

Superior Clamping and Gripping



Product Information

Universal gripper JGP 125

Loadable. Reliable. Compact. Universal gripper JGP

Universal 2-finger parallel gripper of the compact class with T-slot guidance and best cost-performance ratio

Field of application

Optimum standard solution for many fields of application. Universal application in clean and slightly dirty surroundings in machine building and plant building industry, assembly and handling as well as automotive industry.

Advantages - Your benefits

A firm focus on the essentials for maximum profitability

Sturdy T-slot guidance for the precise handling of <u>different workpieces</u>

Compact dimensions and low weight for minimal interfering contours in handling

High maximum moments possible suitable for using long gripper fingers

Wedge-hook design for high power transmission and synchronized gripping

Comprehensive sensor accessories for monitoring and control of the stroke position

Mounting from two gripper sides for universal and flexible gripper assembly

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













Functional description

The oval piston is moved up or down by compressed air. The angled active surfaces of the wedge-hook produce a synchronized, parallel jaw motion.



- 1) T-slot guidance
 - loadable, robust base jaw guidance for extremely long gripper fingers
- ② Base Jaw for the connection of workpiece-specific gripper fingers
- Sensor system Proximity switch can be assembled without mounting kit
- 4 Housing

is weight-optimized due to the use of high-strength aluminum alloy

- (5) Centering and mounting possibilities for universal assembly of the gripper
- Wedge-hook design for high force transmission and centric gripping

General notes about the series

Operating principle: Wedge-hook kinematics **Housing material:** Aluminum alloy, anodized

Base jaw material: Steel

Actuation: pneumatic, with filtered compressed air as per

ISO 8573-1:2010 [7:4:4].

Warranty: 24 months

Scope of delivery: Brackets for proximity switches, centering sleeves, 0-rings for direct connection, assembly instructions (operating manual with declaration of incorporation is available online)

Gripping force maintenance device: possible by using the version with mechanical gripping force maintenance or pressure maintenance valve SDV-P

Gripping force: is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

Finger length: is measured from the reference surface as the distance P in direction to the main axis. The maximum permissible finger length applies until the nominal operating pressure is achieved. With higher pressures, the finger length must be reduced proportio-

Repeat accuracy: is defined as a distribution of the end Position for 100 consecutive strokes.

nally to the nominal operating pressure.

Workpiece weight: is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times: are purely the times that the base jaws or fingers are in motion. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.



Application example

Swivel head with double parallel gripper for simultaneous loading and unloading of workpieces in a machine.

- 2-finger parallel gripper JGP with workpiece-specific gripper fingers
- Swivel head SRH-plus
- 3 Workpiece

SCHUNK offers more ...

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



① For more information on these products can be found on the following product pages or at schunk.com.

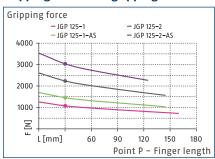
Options and special information

Gripping force maintenance version AS/IS: The mechanical gripping force maintenance version ensures minimum gripping force even in the event of a pressure drop. In the AS/S version this acts as a closing force, in the IS version as an opening force.

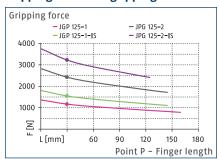
The JGP series is especially suitable for economic handling solutions and distinguishes by its high cost-benefit ratio. **Integrated air purge connection:** impedes the ingress of dirt into the inside of the gripper



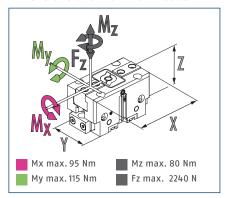
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



