

Modular. Precise. Robust.

AGE-S-XYZ Compensation Unit

Compensation unit compensating in XY- and Z-direction

Field of Application

Palletizing, joining, and assembly of workpieces



Advantages – Your benefit

ISO flange pattern for easy assembly to most types of robots without needing additional adapter plates

Three compensation directions in one unit compact design for minimum installation height

Central locking for fixing the unit rigidly in a defined, central position

Pneumatic position storage for eccentric locking in a deflected position



Sizes
Quantity: 4



Handling weight
9 .. 160 kg



Compensation XY
 $\pm 4 \dots 12$ mm

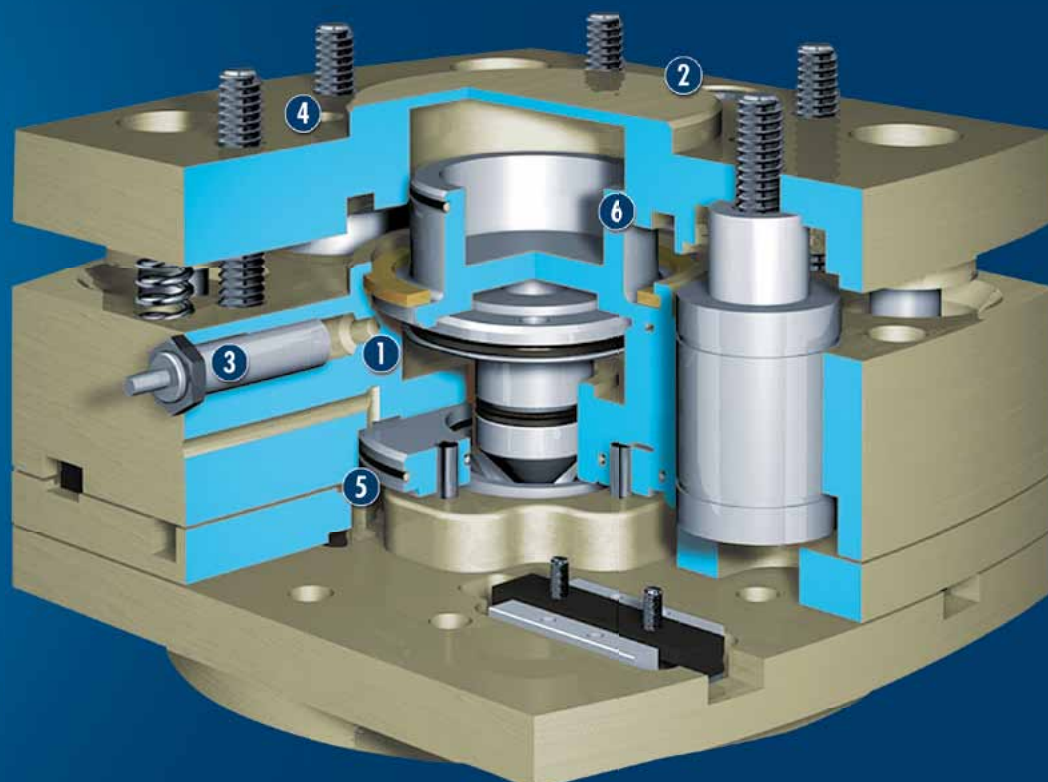


Compensation Z
10 .. 14 mm

Functional Description

The AGE-S compensation unit extends the AGE series (AGE-XY / AGE-Z / AGE-F) for the medium and heavy load range, and provides perfect compensation in all automation tasks. Robust and highly precise linear guidances with excellent guiding stability permit maximum handling weight, and maximum compensation distances.

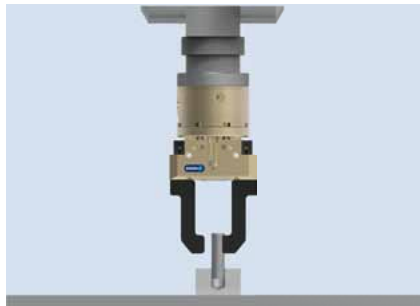
During handling in XY- as well as Z-direction, the unit can be made rigid using the integrated pneumatic lock, and eccentrically locked using the position memory in XY-direction.



