DATA SHEET

W 18-3: Incorporated application Know-how, expanded functionality, high level of equipment availability

	Photoelectric proximity switches, FGS
	Photoelectric reflex switches
	Through-beam photoelectric switches

In Automation Technology, customers demand optical sensors, which can reliably solve complex applications, which are capable of operating at high processing speeds and which provide a high level of in-service availability under arduous operating conditions. To meet these demands the W 18-3 Series is recommended. The W 18-3 Series is the result of a vast amount of experience and many years of knowledge gathered from thousands of applications, from which the user can now benefit. Depending upon the task required, the most appropriate sensor can be selected from the W 18-3 Series:

With precision background suppression, the WT 18-3 Series is ideal for demanding applications. The scanning distance can be simply and quickly adjusted, either via conventional potentiometer or via double Teach buttons, with fine adjustment option. Scanners with red-light transmitters can be quickly and accurately aligned with the object to be sensed. Scanners with infrared light beams are particularly useful in arduous environmental conditions.

WL 18-3, using an auto-collimation optical principle, are designed to optically focus upon the object in a reliable manner and utilising a visually defined small red spot of light, simple and quick alignment is possible.

WS/WE 18-3 – ideal for applications where greater system reserve is required. Using an auto-collimation optical principle, designed to optically focus upon the object in a reliable manner and utilising a visually defined small red spot of light.

The main target industries for the W 18-3 Series are:

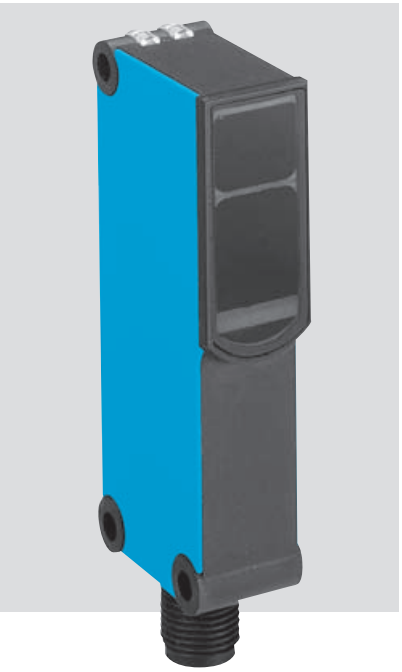
- Packaging industry,
- Food and Confectionery industry,
- Storage and Conveying,
- Wood Processing.

SICK

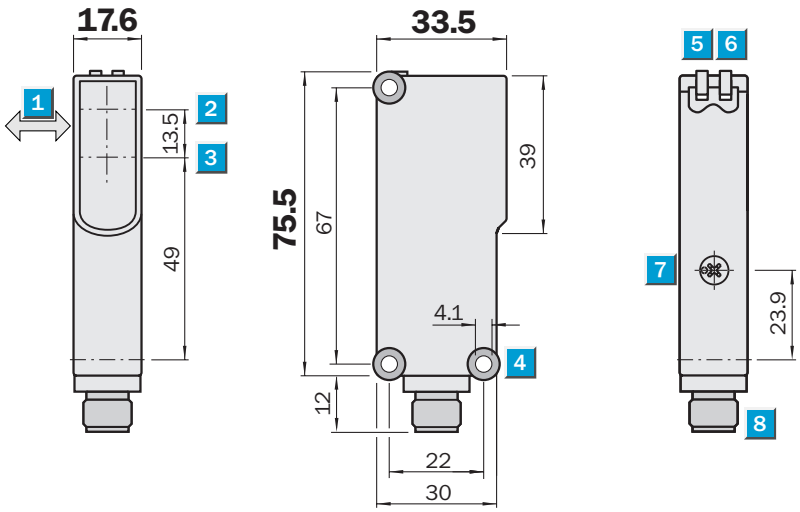
Scanning distance
50 … 600 mm

Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable via potentiometer
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature –40° C ... +60° C



Dimensional drawing



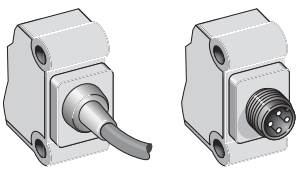
Adjustments possible

All types

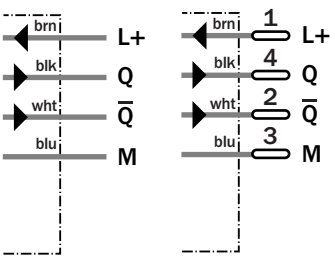
1 Standard direction of the material being scanned
2 Optical axis sender
3 Optical axis receiver
4 Mounting hole Ø 4.1 mm
5 LED indicator, yellow; status of received light beam
6 LED indicator, green; power on
7 Scanning distance adjustment, Poti 4 turn
8 Plug M12, 4-pin or 2 m cable

Connection types

WT18-3P130	WT18-3P430
WT18-3N130	WT18-3N430



4 x 0.25 mm²	4-pin, M12



Accessories

Connectors

Mounting systems

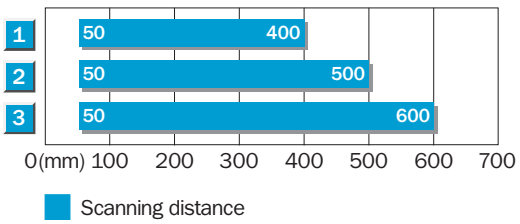
Technical data	WT18-3	P130	P430	N130	N430
Scanning distance, adjustable [1]	50 ... 600 mm, 90 % remission	■	■	■	■
Visible range [1]	10 ... 600 mm	■	■	■	■
Adjustment	Teach-in, via Poti, 4 turn	■	■	■	■
Light source [2], light type	LED, visible red light	■	■	■	■
Light spot diameter	15 mm at 300 mm	■	■	■	■
Supply voltage V_S	10 ... 30 V DC [3]	■	■	■	■
Residual ripple [4]	< 5 V_{PP}	■	■	■	■
Current consumption [5]	< 40 mA	■	■	■	■
Output current I_A max.	< 100 mA	■	■	■	■
Switching outputs	PNP, antivalent	■	■		
	NPN, antivalent			■	■
Response time [6]	< 700 µs	■	■	■	■
Switching frequency max. [7]	700/s	■	■	■	■
Connection types	Cable [8], 2 m, 4 wire	■		■	
	M12 plug, 4-pin		■		■
VDE protection class cable [9]	□	■	■	■	■
Circuit protection [10]	A, B, C	■	■	■	■
Enclosure rating	IP 67	■	■	■	■
Ambient temperature	Operation –40 °C ... +60 °C	■	■	■	■
	Storage –40 °C ... +75 °C	■	■	■	■
Weight	With cable, 2 m, approx. 120 g	■		■	
	With M12 plug, approx. 40 g		■		■
Housing material	ABS	■	■	■	■

1) Object with 90 % remission (according to standard white DIN 5033)
2) Average service life 100,000 h at T_A = +25 °C
3) Limit values
4) Must be within 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
9) Reference voltage 50 V DC
10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

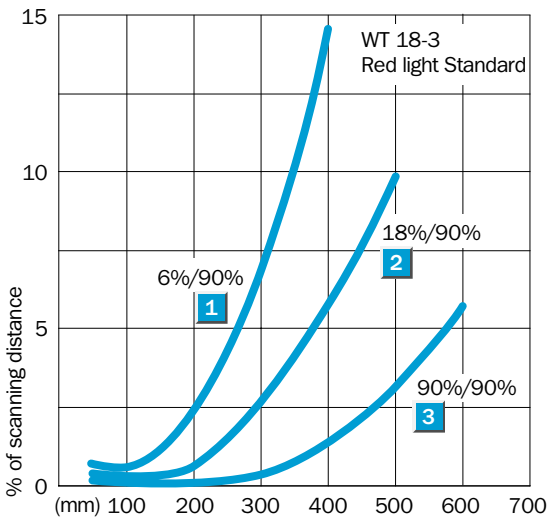
Adjustment via Poti

1. Position the object in the path of the beam.
2. By rotating the potentiometer to the right until the yellow LED illuminates continuously = object is positively detected.
3. If necessary, fine adjustments to the scanning distance can be made to suit the conditions of the application:
   minimal rotation of the potentiometer to the right = scanning distance will be increased,
   minimal rotation of the potentiometer to the left = scanning distance will be decreased.

