with delivery
- **) Reflector P 250 included with delivery

Dimensional drawing





Adjustments possible

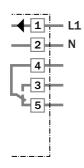
- Middle of optic axis, receiver
 - Middle of optic axis, sender
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear
- LED signal strength indicator, red
- 5 Through hole Ø 5.2 mm on both sides for M5 hex nut
 - 6 Sensitivity control
- 7 Time control ON delay t_{on}
 - Time control OFF delay tope
 - Terminals

Connection types

WL 260-S 270 WL 260-R 270



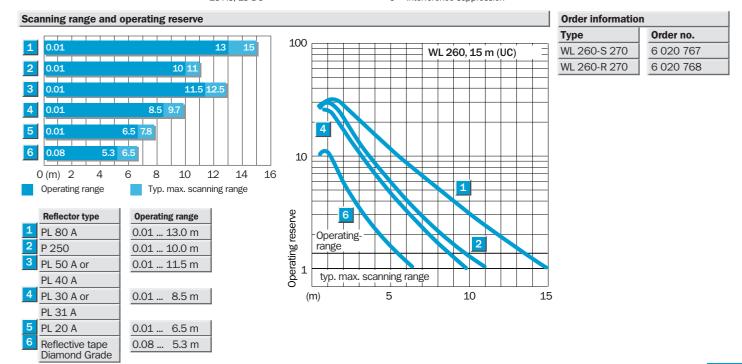
Terminals



Technical data	WL 260-	S 270	R 270				
Scanning range, typ. max/on reflector	0.01 to 15 m/PL 80 A						
typ. max./on reflector	0.01 to 11 m/P 250 (included)						
Operating range	0.01 to 10 m/P 250						
Sensitivity	Adjustable, potentiometer 270°						
Light source 1)	LED, visible red light						
	With polarizing filter						
Light spot diameter	Approx. 300 mm at 10 m						
Aperture angle sender	Approx. 1.7°						
Supply voltage V _S ²⁾	12 to 240 V DC						
	24 to 240 V AC						
Power consumption	≤ 5 VA						
Switching output	Relay, SPDT, electrically isolated ³⁾						
Switching current I max	3 A/240 V AC; 3 A/30 V DC ⁴⁾						
Light receiver, switching mode	Light-switching						
Response time	≤ 20 ms						
Switching frequency max. ⁵⁾	25/s						
Time delays							
ON delay t _{on}	0.1 to 10 s, can be connected separately						
OFF delay t _{OFF}	0.1 to 10 s, can be connected separately						
Connection type	Terminal chamber						
CE generic emission standard	Level EN 61000-6-3						
	("Residential and Commercial Areas")						
VDE protection class 6)							
Circuit protection 7)	A, C						
Enclosure rating	IP 67						
Ambient temperature T _A	Operation – 25 °C + 55 °C						
	Storage − 40 °C + 70 °C						
Weight	Approx. 120 g						
Material	Housing: ABS; Optics: PMMA						

- $^{1)}\,$ Average service life 100,000 h at $T_A = +$ 25 °C
- ²⁾ ± 10 %

- 3) Provide suitable spark suppression for inductive or capacitive loads
- Usage categorie to EN 60947-1, 15 AC, 13 DC
- 5) With light/dark ratio 1:1
- ⁶⁾ Reference voltage 250 V UC
- $^{6)}\ A=V_{s}$ connections reverse-polarity protected $C=Interference\ suppression$





Through-beam photoelectric switch

- Sensitivity, adjustable
- Terminal chamber or plug M12, 4-pin
- Test input



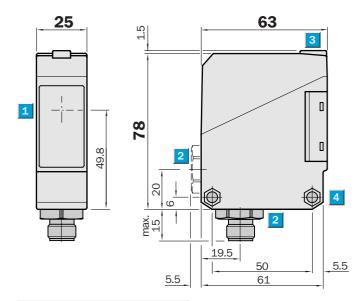


chapter Accessories Sender

See chapter Accessories
Cables and connectors
Mounting systems*)
Special accessories

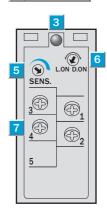
*) Mounting bracket included with delivery

Dimensional drawing



Adjustments possible

WS/WE 260-F 270 WS/WE 260-F 470 WS/WE 260-E 270 WS/WE 260-E 470



- Middle of optic axis, sender/receiver
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear; or M12 equipment plug, bottom
- 3 LED signal indicator orange WE 260: switching output active WS 260: sender active
- Through hole Ø 5.2 mm on both sides for M5 hex nut
- 5 Sensitivity control (WE 260)
- Light/dark rotary switch (WE 260)

