



Superior Clamping and Gripping



## Product Information

Universal swivel unit SRU-plus 35

## SRU-plus

Universal swivel unit

**Robust. Fast. High Performance.**

# Universal rotary actuator SRU-plus

Universally usable unit for pneumatic swivel and turning movements

## Field of application

Can be used in either clean or dirty areas, or wherever pneumatic swiveling is required.



## Advantages – Your benefits

Finely graded series with a steady increase in torque for multiple cases of application, the correct size as a standard product is available

Swivel angle can be selected as either 90° or 180° complete flexibility in selecting the angle of rotation, application-specific angles possible on request

End position adjustability  $+3^\circ/-3^\circ$  (small) or  $+3^\circ/-90^\circ$  (large) can be selected

Middle position can be selected as pneumatic or locked The locked middle position can be unlocked when loaded. The two types of middle positions always allow further rotation in either direction.

Fluid feed-through can be used for gases, fluids, and vacuum therefore no interfering hoses

Electrical rotary feed-through for long-lasting, reliable feed-through of sensor, actuator or optionally bus signals

Choice of electronic magnetic sensors or inductive proximity sensors for absolute variability of position monitoring

Exchangeable screw-in guide sleeves (bushing) allow for easy maintenance and rapid exchange t after several million cycles.

Series extends downwards with the SRU-mini series, for a wide range of applications



Sizes  
Quantity: 8



Weight  
1.2 .. 26.5 kg



Torque  
3 .. 115 Nm



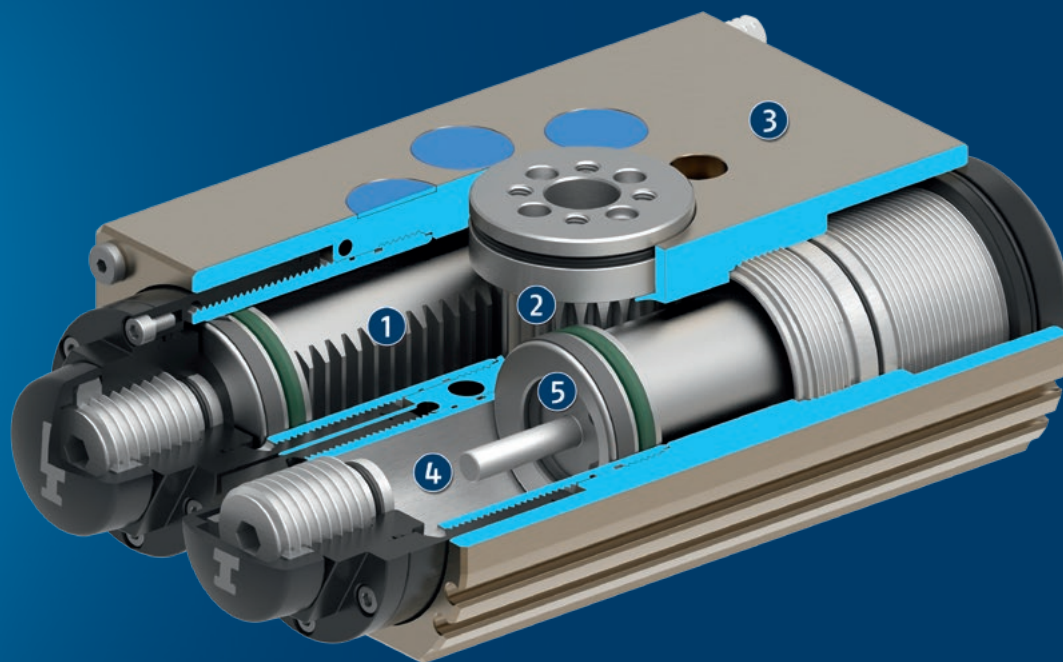
Repeat accuracy  
0.05°



Angle of rotation  
90 .. 180°

## Functional description

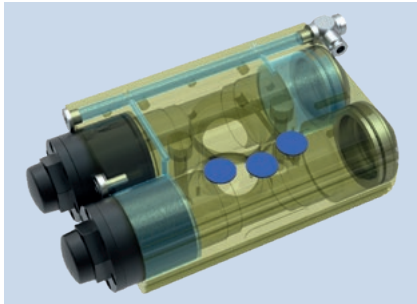
When subjected to pressure, the two pneumatic pistons move their end faces in a straight line in their respective bores thus turning the pinion by means of the serrations on their sides.



- ① **Drive**  
Pneumatic, powerful double piston drive
- ② **Pinion**  
stable pinion, optionally available with fluid feed-through, for transforming the piston movement into a rotary movement
- ③ **Housing**  
weight-optimized due to the use of hard-anodized aluminum alloy
- ④ **Sleeve technology**  
For radial adjustment of the end positions without a settling effect and ensuring rapid exchange for maintenance
- ⑤ **Damping**  
Hydraulic shock absorbers for high moments of inertia

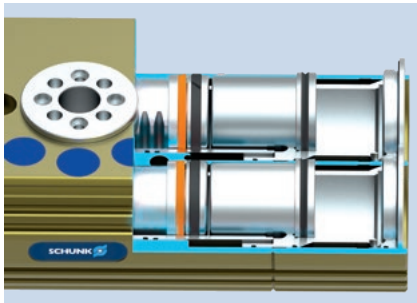
## Detailed functional description

### Pneumatic drive



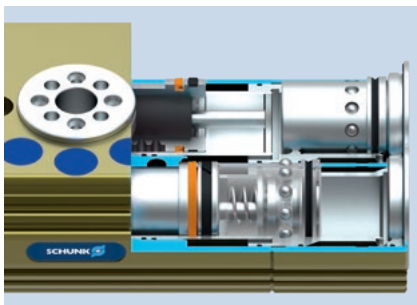
The SRU-plus swivel unit is driven by two powerful pistons. Internal bore holes allow both pistons to be pressurized at the same time, so that large torques are available in a small space.