Scanning distance



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



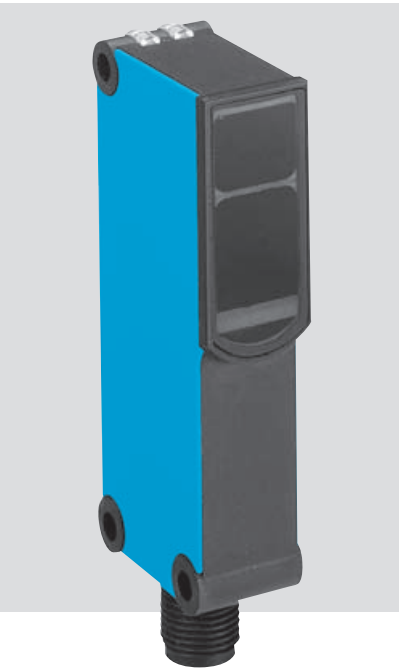
Order information

Type	Part no.
WT18-3P130	1 025 895
WT18-3P430	1 025 896
WT18-3N130	1 025 897
WT18-3N430	1 025 898

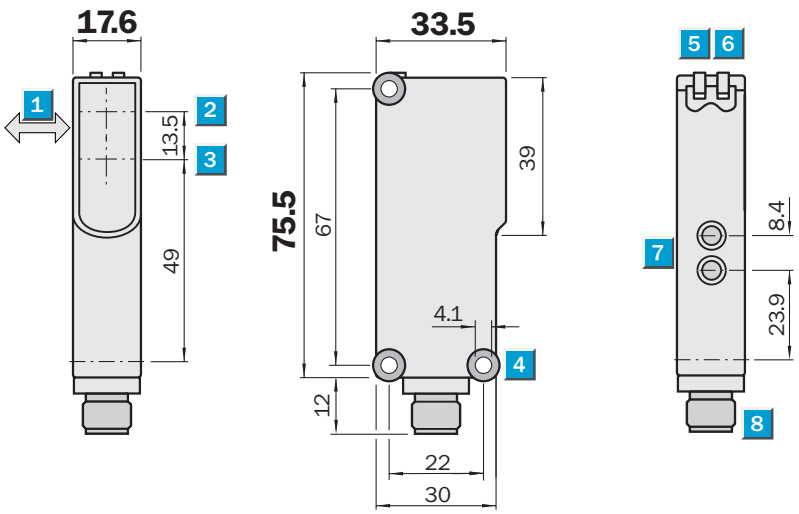
Scanning distance
50 … 600 mm

Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable by a Teach-in process using double Teach buttons
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature –40° C ... +60° C

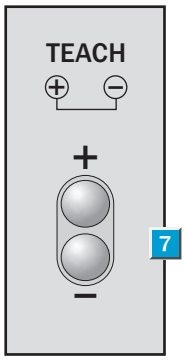


Dimensional drawing



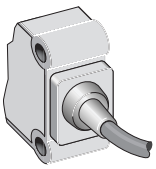
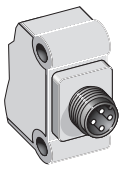
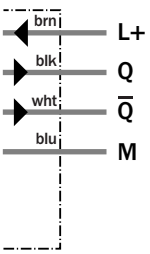
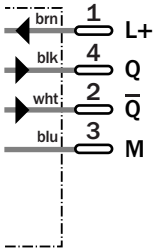
Adjustments possible

All types



1 Standard direction of the material being scanned
2 Optical axis sender
3 Optical axis receiver
4 Mounting hole Ø 4.1 mm
5 LED indicator, yellow; status of received light beam
6 LED indicator, green; power on
7 Scanning distance adjustment, double Teach button
8 Plug M12, 4-pin or 2 m cable

Connection types

WT18-3P131	WT18-3P431 WT18-3N431
	
4 x 0.25 mm²	4-pin, M12
	

Accessories

Connectors

Mounting systems

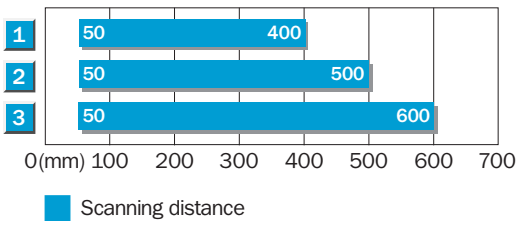
Technical data	WT18-3	P131	P431	N431
Scanning distance, adjustable [1]	50 ... 600 mm, 90 % Remission	■	■	■
Visible range [1]	10 ... 600 mm	■	■	■
Adjustment	Teach-in, via double teach button	■	■	■
Fine adjustment	Manuel via „+“ and „–“ button	■	■	■
Light source [2], light type	LED, visible red light	■	■	■
Light spot diameter	15 mm at 300 mm	■	■	■
Supply voltage V_S	10 ... 30 V DC [3]	■	■	■
Residual ripple [4]	< 5 V_{PP}	■	■	■
Current consumption [5]	< 40 mA	■	■	■
Output current I_A max.	< 100 mA	■	■	■
Switching outputs	PNP, antivalent	■	■	
	NPN, antivalent			■
Response time [6]	< 700 µs	■	■	■
Switching frequency max. [7]	700/s	■	■	■
Connection types	Cable [8], 2 m, 4 wire	■		
	M12 plug, 4-pin		■	■
VDE protection class cable [9]	□	■	■	■
Circuit protection [10]	A, B, C	■	■	■
Enclosure rating	IP 67	■	■	■
Ambient temperature	Operation –40 °C ... +60 °C	■	■	■
	Storage –40 °C ... +75 °C	■	■	■
Weight	With cable, 2 m, approx. 120 g	■		
	With M12 plug, approx. 40 g		■	■
Housing material	ABS	■	■	■

1) Object with 90 % remission (according to standard white DIN 5033)
2) Average service life 100,000 h at T_A = +25 °C
3) Limit values
4) Must be within 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
9) Reference voltage 50 V DC
10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

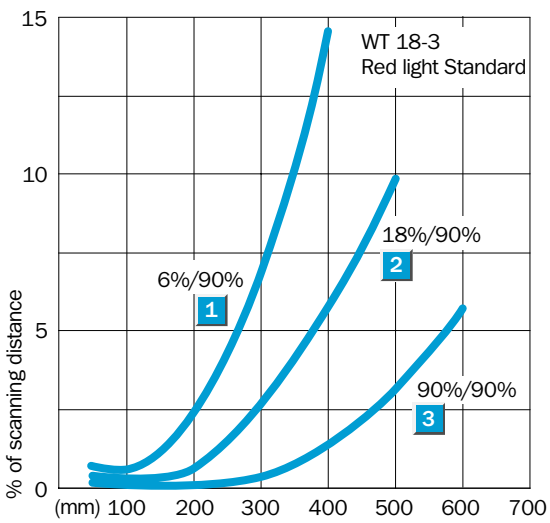
Teach-in procedure via the double Teach buttons

1. Position the object in the path of the beam.
2. Press both buttons simultaneously **(for approx. 2 seconds)** until the yellow LED flashes = object in focus.
   In the event of button activation of less than 2 seconds, the Teach command is not effective, therefore providing no protection against further unwanted manipulation.
3. Release buttons; yellow LED illuminates continuously = object is positively detected.
4. Fine adjustments can be made to the scanning distance, when required by the application:
   Pressing the “+” button **(approx. 0.5 sec)** = scanning distance will be increased.
   Pressing the “–” button **(approx. 0.5 sec)** = scanning distance will be decreased.
   In the event of button activation less than 0.5 sec, no change to the scanning distance is made.
   Upon activation of the button, the yellow LED flashes.
5. The Teach-in scanning distance is stored in the memory.

Scanning distance



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



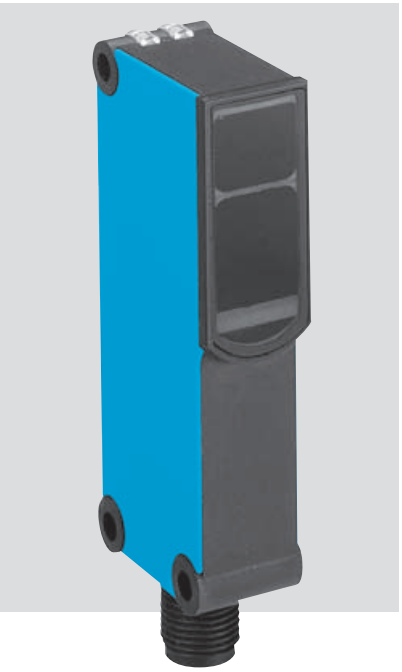
Order information

Type	Part no.
WT18-3P131	1 026 034
WT18-3P431	1 026 032
WT18-3N431	1 026 035

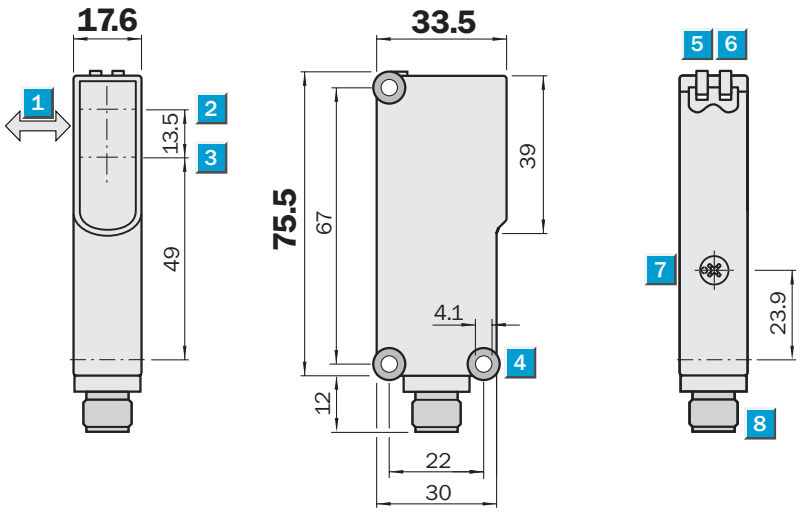
Scanning distance
50 ... 700 mm

Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable via potentiometer
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature –40° C ... +60° C



