


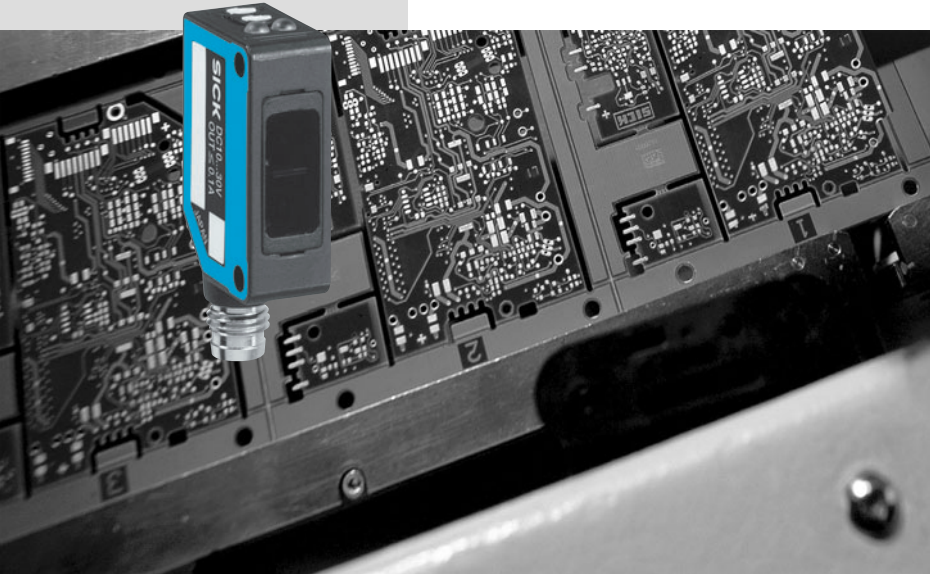


W100L: Laser Sensor in Mini-Format

	Photoelectric proximity switch energ.
	Photoelectric reflex switch
	Through-beam photoelectric switch



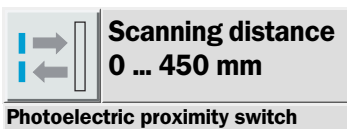
Where applications demand it, the sensor can be adapted for light or dark switching by the use of a rotary switch.

The W100L photoelectric switch series comprises:

- Photoelectric proximity switch WT (energetic) with up to 450 mm scanning distance.
- Photoelectric reflex switch WL with up to 12 m scanning range.
- Through-beam photoelectric switch WS/WE with up to 35 m scanning range.

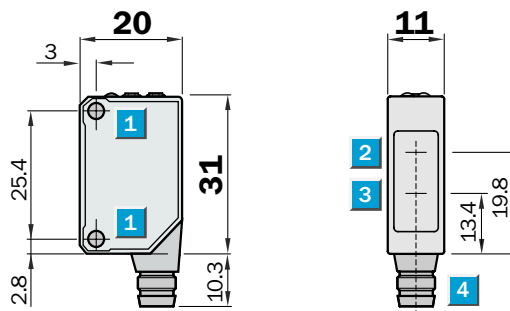
The W100L photoelectric switch series offers laser sensors in a miniature housing. In upgrading the successful W100 series with laser technology, an even wider spectrum of applications can be economically implemented. The small laser light spot and the high switching frequency enable the detection of small objects in high-speed processes. Apart from the benefit to the application, the small and easily visible laser light spot enables easy alignment during installation.

The compact housing creates new applications for laser photoelectric switches where mounting space is at a premium and thus complements the development trend towards ever more compact machines.

