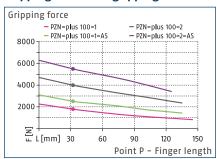
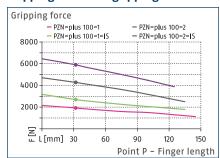


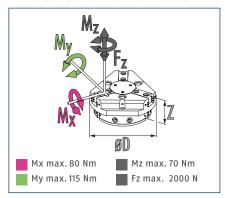
# Gripping force O.D. gripping



# **Gripping force I.D. gripping**



#### **Dimensions and maximum loads**



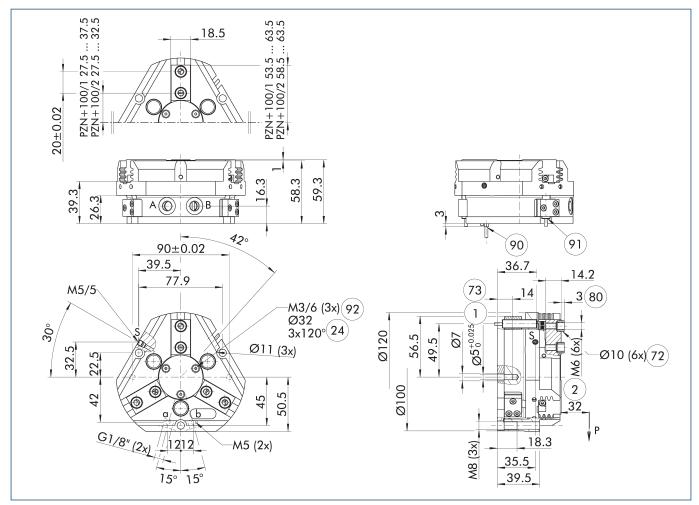
The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

### **Technical data**

Description		PZN-plus 100-1	PZN-plus 100-2	PZN-plus 100-1-AS	PZN-plus 100-2-AS	PZN-plus 100-1-IS	PZN-plus 100-2-IS
ID		0303312	0303412	0303512	0303612	0303542	0303642
Stroke per jaw	[mm]	10	5	10	5	10	5
Closing/opening force	[N]	1800/1920	4000/4280	2520/-	5500/-	-/2700	-/5900
Min. spring force	[N]			720	1500	780	1620
Weight	[kg]	1.41	1.41	1.95	1.95	1.95	1.95
Recommended workpiece weight	[kg]	9	20	9	20	9	20
Cylinder volume per double stroke	[cm³]	120	120	210	210	210	210
Min./nom./max. operating pressure	[bar]	2/6/8	2/6/8	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	0.1/0.2	0.1/0.2	0.2/0.1	0.2/0.1
Closing/opening time with spring	[s]			0.25	0.25	0.25	0.25
Max. permissible finger length	[mm]	145	135	135	125	135	125
Max. permissible weight per finger	[kg]	1.1	1.1	1.1	1.1	1.1	1.1
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 Ø D x Z	[mm]	120 x 59.3	120 x 59.3	120 x 79.3	120 x 79.3	120 x 79.3	120 x 79.3
Options and their characteristics							
Dustproof version		37303312	37303412	37303512	37303612	37303542	37303642
IP protection class		64	64	64	64	64	64
Weight	[kg]	1.9	1.9	2.44	2.44	2.44	2.44
Corrosion-protected version		38303312	38303412	38303512	38303612	38303542	38303642
High-temperature version		39303312	39303412	39303512	39303612	39303542	39303642
Min./max. ambient temperature	[°C]	5/130	5/130	5/130	5/130	5/130	5/130
Power booster version		0372203	0372213	0372223		0372243	
Closing/opening force	[N]	2774/3222	6493/7274	3372/-		-/3755	
Weight	[kg]	2.3	2.3	2.7		2.7	
Maximum pressure	[bar]	6	6	6		6	
Max. permissible finger length	[mm]	100	80	80		80	
Precision version		0303342	0303442	0303492	0303592		

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

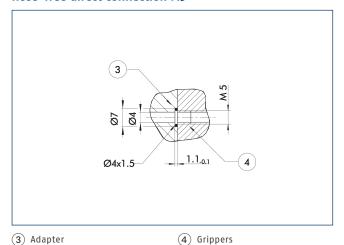


The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).
- A, a Main / direct connection, gripper opening
- B, b Main / direct connection, gripper closing
- S Air purge connection
- (1) Gripper connection
- (2) Finger connection
- 24) Bolt circle