### Pneumatic middle position (M)



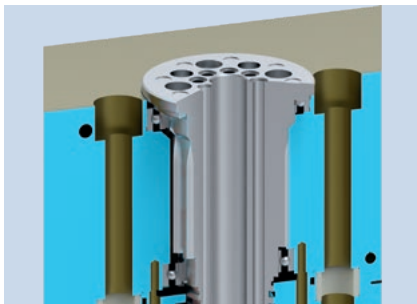
The SRU-plus can be ordered with an optional pneumatic center position so that a third position can be controlled in addition to the two end positions. Pneumatic actuation of the center position pistons allows a certain degree of flexibility to be achieved in the intermediate position. The center position can be set  $\pm 3^\circ$  for fine adjustment.

### Locked middle position (VM)



Alternatively, the SRU-plus swivel unit is available with a locked center position that allows three positions to be approached. The center position is mechanically locked here and additionally hydraulically damped, allowing short swiveling times and high loads. The locked center position can be set  $\pm 3^\circ$  for fine adjustment.

### Fluid feed-through



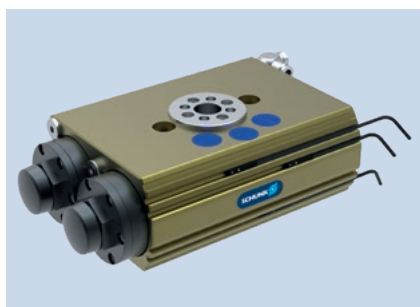
The SRU-plus swivel unit is available with optional fluid feed-through, which eliminates the need for hoses to be carried along and swivelled and therefore process-reliable feed-through of compressed air, gases, or a vacuum can be implemented.

## Electrical rotary feed-through



In addition, the SRU-plus swivel unit is available with an optional electrical feed-through, which allows for reliable feed-through of electrical signals.

## Monitoring via electronic magnetic switches



SCHUNK MMS electronic magnetic switches can be mounted and fully countersunk in the C-slots of the SRU-plus swivel unit. This makes monitoring of up to three positions with minimal interfering contour possible.

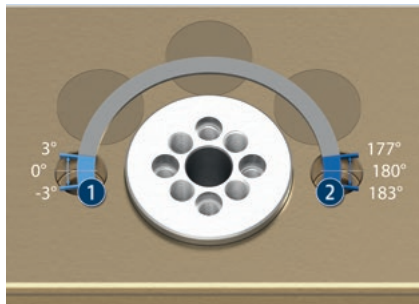
## Monitoring via inductive proximity sensors and adjustable control cam



To interrogate the end positions with inductive proximity switches, an additional mounting kit can be mounted on the rotary table. This means that up to three individual positions can be monitored.

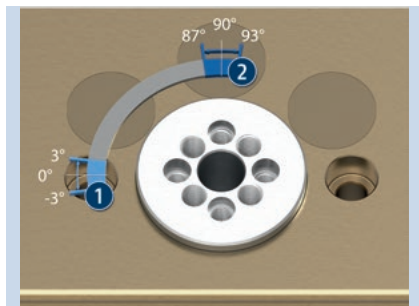
## Adjustment range of end positions and swivel angle

### Versions with small end position adjustability



Slight end position adjustability for fine adjustment of both end positions ( $\pm 3^\circ$ ) in case of swivel units with a swivel angle of  $180^\circ$

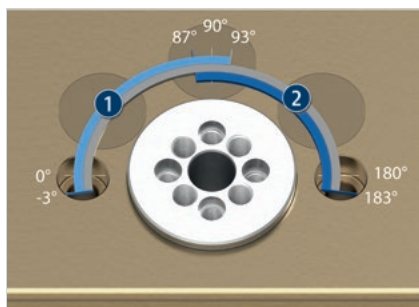
- ❶ Adjustment range starting angle
- ❷ Adjustment range end angle



Slight end position adjustability for fine adjustment of both end positions ( $\pm 3^\circ$ ) in case of swivel units with a swivel angle of  $90^\circ$

- ❶ Adjustment range starting angle
- ❷ Adjustment range end angle

### Version with large end position adjustability



Large end position adjustability for variable adjustment of the swivel angle between  $0^\circ$  and  $186^\circ$ . Both end positions can each be limited by  $90^\circ$  ( $\pm 3^\circ$ ).

- ❶ Adjustment range starting angle
- ❷ Adjustment range end angle





## General notes about the series

**Standard conditions:** The technical data shown refers to an environment of 20 °C and atmospheric pressure.

**Housing material:** Aluminum (extruded profile)

**Actuation:** pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

**Operating principle:** Double piston rack and pinion principle

**Scope of delivery:** Flow control valves, centering bushings, O-rings for direct connection, fitting screws (SRU-plus 63 only), assembly and operating manual with manufacturer's declaration

**Warranty:** 24 months

**Repeat accuracy:** is defined as a distribution of the end position for 100 consecutive cycles.

**Pinion position:** is always shown in the left end position. The pinion rotates from here to the right in clockwise direction. The arrow makes the direction of rotation clear.

**Pinion screw connection diagram:** When setting a swivel angle smaller than 90°, the left end stop must be completely turned in. This means that the left end position has a screw connection diagram on the pinion which is clockwise turned by 90° compared to the main view, which shows a swivel angle of 180°.

**Customized angle of rotation:** More swivel angles are available on request.

**Torque in the end positions:** Please note that the final angular degrees (approx. 2°) before the end position can only be approached using the force of a single drive piston. For this reason, double actuated modules only have about half the rated torque available in this area. An external stop can be used to provide the full torque even in the end positions.

**Travel to the pneumatic middle position:** is carried out using only half of the nominal torque.

**Swiveling time:** is the rotation time of pinion/flange around the nominal rotation angle. Valve switching times, hose filling times, or PLC reaction times are not included and are to be considered when cycle times are calculated.

