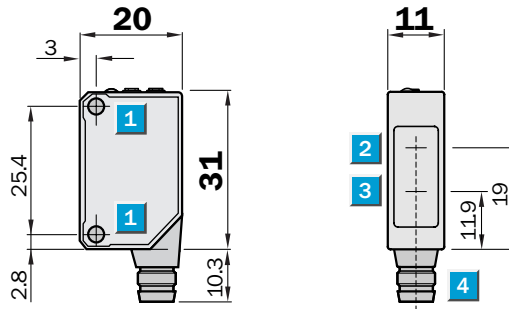


Scanning distance
4 ... 140 mm

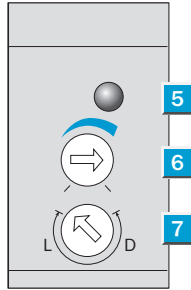
Photoelectric proximity switch

- Photoelectric proximity switch with background blanking
- Visible red light as alignment aid
- Switching point adjustable
- Easy mounting through integrated mounting hole M3

Dimensional drawing



Adjustments possible

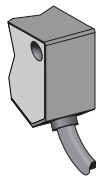


- 1 Mounting hole M 3
- 2 Centre of optical axis, receiver
- 3 Centre of optical axis, sender
- 4 Connector
- 5 LED signal strength indicator orange: switching output active
- 6 Sensitivity adjustment (270 °)
- 7 Light/dark rotary switch: L =light-switching, D =dark-switching

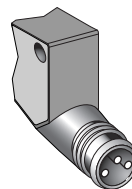
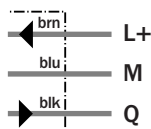


Connection type

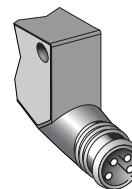
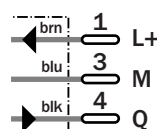
WT100-N1419	WT100-N3419	WT100-N4419
WT100-P1419	WT100-P3419	WT100-P4419



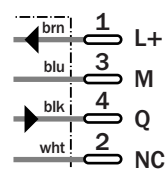
3 x 0.18 mm²



M8, 3-pin



M8, 4-pin



See chapter Accessories

- Connector, M8, 3-pin
- Connector, M8, 4-pin
- Mounting systems

Technical specifications		WT100-	N1419	N3419	N4419	P1419	P3419	P4419				
Scanning distance typ. max.	4 ... 140 mm ¹⁾											
Operating distance	10 ... 100 mm ¹⁾											
Adjustment of operating distance	Potentiometer											
Light source, light type	LED, Red light, 680 nm ²⁾											
Light spot diameter	Approx. 8 mm at 90 mm distance											
Supply voltage V _s	10 ... 30 V DC ³⁾											
Ripple	± 10 % ⁴⁾											
Power consumption	≤ 30 mA ⁵⁾											
Switching outputs	NPN: open collector: Q											
	PNP: open collector: Q											
Switching mode	Light-/dark-switching via rotary switch											
Signal voltage PNP HIGH / LOW	V _s - 1.8 V / approx. 0 V											
Signal voltage NPN HIGH / LOW	Approx. V _s / < 1.8 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁶⁾											
Switching frequency	1,000 Hz ⁷⁾											
Connection type	Cable, PVC, 2 m ⁸⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PC											

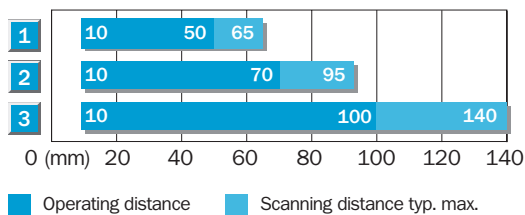
¹⁾ Object with 90% remission (based on standard white to DIN 5033)
²⁾ Average service life 100,000 h

at T_a = +25°C
³⁾ Limit values, operation in short-circuit protected network max. 8 A

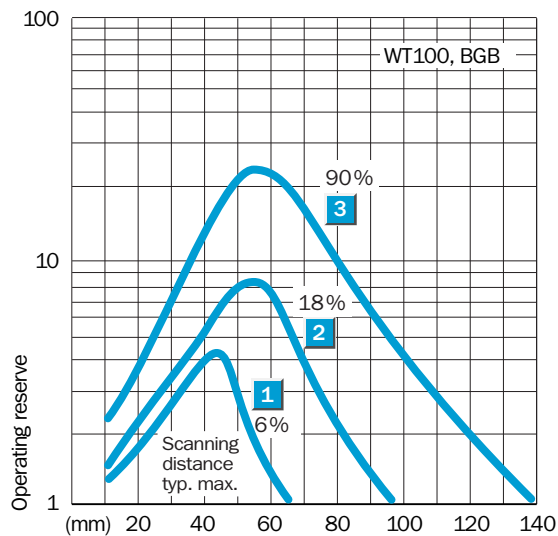
⁴⁾ may not exceed or fall short of V_s tolerances
⁵⁾ without load

⁶⁾ Signal transit time with resistive load
⁷⁾ with light/dark ratio 1:1
⁸⁾ do not bend below 0 °C

Scanning distance




- 1 Scanning range on black, 6 % remission
- 2 Scanning range on grey, 18 % remission
- 3 Scanning range on white, 90 % remission



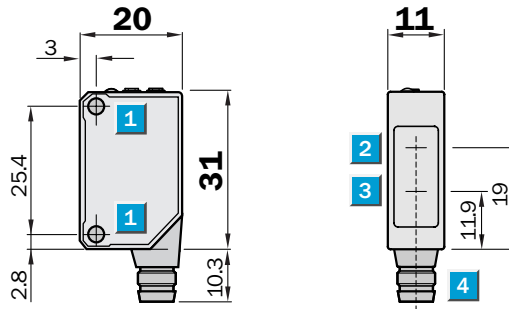
Order information

Type	Order no.
WT100-N1419	6 026 113
WT100-N3419	6 026 115
WT100-N4419	6 028 618
WT100-P1419	6 026 114
WT100-P3419	6 026 116
WT100-P4419	6 028 619

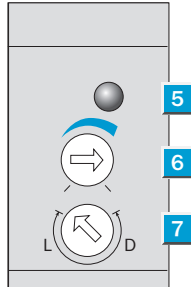

Scanning distance
 0 ... 900 mm
Photoelectric proximity switch

- Energetic photoelectric proximity switches for standard applications
- Visible red light as alignment aid
- Switching point adjustable
- Easy mounting through integrated mounting hole M3

Dimensional drawing



Adjustments possible

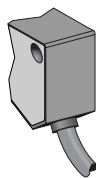


- 1 Mounting hole M 3
- 2 Centre of optical axis, receiver
- 3 Centre of optical axis, sender
- 4 Connector
- 5 LED signal strength indicator orange: switching output active
- 6 Sensitivity adjustment (270 °)
- 7 Light/dark rotary switch: L =light-switching, D =dark-switching