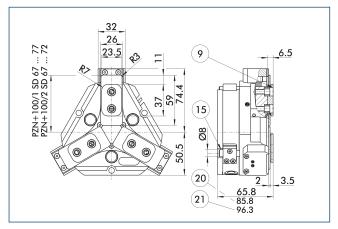
- (72) Fit for centering sleeves
- (73) Fit for centering pins
- 80 Depth of the centering sleeve hole in the counter part
- 90 Sensor MMS 22..
- (91) Sensor IN ...
- Thread below the cover for fastening external attachments

#### 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.

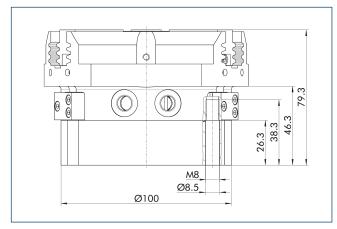
### **Dustproof version**



- (9) For mounting screw connection diagram, see basic version
- 20 For version AS/IS
- (21) Applies for KVZ version
- (15) Sealing bolt

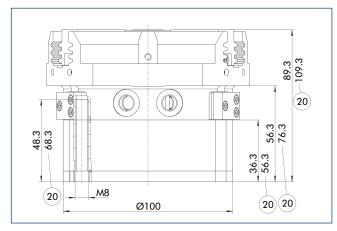
The "dustproof" option increases the degree of protection against penetrating substances. The assembly diagram shifts by the height of the intermediate jaw. The finger length is still measured from the upper edge of the gripper housing.

## **Gripping force maintenance version 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. In the AS/S variant this acts as a closing force, in the IS variant as an opening force. Besides this, gripping force maintenance can be used to increase gripping force or for single actuated gripping.

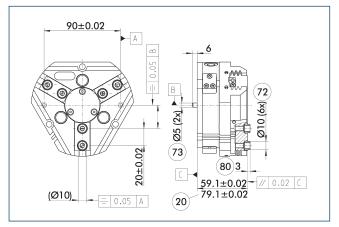
#### **Power booster version**



20 For version AS/IS

The KVZ cylinder increases the gripping forces during opening and closing. A second, in series-connected piston also increases the force on the wedge hook. Please consider that grippers which are equipped with a gripping force maintenance device are higher.

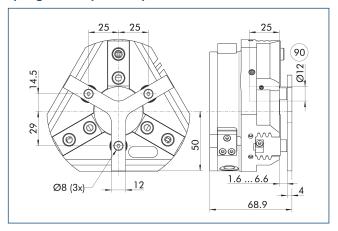
#### **Precision version**



- 20 For version AS/IS
- (72) Fit for centering sleeves
- (73) Fit for centering pins
- 80 Depth of the centering sleeve hole in the counter part

The indicated tolerances just refer to the variants of precision versions shown in the chart of technical specifications. All other variants of precision versions are available on request.

### Spring-loaded pressure piece



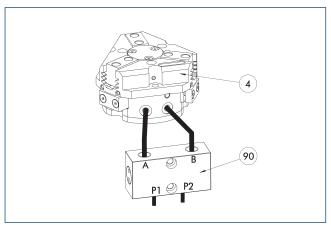
90 Guide pin

For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
		[mm]	[N]
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 100	0303722	5	35

The pressure piece cannot be combined with the dustproof option. Please contact us if you require a customized pressure piece.

#### 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	e valve			
SDV-P 07	0403131	8		
Pressure maintenance valve with air bleed screw				
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.

## **Pneumatic positioning device PPD**

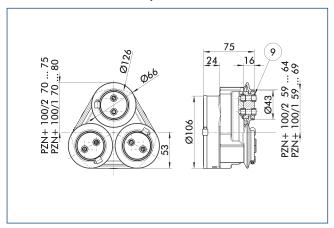


The PPD allows flexibility in all applications with pneumatic grippers through free positioning, gripping force and speed adjustment.

ID	
1540700	
1540691	
1540697	
le track compa	tible
1540660	
1540662	
1540663	
1540705	
	1540700 1540691 1540697 le track compa 1540660 1540662 1540663

① In addition to the PPD, a position sensor (SCHUNK IO-Link sensor or analog sensor (4...20 mA)) is required.