 L.ON = light-switching, D.ON = dark-switching
- 7 Terminals

Terminal 3: WS 260 only Terminal 4: WE 260 only

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П								

WS/WE 260-F 270 WS/WE 260-E 270

WS/WE 260-F 470 WS/WE 260-E 470





Terminals	4-pin, M12
WS 260-G 270	WS 260-G 470
+V -2 0 V +3 TE	1 3 +V 2 3 0 V 4 NC 2 TE
WE 260-E 270	WE 260-F 470

Receiver WE 260-E 270 WE 260-F 270

1 2

4 Q

– 0 V

WE 260-E 470

1 1 +V
2 3 0 V
4 Q
2 NC

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WS/WE 260-	F270 F4	70 E 270 E 4	70			
0.05			_			
Adjustable, potentiometer 270°						
LED, visible red light						
Approx. 700 mm at 30 m						
Approx. 1.4°						
Approx. 20°						
10 to 30 V DC ²⁾						
≤ 5 V _{PP}						
**						
≤ 20 mA						
≤ 35 mA						
PNP. open collector: 0						
100 mA						
Light-/dark-switching by rotary switch						
333/s						
PNP, NPN: TE to 0 V						
Terminal chamber						
Plug M12, 4-pin						
A. B						
<u>'</u>						
Approx. 120 g						
	0 35 m 0 30 m Adjustable, potentiometer 270° LED, visible red light Approx. 700 mm at 30 m Approx. 1.4° Approx. 20° 10 to 30 V DC²) ≤ 5 V _{PP} ≤ 20 mA ≤ 35 mA PNP, open collector: Q NPN, open collector: Q 100 mA Light-/dark-switching by rotary switch ≤ 1.5 ms 333/s PNP, NPN: TE to 0 V	O 35 m O 30 m Adjustable, potentiometer 270° LED, visible red light Approx. 700 mm at 30 m Approx. 1.4° Approx. 20° 10 to 30 V DC²) ≤ 5 V _{PP} ≤ 20 mA ≤ 35 mA PNP, open collector: Q NPN, open collector: Q 100 mA Light-/dark-switching by rotary switch ≤ 1.5 ms 333/s PNP, NPN: TE to 0 V Terminal chamber Plug M12, 4-pin	0 35 m 0 30 m Adjustable, potentiometer 270° LED, visible red light Approx. 700 mm at 30 m Approx. 1.4° Approx. 20° 10 to 30 V DC²) ≤ 5 V _{PP} ≤ 20 mA ≤ 35 mA PNP, open collector: Q NPN, open collector: Q 100 mA Light-/dark-switching by rotary switch ≤ 1.5 ms 333/s PNP, NPN: TE to 0 V Terminal chamber Plug M12, 4-pin □ A, B A, B, C, D IP 67 Operation − 25 °C + 55 °C	0 35 m 0 30 m Adjustable, potentiometer 270° LED, visible red light Approx. 700 mm at 30 m Approx. 1.4° Approx. 20° 10 to 30 ∨ DC ²) ≤ 5 ∨ _{PP} ≤ 20 mA ≤ 35 mA PNP, open collector: Q NPN, open collector: Q 100 mA Light-/dark-switching by rotary switch ≤ 1.5 ms 333/s PNP, NPN: TE to 0 ∨ Terminal chamber Plug M12, 4-pin □ A, B A, B, C, D IP 67 Operation − 25 °C + 55 °C	0 35 m 0 30 m Adjustable, potentiometer 270° LED, visible red light Approx. 700 mm at 30 m Approx. 1.4° Approx. 20° 10 to 30 V DC²) ≤ 5 V _{pp} ≤ 20 mA ≤ 35 mA PNP, open collector: Q NPN, open collector: Q NPN, open collector: Q 100 mA Light/dark-switching by rotary switch ≤ 1.5 ms 333/s PNP, NPN: TE to 0 V Terminal chamber Plug M12, 4-pin □ A, B A, B, C, D IP 67 Operation − 25 °C + 55 °C	0 35 m 0 30 m Adjustable, potentiometer 270° 1 LED, visible red light 4 paprox. 700 mm at 30 m Approx. 14° 4 paprox. 20° 10 to 30 V DC²) 5 V _{FP} ≤ 20 mA ≤ 35 mA PNP, open collector: Q NPN, open collector: Q 100 mA 1 light-/dark-switching by rotary switch ≤ 1.5 ms 333/s 333/s 1 system PNP, NPN: TE to 0 V 1 Terminal chamber Plug M12, 4-pin 1 propertion A, B A, B, C, D IP 67 1 propertion Operation -25 °C + 55 °C