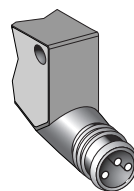
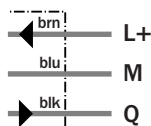


Connection type

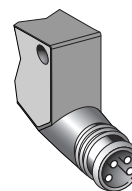
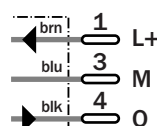
WT100-N1439	WT100-N3439	WT100-N4439
WT100-P1439	WT100-P3439	WT100-P4439



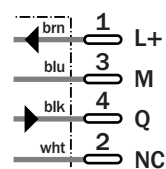
3 x 0.18 mm²



M8, 3-pin



M8, 4-pin



See chapter Accessories

- Connector, M8, 3-pin
- Connector, M8, 4-pin
- Mounting systems

Technical specifications		WT100-	N1439	N3439	N4439	P1439	P3439	P4439				
Scanning distance typ. max.	0 ... 900 mm ¹⁾											
Operating distance	0 ... 700 mm ¹⁾											
Adjustment of operating distance	Potentiometer											
Light source, light type	LED, Red light, 680 nm ²⁾											
Light spot diameter	Approx. 55 mm at 400 mm distance											
Angle of dispersion	Approx. 6.8 °											
Supply voltage V _s	10 ... 30 V DC ³⁾											
Ripple	± 10 % ⁴⁾											
Power consumption	≤ 30 mA ⁵⁾											
Switching outputs	NPN: open collector: Q											
	PNP: open collector: Q											
Switching mode	Light-/dark-switching via rotary switch											
Signal voltage PNP HIGH / LOW	V _s - 1.8 V / approx. 0 V											
Signal voltage NPN HIGH / LOW	Approx. V _s / < 1.8 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁶⁾											
Switching frequency	1,000 Hz ⁷⁾											
Connection type	Cable, PVC, 2 m ⁸⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PC											

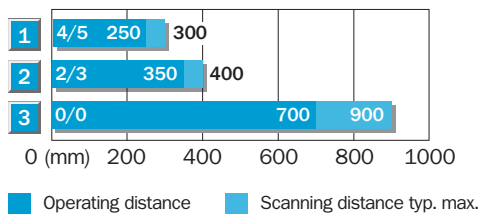
¹⁾ Object with 90% remission (based on standard white to DIN 5033)
²⁾ Average service life 100,000 h

at T_a = +25 °C
³⁾ Limit values, operation in short-circuit protected network max. 8 A

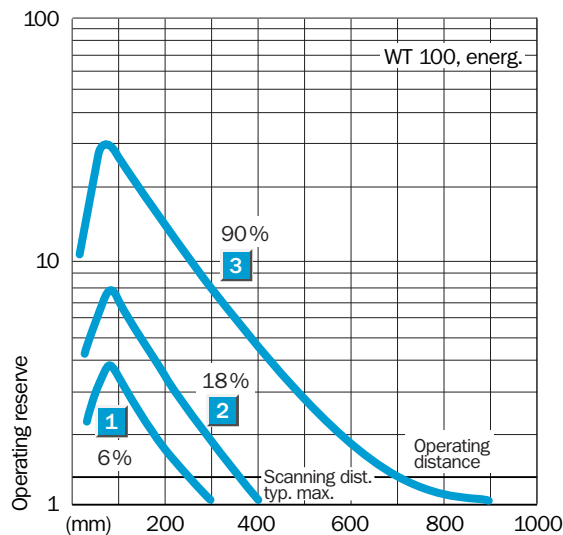
⁴⁾ May not exceed or fall short of V_s tolerances
⁵⁾ without load

⁶⁾ Signal transit time with resistive load
⁷⁾ with light/dark ratio 1:1
⁸⁾ do not bend below 0 °C

Scanning distance



- 1 Scanning range on black, 6 % remission
- 2 Scanning range on grey, 18 % remission
- 3 Scanning range on white, 90 % remission



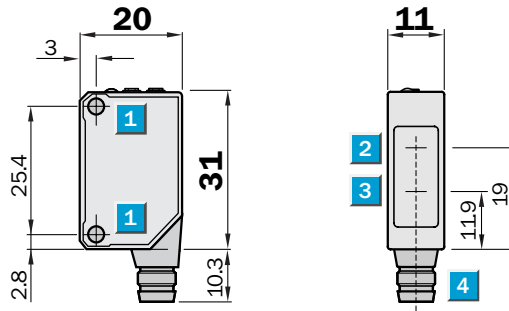
Order information	
Type	Order no.
WT100-N1439	6 026 078
WT100-N3439	6 026 080
WT100-N4439	6 028 614
WT100-P1439	6 026 079
WT100-P3439	6 026 081
WT100-P4439	6 028 615

Scanning range
0.01 ... 6 m

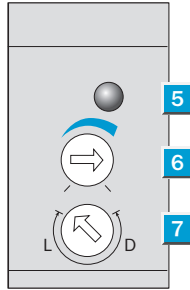
Photoelectric reflex switch

- Polarization filter and consequently reliable detection of objects with shiny surfaces
- Also suitable for "Diamond Grade" reflective tape
- Sensitivity adjustable
- Visible red light as alignment aid
- Easy mounting through integrated mounting hole M3

Dimensional drawing



Adjustments possible

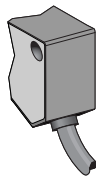


- 1 Mounting hole M 3
- 2 Centre of optical axis, receiver
- 3 Centre of optical axis, sender
- 4 Connector
- 5 LED signal strength indicator orange: switching output active
- 6 Sensitivity adjustment (270°)
- 7 Light/dark rotary switch: L =light-switching, D =dark-switching

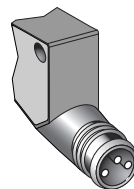
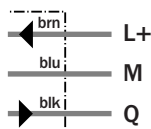


Connection type

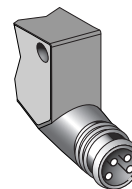
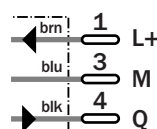
WL100-N1439	WL100-N3439	WL100-N4439
WL100-P1439	WL100-P3439	WL100-P4439