### **Protective cover HUE PZN-plus 100**



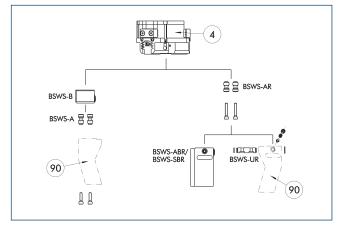
(9) For mounting screw connection diagram, see basic version

The HUE protective cover fully protects the gripper against external influences. The cover is suitable for applications of up to IP65 if an additional sealing of the cover bottom is provided. For detailed information, please see the HUE series. The connection diagram shifts by the height of the intermediate jaw.

Description	ID	IP protection class
Protection cover		
HUE PZN-plus 100	0303482	65

① An inductive monitoring of the gripper in connection with the protective cover HUE is not possible. SCHUNK recommends the use of magnetic sensors that are approved for the respective gripper version.

## 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.

Description	ID	Scope of delivery				
Jaw quick-change system adap	Jaw quick-change system adapter pin					
BSWS-A 100	0303026	2				
BSWS-AR 100	0300094	2				
Quick-change jaw system base						
BSWS-B 100	0303027	1				
Jaw quick-change system finger blank						
BSWS-ABR-PGZN-plus 100	0300074	1				
BSWS-SBR-PGZN-plus 100	0300084	1				
Jaw quick-change system locking mechanism						
BSWS-UR 100	0302993	1				

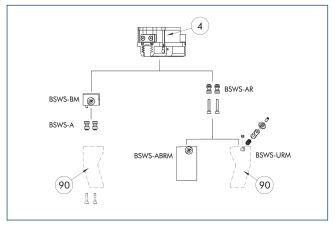
① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

#### Fields of application

Series	Size	Variant	Suitability	
PZN-plus	100	-1 (6 bar)		
PZN-plus	100	-1-AS/1-IS (6 bar)		
PZN-plus	100	-2 (6 bar)		
PZN-plus	100	-2-AS/2-IS (6 bar)		
PZN-plus	100	KVZ (6 bar)		
Legend				
	Can be combined without restrictions			
	Use with restrictions (see loading limits)			
0000	cannot be combined			

The load limits for describing the application limits can be found in the catalog chapter of the corresponding accessories.

## 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 100	0303026	2			
BSWS-AR 100	0300094	2			
Quick-change jaw system base					
BSWS-BM 100	1313902	1			
Jaw quick-change system finger blank					
BSWS-ABRM-PGZN-plus 100	1420853	1			
Jaw quick-change system locking mechanism					
BSWS-URM 100	1398403	1			

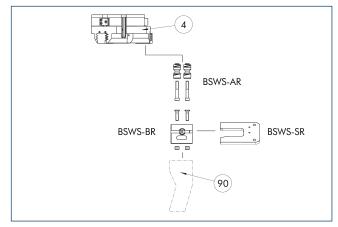
① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

#### Fields of application

Series	Size	Variant	Suitability	
PZN-plus	100	-1 (6 bar)		
PZN-plus	100	-1-AS/1-IS (6 bar)		
PZN-plus	100	-2 (6 bar)		
PZN-plus	100	-2-AS/2-IS (6 bar)		
PZN-plus	100	KVZ (6 bar)		
Legend				
	Can be combined without restrictions			
	Use with restrictions (see loading limits)			
0000	cannot be combine	d		

The load limits for describing the application limits can be found in the catalog chapter of the corresponding accessories.

### Jaw quick-change system BSWS-R



4 Grippers

90 Customized gripper fingers

If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

Description	ID	Scope of delivery	
Jaw quick-change system ada	apter pin		
BSWS-AR 100	0300094	2	
Quick-change jaw system bas	se		
BSWS-BR 100	1555933	1	
Storage system			
BSWS-SR 100	1555959	1	
Attachment kit for proximity	switch		
AS-IN40-BSWS-SR 80/100	1561458	1	
Inductive proximity switches			
IN 40-S-M12	0301574		
IN 40-S-M8	0301474		
INK 40-S	0301555		

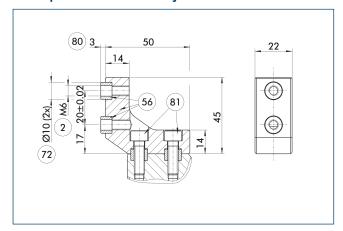
 $\ensuremath{\textcircled{\scriptsize 1}}$  Only systems that are listed in the table, can be used.

