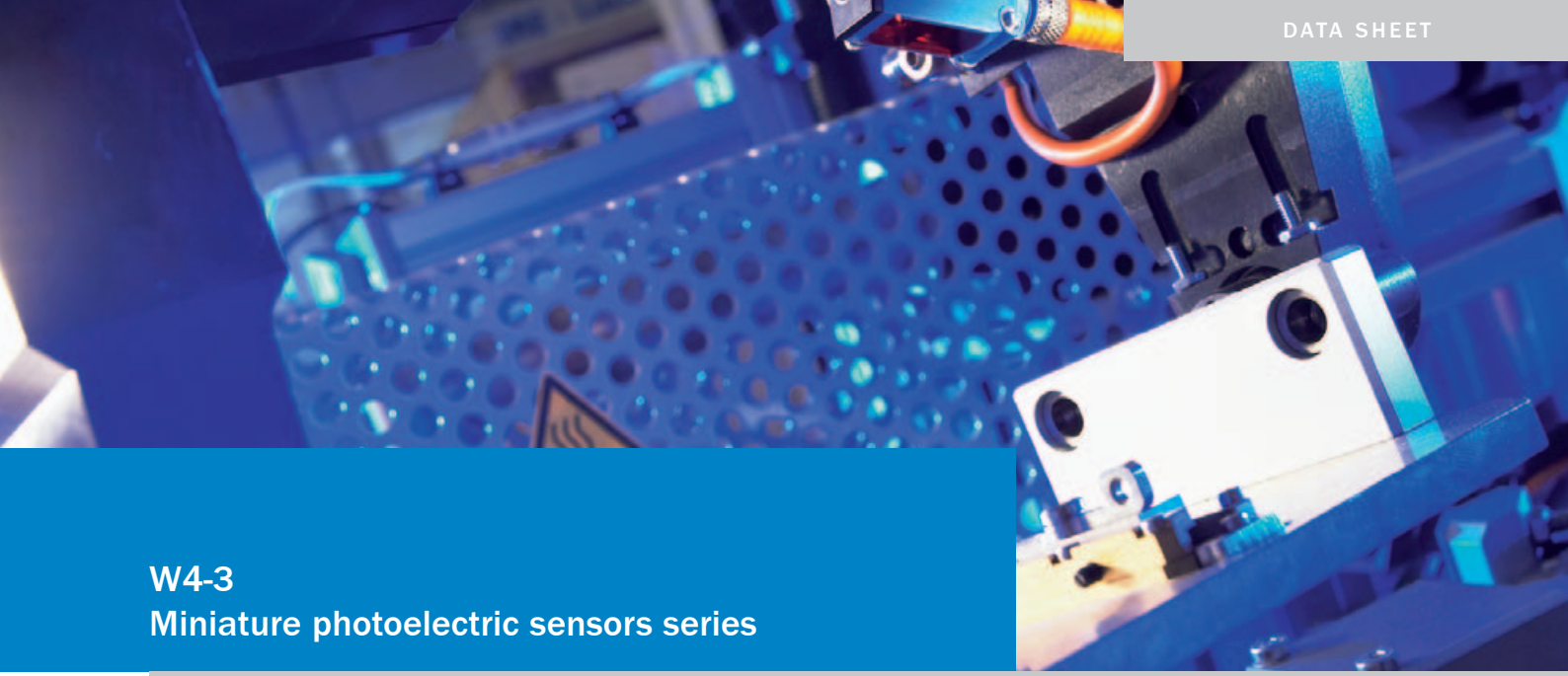


W4-3
Miniature photoelectric sensors series

The efficient space savers

It is the little things that make them "big": minimum size, maximum versatility. Three versions of the W4-3 series offer you the following benefits for your application:

Clearly visible light spot.
The integration of new Pin-Point LEDs creates brilliant, tightly defined light spots. Thus, the photoelectric sensors can be aligned easily and quickly, as the light spot is easy to see even in bright ambient conditions.

Photoelectric reflex sensor with switching threshold adaptation and autocollimation.
Transparent objects of all kinds can be reliably detected in difficult and changing ambient conditions, with the switching threshold being automatically adapted to the changing ambient conditions, such as dust gathering on the optical surfaces.

Best background suppression in its class.
Background suppression offering more than just a good black/white displacement, i. e. object detection in front of reflective and moving backgrounds. The sensor has a 2nd sender LED allowing the sensor to see "spatially".

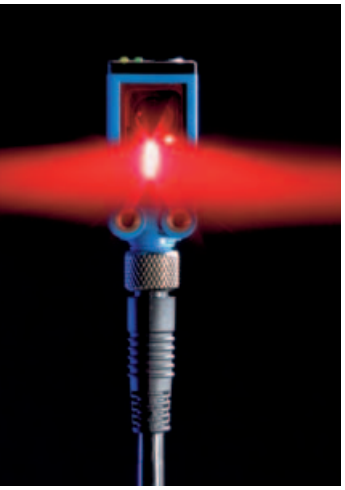
Optimum ambient light suppression.
The photoelectric proximity sensor needs to detect objects directly in front of an energy-saving lamp or a fluorescent lamp – no problem. Light from such sources is identified and suppressed.

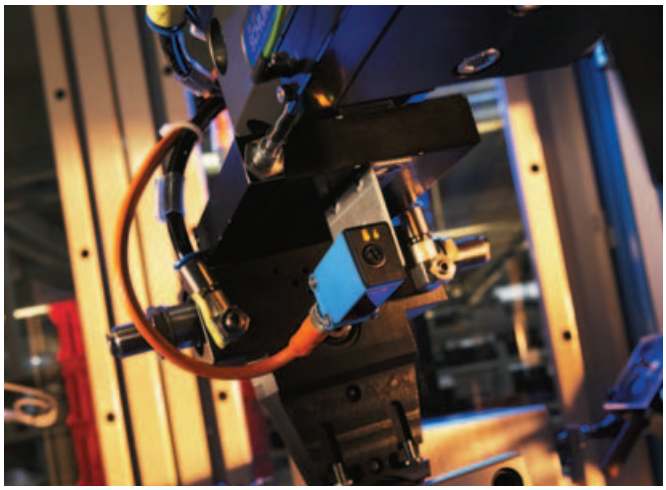
Hygienic and safe to use in aggressive environments.
Hydrofluoric acid, coolants, alcohols etc. cannot affect the fully Teflon-encapsulated versions – even when exposed for long periods.

SICK
Sensor Intelligence.

W4-3 Selection table

Reliably solved with linear light spot featured in the WTB4-3:
- Continuous detection of honeycomb structured objects,
- Accurate positioning, irrespective of grooves or recesses in objects,
- Reliable detection of falling objects.

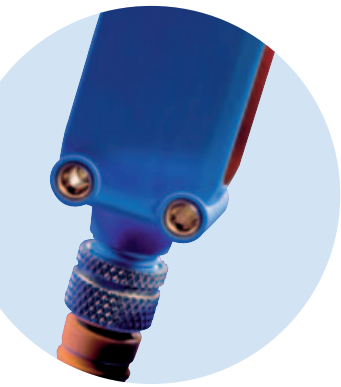


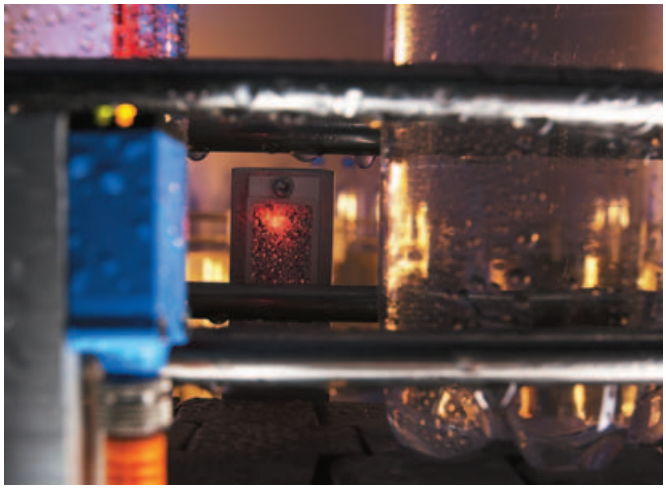


Photoelectric proximity sensor WTB4S-3 with laser-like light spot: detection of the inserted PC board, at a distance of 80 mm, with Pin-Point accuracy. The reflecting background does not interfere with the sensor's performance if no tool carrier is clamped and the robot moves.

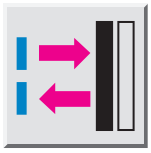
Laser-like light spot in the WTB4S-3 for:
- Accurate positioning of the light beam on the object,
- Reliable detection of small objects immediately in front of a background,
- Very good visibility of the light spot on the object.

Safe and easy mounting. The mounting holes are fitted with M3 threaded metal bushes for added strength.





Photoelectric reflex sensor WLG4S-3 thinks and controls with: automatic switching threshold adaptation – transparent objects with an attenuation of > 8% are reliably detected.
- Detection of transparent objects such as PET bottles, even with dust and moisture present,
- Implementation of the sensor close to the process, without expensive mounting systems,
- Clear visibility of the light spot aids the alignment of the sensor, from nearly all conceivable positions.

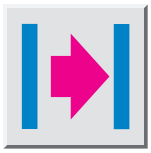


WTB4-3 – Photoelectric proximity sensor with background suppression

Detection of objects, irrespective of colour and consistency, up to the predefined scanning distance
- Best background suppression
- Clearly visible light spot

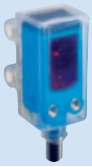
WL4-3 and WLG4-3 – Photoelectric reflex sensors

Quick and easy alignment using the clearly visible light spot. Detection of transparent objects with switching threshold adaptation.



WSE4-3 – Through-beam photoelectric sensors

Fast and reliable alignment of the sensors through brilliant light spot.

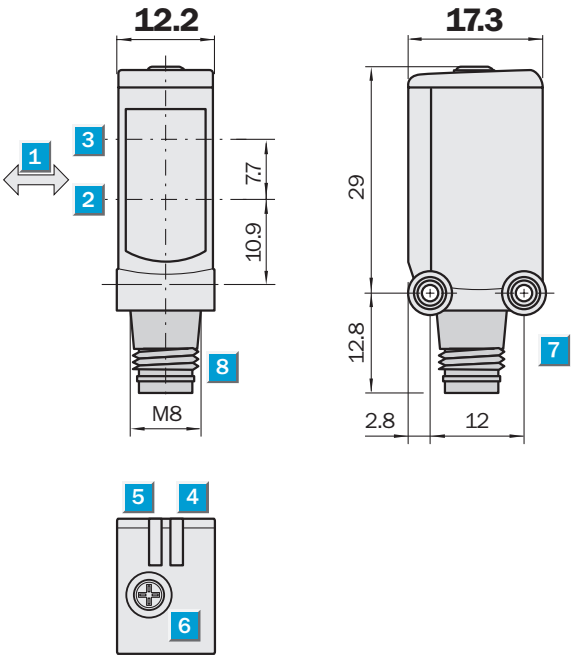
Housing	Version	Light beam geometry	Description	Page
	Standard photoelectric proximity sensor Scanning distance: 3 ... 150 mm	∅ 6.5 mm in 150 mm	For standard applications: packaging, paper, cardboard, PC boards, solar cells.	4 to 5
	Laser-like Scanning distance: 3 ... 120 mm	∅ < 3 mm of 40 mm to 80 mm	Detection and positioning of small parts and any object directly in front of a background.	6 to 11
	Standard photoelectric proximity sensor Scanning distance: 3 ... 150 mm	∅ 7 mm in 50 mm	For standard applications: detection of packaging, paper, cardboard, PC boards, solar cells etc.	12 to 17
	V-optics Scanning distance: 3 ... 50 mm	∅ 10 mm in 40 mm	Detection of transparent and reflective objects: e.g. transparent trays, shiny packages, blister packs.	18 to 19
	Line sensor Scanning distance: 3 ... 150 mm	∅ 5 x 28 mm in 50 mm	Detection of structured objects: grid boxes, PC boards with gaps, monitoring of small ejected parts.	20 to 21
	**Standard sensor in Teflon housing** Scanning distance: 4 ... 120 mm	∅ 7 mm in 50 mm	Detection of objects in harsh ambient conditions or directly in contact with liquids. H_2O_2-compatible.	22 to 23
	Autocollimation with polarisation filter Range: 0 ... 5 m	∅ 45 mm in 1.5 m	Small, high visibility light spot for the detection of small objects and where mounting space is restricted.	24 to 27
	Photoelectric sensor for glass detection with switching threshold adaptation Range: 0 ... 5 m	∅ 45 mm in 1.5 m	Detection of transparent objects. Compensation for environmental effects such as temperature fluctuations, dust and dirt.	28 to 29
	Standard with polarisation filter Range: 0.01 ... 4 m	∅ 75 mm in 1.5 m	For standard applications: With and without Teach-in function, 2-sec. Teach for 50 % switching threshold. 8-sec. Long-Teach for transparent objects with > 8 % attenuation.	30 to 33
	Photoelectric sensor for glass detection Range: 0.01 ... 1 m	∅ 180 mm in 1.5 m	Detection of PET bottles and foils > 8 % attenuation and of objects with critical shiny surfaces such as foil packaging and coffee packages.	34 to 35
	Range: 0 ... 5 m	∅ 50 mm in 2.0 m	Detection of small parts, advantageous for applications where space is restricted and where reflective surfaces are present.	36 to 37
	Range: 0 ... 6 m	∅ 210 mm in 2.0 m	For standard applications: sender with test input.	38 to 39
	Teflon housing Range: 0 ... 3 m	∅ 210 mm in 2.0 m	Detection of objects in harsh ambient conditions or directly in contact with liquids. H_2O_2-compatible.	40 to 41

Scanning distance
4 ... 180 mm

Photoelectric proximity sensor

- Highly accurate adjustment of the scanning distance with 5-turn potentiometer
- Outstandingly visible and tightly defined light spot
- Robust mounting thanks to M3 metal bushes

Dimensional drawing

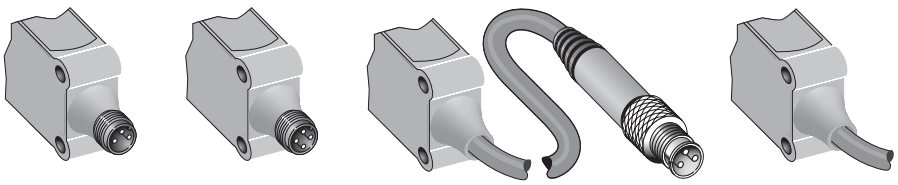


Adjustments possible

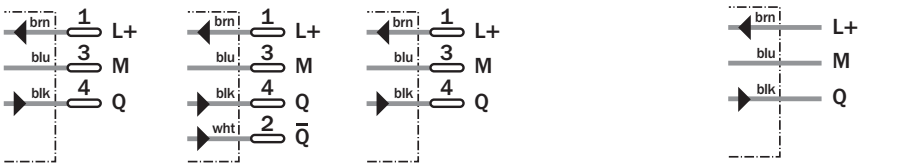
1. Standard direction of the material being scanned
2. Optical axis, receiver
3. Optical axis, sender
4. LED indicator green, power on
5. LED indicator yellow, status of received light beam
6. Potentiometer
7. Mounting hole M3
8. Connector

Connection type

WTB4S-3F2161	WTB4S-3P2261	WTB4S-3P3161	WTB4S-3E1361
WTB4S-3N2161			WTB4S-3N1361
WTB4S-3P2161			WTB4S-3P1361



M8, 3-pin	M8, 4-pin	M8, 3-pin	3 x 0.14 mm²



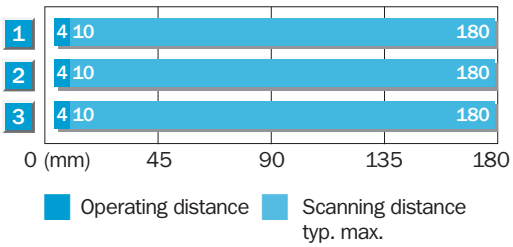
See Accessories chapter

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

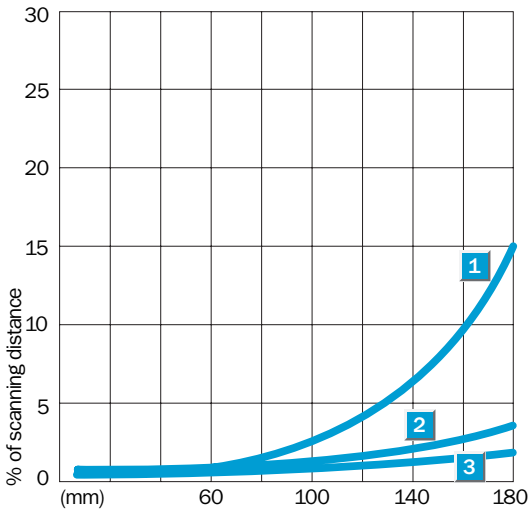
	WTB4S-3	E1361	F2161	N1361	N2161	P1361	P2161	P2261	P3161
Scanning distance typ. max.	4 ... 180 mm	■	■	■	■	■	■	■	■
Operating distance	10 ... 180 mm	■	■	■	■	■	■	■	■
Adjustment of operating distance	Potentiometer, 5 revolutions	■	■	■	■	■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■
Light spot diameter	6.5 mm at 150 mm distance	■	■	■	■	■	■	■	■
Supply voltage V_S	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■
Ripple	< 5 V_{SS}[3]	■	■	■	■	■	■	■	■
Power consumption	≤ 30 mA[4]	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■		■	■				
	PNP, Q		■			■	■		■
	PNP antivalent							■	
Switching mode	Dark-switching	■	■						
	Light-switching			■	■	■	■		■
	Complementary							■	
Output current $I_a$max	≤ 100 mA	■	■	■	■	■	■	■	■
Response time	< 0.5 s[5]	■	■	■	■	■	■	■	■
Switching frequency	1,000 Hz[6]	■	■	■	■	■	■	■	■
Connection type	Cable, PVC, 2 m[7]	■		■		■			
	Connector, M8, 3-pin		■		■		■		
	Connector, M8, 4-pin							■	
	Cable with plug, M8, 3-pin, PVC, 100 mm[7]								■
VDE protection class	⊕	■	■	■	■	■	■	■	■
Circuit protection	V_S connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■
Weight	Ca. 20 g	■	■	■	■	■	■	■	■
Housing material	Novodur, PMMA	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values
3) May not exceed or fall short of V_S tolerances
4) Without load
5) Signal transit time with resistive load
6) With light/dark ratio 1:1
7) Do not bend below 0 °C