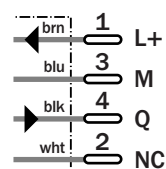
3 x 0.18 mm²



M8, 3-pin



M8, 4-pin



See chapter Accessories

Connector, M8, 3-pin
Connector, M8, 4-pin
Mounting systems
Reflectors

Technical specifications		WL100-	N1439	N3439	N4439	P1439	P3439	P4439				
Scanning range typ. max.	0.01 ... 6 m											
Scanning range, recommended	0.01 ... 5 m											
Relating to	Reflector PL 80 A											
Sensitivity adjustment	Potentiometer											
Light source, light type	LED, Red light, 680 nm ¹⁾											
Light spot diameter	Approx. 250 mm at 3.5 m distance											
Angle of dispersion	Approx. 4 °											
Polarisation filter	✓											
Supply voltage V_s	10 ... 30 V DC ²⁾											
Ripple	± 10 % ³⁾											
Power consumption	≤ 30 mA ⁴⁾											
Switching outputs	NPN: open collector: Q											
	PNP: open collector: Q											
Switching mode	Light-/dark-switching via rotary switch											
Signal voltage PNP HIGH / LOW	V _s - 1.8 V / approx. 0 V											
Signal voltage NPN HIGH / LOW	Approx. V _s / < 1.8 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁵⁾											
Switching frequency	1,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PMMA											

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

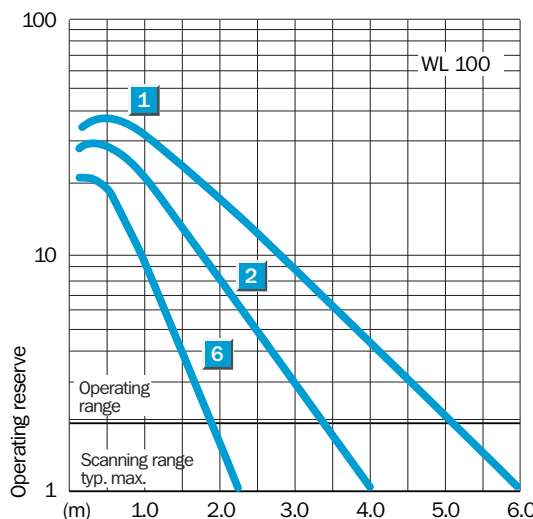
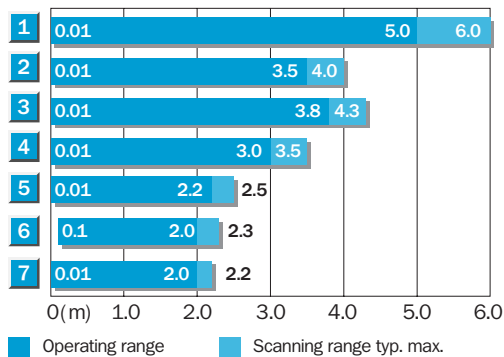
²⁾ Limit values, operation in short-circuit

protected network max. 8 A
³⁾ 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

Scanning range and operating reserve



Reflector type	Operating range
1 PL 80 A	0.01 ... 5.0 m
2 P 250	0.01 ... 3.5 m
3 PL 50 A/PL 40 A	0.01 ... 3.8 m
4 PL 30 A/PL 31 A	0.01 ... 3.0 m
5 PL 20 A	0.01 ... 2.2 m
6 Reflective tape Diamond Grade	0.1 ... 2.0 m (100 x 100 mm ²)
7 P 45	0.01 ... 2.0 m

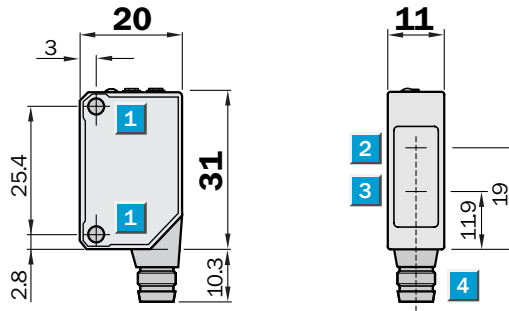
Order information	
Type	Order no.
WL100-N1439	6 026 064
WL100-N3439	6 026 070
WL100-N4439	6 028 604
WL100-P1439	6 026 067
WL100-P3439	6 026 073
WL100-P4439	6 028 607


Scanning range
 0.01 ... 6 m

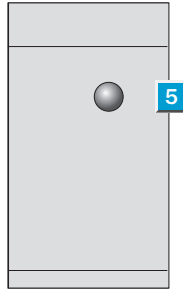
Photoelectric reflex switch

- Polarization filter and consequently reliable detection of objects with shiny surfaces
- Also suitable for "Diamond Grade" reflective tape
- Light- or dark-switching
- Visible red light as alignment aid
- Easy mounting through integrated mounting hole M3

Dimensional drawing



Adjustments possible

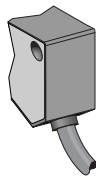


- 1** Mounting hole M 3
- 2** Centre of optical axis, receiver
- 3** Centre of optical axis, sender
- 4** Connector
- 5** LED signal strength indicator orange: switching output active

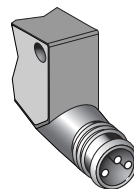
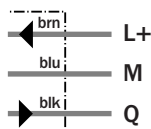


Connection type

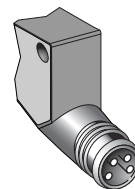
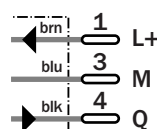
WL100-P1239	WL100-P3239	WL100-P4239
WL100-P1339	WL100-P3339	WL100-P4339



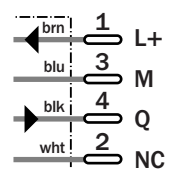
3 x 0.18 mm²



M8, 3-pin



M8, 4-pin



See chapter Accessories

- Connector, M8, 3-pin
- Connector, M8, 4-pin
- Mounting systems
- Reflectors

Technical specifications		WL100-	P1239	P1339	P3239	P3339	P4239	P4339				
Scanning range typ. max.	0.01 ... 6 m											
Scanning range, recommended	0.01 ... 5 m											
Relating to	Reflector PL 80 A											
Light source, light type	LED, Red light, 680 nm ¹⁾											
Light spot diameter	Approx. 250 mm at 3.5 m distance											
Angle of dispersion	Approx. 4 °											
Polarisation filter	✓											
Supply voltage V _s	10 ... 30 V DC ²⁾											
Ripple	± 10 % ³⁾											
Power consumption	≤ 30 mA ⁴⁾											
Switching outputs	PNP: open collector: Q											
Switching mode	Dark-switching											
	Light-switching											
Signal voltage PNP HIGH / LOW	V _s - 1.8 V / approx. 0 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁵⁾											
Switching frequency	1,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PMMA											