#### Fields of application

Series	Size	Variant	Suitability
PZN-plus	100	-1 (6 bar)	
PZN-plus	100	-1-AS/1-IS (6 bar)	
PZN-plus	100	-2 (6 bar)	
PZN-plus	100	-2-AS/2-IS (6 bar)	
PZN-plus	100	KVZ (6 bar)	
Legend			
	Can be combined without restrictions		
	Use with restrictions (see loading limits)		
0000	cannot be combine	d	

The load limits for describing the application limits can be found in the catalog chapter of the corresponding accessories.

### ZBA-L-plus 100 intermediate jaws

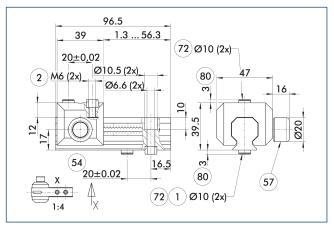


- 2 Finger connection
- 66 Included in the scope of delivery
- (72) Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 81) Not included in the scope of delivery

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	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 100	0311742	Aluminum	PGN-plus 100	1

## UZB 100 universal intermediate jaw



- 1 Gripper connection
- (2) Finger connection
- (54) Optional right or left connection
- 57 Locking
- $\overline{(72)}$  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 100	0300044	2.5
Finger blank		
ABR-PGZN-plus 100	0300012	
SBR-PGZN-plus 100	0300022	
Slide for universal interr	mediate jaw	
UZB-S 100	5518272	2.5

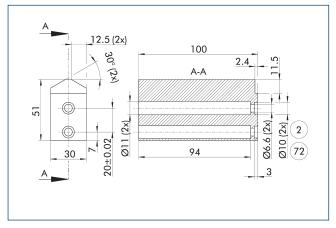
① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

#### Fields of application

Series	Size	Variant	Suitability
PZN-plus	100	-1 (6 bar)	
PZN-plus	100	-1-AS/1-IS (6 bar)	
PZN-plus	100	-2 (6 bar)	0000
PZN-plus	100	-2-AS/2-IS (6 bar)	0000
PZN-plus	100	KVZ (6 bar)	0000
Legend			
	Can be combined w	ithout restrictions	
	Use with restriction	s (see loading limit	s)
0000	cannot be combine	d	

The load limits for describing the application limits can be found in the catalog chapter of the corresponding accessories.

## Finger blanks ABR/SBR-PGZN-plus 100



(2) Finger connection

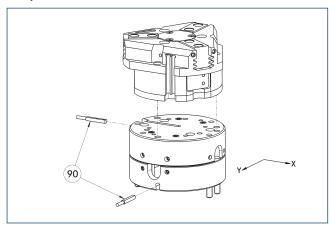
72) Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 100	0300012	Aluminum (3.4365)	1
SBR-PGZN-plus 100	0300022	Steel (1.7131)	1

① In the PGL-plus-P gripper series, the use of finger blanks results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

### Compensation unit AGE-F

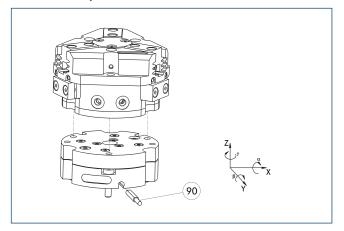


90 Monitoring

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	•

### Tolerance compensation unit TCU

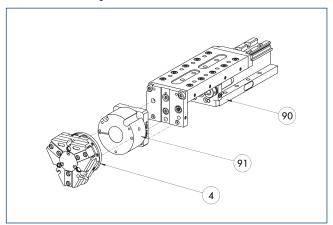


90 Monitoring of locking

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-Z-100-2-MV	0324798	yes	±1°/±1°/±1°	•
TCU-Z-100-2-0V	0324799	no	±1°/±1°/±1°	

### **Modular Assembly Automation**



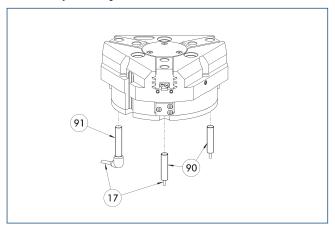
(4) Grippers

(91) ASG adapter plate

QO Linear module CLM/KLM/LM/ELP/ ELM/ELS/HLM

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**



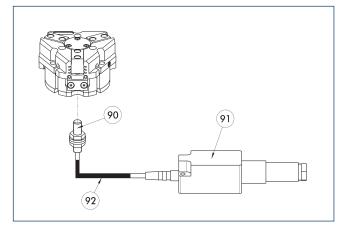
- (17) Cable outlet
- 91) Sensor IN..-SA
- 90 Sensor IN ...