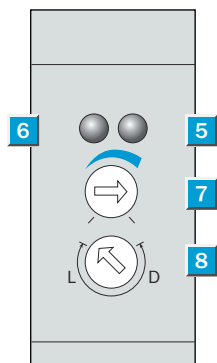


- Laser sensor in mini-format
- Easy alignment by
Class 2 red light laser
- Switching frequency 2000 Hz

Dimensional drawing



Adjustments possible

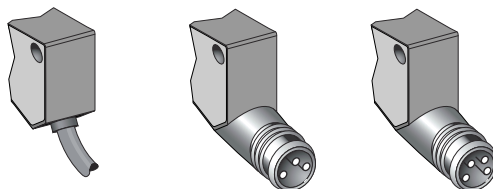


- 1 Mounting hole M3
- 2 Centre of optical axis, receiver
- 3 Centre of optical axis, sender
- 4 Connector
- 5 LED signal strength indicator orange: switching output active
- 6 LED signal strength indicator green: power on
- 7 Sensitivity adjustment (270°)
- 8 Light/dark rotary switch :
L = light-switching, D = dark-switching



Connection type

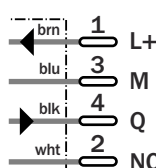
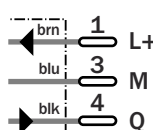
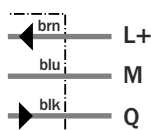
WT100L-E1141	WT100L-E2141	WT100L-E2241
WT100L-F1141	WT100L-F2141	WT100L-F2241



3 x 0.18 mm²

M8, 3-pin

M8, 4-pin



Accessories

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

Technical specifications		WT100L-	E1141	E2141	E2241	F1141	F2141	F2241				
Scanning distance typ. max.	0 ... 450 mm ¹⁾											
Operating distance	0 ... 400 mm ¹⁾											
Adjustment of operating distance	Potentiometer											
Light source, light type	Laser diode, Laser, 650 nm ²⁾											
Laser protection class	2 (IEC 60 825-1/C.D.R.H)											
Light spot diameter	2 mm at 400 mm distance											
Supply voltage V _s	DC 10 ... 30 V ³⁾											
Ripple	± 10 % ⁴⁾											
Power consumption	≤ 30 mA ⁵⁾											
Switching outputs	NPN, Q											
	PNP, Q											
Switching mode	Light-/dark-switching via rotary switch											
Output current I _{a,max}	≤ 100 mA											
Response time	< 0.25 ms ⁶⁾											
Switching frequency	2,000 Hz ⁷⁾											
Connection type	Cable, PVC, 2 m ⁸⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-10 °C ... +50 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Ca. 50 g											
	Ca. 10 g											
Housing material	ABS, PMMA											
Included with delivery	Mounting bracket											

¹⁾ Object with 90 % remission (based on standard white to DIN 5033)