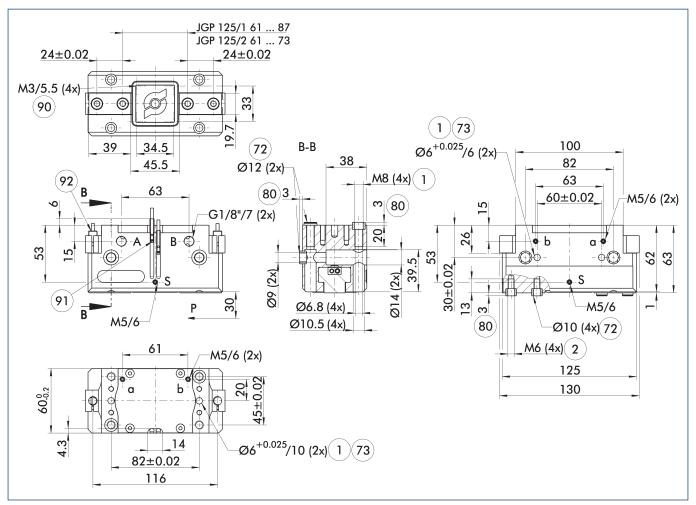
The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		JGP 125-1	JGP 125-2	JGP 125-1-AS	JGP 125-2-AS	JGP 125-1-IS	JGP 125-2-IS
ID		0308650	0308655	0308651	0308656	0308652	0308657
Stroke per jaw	[mm]	13	6	13	6	13	6
Closing/opening force	[N]	1080/1170	2240/2420	1470/-	3040/-	-/1560	-/3220
Min. spring force	[N]			390	800	390	800
Weight	[kg]	1.35	1.35	1.85	1.85	1.85	1.85
Recommended workpiece weight	[kg]	5.4	11.2	5.4	11.2	5.4	11.2
Fluid consumption double stroke	[cm³]	87	87	119	119	166	166
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8	4/6/6.5	4/6/6.5	4/6/6.5	4/6/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1	0.5/1	0.5/1
Closing/opening time	[s]	0.1/0.1	0.1/0.1	0.08/0.12	0.08/0.12	0.12/0.08	0.12/0.08
Closing/opening time with spring	[s]			0.30	0.30	0.30	0.30
Max. permissible finger length	[mm]	160	145	145	125	145	125
Max. permissible mass per finger	[kg]	2.1	2.1	2.1	2.1	2.1	2.1
IP protection class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Dimensions X x Y x Z	[mm]	125 x 60 x 63	125 x 60 x 63	125 x 60 x 93			

① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available.

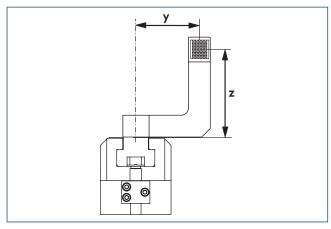
Main view

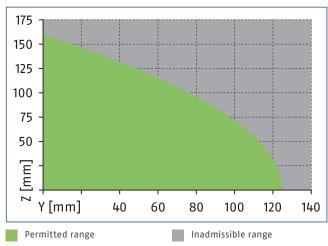


The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- ① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical 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
- (1) Gripper connection
- (2) Finger connection
- 72) Fit for centering sleeves
- (73) Fit for centering pins
- 80 Depth of the centering sleeve hole in the counter part
- 90 Thread below the cover for fastening external attachments
- (91) Sensor MMS 22..
- **92** Sensor IN ...

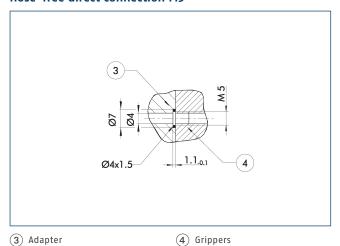
Maximum permitted finger projection





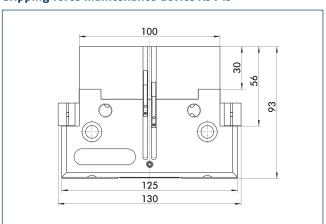
The curve applies for stroke version 1. For other versions, the curve must be parallely off-set to the max. permissible finger length.

Hose-free direct connection M5



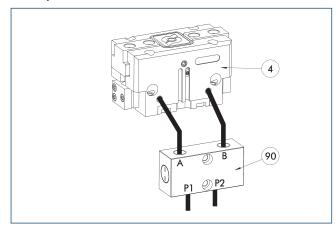
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device AS / IS



The mechanical gripping force maintenance device ensures that a minimum clamping force will be applied even if there is a drop in pressure. This acts as closing force in the AS / S version, and as opening force in the IS version. Besides this, the gripping force maintenance device can be used to increase the gripping force or for single actuated gripping.

