

Strong. Robust. Flexible.

SPG Heavy-duty Gripper

Sturdy gripper for heavy components and a broad part range, equipped with robust guidances and therefore suitable for high gripping forces and maximum moment loads

Field of Application

Suitable for clean working environments, covers a broad range of parts due to its long jaw stroke and high gripping forces for heavy workpieces

Advantages – Your benefit

Solid guides for precise handling

High maximum moments possible suitable for using long gripper fingers

High efficiency through direct drive

Mounting from three sides in three screw directions for universal and flexible gripper assembly

Air supply via hose-free direct connection or screw connections for flexible pressure supply in all automated systems



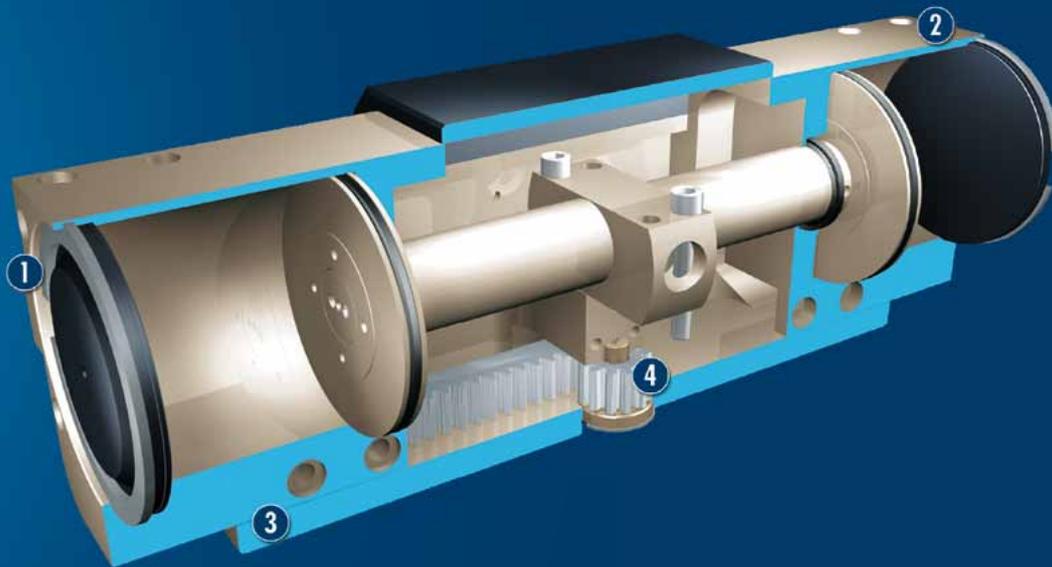
 <p>Sizes Quantity: 1</p>	 <p>Weight 35 kg</p>	 <p>Gripping force 10000 N</p>	 <p>Stroke per jaw 100 mm</p>	 <p>Workpiece weight 50 kg</p>
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Functional Description

The aligned base jaws are actuated with compressed air directly by the fixed piston, which opens and closes them. The base jaws are synchronized by the rack and pinion kinematics.

The direct flow of force enables a high degree of efficiency and therefore very high gripping forces.



- ① **Sliding guide**
Precise gripping due to the use of a highly loadable guidance with minimum play
- ② **Base jaw**
for the connection of workpiece-specific gripper fingers
- ③ **Housing**
Weight-optimized through application of high-strength aluminum alloy
- ④ **Kinematics**
Pinion and rack principle for centric clamping, even at large strokes

CAD data, operating manuals and other current product documents are available at www.schunk.com

General Notes about the Series

Housing material: Aluminum alloy, anodized

Base jaw material: Aluminum alloy, anodized

Actuation: pneumatic, with filtered compressed air as per DIN ISO 8573-1: 7 4 4

Warranty: 24 months (details, general terms and conditions and operating manuals can be downloaded at www.schunk.com)

Scope of delivery: Centering sleeves, cupped-type lubricating nipples, O-rings for direct connection, assembly and operating manual with manufacturer's declaration

Gripping force maintenance device: with version with ID no. 0302120 with integrated pressure maintenance valve, with version with ID no. 0302121 retrofittable with external pressure maintenance valve

