

# MH – MULTI HEAD: Small sensor, big power




In spite of the extremely compact design (10 mm x 16.3 mm), advantages such as a high degree of insensitivity to ambient light and good optical datas are provided.

The MH has a very good price/performance ratio thanks to an ASIC developed by SICK with an integrated reception component.

	<b>Photoelectric proximity switches HGA</b>
	<b>Photoelectric proximity switches energetic</b>
	<b>Photoelectric reflex switches</b>

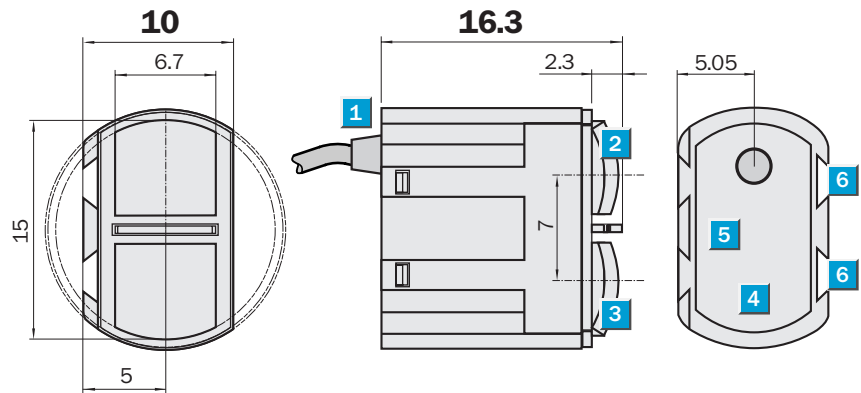
Say goodbye to handmade sensor technology and mechanical switches – the Multi Head (MH) series is miniature, inexpensive and reliable where standard detection jobs are required with small and inexpensive sensors. For example, the MHs are suitable – among other things – for monitoring sizes in automatic transport systems, for bin controls in vending machines, for the cash register area in supermarkets and presence monitoring on conveyor lines.



	<b>Scanning distance</b> 50 mm
<b>Photoelectric proximity switch</b>	

- Excellent price/performance ratio thanks to an optical ASIC
- Mounting via dovetail
- Can be mounted fast and reliably using a snap holder
- PNP or NPN output
- Sensors stackable

**Dimension illustration**

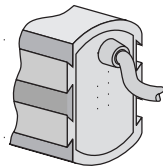


- 1** Connection cable 2 m, 3x 0.25 mm<sup>2</sup>
- 2** Optic axis sender
- 3** Optic axis receiver
- 4** LED function indicator
- 5** Translucent rear side
- 6** Mounting slots

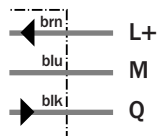


**Connection type**

- MHT1-P112
- MHT1-N112



3 x 0.25 mm<sup>2</sup>



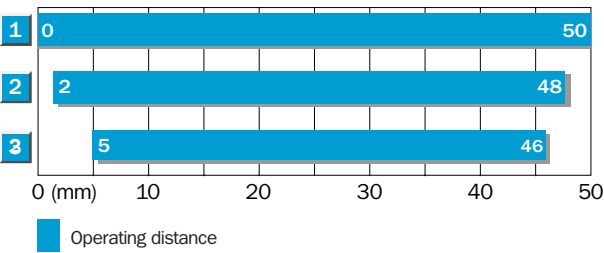
<b>Accessories</b>
Snap holder (included with delivery)
Mini ball joint bracket