Directly mounted end position monitoring.

Inductive proximity switches  IN 80-S-M12  IN 80-S-M8  IN 80-S-M8  IN 80-S-M8  IN 80-S-M12  Inductive proximity switch with lateral cable outlet  IN 80-S-M12-SA  IN 80-S-M8-SA  IN 80-S-M8-SA  INK 80-S-SA  Connection cables  KA BG08-L 3P-0300-PNP  MA BG08-L 3P-0500-PNP  MA BG12-L 3P-0500-PNP  MA BW08-L 3P-0500-PNP  MA BW08-L 3P-0300-PNP  MA BW08-L 3P-0500-PNP  MA BW12-L 3P-0500-PNP  MA B	Description	ID	Often combined
IN 80-S-M12 0301578 IN 80-S-M8 0301478 ● INK 80-S 0301550 Inductive proximity switch with lateral cable outlet 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 0301639 KA BW08-L 3P-0500-PNP 0301594 KA BW08-L 3P-0300-PNP 0301502 KA BW12-L 3P-0500-PNP 0301503 KA BW12-L 3P-0500-PNP 0301507 Clip for connector/socket CLI-M12 0301464			
INK 80-S Inductive proximity switch with lateral cable outlet IN 80-S-M12-SA IN 80-S-M8-SA INK 80-S-SA		0301578	
Inductive proximity switch with lateral cable outlet  IN 80-S-M12-SA  IN 80-S-M8-SA  INK 80-S-SA  Connection cables  KA BG08-L 3P-0300-PNP  KA BG12-L 3P-0500-PNP  MA BW08-L 3P-0500-PNP  WA BW12-L 3P-0500-PN	IN 80-S-M8	0301478	•
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 0301569  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 connector/socket  CLI-M12 0301464	INK 80-S	0301550	
IN 80-S-M8-SA 0301483	Inductive proximity switch with la	teral cable ou	tlet
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 connector/socket  CLI-M12 0301464	IN 80-S-M12-SA	0301587	
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 connector/socket  CLI-M12 0301464	IN 80-S-M8-SA	0301483	•
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 connector/socket  CLI-M12 0301464	INK 80-S-SA	0301566	
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 connector/socket  CLI-M12 0301464	Connection cables		
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 connector/socket  CLI-M12 0301464	KA BG08-L 3P-0300-PNP	0301622	•
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 connector/socket  CLI-M12 0301464	KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0500-PNP 0301502  KA BW12-L 3P-0300-PNP 0301503  KA BW12-L 3P-0500-PNP 0301507  Clip for connector/socket  CLI-M12 0301464	KA BG12-L 3P-0500-PNP	30016369	
KA BW12-L 3P-0300-PNP       0301503         KA BW12-L 3P-0500-PNP       0301507         Clip for connector/socket       CLI-M12	KA BW08-L 3P-0300-PNP	0301594	
KA BW12-L 3P-0500-PNP     0301507       Clip for connector/socket     CLI-M12       0301464	KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/socket CLI-M12 0301464	KA BW12-L 3P-0300-PNP	0301503	
CLI-M12 0301464	KA BW12-L 3P-0500-PNP	0301507	
	Clip for connector/socket		
CLI-M8 0301463	CLI-M12	0301464	
	CLI-M8	0301463	
Cable extension	Cable extension		
KV BG12-SG12 3P-0030-PNP 0301999	KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP 0301998	KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP 0301495	KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP 0301496	KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP 0301497	KV BW08-SG08 3P-0200-PNP	0301497	•
KV BW12-SG12 3P-0030-PNP 0301595	KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP 0301596	KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP 0301597	KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor	Sensor distributor		
V2-M12 0301776 •	V2-M12	0301776	•
V2-M8 0301775 •	V2-M8	0301775	•
V4-M8 0301746	V4-M8	0301746	
V8-M8 0301751	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



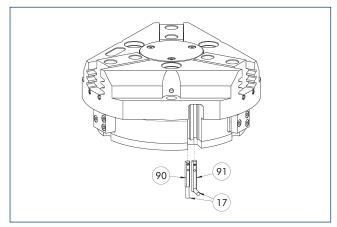
- 90 FPS-S sensor
- 92 Cable extension
- 91) FPS-F5 evaluation electronic

Flexible position monitoring of up to five positions.