## Application example

Unit for turning and joining of small components

- ① Rotary actuator SRU-plus
- ② Tolerance compensation unit TCU
- ③ 2-finger parallel gripper PGN-plus
- ④ Linear module KLM
- ⑤ Linear module LM





## SCHUNK offers more ...

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



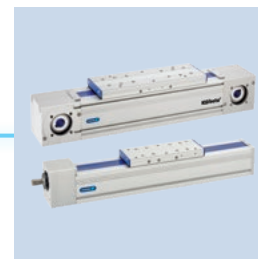
Universal gripper



Sealed gripper



Angular gripper



Linear module



Inductive proximity switches



Magnetic switches



Pressure maintenance valve



Line gantry



Fastened with screws

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

## Options and special information

For particularly damping-intensive swivel movements, additional, external shock absorbers can be fitted. Due to the innovative sleeve technology, special rotation angles of more than 180° can be provided quickly and economically. Please contact us for assistance.

On request, we can also provide our electric feed-throughs with M5 or M12 connection sockets. On request, the electric feed-throughs can also be used to transmit bus signals.

Please note that suitable emergency stop scenarios (e.g. controlled shut down) and restarting scenarios (e.g. pressure build-up valves, appropriate valve switching sequences) are needed for all pneumatic actuators.

Cutting off the pressure in an uncontrolled manner could lead to undefined states and behavior.

## Ordering example

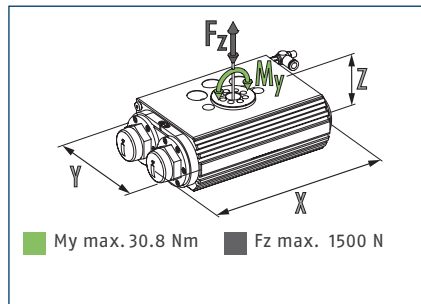
	SRU-plus	20	-	S	-	180	-	3	-	M	-	4	-	M8	-	AS
<b>Description</b>	SRU-plus															
<b>Size</b>	20/25/30/35/40/50/60/63															
<b>Type of damping method</b>	S = speed (with size 20) W = soft H = hard (for high loads)															
<b>Swivel angle</b>	90°/180°															
<b>End position adjustability</b>	3°/90°															
<b>Middle position</b>	- = no M = pneumatic center position VM = Locked center position															
<b>Number of air feed-throughs</b>	- = no fluid feed-through 4 = for sizes 20 – 35 8 = for sizes 40 – 63															
<b>Connector size for electric feed-through</b>	- = no electrical feed-through M5 = M5 plug connector on the rotating side M8 = M8 plug connector on the rotating side M12 = M12 plug connector on the rotating side															
<b>Mounting kit for inductive proximity switch</b>	- = no mounting kit AS = with mounting kit															



# SRU-plus 35

Universal swivel unit

## Dimensions and maximum loads



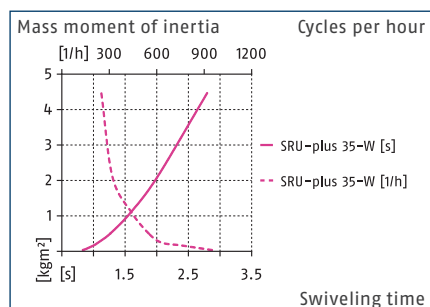
① The indicated moments and forces are static values and may appear simultaneously. Throttling has to be done for ensuring that the rotary movement takes place without impact or bouncing. Otherwise the service life reduces.

## Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 35-W-90-3	SRU-plus 35-W-180-3	SRU-plus 35-W-180-90
ID		0362000	0362020	0362050
End position damping		hydr. damper	hydr. damper	hydr. damper
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	14.0	14.0	14.0
Number of intermediate positions		none	none	none
IP protection class		67	67	67
Weight	[kg]	2.65	2.65	2.75
Fluid consumption (2x nom. angle)	[cm³]	132.0	216.0	216.0
Min./nom./max. operating pressure	[bar]	4/6/8	4/6/8	4/6/8
Diameter of connecting hose		6 x 3.9 x 1.05	6 x 3.9 x 1.05	6 x 3.9 x 1.05
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[°]	0.05	0.05	0.05
Dimensions X x Y x Z	[mm]	195.6 x 107 x 60	195.6 x 107 x 60	217.5 x 107 x 60
<b>Options with fluid feed-through</b>				
Designation (soft damping)		SRU-plus 35-W-90-3-4	SRU-plus 35-W-180-3-4	SRU-plus 35-W-180-90-4
ID		0362002	0362022	0362052
Torque	[Nm]	13.4	13.4	13.4
Weight	[kg]	2.95	2.95	3.05
No. of fluid feed-throughs		4	4	4
Max. pressure fluid feed-through	[bar]	8	8	8
Dimensions X x Y x Z	[mm]	195.6 x 107 x 81	195.6 x 107 x 81	217.5 x 107 x 81
<b>Options with fluid and electric feed-through</b>				
Designation (soft damping)		SRU-plus 35-W-90-3-4-M8	SRU-plus 35-W-180-3-4-M8	SRU-plus 35-W-180-90-4-M8
ID		0362004	0362024	0362054
Weight	[kg]	3.7	3.7	3.8
Number/size of electrical connections on the output end		6/M8	6/M8	6/M8
Max. voltage	[V]	24	24	24
Max. current per wire/total	[A]	1/1	1/1	1/1
Dimensions X x Y x Z	[mm]	195.6 x 107 x 128.12	195.6 x 107 x 128.12	217.5 x 107 x 128.12
<b>Options with fluid and electric feed-through and mounting kit</b>				
Designation (soft damping)		SRU-plus 35-W-90-3-4-M8-AS	SRU-plus 35-W-180-3-4-M8-AS	SRU-plus 35-W-180-90-4-M8-AS
ID		0362007	0362027	0362057
Dimensions X x Y x Z	[mm]	195.6 x 107 x 139.5	195.6 x 107 x 139.5	217.5 x 107 x 139.5

① All units are also available in an FKM version. Please contact us for details.