Scanning distance



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



Ordering information

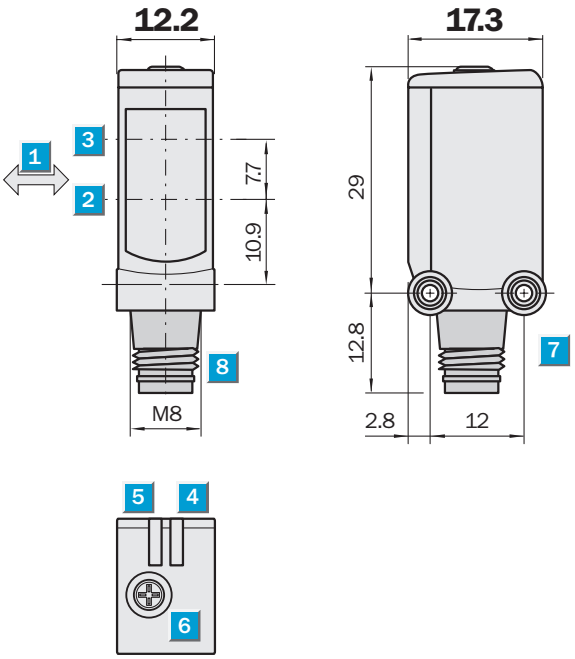
Type	Order no.
WTB4S-3E1361	1042047
WTB4S-3F2161	1042044
WTB4S-3N1361	1042046
WTB4S-3N2161	1042045
WTB4S-3P1361	1042043
WTB4S-3P2161	1042040
WTB4S-3P2261	1042041
WTB4S-3P3161	1042042

Scanning distance
4 ... 120 mm

Photoelectric proximity sensor

- Highly accurate adjustment of the scanning distance with 5-turn potentiometer
- Easily visible laser-type light spot
- Robust mounting thanks to M3 metal bushes

Dimensional drawing

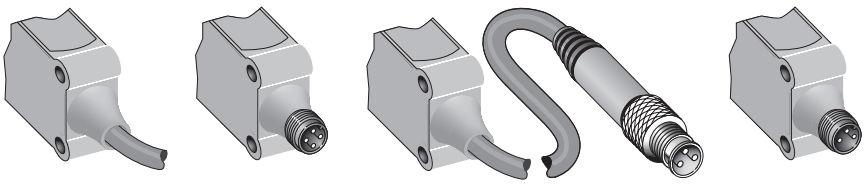


Adjustments possible

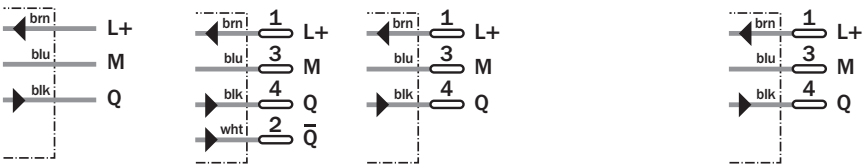
1. Standard direction of the material being scanned
2. Optical axis, receiver
3. Optical axis, sender
4. LED indicator green, power on
5. LED indicator yellow, status of received light beam
6. Potentiometer
7. Mounting hole M3
8. Connector

Connection type

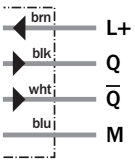
WTB4S-3E1331 WTB4S-3N1331 WTB4S-3P1331	WTB4S-3P2231	WTB4S-3P3131	WTB4S-3F2131 WTB4S-3N2131 WTB4S-3P2131



3 x 0.14 mm²	M8, 4-pin	M8, 3-pin	M8, 3-pin



WTB4S-3N1131
4 x 0.14 mm²



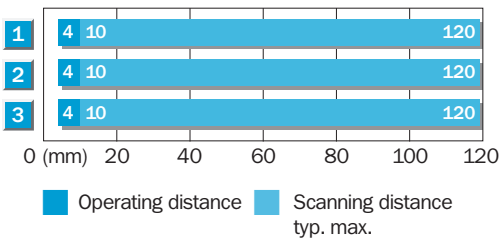
See Accessories chapter

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

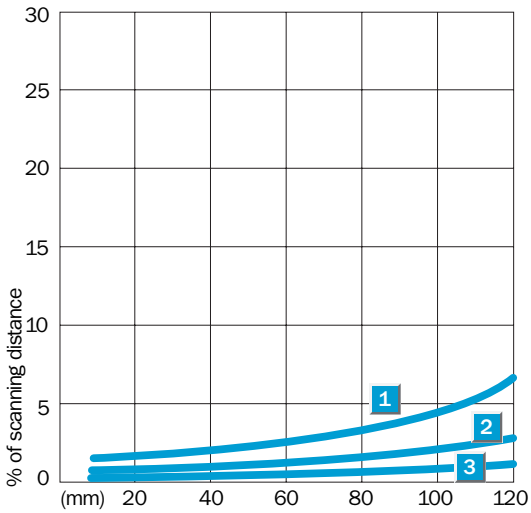
	WTB4S-3	E1331	F2131	N1131	N1331	N2131	P1331	P2131	P2231	P3131
Scanning distance typ. max.	4 ... 120 mm	■	■	■	■	■	■	■	■	■
Operating distance	10 ... 120 mm	■	■	■	■	■	■	■	■	■
Adjustment of operating distance	Potentiometer, 5 revolutions	■	■	■	■	■	■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■	■
Light spot diameter	2.5 mm at 50 mm distance	■	■	■	■	■	■	■	■	■
Supply voltage V_S	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■
Ripple	< 5 V_{SS}[3]	■	■	■	■	■	■	■	■	■
Power consumption	≤ 30 mA[4]	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■			■	■				
	PNP, Q		■				■	■		■
	NPN antivalent			■						
	PNP antivalent								■	
Switching mode	Dark-switching	■	■							
	Complementary			■					■	
	Light-switching				■	■	■	■		■
Output current $I_a$max	≤ 100 mA	■	■	■	■	■	■	■	■	■
Response time	< 0.5 s[5]	■	■	■	■	■	■	■	■	■
Switching frequency	1,000 Hz[6]	■	■	■	■	■	■	■	■	■
Connection type	Cable, PVC, 2 m[7]	■		■	■		■			
	Connector, M8, 3-pin		■			■		■		
	Connector, M8, 4-pin								■	
	Cable with plug, M8, 3-pin, PVC, 100 mm[7]									■
VDE protection class	⊕	■	■	■	■	■	■	■	■	■
Circuit protection	V_S connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■
Weight	Ca. 20 g	■	■	■	■	■	■	■	■	■
Housing material	Novodur, PMMA	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values
3) May not exceed or fall short of V_S tolerances
4) Without load
5) Signal transit time with resistive load
6) With light/dark ratio 1:1
7) Do not bend below 0 °C

Scanning distance



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



Ordering information

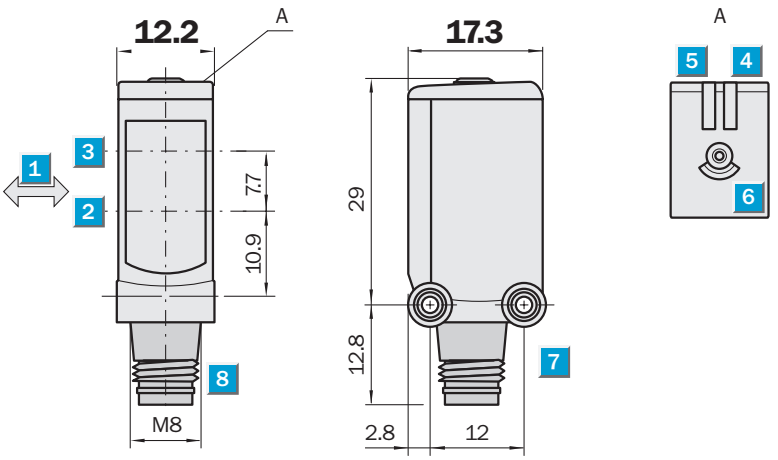
Type	Order no.
WTB4S-3E1331	1042064
WTB4S-3F2131	1042060
WTB4S-3N1131	1042063
WTB4S-3N1331	1042062
WTB4S-3N2131	1042061
WTB4S-3P1331	1042059
WTB4S-3P2131	1042056
WTB4S-3P2231	1042057
WTB4S-3P3131	1042058

Scanning distance
4 ... 120 mm

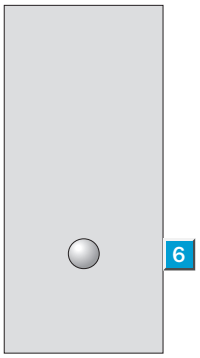
Photoelectric proximity sensor

- Easy commissioning through teach-in function
- Easily visible laser-type light spot
- Robust mounting thanks to M3 metal bushes

Dimensional drawing



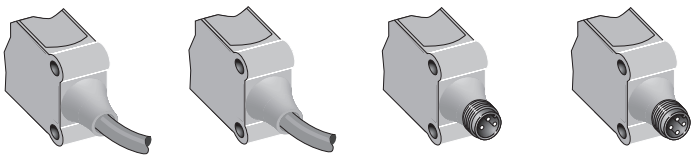
Adjustments possible



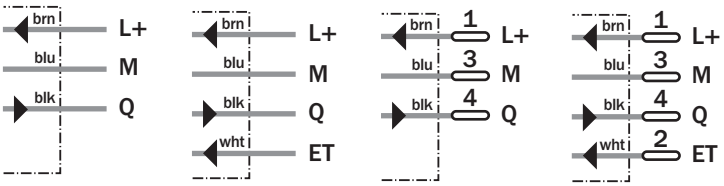
1. Standard direction of the material being scanned
2. Optical axis, receiver
3. Optical axis, sender
4. LED indicator green, power on
5. LED indicator yellow, status of received light beam
6. Teach-in button
7. Mounting hole M3
8. Connector

Connection type

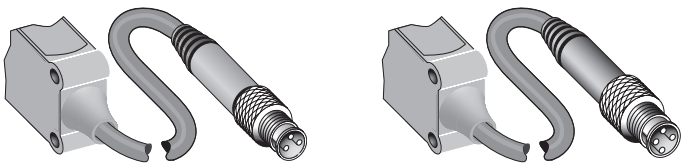
WTB4S-3N1332	WTB4S-3N1134	WTB4S-3P2132	WTB4S-3P2234



3 x 0,14 mm²	4 x 0,14 mm²	M8, 3-pin	M8, 4-pin



WTB4S-3P3132	WTB4S-3P3234



M8, 3-pin	M8, 4-pin

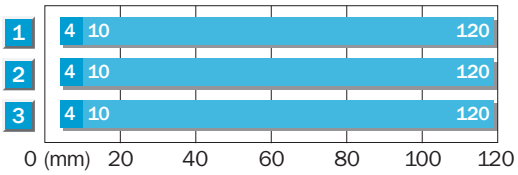
See Accessories chapter

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

	WTB4S-3	N1134	N1332	P2132	P2234	P3132	P3234
Scanning distance typ. max.	4 ... 120 mm	■	■	■	■	■	■
Operating distance	10 ... 120 mm	■	■	■	■	■	■
Adjustment of operating distance	Teach-in: single-teach button & cable[1]	■			■		■
	Teach-in: single-teach button		■	■		■	
Light source, light type	Pin-Point LED, red light, 650 nm[2]	■	■	■	■	■	■
Light spot diameter	2.5 mm at 50 mm distance	■	■	■	■	■	■
Supply voltage V_S	DC 10 ... 30 V[3]	■	■	■	■	■	■
Ripple	< 5 V_{SS}[4]	■	■	■	■	■	
Power consumption	≤ 30 mA[5]	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■				
	PNP, Q			■	■	■	■
Switching mode	Light-switching	■	■	■	■	■	■
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				■		
	Cable with plug, M8, 3-pin, PVC, 100 mm[8]					■	
	Cable with plug, M8, 4-pin, PVC, 100 mm[8]						■
VDE protection class	III	■	■	■	■	■	■
Circuit protection	V_S connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■
Weight	Ca. 20 g	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■

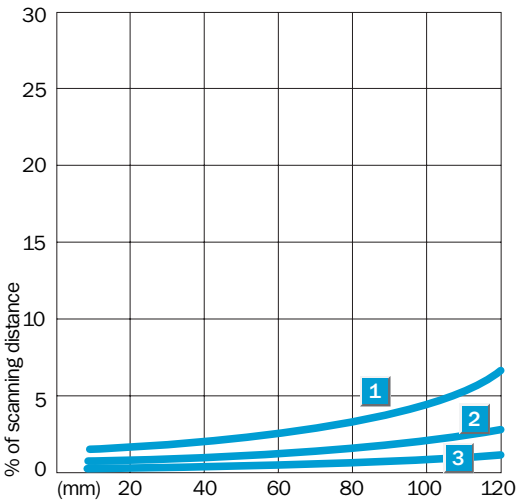
1) External teach-in: impuls > 2 s with voltage V_S for PNP or M for NPN
2) Average service life 100,000 h at T_a = +25 C
3) Limit values
4) May not exceed or fall short of V_S tolerances
5) Without load
6) Signal transit time with resistive load
7) With light/dark ratio 1:1
8) Do not bend below 0 °C

Scanning distance



Operating distance Scanning distance typ. max.

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



Order information

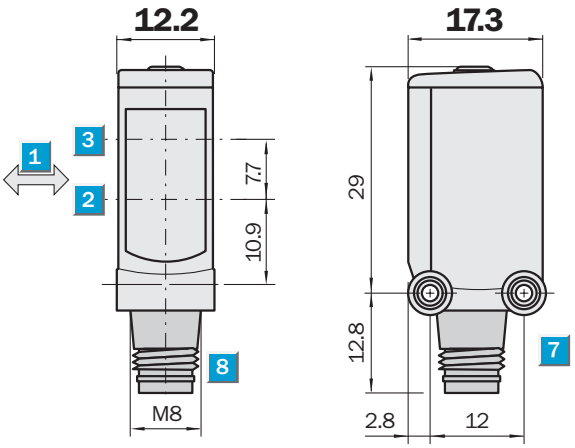
Type	Order no.
WTB4S-3N1134	1042052
WTB4S-3N1332	1042055
WTB4S-3P2132	1042053
WTB4S-3P2234	1042050
WTB4S-3P3132	1042054
WTB4S-3P3234	1042051

Scanning distance
4 ... 120 mm

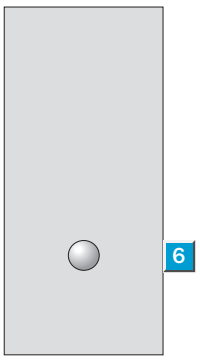
Photoelectric proximity sensor

- Parameterisation and diagnostics via IO-Link
- Easily visible laser-type light spot
- Robust mounting thanks to M3 metal bushes

Dimensional drawing



Adjustments possible



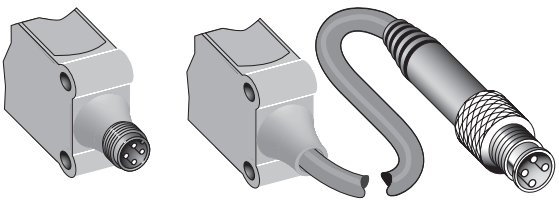
1. Standard direction of the material being scanned
2. Optical axis, receiver
3. Optical axis, sender
4. LED indicator green, power on
5. LED indicator yellow, status of received light beam
6. Teach button
7. Mounting hole M3
8. Connector

ECOLAB

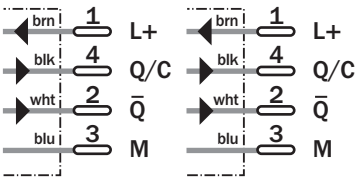
IO-Link

Connection type

WTB4SC-3P2232	WTB4SC-3P3432



M8, 4-pin	M12, 4-pin



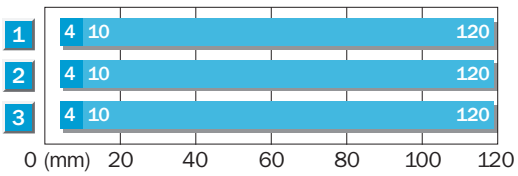
See Accessories chapter

- Connector, M12, 4-pin
- Connector, M8, 4-pin
- Mounting systems

	WTB4SC-3	P2232	P3432
Scanning distance typ. max.	4 ... 120 mm	■	■
Operating distance	10 ... 120 mm	■	■
Adjustment of operating distance	Teach-in: single-teach button Teach-in: via IO-Link	■ ■	■ ■
Communication mode	COM2	■	■
Light source, light type	Pin-Point LED, red light, 660 nm[1]	■	■
Light spot diameter	2.5 mm at 50 mm distance	■	■
Supply voltage V_S	DC 18 ... 30 V[2]	■	■
Ripple	≤ 5 V_{SS}[3]	■	■
Power consumption	≤ 30 mA[4]	■	■
Switching outputs	PNP, Q/C PNP, not Q	■ ■	■ ■
Switching mode	Light-switching[5]	■	■
Output current $I_a$max	< 100 mA	■	■
Response time	< 0.65 ms[6]	■	■
Switching frequency	1,000 Hz[7]	■	■
Connection type	Connector, M8, 4-pin	■	
	Cable with plug, M12, 4-pin, PVC, 150 mm[8]		■
VDE protection class	III	■	■
Circuit protection	V_S connections reverse-polarity protected / All outputs short-circuit protected / Interference suppression	■ ■ ■	■ ■ ■
Enclosure rating	IP 66, IP 67	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■
Weight	Ca. 20 g	■	■
Housing material	Bayblend, PMMA	■	■

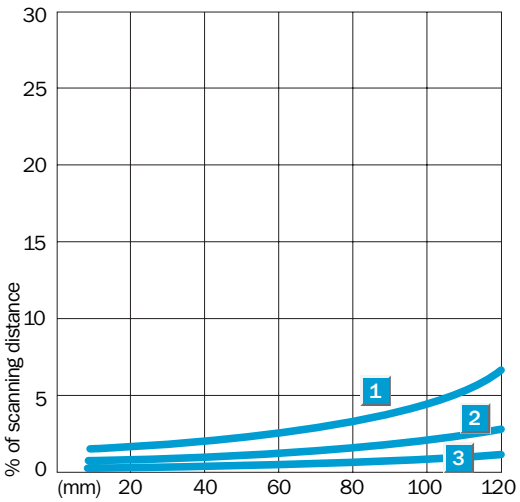
1) Average service life 100,000 h at T_a = +25 °C
2) Limit values
3) May not exceed or fall short of V_S tolerances
4) Without load
5) Parametrisable via IO-Link
6) Signal transit time with resistive load in switching mode. Different values possible in COM2 mode.
7) With light/dark ratio 1:1 in switching mode. Different values possible in COM2 mode.
8) Do not bend below 0 °C

Scanning distance



Operating distance Scanning distance typ. max.