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

²⁾ Limit values, operation in short circuit protected network max. 8 A

 $^{3)}$ Must be within V_S tolerances

4) Without load

5) With resistive load

6) With light/dark ratio 1:1

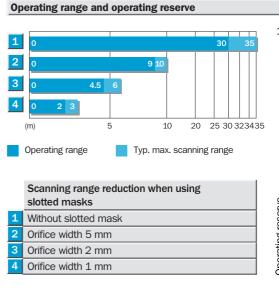
7) Reference voltage 50 V DC

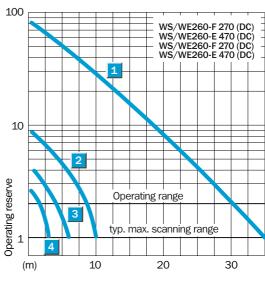
 $A = V_s$ connections reverse-polarity protected

B= Inputs/outputs reverse-polarity protected

C = Interference suppression

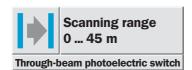
D= Outputs overcurrent and shortcircuit protected





Order information Туре Order no. WS/WE 260-F 270 6 020 973 WS/WE 260-F 470 6 020 974 WS/WE 260-E 270 6 020 975 WS/WE 260-E 470 6 021 817

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- Universal voltage
- Sensitivity, adjustable
- Terminal chamber
- Relay output, SPDT, time delays
- CE generic emission standard EN 61000-6-3 ("Residential and **Commercial Areas**")



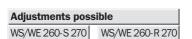
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19.5

50

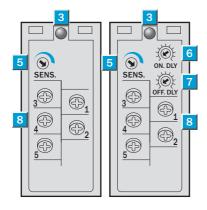
61





Dimensional drawing

25



Middle of optic axis, sender resp. receiver

5.5

Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear

LED signal indicator orange; WE 260: switching output active WS 260: sender active

Through hole \emptyset 5.2 mm on both sides for M5 hex nut

Sensitivity control (WE 260)

Time control ON delay t_{on} (WE 260)

Time control OFF delay t_{OFF} (WE 260)

Terminals 3, 4, 5: WE 260 only



WS/WE 260-S 270 WS/WE 260-R 270





See chapter Accessories

Mounting systems*)

