

W 23: Economical and High Performance




and background suppression as well as the WL 23 photoelectric reflex switch. The range of the WL 23 is 6 m and that of the WT 23 photoelectric reflex switch between 1,000 and 2,000 mm. Long-life infrared transmitter diodes and 4-pin M-12 plugs are standard in all W 23 sensors, which also have non-interchangeable connections, short-circuit protected switching outputs and interference pulse suppression.

Conventional objects in stationary conveyor engineering are pallets, lattice baskets, cardboard boxes and plastic containers, but also intermediate and final products. Economical sensors are required here, which detect and count reliably regardless of the ambient conditions. The W 23 photoelectric switch series fulfills these requirements of the market for standard sensors both from a technological and an economical standpoint. You have the choice of the WT 23 photoelectric proximity switch in an energetic model or with adjustable scanning range

Typical uses include stationary conveyor engineering, e.g., in automated storage systems, picking centers and packaging facilities. But the W 23 is the first choice in other applications in the automobile industry or in production engineering too.

	Photoelectric proximity switch BGS
	Photoelectric proximity switch energetic
	Photoelectric reflex switch

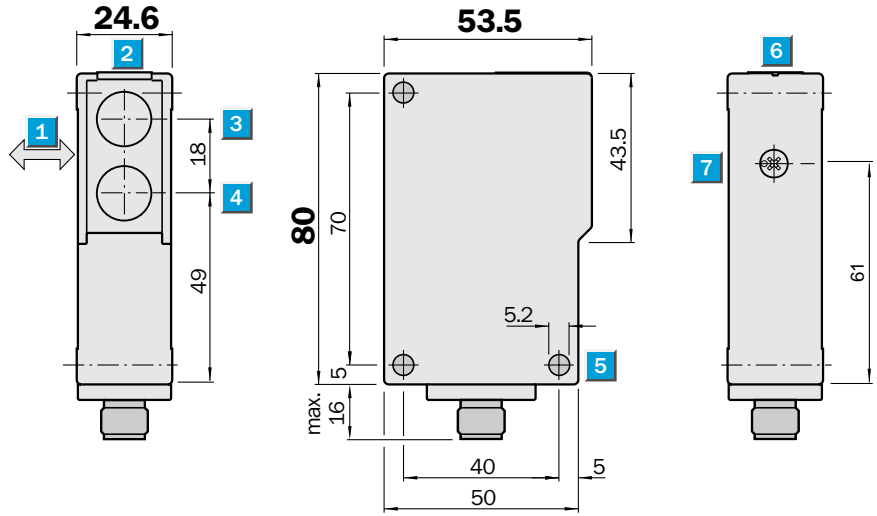


	Scanning distance 30 ... 1000 mm
Photoelectric proximity switch	

- Infrared light
- Background suppression, adjustable
- Reasonable sensor

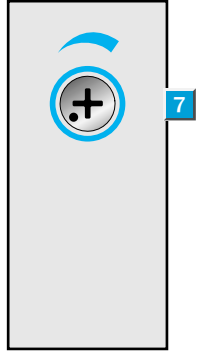


Dimension illustration



Setting options

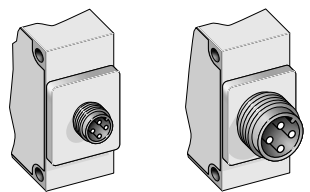
- WT 23-F 420
- WT 23-F 421



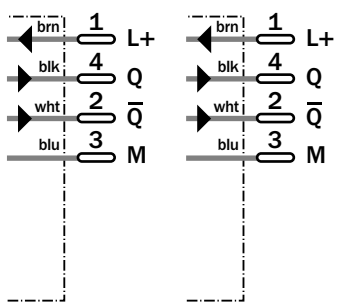
- 1 Targed standard direction
- 2 Status indicator
- 3 Center of optical axis – sender
- 4 Center of optical axis – receiver
- 5 Mountig holes Ø 5.2 mm
- 6 Alignment sight
- 7 Sensivity control