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



Ordering information

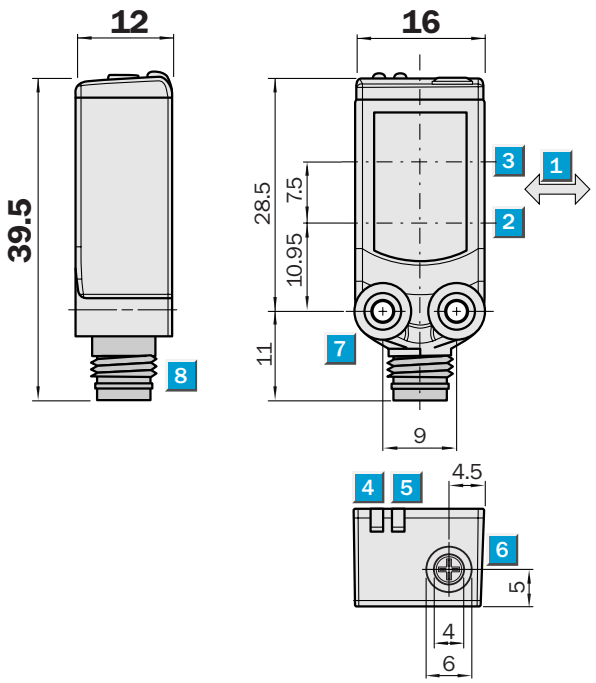
Type	Order no.
WTB4SC-3P2232	1042049
WTB4SC-3P3432	1042048

Scanning distance
4 ... 150 mm

Photoelectric proximity sensor

- High-precision setting of scanning distance thanks to 5-turn potentiometer
- Object detection almost irrespective of colour and background consistency
- Secure function when mounted opposite other sensors

Dimensional drawing

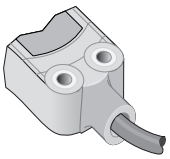


Adjustments possible

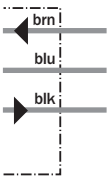
1 Standard direction of the material being scanned
2 Optical axis, sender
3 Optical axis, receiver
4 LED indicator yellow, status of received light beam
5 LED indicator green, power on
6 Potentiometer
7 Mounting hole M3
8 Connector

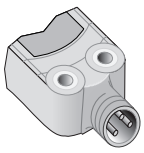
Connection type

WTB4-3P1361	WTB4-3F2161	WTB4-3F3161
WTB4-3N1361	WTB4-3N2161	WTB4-3P3161
	WTB4-3P2161	

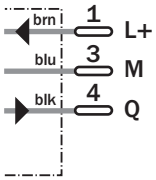


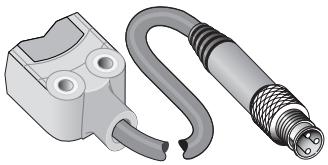
3 x 0.14 mm²



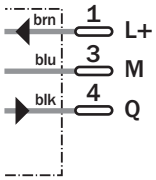


M8, 3-pin

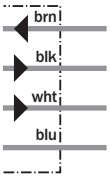




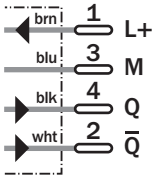
M8, 3-pin



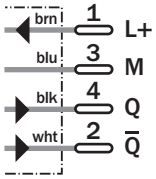
WTB4-3N1161
4 x 0.14 mm²



WTB4-3P2261
M8, 4-pin



WTB4-3P3261
M8, 4-pin



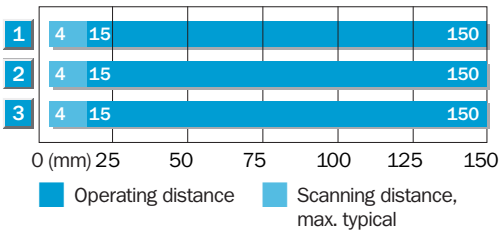
See Accessories chapter

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

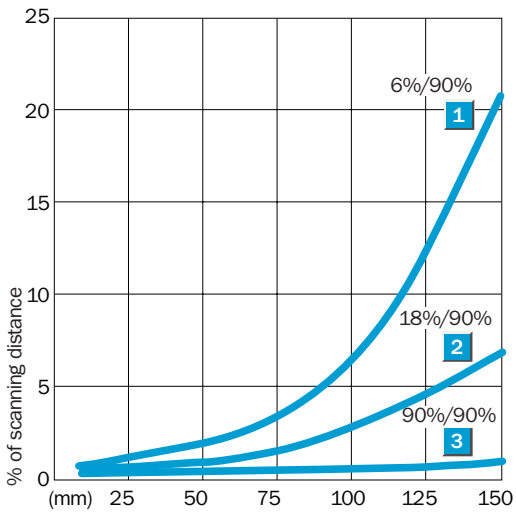
	WTB4-3	F2161	F3161	N1161	N1361	N2161	P1361	P2161	P2261	P3161	P3261
Scanning distance typ. max.	4 ... 150 mm	■	■	■	■	■	■	■	■	■	■
Operating distance	15 ... 150 mm	■	■	■	■	■	■	■	■	■	■
Adjustment of operating distance	Potentiometer, 5 revolutions	■	■	■	■	■	■	■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■	■	■
Light spot diameter	7 mm at 50 mm distance	■	■	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■	■
Ripple	< 5 V_{ss}[3]	■	■	■	■	■	■	■	■	■	■
Power consumption	≤ 30 mA[4]	■	■	■	■	■	■	■	■	■	■
Switching outputs	PNP, Q	■	■				■	■		■	
	NPN antivalent			■							
	NPN, Q				■	■					
	PNP antivalent								■		■
Switching mode	Dark-switching	■	■								
	Complementary			■					■		■
	Light-switching				■	■	■	■		■	
Output current $I_a$max	≤ 100 mA	■	■	■	■	■	■	■	■	■	■
Response time	< 0.5 ms[5]	■	■	■	■	■	■	■	■	■	■
Switching frequency	1,000 Hz[6]	■	■	■	■	■	■	■	■	■	■
Connection type	Connector, M8, 3-pin	■				■		■			
	Cable with plug, M8, 3-pin, PVC, 100 mm[7]		■							■	
	Cable, PVC, 2 m[7]			■	■		■				
	Connector, M8, 4-pin								■		
	Cable with plug, M8, 4-pin, PVC, 100 mm[7]										■
VDE protection class	III	■	■	■	■	■	■	■	■	■	■
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■	■
Weight	Ca. 20 g	■	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values
3) May not exceed or fall short of V_s tolerances
4) Without load
5) Signal transit time with resistive load
6) With light/dark ratio 1:1
7) 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



Ordering information

Type	Order no.
WTB4-3F2161	1028107
WTB4-3F3161	1028106
WTB4-3N1161	1028102
WTB4-3N1361	1028101
WTB4-3N2161	1028104
WTB4-3P1361	1028094
WTB4-3P2161	1028099
WTB4-3P2261	1028100
WTB4-3P3161	1028097
WTB4-3P3261	1028098

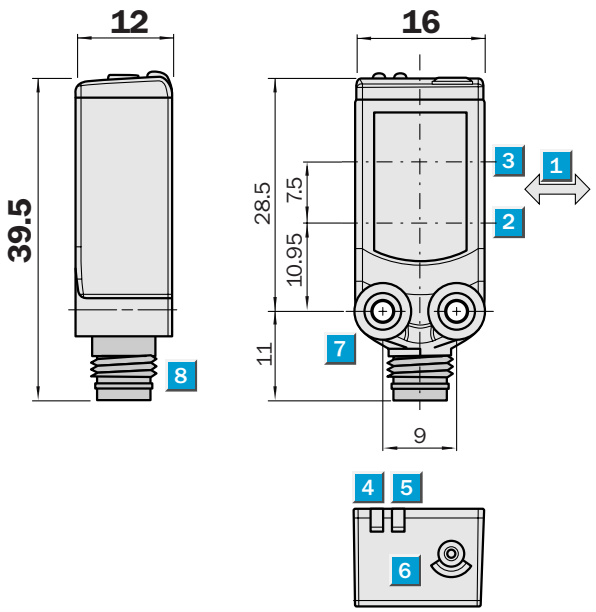
Additional types on request

Scanning distance
4 ... 150 mm

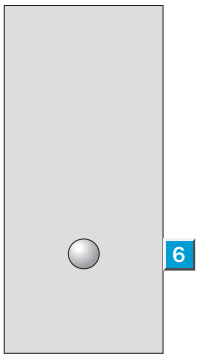
Photoelectric proximity sensor

- Commissioning by simple teach-in function
- Object detection almost irrespective of colour and background consistency
- Secure function when mounted opposite other sensors

Dimensional drawing



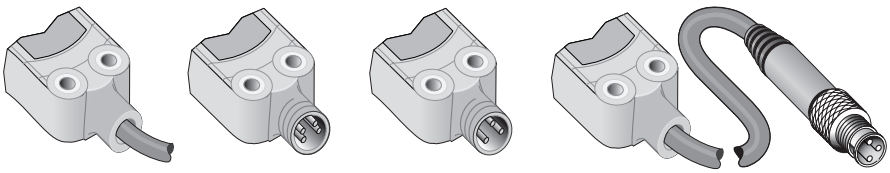
Adjustments possible



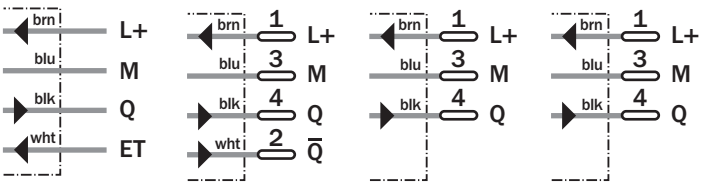
1. Standard direction of the material being scanned
2. Optical axis, sender
3. Optical axis, receiver
4. LED indicator yellow, status of received light beam
5. LED indicator green, power on
6. Teach button
7. Mounting hole M3
8. Connector

Connection type

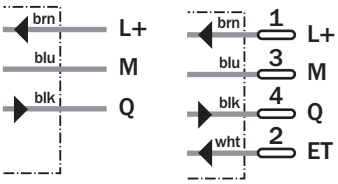
WTB4-3N1164	WTB4-3P2262	WTB4-3N2162	WTB4-3N3162
WTB4-3P1164		WTB4-3P2162	WTB4-3P3162



4 x 0.14 mm²	M8, 4-pin	M8, 3-pin	M8, 3-pin



WTB4-3N1362	WTB4-3P2264
WTB4-3P1362	M8, 4-pin
3 x 0.14 mm²	



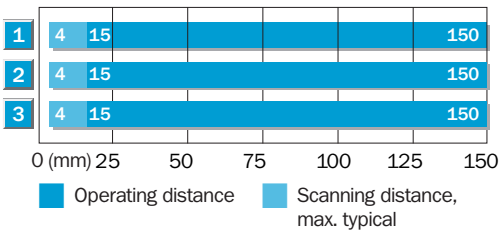
See Accessories chapter

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

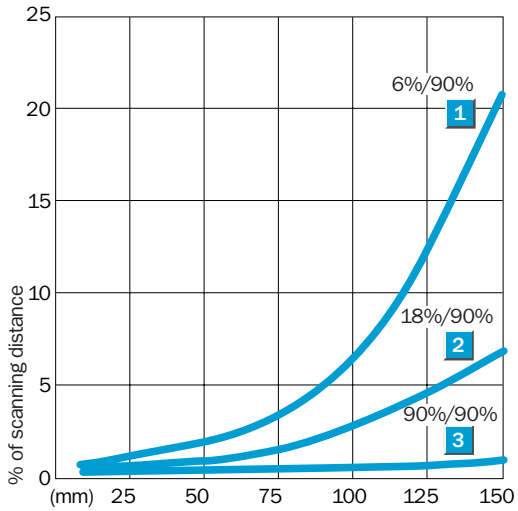
WTB4-3		N1164	N1362	N2162	N3162	P1164	P1362	P2162	P2262	P2264	P3162
Scanning distance typ. max.	4 ... 150 mm	■	■	■	■	■	■	■	■	■	■
Operating distance	15 ... 150 mm	■	■	■	■	■	■	■	■	■	■
Adjustment of operating distance	Teach-in: single-teach button & cable[1]	■				■				■	
	Teach-in: single-teach button		■	■	■		■	■	■		■
Light source, light type	Pin-Point LED, red light, 650 nm[2]	■	■	■	■	■	■	■	■	■	■
Light spot diameter	7 mm at 50 mm distance	■	■	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 30 V[3]	■	■	■	■	■	■	■	■	■	■
Ripple	< 5 V_{SS}[4]	■	■	■	■	■	■	■	■	■	■
Power consumption	≤ 30 mA[5]	■	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■	■	■						
	PNP, Q					■	■	■		■	■
	PNP antivalent								■		
Switching mode	Light-switching	■	■	■	■	■	■	■		■	■
	Complementary								■		
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			■				■			
	Cable with plug, M8, 3-pin, PVC, 100 mm[8]				■						■
	Connector, M8, 4-pin								■	■	
VDE protection class	⊘	■	■	■	■	■	■	■	■	■	■
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■	■
		■	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■	■
Weight	Ca. 20 g	■	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■	■

1) External teach-in: impuls > 2 s with voltage V_s for PNP or M for NPN
2) Average service life 100,000 h at T_a = +25 °C
3) Limit values
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



Ordering information

Type	Order no.
WTB4-3N1164	1028090
WTB4-3N1362	1028087
WTB4-3N2162	1028088
WTB4-3N3162	1028089
WTB4-3P1164	1041890
WTB4-3P1362	1028081
WTB4-3P2162	1028084
WTB4-3P2262	1028085
WTB4-3P2264	1028086
WTB4-3P3162	1028082

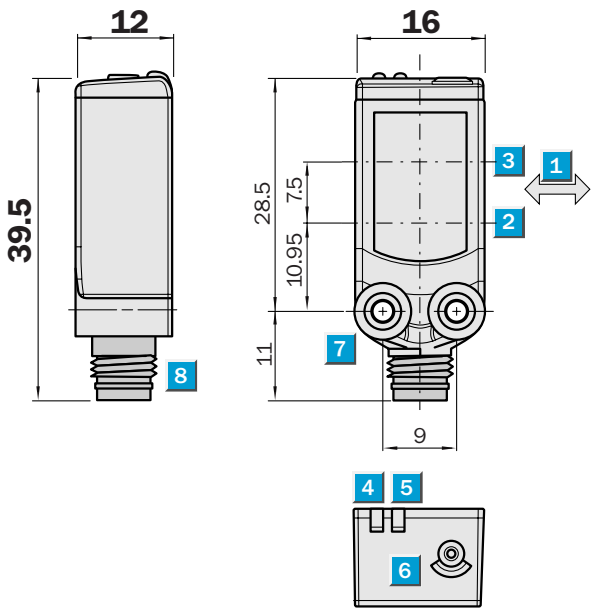
Additional types on request

Scanning distance
4 ... 150 mm

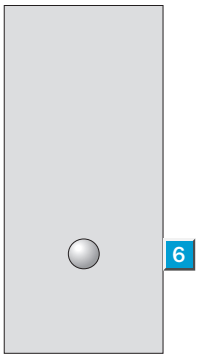
Photoelectric proximity sensor

- Object detection almost irrespective of colour and background consistency
- Reliable operation if devices are installed opposite each other
- Commissioning through simple teach-in function or IO-Link
- Parameters and diagnostics via IO-Link