Special accessories

*) Reflector P 250 included with delivery

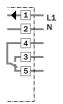
Sender

Terminals WS 260-U 270



Receiver

WE 260-S 270 WE 260-R 270



SENSICK CATALOGUE



Approx. 20° 21 to 240 V DC 24 to 240 V AC Power consumption Sender	Technical data	WS/WE 260-	S 270 R 270			
Departing range O4 0 m Adjustable, potentiometer 270°	Scanning range, typ. max.	0 45 m				
Sensitivity Adjustable, potentiometer 270° Light source ¹¹ Light source ¹² Light source ¹³ Light source ¹⁴ Li						
Light source ¹³ Light source ¹³ Light source ¹⁴ Light spot diameter Approx. 700 mm at 40 m Approx. 12 Approx. 27 Approx. 27 Approx. 27 Supply voltage V _s ²⁰ 12 to 240 V DC 24 to 240 V AC Power consumption Sender 5 4 VA Receiver 5 5 VA Receiver 5 5 VA Switching output Switching output Belay, SPDT, electrically isolated ²⁰ Switching output Switching output Light receiver, switching mode Light receiver Light rec						
Light sport diameter		rajustasis, peternieter 2. c				
Aperture angle sender Angle of reception receiver Angle of reception receiver Approx. 20° 12 to 240 V DC 24 to 240 V AC Power consumption Sender Sen	Light source ¹⁾	LED, visible red light				
Angle of reception receiver Approx. 20° 21 to 240 V DC 24 to 240 V AC 24 to 240 V AC Power consumption Sender	Light spot diameter	Approx. 700 mm at 40 m				
Supply voltage V ₈ [®] 12 to 240 V AC 24 to 240 V AC Power consumption Sender ≤ 4 VA Receiver ≤ 5 VA Switching output Relay, SPDT, electrically isolated ³¹ Switching output I max. 3 A/240 V AC; 3 A/30 V DC ⁶¹ Light receiver, switching mode Light switching mode Switching frequency max. ⁵¹ 25/s Time delays ON delay lo ₃ ON delay lo ₃ OFF delay lo ₄ OFF delay lo ₄ OFF delay lo ₇ Onection type Terminal chamber CE generic emission standard Level EN 61000-6-3 (Residential and Commercial Areas') VDE protection class ⁶¹ © Circuit protection ⁷¹ A, C Enclosure rating P 67 Ambient temperature T _A Operation −25 °C +55 °C Storage −40 °C +70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC Weight Approx. 120 g Material 1. Average service life 100,000 h 3. Provide suitable spark suppression for inductive or appealthe loads 4. Usage categorie to EN 60947.1.15 AC, 13 CC Operating range and operating reserve Operating range and operating reserve Order information Type Order no. WS/WE280-R 270 (UC)	Aperture angle sender	Approx. 1°				
24 to 240 V AC	Angle of reception receiver	Approx. 20°				
24 to 240 V AC	Supply voltage V _s ²⁾	12 to 240 V DC				
Switching output Relay, SPDT, electrically isolated ³⁰ Switching current I max. 3 A/240 V AC; 3 A/30 V DC ⁴⁾ Light receiver, switching mode Light switching Switching frequency max. ³⁰ 25/s Time delays ON delay t _{ON} OFF delay t _{OPP} OL 1 to 10 s, can be connected separately OFF delay t _{OPP} OL 1 to 10 s, can be connected separately OFF delay t _{OPP} OL 1 to 10 s, can be connected separately OFF delay t _{OPP} OFF delay t _{OPP} OL 1 to 10 s, can be connected separately OFF delay t _{OPP} OFF						
Switching output	Power consumption	-				
Switching output Relay, SPDT, electrically isolated ⁽³⁾ Switching output Relay, SPDT, electrically isolated ⁽³⁾ Switching current I max. 3 A/240 V AC; 3 A/30 V DC. ⁽⁴⁾ Light receiver, switching mode Light-switching Response time ≤ 20 ms Switching frequency max. ⁽³⁾ 25/s Time delays ON delay tow 0.1 to 10 s, can be connected separately OFF delay torp 0.1 to 10 s, can be connected separately Connection type Terminal chamber Ce generic emission standard Level EN 61000-6-3 Level EN 61000-6-3 ("Residential and Commercial Areas") VDE protection class ⁽⁶⁾ [B] Clicuit protection ⁽⁷⁾ A, C Chamblent temperature T _A Operation = -25 °C + 55 °C Class of Chamblest temperature T _A Operation = -25 °C + 55 °C Class of Chamblest temperature T _A Storage = -40 °C + 70 °C With light/dark ratio 1:1 ⁽⁷⁾ A = V _x connections reverse-polarity inductive or capacitive loads of Chamblest temperature T _A Storage categories to EN 60947.1, 15 AC, (9) With light/dark ratio 1:1 (9) With light/dark ratio 1:1 (9) Reference voltage 250 V UC Order information	·	≤ 4 VA				
Switching current I max. 3 A/240 V AC; 3 A/30 V DC- ⁽¹⁾ Light receiver, switching mode Light-switching Switching frequency max. ⁽⁵⁾ 2 25 /s Time delays ON delay ton OI to 10 s, can be connected separately OFF delay ton OFF delay ton OI to 10 s, can be connected separately Connection type Terminal chamber CE generic emission standard Level EN 61000 6-3 ("Residential and Commercial Areas") VDE protection class ⁽⁶⁾ Circuit protection ⁽⁷⁾ A, C Enclosure rating IP 67 Ambient temperature T _A Operation − 25 °C + 55 °C Storage − 40 °C + 70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC 3 Average service life 100,000 h inductive or capacitive loads 6 Usage categorie to EN 60947-1, 15 AC, 13 DC Operating range and operating reserve Order information Type Order no. WS/WE 260-8 270 (UC)	Receiver	≤ 5 VA				
Switching current I max. 3 A/240 V AC; 3 A/30 V DC4 Light receiver, switching mode Light-switching Switching frequency max. 2 20 ms Switching frequency max. 2 5/s Time delays ON delay ton OFF delay ton O	Switching output	Relay, SPDT, electrically isolated ³⁾				