Connection type

- WT 23-F 420
- WT 23-F 421



- 4 pin, M 12
- 4 pin, M 18



Accessories
Cable receptacles
Mounting brackets



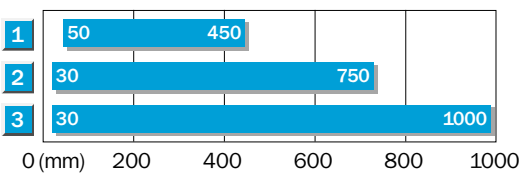
Technical data		WT 23-	F 420	F 421								
Scanning distance	30 ... 1000 mm, adjustable											
Light source ⁴⁾	LED, infrared light											
Light spot diameter	30 mm at distance of 800 mm											
Supply voltage V_s	12 ... 24 V DC ²⁾											
Ripple ³⁾	$\leq 5 V_{pp}$											
Current consumption ⁴⁾	≤ 30 mA											
Switching outputs	PNP, Q and \bar{Q}											
Output current I_A max.	100 mA											
Response time ⁵⁾ /Switching frequ. max. ⁶⁾	2.5 ms; 200/s											
Connection type	M 12 plug, 4 pin											
	M 18 plug, 4 pin											
VDE protection class ⁷⁾	<input type="checkbox"/>											
Circuit protection ⁸⁾	A, B, C											
Enclosure rating	IP 65											
Ambient temperature	Operation -25 °C ... +60 °C											
	Storage -40 °C ... +70 °C											
Weight	Approx. 120 g											
Housing material	ABS											

¹⁾ Average service life 100,000 h at $T_U = +25$ °C
²⁾ Limit values
³⁾ Must be within V_s tolerances

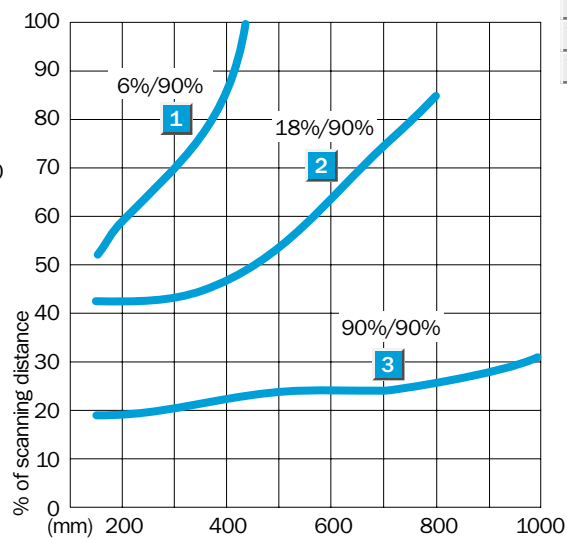
⁴⁾ Without load
⁵⁾ With resistive load
⁶⁾ With light/dark ratio 1:1
⁷⁾ Withstand voltage 50 V DC

⁸⁾ A = V_s -connections reverse-polarity protected
 B = Output Q and \bar{Q} short-circuit protected
 C = Interference pulse suppression

Scanning distance




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



Order information

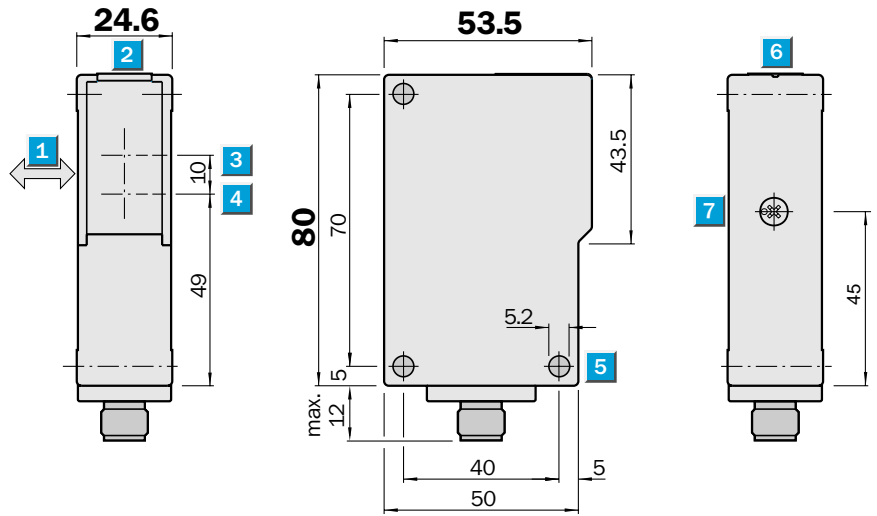
Type	Order no.
WT 23-F 420	1 016 667
WT 23-F 421	1 016 666


Scanning distance
300 ... 2000 mm
 Photoelectric proximity switch

- Infrared light
- Energetic proximity switch, adjustable
- Reasonable sensor

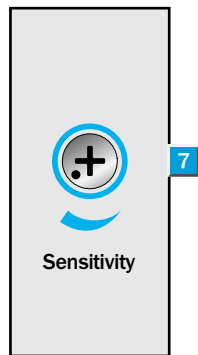


Dimension illustration



Setting options

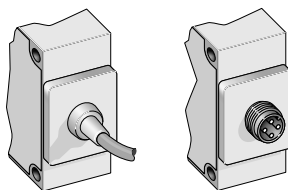
- WT 23-F 410
- WT 23-S 112



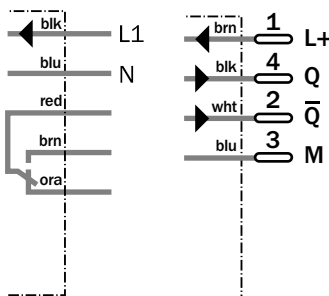
- 1 Targed standard direction
- 2 Status indicator
- 3 Center of optical axis – sender
- 4 Center of optical axis – receiver
- 5 Mountig holes Ø 5.2 mm
- 6 Alignment sight
- 7 Sensitivity control