**Technical data** MHT1- P 122 N 122

<b>Scanning distance typ. max.</b>	0 ... 50 mm		
<b>Light source<sup>1)</sup></b>	LED, infrared		
<b>Supply voltage <math>V_s</math><sup>2)</sup></b>	10 ... 30 VDC		
Ripple <sup>3)</sup>	< 5 $V_{SS}$ within $U_v$		
Current consumption <sup>4)</sup>	< 20 mA		
<b>Switching outputs</b>	$Q_{PNP}$		
	$Q_{NPN}$		
	Light-switching		
<b>Output current <math>I_A</math> max.</b>	50 mA		
<b>Response time</b>	< 2,5 ms		
<b>Switching frequency<sup>5)</sup></b>	200/s		
<b>Type of connection<sup>6)</sup></b>	Cable 2 m		
<b>Enclosure rating</b>	Housing IP 40		
<b>Ambient temperature</b>	Operation -25 ... +50 °C		
	Storage -40 ... +70 °C		
<b>Housing material</b>	ABS		

<sup>1)</sup> Average service life 100,000 h at  $T_U = +25$  °C  
<sup>2)</sup> Limit values  
<sup>3)</sup> Must be within  $V_s$  tolerances  
<sup>4)</sup> Without load  
<sup>5)</sup> Programmable up to 700/s on request  
<sup>6)</sup> Do not bend below 0 °C


**Scanning distance**



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

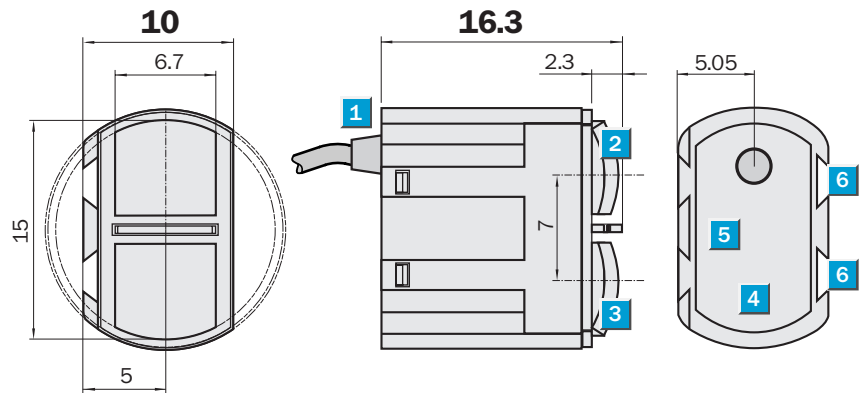
**Order information**

Type	Order no.
MHT1-P122	1 016 051
MHT1-N122	1 019 707

	<b>Scanning distance</b> <b>100 mm</b>
<b>Photoelectric proximity switch</b>	

- Excellent price/performance ratio thanks to an optical ASIC
- Mounting via dovetail
- Can be mounted fast and reliably using a snap holder
- PNP or NPN output
- Sensors stackable

**Dimension illustration**

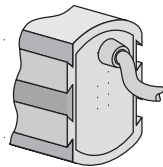


- 1** Connection cable 2 m, 3x 0.25 mm<sup>2</sup>
- 2** Optic axis sender
- 3** Optic axis receiver
- 4** LED function indicator
- 5** Translucent rear side
- 6** Mounting slots

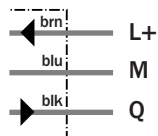


**Connection type**

- MHT1-P222
- MHT1-N222



3 x 2.4 mm<sup>2</sup>



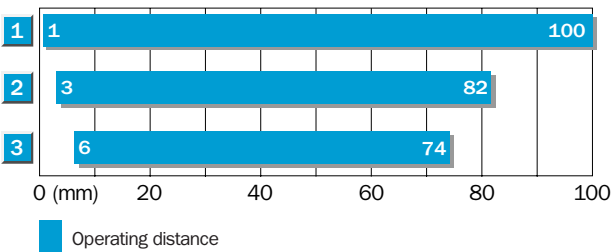
<b>Accessories</b>
Snap holder (included with delivery)
Mini ball joint bracket