Light receiver, switching mode Response time \$ 20 ms Switching frequency max. \$ 25/s Time delays ON delay ton OFF delay torF O1 to 10 s, can be connected separately OFF delay torF Connection type Terminal chamber CE generic emission standard Level EN 61000-6-3 ("Residential and Commercial Areas") VDE protection class \$ [Circuit protection \$^{17}\$] A, C Enclosure rating IP 67 Ambient temperature T _A Operation -25 °C +55 °C Storage -40 °C +70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC 2 Average service life 100,000 h at T _A = +25 °C 2 110 % Operating range and operating reserve Order information Type WS/WE260-S 270 (UC) WS/WE260-S 270 (UC) WS/WE260-R 270 (UC)						
Response time \$\leq 20\$ ms Switching frequency max. \(\frac{5}{3} \) 25/s Time delays ON delay ton OFF delay tor OFF delay tor OFF delay tor OTHING THE DELAY TO THE D						
Switching frequency max. \$\frac{9}{25/5}\$ Time delays ON delay \$\text{to 10 s, can be connected separately}} OFF delay \$\text{to 10 s, can be connected separately}} Connection type Terminal chamber CE generic emission standard Level EN 61000-6-3 ("Residential and Commercial Areas") VDE protection class \$\frac{9}{12}\$ Circuit protection \$\frac{7}{2}\$ A, \$C\$ Enclosure rating IP 67 Ambient temperature \$T_A\$ Operation \$-25^\cc+55^\cc.}\$ Storage \$-40^\cc+70^\cc.}\$ Weight Approx. \$120 g\$ Material Housing: ABS; Optics: PC 1 Average service life \$100,000 h\$ inductive or capacitive loads 1 Usage categorie to EN 60947-1, 15 AC, 13 DC Operating range and operating reserve						
ON delay ton OFF	Switching frequency max. 5)	25/s				
ON delay ton O.1 to 10 s, can be connected separately OFF delay tone OFF delay to	Time delays					
Connection type Terminal chamber CE generic emission standard Level EN 61000-6-3 ("Residential and Commercial Areas") VDE protection class *9 Circuit protection *7 A, C Enclosure rating IP 67 Ambient temperature T _A Operation -25 °C +55 °C Storage -40 °C +70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC 1 Average service life 100,000 h at T _A = +25 °C Usage categorie to EN 60947-1, 15 AC, 13 DC Operating range and operating reserve Type WS/WE260-8 270 (UC) WS/WE2		0.1 to 10 s. can be connected separately				
CE generic emission standard Level EN 61000-6-3 ("Residential and Commercial Areas") VDE protection class ⁶ Circuit protection ⁷ A, C Enclosure rating IP 67 Ambient temperature T _A Operation -25 °C +55 °C Storage -40 °C +70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC 3 Average service life 100,000 h at T _A = +25 °C 1 Usage categorie to EN 60947-1, 15 AC, 13 DC Operating range and operating reserve Order information Type WS/WE260-S 270 (UC) WS/WE260-R 270 (UC)						
("Residential and Commercial Areas") VDE protection class 6) Circuit protection 7 A, C Enclosure rating IP 67 Ambient temperature T _A Operation - 25 °C + 55 °C Storage - 40 °C + 70 °C Weight Approx. 120 g Material I Average service life 100,000 h at T _A = + 25 °C at T _B = 45 °C I Storage - 40 °C + 70 °C I Average service life 100,000 h at T _A = + 25 °C at T _B = 45 °C I Storage - 40 °C + 70 °C I Storage - 40 °C + 70 °C Storage - 40 °C + 70 °C I Approx. 120 g Material I Average service life 100,000 h at T _A = + 25 °C at T _B = 45 °C I Storage - 40 °C + 70 °C	Connection type	Terminal chamber				
("Residential and Commercial Areas") VDE protection class 6) Circuit protection 7 A, C Enclosure rating IP 67 Ambient temperature T _A Operation - 25 °C + 55 °C Storage - 40 °C + 70 °C Weight Approx. 120 g Material 1 Average service life 100,000 h at T _A = + 25 °C 13 DC Operating range and operating reserve Order information Type WS/WE260-8 270 (UC) WS/WE260-8 270 (UC) WS/WE260-R 270 (UC) WS/WE260-R 270 (UC) WS/WE260-R 270 (UC) WS/WE260-R 270 (UC) Order no. WS/WE260-R 270 (UC) WS/WE260-R 270 (UC) Order no. WS/WE260-R 270 (UC)	CE ganaria amissian standard	Loval EN 61000 6 2				
VDE protection class 6) Circuit protection 7) A, C Enclosure rating IP 67 Ambient temperature T _A Operation - 25 °C + 55 °C Storage - 40 °C + 70 °C Weight Approx. 120 g Material I) Average service life 100,000 h at T _A = + 25 °C b) With light/dark ratio 1:1 i) Average service life 100,000 h at T _A = + 25 °C b) With light/dark ratio 1:1 i) Reference voltage 250 V UC Operating range and operating reserve Order information Type WS/WE 260-S 270 WS/WE 260-S 270 WS/WE 260-R 270 WS/WE 260	CE generic emission standard					
Circuit protection 7) A, C Enclosure rating IP 67 Ambient temperature T _A Operation - 25 °C + 55 °C Storage - 40 °C + 70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC 1) Average service life 100,000 h at T _A = + 25 °C inductive or capacitive loads (2) ± 10 % 1) Usage categorie to EN 60947-1, 15 AC, 13 DC Operating range and operating reserve Order information Type WS/WE 260-8 270 (UC) WS/WE 260-8 270 (UC) 10 0 3 4 0 3 4 0 3 4 0 3 4 0 3 4 0 5 0	VDE protection class 6)	· · · · · · · · · · · · · · · · · · ·				