Dimensional drawing



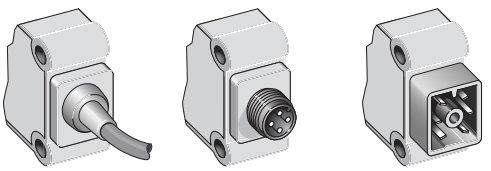
Adjustments possible

All types

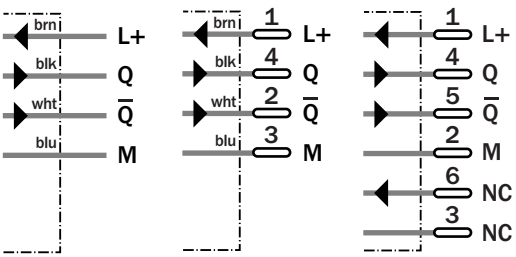
1 Standard direction of the material being scanned
2 Optical axis sender
3 Optical axis receiver
4 Mounting hole Ø 4.1 mm
5 LED indicator, yellow; status of received light beam
6 LED indicator, green; power on
7 Scanning distance adjustment, Poti 4 turn
8 Plug M12, 4-pin or 2 m cable or cubic plug, 6-pin

Connection types

WT18-3P110 WT18-3N110	WT18-3P410 WT18-3N410	WT18-3P610 WT18-3N610



4 x 0.25 mm²	4-pin, M12	6-pin



Accessories
Connectors
Mounting systems

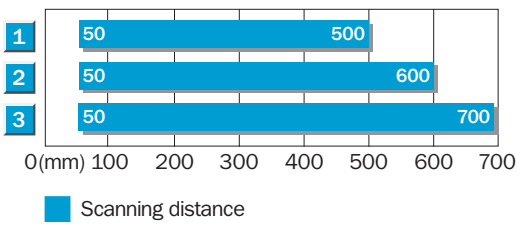
Technical data	WT18-3	P110	P410	P610	N110	N410	N610
Scanning distance, adjustable [1]	50 ... 700 mm, 90 % remission	■	■	■	■	■	■
Visible range [1]	10 ... 700 mm	■	■	■	■	■	■
Adjustment	Teach-in, via Poti, 4 turn	■	■	■	■	■	■
Light source [2], light type	LED, infrared light	■	■	■	■	■	■
Light spot diameter	20 mm at 400 mm	■	■	■	■	■	■
Supply voltage V_S	10 ... 30 V DC [3]	■	■	■	■	■	■
Residual ripple [4]	< 5 V_{SS}	■	■	■	■	■	■
Current consumption [5]	< 60 mA	■	■	■	■	■	■
Output current I_A max.	< 100 mA	■	■	■	■	■	■
Switching outputs	PNP, antivalent	■	■	■			
	NPN, antivalent				■	■	■
Response time [6]	< 700 µs	■	■	■	■	■	■
Switching frequency max. [7]	700/s	■	■	■	■	■	■
Connection types	Cable [8], 2 m, 4 wire	■			■		
	M12 plug, 4-pin		■			■	
	Cubic plug, 6-pin			■			■
VDE protection class cable [9]	□	■	■	■	■	■	■
Circuit protection [10]	A, B, C	■	■	■	■	■	■
Enclosure rating	IP 67	■	■	■	■	■	■
Ambient temperature	Operation –40 °C ... +60 °C	■	■	■	■	■	■
	Storage –40 °C ... +75 °C	■	■	■	■	■	■
Weight	With cable, 2 m, approx. 120 g	■			■		
	With M12 plug, approx. 40 g		■			■	
	With cubic plug, approx. 40 g			■			■
Housing material	ABS	■	■	■	■	■	■

1) Object with 90 % remission (according to standard white DIN 5033)
2) Average service life 100,000 h at T_A = +25 °C
3) Limit values
4) Must be within 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
9) Reference voltage 50 V DC
10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

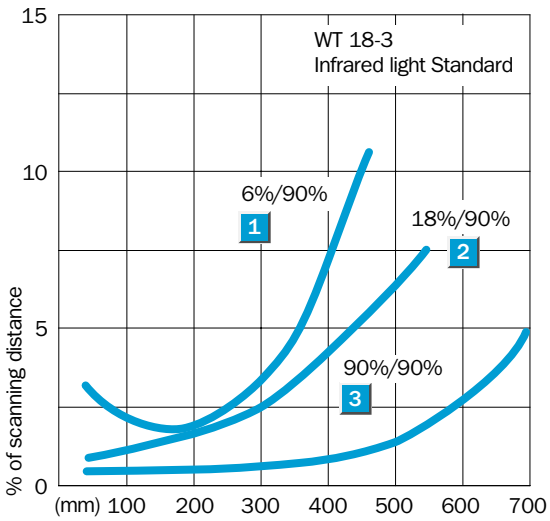
Adjustment via Poti

1. Position the object in the path of the beam.
2. By rotating the potentiometer to the right until the yellow LED illuminates continuously = object is positively detected.
3. If necessary, fine adjustments to the scanning distance can be made to suit the conditions of the application:
   minimal rotation of the potentiometer to the right = scanning distance will be increased,
   minimal rotation of the potentiometer to the left = scanning distance will be decreased.

Scanning distance



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



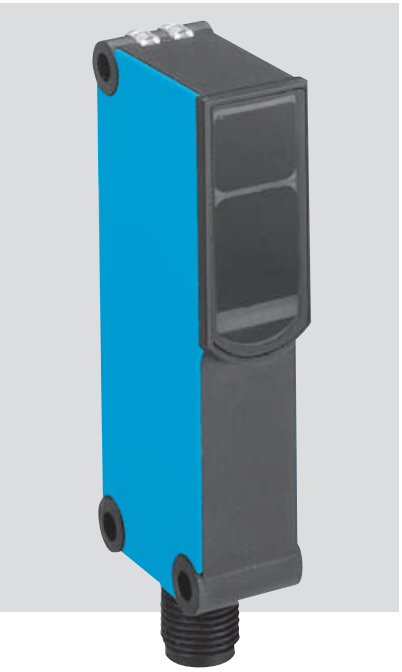
Order information

Type	Part no.
WT18-3P110	1 025 887
WT18-3P410	1 025 889
WT18-3P610	1 025 890
WT18-3N110	1 025 891
WT18-3N410	1 025 893
WT18-3N610	1 025 894

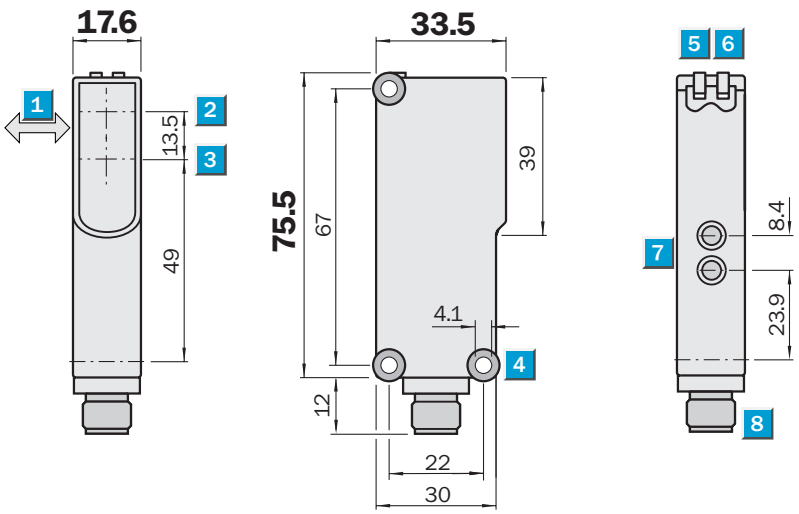
Scanning distance
50 … 700 mm

Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable by a Teach-in process using double Teach buttons
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature –40° C … +60° C

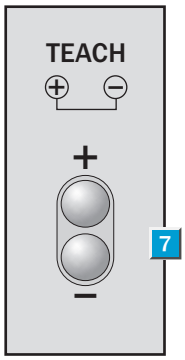


Dimensional drawing



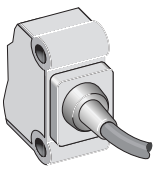
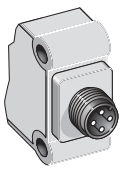
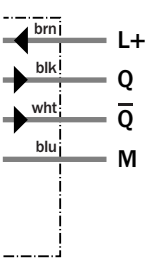
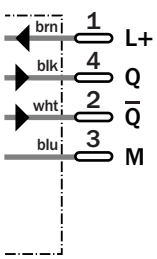
Adjustments possible

All types



1 Standard direction of the material being scanned
2 Optical axis sender
3 Optical axis receiver
4 Mounting hole Ø 4.1 mm
5 LED indicator, yellow; status of received light beam
6 LED indicator, green; power on
7 Scanning distance adjustment, double Teach button
8 Plug M12, 4-pin or 2 m cable

Connection types

WT18-3P111	WT18-3P411
	
4 x 0.25 mm²	4-pin, M12
	

Accessories

Connectors

Mounting systems

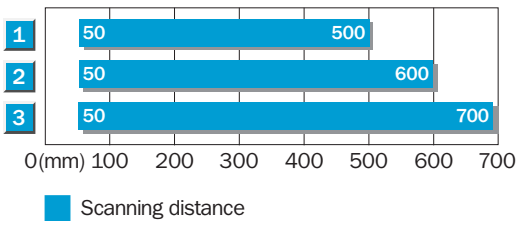
Technical data	WT18-3	P111	P411
Scanning distance, adjustable [1]	50 ... 700 mm, 90 % remission		
Visible range [1]	10 ... 700 mm		
Adjustment	Teach-in, via double teach button		
Fine adjustment	Manuel via „+“ and „–“ button		
Light source [2], **light type**	LED, infrared light		
Light spot diameter	20 mm at 400 mm		
Supply voltage V_S	10 ... 30 V DC [3]		
Residual ripple [4]	< 5 V_{SS}		
Current consumption [5]	< 60 mA		
Output current I_A max.	< 100 mA		
Switching outputs	PNP, antivalent		
	NPN, antivalent		
Response time [6]	< 700 µs		
Switching frequency max. [7]	700/s		
Connection types	Cable [8], 2 m, 4 wire		
	M12 plug, 4-pin		
VDE Schutzklasse [9]	□		
Circuit protection [10]	A, B, C		
Enclosure rating	IP 67		
Ambient temperature	Operation –40 °C ... +60 °C		
	Storage –40 °C ... +75 °C		
Weight	With cable, 2 m, approx. 120 g		
	With M12 plug, approx. 40 g		
Housing material	ABS		