<b>Technical data</b>	MHT1-	P 222	N 222								
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<b>Scanning distance typ. max.</b>	1 ... 100 mm		
<b>Light source<sup>4)</sup></b>	LED, infrared		
<b>Supply voltage V<sub>S</sub><sup>2)</sup></b>	10 ... 30 VDC		
Ripple <sup>3)</sup>	< 5 V <sub>SS</sub> within U <sub>V</sub>		
Current consumption <sup>4)</sup>	< 20 mA		
<b>Switching outputs</b>	Q <sub>PNP</sub>		
	Q <sub>NPN</sub>		
	Light-switching		
<b>Output current I<sub>A</sub> max.</b>	50 mA		
<b>Response time</b>	< 2,5 ms		
<b>Switching frequency<sup>5)</sup></b>	200/s		
<b>Type of connection<sup>6)</sup></b>	Cable 2 m		
<b>Enclosure rating</b>	Housing IP 40		
<b>Ambient temperature</b>	Operation -25 ... +50 °C		
	Storage -40 ... +70 °C		
<b>Housing material</b>	ABS		

- 1) Average service life 100,000 h at T<sub>U</sub> = +25 °C
- 2) Limit values
- 3) Must be within V<sub>S</sub> tolerances
- 4) Without load
- 5) Programmable up to 700/s on request
- 6) Do not bend below 0 °C

**Scanning distance**



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

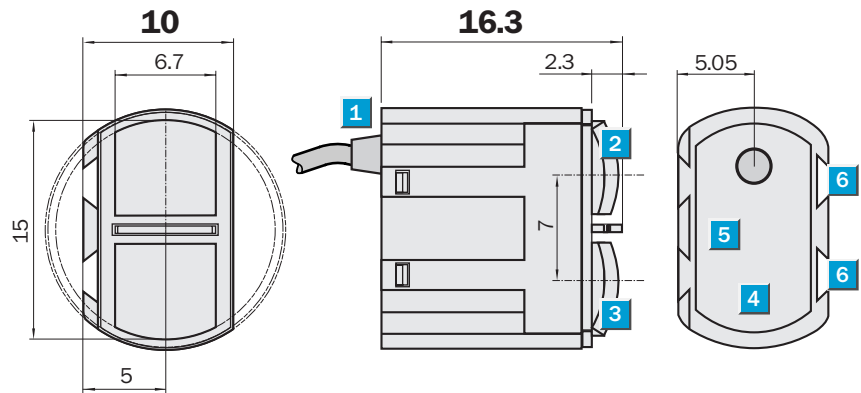
**Order information**

Type	Part no.
MHT1-P222	1 019 706
MHT1-N222	1 019 708

	<b>Scanning range</b>
	<b>4 m</b>
<b>Photoelectric reflex switch</b>	

- With polarisation filter
- Excellent price/performance ratio thanks to an optical ASIC
- Mounting via dovetail
- Can be mounted fast and reliably using a snap holder
- PNP or NPN output
- Sensors stackable

**Dimension illustration**

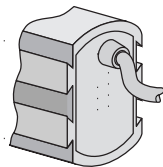


- 1** Connection cable 2 m, 3x 0.25 mm<sup>2</sup>
- 2** Optic axis sender
- 3** Optic axis receiver
- 4** LED function indicator
- 5** Translucent rear side
- 6** Mounting slots

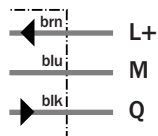


**Connection type**

MHL1-P122
MHL1-N122



3 x 2.4 mm<sup>2</sup>

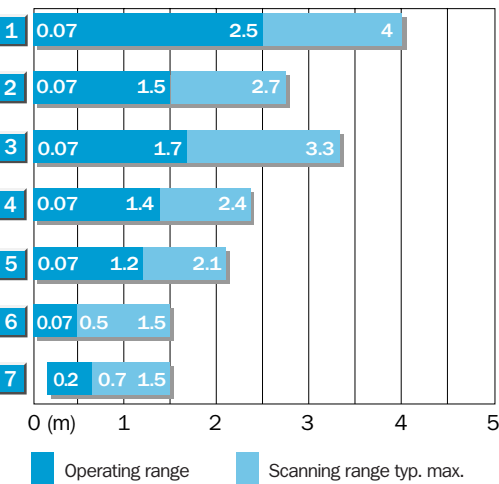


<b>Accessories</b>
Snap holder (included with delivery)
Mini ball joint bracket
Reflectors