Connection type

- WT 23-S 112
- WT 23-F 410



- 5 x 0.25 mm²
- 4 pin, M 12



Accessories

- Cable receptacles
- Mounting brackets



Technical data		WT 23-	F 410	S 112							
Scanning distance	300 ... 2000 mm, adjustable										
Light source ⁴⁾	LED, infrared light										
Light spot diameter	200 mm at distance of 2000 mm										
Supply voltage V_s	12 ... 24 V DC ²⁾										
	90 ... 265 V AC ²⁾										
Ripple ³⁾	$\leq 5 V_{pp}$										
Current consumption ⁴⁾	≤ 25 mA										
Power consumption	< 2 VA										
Switching outputs	PNP, Q and \bar{Q}										
	Relay, 1 x u ⁵⁾										
Output current I_A max.	100 mA										
Switching voltage max.	90 ... 265 V AC										
Switching current	2.5 A										
Switching capacity max.	150 VA										
Response time ⁶⁾ /Switching frequ. max. ⁷⁾	2.5 ms; 250/s										
	6 ms; 10/s										
Connection type	Cable ⁸⁾ , 2 m										
	M 12 plug, 4 pin										
VDE protection class ⁹⁾	<input type="checkbox"/>										
Circuit protection ¹⁰⁾	A, B, C										
Enclosure rating	IP 65										
Ambient temperature	Operation -25 °C ... +60 °C										
	Storage -40 °C ... +70 °C										
Weight	Approx. 100 g										
	Approx. 180 g										
Housing material	ABS										

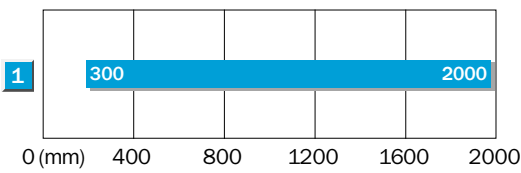
¹⁾ Average service life 100,000 h at $T_U = +25$ °C
²⁾ Limit values
³⁾ Must be within V_s tolerances

⁴⁾ Without load
⁵⁾ Intended as spark suppression suitable for inductive or capacitive load
⁶⁾ With resistive load

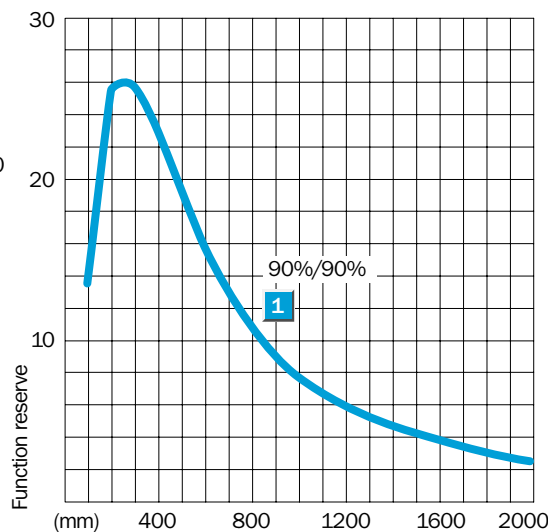
⁷⁾ With light/dark ratio 1:1
⁸⁾ Do not distort cable below 0 °C
⁹⁾ Withstand voltage 50 V DC, 250 V AC

¹⁰⁾ A = V_s -connections reverse-polarity protected
 B = Output Q and \bar{Q} short-circuit protected
 C = Interference pulse suppression