1) Object with 90 % remission (according to standard white DIN 5033)
2) Average service life 100,000 h at T_A = +25 °C
3) Limit values
4) Must be within 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
9) Reference voltage 50 V DC
10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

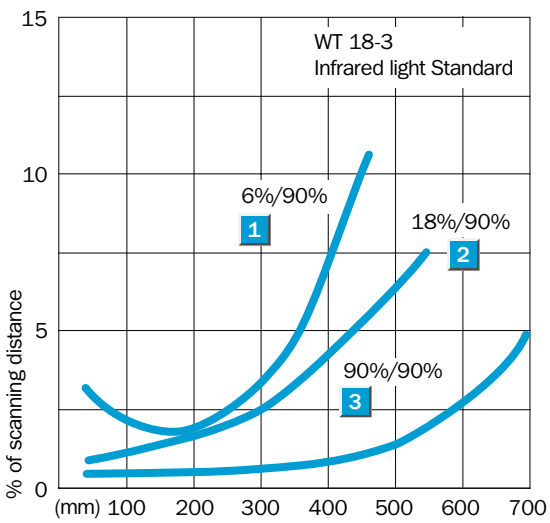
Teach-in procedure via the double Teach buttons

1. Position the object in the path of the beam.
2. Press both buttons simultaneously **(for approx. 2 seconds)** until the yellow LED flashes = object in focus.
   In the event of button activation of less than 2 seconds, the Teach command is not effective, therefore providing no protection against further unwanted manipulation.
3. Release buttons; yellow LED illuminates continuously = object is positively detected.
4. Fine adjustments can be made to the scanning distance, when required by the application:
   Pressing the “+” button **(approx. 0.5 sec)** = scanning distance will be increased.
   Pressing the “–” button **(approx. 0.5 sec)** = scanning distance will be decreased.
   In the event of button activation less than 0.5 sec, no change to the scanning distance is made.
   Upon activation of the button, the yellow LED flashes.
5. The Teach-in scanning distance is stored in the memory.

Scanning distance



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



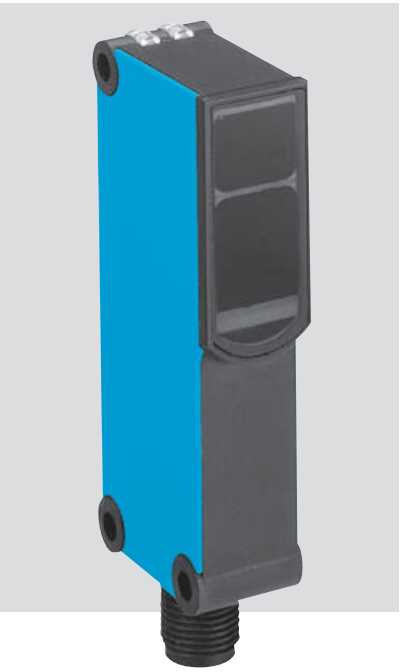
Order information

Type	Part no.
WT18-3P111	1 026 033
WT18-3P411	1 026 031

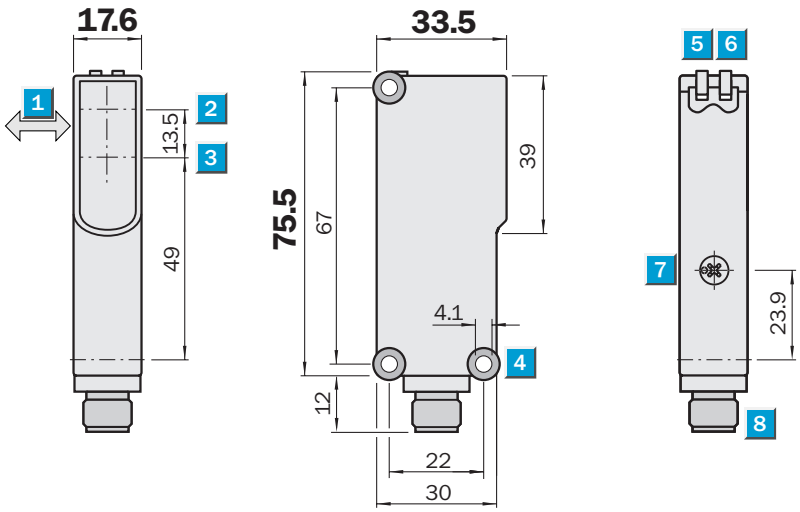
Scanning distance
50 ... 1000 mm

Photoelectric proximity switches

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable via potentiometer
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature –40° C ... +60° C



Dimensional drawing

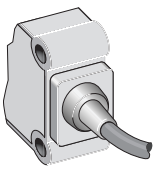
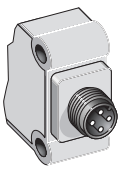
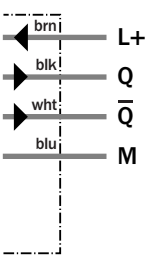
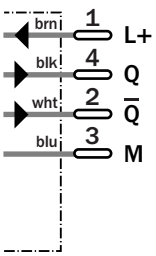


Adjustments possible

All types

1 Standard direction of the material being scanned
2 Optical axis sender
3 Optical axis receiver
4 Mounting hole Ø 4.1 mm
5 LED indicator, yellow; status of received light beam
6 LED indicator, green; power on
7 Scanning distance adjustment, Poti 4 turn
8 Plug M12, 4-pin or 2 m cable

Connection types

WT18-3P120	WT18-3P420
	
4 x 0.25 mm²	4-pin, M12
	

Accessories
Connectors
Mounting systems

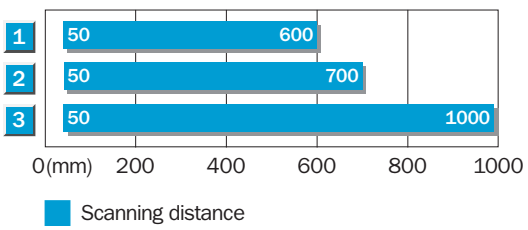
Technical data	WT18-3	P120	P420
Scanning distance, adjustable [1]	50 ... 1000 mm, 90 % Remission	■	■
Visible range [1]	10 ... 1000 mm	■	■
Adjustment	Teach-in, via Poti, 4 turn	■	■
Light source [2], light type	LED, infrared light	■	■
Light spot diameter	30 mm at 600 mm	■	■
Supply voltage V_S	10 ... 30 V DC [3]	■	■
Residual ripple [4]	< 5 V_{SS}	■	■
Current consumption [5]	< 45 mA	■	■
Output current I_A max.	< 100 mA	■	■
Switching outputs	PNP, antivalent	■	■
Response time [6]	< 700 µs	■	■
Switching frequency max. [7]	700/s	■	■
Connection types	Cable [8], 2 m, 4 wire	■	
	M12 plug, 4-pin		■
VDE protection class cable [9]	⧈	■	■
Circuit protection [10]	A, B, C	■	■
Enclosure rating	IP 67	■	■
Ambient temperature	Operation –40 °C ... +60 °C	■	■
	Storage –40 °C ... +75 °C	■	■
Weight	With cable, 2 m, approx. 120 g	■	
	With M12 plug, approx. 40 g		■
Housing material	ABS	■	■

1) Object with 90 % remission (according to standard white DIN 5033)
2) Average service life 100,000 h at T_A = +25 °C
3) Limit values
4) Must be within 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
9) Reference voltage 50 V DC
10) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

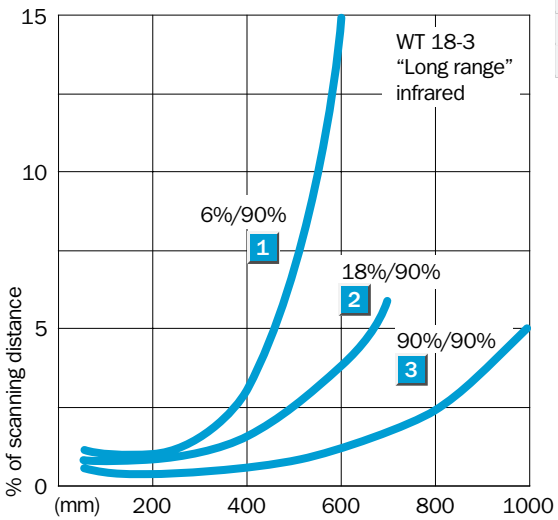
Adjustment via Poti

1. Position the object in the path of the beam.
2. By rotating the potentiometer to the right until the yellow LED illuminates continuously = object is positively detected.
3. If necessary, fine adjustments to the scanning distance can be made to suit the conditions of the application:
   minimal rotation of the potentiometer to the right = scanning distance will be increased,
   minimal rotation of the potentiometer to the left = scanning distance will be decreased.