- ① **Position memory**
locking in any eccentric position using two pneumatically driven pistons and frictional connection
- ② **Direct assembly**
by using a standardized ISO 9409 interface for robots
- ③ **Monitoring**
stroke monitoring of the locking piston with electronic magnetic switch
- ④ **Housing**
weight-optimized through application of high-strength aluminum alloy
- ⑤ **Compensation body**
for compensating positioning errors in the X-Y plane
- ⑥ **Locking**
pneumatically driven centric locking

Detailed functional Description

Case A, removal: AGE unlocked – Gripper open



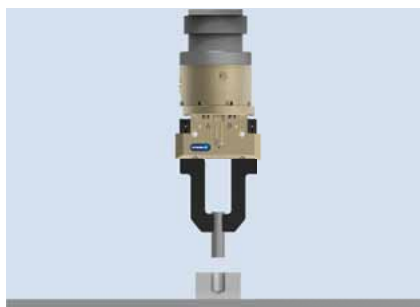
The robot travels towards the workpiece with a gripper unit consisting of an AGE (compensation unit) and gripper. There is an axial offset due to tolerances / imprecision.

Case A, removal: AGE unlocked – Gripper closed



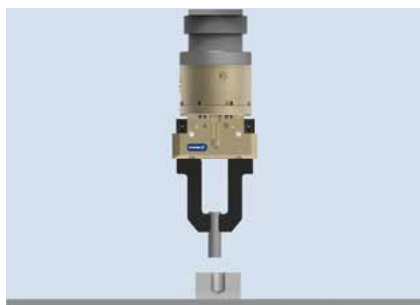
An unlocked AGE can be used to compensate the existing axial offset between the gripper and workpiece axes.

Case A, removal: AGE locked (position memory) – Gripper closed



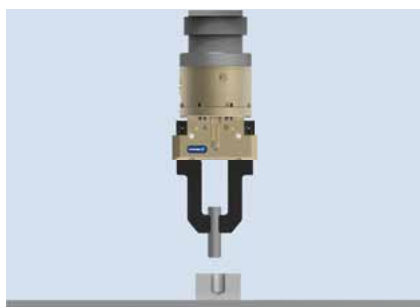
The robot can remove the workpiece. The deflected position of the AGE can be locked via the integrated position memory.

Case A, removal: AGE centrally locked – Gripper closed



The position memory of the AGE is unlocked and the centered AGE lock is activated. That renders the original axis offset, as the gripper and robot axis are now centered relative to one another.

Case B, joining: AGE centrically locked – Gripper closed



The robot travels towards the workpiece with a gripper unit consisting of an AGE (compensation unit) and gripper. There is an axial offset due to tolerances / imprecision.

Case B, joining: AGE unlocked – Gripper closed



An unlocked AGE can be used to compensate the existing axial offset between the gripper and workpiece axes and the workpiece can be joined.

Case B, joining: AGE unlocked – Gripper open



The robot moves away from the center of compliance with the gripper unit, the unit is then centrically locked and the gripper is closed.



General Notes to the Series

Monitoring: XY locking and unlocking via a magnetic switch and Z-stroke via inductive proximity switch

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

Housing: The housing is made of high-tensile, hard-coated aluminum alloy. The functional parts are made of hardened steel.