•	0 1	·
Description		ID
Attachment kit for FPS		
AS-FPS-PGZN-plus 100-1		0301634
AS-FPS-PGZN-plus 100-2/F	PZB 125	0301635
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**



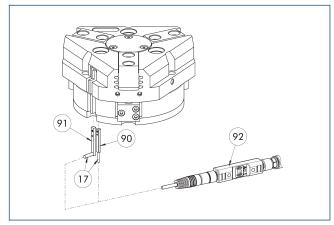
- (17) Cable outlet
- 91) Sensor MMS 22...-SA
- 90 Sensor MMS 22..

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 (	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 connector/socket		
CLI-M8	0301463	
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



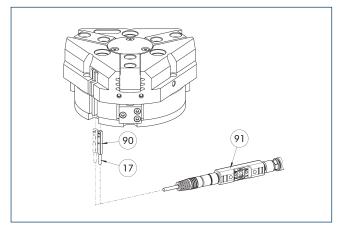
- (17) Cable outlet
- (91) Sensor MMS 22 ..-PI1-...-SA
- 90 Sensor MMS 22 PI1-...
- 92 Connector teaching tool ST

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, ID 0301030) 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	
Plug teaching tool		
ST-MMS 22-PI1-PNP	0301025	

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

(91) Connector teaching tool ST

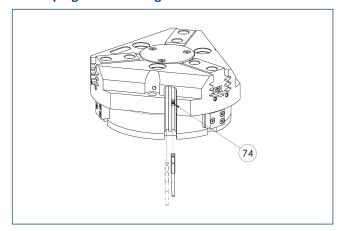
90 MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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	
Plug teaching tool		
ST-MMS 22-PI2-PNP	0301026	

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



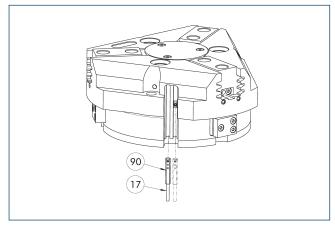
74) Limit stop for sensor

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

Description	ID	Often combined
Programmable magnetic switch	h	
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	•
Connection cables		
KA GLN0804-LK-00500-A	0307767	•
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
Clip for connector/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



(17) Cable outlet

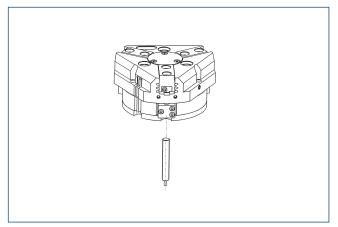
90 Sensor MMS 22-I0L-...

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. The sensor is programmed for the gripper via the IO-Link interface or the ST plug teaching tool (not included in scope of delivery; ID 0301026). It is not possible to program the sensor using the Magnet teaching tool MT. 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

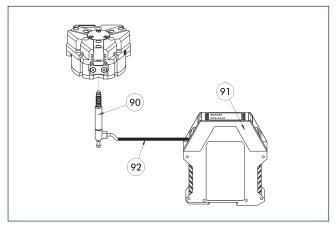


Non-contact measuring, analog multi-position monitoring for any number of positions.

Description	ID	Often combined
Mounting kit for APS-Z80		
AS-APS-Z80-PGZN-plus 100-1	0302109	
AS-APS-Z80-PGZN-plus 100-2	0302110	
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



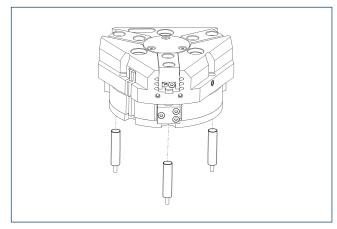
- 90 APS-M1S sensor
- **92** APS-K extension cable
- (91) APS-M1E electronic processor

Analog multi position monitoring for any desired positions

Description	ID
Mounting kit for APS-M1	
AS-APS-M1-PGZN-plus 100-1	0302079
AS-APS-M1-PGZN-plus 100-2	0302080
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.