Dimensional drawing



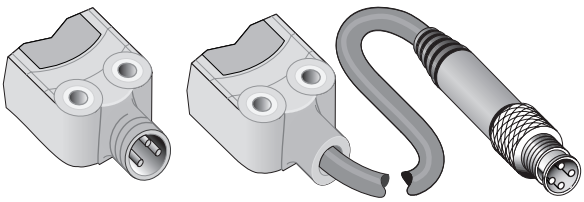
Adjustments possible



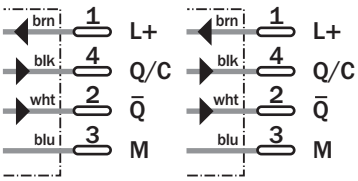
1. Standard direction of the material being scanned
2. Optical axis, sender
3. Optical axis, receiver
4. LED indicator yellow, status of received light beam
5. LED indicator green, power on
6. Teach button
7. Mounting hole M3
8. Connector

Connection type

WTB4C-3P2264 | WTB4C-3P3464



M8, 4-pin | M12, 4-pin



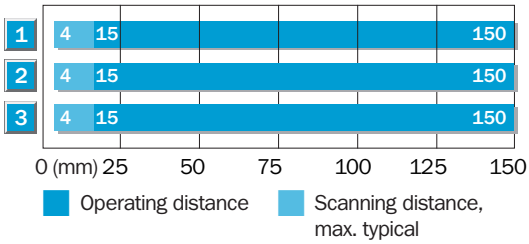
See Accessories chapter

- Connector, M12, 4-pin
- Connector, M8, 4-pin
- Mounting systems

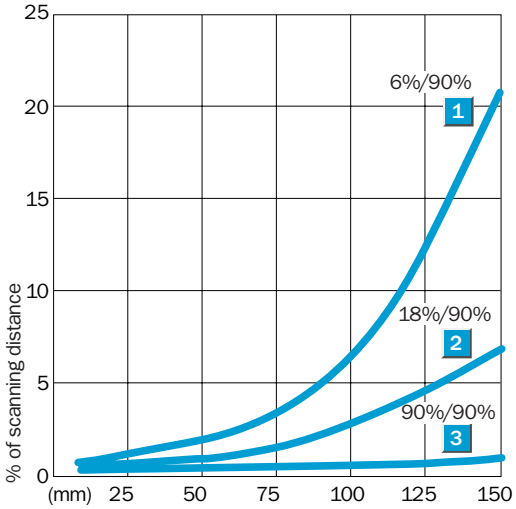
	WTB4C-3	P2264	P3464
Scanning distance typ. max.	4 ... 150 mm	■	■
Operating distance	15 ... 150 mm	■	■
Adjustment of operating distance	Teach-in: single-teach button Teach-in: via IO-Link	■	■
Communication mode	COM2	■	■
Light source, light type	Pin-Point LED, red light, 660 nm[1]	■	■
Light spot diameter	7 mm at 50 mm distance	■	■
Supply voltage V_S	DC 18 ... 30 V[2]	■	■
Ripple	≤ 5 V_{SS}[3]	■	■
Power consumption	≤ 30 mA[4]	■	■
Switching outputs	PNP, Q/C PNP, not Q	■	■
Switching mode	Light-switching[5]	■	■
Output current $I_a$max	< 100 mA	■	■
Response time	< 0.65 ms[6]	■	■
Switching frequency	1,000 Hz[7]	■	■
Connection type	Connector, M8, 4-pin	■	
	Cable with plug, M12, 4-pin, PVC, 100 mm[8]		■
VDE protection class	⊘	■	■
Circuit protection	V_S connections reverse-polarity protected / All outputs short-circuit protected / Interference suppression	■	■
Enclosure rating	IP 66, IP 67	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■
Weight	Ca. 20 g	■	■
Housing material	Bayblend, PMMA	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values
3) May not exceed or fall short of V_S tolerances
4) Without load
5) Parametrisable via IO-Link
6) Signal transit time with resistive load in switching mode. Different values possible in COM2 mode.
7) With light/dark ratio 1:1 in switching mode. Different values possible in COM2 mode.
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



Ordering information

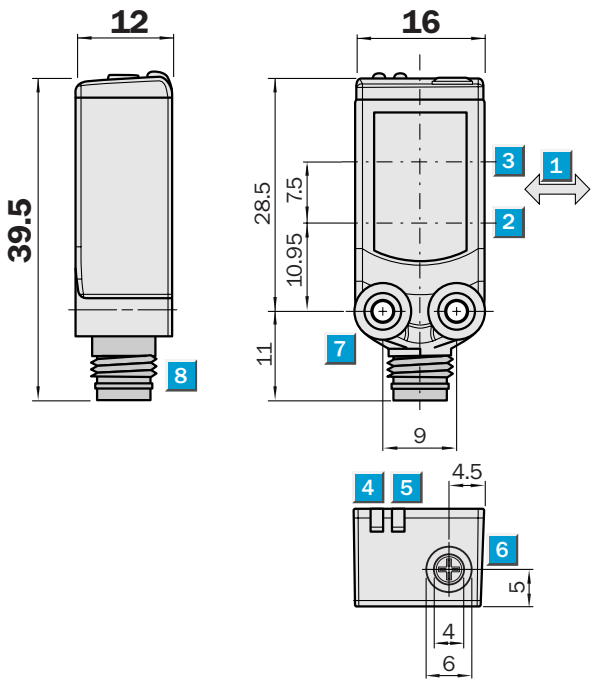
Type	Order no.
WTB4C-3P2264	1028093
WTB4C-3P3464	1040119

Scanning distance
4 ... 50 mm

Photoelectric proximity sensor

- Reliable detection of highly transparent and shiny objects at a distance of 20 ... 25 mm
- High-precision setting of scanning distance thanks to 5-turn potentiometer
- Large, homogeneous light spot

Dimensional drawing

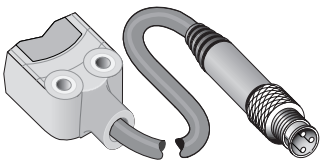


Adjustments possible

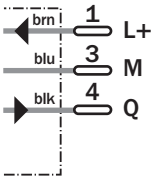
1 Standard direction of the material being scanned
2 Optical axis, sender
3 Optical axis, receiver
4 LED indicator yellow, status of received light beam
5 LED indicator green, power on
6 Potentiometer
7 Mounting hole M3
8 Connector

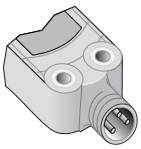
Connection type

WTV4-3P3121	WTV4-3N2141	WTV4-3P2241	WTV4-3N1341
WTV4-3P3141	WTV4-3P2141		WTV4-3P1321
			WTV4-3P1341

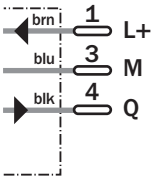


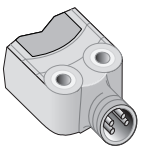
M8, 3-pin



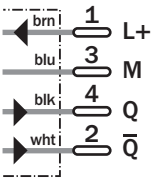


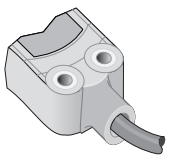
M8, 3-pin



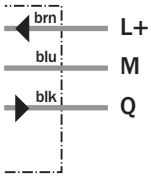


M8, 4-pin

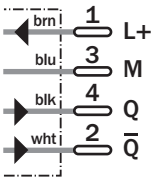




3 x 0.14 mm²



WTV4-3P3441
M12, 4-pin



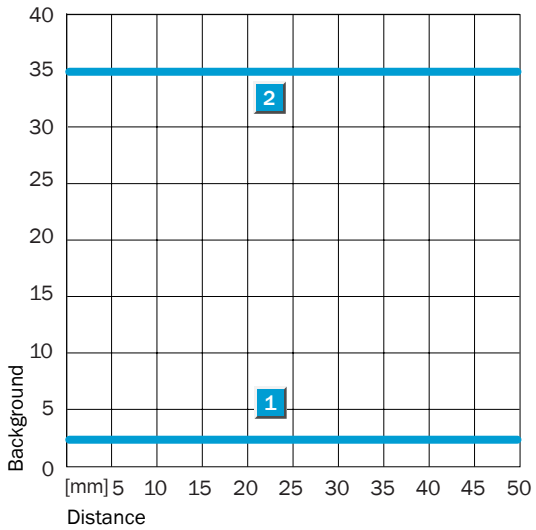
See Accessories chapter

- Connector, M12, 4-pin
- Connector, M8, 3-pin
- Connector, M8, 4-pin
- Mounting systems

	WTV4-3	N1341	N2141	P1321	P1341	P2141	P2241	P3121	P3141	P3441
Scanning distance typ. max.	4 ... 50 mm	■	■	■	■	■	■	■	■	■
Operating distance	15 ... 50 mm	■	■	■	■	■	■	■	■	■
Adjustment of operating distance	Potentiometer, 5 revolutions	■	■	■	■	■	■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■		■	■	■		■	■
	Pin-Point LED, infrared light, 880 nm[1]			■				■		
Light spot diameter	10 mm at 40 mm distance	■	■	■	■	■	■	■	■	■
Supply voltage V_S	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■
Ripple	< 5 V_{SS}[3]	■	■	■	■	■	■	■	■	■
Power consumption	≤ 30 mA[4]	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■							
	PNP, Q			■	■	■		■	■	
	PNP antivalent						■			■
Switching mode	Light-switching	■	■	■	■	■		■	■	
	Complementary						■			■
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						■			
	Cable with plug, M8, 3-pin, PVC, 100 mm							■	■	
	Cable with plug, M12, 4-pin, PVC, 150 mm									■
VDE protection class	III	■	■	■	■	■	■	■	■	■
Circuit protection	V_S connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■
Weight	Ca. 20 g	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values
3) May not exceed or fall short of V_S tolerances
4) Without load
5) Signal transit time with resistive load
6) With light/dark ratio 1:1
7) Do not bend below 0 °C

Black-white shift/distance to background



1	Black-white shift 90 %/6 %
2	Distance to background detecting transparent objects

Ordering information

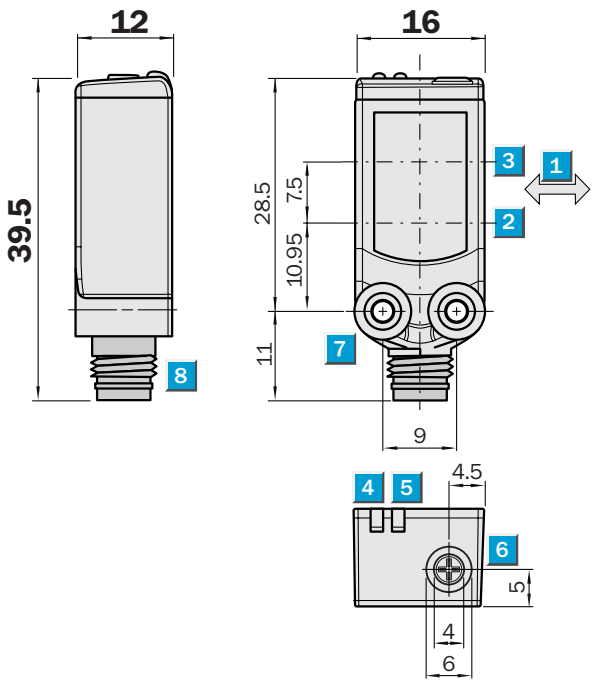
Type	Order no.
WTV4-3N1341	1028115
WTV4-3N2141	1028116
WTV4-3P1321	1029888
WTV4-3P1341	1028111
WTV4-3P2141	1028113
WTV4-3P2241	1028114
WTV4-3P3121	1042191
WTV4-3P3141	1028112
WTV4-3P3441	1029582

Scanning distance
4 ... 150 mm

Photoelectric proximity sensor

- Wide-angle light spot with an aperture of 30°
- Reliable detection of objects with slots and holes
- Reliable detection of grid structures

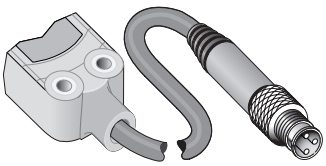
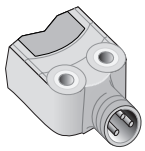
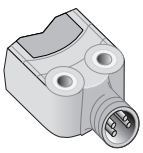
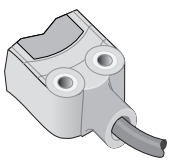
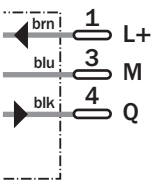
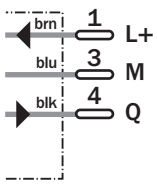
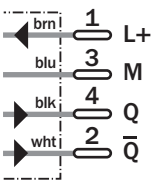
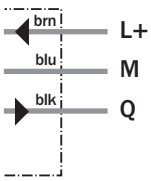
Dimensional drawing



Adjustments possible

1 Direction of the sender light line
2 Optical axis, sender
3 Optical axis, receiver
4 LED indicator yellow, status of received light beam
5 LED indicator green, power on
6 Potentiometer
7 Mounting hole M3
8 Connector

Connection type

WTB4-3N3171 WTB4-3P3171	WTB4-3N2171 WTB4-3P2171	WTB4-3P2271	WTB4-3N1371 WTB4-3P1371
			
M8, 3-pin	M8, 3-pin	M8, 4-pin	3 x 0.14 mm²
			

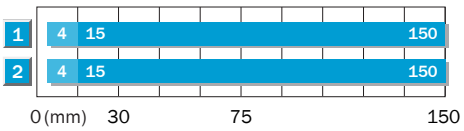
See Accessories chapter

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

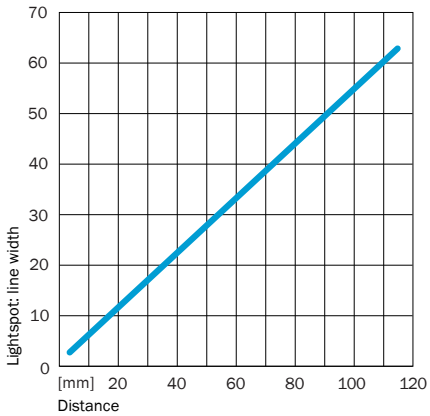
	WTB4-3	N1371	N2171	N3171	P1371	P2171	P2271	P3171			
Scanning distance typ. max.	4 ... 150 mm	■	■	■	■	■	■	■			
Operating distance	15 ... 150 mm	■	■	■	■	■	■	■			
Adjustment of operating distance	Potentiometer, 5 revolutions	■	■	■	■	■	■	■			
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■			
Light spot diameter	5 x 28 mm at 50 mm distance	■	■	■	■	■	■	■			
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■			
Ripple	< 5 V_{ss}[3]	■	■	■	■	■	■	■			
Power consumption	≤ 30 mA[4]	■	■	■	■	■	■	■			
Switching outputs	NPN, Q	■	■	■							
	PNP, Q				■	■		■			
	PNP antivalent						■				
Switching mode	Light-switching	■	■	■	■	■		■			
	Complementary						■				
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		■			■					
	Cable with plug, M8, 3-pin, PVC, 100 mm[7]			■				■			
	Connector, M8, 4-pin						■				
VDE protection class	III	■	■	■	■	■	■	■			
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■			
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■			
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■			
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■			
Weight	Ca. 20 g	■	■	■	■	■	■	■			
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■			

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values
3) May not exceed or fall short of V_s tolerances
4) Without load
5) Signal transit time with resistive load
6) With light/dark ratio 1:1
7) Do not bend below 0 °C

Scanning distance and light spot width



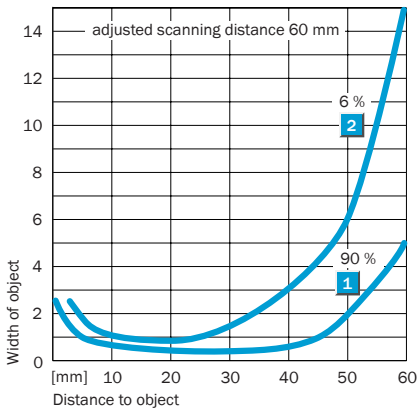
1 Scanning range on white, 90 % reflectance
2 Scanning range on black,6 % reflectance

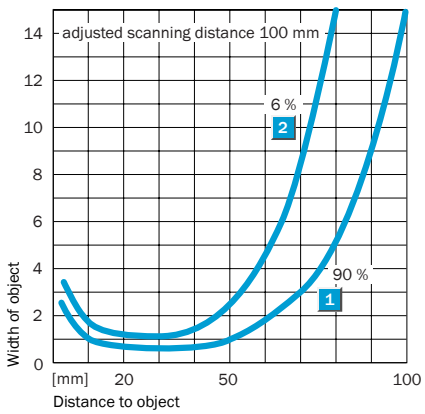


Ordering information

Type	Order no.
WTB4-3N1371	1028125
WTB4-3N2171	1028126
WTB4-3N3171	1041717
WTB4-3P1371	1028121
WTB4-3P2171	1028123
WTB4-3P2271	1042190
WTB4-3P3171	1028122