SDV-P pressure maintenance valve



4 Grippers

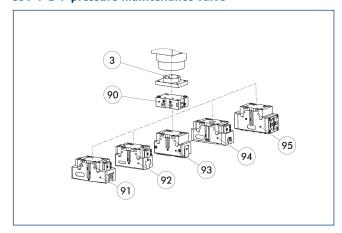
90 SDV-P pressure maintenance

The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter		
		[mm]		
Pressure maintenance valve				
SDV-P 04	0403130	6		
SDV-P 07	0403131	8		
Pressure maintenance valve with air bleed screw				
SDV-P 04-E	0300120	6		
SDV-P 07-E	0300121	8		

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at schunk.com.

SDV-P E-P pressure maintenance valve



3 Adapter

90 SDV-P E-P pressure maintenance valve

91) PGN-plus / PGN-plus-P 2-finger parallel gripper

92 JGP 2-finger parallel grippers

93 2-finger angular gripper PWG-plus

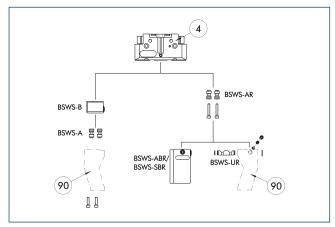
(94) 2-finger parallel gripper PGB

95) Sealed DPG-plus gripper

The SDV-P E-P pressure maintenance valves ensure that the pressure in the piston chamber is maintained temporarily during an emergency stop. SDV-P E-P can be directly connected to the listed grippers without the need for additional pneumatic hoses.

Description	ID
Pressure maintena	ance valve
SDV-P 125-E-P	0300127

BSWS jaw quick-change jaw systems



4 Grippers

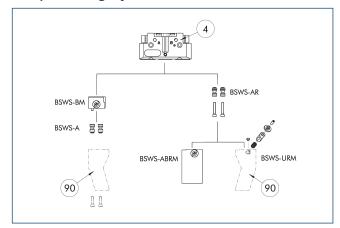
90 Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

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Description	ID	Scope of delivery			
Jaw quick-change system adapter pin					
BSWS-A 125	0303028	2			
BSWS-AR 125	0300095	2			
Quick-change jaw system base					
BSWS-B 125	0303029	1			
Jaw quick-change system finger blank					
BSWS-ABR-PGZN-plus 125	0300075	1			
BSWS-SBR-PGZN-plus 125	0300085	1			
Jaw quick-change system locking mechanism					
BSWS-UR 125	0302994	1			

 $\ensuremath{\textcircled{\scriptsize 1}}$ Only systems that are listed in the table, can be used.

Jaw quick-change system BSWS-M



4 Grippers

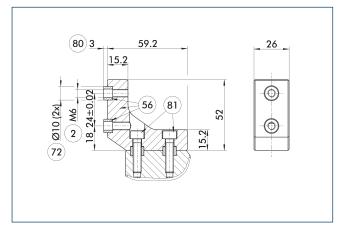
90 Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

Description	ID	Scope of delivery				
Jaw quick-change system adapter pin						
BSWS-A 125	0303028	2				
BSWS-AR 125	0300095	2				
Quick-change jaw system base						
BSWS-BM 125	1302006	1				
Jaw quick-change system finger blank						
BSWS-ABRM-PGZN-plus 125	1420854	1				
Jaw quick-change system locking mechanism						
BSWS-URM 125	1398404	1				

① Only systems that are listed in the table, can be used.

ZBA-L-plus 125 intermediate jaws

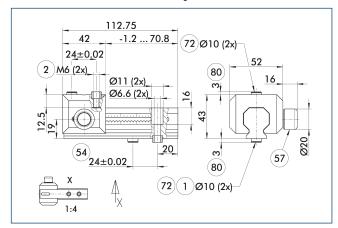


- 2 Finger connection
- (56) Included in the scope of delivery
- 72) Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 81) Not included in the scope of delivery

The optional ZBA-L-plus intermediate jaws allow the screw connection diagram of the top jaws to be rotated by 90°. This makes it easier to design and produce top jaws (particularly for long versions) because no deep through-bores are required.