²⁾ Average service life 50,000 h

at T_a = +25 °C

³⁾ Limit values

⁴⁾ May not exceed or fall short of

V_s tolerances

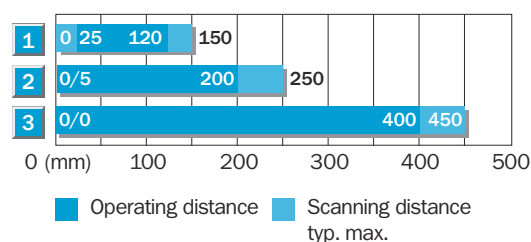
⁵⁾ Without load

⁶⁾ Signal transit time with resistive load

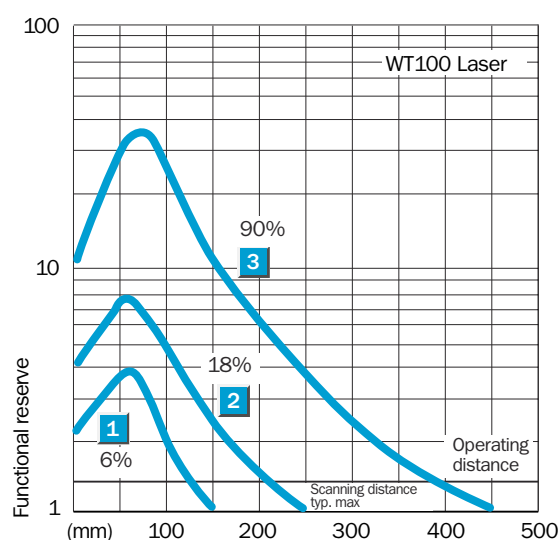
⁷⁾ With light/dark ratio 1:1

⁸⁾ Do not bend below 0 °C

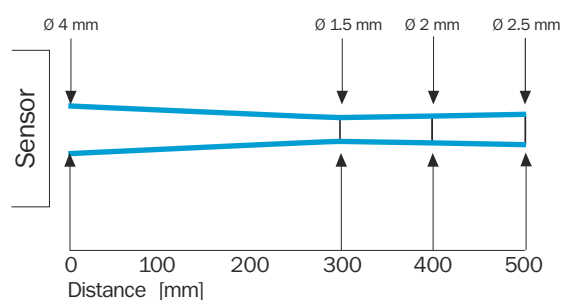
Scanning distance



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

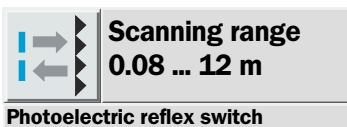


Light spot diameter



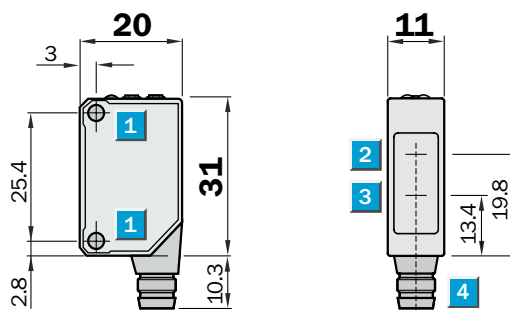
Ordering information

Type	Order No.
WT100L-E1141	6 030 705
WT100L-E2141	6 030 706
WT100L-E2241	6 030 707
WT100L-F1141	6 030 702
WT100L-F2141	6 030 703
WT100L-F2241	6 030 704

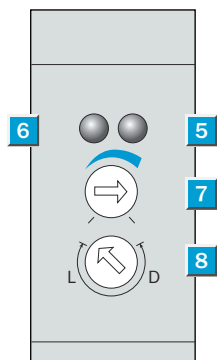


- Laser sensor in mini-format
- Easy alignment by Class 2 red light laser
- Switching frequency 2000 Hz
- Polarisation filter for secure detection of reflective objects

Dimensional drawing



Adjustments possible

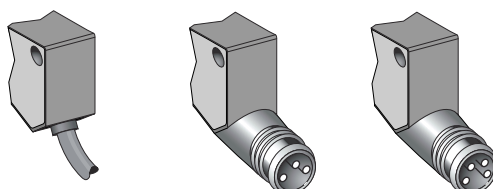


- 1 Mounting hole M3
- 2 Centre of optical axis, receiver
- 3 Centre of optical axis, sender
- 4 Connector
- 5 LED signal strength indicator orange: switching output active
- 6 LED signal strength indicator green: power on
- 7 Sensitivity adjustment (270°)
- 8 Light/dark rotary switch :
L = light-switching, D = dark-switching



Connection type

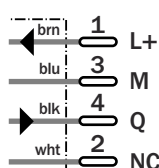
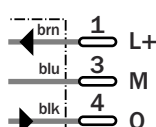
WL100L-E1131	WL100L-E2131	WL100L-E2231
WL100L-F1131	WL100L-F2131	WL100L-F2231