Technical data		MHL1-	P122	F122	N122	E122						
Scanning distance typ. max./on reflector	4 m on PL 80 A											
Operating range	2.5 m on PL 80 A											
Light source <sup>1)</sup>	LED, red light											
Light spot	80 x 80 mm in 2000 mm											
Supply voltage $V_s$ <sup>2)</sup>	10 ... 30 VDC											
Ripple <sup>3)</sup>	< 5 $V_{SS}$											
Current consumption <sup>4)</sup>	< 20 mA											
Switching outputs	$Q_{PNP}$											
	$Q_{NPN}$											
	Light-switching											
	Dark-switching											
Output current $I_A$ max.	50 mA											
Response time	< 2.5 ms											
Switching frequency <sup>5)</sup>	200/s											
Type of connection <sup>6)</sup>	Cable, 2 m											
Enclosure rating	Housing IP 40											
Ambient temperature	Operation	-25 ... +50 °C										
	Storage	-40 ... +70 °C										
Housing material	ABS											

- <sup>1)</sup> Average service life 100,000 h at  $T_U = +25$  °C
- <sup>2)</sup> Limit values
- <sup>3)</sup> Must be within  $V_s$  tolerances
- <sup>4)</sup> Without load
- <sup>5)</sup> Programmable up to 700/s on request
- <sup>6)</sup> Do not bend below 0 °C

Scanning distance

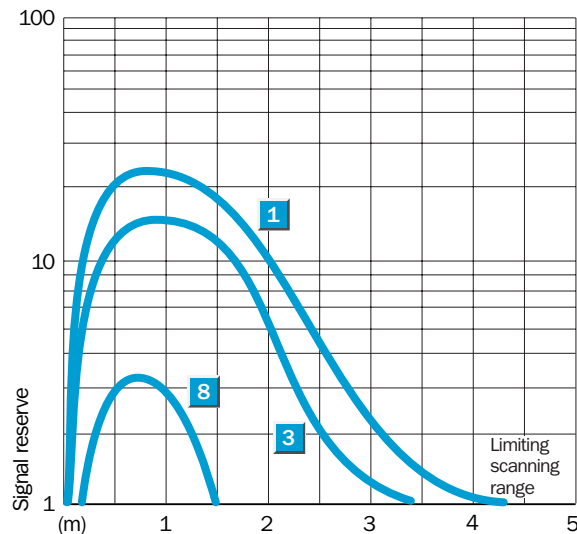


Reflector type	Operating range
1 PL 80 A	0.07 ... 2.5
2 PL 50 A	0.07 ... 1.5
3 P 250	0.07 ... 1.7
4 PL 40 A	0.07 ... 1.4
5 PL 30 A	0.07 ... 1.2
6 PL 20 A	0.07 ... 0.5
7 Diamond grade* reflective tape	0.2 ... 1.5