Scanning distance




1 Scanning distance on white, 90 % remission



Order information

Type	Order no.
WT 23-F 410	1 015 925
WT 23-S 112	1 016 249

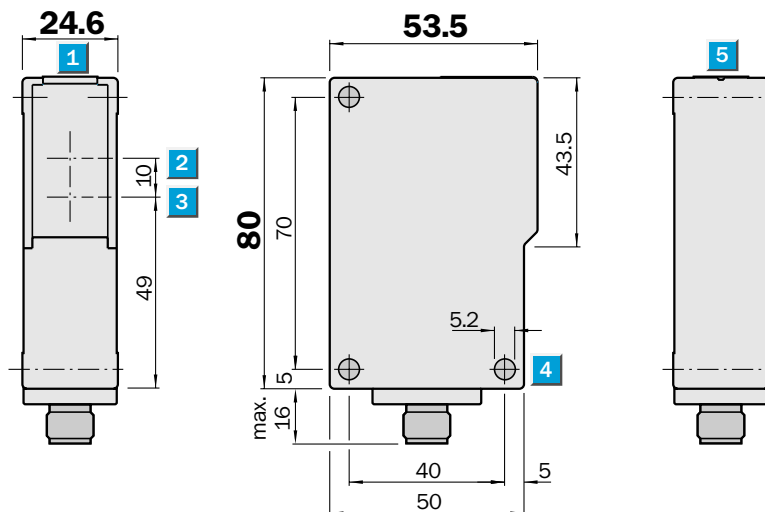

Scanning range
9 m

Photoelectric reflex switch

- Red light
- Reasonable sensor



Dimension illustration



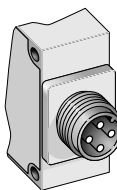
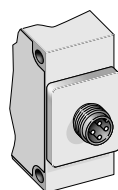
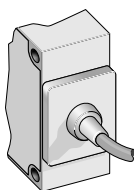
- 1 Status indicator
- 2 Center of optical axis – sender
- 3 Center of optical axis – receiver
- 4 Mounting holes Ø 5.2 mm
- 5 Alignment sight

Connection type

WL 23-F 132

WL 23-F 430

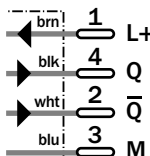
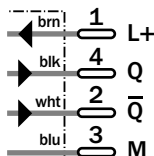
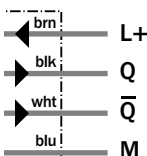
WL 23-F 431



4 x 0.25 mm²

4 pin, M 12

4 pin, M 18



Accessories

- Cable receptacles
- Mounting brackets
- Reflectors



Technical data	WL 23-	F 132	F 430	F 431							
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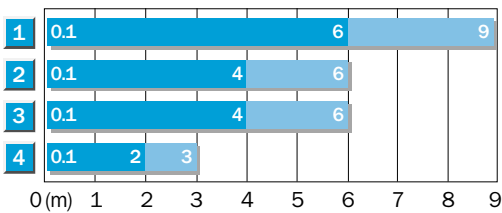
Scanning range , typ. max./on Reflector	9 m/PL 80 A			
Light source ⁴⁾	LED, visible red light			
Light spot diameter	Approx. 40 mm at distance of 2.70 m			
Supply voltage V_s	12 ... 24 V DC ($\pm 20\%$)			
Ripple ²⁾	$< 5 V_{pp}$			
Current consumption ³⁾	$< 25\text{ mA}$			
Switching outputs	PNP, Q and \bar{Q}			
Output current I_A max.	100 mA			
Response time ⁴⁾ /Switching frequ. max. ⁵⁾	2.5 ms; 200/s			
Connection type	Cable ⁶⁾ , 2 m			
	M 12 plug, 4 pin			
	M 18 plug, 4 pin			
VDE protection class ⁷⁾	<input type="checkbox"/>			
Circuit protection ⁸⁾	A, B, C			
Enclosure rating	IP 65			
Ambient temperature	Operation $-25\text{ }^\circ\text{C} \dots +60\text{ }^\circ\text{C}$			
	Storage $-40\text{ }^\circ\text{C} \dots +75\text{ }^\circ\text{C}$			
Weight	Approx. 100 g			
Polarising filter				
Housing material	ABS			

¹⁾ Average service life 100,000 h at $T_U = +25\text{ }^\circ\text{C}$
²⁾ Must be within V_s tolerances
³⁾ Without load

⁴⁾ With resistive load
⁵⁾ With light/dark ratio 1:1
⁶⁾ Do not distort cable below $0\text{ }^\circ\text{C}$
⁷⁾ Withstand voltage 50 V DC

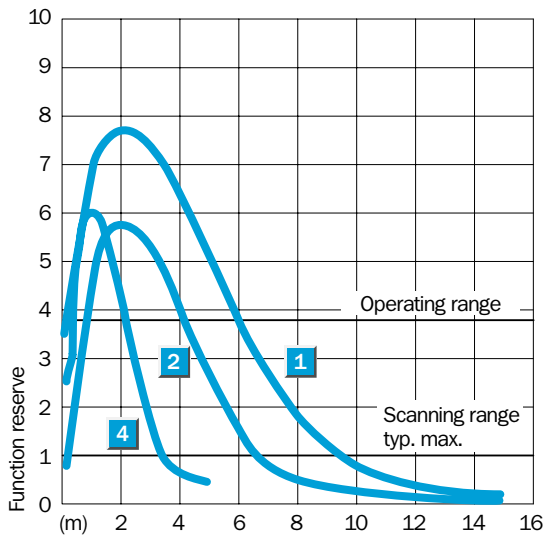
⁸⁾ A = V_s -connections reverse-polarity protected
 B = Output Q and \bar{Q} short-circuit protected
 C = Interference pulse suppression

Scanning range and function reserve




■ Operating range ■ Scanning range type. max.