Minimum detectable object



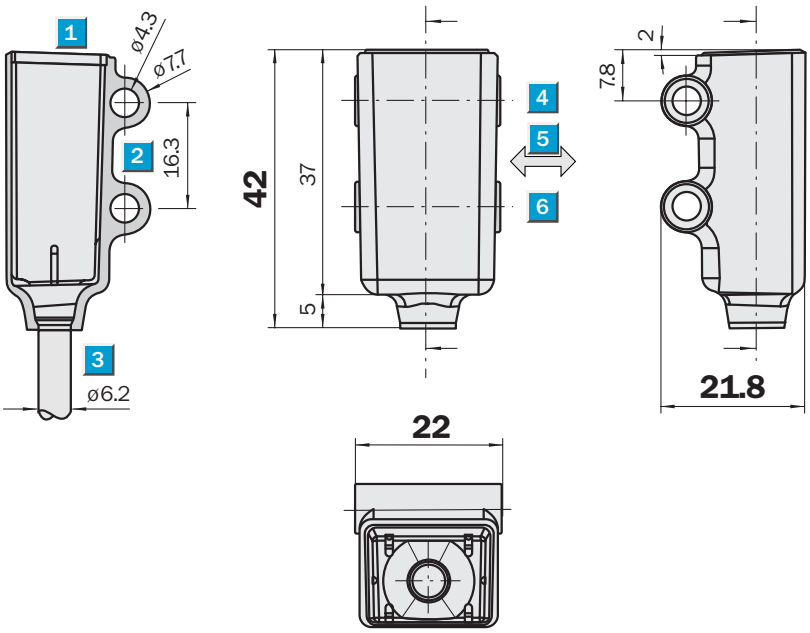


Scanning distance
4 ... 120 mm

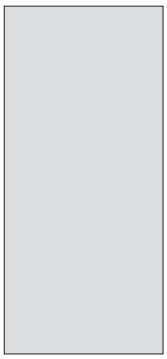
Photoelectric proximity sensor

- Robust Teflon housing for use in wet and aggressive environments
- Suitable for food applications
- Scanning distance set via teach-in wire
- Background suppression

Dimensional drawing



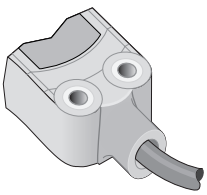
Adjustments possible



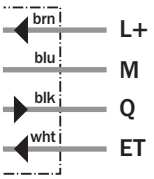
1. LED signal
2. Mounting hole Ø 4.3 mm
3. Cable 5 m, Ø 3.4 mm, 2 m Teflon coated, Ø 6.2 mm
4. Optical axis, receiver
5. Standard direction of the material being scanned
6. Optical axis, sender

Connection type

WTB4T-3N1264
WTB4T-3P1264



4 x 0.14 mm²



See Accessories chapter
Mounting systems

	WTB4T-3	N1264	P1264
Scanning distance typ. max.	4 ... 120 mm	■	■
Operating distance	15 ... 120 mm	■	■
Adjustment of operating distance	Teach-in: External[1]	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[2]	■	■
Light spot diameter	7 mm at 50 mm distance	■	■
Supply voltage V_S	DC 10 ... 30 V[3]	■	■
Ripple	< 5 V_{SS}[4]	■	■
Power consumption	≤ 30 mA[5]	■	■
Switching outputs	NPN, Q	■	
	PNP, Q		■
Switching mode	Light-switching	■	■
Output current $I_a$max	≤ 100 mA	■	■
Response time	< 1 ms[6]	■	
	< 0.5 ms[6]		■
Switching frequency	500 Hz[7]	■	
	1,000 Hz[7]		■
Connection type	Cable, PVC/Teflon coating, 5 m[8]	■	■
VDE protection class	III	■	■
Circuit protection	V_S connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■
Enclosure rating	IP 68, IP 69K	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■
Weight	Ca. 50 g	■	■
Housing material	PTFE/Teflon	■	■

1) External teach-in: impuls > 2 s with voltage V_S for PNP or M for NPN
2) Average service life 100,000 h at T_a = +25 °C
3) Limit values
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

Ordering information

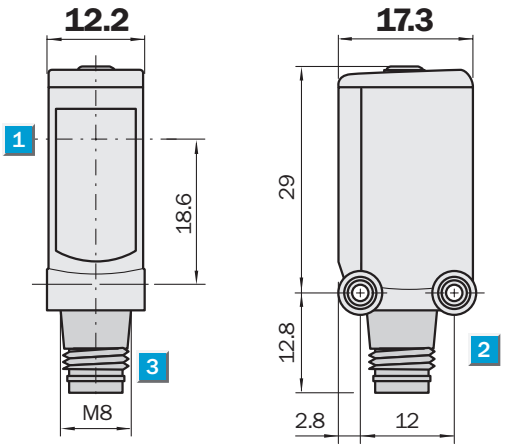
Type	Order no.
WTB4T-3N1264	1028092
WTB4T-3P1264	1028091

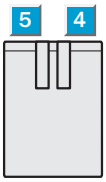
Scanning range
0 ... 4 m

Photoelectric reflex sensor

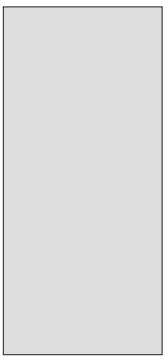
- Reliable function in restricted spaces thanks to autocollimation
- Small, easily visible, tightly defined light spot
- Robust mounting thanks to M3 metal bushes

Dimensional drawing





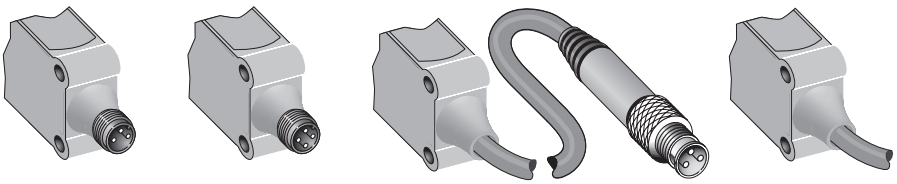
Adjustments possible



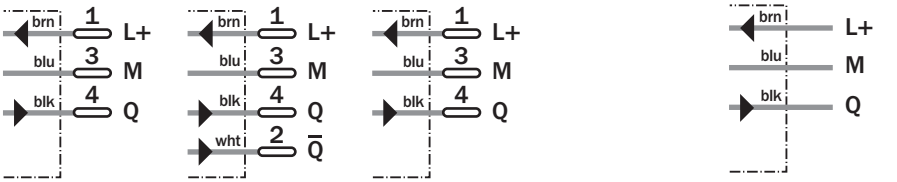
1. Optical axis
2. Mounting hole M3
3. Connector
4. LED signal strength indicator green: power on
5. LED signal strength indicator orange: status of received light beam

Connection type

WL4S-3E2130	WL4S-3P2230	WL4S-3F3130	WL4S-3E1330
WL4S-3F2130		WL4S-3P3130	WL4S-3N1330
WL4S-3P2130			WL4S-3P1330



M8, 3-pin	M8, 4-pin	M8, 3-pin	3 x 0.14 mm²



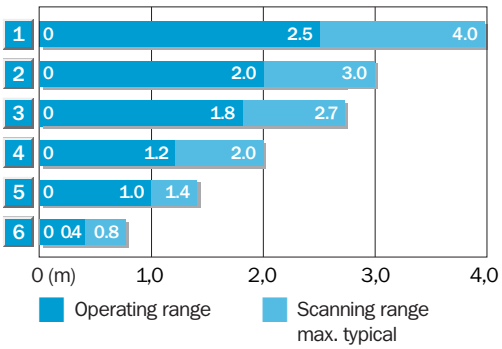
See Accessories chapter

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

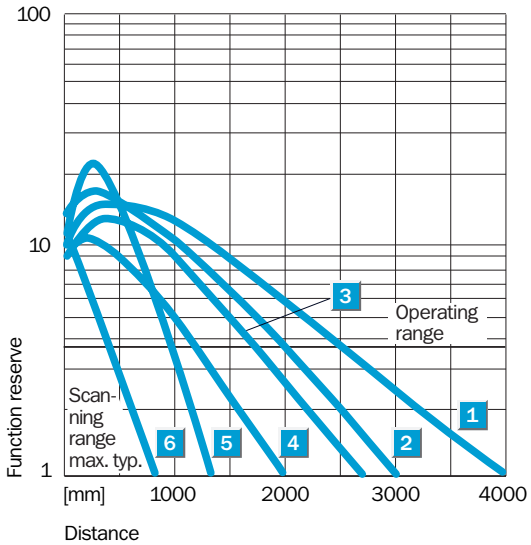
	WL4S-3	E1330	E2130	F2130	F3130	N1330	P1330	P2130	P2230	P3130
Scanning range typ. max.	0 ... 4 m	■	■	■	■	■	■	■	■	■
Scanning range, recommended	0 ... 2.5 m	■	■	■	■	■	■	■	■	■
Relating to	Reflector PL80A	■	■	■	■	■	■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■	■
Light spot diameter	45 mm at 1.5 m distance	■	■	■	■	■	■	■	■	■
Polarisation filter	✓	■	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■
Ripple	≤ 5 V_{ss}[3]	■	■	■	■	■	■	■	■	■
Power consumption	≤ 20 mA[4]	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■			■				
	PNP, Q			■	■		■	■		■
	PNP antivalent								■	
Switching mode	Dark-switching	■	■	■	■					
	Light-switching					■	■	■		■
	Complementary								■	
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		■	■				■		
	Cable with plug, M8, 3-pin, PVC, 100 mm[7]				■					■
	Connector, M8, 4-pin								■	
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■
Weight	Ca. 30 g	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected 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	PL80A	0 ... 2.5 m
2	PL250F	0 ... 2.0 m
3	PL40A	0 ... 1.8 m
4	PL20F	0 ... 1.2 m
5	PL10F	0 ... 1.0 m
6	REF-IRF-56	0 ... 0.4 m



Ordering information

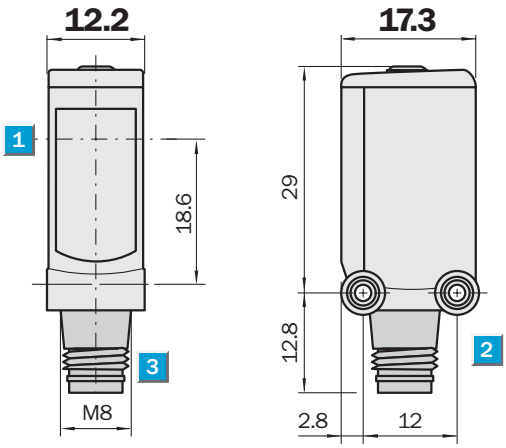
Type	Order no.
WL4S-3E1330	1042072
WL4S-3E2130	1042071
WL4S-3F2130	1042065
WL4S-3F3130	1042067
WL4S-3N1330	1042073
WL4S-3P1330	1042068
WL4S-3P2130	1042069
WL4S-3P2230	1042066
WL4S-3P3130	1042070

Scanning range
0 ... 5 m

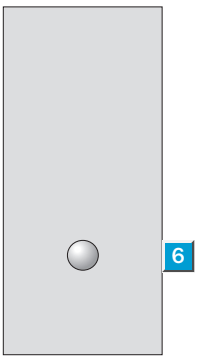
Photoelectric reflex sensor

- Reliable function in restricted spaces thanks to autocollimation
- Small, easily visible, tightly defined light spot
- Quick and easy commissioning through teach-in function
- Robust mounting thanks to M3 metal bushes

Dimensional drawing

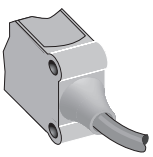
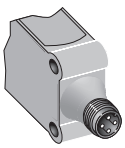
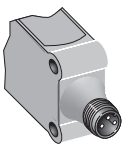
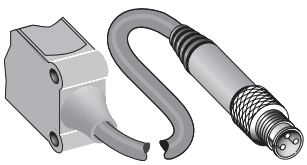


Adjustments possible



1. Optical axis
2. Mounting hole M3
3. Connector
4. LED signal strength indicator green: power on
5. LED signal strength indicator orange: status of received light beam
6. Teach button

Connection type

WL4S-3E1332 WL4S-3F1332 WL4S-3N1332	WL4S-3V2232	WL4S-3E2132 WL4S-3F2132 WL4S-3P2132	WL4S-3F3132
			
3 x 0.14 mm²	M8, 4-pin	M8, 3-pin	M8, 3-pin
brn L+ blu M blk Q	brn 1 L+ blk 4 Q wht 2 Alarm blu 3 M	brn 1 L+ blu 3 M blk 4 Q	brn 1 L+ blu 3 M blk 4 Q

WL4S-3W1132 4 x 0.14 mm²	WL4S-3P2232 M8, 4-pin
brn 1 L+ blk 4 Q wht 2 Alarm blu 3 M	brn 1 L+ blu 3 M blk 4 Q wht 2 $\overline{Q}$

See Accessories chapter

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

	WL4S-3	E1332	E2132	F1332	F2132	F3132	N1332	P2132	P2232	V2232	W113
Scanning range typ. max.	0 ... 5 m	■	■	■	■	■	■	■	■	■	■
Scanning range, recommended	0 ... 3 m	■	■	■	■	■	■	■	■	■	■
Relating to	Reflector PL80A	■	■	■	■	■	■	■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■	■	■
Light spot diameter	45 mm at 1.5 m distance	■	■	■	■	■	■	■	■	■	■
Polarisation filter	✓	■	■	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■	■
Ripple	≤ 5 V_{ss}[3]	■	■	■	■	■	■	■	■	■	■
Power consumption	≤ 20 mA[4]	■	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■				■				
	PNP, Q			■	■	■		■			
	PNP antivalent								■		
	PNP, Q and alarm									■	
	NPN, Q and alarm										■
Switching mode	Dark-switching	■	■	■	■	■				■	■
	Light-switching						■	■			
	Complementary								■		
Output current $I_a$max	≤ 100 mA	■	■	■	■	■	■	■	■	■	■
Response time	< 0.5 ms[5]	■	■	■	■	■	■	■	■	■	■
Switching frequency	1,000 Hz[6]	■	■	■	■	■	■	■	■	■	■
Alarm output	Pre-failure signalling output									■	■
Connection type	Cable, PVC, 2 m[7]	■		■			■				■
	Connector, M8, 3-pin		■		■			■			
	Cable with plug, M8, 3-pin, PVC, 100 mm[7]					■					
	Connector, M8, 4-pin								■	■	
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■	■
Weight	Ca. 30 g	■	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected 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

Teach-in function

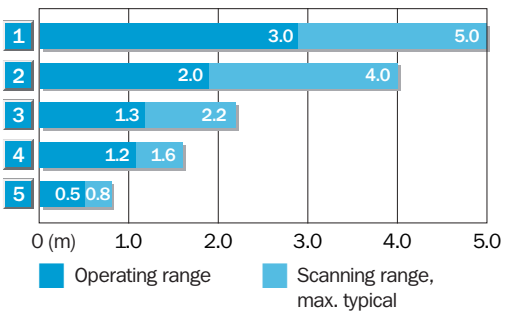
- **Programming via teach-in button.**
- **Easy programming:**

Position reflector in the beam path, press button, ready:

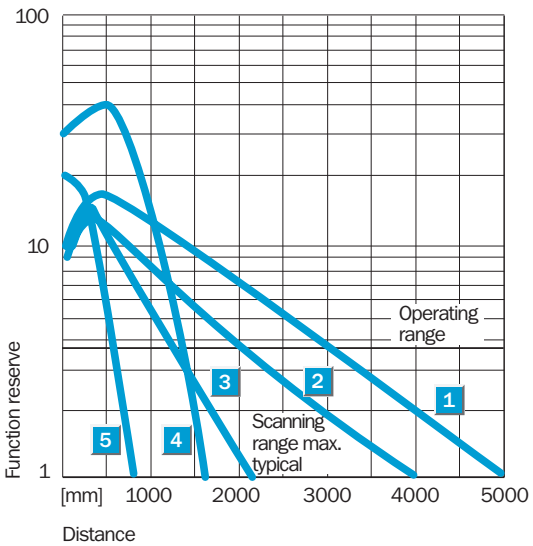
LED confirms teach-in operation.

Double reserve via switching threshold.