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

²⁾ Limit values, operation in short-circuit

³⁾ may not exceed or fall short of protected network max. 8 A

V_s tolerances

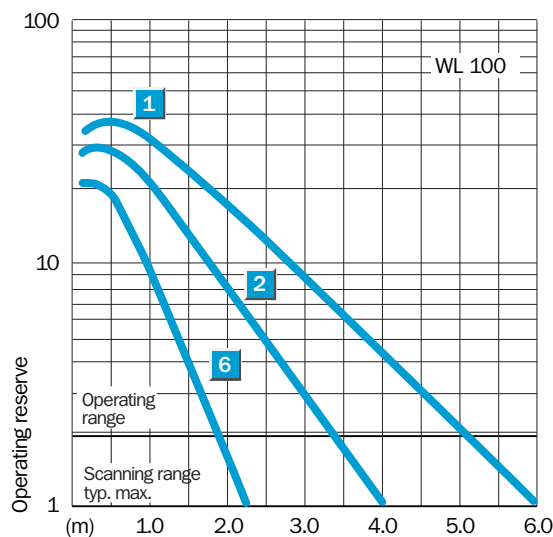
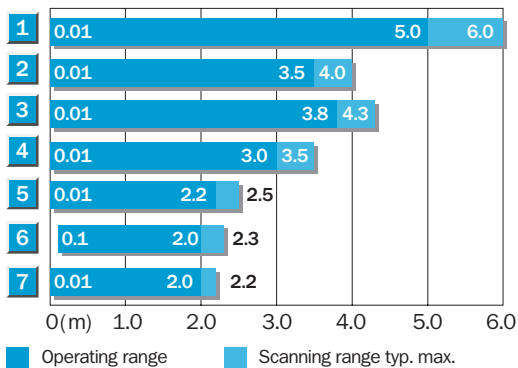
⁴⁾ without load

⁵⁾ Signal transit time with resistive load

⁶⁾ with light/dark ratio 1:1


⁷⁾ do not bend below 0 °C

Scanning range and operating reserve



Reflector type	Operating range
1 PL 80 A	0.01 ... 5.0 m
2 P 250	0.01 ... 3.5 m
3 PL 50 A/PL 40 A	0.01 ... 3.8 m
4 PL 30 A/PL 31 A	0.01 ... 3.0 m
5 PL 20 A	0.01 ... 2.2 m
6 Reflective tape Diamond Grade	0.1 ... 2.0 m (100 x 100 mm ²)
7 P 45	0.01 ... 2.0 m

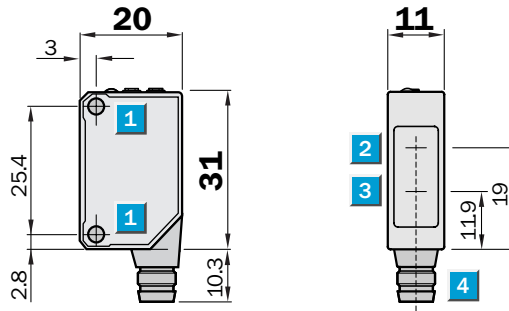
Order information	
Type	Order no.
WL100-P1239	6 026 065
WL100-P1339	6 026 066
WL100-P3239	6 026 071
WL100-P3339	6 026 072
WL100-P4239	6 028 605
WL100-P4339	6 028 606


Scanning range
 0.01 ... 6 m

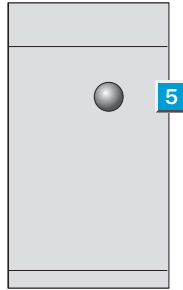
Photoelectric reflex switch

- Polarization filter and consequently reliable detection of objects with shiny surfaces
- Also suitable for "Diamond Grade" reflective tape
- Light- or dark-switching
- Visible red light as alignment aid
- Easy mounting through integrated mounting hole M3

Dimensional drawing



Adjustments possible

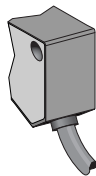


- 1** Mounting hole M 3
- 2** Centre of optical axis, receiver
- 3** Centre of optical axis, sender
- 4** Connector
- 5** LED signal strength indicator orange: switching output active

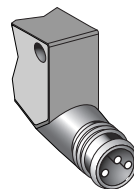
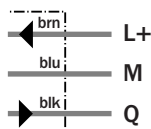


Connection type

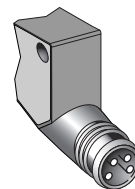
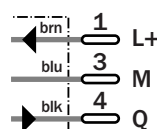
WL100-N1239	WL100-N3239	WL100-N4239
WL100-N1339	WL100-N3339	WL100-N4339



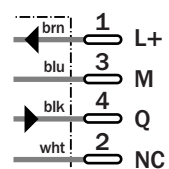
3 x 0.18 mm²



M8, 3-pin



M8, 4-pin



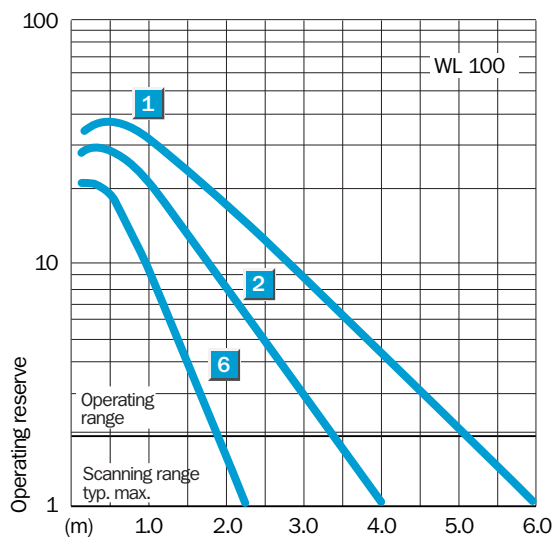
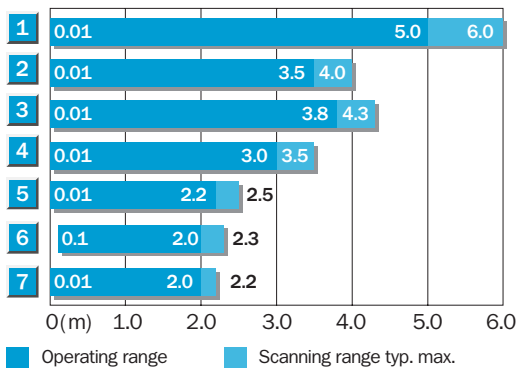
See chapter Accessories

Connector, M8, 3-pin
Connector, M8, 4-pin
Mounting systems
Reflectors

Technical specifications		WL100-	N1239	N1339	N3239	N3339	N4239	N4339				
Scanning range typ. max.	0.01 ... 6 m											
Scanning range, recommended	0.01 ... 5 m											
Relating to	Reflector PL 80 A											
Light source, light type	LED, visible red light ¹⁾											
Light spot diameter	Approx. 250 mm at 3.5 m distance											
Angle of dispersion	Approx. 4 °											
Polarisation filter	✓											
Supply voltage V _s	10 ... 30 V DC ²⁾											
Ripple	± 10 % ³⁾											
Power consumption	≤ 30 mA ⁴⁾											
Switching outputs	NPN: open collector: Q											
Switching mode	Dark-switching											
	Light-switching											
Signal voltage NPN HIGH / LOW	Approx. V _s / < 1.8 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁵⁾											
Switching frequency	1,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PMMA											