Reflector type	Operating range
1 PL 80 A	0.1 – 6 m
2 C 110	0.1 – 4 m
3 PL 40 A	0.1 – 4 m
4 PL 20 A	0.1 – 2 m



Order information

Type	Order no.
WL 23-F 132	1 015 686
WL 23-F 430	1 015 684
WL 23-F 431	1 015 685

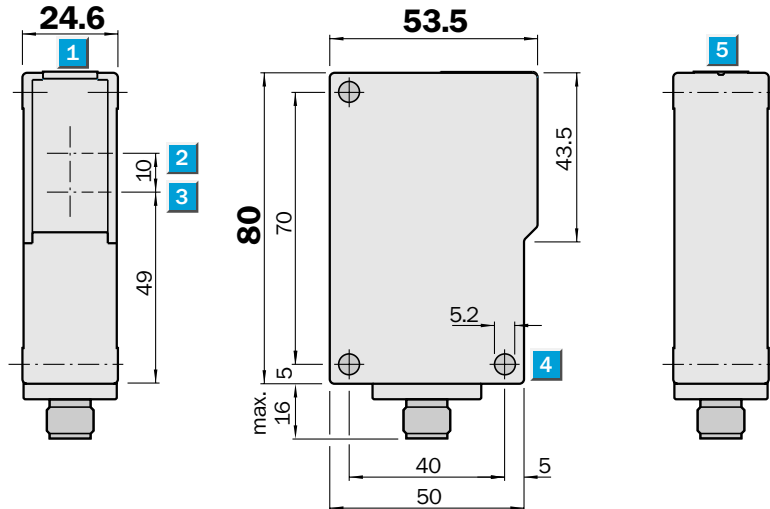

Scanning range
9 m

Photoelectric reflex switch

- Red light
- Reasonable sensor



Dimension illustration

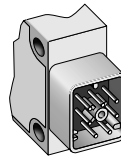
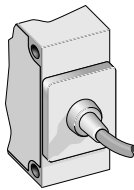


- 1 Status indicator
- 2 Center of optical axis – sender
- 3 Center of optical axis – receiver
- 4 Mounting holes \varnothing 5.2 mm
- 5 Alignment sight

Connection type

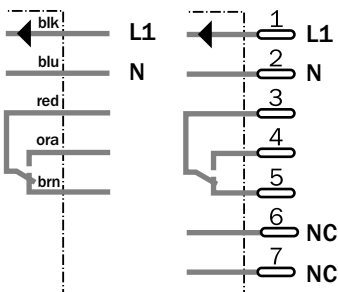
WL 23-S 132

WL 23-S 730



5 x 0.25 mm²

7 pin



Accessories

- Cable receptacles
- Mounting brackets
- Reflectors

Technical data		WL 23-	S 132	S 730								
Scanning range , max.typ./on Reflector	9 m/PL 80 A											
Light source ⁴⁾	LED, visible red light											
Light spot diameter	Approx. 40 mm at distance of 2.70 m											
Supply voltage V_s	90 ... 265 V AC											
Power consumption	< 2 VA											
Switching outputs	Relay, 1 x u, electrically isolated ²⁾											
Switching voltage max.	90 ... 265 V AC											
Switching current	2.5 A											
Switching capacity max.	150 VA											
Response time/Switching frequ. max. ³⁾	6 ms; 10/s											
Connection type	Cable ⁴⁾ , 2 m											
	Cubic plug, 7 pin											
VDE protection class ⁵⁾	<input type="checkbox"/>											
Circuit protection ⁶⁾	A, C											
Enclosure rating	IP 65											
Ambient temperature	Operation - 25 °C ... + 60 °C											
	Storage - 40 °C ... + 75 °C											
Weight	Approx. 100 g											
Polarising filter												
Housing material	ABS											

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

³⁾ With light/dark ratio 1:1

⁶⁾ A = V_s -connections reverse-polarity protected

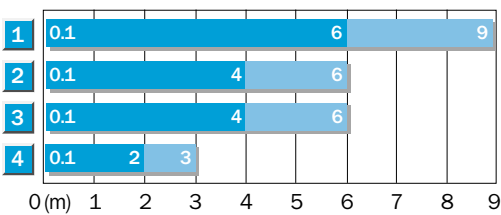
²⁾ Intendend as spark suppression suitable for inductive or capacitive load