## Max. permissible inertia J\*



\* The diagrams are valid for basic units and for applications with a vertical swivel axis as well as for absolutely centric loads with a horizontal swivel axis and with an operating pressure of 6 bar. The swiveling times per throttling have to be observed, otherwise the life time may reduce. We will be happy to help you designing other applications. In addition, the SCHUNK Design Tool Swiveling is available online.

## Technical data of SRU-plus with middle position

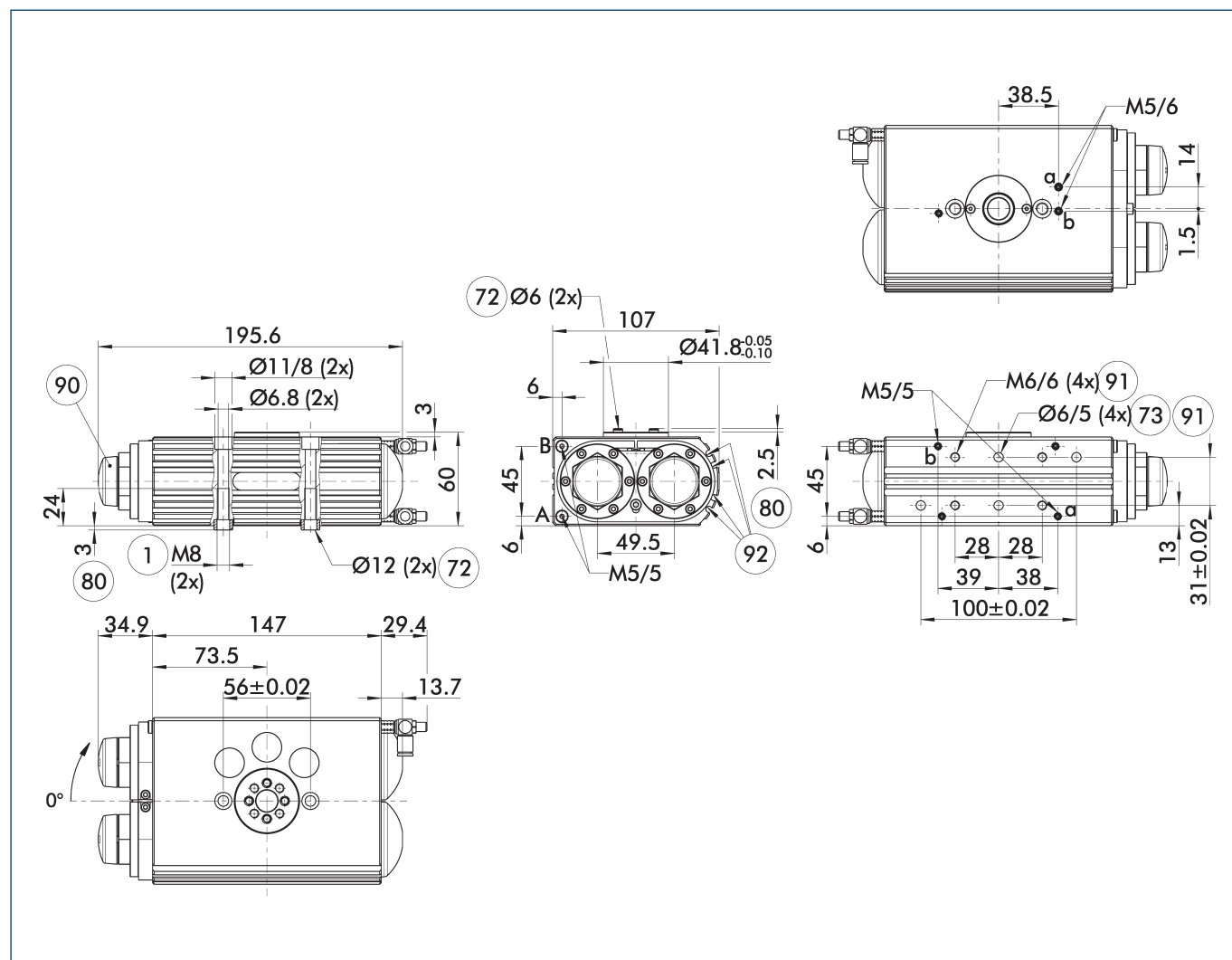
Designation (soft damping)		SRU-plus 35-W-180-3-M	SRU-plus 35-W-180-3-VM	SRU-plus 35-W-180-90-M
ID		0362030	0362040	0362060
End position damping		hydr. damper	hydr. damper	hydr. damper
Angle of rotation	[°]	180.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	14.0	14.0	14.0
Number of intermediate positions		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
Adjustability of middle position	[°]	3.0	3.0	3.0
IP protection class		67	67	67
Weight	[kg]	3.65	4.15	3.75
Fluid consumption (2x nom. angle)	[cm³]	216.0	216.0	216.0
Min./nom./max. operating pressure	[bar]	4/6/8	4/6/6.5	4/6/8
Diameter of connecting hose		6 x 3.9 x 1.05	6 x 3.9 x 1.05	6 x 3.9 x 1.05
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[°]	0.05	0.05	0.05
Dimensions X x Y x Z	[mm]	247.6 x 107 x 60	290.4 x 107 x 60	269.5 x 107 x 60
<b>Options with fluid feed-through</b>				
Designation (soft damping)		SRU-plus 35-W-180-3-M-4	SRU-plus 35-W-180-3-VM-4	SRU-plus 35-W-180-90-M-4
ID		0362032	0362042	0362062
Torque	[Nm]	13.4	13.4	13.4
Weight	[kg]	3.95	4.45	4.05
No. of fluid feed-throughs		4	4	4
Max. pressure fluid feed-through	[bar]	8	8	8
Dimensions X x Y x Z	[mm]	247.6 x 107 x 81	290.4 x 107 x 81	269.5 x 107 x 81
<b>Options with fluid and electric feed-through</b>				
Designation (soft damping)		SRU-plus 35-W-180-3-M-4-M8	SRU-plus 35-W-180-3-VM-4-M8	SRU-plus 35-W-180-90-M-4-M8
ID		0362034	0362044	0362064
Weight	[kg]	4.7	5.2	4.8
Number/size of electrical connections on the output end		6/M8	6/M8	6/M8
Max. voltage	[V]	24	24	24
Max. current per wire/total	[A]	1/1	1/1	1/1
Dimensions X x Y x Z	[mm]	247.6 x 107 x 128.12	290.4 x 107 x 128.12	269.5 x 107 x 128.12
<b>Options with fluid and electric feed-through and mounting kit</b>				
Designation (soft damping)		SRU-plus 35-W-180-3-M-4-M8-AS	SRU-plus 35-W-180-3-VM-4-M8-AS	SRU-plus 35-W-180-90-M-4-M8-AS
ID		0362037	0362047	0362067
Dimensions X x Y x Z	[mm]	247.6 x 107 x 139.5	290.4 x 107 x 139.5	269.5 x 107 x 139.5