\* Size min. 50 x 50 mm<sup>2</sup>

Order information

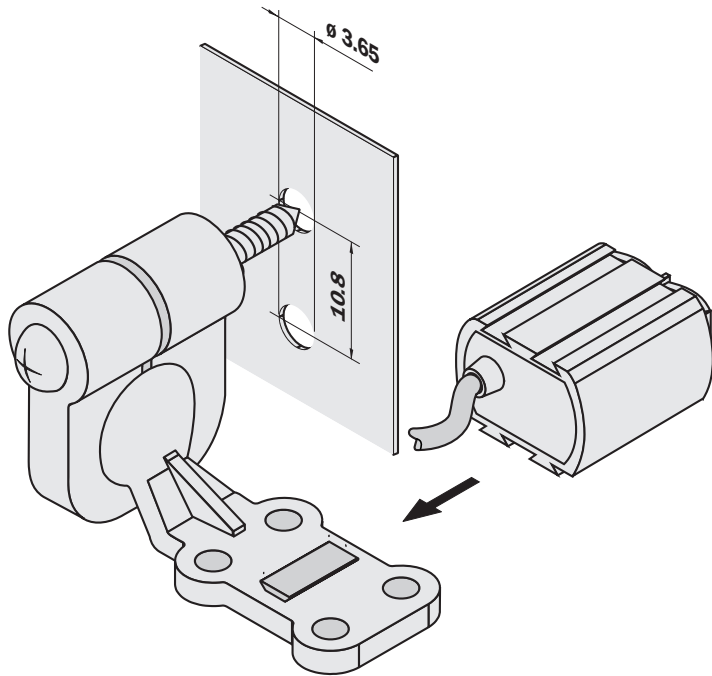
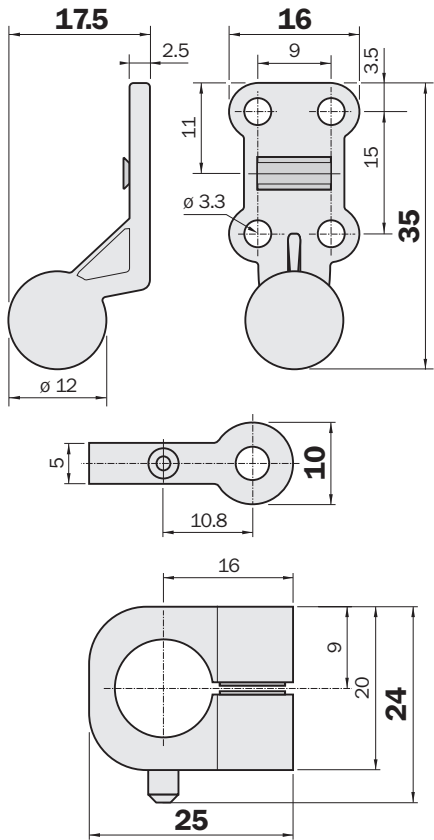
Type	Part no.
MHL1-P122	1 019 709
MHL1-F122	1 019 845
MHL1-N122	1 109 710
MHL1-E122	1 109 846



Dimension illustrations and ordering information

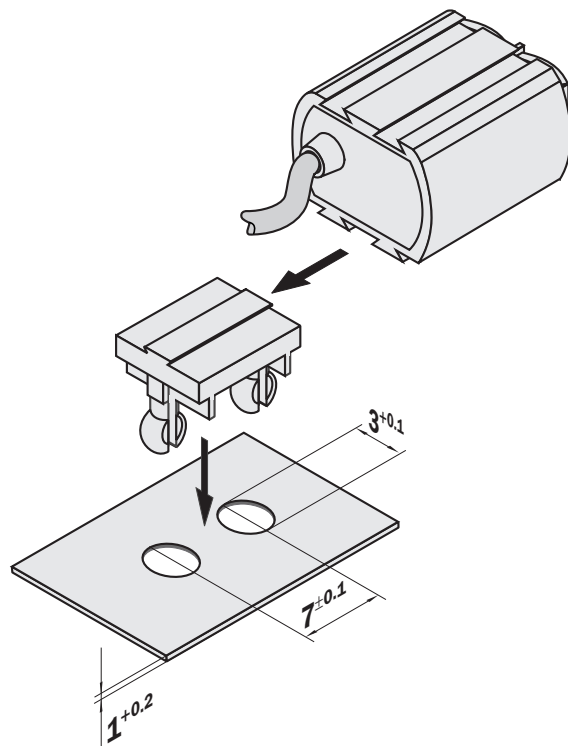
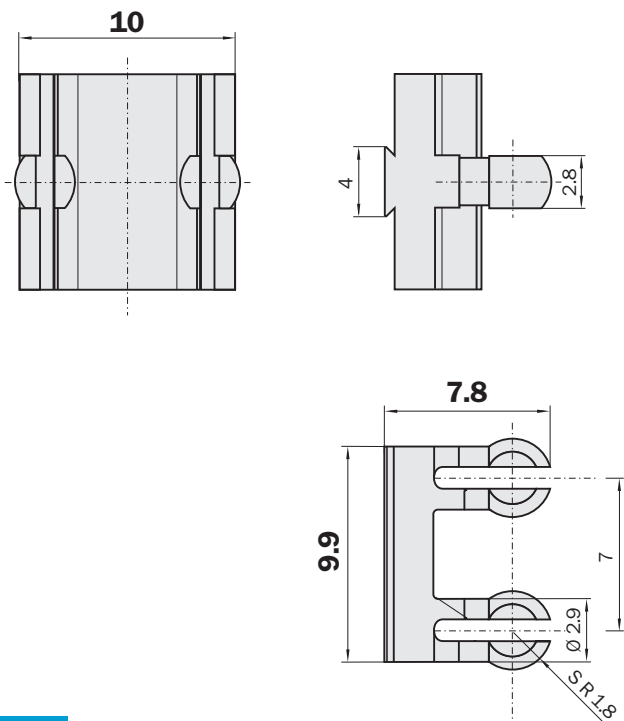
Ball-and-socket holder with self-grooving screw  $\varnothing$  4 mm