Scanning range and operating reserve



	Reflector type	Operating range
1	PL80A	0 ... 3.0 m
2	PL40A	0 ... 2.0 m
3	PL20A	0 ... 1.3 m
4	PL10F	0 ... 1.2 m
5	REF-IRF-56	0 ... 0.5 m



Ordering information

Type	Order no.
WL4S-3E1332	1042081
WL4S-3E2132	1042080
WL4S-3F1332	1042076
WL4S-3F2132	1042074
WL4S-3F3132	1042075
WL4S-3N1332	1042082
WL4S-3P2132	1042077
WL4S-3P2232	1042078
WL4S-3V2232	1042079
WL4S-3W1132	1042083

Scanning range
0 ... 5 m

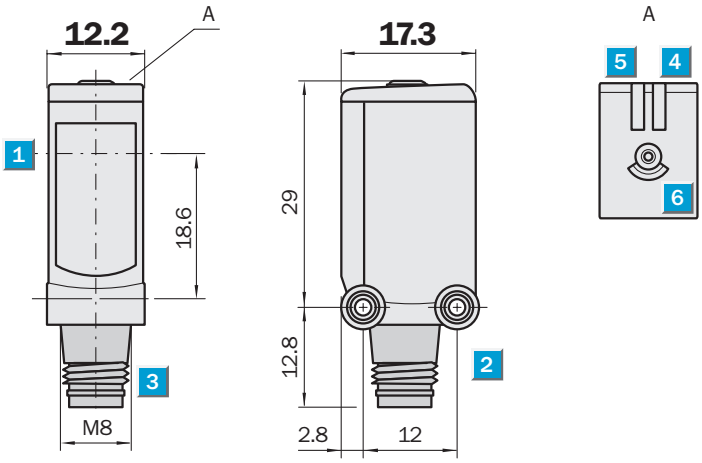
Photoelectric reflex sensor

- Continuous adaptation of the switching threshold in case of lens contamination
- Stable operation thanks to temperature compensation
- Small, easily visible, tightly defined light spot
- Quick and easy commissioning through teach-in function
- Detection of glass objects with an attenuation of > 8%

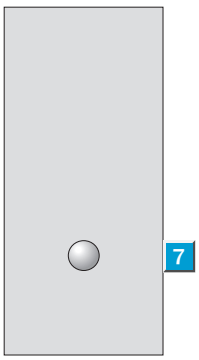
See Accessories chapter

Connector, M8, 4-pin
Mounting systems
Reflectors

Dimensional drawing



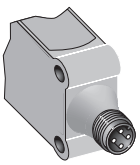
Adjustments possible



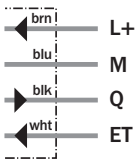
1 Optical axis
2 Mounting hole M3
3 Connector
4 LED signal strength indicator green: power on
5 LED signal strength indicator orange: status of received light beam
6 Teach button

Connection type

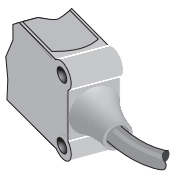
WLG4S-3F2234



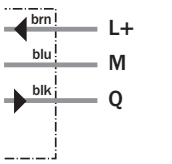
M8, 4-pin



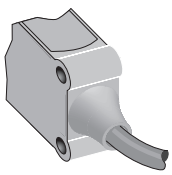
WLG4S-3E1134



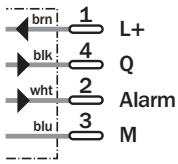
3 x 0,14 mm²



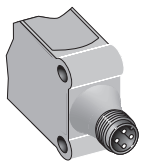
WLG4S-3W1132



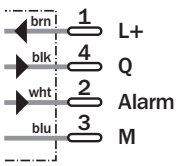
4 x 0,14 mm²



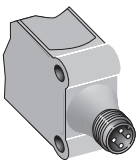
WLG4S-3V2232



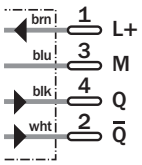
M8, 4-pin



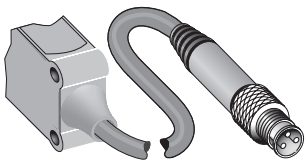
WLG4S-3P2232



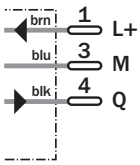
M8, 4-pin



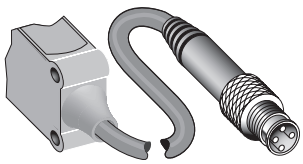
WLG4S-3F3132
WLG4S-3P3132



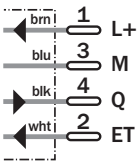
M8, 3-pin



WLG4S-3F3234



M8, 4-pin



	WLG4S-3	E1134	F2234	V2232	W113	P2232	P3132	F3132	F3234
Detection of transparent objects	✓								
Attenuation along light beam	> 8 %								
Scanning range typ. max.	0 ... 5 m								
Scanning range, recommended	0 ... 3 m								
Relating to	Reflector PL80A								
Sensitivity adjustment	Teach-in: single-teach button								
	Teach-in: single-teach button & cable								
Light source, light type	Pin-Point LED, red light, 650 nm[1]								
Light spot diameter	45 mm at 1.5 m distance								
Polarisation filter	✓								
Supply voltage V_s	DC 10 ... 30 V[2]								
Ripple	≤ 5 V_{ss}[3]								
Power consumption	≤ 20 mA[4]								
Switching outputs	NPN, Q								
	PNP, Q								
Switching mode	Dark-switching								
Output current $I_a$max	≤ 100 mA								
Response time	< 0.5 ms[5]								
Switching frequency	1,000 Hz[6]								
Alarm output	Pre-failure signalling output								
Connection type	Cable, PVC, 2 m[7]								
	Connector, M8, 3-pin,								
	Cable with plug, M8, 3-pin, 100 mm[7]								
	Cable with plug, M8, 4-pin, 100 mm[7]								
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression								
Enclosure rating	IP 66, IP 67								
Ambient temperature operation	–40 °C ... +60 °C								
Ambient temperature storage	–40 °C ... +75 °C								
Weight	Ca. 30 g								
Housing material	Bayblend, PMMA								

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected 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

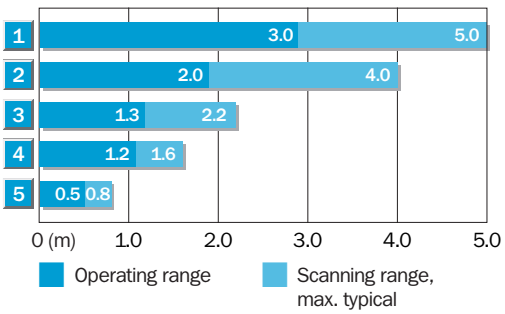
Teach-in function

Programming via teach-in button

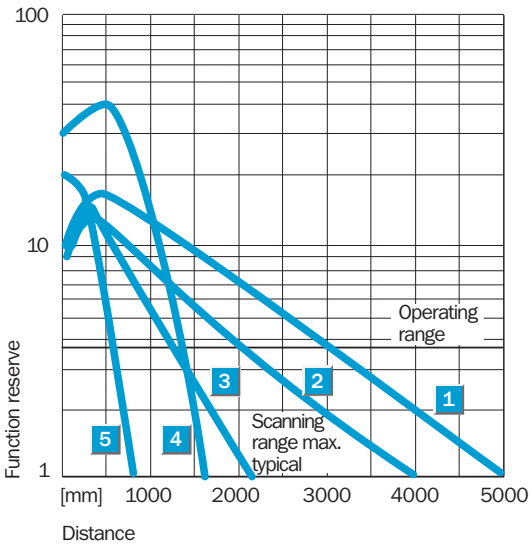
Standard mode (switching threshold adaptation): sensor adjusts the switching threshold to the ambient conditions. Sensor has clear sight of the reflector. No object in the beam path: press teach-in button for > 2 s until yellow LED indicator lights up again. Sensor is ready to operate.

Switch off switching threshold adaptation: sensor works statically with a switching threshold of 50 %. Sensor has clear sight of the reflector. No object in the beam path: press teach-in button for > 8 s until yellow LED indicator flashes twice. Sensor is ready to operate.

Scanning range and operating reserve



	Reflector type	Operating range
1	PL80A	0 ... 3.0 m
2	PL40A	0 ... 2.0 m
3	PL20A	0 ... 1.3 m
4	PL10F	0 ... 1.2 m
5	REF-IRF-56	0 ... 0.5 m



Order information

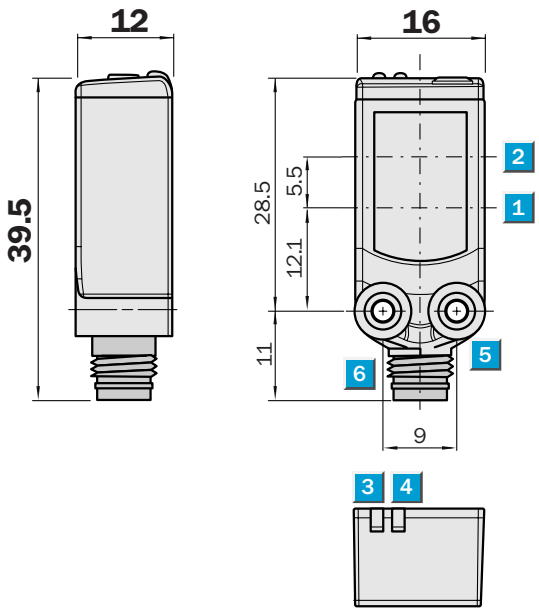
Type	Order no.
WLG4S-3E1134	1042085
WLG4S-3F2234	1042084
WLG4S-3V2232	1042087
WLG4S-3W1132	1042086
WLG4S-3P2232	1044186
WLG4S-3P3132	1043839
WLG4S-3F3132	1043838
WLG4S-3F3234	1043840

Scanning range
0.01 ... 4 m

Photoelectric reflex sensor

- Fast and safe alignment through high visibility light spot
- Fast commissioning. Connect, align, ready!
- Easy assembly in slots and guide rails

Dimensional drawing

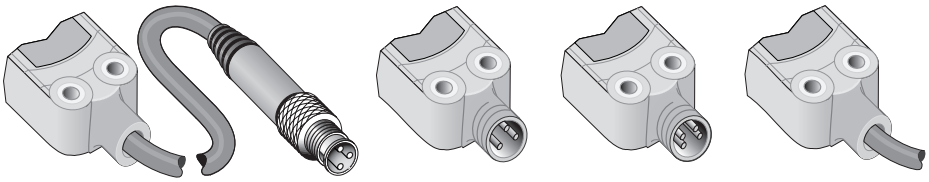


Adjustments possible

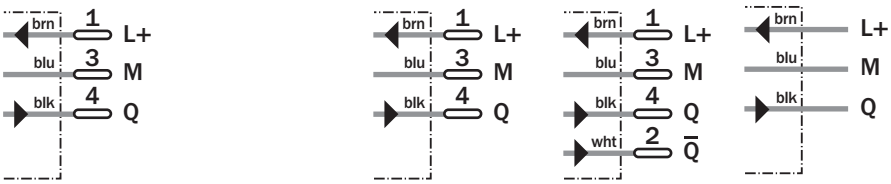
1. Centre of optical axis, sender
2. Centre of optical axis, receiver
3. LED signal strength indicator yellow: status of received light beam
4. LED signal strength indicator green: power on
5. Mounting hole M3
6. Connector

Connection type

WL4-3F3130	WL4-3E2130	WL4-3P2230	WL4-3E1330
WL4-3N3130	WL4-3F2130		WL4-3F1330
WL4-3P3130	WL4-3P2130		WL4-3P1330



M8, 3-pin	M8, 3-pin	M8, 4-pin	3 x 0.14 mm²



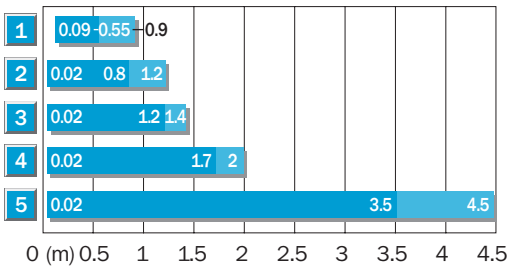
See Accessories chapter

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

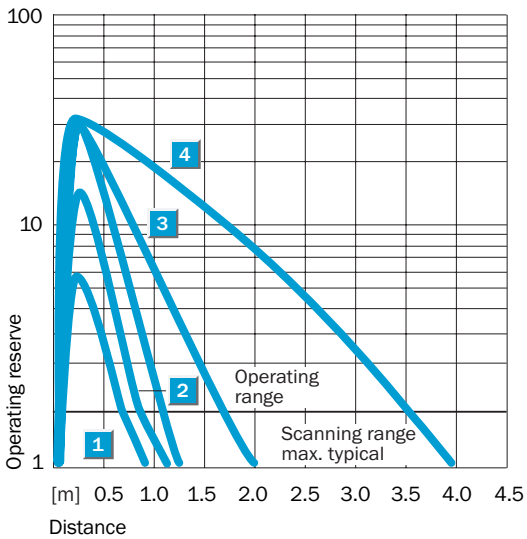
WL4-3		E1330	E2130	F1330	F2130	F3130	N3130	P1330	P2130	P2230	P3130
Scanning range typ. max.	0.01 ... 4 m	■	■	■	■	■	■	■	■	■	■
Scanning range, recommended	0.02 ... 3.5 m	■	■	■	■	■	■	■	■	■	■
Relating to	Reflector PL80A	■	■	■	■	■	■	■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■	■	■
Light spot diameter	75 mm at 1.5 m distance	■	■	■	■	■	■	■	■	■	■
Polarisation filter	✓	■	■	■	■	■	■	■	■	■	■
Supply voltage V_S	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■	■
Ripple	≤ 5 V_{SS}[3]	■	■	■	■	■	■	■	■	■	■
Power consumption	≤ 20 mA[4]	■	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■				■				
	PNP, Q			■	■	■		■	■		■
	PNP antivalent									■	
Switching mode	Dark-switching	■	■	■	■	■					
	Light-switching						■	■	■	■	■
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		■		■				■		
	Cable with plug, M8, 3-pin, 100 mm[7]					■	■				■
	Connector, M8, 4-pin									■	
Circuit protection	V_S connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■	■
Weight	Ca. 30 g	■	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected 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	REF-IRF-56	0.09 ... 0.55 m
2	PL10F	0.02 ... 0.8 m
3	PL20A	0.02 ... 1.2 m
4	PL40A	0.02 ... 1.7 m
5	PL80A	0.02 ... 3.5 m



Ordering information

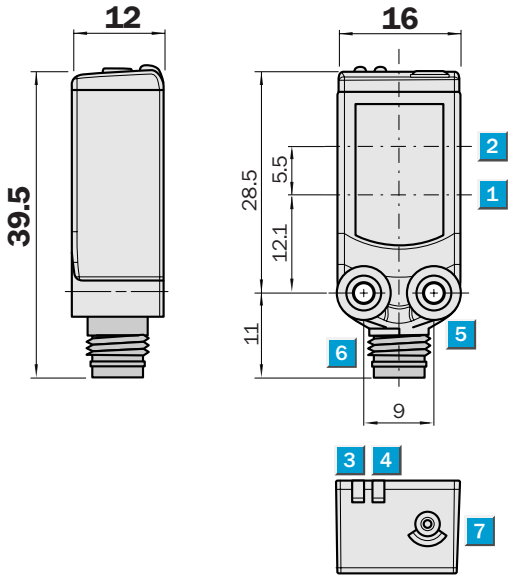
Type	Order no.
WL4-3E1330	1028156
WL4-3E2130	1028158
WL4-3F1330	1028152
WL4-3F2130	1028155
WL4-3F3130	1028153
WL4-3N3130	1028150
WL4-3P1330	1028143
WL4-3P2130	1028146
WL4-3P2230	1028147
WL4-3P3130	1028144

Scanning range
0.01 ... 4 m

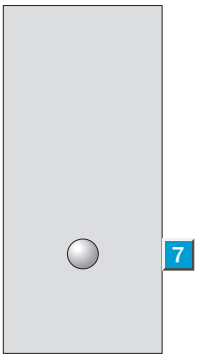
Photoelectric reflex sensor

- Fast and safe alignment through high visibility light spot
- Detection of glass objects with an attenuation of > 8%
- Sensitivity setting via wire

Dimensional drawing



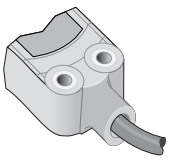
Adjustments possible



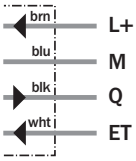
1. Centre of optical axis, sender
2. Centre of optical axis, receiver
3. LED signal strength indicator orange: status of received light beam
4. LED signal strength indicator green: power on
5. Mounting hole M3
6. Connector
7. Teach button

Connection type

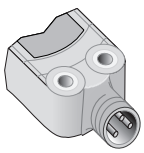
WLG4-3E1134



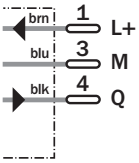
4 x 0,14 mm²



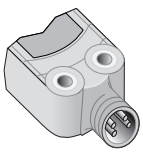
WLG4-3E2132
WLG4-3F2132
WLG4-3P2132



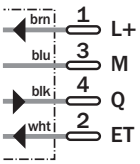
M8, 3-pin



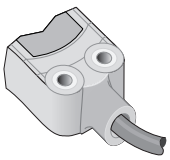
WLG4-3F2234



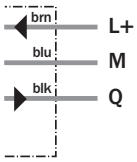
M8, 4-pin



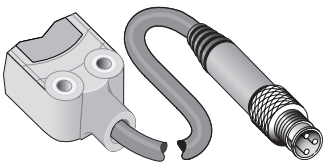
WLG4-3E1332
WLG4-3P1332



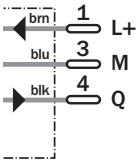
3 x 0,14 mm²



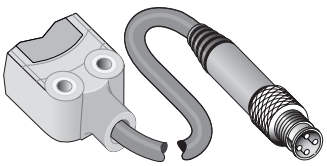
WLG4-3F3132



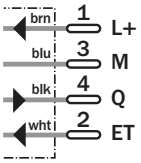
M8, 3-pin



WLG4-3F3234



M8, 4-pin



See Accessories chapter

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

	WLG4-3	E1134	E1332	E2132	F2132	F2234	F3132	F3234	P1332	P2132
Detection of transparent objects	✓	■	■	■	■	■	■	■	■	■
Attenuation along light beam	> 8 %	■	■	■	■	■	■	■	■	■
Scanning range typ. max.	0.01 ... 4 m	■	■	■	■	■	■	■	■	■
Scanning range, recommended	0.02 ... 3.5 m	■	■	■	■	■	■	■	■	■
Relating to	Reflector PL80A	■	■	■	■	■	■	■	■	■
Sensitivity adjustment	Teach-in: single-teach button & cable	■				■		■		
	Teach-in: single-teach button		■	■	■		■	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■	■
Light spot diameter	75 mm at 1.5 m distance	■	■	■	■	■	■	■	■	■
Polarisation filter	✓	■	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■
Ripple	≤ 5 V_{ss}[3]	■	■	■	■	■	■	■	■	■
Power consumption	≤ 20 mA[4]	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■	■						
	PNP, Q				■	■	■	■	■	■
Switching mode	Dark-switching	■	■	■	■	■	■	■		
	Light-switching								■	■
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					■				
	Cable with plug, M8, 3-pin, 100 mm[7]						■			
	Cable with plug, M8, 4-pin, 100 mm[7]							■		
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■	■
Weight	Ca. 30 g	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected 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

Teach-in-Funktion

- **Programming via teach-in button.**
- **Easy programming:**

Position reflector in the beam path, press button, ready:

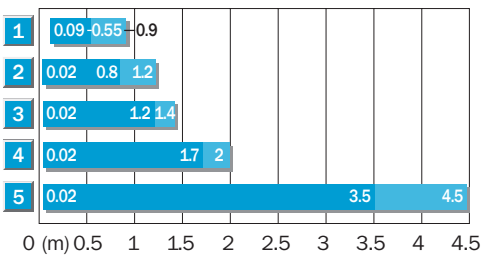
LED confirms teach-in operation.