Ambient temperature T _A Operation - 25 °C + 55 °C Storage - 40 °C + 70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC 3 Provide suitable spark suppression for inductive or capacitive loads 4 Usage categorie to EN 60947-1, 15 AC, 13 DC Operating range and operating reserve Order information Type WS/WE260-S 270 (UC) WS/WE260-R 270 (UC)	-					
Storage — 40 °C + 70 °C Weight Approx. 120 g Material Housing: ABS; Optics: PC Average service life 100,000 h at T _A = + 25 °C 2) ± 10 % Operating range and operating reserve Order information Type WS/WE 260-S 270 (UC) WS/WE 260-R 270 (UC) WS/WE 260-R 270 (UC) Operating range and operating reserve Order no. 6 020 773 6 020 774	Enclosure rating	-				
Material Approx. 120 g Material Housing: ABS; Optics: PC Average service life 100,000 h at T _A = + 25 °C Usage categorie to EN 60947-1, 15 AC, 13 DC Operating range and operating reserve Operating range and operating reserve Order information Type WS/WE 260-S 270 (UC) WS/WE 260-R 270 (UC)	Ambient temperature T _A	Operation – 25 °C + 55 °C				
## Housing: ABS; Optics: PC A verage service life 100,000 h at T _A = + 25 °C 4 Verage service life 100,000 h at T _A = + 25 °C 4 Usage categorie to EN 60947-1, 15 AC, 13 DC 5 With light/dark ratio 1:1 6 Reference voltage 250 V UC 7 A = V _s connections reverse-polarity protected C = Interference suppression 7 A = V _s connections reverse-polarity protected C = Interference suppression 7 A = V _s connections reverse-polarity protected C = Interference suppression 7 A = V _s connections reverse-polarity protected C = Interference suppression 8 A = V _s connections reverse-polarity protected C = Interference suppression 9 A = V _s connections reverse-polarity protected C = Interference suppression 1		Storage – 40 °C + 70 °C				
1) Average service life 100,000 h at $T_A = +25$ °C inductive or capacitive loads (2) \pm 10 % 10 Loads (3) Provide suitable spark suppression for inductive or capacitive loads (4) Usage categorie to EN 60947-1, 15 AC, 13 DC 10 Mith light/dark ratio 1:1 Reference voltage 250 V UC (5) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (7) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (7) A = V_s connections reverse-polarity protected (7) A = V_s connections reverse-polarity protected (8) With light/dark ratio 1:1 (8) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (8) With light/dark ratio 1:1 (9) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (7) A = V_s connections reverse-polarity protected (8) With light/dark ratio 1:1 (9) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (8) With light/dark ratio 1:1 (9) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (8) With light/dark ratio 1:1 (9) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (8) With light/dark ratio 1:1 (9) Reference voltage 250 V UC (7) A = V_s connections reverse-polarity protected (8) With light/dark ratio 1:1 (9) Reference voltage 250 V UC (8) With light/dark ratio 1:1 (9) Reference voltage 250 V UC (8) Referen	Weight	Approx. 120 g				
at T _A = + 25 °C inductive or capacitive loads (4) Usage categorie to EN 60947-1, 15 AC, 13 DC (2) ± 10 % (4) Usage categorie to EN 60947-1, 15 AC, 13 DC (2) ± 10 % (3) DC (4) Usage categorie to EN 60947-1, 15 AC, 13 DC (4) Usage categorie to EN 60947-1, 15 AC, 13 DC (5) Order information (7) Order information (7) Usage categorie to EN 60947-1, 15 AC, 13 DC (1) Usage categorie to EN 60947-1, 15 AC, 13 DC (1) Usage categorie to EN 60947-1, 15 AC, 15 AC, 15 AC, 15 AC, 15 AC, 15 AC, 16 DC (1) Usage categorie to EN 60947-1, 15 AC,	Material	Housing: ABS; Optics: PC				
at T _A = + 25 °C inductive or capacitive loads (2) ± 10 % (4) Usage categorie to EN 60947-1, 15 AC, 13 DC (5) Reference voltage 250 V UC (7) Usage categorie to EN 60947-1, 15 AC, 13 DC (7) Usage categorie to EN 60947-1, 15 AC, 13 DC (7) Usage categorie to EN 60947-1, 15 AC, 13 DC (7) Usage categorie to EN 60947-1, 15 AC, 15 AC, 16 DC (8) Usage categorie to EN 60947-1, 15 AC, 15 AC, 15 AC, 16 DC (8) Usage categorie to EN 60947-1, 15 AC, 15 AC, 15 AC, 16 DC (8) Usage categorie to EN 60947-1, 15 AC, 15 AC, 15 AC, 16 DC (8) Usage categorie to EN 60947-1, 15 AC, 15 A	1) Average service life 100,000 h				$^{7)}$ A = V_s connections	reverse-polarity
Operating range and operating reserve Type Order no. WS/WE 260-S 270 (UC) WS/WE 260-S 270 (UC) WS/WE 260-R 270 (UC) WS/WE 260-R 270 (UC) WS/WE 260-R 270 (UC) WS/WE 260-R 270 (UC)		⁴⁾ Usage categorie to EN 60947-1, 15 AC,	Reference voltage 25	0 V UC		ppression
100	On another war as a soul as				Ouday to face 11	
100	operating range and operating re	eserve				Order
WS/WE260-R 270 (UC) - WS/WE260-R 270 (UC) - WS/WE 260-R 270 (UC) - W						
2 0 12 14 3 0 6 8 4 0 3 4 0 (m) 10 20 30 40 50	_	40 45	WS/W	E260-S 270 (UC)		
4 0 3 4 0 m 10 20 30 40 50	2 0 12 14			= 10 (UC) -	VV3/ VVL 200-R 210	0 020 114
4 0 3 4 0 m) 10 20 30 40 50	3 0 6 8					
0 (m) 10 20 30 40 50						
Operating range Typ. max. scanning range	0 (m) 10 2	0 30 40 50				
	Operating range Typ. max	x. scanning range				
				+ + -		