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

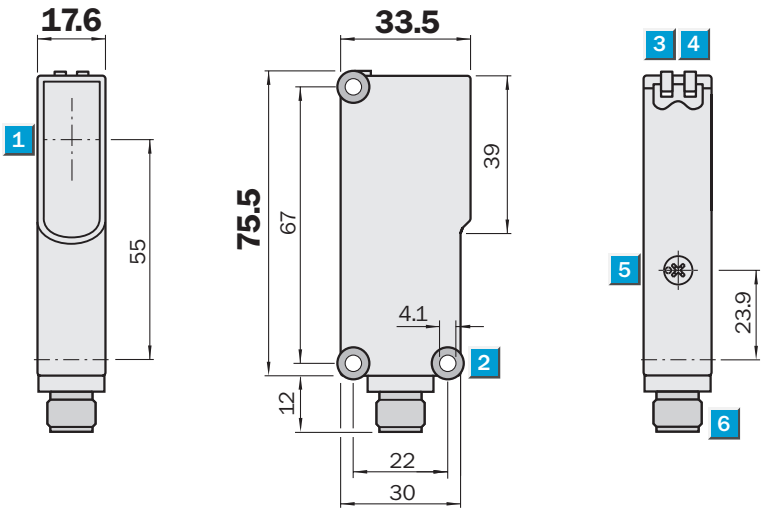
Type	Part no.
WT18-3P120	1 025 904
WT18-3P420	1 025 905

Scanning range
7 m

Photoelectric reflex switches

- Autocollimation optics; reliable target detection
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature –40° C ... +60° C
- Test input for system diagnosis (optional)

Dimensional drawing

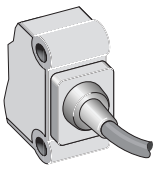
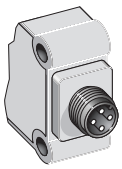
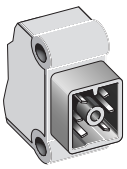
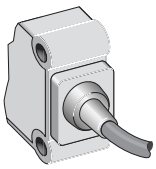
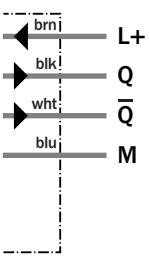
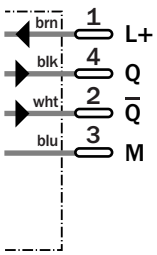
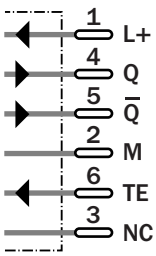
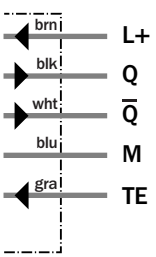


Adjustments possible

All types

1 Middle of optical axis
2 Mounting holes Ø 4.1 mm
3 Status indicator LED, yellow, status of received light beam
4 Status indicator LED, green; power on
5 Sensitivity control; Poti 270°
6 Plug M12, 4-pin or cable 2 m or cubic plug 6 pin

Connection types

WL18-3P130 WL18-3N130	WL18-3P430 WL18-3N430	WL18-3P630 WL18-3N630	WL18-3P730 WL18-3N730
			
4 x 0.25 mm²	4-pin, M12	6-pin	5 x 0.25 mm²
			

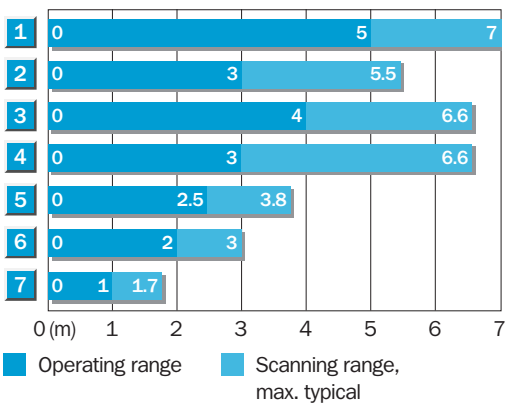
Accessories

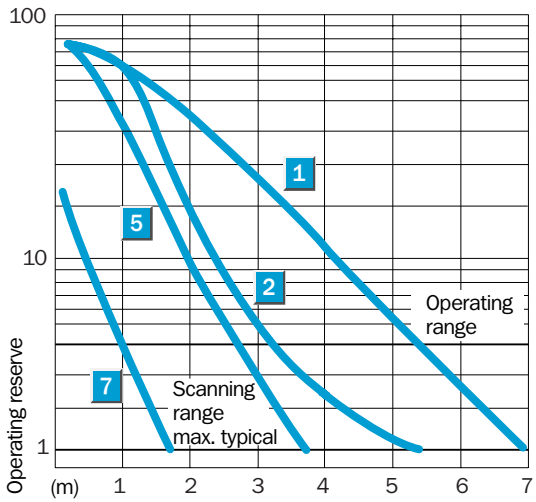
Connectors
Reflectors
Mounting systems

Technical data	WL18-3	P130	P430	P630	P730	N130	N430	N630	N730
Scanning range, max. typ./on reflector	7 m/PL 80 A	■	■	■	■	■	■	■	■
Sensitivity	Adjustable, via Poti, 270°	■	■	■	■	■	■	■	■
Light source [1], light type	LED, visible red light	■	■	■	■	■	■	■	■
Angle of dispersion	1.5°	■	■	■	■	■	■	■	■
Light spot diameter	40 mm at 2 m	■	■	■	■	■	■	■	■
Polarising filter	Yes	■	■	■	■	■	■	■	■
Supply voltage V_S	10 ... 30 V DC [2]	■	■	■	■	■	■	■	■
Residual ripple [4]	< 5 V_{PP}	■	■	■	■	■	■	■	■
Current consumption [5]	< 30 mA	■	■	■	■	■	■	■	■
Output current I_A max.	< 100 mA	■	■	■	■	■	■	■	■
Switching outputs	PNP, antivalent	■	■	■	■				
	NPN, antivalent					■	■	■	■
Response time [5]	500 µs	■	■	■	■	■	■	■	■
Switching frequency max. [6]	1000/s	■	■	■	■	■	■	■	■
Test input »TE«	PNP: Sender off; TE to 0 V				■				
	NPN: Sender off; TE to V+								■
Connection types	Cable [7], 2 m, 4 wire	■				■			
	M12 plug, 4-pin		■				■		
	Cubic plug, 6-pin			■				■	
	Cable, 2 m, 5 wire				■				■
VDE protection class cable [8]	⊡	■	■	■	■	■	■	■	■
Circuit protection [9]	A, B, C	■	■	■	■	■	■	■	■
Enclosure rating	IP 67	■	■	■	■	■	■	■	■
Ambient temperature	Operation –40 °C ... +60 °C	■	■	■	■	■	■	■	■
	Storage –40 °C ... +75 °C	■	■	■	■	■	■	■	■
Weight	With cable, 2 m, approx. 120 g	■			■	■			■
	With M12 plug, approx. 40 g		■				■		
	With cubic plug, ca. 40 g			■				■	
Housing material	ABS	■	■	■	■	■	■	■	■

1) Average service life 100,000 h at T_A = +25 °C
2) Limit values
3) Must be within 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
8) Reference voltage 50 V DC
9) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

Scanning range





	Reflector type	Operating range
1	PL 80 A	0 ... 5.0 m
2	C 110	0 ... 3.0 m
3	PL 50	0 ... 4.0 m
4	PL 40 A	0 ... 3.0 m
5	PL 30 A	0 ... 2.5 m
6	PL 20 A	0 ... 2.0 m
7	Reflective tape Diamond Grade	0 ... 1.0 m

Order information

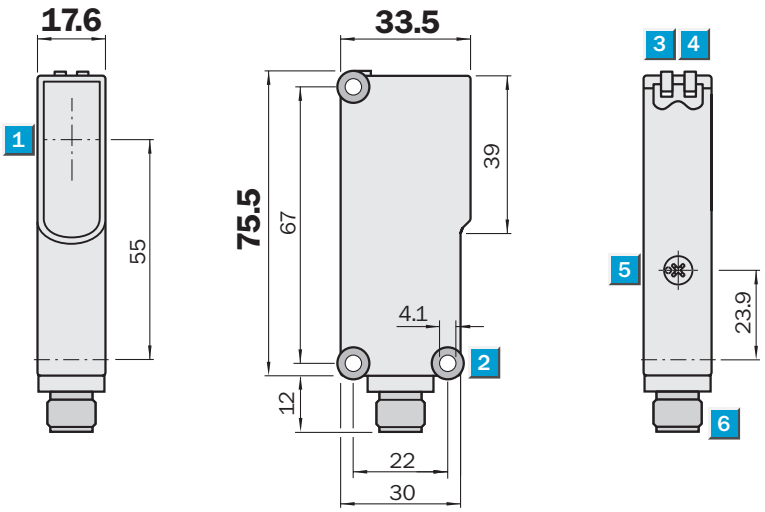
Type	Part no.
WL18-3P130	1 025 909
WL18-3P430	1 025 911
WL18-3P630	1 025 912
WL18-3P730	1 026 029
WL18-3N130	1 025 913
WL18-3N430	1 025 915
WL18-3N630	1 025 916
WL18-3N730	1 026 030