⁴⁾ Do not distort cable below 0 °C

⁵⁾ Withstand voltage 250 V AC

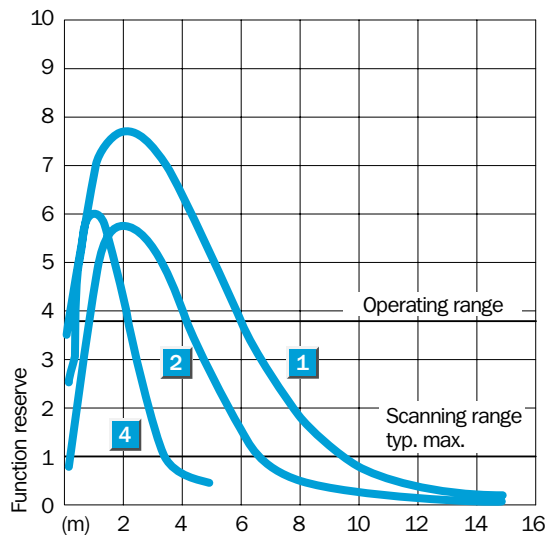
C = Interference pulse suppression

Scanning range and function reserve



■ Operating range ■ Scanning range typ. max.

Reflector type	Operating range
1 PL 80 A	0.1 – 6 m
2 C 110	0.1 – 4 m
3 PL 40 A	0.1 – 4 m
4 PL 20 A	0.1 – 2 m



Order information

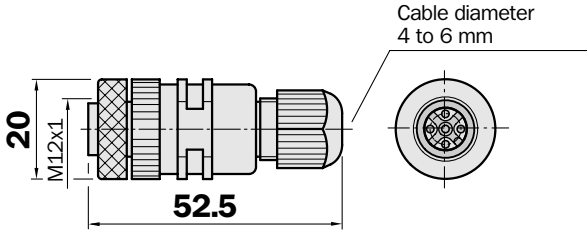
Type	Order no.
WL 23-S 132	1 015 687
WL 23-S 730	1 015 688

Dimension illustrations and ordering information

SENSICK circular screwing system M 12, 4 pin, enclosure rating IP 67

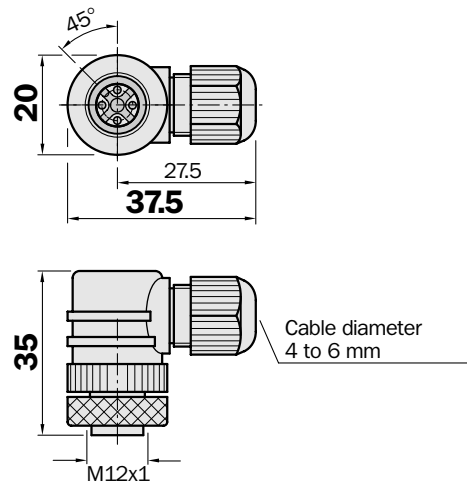
M 12 cable receptacles, 4 pin, straight

Type	Order no.	Pins
DOS-1204-G	6 007 302	4



M 12 cable receptacles, 4 pin, angled

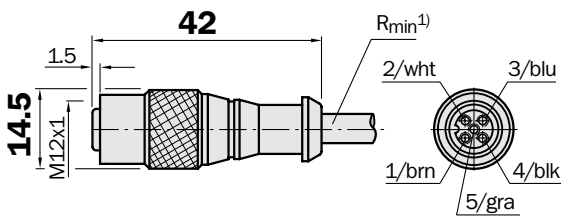
Type	Order no.	Pins
DOS-1204-W	6 007 303	4



M 12 cable receptacles, 4 pin, straight

Cable diameter 5 mm, 4 x 0.25 mm², PVC coating

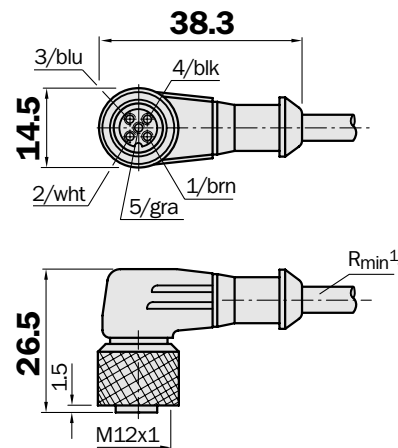
Type	Order no.	Pins	Cable length
DOL-1204-G02M	6 009 382	4	2 m
DOL-1204-G05M	6 009 866	4	5 m
DOL-1204-G10M	6 010 543	4	10 m
DOL-1204-G15M	6 010 753	4	15 m