- **Two operating modes:**

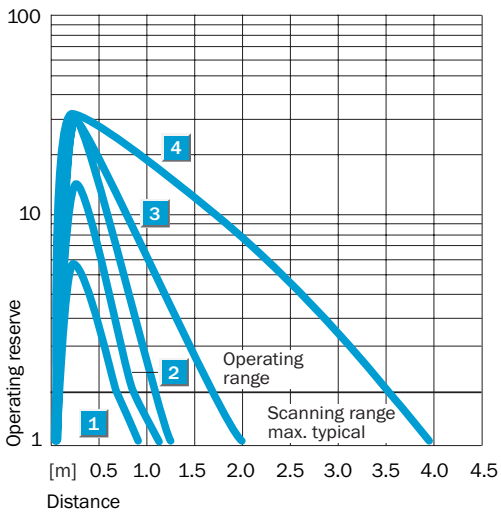
Standard setting: short Teach-in period (< 8 s); for standard applications; approx. double reserve via switching threshold

Fine adjustment: long Teach-in period (> 8 s); for precise applications, transparent objects. Small switching hysteresis.

Scanning range and operating reserve



	Reflector type	Operating range
1	REF-IRF-56	0.09 ... 0.55 m
2	PL10F	0.02 ... 0.8 m
3	PL20A	0.02 ... 1.2 m
4	PL40A	0.02 ... 1.7 m
5	PL80A	0.02 ... 3.5 m



Ordering information

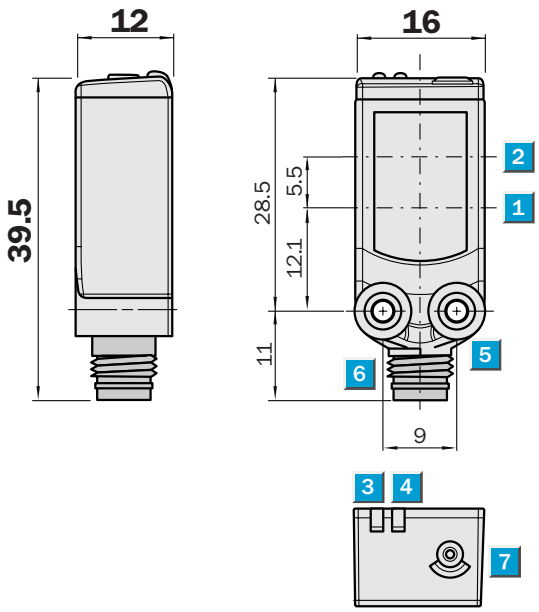
Type	Order no.
WLG4-3E1134	1028133
WLG4-3E1332	1028131
WLG4-3E2132	1028132
WLG4-3F2132	1028127
WLG4-3F2234	1028130
WLG4-3F3132	1028128
WLG4-3F3234	1028129
WLG4-3P1332	1042844
WLG4-3P2132	1029567

Scanning range
0.01 ... 1.6 m

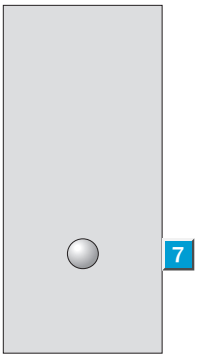
Photoelectric reflex sensor

- Fast and safe alignment through high visibility light spot
- Detection of PET bottles and foils with an attenuation of > 8%
- Sensitivity setting via wire

Dimensional drawing



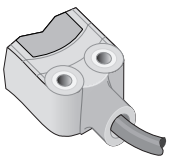
Adjustments possible



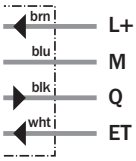
1. Centre of optical axis, sender
2. Centre of optical axis, receiver
3. LED signal strength indicator orange: status of received light beam
4. LED signal strength indicator green: power on
5. Mounting hole M3
6. Connector
7. Teach button

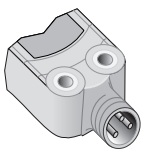
Connection type

WLG4-3E1184	WLG4-3F2182	WLG4-3F2284	WLG4-3E1382
WLG4-3P1482	WLG4-3P2182		WLG4-3N1382

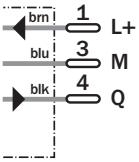


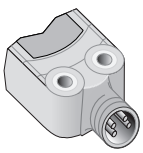
4 x 0,14 mm²



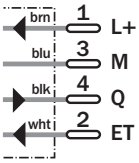


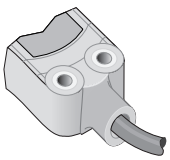
M8, 3-pin



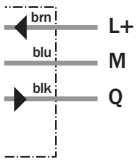


M8, 4-pin

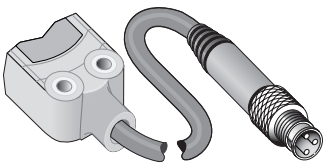




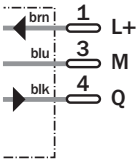
3 x 0,14 mm²



WLG4-3F3182



M8, 3-pin



See Accessories chapter

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

	WLG4-3	E1184	E1382	F2182	F2284	F3182	N1382	P1482	P2182
Detection of transparent objects	✓	■	■	■	■	■	■	■	■
Attenuation along light beam	> 8 %	■	■	■	■	■	■	■	■
Scanning range typ. max.	0.01 ... 1.6 m	■	■	■	■	■	■	■	■
Scanning range, recommended	0.02 ... 0.9 m	■	■	■	■	■	■	■	■
Relating to	Reflector PL80A	■	■	■	■	■	■	■	■
Sensitivity adjustment	Teach-in: single-teach button & cable	■			■	■	■	■	■
	Teach-in: single-teach button		■	■					
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■
Light spot diameter	180 mm at 1.5 m distance	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■
Ripple	≤ 5 V_{ss}[3]	■	■	■	■	■	■	■	■
Power consumption	≤ 20 mA[4]	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■	■						
	PNP, Q			■	■	■	■	■	■
Switching mode	Dark-switching	■	■	■	■	■	■	■	■
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]	■	■				■		
	Cable, PVC, 5 m[7]							■	
	Connector, M8, 3-pin			■					■
Connection type	Connector, M8, 4-pin				■				
	Cable with plug, M8, 3-pin, 100 mm					■			
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■ ■	■ ■	■ ■	■ ■				
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +75 °C	■	■	■	■	■	■	■	■
Weight	Ca. 30 g	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected 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

Teach-in function

- **Programming via teach-in button.**
- **Easy programming:**

Position reflector in the beam path, press button, ready:

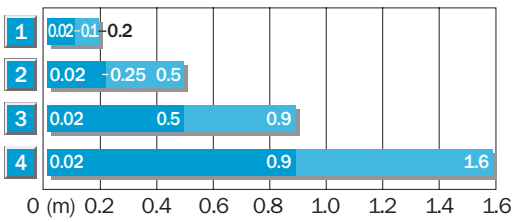
LED confirms teach-in operation.

- **Two operating modes:**

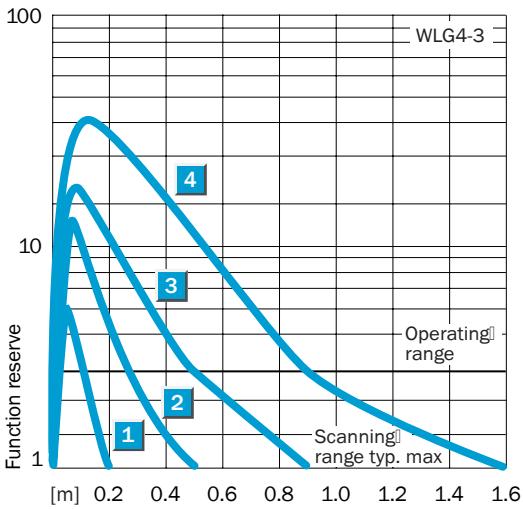
Standard setting: short Teach-in period (< 8 s); for standard applications; approx. double reserve via switching threshold

Fine adjustment: long Teach-in period (> 8 s); for precise applications, transparent objects. Small switching hysteresis.

Scanning range and operating reserve



	Reflector type	Operating range
1	PL10F	0.02 ... 0.1 m
2	PL20A	0.02 ... 0.25 m
3	PL40A	0.02 ... 0.5 m
4	PL80A	0.02 ... 0.9 m



Ordering information

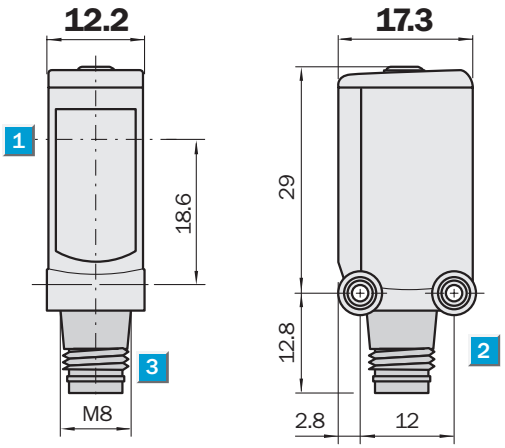
Type	Order no.
WLG4-3E1184	1028140
WLG4-3E1382	1028138
WLG4-3F2182	1028134
WLG4-3F2284	1028137
WLG4-3F3182	1028135
WLG4-3N1382	1040493
WLG4-3P1482	1029897
WLG4-3P2182	1044179

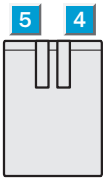
Scanning range
0 ... 5 m

Through-beam photoelectric sensor

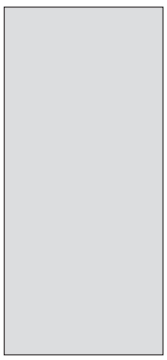
- Fast and reliable alignment through brilliant light spot
- Assembly of several pairs in tight environments due to a tightly defined small light spot
- Robust mounting thanks to M3 metal bushes

Dimensional drawing



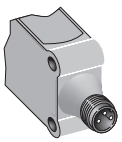
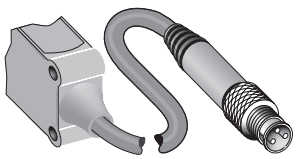
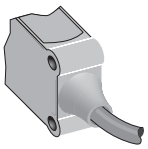
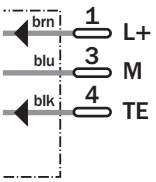
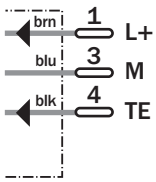
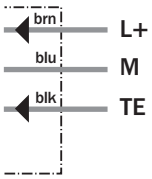
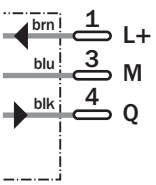
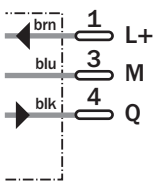
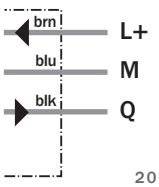


Adjustments possible



1. Centre of optical axis
2. LED signal strength indicator orange: status of received light beam
3. LED signal strength indicator green: power on
4. Mounting hole M3
5. Connector

Connection type

	WSE4S-3E2130 WSE4S-3F2130 WSE4S-3P2130	WSE4S-3F3130	WSE4S-3E1330 WSE4S-3F1330 WSE4S-3N1330
			
Sender	M8, 3-pin	M8, 3-pin	3 x 0.14 mm²
			
Receiver	M8, 3-pin	M8, 3-pin	3 x 0.14 mm²
			

See Accessories chapter

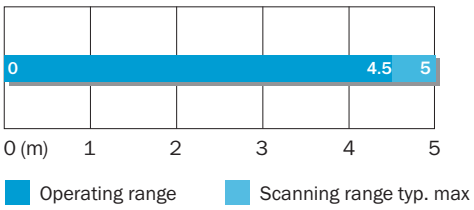
Connector, M8, 3-pin

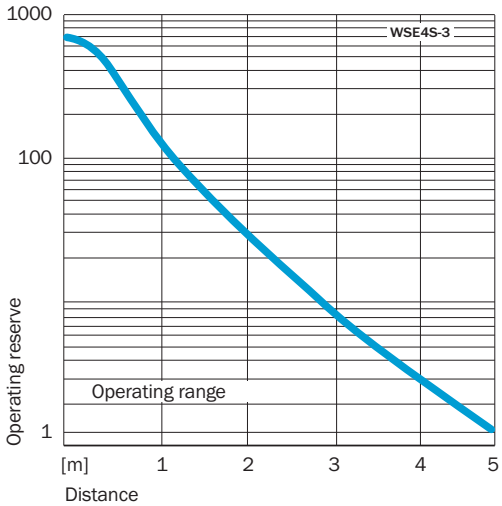
Mounting systems

	WSE4S-3	E1330	E2130	F1330	F2130	F3130	N1330	P2130			
Scanning range typ. max.	0 ... 5 m	■	■	■	■	■	■	■			
Scanning range, recommended	0 ... 4.5 m	■	■	■	■	■	■	■			
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■			
Light spot diameter	50 mm at 2.0 m distance	■	■	■	■	■	■	■			
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■			
Ripple	≤ 5 V_{ss}[3]	■	■	■	■	■	■	■			
Power consumption, sender	≤ 20 mA	■	■	■	■	■	■	■			
Power consumption, receiver	≤ 20 mA	■	■	■	■	■	■	■			
Switching outputs	NPN, Q	■	■				■				
	PNP, Q			■	■	■		■			
Switching mode	Dark-switching	■	■	■	■	■					
	Light-switching						■	■			
Output current $I_a$max	≤ 100 mA	■	■	■	■	■	■	■			
Response time	2.5 ms[4]	■	■	■	■	■	■	■			
Switching frequency	200 Hz[5]	■	■	■	■	■	■	■			
Test input sender off	TE to 0 V	■	■	■	■	■	■	■			
Connection type	Cable, PVC, 2 m[6]	■		■			■				
	Connector, M8, 3-pin		■		■			■			
	Cable with plug, M8, 3-pin, PVC, 100 mm[6]					■					
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■			
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■			
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■			
Ambient temperature storage	–40 °C ... +70 °C	■	■	■	■	■	■	■			
Weight	Ca. 40 g	■	■	■	■	■	■	■			
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■			

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected operation in short-circuit protected network max. 8 A
3) May not exceed or fall short of V_s tolerances
4) Signal transit time with resistive load
5) With light/dark ratio 1:1
6) Do not bend below 0 °C

Scanning range and operating reserve





Ordering information

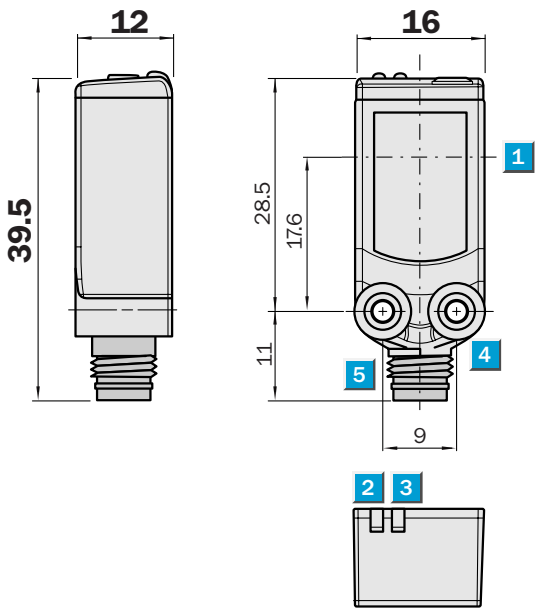
Type	Order no.
WSE4S-3E1330	1042093
WSE4S-3E2130	1042092
WSE4S-3F1330	1042090
WSE4S-3F2130	1042088
WSE4S-3F3130	1042089
WSE4S-3N1330	1042094
WSE4S-3P2130	1042091

Scanning range
0 ... 6 m

Through-beam photoelectric sensor

- Fast and safe alignment through high visibility light spot
- Fast commissioning. Connect, align, ready!
- Easy assembly in slots and guide rails

Dimensional drawing

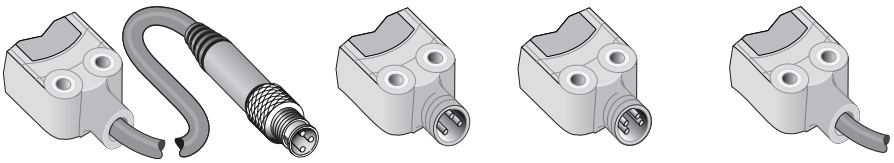


Adjustments possible

1. Centre of optical axis
2. LED signal strength indicator orange: status of received light beam
3. LED signal strength indicator green: power on
4. Mounting hole M3
5. Connector