¹⁾ Average service life 100,000 h at T_a = +25 °C
²⁾ Limit values, operation in short-circuit
³⁾ protected network max. 8 A may not exceed or fall short of
⁴⁾ V_s tolerances without load
⁵⁾ Signal transit time with resistive load
⁶⁾ with light/dark ratio 1:1
⁷⁾ do not bend below 0 °C

Scanning range and operating reserve



Reflector type	Operating range
1 PL 80 A	0.01 ... 5.0 m
2 P 250	0.01 ... 3.5 m
3 PL 50 A/PL 40 A	0.01 ... 3.8 m
4 PL 30 A/PL 31 A	0.01 ... 3.0 m
5 PL 20 A	0.01 ... 2.2 m
6 Reflective tape Diamond Grade	0.1 ... 2.0 m (100 x 100 mm ²)
7 P 45	0.01 ... 2.0 m

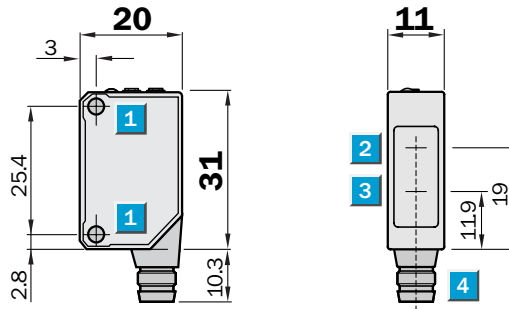
Order information	
Type	Order no.
WL100-N1239	6 026 062
WL100-N1339	6 026 063
WL100-N3239	6 026 068
WL100-N3339	6 026 069
WL100-N4239	6 028 602
WL100-N4339	6 028 603

Scanning range
0.01 ... 3 m

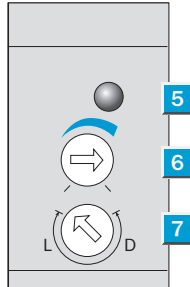
Photoelectric reflex switch

- Ideal for detection of glass or transparent objects
- Detection reliability, min. attenuation 20 %
- Also suitable for "Diamond Grade" reflection tape
- Sensitivity adjustable
- Visible red light as alignment aid
- Easy mounting through integrated mounting hole M3

Dimensional drawing



Adjustments possible

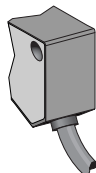


- 1 Mounting hole M 3
- 2 Centre of optical axis, receiver
- 3 Centre of optical axis, sender
- 4 Connector
- 5 LED signal strength indicator orange: switching output active
- 6 Sensitivity adjustment (270 °)
- 7 Light/dark rotary switch: L =light-switching, D =dark-switching

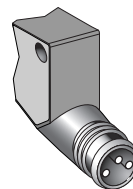
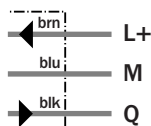


Connection type

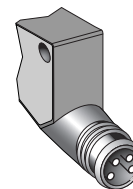
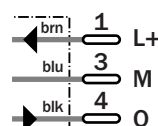
WL100-N1429	WL100-N3429	WL100-N4429
WL100-P1429	WL100-P3429	WL100-P4429



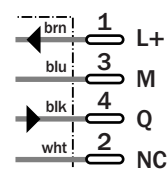
3 x 0.18 mm²



M8, 3-pin



M8, 4-pin



See chapter Accessories

- Connector, M8, 3-pin
- Connector, M8, 4-pin
- Mounting systems
- Reflectors

Technical specifications	WL100-	N1429	N3429	N4429	P1429	P3429	P4429				
Detection of transparent objects	✓										
Attenuation along light beams	≥ 20 %										
Scanning range typ. max.	0.01 ... 3 m										
Scanning range, recommended	0.01 ... 2.6 m										
Relating to	Reflector PL 80 A										
Sensitivity adjustment	Potentiometer										
Light source, light type	LED, Red light, 680 nm ¹⁾										
Light spot diameter	Approx. 200 mm at 2 m distance										
Angle of dispersion	Approx. 4 °										
Supply voltage V_s	10 ... 30 V DC ²⁾										
Ripple	± 10 % ³⁾										
Power consumption	≤ 30 mA ⁴⁾										
Switching outputs	NPN: open collector: Q										
	PNP: open collector: Q										
Switching mode	Light/dark-switching via rotary switch										
Signal voltage PNP HIGH / LOW	V _s - 1.8 V / approx. 0 V										
Signal voltage NPN HIGH / LOW	Approx. V _s / < 1.8 V										
Output current I _a max	100 mA										
Response time	≤ 0.5 ms ⁵⁾										
Switching frequency	1,000 Hz ⁶⁾										
Connection type	Cable, PVC, 2 m ⁷⁾										
	Connector, M8, 3-pin										
	Connector, M8, 4-pin										
VDE protection class	⊠										
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected										
Enclosure rating	IP 65										
Ambient temperature operation	-25 °C ... +55 °C										
Ambient temperature storage	-40 °C ... +70 °C										
Weight	Approx. 53 g										
	Approx. 9 g										
Housing material	ABS, PMMA										

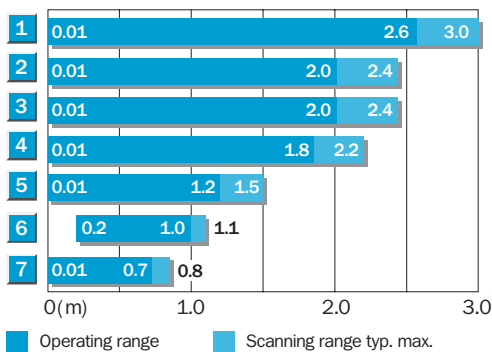
¹⁾ Average service life 100,000 h at T_a = +25 °C
²⁾ Limit values, operation in short-circuit

protected network max. 8 A
³⁾ may not exceed or fall short of

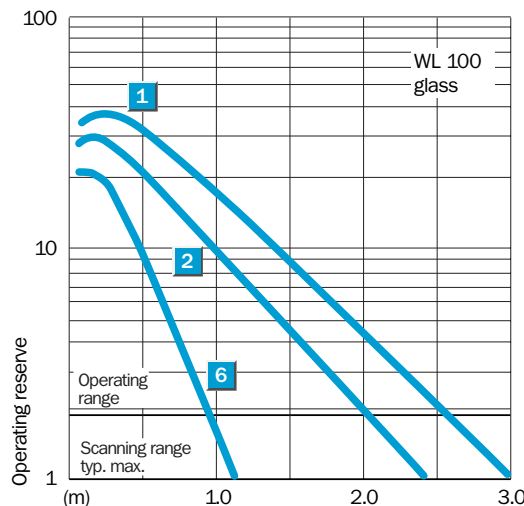
V_s tolerances
⁴⁾ without load
⁵⁾ Signal transit time with resistive load