3 x 0.18 mm²

M8, 3-pin

M8, 4-pin



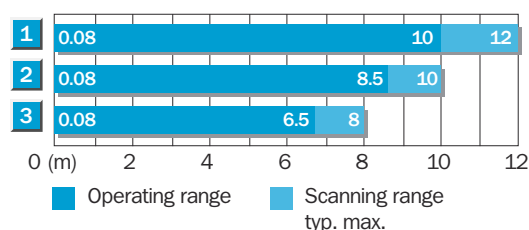
Accessories

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

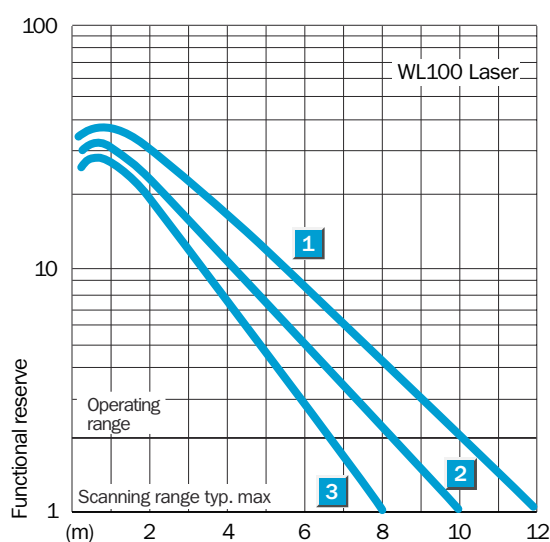
Technical specifications		WL100L-	E1131	E2131	E2231	F1131	F2131	F2231				
Scanning range typ. max.	0.08 ... 12 m											
Scanning range, recommended	0.08 ... 10 m											
Relating to	Reflector P250 F											
Sensitivity adjustment	Potentiometer											
Light source, light type	Laser diode, Laser, 650 nm ¹⁾											
Laser protection class	2 (IEC 60 825-1/C.D.R.H)											
Light spot diameter	12 mm at 10 m distance											
Supply voltage V _s	DC 10 ... 30 V ²⁾											
Ripple	± 10 % ³⁾											
Power consumption	≤ 30 mA ⁴⁾											
Switching outputs	NPN, Q											
	PNP, Q											
Switching mode	Light-/dark-switching via rotary switch											
Output current I _a max	≤ 100 mA											
Response time	< 0.25 ms ⁵⁾											
Switching frequency	2,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-10 °C ... +50 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Ca. 50 g											
	Ca. 10 g											
Housing material	ABS, PMMA											
Included with delivery	Reflector P250F + mounting brackets											

¹⁾ Average service life 50,000 h at T_a = +25 °C
²⁾ Limit values
³⁾ May not exceed or fall short of
⁴⁾ Without load
⁵⁾ V_s tolerances
⁶⁾ Without load
⁷⁾ Signal transit time with resistive load
⁸⁾ With light/dark ratio 1:1
⁹⁾ Do not bend below 0 °C

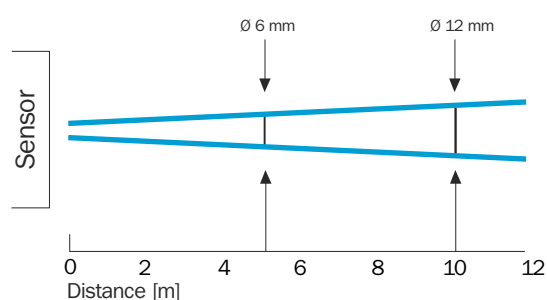
Scanning range and functional reserve



Reflector type	Operating range
1 P250F	0.08 ... 10 m
2 PL20F	0.08 ... 8.5 m
3 PL10F	0.08 ... 6.5 m



Light spot diameter



Ordering information

Type	Order No.
WL100L-E1131	6 030 711
WL100L-E2131	6 030 712
WL100L-E2231	6 030 713
WL100L-F1131	6 030 708
WL100L-F2131	6 030 709
WL100L-F2231	6 030 710

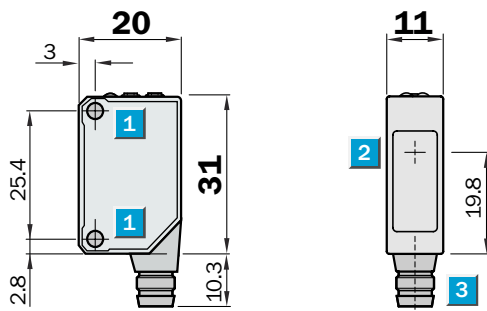


Scanning range
0 ... 35 m

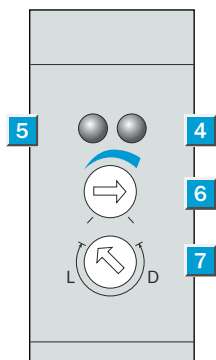
Through-beam photoelectric switch

- Laser sensor in mini-format
- High degree of eye protection by Class 1 red light laser
- Switching frequency 2000 Hz