Scanning range
7 m

Photoelectric reflex switches

- Autocollimation optics; reliable target detection
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature –40° C ... +60° C
- Test input for system diagnosis (optional)

Dimensional drawing



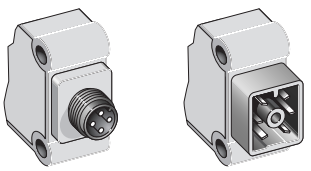
Adjustments possible

All types

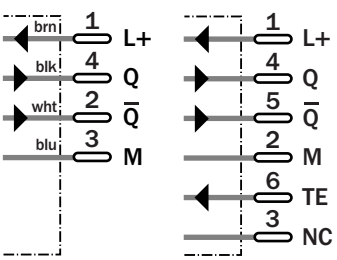
1 Middle of optical axis
2 Mounting holes Ø 4.1 mm
3 Status indicator LED, yellow, status of received light beam
4 Status indicator LED, green; power on
5 Sensitivity control; Poti 270°
6 Plug M12, 4-pin or cubic plug 6-pin

Connection types

WL18-3P480	WL18-3P680



4-pin, M12	6-pin



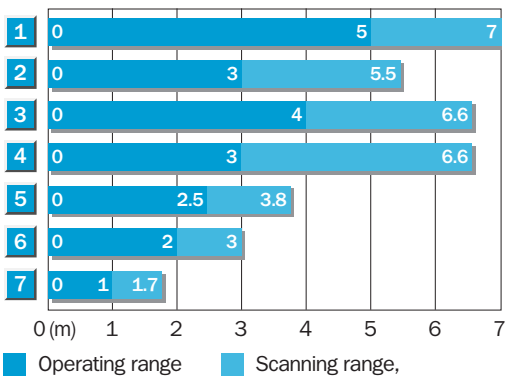
Accessories

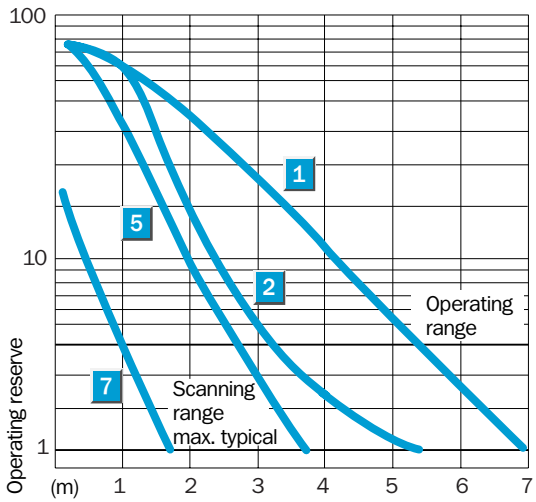
- Connectors
- Reflectors
- Mounting systems

Technical data	WL18-3	P480	P680
Scanning range, max. typ./on reflector	7 m/PL 80 A	■	■
Sensitivity	Adjustable, via Poti, 270°	■	■
Light source [1], light type	LED, visible red light	■	■
Angle of dispersion	1.5°	■	■
Light spot diameter	40 mm at 2 m	■	■
Polarising filter	No	■	■
Supply voltage V_S	10 ... 30 V DC [2]	■	■
Residual ripple [4]	< 5 V_{PP}	■	■
Current consumption [5]	< 30 mA	■	■
Output current I_A max.	< 100 mA	■	■
Switching outputs	PNP, antivalent	■	■
Response time [5]	500 µs	■	■
Switching frequency max. [6]	1000/s	■	■
Test input »TE«	PNP: Sender off; TE to 0 V		■
Connection types	M12 plug, 4-pin	■	
	Cubic plug, 6-pin		■
VDE protection class cable [7]	□	■	■
Circuit protection [8]	A, B, C	■	■
Enclosure rating	IP 67	■	■
Ambient temperature	Operation –40 °C ... +60 °C	■	■
	Storage –40 °C ... +75 °C	■	■
Weight	With M12 plug, approx. 40 g	■	
	With cubic plug, ca. 40 g		■
Housing material	ABS	■	■

1) Average service life 100,000 h at T_A = +25 °C
2) Limit values
3) Must be within 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
8) Reference voltage 50 V DC
9) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

Scanning range





	Reflector type	Operating range
1	PL 80 A	0 ... 5.0 m
2	C 110	0 ... 3.0 m
3	PL 50	0 ... 4.0 m
4	PL 40 A	0 ... 3.0 m
5	PL 30 A	0 ... 2.5 m
6	PL 20 A	0 ... 2.0 m
7	Reflective tape Diamond Grade	0 ... 1.0 m

Order information

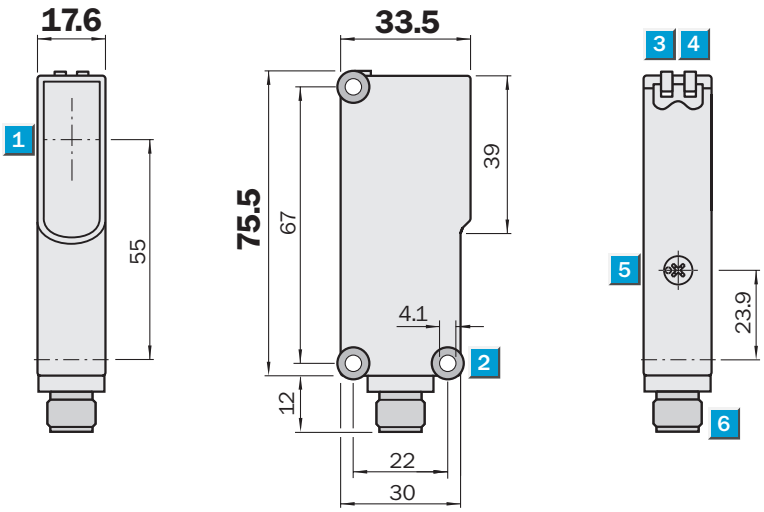
Type	Part no.
WL18-3P480	1 025 917
WL18-3P680	1 025 918

Scanning range
20 m

Through-beam photoelectric switches

- Autocollimation optics; reliable target detection
- Insensitive to external light sources (HF lamps)
- Permissible ambient operating temperature –40° C ... +60° C
- Test input; for device diagnosis
- Rugged plastic housing

Dimensional drawing

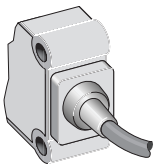
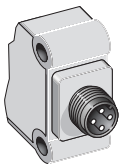
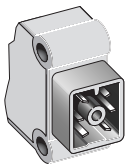


Adjustments possible

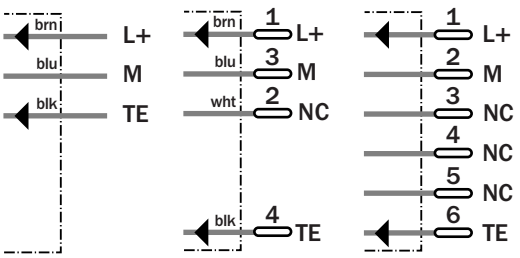
All types

1 Middle of optical axis
2 Mounting holes Ø 4.1 mm
3 Status indicator LED, yellow, status of received light beam
4 Status indicator LED, green; power on
5 Sensitivity control; Potentiometer 270° on WE
6 Plug M12, 4-pin or cable 2 m or cubic plug 6-pin