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10

Operating range typ. max. scanning range

30

40

50

20

Operating reserve

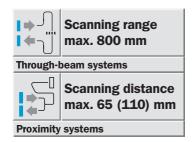
(m)

Scanning range reduction when using

slotted masks

Slot width 5 mm Slot width 2 mm Slot width 1 mm

Without slotted mask



- Broad range of fibre-optic cables for through-beam and proximity applications
- Easy adaption of fibre-optic cable using cap nut
- Sensitivity, adjustable
- Terminal chamber, at bottom and rear or plug M12, 4-pin
- Test input

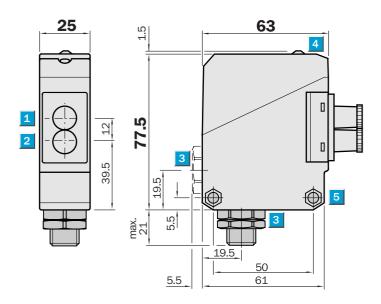




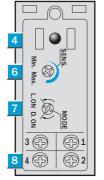
See chapter Accessories	
Cables and connectors	
Mounting systems*)	
Fibre-optic cables	

Mounting bracket included with delivery

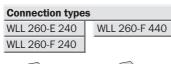
Dimensional drawing



Adjustments possible WLL 260-F 240 WLL 260-F 440 WLL 260-E 240



- 1 Middle of optic axis, receiver
- 2 Middle of optic axis, sender
- Cable entry gland 1/2" PF thread for cable diameters from 6 to 10 mm optionally at bottom or rear; or M12 equipment plug, bottom
- LED signal strength indicator, red
- 5 Through hole Ø 5.2 mm on both sides for M5 hex nut
- 6 Sensitivity control
- Light/dark rotary switch
- L.ON = light-switching, D.ON = dark-switching
- 3 Terminals







Terminals	4-pin, M12
1 +V 2 0 V 4 Q 3 TE	1 1 +V 2 3 0 V 4 Q 4 3 TE

Technical data	WLL 260-	F 240	F 440	E 240				
Suitable fibre-optic cable	Fibre-optic cable series LIS/LBS							
Scanning distance/range	Depends on the fibre-optic cable used							
Proximity system	Depends on the hore-optic capie used							
	0 to 65 mm							
Typ. max. scanning distance 1)	0 to 110 mm with special fibre-optic cable							
Operating distance 1)	0 to 50 mm							
Operating distance	0 to 90 mm with special fibre-optic cable							
Through-beam system	0 to 90 mm with special hore-optic cable							
	0 to 800 mm							
Typ. max. scanning range	0 to 700 mm							
Operating range								
Sensitivity	Adjustable, potentiometer 270°							
Light source 2)	LED, visible red light							
Light spot diameter	Depends on scanning range							
Aperture fibre-optic cable	Approx. 65°							
<u> </u>								
Supply voltage V _S	10 to 30 V DC ³⁾							
Ripple 4)	≤ 5 V _{PP}							
Current consumption 5)	≤ 35 mA							
Switching outputs	PNP, open collector: Q			İ				
Owntoining outputs	NPN, open collector: Q							_
Output current I _A max.	100 mA							
Light receiver, switching mode	Light-/dark-switching by rotary switch							_
Response time ⁶⁾	≤ 0.7 ms							
Switching frequency max. 7)	700/s							_
Ownering requerity max.	100/3							
Test input »TE« sender off	PNP: TE following + V _S							
	NPN: TE following 0 V							
Connection types	Terminal chamber							_
	Plug M12, 4-pin							
				I				
VDE protection class 8)								
Circuit protection 9)	A, B, C, D							
Enclosure rating	IP 66							
Ambient temperature T _A	Operation -25 °C +55 °C							
	Storage − 40 °C + 70 °C							
Weight	Approx. 120 g							
Material	Housing: ABS							

Object with 90 % remission (based on standard white DIN 5033)

 $^{2)}$ Average service life 100,000 h at $T_{A} = +\ 25\ ^{\circ}\text{C}$

3) Limit values, operation in short circuit protected network max. 8 A

4) Must be within V_S tolerances

5) Without load

6) With resistive load

7) With light/dark ratio 1:1

8) Reference voltage 50 V DC

 $^{9)} \quad A = V_s \, connections \, reverse-polarity \\ protected$

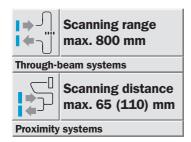
B = Inputs/outputs reverse-polarity protected