Description	ID		Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 125	0311752	Aluminum	PGN-plus 125	1

UZB 125 universal intermediate jaw

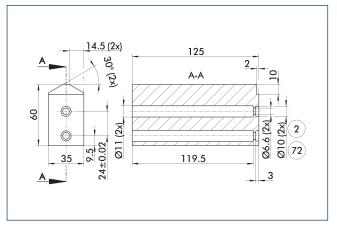


- 1 Gripper connection
- Finger connection
- (54) Optional right or left connection
- 57 Locking
- (72) Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw. The fully removable UZB-S slide (can also be ordered separately) allows for a quick jaw change.

Description	ID	Grid dimension	
		[mm]	
Universal intermediate j	aw		
UZB 125	0300045	3	
Finger blank			
ABR-PGZN-plus 125	0300013		
SBR-PGZN-plus 125	0300023		
Slide for universal intermediate jaw			
UZB-S 125	5518273	3	

Finger blanks ABR- / SBR-PGZN-plus 125

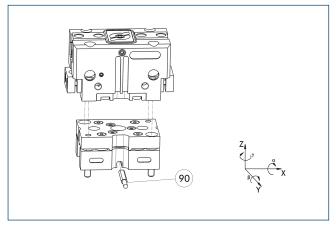


- (2) Finger connection
- 72 Fit for centering sleeves

The drawing shows the finger blank which can be reworked by the customer.

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 125	0300013	Aluminum	1
SBR-PGZN-plus 125	0300023	Steel	1

Tolerance compensation unit TCU

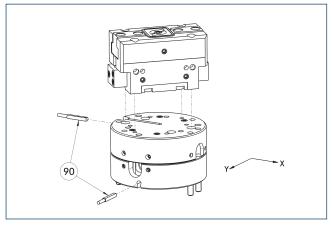


90 Monitoring of locking

Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details please refer to our catalog robot accessories.

Description	ID	Locking	Deflection	Often combined
Compensation unit				
TCU-P-125-3-MV	0324828	yes	±1°/±1,5°/±1,5°	•
TCU-P-125-3-0V	0324829	no	±1°/±1.5°/±1.5°	

Compensation unit AGE-F

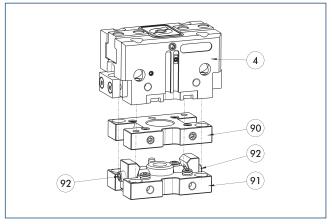


90 Monitoring

Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

Description	ID	Compensation XY	Reset force	Often combined
		[mm]	[N]	
Compensation unit				
AGE-F-XY-080-1	0324960	± 5	39	
AGE-F-XY-080-2	0324961	± 5	85	
AGE-F-XY-080-3	0324962	± 5	90	•

Compact change system for grippers

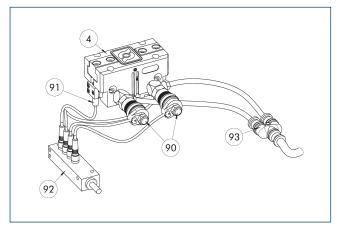


- 4 Grippers
- (91) CWK compact change master
- (90) CWA compact change adapter
- 92 Locking mechanism

Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

Description	ID	
CWA compact change	adapter	
CWA-125-P	0305826	
CWK compact change	master	
CWK-125-P	0305825	

Attachment valves



- 4 Grippers
- 90 Micro valves
- (91) Sensor

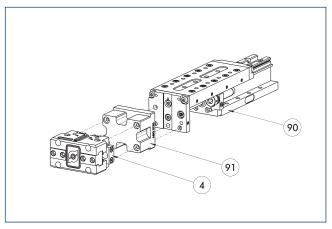
- 92 Sensor distributor
- 93 Y distributor