① All units are also available in an FKM version. Please contact us for details.

# SRU-plus 35

Universal swivel unit

## Main view for SRU-plus without EDF



The main view shows the SRU-plus in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, without a middle position, and without fluid feed-through.

① The SDV-P pressure maintenance valve can be used to maintain the position in the case of a loss of pressure (see "Accessories" catalog section).

A, a Main / direct connection, rotary actuator rotates clockwise

B, b Main / direct connection, rotary actuator rotates counterclockwise

① Connection swivel unit

⑦② Fit for centering sleeves

⑦③ Fit for centering pins

⑧① Depth of the centering sleeve hole in the counter part

⑨① Cover caps

⑨① Not intended for mounting the unit, only for attachments

⑨② Sensor MMS 22..

Technical drawing of the 2500 series hydraulic cylinder, showing front, side, and end views with dimensions and part numbers.

**Front View (Top Left):** Shows the cylinder body with dimensions 19, 9, 39, 47, 10, 10, and 25. Part numbers include 84 M8, M8 83, and M5/8 (4x).

**Side View (Middle Left):** Shows the cylinder body with dimensions 15, 80, 70.9, 3, 12, 60, 26, and 2.5 80. Part numbers include 72 Ø12 (2x), M8 (2x) 1, and 25.

**End View (Bottom Left):** Shows the cylinder head with dimensions 10, 31, and 2. Part numbers include 72 Ø6 (2x) and M6 (4x) 2.

**Top View (Top Right):** Shows the cylinder head with dimensions 18, 1.5, 14, 18, 24, 24, 28, 28, 38.5, and 11.5. Part numbers include M5/5 and 25.

**Side View (Middle Right):** Shows the cylinder body with dimensions 128.12, 26, 13, 10, 9, 21, and 19. Part numbers include 84 M8, M8 83, and M16 85.

**End View (Bottom Right):** Shows the cylinder head with dimensions 19, 1, 1, 19, 28, 28, 8.4, 80, 96.8, and 70. Part numbers include A, B, and D.

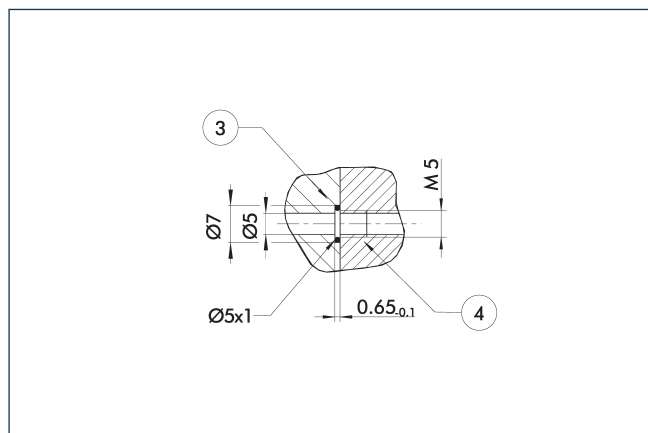
**Detail View (Far Right):** Shows a detail of the cylinder head with dimensions 1, 19, 15, and 25. Part numbers include M5/5 and 25.

**Detail View (Bottom Right):** Shows a detail of the cylinder head with dimensions 1, 19, 15, and 25. Part numbers include M4/6 (4x) and Ø6/0.75 (4x) 25.