Type	Part no.
BEF-GH-Mini01	2 023 160



Snap holder for MH  
Pluggable for wall depth 1 to 1.2 mm

Type	Part no.	Pieces
BEF-SH-MH-A50	2 021 351	50



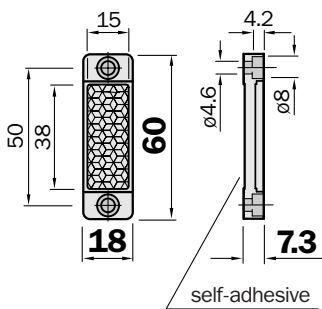


Dimension illustrations and ordering information

Plastic model for temperatures up to 65 °C

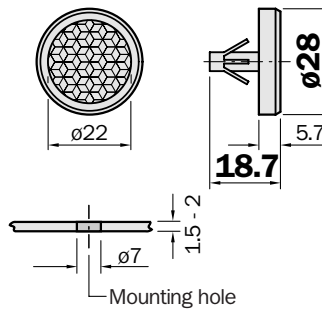
Reflector 20 x 40 mm

Type	Part no.
PL 20 A	1 012 719



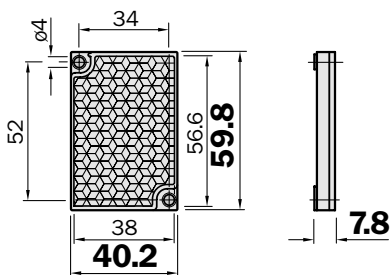
Reflector  $\varnothing$  23 mm, self-adhesive

Type	Part no.
PL 22 A	1 004 488



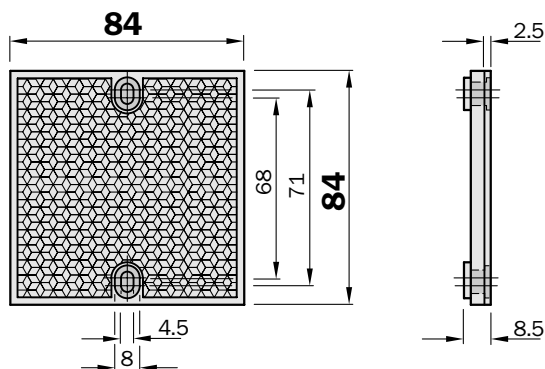
Reflector 40 x 60 mm

Type	Part no.
PL 40 A	1 012 720



Reflector 80 x 80 mm

Type	Part no.
PL 80 A	1 003 865



MH dead housing for distance need

Type	Part no.
Housing	2 023 160

Self-adhesive reflective tape for photoelectric switches with polarizing filter

	Type	Part no.
Reflective tape DG, sheet 749 x 914 mm	REF-DG	5 304 334
Reflective tape DG, ready-made sheet	REF-DG-K	4 019 634