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV30-G1/8	0303328	
ABV-MV30-G1/8-V2-M8	0303396	
ABV-MV30-G1/8-V4-M8	0303366	•
ABV-MV30-G1/8-V8-M8	0303367	

A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

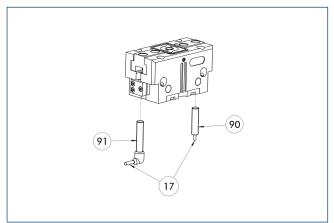
Modular Assembly Automation



- 4 Grippers
- 91) ASG adapter plate
- 90 CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

Grippers and linear modules can be combined with standard adapter plates from the modular assembly system. For more information see our main catalog "Modular Assembly Automation".

Inductive Proximity Switches



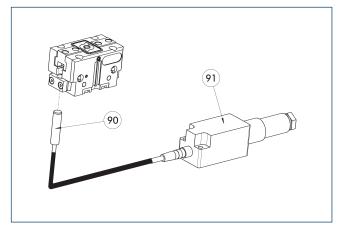
- (17) Cable outlet
- 91) Sensor IN..-SA
- 90 Sensor IN ...

Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
INK 80-S	0301550	
Inductive proximity switch with la	teral cable ou	tlet
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
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	
Sensor distributor		
V2-M12	0301776	•
V2-M8	0301775	•
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

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.

Flexible position sensor



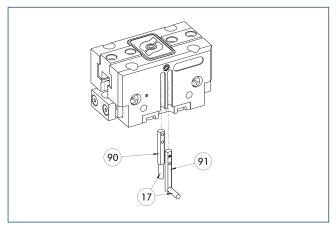
- 90 FPS-S sensor
- (91) FPS-F5 evaluation electronic

Flexible position monitoring of up to five positions.

Description	ID
Attachment kit for FPS	
AS-FPS-PGZN-plus 125-1/PZB 160	0301636
AS-FPS-PGZN-plus 125-2	0301637
Sensor	
FPS-S M8	0301704
Evaluation electronics	
FPS-F5	0301805
Cable extension	
KV BG08-SG08 3P-0050	0301598
KV BG08-SG08 3P-0100	0301599

When using an FPS system, an FPS sensor (FPS-S) as well as an electronic processor (FPS-F5 / F5 T) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are optionally available – see catalog chapter "Accessories."

Electronic magnetic switch MMS



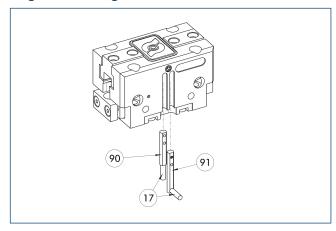
- (17) Cable outlet
- 91) Sensor MMS 22...-SA
- 90 Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	•
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with	lateral cable o	outlet
MMS 22-S-M8-PNP-SA	0301042	•
MMSK 22-S-PNP-SA	0301044	
Reed Switches		
RMS 22-S-M8	0377720	•
Connection cables		
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	
clip for plug/socket		
CLI-M8	0301463	
Wireless sensor system		
RSS-T2	0377715	
RSS-T2-US/CA	0377717	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	•
Sensor distributor		
V2-M8	0301775	•
V4-M8	0301746	
V8-M8	0301751	

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



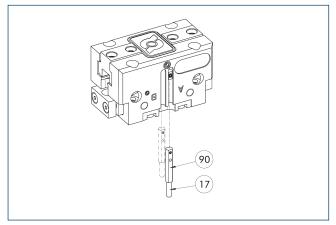
- (17) Cable outlet
- **91** Sensor MMS 22 ..-PI1-...-SA
- 90 Sensor MMS 22 PI1-...