(85) Sensor feed-through output



### Hose-free direct connection M5

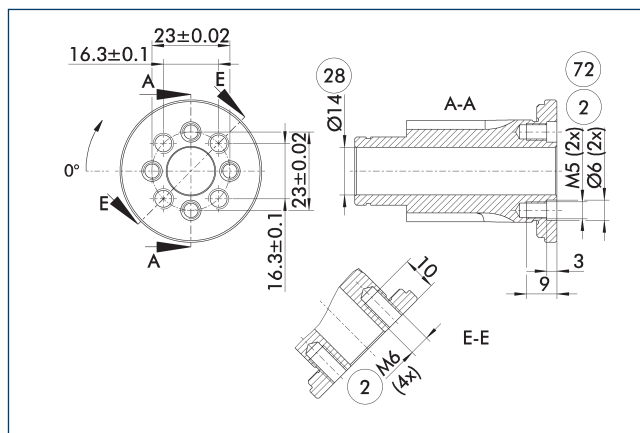


③ Adapter

④ Rotary unit

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

### Pinion without fluid feed-through



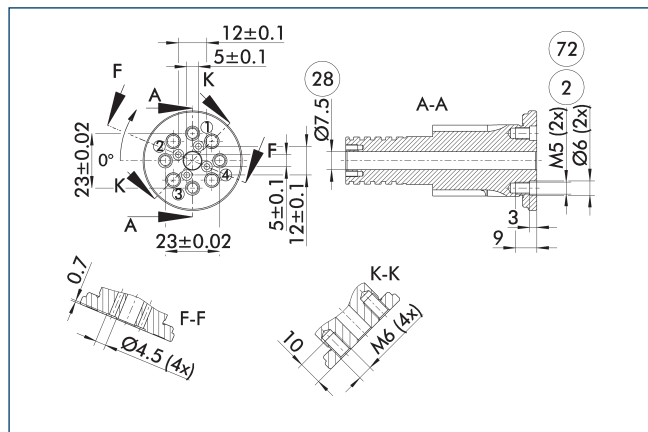
② Attachment connection

⑦② Fit for centering sleeves

②⑧ Through-hole

Mounting pattern for fastening the rotating load to the pinion. The "4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the "4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

### Pinion with fluid feed-through



② Attachment connection

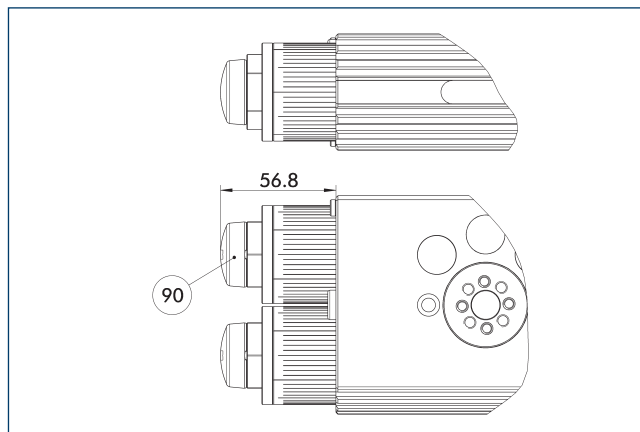
⑦② Fit for centering sleeves

②⑧ Through-hole

Pinion screw connection diagram if the option "fluid feed-through" was chosen. The preferred drilling pattern is two screws and two screws with a centering sleeve.

① View applicable only for versions without EDF!

### Large end position adjustability 90°



⑨⑩ Cover caps

The drawing shows the change in dimension of the "large end position adjustability (90°)" option as compared to the basic variant. The option permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

Technical drawing of the M5/5 pressure washer, showing front, side, and top views with dimensions.

**Front View (Top):**

- Overall width: 38.5
- Distance from left edge to center of trigger gun: 32.5
- Distance from center of trigger gun to right edge: 52
- Overall height: 29.4
- Distance from bottom edge to center of trigger gun: 14
- Distance from center of trigger gun to top edge: 1.5
- Trigger gun label: M5/5
- Labels c and d point to the trigger gun mechanism.

**Side View (Bottom):**

- Overall width: 16
- Overall height: 5.6
- Labels A, B, C, and D point to the trigger gun mechanism.
- Label M5/5 is present.

**Top View (Right):**

- Shows the side profile of the trigger gun.
- Label M5/5 is present.

- The drawing shows the change in dimension of the "pneumatic center position (M)" option compared to the basic variant. Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

- The drawing shows the change in dimension of the "locked center position (VM)" option compared to the basic variant. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

Technical drawing of a 2x2 ball valve assembly. The drawing includes a front view, a top view, and a side view of the handle assembly.

**Front View Dimensions:**

- Overall width: 90
- Distance from left face to center of top port: 38.5
- Top port size: M5/6 (4x)
- Right port size: M5/8
- Distance from right face to center of right port: 14
- Distance from right face to center of bottom port: 1.5
- Overall height: 18
- Distance from bottom face to center of bottom port: 18
- Ball diameter:  $\varnothing 95$
- Port diameter: 24
- Port tolerance:  $\pm 0.02$
- Bottom port size: M5/5

**Top View Dimensions:**

- Distance between port centers: 13
- Distance from center to port center: 19
- Port labels: A, B

**Side View Dimensions:**

- Handle length: 80
- Distance from handle end to ball center: 21
- Distance from handle end to ball center (alternative): 13
- Distance from ball center to handle end (alternative): 20
- Distance from ball center to handle end (alternative): 3
- Handle diameter:  $\varnothing 12$  (2x)
- Handle end diameter: 72
- Handle end features: 3, 4

- Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

 View applicable only for versions without EDF!

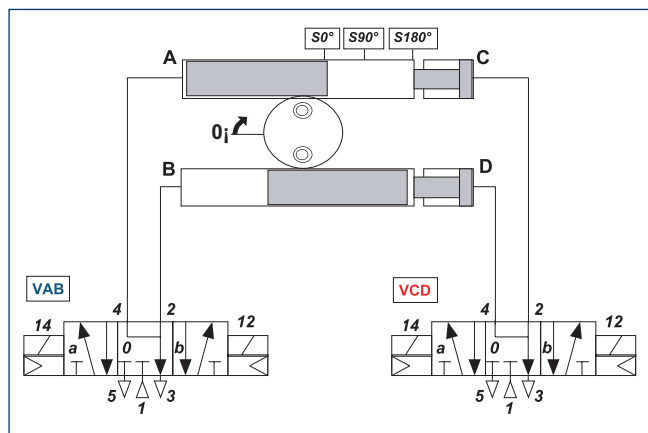
Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

 View applicable only for versions without EDF!