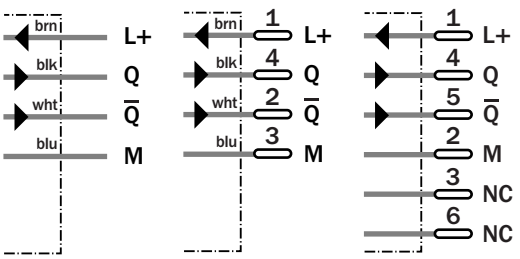
Connection types

WS/WE18-3P130 WS/WE18-3N130	WS/WE18-3P430	WS/WE18-3P630 WS/WE18-3N630
		
3 x 0.25 mm²	4-pin, M12	6-pin

Sender



Receiver

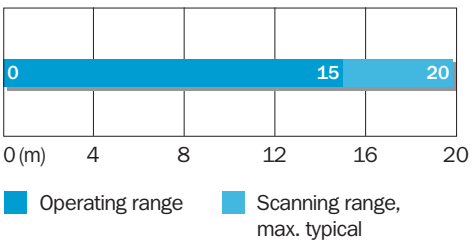


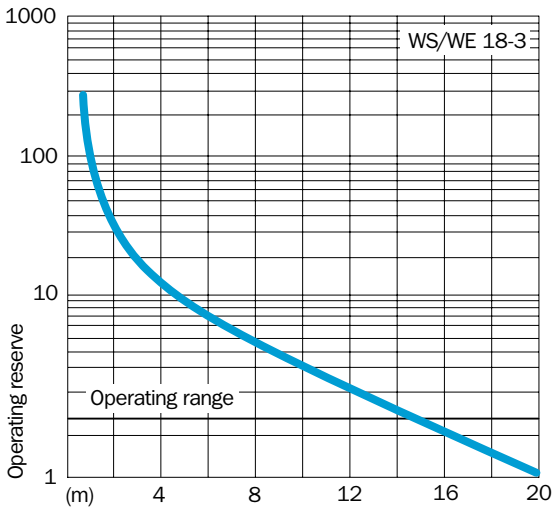
Accessories
Connectors
Mounting systems

Technical data	WS/WE18-3	P130	P430	P630	N130	N630
Scanning range, max. typ.	0 ... 20 m	■	■	■	■	■
Sensitivity	Adjustable, via Poti, 270°	■	■	■	■	■
Light source [1], light type	LED, visible red light	■	■	■	■	■
Light spot diameter	450 mm at 15 m	■	■	■	■	■
Angle of dispersion	Approx. 1,5°	■	■	■	■	■
Angle of reception		■	■	■	■	■
Supply voltage V_S	10 ... 30 V DC [2]	■	■	■	■	■
Residual ripple [4]	< 5 V_{PP}	■	■	■	■	■
Current consumption [4]	Sender < 35 mA	■	■	■	■	■
	Receiver < 20 mA	■	■	■	■	■
Output current I_A max.	< 100 mA	■	■	■	■	■
Switching outputs	PNP, antivalent	■	■	■		
	NPN, antivalent				■	■
Response time [5]	500 µs	■	■	■	■	■
Switching frequency max. [6]	1000/s	■	■	■	■	■
Test input »TE« Sender off	TE to 0 V (WS)	■	■	■	■	■
Connection types	Cable [7], 2 m, 4 wire	■			■	
	M12 plug, 4-pin		■			
	Cubic plug, 6-pin			■		■
VDE protection class cable [8]	□	■	■	■	■	■
Circuit protection [9]	A, B, C	■	■	■	■	■
Enclosure rating	IP 67	■	■	■	■	■
Ambient temperature	Operation –40 °C ... +60 °C	■	■	■	■	■
	Storage –40 °C ... +75 °C	■	■	■	■	■
Weight	With cable, 2 m, approx. 120 g	■			■	
	With M12 plug, approx. 40 g		■			
	With cubic plug, ca. 40 g			■		■
Housing material	ABS	■	■	■	■	■

1) Average service life 100,000 h at T_A = +25 °C
2) Limit values
3) Must be within 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
8) Reference voltage 50 V DC
9) A = V_S connection reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

Scanning range and operating reserve





Order information

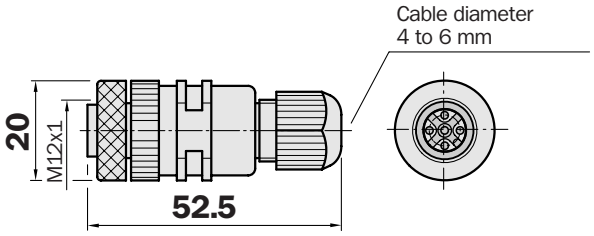
Type	Part no.
WS/WE18-3P130	1 025 922
WS/WE18-3P430	1 025 923
WS/WE18-3P630	1 025 924
WS/WE18-3N130	1 025 925
WS/WE18-3N630	1 025 926

Dimensional drawings and order information

SENSICK srew-in system M12, 4-pin, enclosure rating IP 67

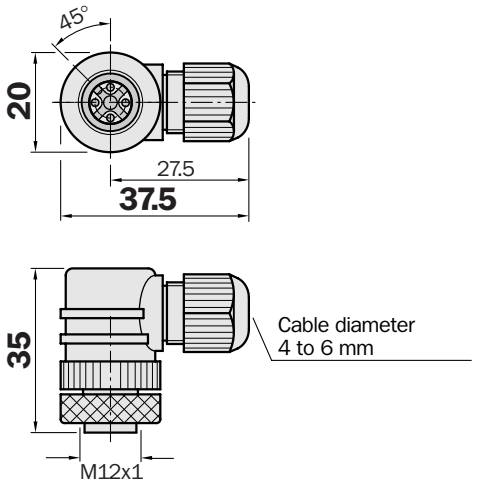
Female connector M12, 4-pin, straight

Type	Part no.	Contacts
DOS-1204-G	6 007 302	4



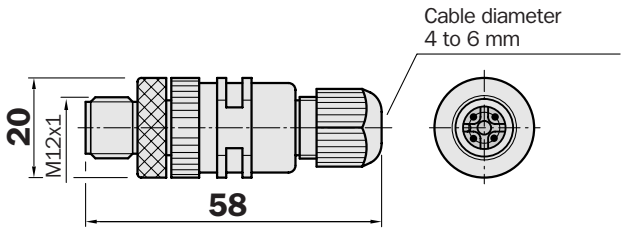
Female connector M12, 4-pin, right angle

Type	Part no.	Contacts
DOS-1204-W	6 007 303	4



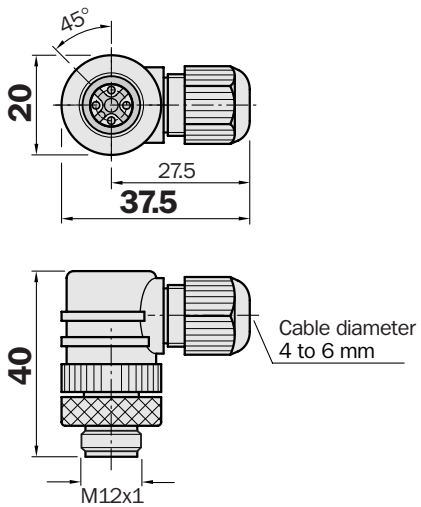
Male connector M12, 4-pin, straight

Type	Part no.	Contacts
STE-1204-G	6 009 932	4



Male connector M12, 4-pin, right angle

Type	Part no.	Contacts
STE-1204-W	6 022 084	4

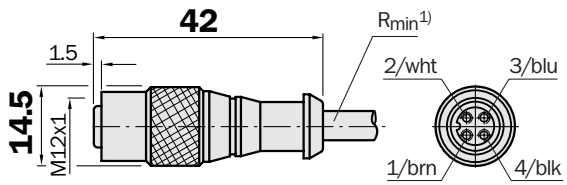


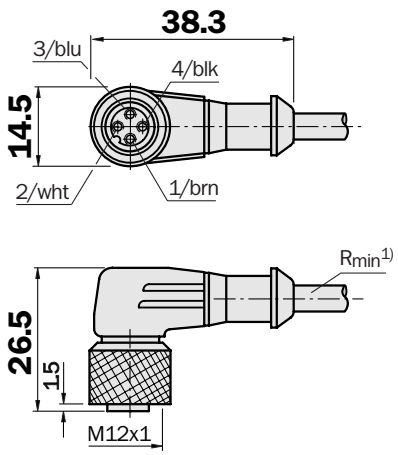
Dimensional drawings and order information

SENSICK srew-in system M12, 4-pin, enclosure rating IP 67

Female connector M12, 4-pin, straight			
Cable diameter 5 mm, 4 x 0.25 mm², sheath PVC			
Type	**Part no.**	**Contacts**	**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

Female connector M12, 4-pin, right angle			
Cable diameter 5 mm, 4 x 0.25 mm², sheath PVC			
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

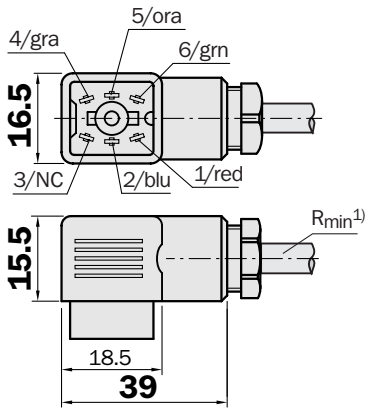




1) Minimum bend radius in dynamic use
R_{min} = 20 x cable diameter

SENSICK rectangular plug-in system Q 6, 6-pin

Female connector, 6-pin, DC-coding		
Cable diameter 5 mm, 5 x 0.25 mm², sheath PVC		
Type	**Part no.**	**Cable length**
DOS-1306-W	6 006 710	–
DOL-1306-02M	2 009 477	2 m
DOL-1306-03M	2 009 478	3 m
DOL-1306-05M5	2 009 479	5,5 m
DOL-1306-10M	2 009 480	10 m



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

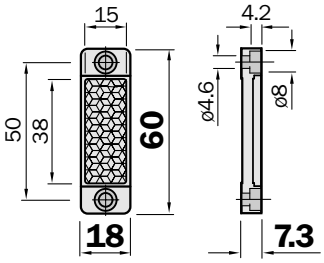
Dimensional drawings and order information

Reflectors

Plastic design for temperatures up to 65 °C

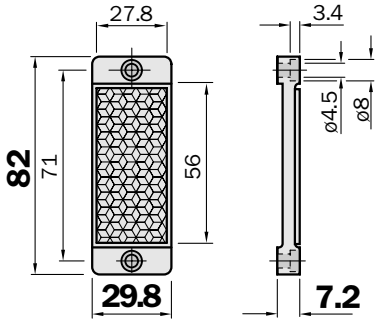
Reflector 20 x 40 mm²

Type	Part no.
PL 20 A	1 012 719



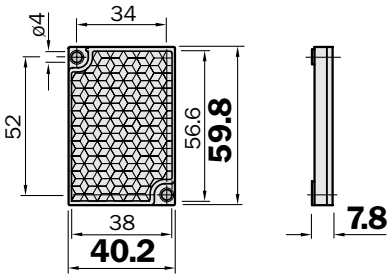
Reflector 30 x 50 mm²

Type	Part no.
PL 30 A	1 002 314



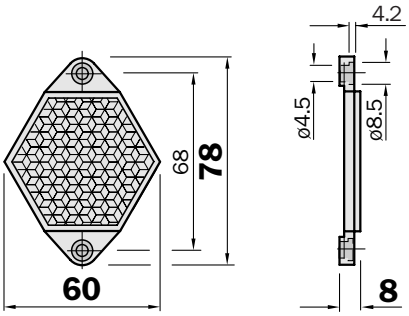
Reflector 40 x 60 mm²

Type	Part no.
PL 40 A	1 012 720



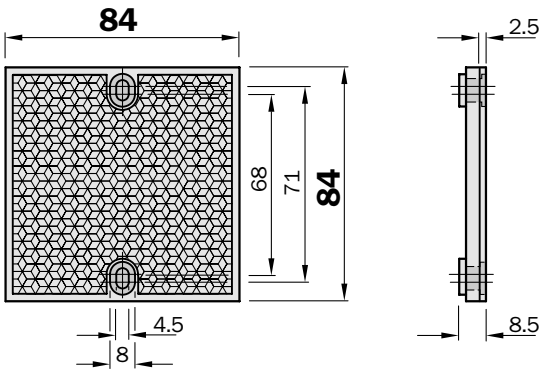
Reflector, 6-sided
width across flats 48 mm