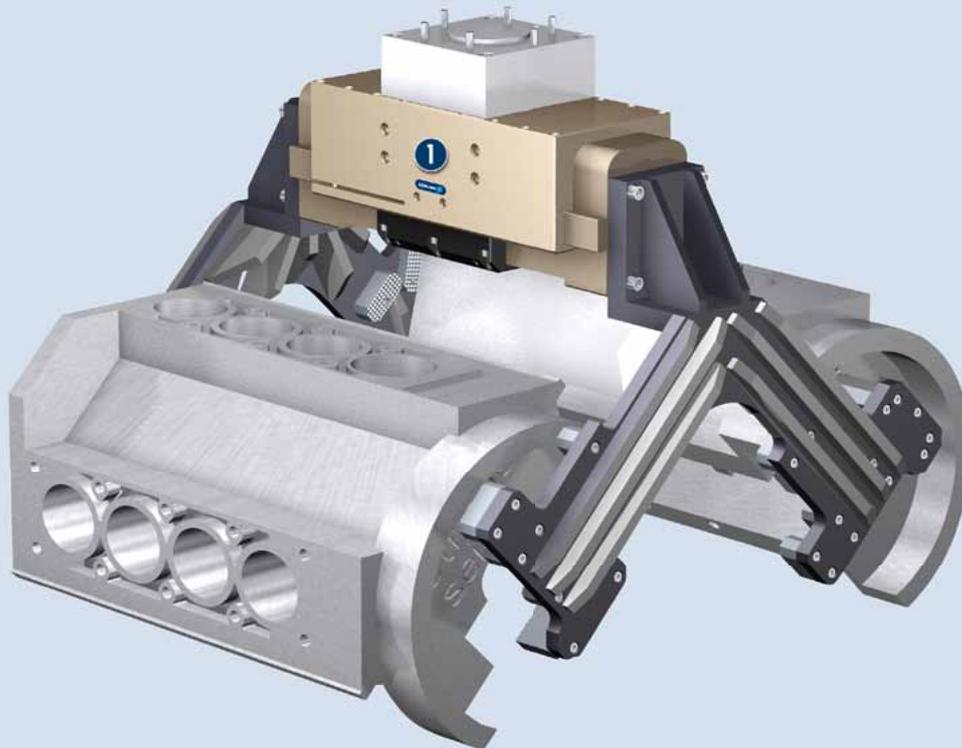
Gripping force: is the arithmetic total of the gripping force applied to each gripper jaw at distance P (see illustration).

Finger length: is measured from the upper edge of the gripper housing in the direction of the main axis. The breach of the max. permitted finger length can bring higher abrasion. The maximum permissible finger length applies up to the nominal operating pressure. With higher pressures, the finger length must be reduced proportionally to the nominal operating pressure.

Repeat accuracy: is defined as the spread of the limit position after 100 consecutive strokes.

Workpiece weight: is calculated for a force-fit connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

Closing and opening times: are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.



Application example

Gripper unit for heavy V8 motors

① SPG 2-Finger Heavy-duty Gripper

SCHUNK offers more ...

The following components make the product SPG even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Centering Sleeves



Fittings



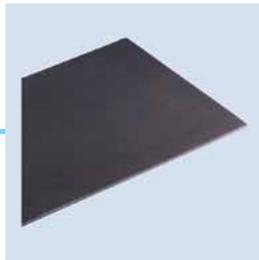
Magnetic Switches



Inductive Proximity Switches



Sensor Distributor



Gripper Pads



Sensor Cables



Plastic Inserts



SDV-P Pressure Maintenance Valve

① Further information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

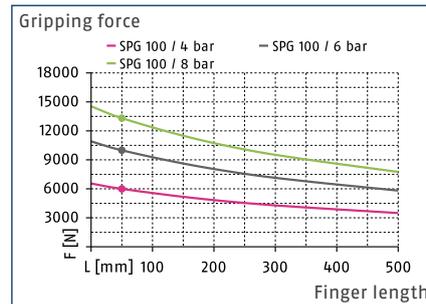
Two TM6 lubricating nipples on either side for relubricating the base jaws and purge air connections are already provided.

Gripping force maintenance device: The SPG 100 (ID 0302121) with reduced opening and closing times of 1.5 s does not feature an integrated pressure maintenance valve as a gripping force safety device.