Dimensional drawing



Adjustments possible

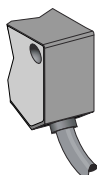


- 1 Mounting hole M3
- 2 Centre of optical axis
- 3 Connector
- 4 LED signal strength indicator orange: switching output active
- 5 LED signal strength indicator green: power on
- 6 Sensitivity adjustment (270 °)
- 7 Light/dark rotary switch:
L = light-switching, D = dark-switching

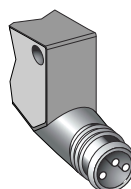


Connection type

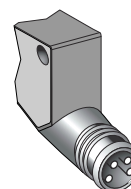
WS/WE100L-E1131
WS/WE100L-F1131



WS/WE100L-E2131
WS/WE100L-F2131

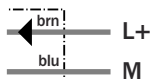


WS/WE100L-E2231
WS/WE100L-F2231

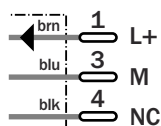


Sender

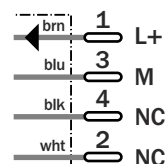
2 x 0.18 mm²



M8, 3-pin

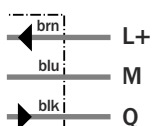


M8, 4-pin

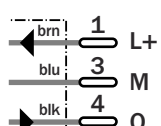


Receiver

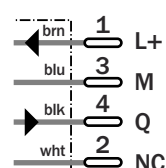
3 x 0.18 mm²



M8, 3-pin



M8, 4-pin



Accessories

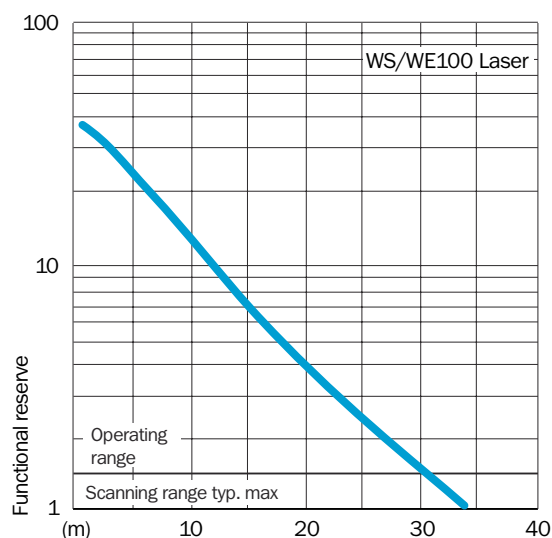
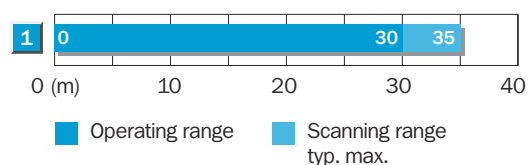
- Connector, M8, 3-pin
- Connector, M8, 4-pin
- Mounting systems



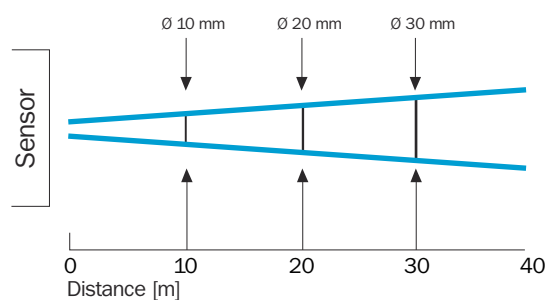
Technical specifications		WS/WE100L-	E1131	E2131	E2231	F1131	F2131	F2231				
Scanning range typ. max.	0 ... 35 m											
Scanning range, recommended	0 ... 30 m											
Sensitivity adjustment	Potentiometer											
Light source, light type	Laser diode, Laser, 650 nm ¹⁾											
Laser protection class	1 (EN 60 825-1)											
Light spot diameter	30 mm at 30 m distance											
Supply voltage V _s	DC 10 ... 30 V ²⁾											
Ripple	± 10 % ³⁾											
Power consumption	≤ 30 mA ⁴⁾											
Switching outputs	NPN, Q											
	PNP, Q											
Switching mode	Light-/dark-switching via rotary switch											
Output current I _{a,max}	≤ 100 mA											
Response time	< 0.25 ms ⁵⁾											
Switching frequency	2,000 Hz ⁶⁾											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 3-pin											
	Connector, M8, 4-pin											
Circuit protection	V _s connections reverse-polarity protected / In-/outputs short-circuit protected / Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 65											
Ambient temperature operation	-10 °C ... +50 °C											
Ambient temperature storage	-40 °C ... +70 °C											
Weight	Ca. 50 g											
	Ca. 10 g											
Housing material	ABS, PMMA											
Included with delivery	Mounting bracket											