⁶⁾ with light/dark ratio 1:1
⁷⁾ do not bend below 0 °C


Scanning range and operating reserve



Reflector type	Operating range
1 PL 80 A	0.01 ... 2.6 m
2 P 250	0.01 ... 2 m
3 PL 50 A/PL 40 A	0.01 ... 2 m
4 PL 30 A/PL 31 A	0.01 ... 1.8 m
5 PL 20 A	0.01 ... 1.2 m
6 Reflective tape Diamond Grade	0.2 ... 1.0 m (100 x 100 mm ²)
7 P 45	0.01 ... 0.7 m



Order information	
Type	Order no.
WL100-N1429	6 027 661
WL100-N3429	6 027 663
WL100-N4429	6 028 610
WL100-P1429	6 027 662
WL100-P3429	6 027 664
WL100-P4429	6 028 611

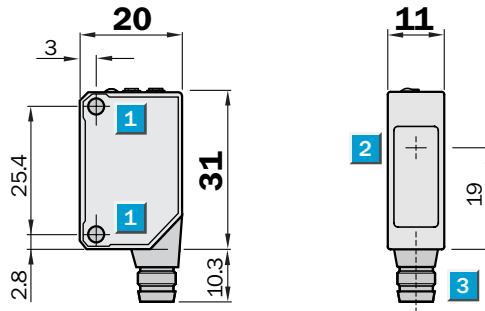
 **Scanning range**
0 ... 15 m

Through-beam photoelectric

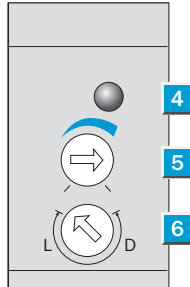
- Polarizing filter tip adapters as accessories
- Slotted masks as accessories for detecting small parts or for positioning jobs
- Sensitivity adjustable
- Visible red light as alignment aid
- Easy mounting through integrated mounting hole M3



Dimensional drawing



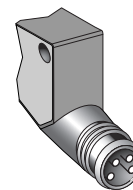
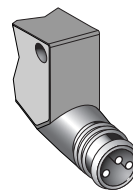
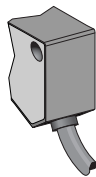
Adjustments possible



- 1 Mounting hole für M 3
- 2 Centre of optical axis, sender WS 100
Centre of optical axis, receiver WE 100
- 3 Connector
- 4 LED signal strength indicator orange: switching output active
- 5 Sensitivity adjustment (270 °, WE 100)
- 6 Light/dark rotary switch: L =light-switching, D =dark-switching (WE 100)

Connection type

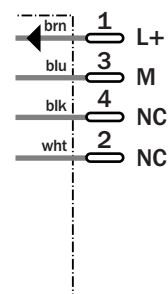
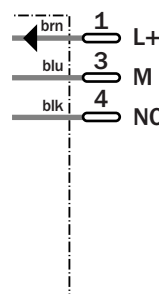
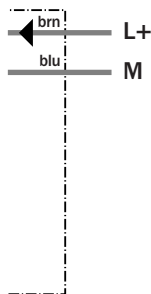
WS/WE100-N1439	WS/WE100-N3439	WS/WE100-N4439
WS/WE100-P1439	WS/WE100-P3439	WS/WE100-P4439



Sender 2 x 0.18 mm²

M8, 3-pin

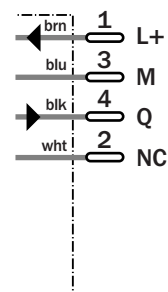
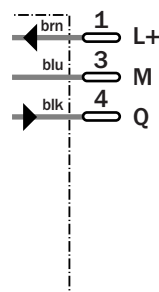
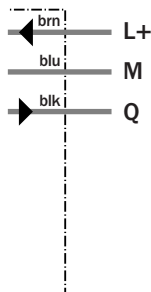
M8, 4-pin



Receiver 3 x 0.18 mm²

M8, 3-pin

M8, 4-pin



See chapter Accessories

Connector, M8, 3-pin
Connector, M8, 4-pin
Masks
Mounting systems
Polarisation filters

Technical specifications		WS/WE100-	N1439	N3439	N4439	P1439	P3439	P4439				
Scanning range typ. max.	0 ... 15 m											
Scanning range, recommended	0 ... 12 m											
Sensitivity adjustment	Potentiometer											
Light source, light type	LED, Red light, 680 nm ¹⁾											
Light spot diameter	Approx. 650 mm at 12 m distance											
Angle of dispersion	Approx. 3.1 °											
Angle of reception	Approx. 15 °											
Supply voltage V _s	10 ... 30 V DC ²⁾											
Ripple	± 10 % ³⁾											
Power consumption, sender	≤ 15 mA ⁴⁾											
Power consumption, receiver	≤ 20 mA ⁴⁾											
Switching outputs	NPN: open collector: Q PNP: open collector: Q											
Switching mode	Light-/dark-switching via rotary switch											
Signal voltage PNP HIGH / LOW	V _s - 1.8 V / approx. 0 V											
Signal voltage NPN HIGH / LOW	Approx. V _s / < 1.8 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁵⁾											
Switching frequency	1,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◇											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected (receiver only) / Outputs overcurrent and short-circuit protected (receiver only)											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PC											

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

²⁾ Limit values, operation in short-circuit

³⁾ may not exceed or fall short of protected network max. 8 A

V_s tolerances

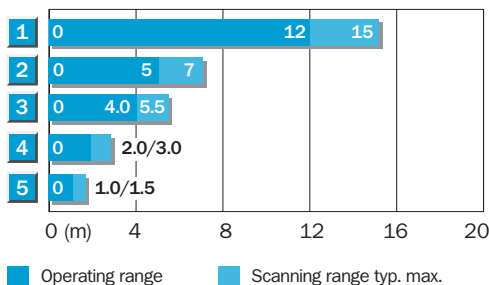
⁴⁾ without load

⁵⁾ Signal transit time with resistive load

⁶⁾ with light/dark ratio 1:1

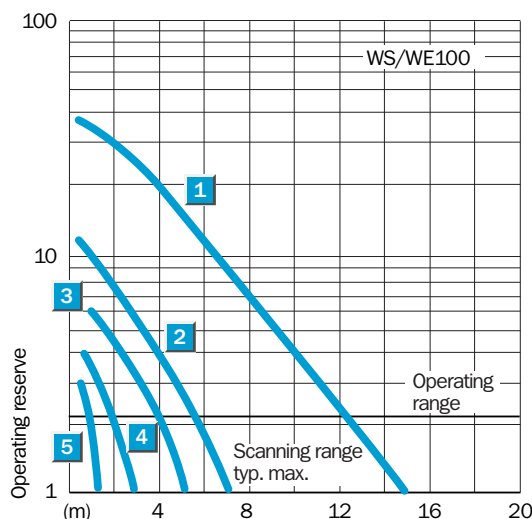
⁷⁾ do not bend below 0 °C

Scanning range and operating reserve




Scanning range reduction when slotted masks are used

1	Without masks/polarization filter
2	With polarization filter tip adapter
3	With slotted mask, width 2.0 mm
4	With slotted mask, width 1.0 mm
5	With slotted mask, width 0.5 mm