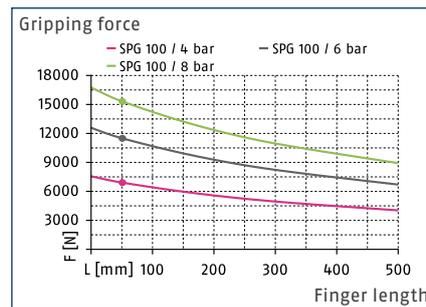
Precision version P: for the highest accuracy



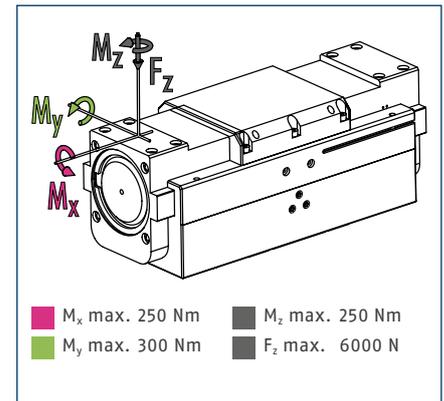
Gripping force, O.D. gripping



Gripping force, I.D. gripping



Finger load



① The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is impreative to throttle the air supply so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

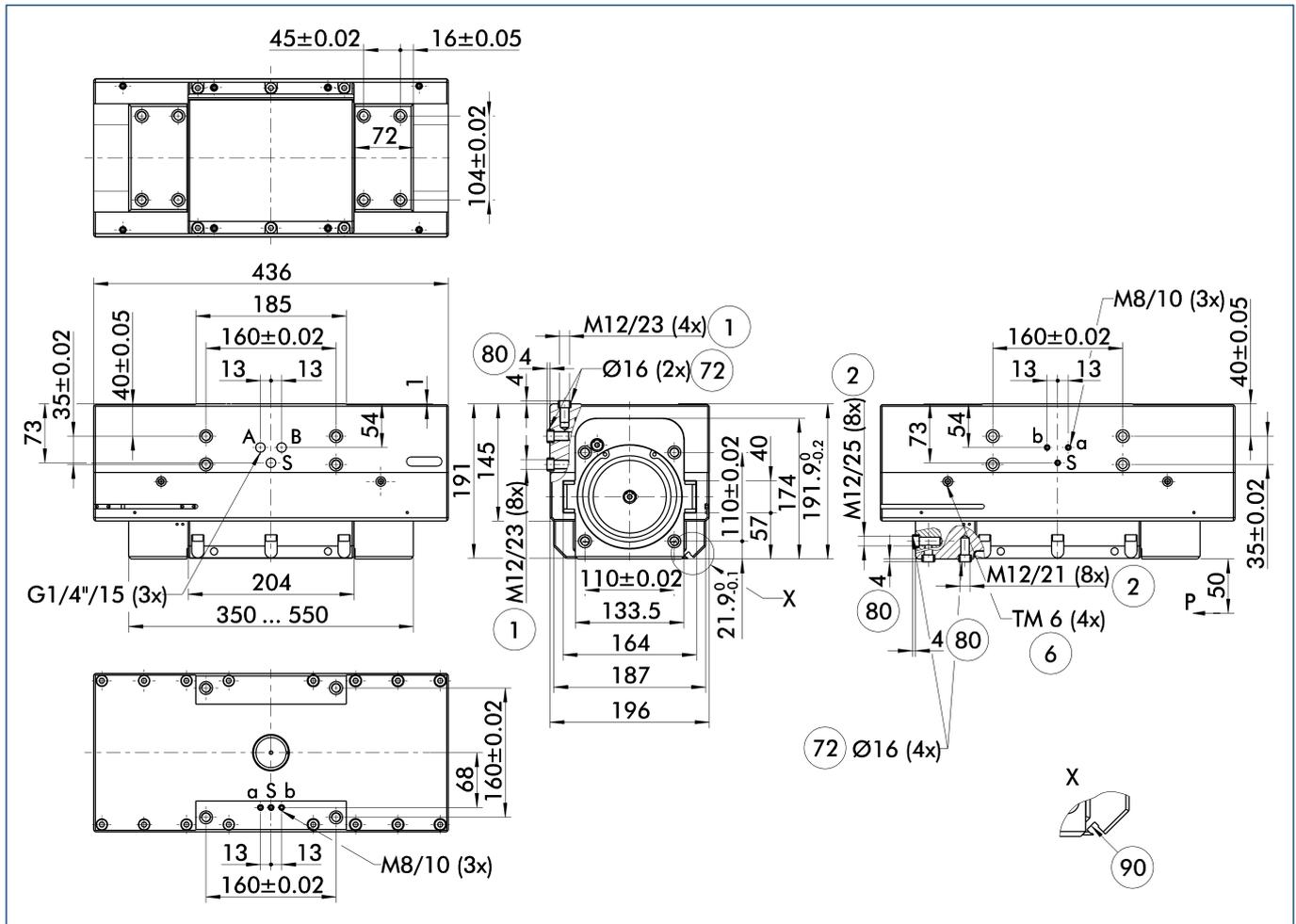
Technical data

Description		SPG 100	SPG 100-SDV-P
ID		0302121	0302120
Stroke per jaw	[mm]	100	100
Closing- / opening force	[N]	10000/11480	10000/11480
Weight	[kg]	35	35
Recommended workpiece weight	[kg]	50	50
Fluid consumption per double stroke	[cm ³]	4600	4600
min. / max. operating pressure	[bar]	2/8	2/8
Nominal operating pressure	[bar]	6	6
Closing- / opening time	[s]	1.5/1.5	3/3
max. permitted finger length	[mm]	500	500
max. permitted weight per finger	[kg]	15	15
IP class		30	30
min. / max. ambient temperature	[°C]	5/90	5/90
Repeat accuracy	[mm]	0.1	0.1