¹⁾ Average service life 50,000 h at T_a = +25 °C
²⁾ Limit values
³⁾ May not exceed or fall short of
⁴⁾ Without load
⁵⁾ V_s tolerances
⁶⁾ With light/dark ratio 1:1
⁷⁾ Do not bend below 0 °C

Scanning range and functional reserve



Light spot diameter



Ordering information

Type	Order No.
WS/WE100L-E1131	6 030 717
WS/WE100L-E2131	6 030 718
WS/WE100L-E2231	6 030 719
WS/WE100L-F1131	6 030 714
WS/WE100L-F2131	6 030 715
WS/WE100L-F2231	6 030 716

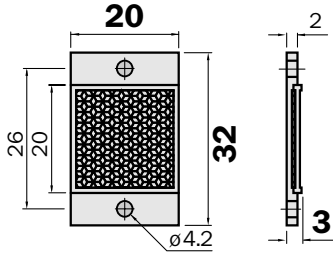
Dimensional drawings and order information

Plastic design for temperatures up to 65 °C

Reflector 20 x 20 mm²

Micro triple, 2 hole mounting

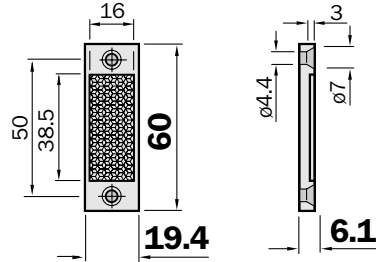
Type	Part no.
PL10F	5311210



Reflector 20 x 40 mm²

Micro triple, 2 hole mounting

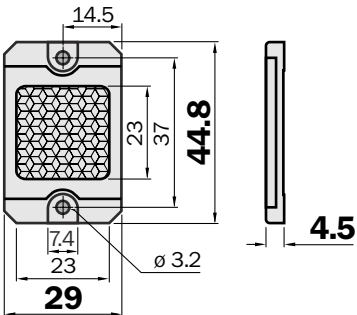
Type	Part no.
PL20F	5308844



Reflector 23 x 23 mm²

Micro triple, 2 hole mounting

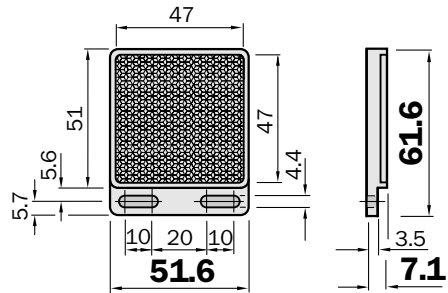
Type	Part no.
PL41F	5315128



Reflector 47 x 47 mm²

Micro triple, 2 hole mounting

Type	Part no.
P250F	5308843



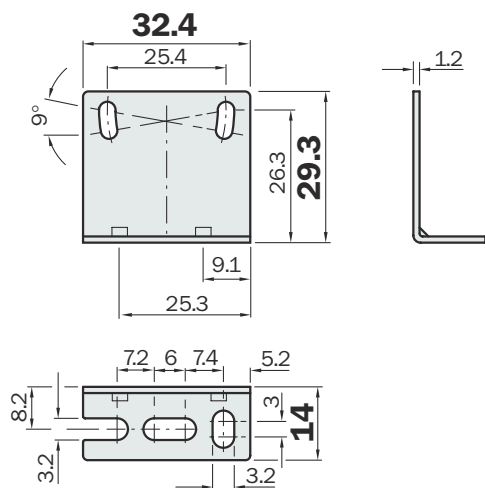
Dimensional drawings and order information