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
Programmable magnetic switch		
MMS 22-PI1-S-M8-PNP	0301160	•
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch	with lateral c	able outlet
MMS 22-PI1-S-M8-PNP-SA	0301166	•
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch	with stainles	s steel housing
MMS 22-PI1-S-M8-PNP-HD	0301110	•
MMSK 22-PI1-S-PNP-HD	0301112	

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-PI2



(17) Cable outlet

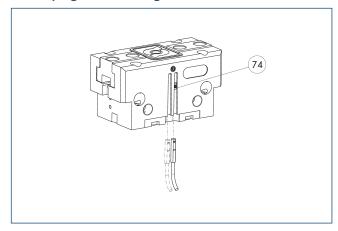
90 MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics built into 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
Programmable magnetic switch		
MMS 22-PI2-S-M8-PNP	0301180	•
MMSK 22-PI2-S-PNP	0301182	
Programmable magnetic switch	with lateral c	able outlet
MMS 22-PI2-S-M8-PNP-SA	0301186	•
MMSK 22-PI2-S-PNP-SA	0301188	
Programmable magnetic switch	with stainless	s steel housing
MMS 22-PI2-S-M8-PNP-HD	0301130	•
MMSK 22-PI2-S-PNP-HD	0301132	

① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

MMS-P programmable magnetic switch



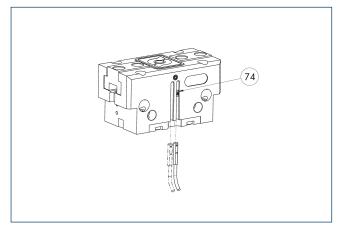
74) Limit stop for sensor

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic	switch	
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	•
Connection cables		
KA BG08-L 4P-0500	0307767	•
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

Programmable magnetic switch MMS-I0-Link



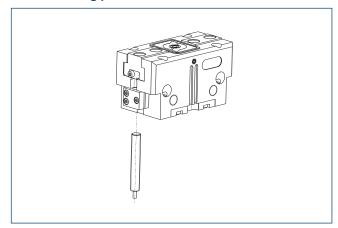
(74) Limit stop for sensor

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). An IO-Link master is required for operation.

Description	ID
Programmable mag	netic switch
MMS 22-I0L-M08	0315830
MMS 22-I0L-M12	0315835

① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

APS-Z80 analog position sensor

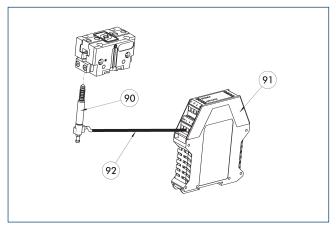


No–contact measuring, analog multi–position monitoring for any number of positions.

Description	ID	Often combined
Mounting kit for APS-Z80		
AS-APS-Z80-PGZN-plus 125-1	0302111	
AS-APS-Z80-PGZN-plus 125-2	0302112	
Analog position sensor		
APS-Z80-K	0302072	
APS-Z80-M8	0302070	•

When using an APS system, one mounting kit (AS-APS-Z80) and one APS-Z80 sensor is required per gripper. The resolution of the sensor can be lower in the peripheral areas of the gripper. You can find further information on the product in the operating manual.

APS-M1 analog position sensor



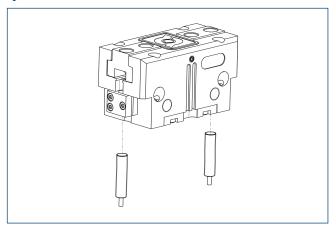
- 90 APS-M1S sensor
- **92** APS-K extension cable
- (91) APS-M1E electronic processor

Analog multi position monitoring for any desired positions

Description	ID
Mounting kit for APS-M1	
AS-APS-M1-PGZN-plus 125-1	0302081
AS-APS-M1-PGZN-plus 125-2	0302082
Analog position sensor	
APS-M1S	0302062
Connection cables	
APS-K0200	0302066
APS-K0700	0302068
Evaluation electronics	
APS-M1E	0302064

When using an APS system, for each gripper an attachment kit (AS-APS-M1), an APS-M1S sensor (incl. 3 m cable) as well as an electronics (APS-M1e) are required. An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

Cylindrical reed switches



End position monitoring can be mounted with an attachment kit.

Description	ID
Attachment kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 100/125	0377726
Reed Switches	
RMS 80-S-M8	0377721

Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. Two mounting kits are required for each gripper. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.



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