Connection type

WSE4-3F3130	WSE4-3F2130	WSE4-3P2230	WSE4-3E1330
WSE4-3P3130	WSE4-3F2131		WSE4-3F1330
WSE4-3P3131	WSE4-3P2130		WSE4-3N1330



Sender	M8, 3-pin	M8, 3-pin	M8, 4-pin	3 x 0.14 mm²
	brn 1 L+ blu 3 M blk 4 TE	brn 1 L+ blu 3 M blk 4 TE	brn 1 L+ 2 NC blu 3 M blk 4 TE	brn L+ blu M blk TE
Receiver	M8, 3-pin	M8, 3-pin	M8, 4-pin	3 x 0.14 mm²
	brn 1 L+ blu 3 M blk 4 Q	brn 1 L+ blu 3 M blk 4 Q	brn 1 L+ blu 3 M blk 4 Q wht 2 $\overline{Q}$	brn L+ blu M blk Q

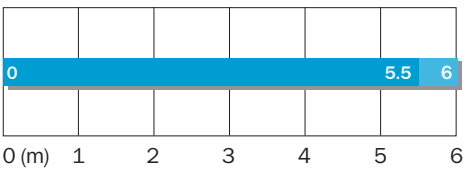
See Accessories chapter

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

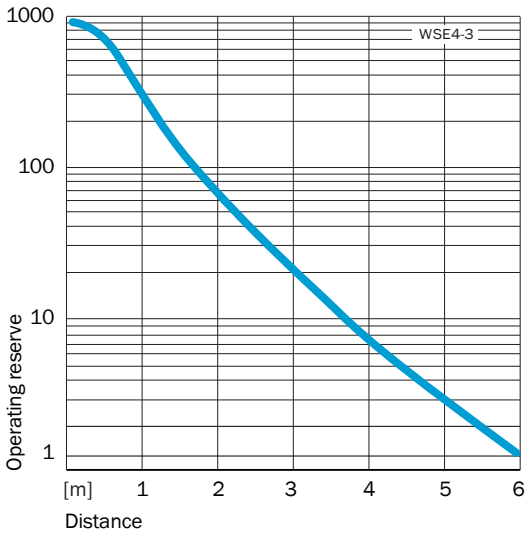
	WSE4-3	E1330	F1330	F2130	F2131	F3130	N1330	P2130	P2230	P3130	P3131
Scanning range typ. max.	0 ... 6 m	■	■	■	■	■	■	■	■	■	■
Scanning range, recommended	0 ... 5.5 m	■	■	■	■	■	■	■	■	■	■
Sensitivity adjustment	Potentiometer, 5 revolutions				■						■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■	■	■	■	■	■	■	■
Light spot diameter	210 mm at 2 m distance	■	■	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 30 V[2]	■	■	■	■	■	■	■	■	■	■
Ripple	≤ 5 V_{ss}[3]	■	■	■	■	■	■	■	■	■	■
Power consumption, sender	≤ 20 mA	■	■	■	■	■	■	■	■	■	■
Power consumption, receiver	≤ 20 mA	■	■	■	■	■	■	■	■	■	■
Switching outputs	NPN, Q	■					■				
	PNP, Q		■	■	■	■		■		■	■
	PNP								■		
Switching mode	Dark-switching	■	■	■	■	■					
	Light-switching						■	■		■	■
	Complementary								■		
Output current $I_a$max	≤ 100 mA	■	■	■	■	■	■	■	■	■	■
Response time	> 0.5 ms[4]	■	■	■	■	■	■	■	■	■	■
Switching frequency	1,000 Hz[5]	■	■	■	■	■	■	■	■	■	■
Test input sender off	TE to 0 V	■	■	■	■	■	■	■	■	■	■
Connection type	Cable, 2 m[6]	■	■				■				
	Connector, M8, 3-pin			■	■						
	Cable with plug, M8, 3-pin, PVC, 100 mm[6]					■				■	■
	Connector, M8, 3-pin[6]							■			
	Connector, M8, 4-pin								■		
Circuit protection	V_s connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■	■	■	■	■	■	■	■
Enclosure rating	IP 66, IP 67	■	■	■	■	■	■	■	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■	■	■	■	■	■	■	■
Ambient temperature storage	–40 °C ... +70 °C	■	■	■	■	■	■	■	■	■	■
Weight	Ca. 40 g	■	■	■	■	■	■	■	■	■	■
Housing material	Bayblend, PMMA	■	■	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected operation in short-circuit protected network max. 8 A
3) May not exceed or fall short of V_s tolerances
4) Signal transit time with resistive load
5) With light/dark ratio 1:1
6) Do not bend below 0 °C

Scanning range and operating reserve



Operating range Scanning range typ. max.



Ordering information

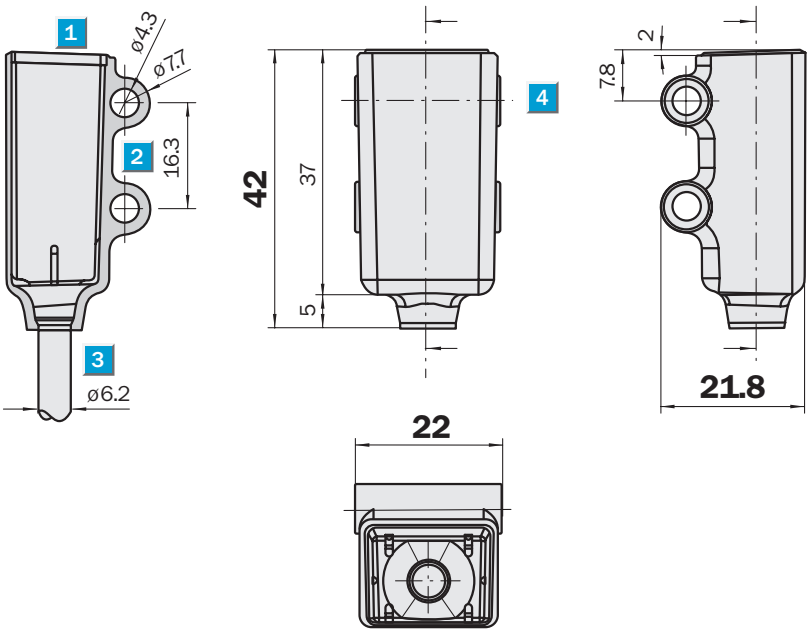
Type	Order no.
WSE4-3E1330	1028172
WSE4-3F1330	1028168
WSE4-3F2130	1028171
WSE4-3F2131	1041132
WSE4-3F3130	1028170
WSE4-3N1330	1028164
WSE4-3P2130	1028163
WSE4-3P2230	1028160
WSE4-3P3130	1028161
WSE4-3P3131	1029898

Scanning range
0 ... 3 m

Through-beam photoelectric sensor

- Robust Teflon housing for use in wet and aggressive environments
- Suitable for food applications
- Test input

Dimensional drawing

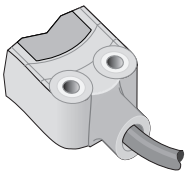


Adjustments possible

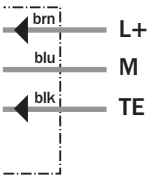
1 LED signal
2 Mounting hole Ø 4.3 mm
3 Cable 5 m, Ø 3.4 mm, 2 m Teflon coated, Ø 6.2 mm
4 Optical axis, sender und receiver

Connection type

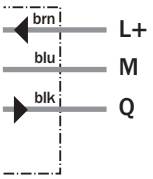
WSE4T-3E1430
WSE4T-3F1430
WSE4T-3P1430



Sender	3 x 0.14 mm²



Receiver	3 x 0.14 mm²

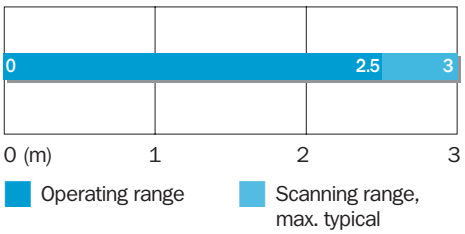


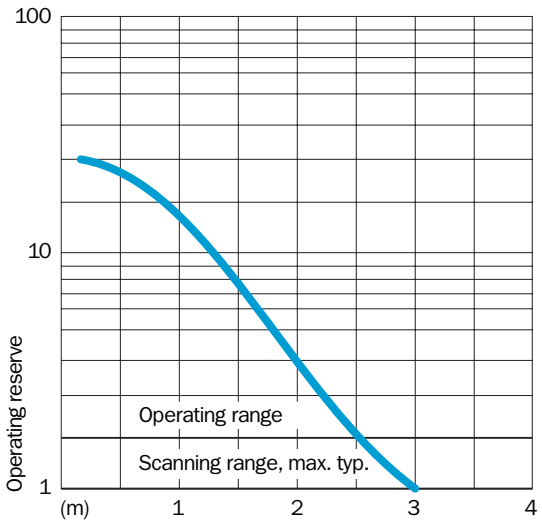
See Accessories chapter
Mounting systems

	WSE4T-3	E1430	F1430	P1430
Scanning range typ. max.	0 ... 3 m	■	■	■
Scanning range, recommended	0 ... 2.5 m	■	■	■
Light source, light type	Pin-Point LED, red light, 650 nm[1]	■	■	■
Light spot diameter	210 mm at 2 m distance	■	■	■
Supply voltage V_S	DC 10 ... 30 V[2]	■	■	■
Ripple	≤ 5 V_{SS}[3]	■	■	■
Power consumption, sender	≤ 20 mA	■	■	■
Power consumption, receiver	≤ 20 mA	■	■	■
Switching outputs	NPN, Q	■		
	PNP, Q		■	■
Switching mode	Dark-switching	■	■	
	Light-switching			■
Output current $I_a$max	≤ 100 mA	■	■	■
Response time	> 0.5 ms[4]	■	■	■
Switching frequency	1,000 Hz[5]	■	■	■
Test input sender off	TE to 0 V	■	■	■
Connection type	Cable, 5 m[6]	■	■	■
Circuit protection	V_S connections reverse-polarity protected / Output Q and Q not short-circuit protected / Interference suppression	■	■	■
Enclosure rating	IP 68, IP 69K	■	■	■
Ambient temperature operation	–40 °C ... +60 °C	■	■	■
Ambient temperature storage	–40 °C ... +70 °C	■	■	■
Weight	Ca. 60 g	■	■	■
Housing material	PTFE/teflon, PMMA	■	■	■

1) Average service life 100,000 h at T_a = +25 °C
2) Limit values, reverse-polarity protected operation in short-circuit protected network max. 8 A
3) May not exceed or fall short of V_S tolerances
4) Signal transit time with resistive load
5) With light/dark ratio 1:1
6) Do not bend below 0 °C

Scanning range and operating reserve





Ordering information

Type	Order no.
WSE4T-3E1430	1029648
WSE4T-3F1430	1029647
WSE4T-3P1430	1029646

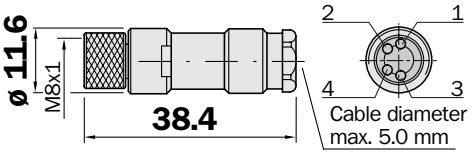
Dimensional drawings and order information

Connectors

SENSICK sheath M8, 3- or 4-pin, enclosure rating IP 67

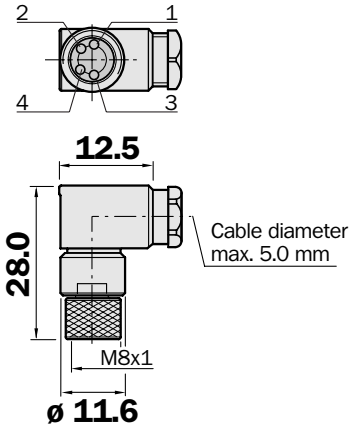
Female connector M8, 3- or 4-pin, straight

Type	Order no.	Contacts
DOS-0804-G	6009974	4



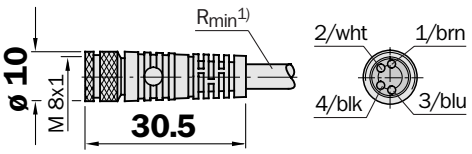
Female connector M8, 3- or 4-pin, angled

Type	Order no.	Contacts
DOS-0804-W	6009975	4



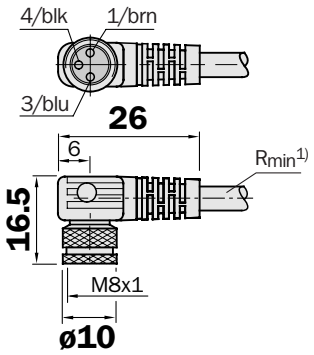
Female connector M8, 3- or 4-pin, straight
3 x 0.34 mm² or 4 x 0.25 mm², sheath PVC

Type	Order no.	Contacts	Cable length
DOL-0803-G02M	6010785	3	2 m
DOL-0803-G05M	6022009	3	5 m
DOL-0803-G10M	6022011	3	10 m
DOL-0804-G02M	6009870	4	2 m
DOL-0804-G05M	6009872	4	5 m
DOL-0804-G10M	6010754	4	10 m



Female connector M8, 3- or 4-pin, angled
3 x 0.34 mm² or 4 x 0.25 mm², sheath PVC

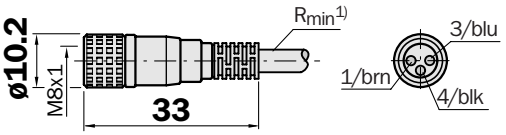
Type	Order no.	Contacts	Cable length
DOL-0803-W02M	6008489	3	2 m
DOL-0803-W05M	6022010	3	5 m
DOL-0803-W10M	6022012	3	10 m
DOL-0804-W02M	6009871	4	2 m
DOL-0804-W05M	6009873	4	5 m
DOL-0804-W10M	6010755	4	10 m



1) Minimum bend radius in dynamic use
R_{min} = 20 x cable diameter

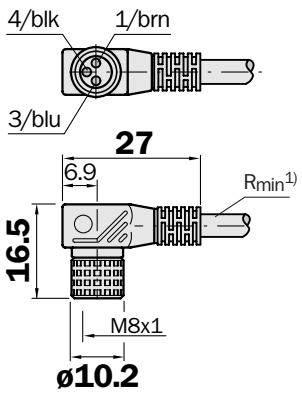
Female connector M8, 3-pin, straight
Cable diameter 4.5 mm, 3 x 0.25 mm², sheath PUR, halogen free

Type	Order no.	Cable length
DOL-0803-G05MB	7902080	5 m



Female connector M8, 3-pin, angled
Cable diameter 4.5 mm, 3 x 0.25 mm², sheath PUR, halogen free

Type	Order no.	Cable length
DOL-0803-W05MB	7902081	5 m



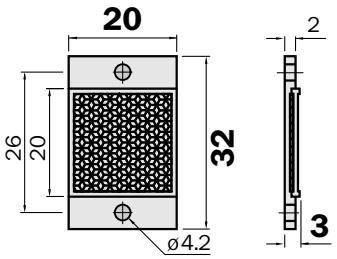
Dimensional drawings and order information

Reflectors

Plastic design for temperatures up to 65 °C

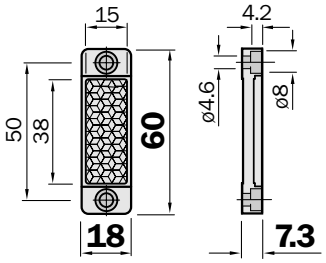
Micro triple reflector 20 x 20 mm

Type	Order no.
PL10F	5311210



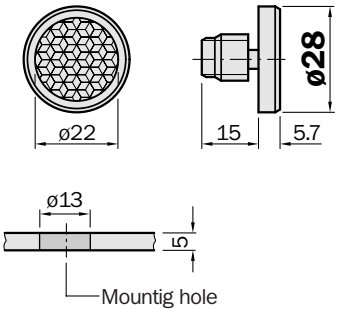
Reflector 20 x 40 mm

Type	Order no.
PL20A	1012719



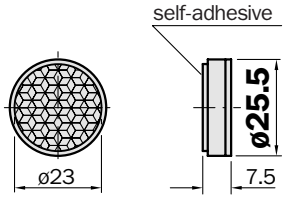
Reflector ∅ 22 mm, plug-in

Type	Order no.
PL22-1	1003546



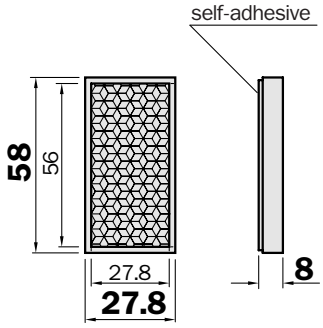
Reflector ∅ 22 mm, self-adhesive

Type	Order no.
PL22-2	1003621



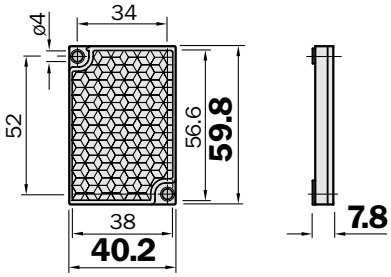
Reflector 30 x 50 mm

Type	Order no.
PL30A	1002314



Reflector 40 x 60 mm

Type	Order no.
PL40A	1012720



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