① The closing and opening times can be further reduced by fitting rapid deaeration valves to the air connections. However, care must be taken to ensure that the jaw motion occurs without any hitting or bouncing.



Main view

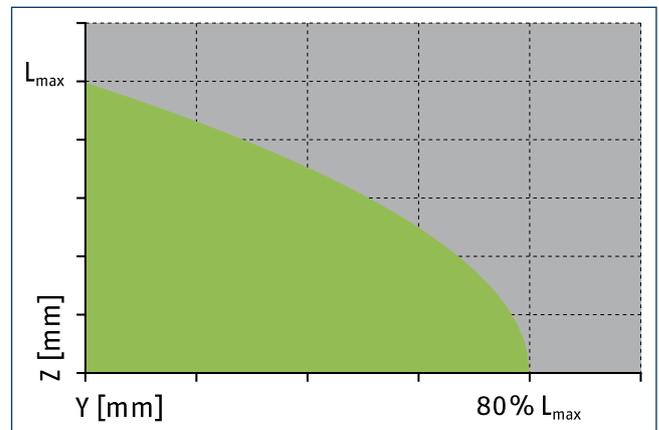
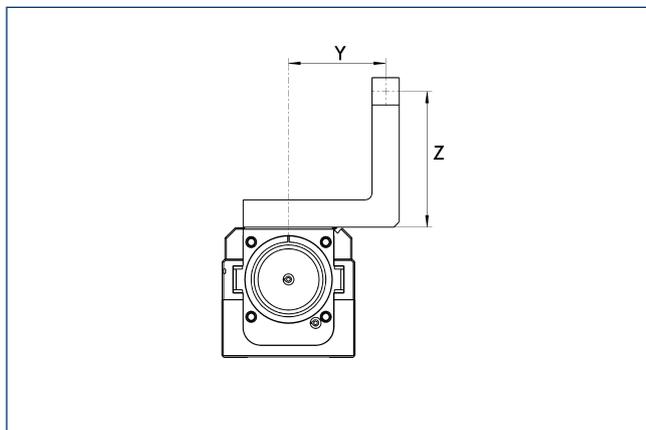


The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can be used as a gripping force maintenance device (see catalog section on "Accessories").

- A, a Main / direct connection, gripper opening
- B, b Main / direct connection, gripper closing
- S Air purge connection (0.5 ... 1 bar)
- ① Gripper connection
- ② Finger connection
- ⑥ Lubricating nipple connection
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the mating part
- ⑨⑩ MMS 30

Maximum permitted finger projection



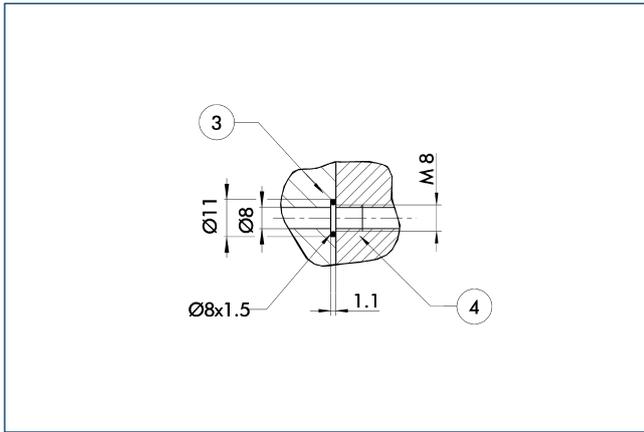
■ Permitted range ■ Inadmissible range

L_{max} is equivalent to the maximum permitted finger length, see the chart of technical specifications.