Scope of delivery: Robot-side mounting screws

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

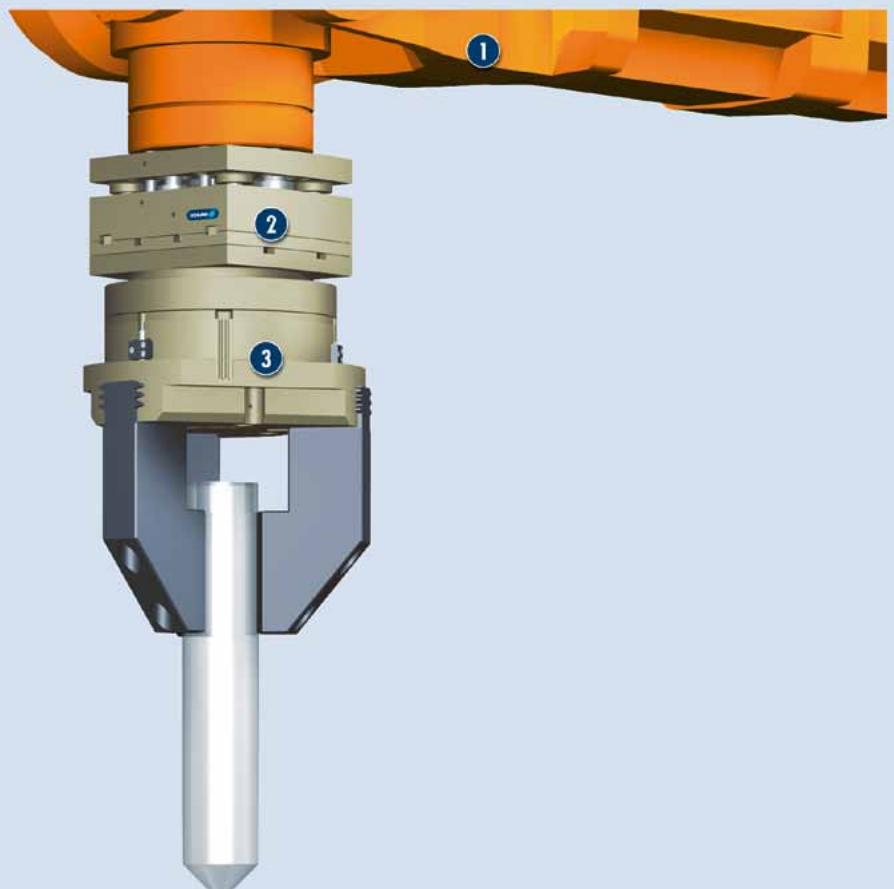
Harsh environmental conditions: Please note that the use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service lifetime of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us.

Handling weight: the weight of the total load attached to the flange. The design must take into account the permissible forces and moments. Please note that the life span will be reduced if the maximum handling weight is exceeded.

Application example

Lifting and putting down components in an undefined position using the compensation unit and a 3-finger centric gripper.

- 1 Robots
- 2 AGE-S-XYZ Compensation Unit
- 3 3-Finger Centric Gripper PZN-plus



SCHUNK offers more ...

The following components make the AGE-S even more productive – the perfect complement for highest functionality, flexibility and process reliability.