# SRU-plus 35

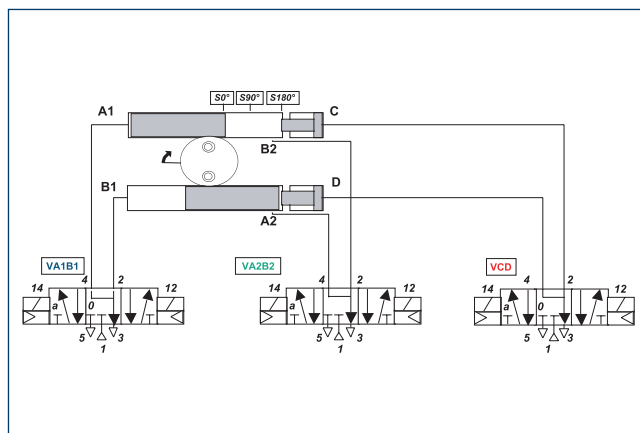
Universal swivel unit

## Pneumatic diagram of SRU-plus-VM — vertical axis



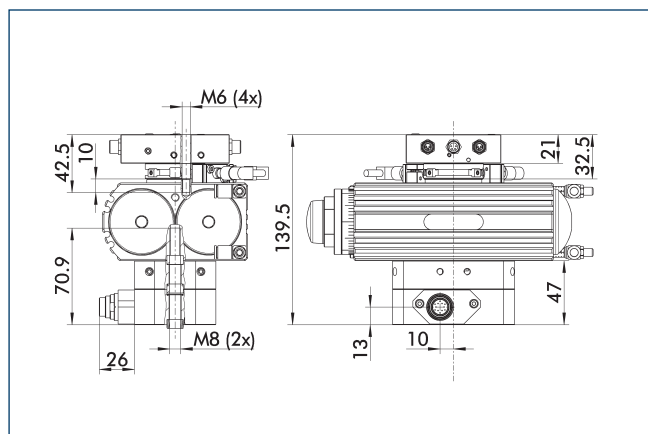
VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

## Pneumatic diagram of SRU-plus-VM — horizontal axis



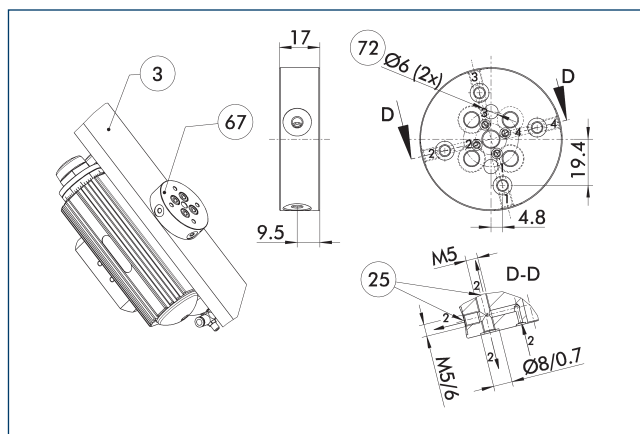
VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

## Attachment kit for proximity switch at SRU-plus with EDF



The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

## Distributor for SRU-plus



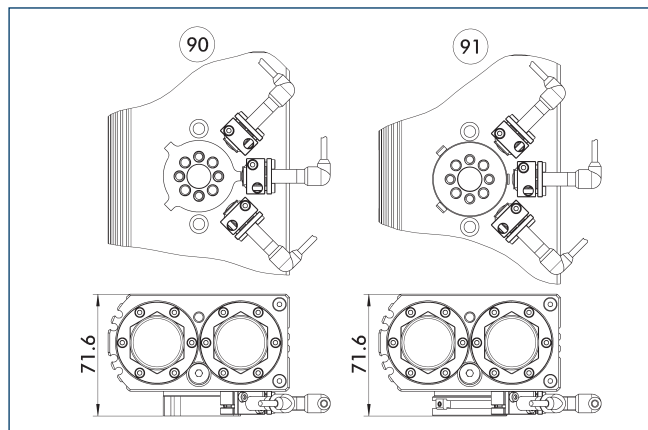
- ③ Adapter
- ⑥7 Distributor for media feed-through
- ②5 Fluid feed-through
- ⑦2 Fit for centering sleeves

The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor plate	
V-SRU-plus 35	0357792

① View applicable only for versions without EDF!

## Attachment kit for proximity switch at SRU-plus without EDF



90 AS-NHS-F-SRU-plus 35

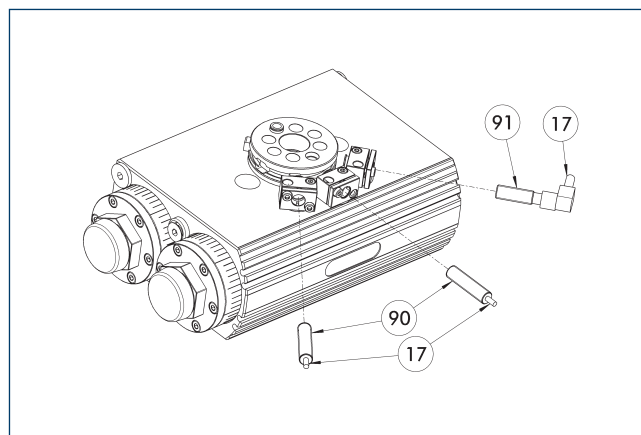
91 AS-NHS-SRU-plus 35

The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Description	ID	
Mounting kit for proximity switch with fixed cam		
AS-NHS-F-SRU-plus 35	0362095	
AS-NHS-F-SRU-plus 35-4	0362096	
Mounting kit for proximity switch with adjustable cam		
AS-NHS-SRU-plus 35	0362090	
AS-NHS-SRU-plus 35-4	0362091	

- ① Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

## Inductive proximity switches IN for SRU-plus without EDF



17 Cable outlet

91 Sensor IN...-SA

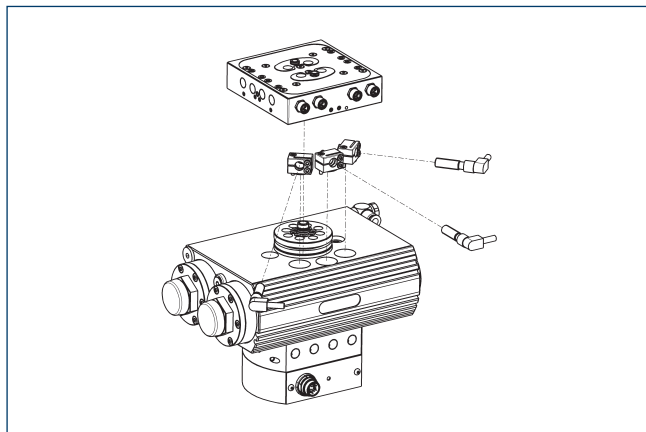
90 Sensor IN ...