SPG 100

SCHUNK Grippers pneumatic | 2-Finger Parallel Grippers | Heavy-duty Gripper

Hose-free direct connection M8

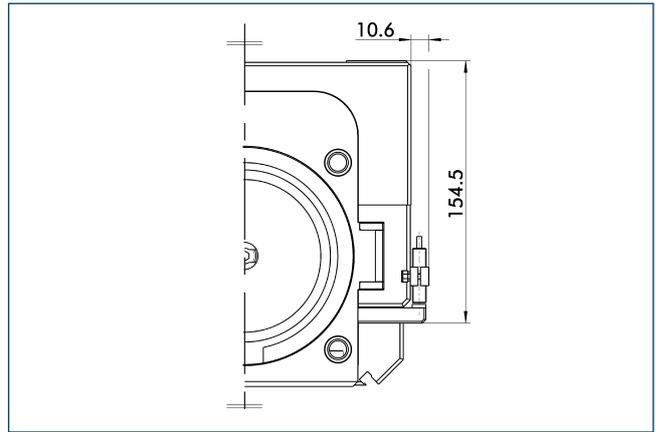


③ Adapter

④ Gripper

The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Mounting kit for proximity switch



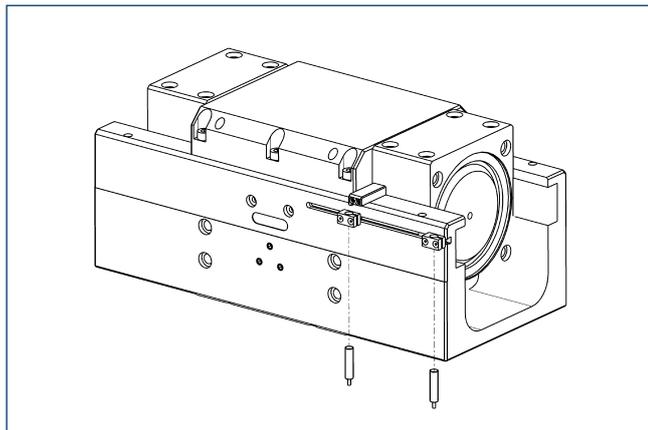
The mounting kit comprises mount, switching lug / cam and mounting screws. Proximity switches must be ordered separately.

Description	ID
Mounting kit for proximity switch	
HG-SPG 100	0300765

① This mounting kit needs to be ordered optionally as an accessory.



Inductive proximity switches

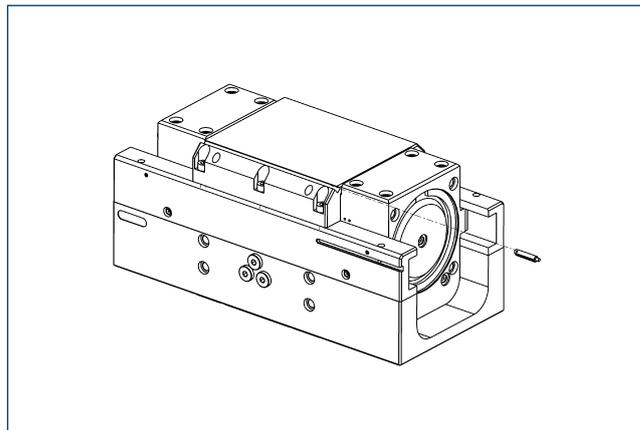


Limit position monitor can be mounted with mounting kit.

Description	ID	Often combined
Mounting kit for proximity switch		
HG-SPG 100	0300765	
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Clip for plug / socket		
CLI-M12	0301464	
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Sensor distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	

① Two sensors (closer/S) are required for each unit, plus extension cables as an option. This mounting kit needs to be ordered optionally as an accessory. Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

MMS electronic magnetic switches



End position monitoring for mounting in the T-slot.

Description	ID	Often combined
MMS electronic magnetic switches		
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	●
MMSK 30-S-PNP	0301563	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Clip for plug / socket		
CLI-M12	0301464	
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

① Two sensors (closer/S) are required for each unit, plus extension cables as an option. Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.