Order information

Type	Order no.
WS/WE100-N1439	6 026 040
WS/WE100-N3439	6 026 046
WS/WE100-N4439	6 028 592
WS/WE100-P1439	6 026 043
WS/WE100-P3439	6 026 049
WS/WE100-P4439	6 028 595

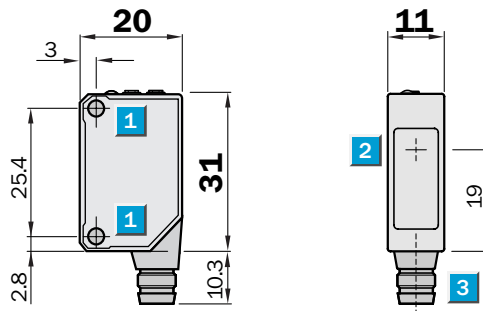
 **Scanning range**
0 ... 15 m

Through-beam photoelectric

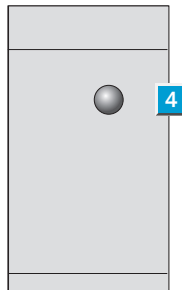
- Polarizing filter tip adapters as accessories
- Slotted masks as accessories for detecting small parts or for positioning jobs
- Visible red light as alignment aid
- Easy mounting through integrated mounting hole M3



Dimensional drawing



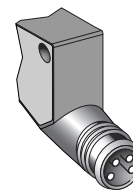
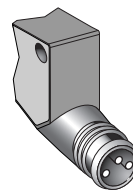
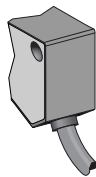
Adjustments possible



- 1 Mounting hole für M 3
- 2 Centre of optical axis, sender WS 100
- 2 Centre of optical axis, receiver WE 100
- 3 Connector
- 4 LED signal strength indicator orange: switching output active

Connection type

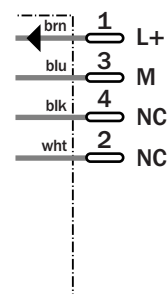
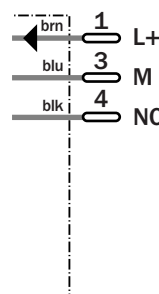
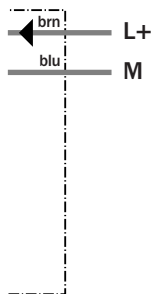
WS/WE100-P1239	WS/WE100-P3239	WS/WE100-P4239
WS/WE100-P1339	WS/WE100-P3339	WS/WE100-P4339



Sender 2 x 0.18 mm²

M8, 3-pin

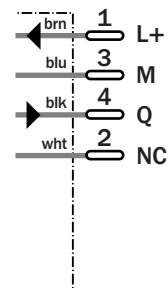
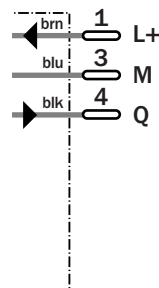
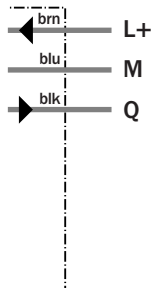
M8, 4-pin



Receiver 3 x 0.18 mm²

M8, 3-pin

M8, 4-pin



See chapter Accessories

Connector, M8, 3-pin
Connector, M8, 4-pin
Masks
Mounting systems
Polarisation filters

Technical specifications		WS/WE100-	P1239	P1339	P3239	P3339	P4239	P4339				
Scanning range typ. max.	0 ... 15 m											
Scanning range, recommended	0 ... 12 m											
Light source, light type	LED, Red light, 680 nm ¹⁾											
Light spot diameter	Approx. 650 mm at 12 m distance											
Angle of dispersion	Approx. 3.1 °											
Angle of reception	Approx. 15 °											
Supply voltage V_s	10 ... 30 V DC ²⁾											
Ripple	± 10 % ³⁾											
Power consumption, sender	≤ 15 mA ⁴⁾											
Power consumption, receiver	≤ 20 mA ⁴⁾											
Switching outputs	PNP: open collector: Q											
Switching mode	Dark-switching											
	Light-switching											
Signal voltage PNP HIGH / LOW	V _s - 1.8 V / approx. 0 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁵⁾											
Switching frequency	1,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected (receiver only) Outputs overcurrent and short-circuit protected (receiver only)											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PC											

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

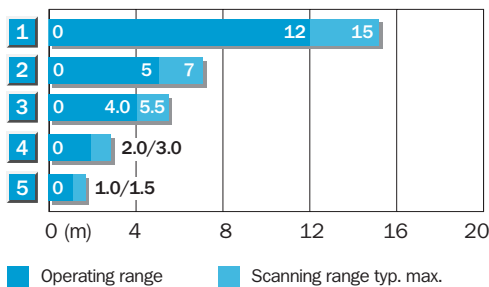
²⁾ Limit values, operation in short-circuit

³⁾ protected network max. 8 A may not exceed or fall short of

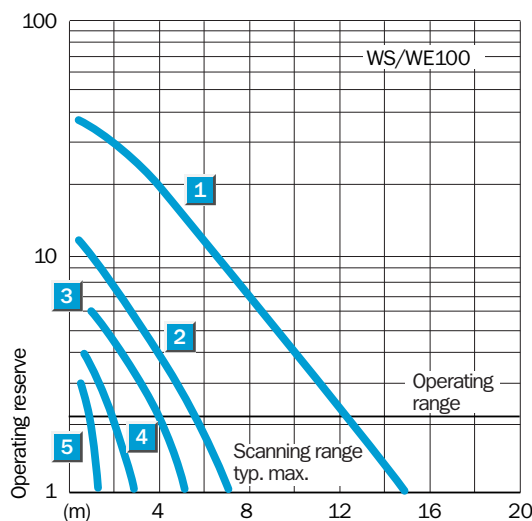
V_s tolerances
⁴⁾ without load
⁵⁾ Signal transit time with resistive load

⁶⁾ with light/dark ratio 1:1
⁷⁾ do not bend below 0 °C

Scanning range and operating reserve



Scanning range reduction when slotted masks are used	
1	Without masks/polarization filter
2	With polarization filter tip adapter
3	With slotted mask, width 2.0 mm
4	With slotted mask, width 1.0 mm
5	With slotted mask, width 0.5 mm