End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined
Mounting kit for proximity switch with fixed cam		
AS-NHS-F-SRU-plus 35	0362095	
AS-NHS-F-SRU-plus 35-4	0362096	
Mounting kit for proximity switch with adjustable cam		
AS-NHS-SRU-plus 35	0362090	
AS-NHS-SRU-plus 35-4	0362091	
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-C 80-S-M8-PNP	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	●
INK 80-S-SA	0301566	

- ① View applicable only for versions without EDF!

### Inductive proximity switches IN for SRU-plus with EDF

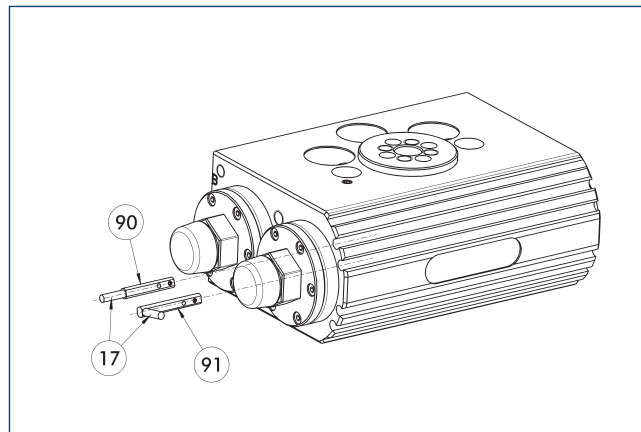


End and intermediate position monitoring mounted directly

Description	ID	Often combined
<b>Inductive proximity switches</b>		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-C 80-S-M8-PNP	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
<b>Inductive proximity switch with lateral cable outlet</b>		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	●
INK 80-S-SA	0301566	
<b>Connection cables</b>		
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	
<b>clip for plug/socket</b>		
CLI-M12	0301464	
CLI-M8	0301463	
<b>Cable extension</b>		
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	
<b>Sensor distributor</b>		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

### Electronic magnetic switch MMS



①7 Cable outlet

①0 Sensor MMS 22..

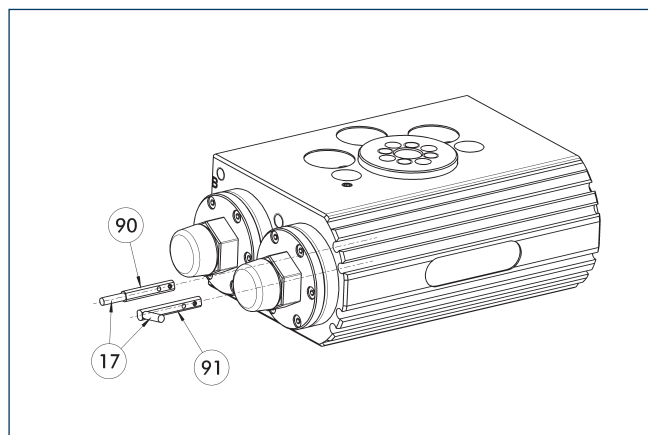
①1 Sensor MMS 22...-SA

End and intermediate position monitoring mounted in C-slot

Description	ID	Often combined
<b>Electronic magnetic switch</b>		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
<b>Electronic magnetic switches with lateral cable outlet</b>		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
<b>Connection cables</b>		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
<b>clip for plug/socket</b>		
CLI-M8	0301463	
<b>Cable extension</b>		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
<b>Sensor distributor</b>		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

## Programmable magnetic switch MMS 22-PI1



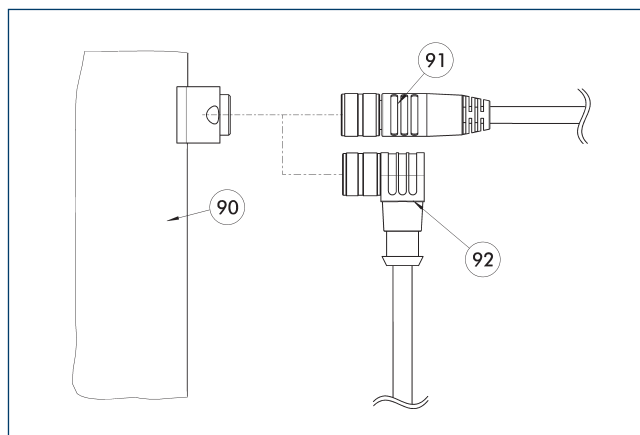
- ①⑦ Cable outlet  
 ⑨⑦ Sensor MMS 22 ..-PI1-...-SA  
 ⑨⑦ Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
<b>Programmable magnetic switch</b>		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
<b>Programmable magnetic switch with lateral cable outlet</b>		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
<b>Programmable magnetic switch with stainless steel housing</b>		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

## Connection cables



- ⑨⑦ Electrical connection component  
 ⑨⑦ Cable with straight connector  
 ⑨⑦ Cable with angled connector

Description	ID	Length [m]
<b>Connection cables</b>		
KA BG16-L 12P-1000	0301801	10
KA BW16-L 12P-0500	0323005	5

- ① BG stands for a connection cable with a straight female connector and BW for an angled female connector. SG stands for a connection cable with a straight male connector and SW for an angled male connector.



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