Fittings



Inductive Proximity Switches



Sensor Cables



Magnetic Switches



Centric Gripper PZN-plus



Rotary Feed-through DDF 2



Universal Gripper PGN-plus



Quick-Change System SWS



Collision and Overload Sensor
OPR

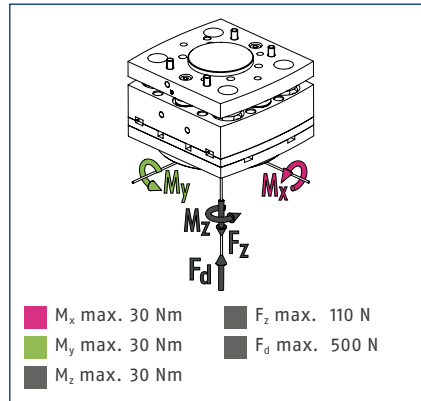


Electrical Magnetic Gripper

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



Forces and Moments

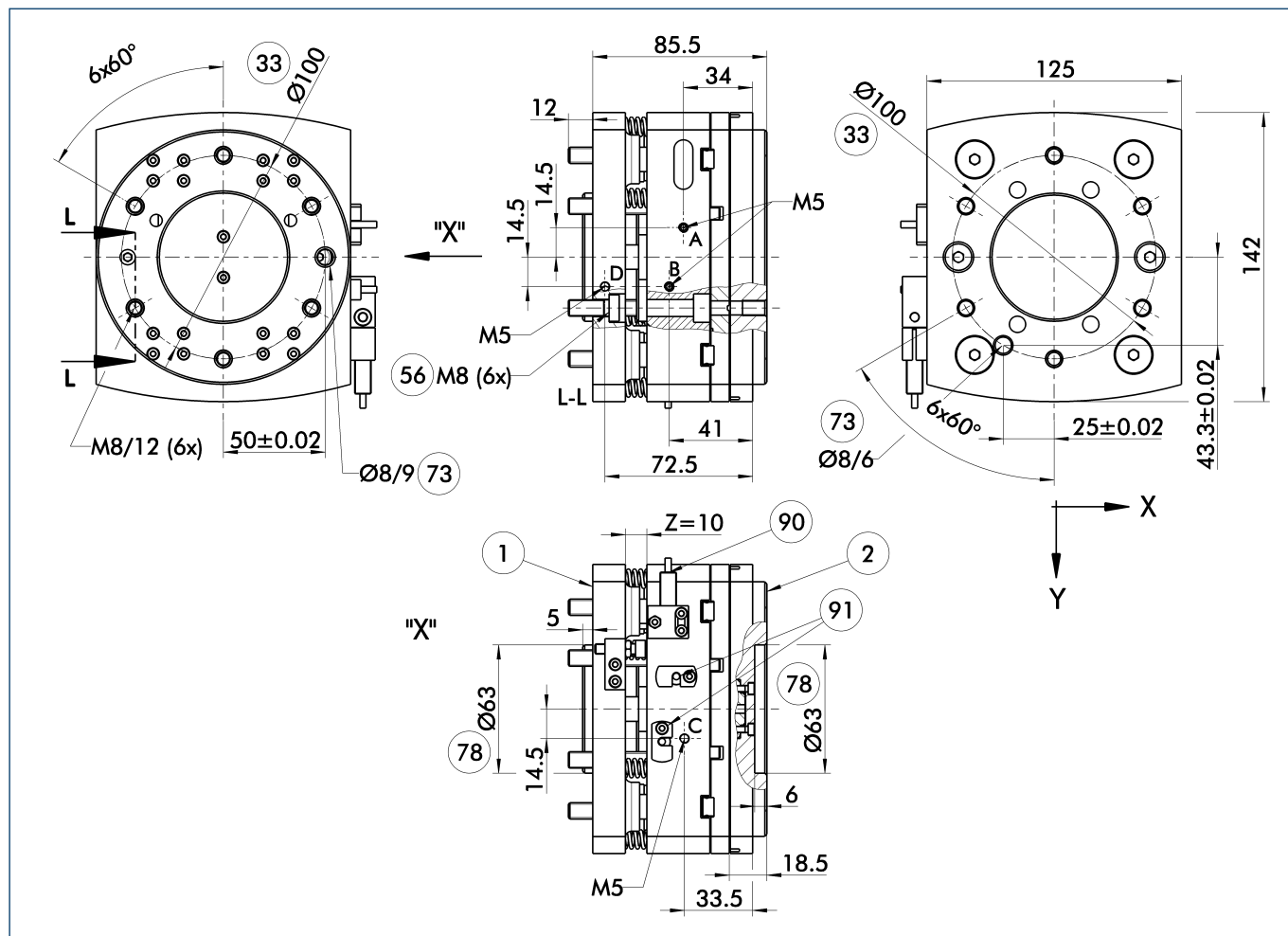


ⓘ This is the max. total of all loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to guarantee error-free function.

Technical data

Description		AGE-S-XYZ-100-0	AGE-S-XYZ-100-P	AGE-S-XY-100-0	AGE-S-XY-100-P	AGE-S-Z-100-0
ID		0324502	0324504	0324500	0324503	0324501
Compensation XY	[mm]	±4	±4	±4	±4	
Compensation Z	[mm]	10	10			10
max. vertical payload	[kg]	9	9	9	9	9
max. payload horizontal	[kg]	5.5	5.5	5.5	5.5	5.5
Locking force	[N]	800	800	800	800	
Position memory holding force	[N]		126		126	
Stroke Z	[N]	800	800			800
min. spring force	[N]	240	240			240
min. / max. operating pressure	[bar]	2.5/8	2.5/8	2.5/8	2.5/8	2.5/8
Nominal operating pressure	[bar]	6	6	6	6	6
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot side connection		ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8
Tool side connection		ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8
Weight	[kg]	3.6	3.6	2.6	2.6	3.2
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60

Main view



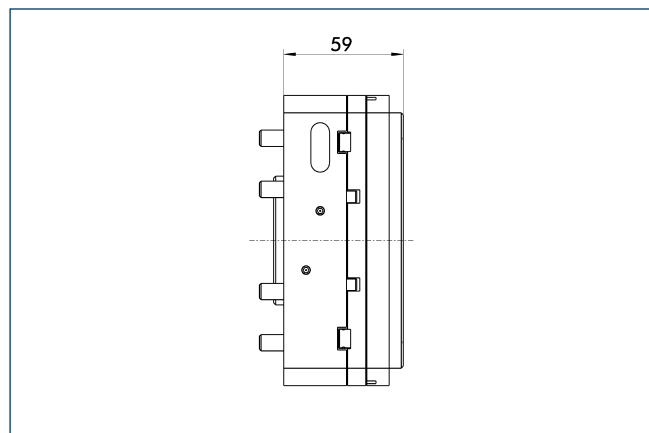
The main view shows the product with proximity switch. It is optional.