M 12 cable receptacles, 4 pin, angled

Cable diameter 5 mm, 4 x 0.25 mm², PVC coating

Type	Order no.	Pins	Cable length
DOL-1204-W02M	6 009 383	4	2 m
DOL-1204-W05M	6 009 867	4	5 m
DOL-1204-W10M	6 010 541	4	10 m



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

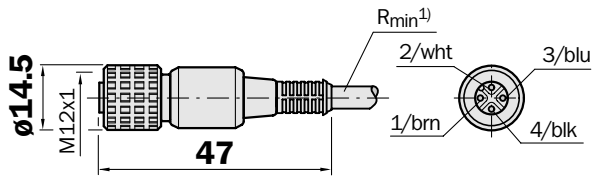
Dimension illustrations and ordering information

SENSICK circular screwing system M 12, 4 pin, enclosure rating IP 67

M 12 cable receptacles, 4 pin, straight

Cable diameter 4.5 mm, 4 x 0.34 mm², PUR coating

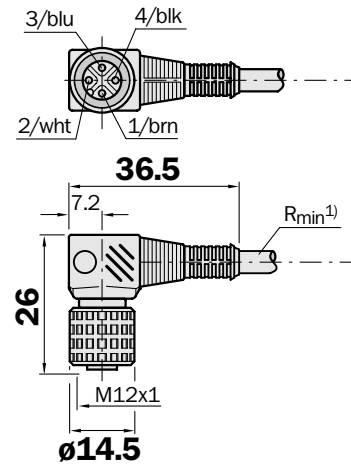
Type	Order no.	Cable length
DOL-1204-G05MB	7 902 084	5 m



M 12 cable receptacles, 4 pin, angled

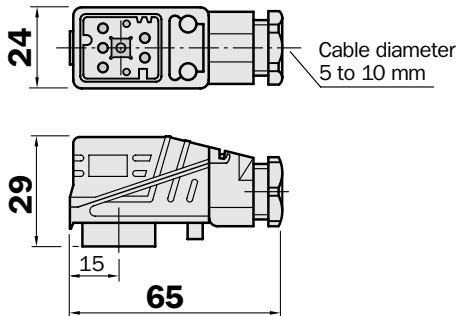
Cable diameter 4.5 mm, 4 x 0.34 mm², PUR coating