Type	Part no.
PL 50 A	1 000 132



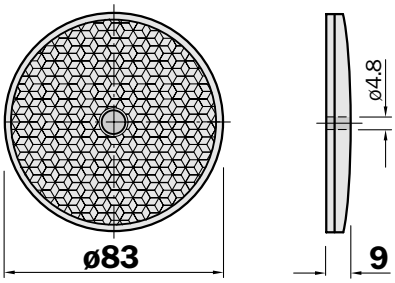
Reflector 80 x 80 mm²

Type	Part no.
PL 80 A	1 003 865



Reflector, diameter 83 mm, centre hole mounting

Type	Part no.
C 110	5 304 549

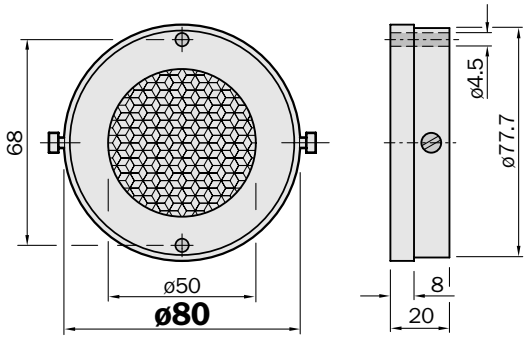


Dimensional drawings and order information

Special reflectors

Reflector, 6-sided, width across flats 48 mm, oil-tight

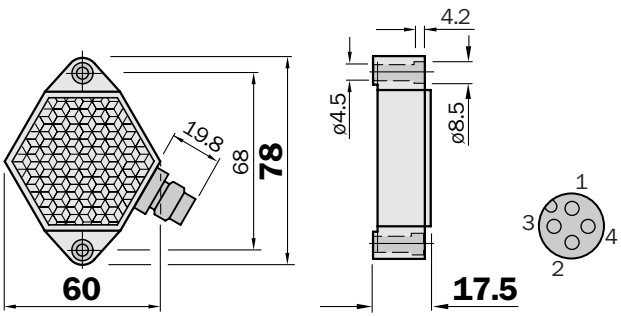
Type	Part no.
PL 53 A	1 000 382

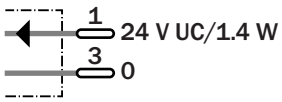


Reflectors with heating, UC 24 V; 1.4 W

Reflector, 6-sided, width across flats 48 mm, with continuous heating

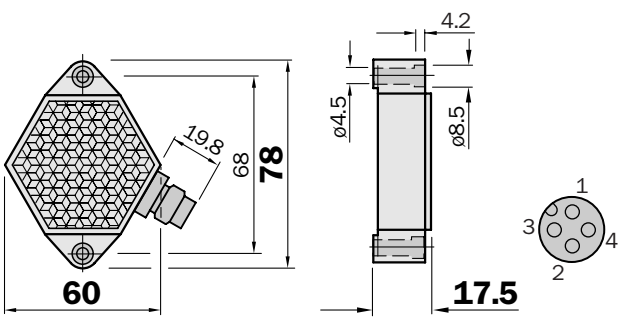
Type	Part no.
PL 50 HK	1 011 545

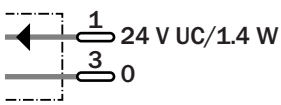




Reflector, 6-sided, width across flats 48 mm, with regulated heating

Type	Part no.
PL 50 HS	1 009 871





Heating ON: < 15 °C

Dimensional drawings and order information

Self-adhesive reflective tape for photoelectric switches with/without polarisation filter

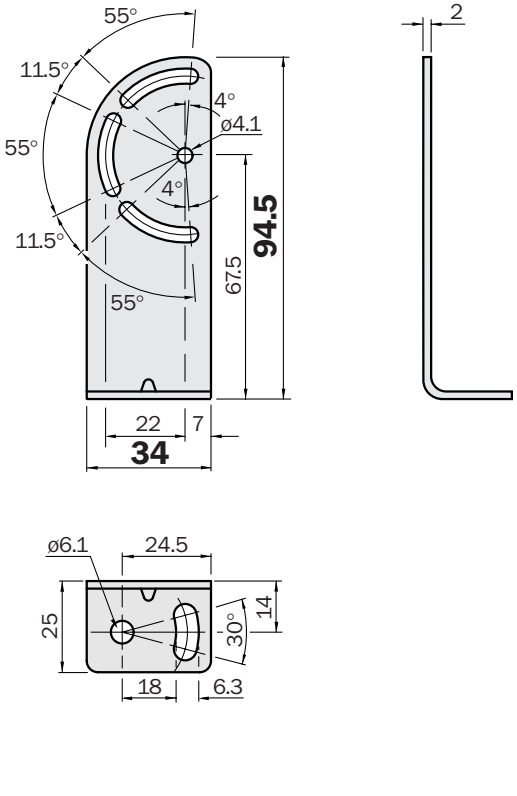
Reflective tape “Diamond Grade”, self-adhesive

Type	Part no.	
REF-DG-K	4 019 634	Cut to size
REF-DG	5 304 334	Sheet 749 x 914 mm²

Mounting systems

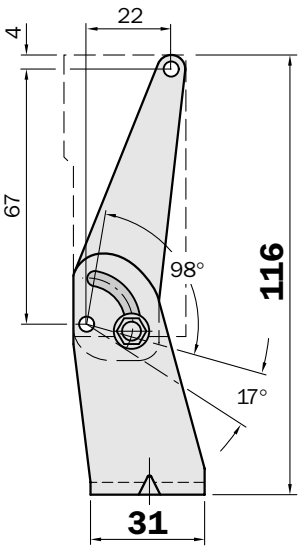
Mounting bracket

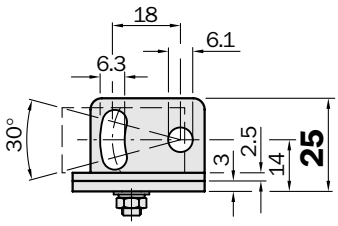
Type	Part no.
BEF-WN-W14	2 019 084



Mounting bracket

Type	Part no.
BEF-WN-W18	2 009 317

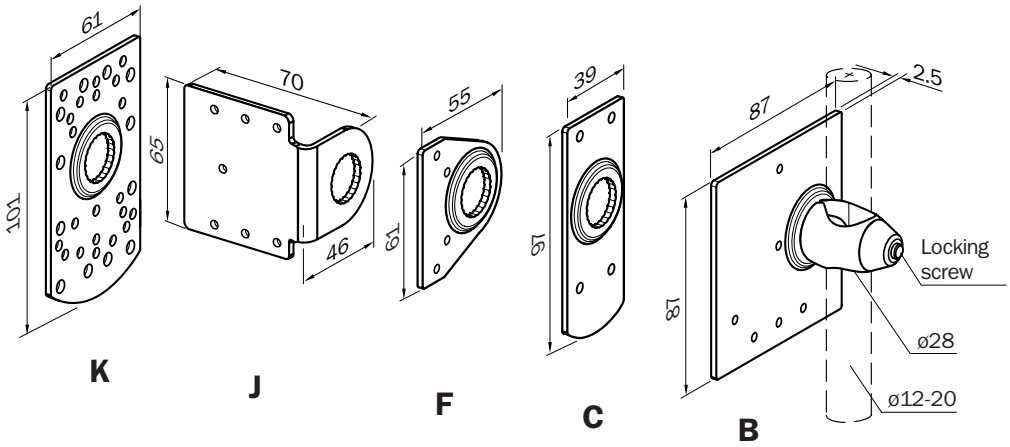




Dimensional drawings and order information

Mounting systems

Universal bar clamps for sensors and reflectors



Mounting plates	Type	Part no. [1]	for device/reflector type
B	BEF-KHS-B01	2 022 459	PL 30 A, PL 40 A, PL 50 A, PL 80 A, C 110
C	BEF-KHS-C01	2 022 460	W 18-3
F	BEF-KHS-F01	2 022 463	PL 20 A
J	BEF-KHS-J01	2 022 719	PL 20 A, PL 40 A, PL 50 A, C 110
K	BEF-KHS-K01	2 022 718	W 18-3, PL 20 A, PL 30 A, PL 40 A, PL 50 A, PL 80 A, C 110
	BEF-KHS-KH1	2 022 726	Clamp without mounting plate

[1] Part no. includes bar support and mounting material

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