C = Interference suppression

D= Outputs overcurrent and shortcircuit protected

Order informatio	n
Туре	Order no.
WLL 260-F 240	6 020 064
WLL 260-F 440	6 020 065
WLL 260-E 240	6 020 063

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- Universal voltage
- Broad range of fibre-optic cables for through-beam and proximity applications
- Easy adaption of fibre-optic cable using cap nut
- Sensitivity, adjustable
- Terminal chamber
- Relay output, SPDT, time delays

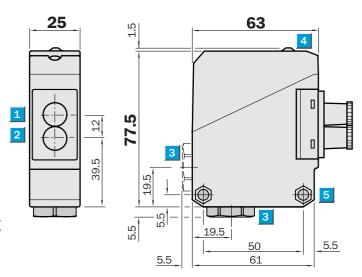




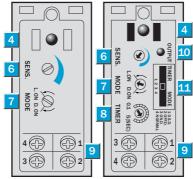


*) Mounting bracket included with delivery

Dimensional drawing



Adjustments possible
WLL 260-S 240 WLL 260-R 240



- 1 Middle of optic axis, receiver
- Middle of optic axis, sender

 Cable entry gland 1/2" PF thread
 for cable diameters from 6 to 10 mm
 optionally at bottom or rear
- LED signal strength indicator, red
- Through hole Ø 5.2 mm on both sides for M5 hex nut
- 6 Sensitivity control
- Light/dark rotary switch
 - L.ON = light-switching, D.ON = dark-switching
- Time range control
- Terminals
- Red LED status indicator, switching output active
- Time delay selector switch

O.S.D. = One Shot

OFF.D. = OFF delay

ON.D. = ON delay

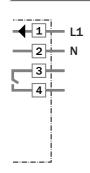
Normal = No delay

Connection types WLL 260-S 240

WLL 260-R 240

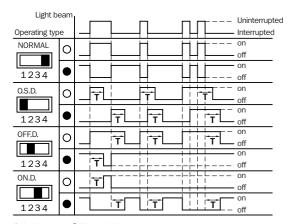


Terminals



Time delays

t = 0.1-5 s



Switching mode: O light-switching

dark-switching

Technical data		WLL 260-	S 240	R 240						
Cuitoble fibre	atio aphlo	Fibro antio cable acrica LIC /LDC								
Suitable fibre-op		Fibre-optic cable series LIS/LBS								
Scanning distan		Depends on the fibre-optic cable used								
Proximity system										
Typ. max. scanning distance 1)		0 to 65 mm								
	4)	0 to 110 mm with special fibre-optic cable								
Operating dis	stance ¹⁾	0 to 50 mm								
		0 to 90 mm with special fibre-optic cable								
Through-beam s	-	0.1.000								
Typ. max. sca		0 to 800 mm								
Operating rai	nge	0 to 700 mm								
Sensitivity		Adjustable, potentiometer 270°								
Light source ²⁾		LED, visible red light								
Light spot diamet	ter	Depends on scanning range								
Aperture fibre-op		Approx. 65°								
or car o more op										
Supply voltage \	Vs ³⁾	12 to 240 V DC								
pp.,	-3	24 to 240 V AC								
Power consumpti	ion	≤ 5 VA								
Switching outpu		Relay, SPDT, electrically isolated ⁴⁾								
Switching current		3 A/240 V AC; 3 A/30 V DC ⁵⁾								
Light receiver, sw	vitching mode	Light-/dark-switching by rotary switch								
Response time		≤ 20 ms								
Switching frequer	ncy max. ⁶⁾	25/s								
Time delays		With indicator LED: Switching output active	<u>,</u>							
Switch position	"1 0.S.D."	"One shot"								
	"2 OFF.D."	OFF delay t _{off}								
	"3 ON.D."	ON delay t _{on}								
	"4 Normal"	No delay								
Time range		Adjustable, 0.1 to 5 s; potentiometer 270°)							
		·								
Connection type	•	Terminal chamber								
VDE protection	class 7)									
Circuit protection 8)		A, C								
Enclosure rating		IP 66								
Ambient temper		Operation – 25 °C + 55 °C								
Ambient temper	I A I A	Storage – 40 °C + 70 °C								
Weight		Approx. 120 g								
Material		Housing: ABS								
		3) ± 10 % 4) Provide suitable spark suppression for	13 DC		to EN 609	47-1, 15 AC	,	V _s conne	d	

Order information

 Type
 Order no.

 WLL 260-S 240
 6 009 504

 WLL 260-R 240
 6 009 503

C = Interference suppression

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6) With light/dark ratio 1:1
7) Reference voltage 50 V DC

inductive or capacitive loads

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