Mounting brackets

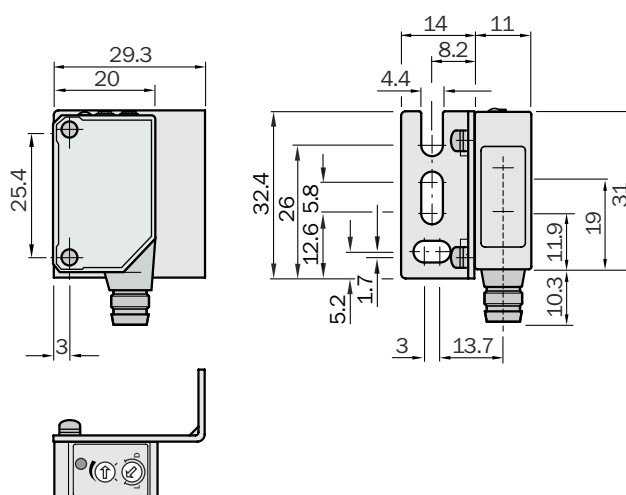
Mounting bracket, horizontal for W100L *)

Type	Part no.
BEF-W100-A	5311520

Mounting



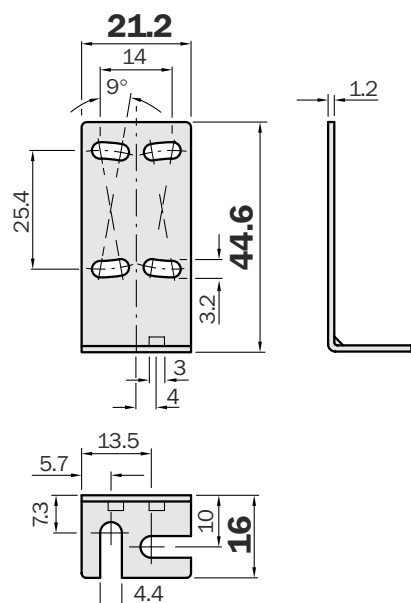
*) Included with delivery W100L



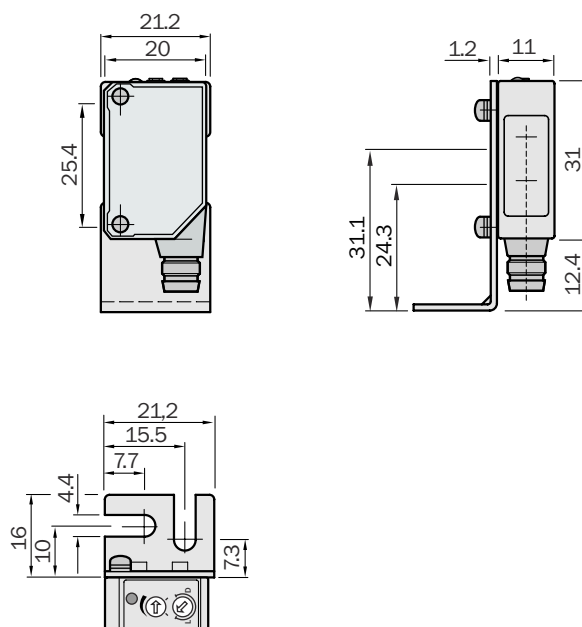
Mounting bracket, vertical for W100L **)

Type	Part no.
BEF-W100-B	5311521

Mounting



** Optional. Please order separately



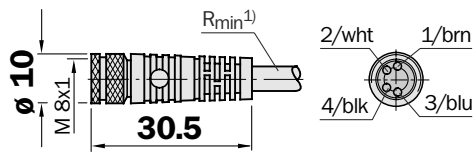
Dimensional drawings and order information

SENSICK screw-in system M8, 3- or 4-pin, enclosure rating IP 67

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

3 x 0.34 mm² or 4 x 0.25 mm², sheath PVC

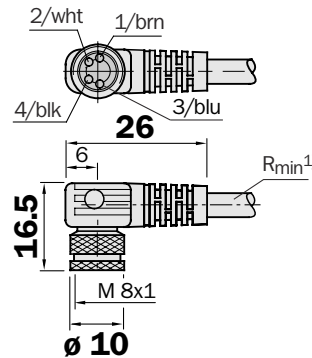
Type	Part no.	Contacts	Cable length
DOL-0803-G02M	6010785	3	2 m
DOL-0803-G05M	6022009	3	5 m
DOL-0803-G10M	6022011	3	10 m
DOL-0804-G02M	6009870	4	2 m
DOL-0804-G05M	6009872	4	5 m
DOL-0804-G10M	6010754	4	10 m