Type	Order no.	Cable length
DOL-1204-W05MB	7 902 085	5 m



Cable receptacles, 7 pin, AC/UC coding

Type	Order no.
DOS-2207-W	6 006 821

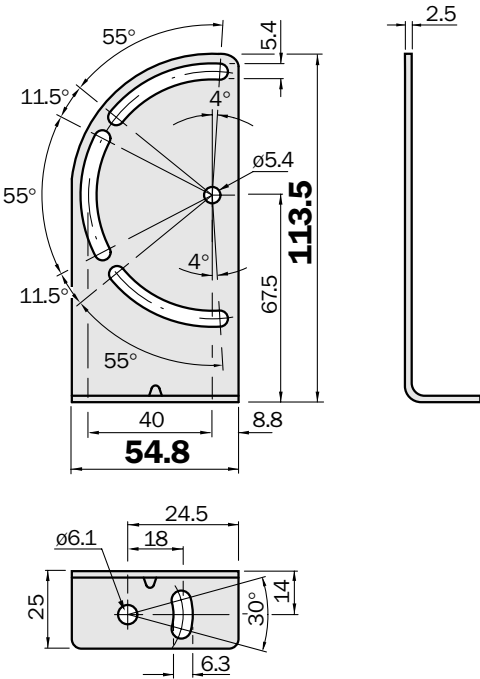


Dimension illustrations and ordering information

Mounting brackets

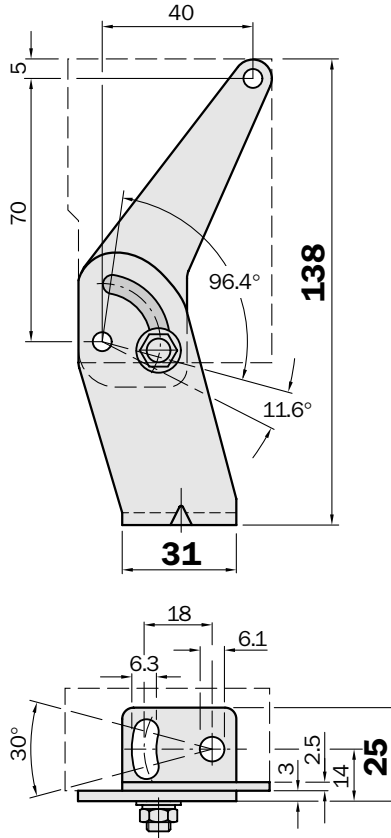
Mounting bracket

Type	Order no.
BEF-WN-W23	2 019 085



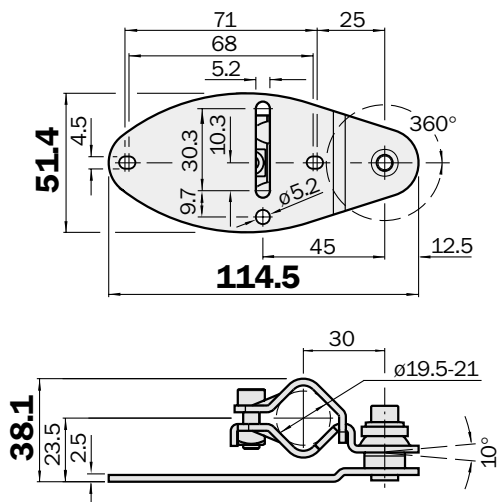
Mounting bracket

Type	Order no.
BEF-WN-W27	2 009 122



Universal holder (rod attachment)

Type	Order no.
	2 021 382

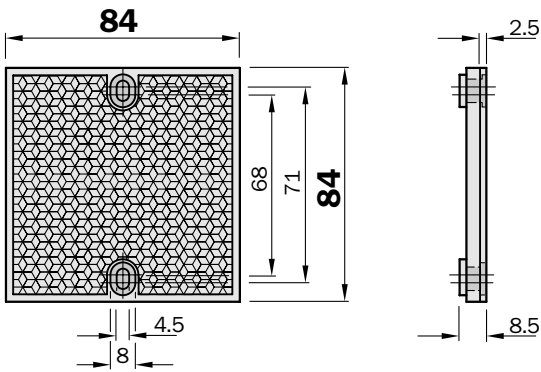


Dimension illustrations and ordering information

Plastic model for temperatures up to 65 °C

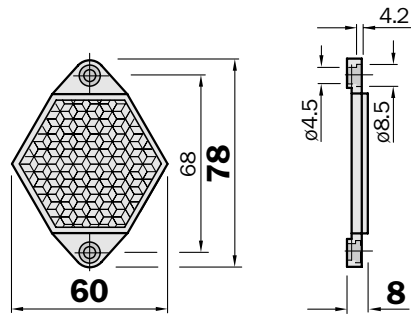
Reflector 80 x 80

Type	Order no.
PL 80 A	1 003 865



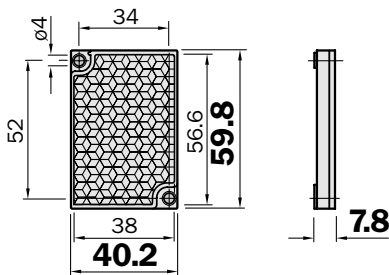
Reflector, hexagonal

Opening width 48 mm	
Type	Order no.
PL 50 A	1 000 132



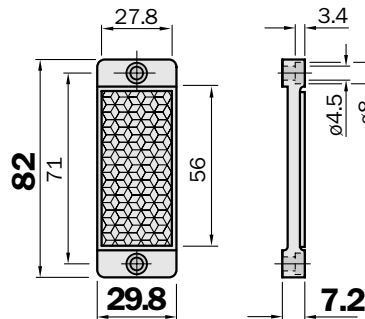
Reflector 40 x 60 mm

self-adhesive	
Type	Order no.
PL 40 A	1 012 720



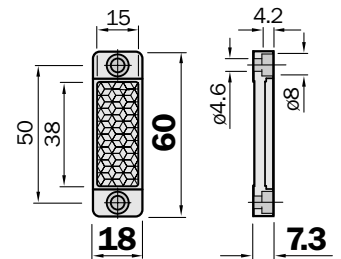
Reflector 30 x 50 mm

Type	Order no.
PL 30 A	1 002 314



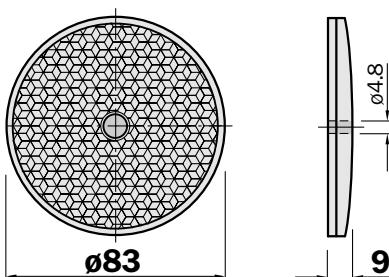
Reflector 20 x 40 mm

Type	Order no.
PL 20 A	1 012 719



Reflector, ø 83 mm, center hole mounting

Type	Order no.
C 110	5 304 549



Reflective tape

Type	Order no.	
REF-DG-K	4 019 634	Ready-made
REF-DG	5 304 334	Sheet 749 x 914 mm