Order information	
Type	Order no.
WS/WE100-P1239	6 026 041
WS/WE100-P1339	6 026 042
WS/WE100-P3239	6 026 047
WS/WE100-P3339	6 026 048
WS/WE100-P4239	6 028 593
WS/WS100-P4339	6 028 594

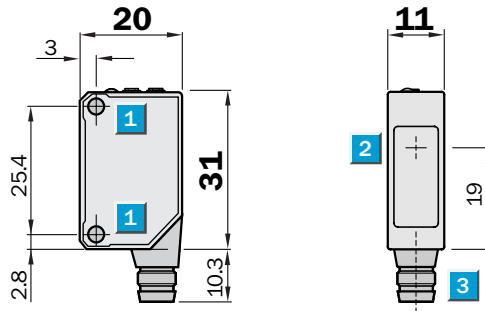
 **Scanning range**
0 ... 15 m

Through-beam photoelectric

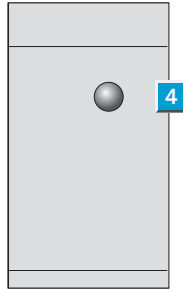
- Polarizing filter tip adapters as accessories
- Slotted masks as accessories for detecting small parts or for positioning jobs
- Visible red light as alignment aid
- Easy mounting through integrated mounting hole M3



Dimensional drawing



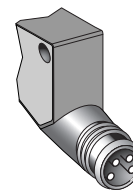
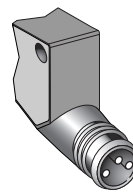
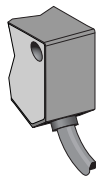
Adjustments possible



- 1 Mounting hole für M 3
- 2 Centre of optical axis, sender WS 100
- 3 Centre of optical axis, receiver WE 100 onector
- 4 LED signal strength indicator orange: switching output active

Connection type

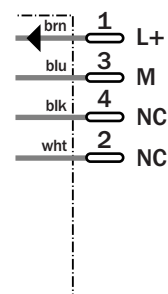
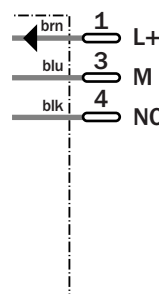
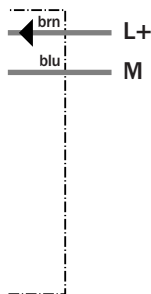
WS/WE100-N1239	WS/WE100-N3239	WS/WE100-N4239
WS/WE100-N1339	WS/WE100-N3339	WS/WE100-N4339



Sender 2 x 0.18 mm²

M8, 3-pin

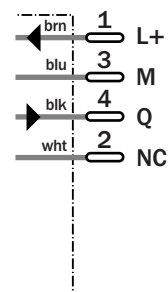
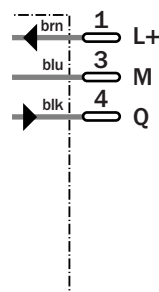
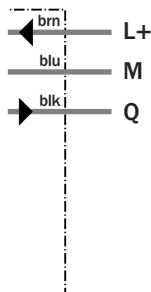
M8, 4-pin



Receiver 3 x 0.18 mm²

M8, 3-pin

M8, 4-pin



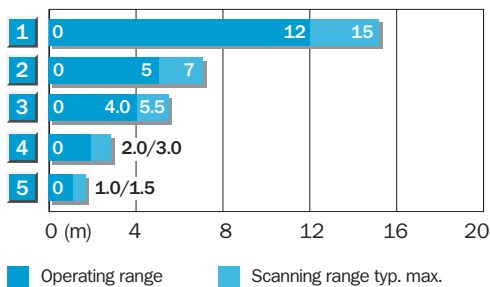
See chapter Accessories

Connector, M8, 3-pin
Connector, M8, 4-pin
Masks
Mounting systems
Polarisation filters

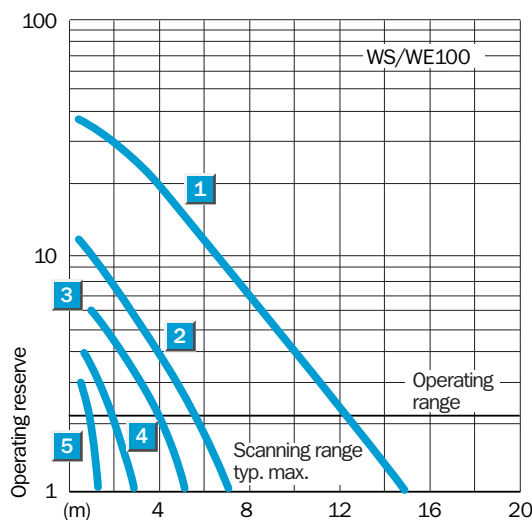
Technical specifications		WS/WE100-	N1239	N1339	N3239	N3339	N4239	N4339				
Scanning range typ. max.	0 ... 15 m											
Scanning range, recommended	0 ... 12 m											
Light source, light type	LED, Red light, 680 nm ¹⁾											
Light spot diameter	Approx. 650 mm at 12 m distance											
Angle of dispersion	Approx. 3.1 °											
Angle of reception	Approx. 15 °											
Supply voltage V_s	10 ... 30 V DC ²⁾											
Ripple	± 10 % ³⁾											
Power consumption, sender	≤ 15 mA ⁴⁾											
Power consumption, receiver	≤ 20 mA ⁴⁾											
Switching outputs	NPN: open collector: Q											
Switching mode	Dark-switching											
	Light-switching											
Signal voltage NPN HIGH / LOW	Approx. V _s / < 1.8 V											
Output current I _a max	100 mA											
Response time	≤ 0.5 ms ⁵⁾											
Switching frequency	1,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected (receiver only) / Outputs overcurrent and short-circuit protected (receiver only)											
Enclosure rating	IP 65											
Ambient temperature operation	-25 °C ... +55 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Approx. 53 g											
	Approx. 9 g											
Housing material	ABS, PC											

¹⁾ Average service life 100,000 h at T_a = +25 °C
²⁾ Limit values, operation in short-circuit
³⁾ protected network max. 8 A may not exceed or fall short of
⁴⁾ V_s tolerances without load
⁵⁾ Signal transit time with resistive load
⁶⁾ with light/dark ratio 1:1
⁷⁾ do not bend below 0 °C

Scanning range and operating reserve



Scanning range reduction when slotted masks are used	
1	Without masks/polarization filter
2	With polarization filter tip adapter
3	With slotted mask, width 2.0 mm
4	With slotted mask, width 1.0 mm
5	With slotted mask, width 0.5 mm



Order information	
Type	Order no.
WS/WE100-N1239	6 026 038
WS/WE100-N1339	6 026 039
WS/WE100-N3239	6 026 044
WS/WE100-N3339	6 026 045
WS/WE100-N4239	6 028 590
WS/WE100-N4339	6 028 591