Female connector M8, 3- or 4-pin, right angle

3 x 0.34 mm² or 4 x 0.25 mm², sheath PVC

Type	Part 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



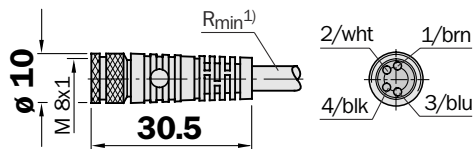
¹⁾ Minimum bend radius in dynamic use
 $R_{min} = 20 \times \text{cable diameter}$

SENSICK screw-in system M8, 3- or 4-pin, enclosure rating IP 67

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

3/4 x 0.34 mm², sheath PUR halogen free

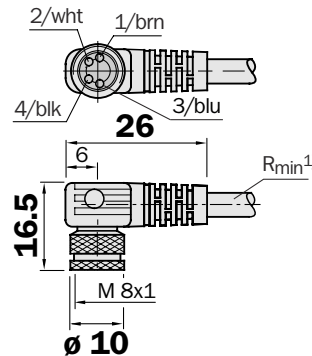
Type	Part no.	Contacts	Cable length
DOL-0803-G02MC	6025888	3	2 m
DOL-0803-G05MC	6025889	3	5 m
DOL-0803-G10MC	6025890	3	10 m
DOL-0804-G02MC	6025894	4	2 m
DOL-0804-G05MC	6025895	4	5 m
DOL-0804-G10MC	6025896	4	10 m



Female connector M8, 3- or 4-pin, right angle

3/4 x 0.34 mm², sheath PUR halogen free

Type	Part no.	Contacts	Cable length
DOL-0803-W02MC	6025891	3	2 m
DOL-0803-W05MC	6025892	3	5 m
DOL-0803-W10MC	6025893	3	10 m
DOL-0804-W02MC	6025897	4	2 m
DOL-0804-W05MC	6025898	4	5 m
DOL-0804-W10MC	6025899	4	10 m



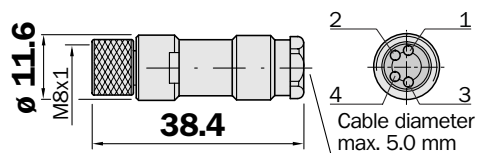
¹⁾ Minimum bend radius in dynamic use
 $R_{min} = 20 \times \text{cable diameter}$

Dimensional drawings and order information

SENSICK screw-in system M8, 3- or 4-pin, enclosure rating IP 67

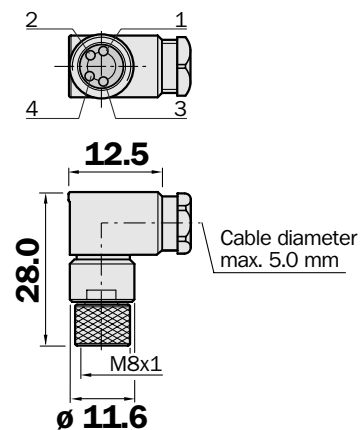
Female connector M8, 3- or 4-pin, straight

Type	Part no.	Contacts
DOS-0803-G	7902077	3
DOS-0804-G	6009974	4



Female connector M8, 3- or 4-pin, right angle

Type	Part no.	Contacts
DOS-0803-W	7902078	3
DOS-0804-W	6009975	4



Round connectors, extension cable PVC, female connector M8 (straight), male connector M12 (straight)

Type	Part no.	Contacts Female connector	Contacts Male connector	Cable length [m]
DSL-8203-G0M6	6022570	3	3	0.6 m
DSL-8203-G02M	6022572	3	3	2 m
DSL-8204-G0M6	6022571	4	4	0.6 m
DSL-8204-G02M	6022573	4	4	2 m