- A, a Air connection unlocked
- B, b Air connection locked
- C, c Air connection position memory XY
- D, d Air connection locked Z

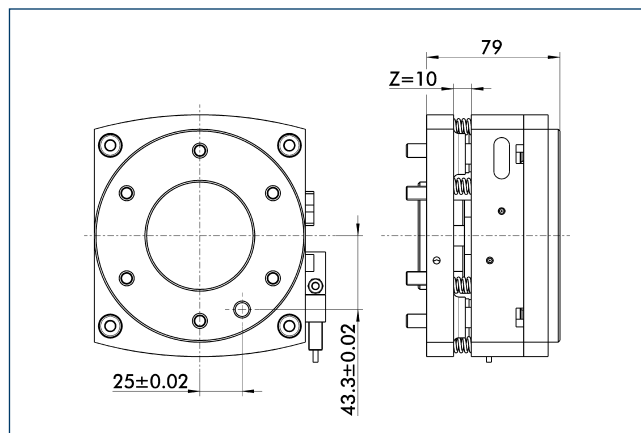
- ① Robot side connection
- ② Tool side connection

- ③③ DIN ISO-9409 bolt-hole circle diameter
- ⑤⑥ Included in delivery
- ⑦③ Fit for a centering pin
- ⑦⑧ Fitting for centering
- ⑨⑦ Sensor IN ...
- ⑨① MMS-K 65

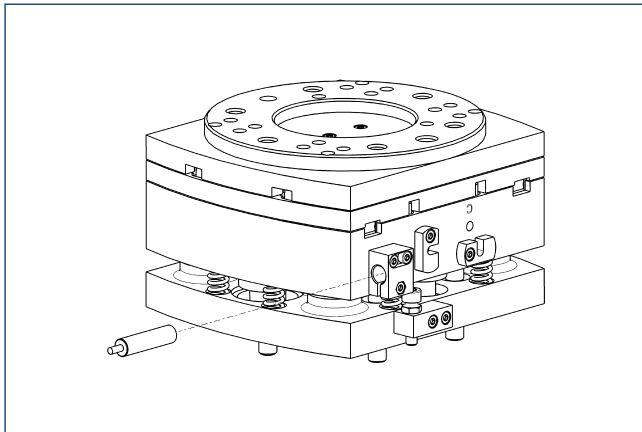
Dimensional change AGE-S-100-XY



Dimensional change AGE-S-100-Z



Sensor systems for Z-stroke

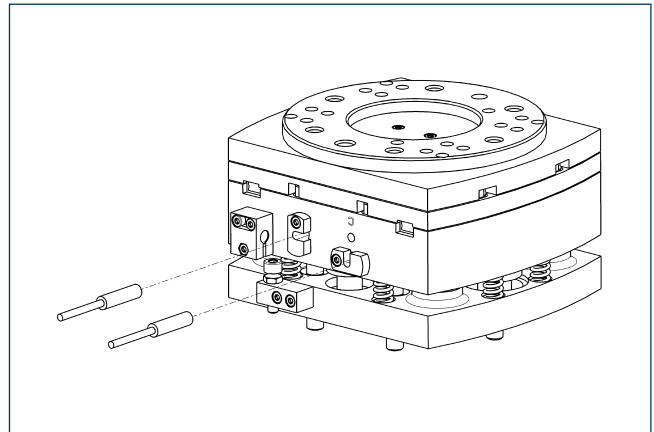


Can be mounted directly for Z-stroke or end position monitoring

Description	ID	often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80 S-M8	0301477	
INK 80-S	0301550	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Clip		
CLI-M12	0301464	
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Sensor Distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

① Per unit one sensor (closer/S) is required, optionally a cable extension.

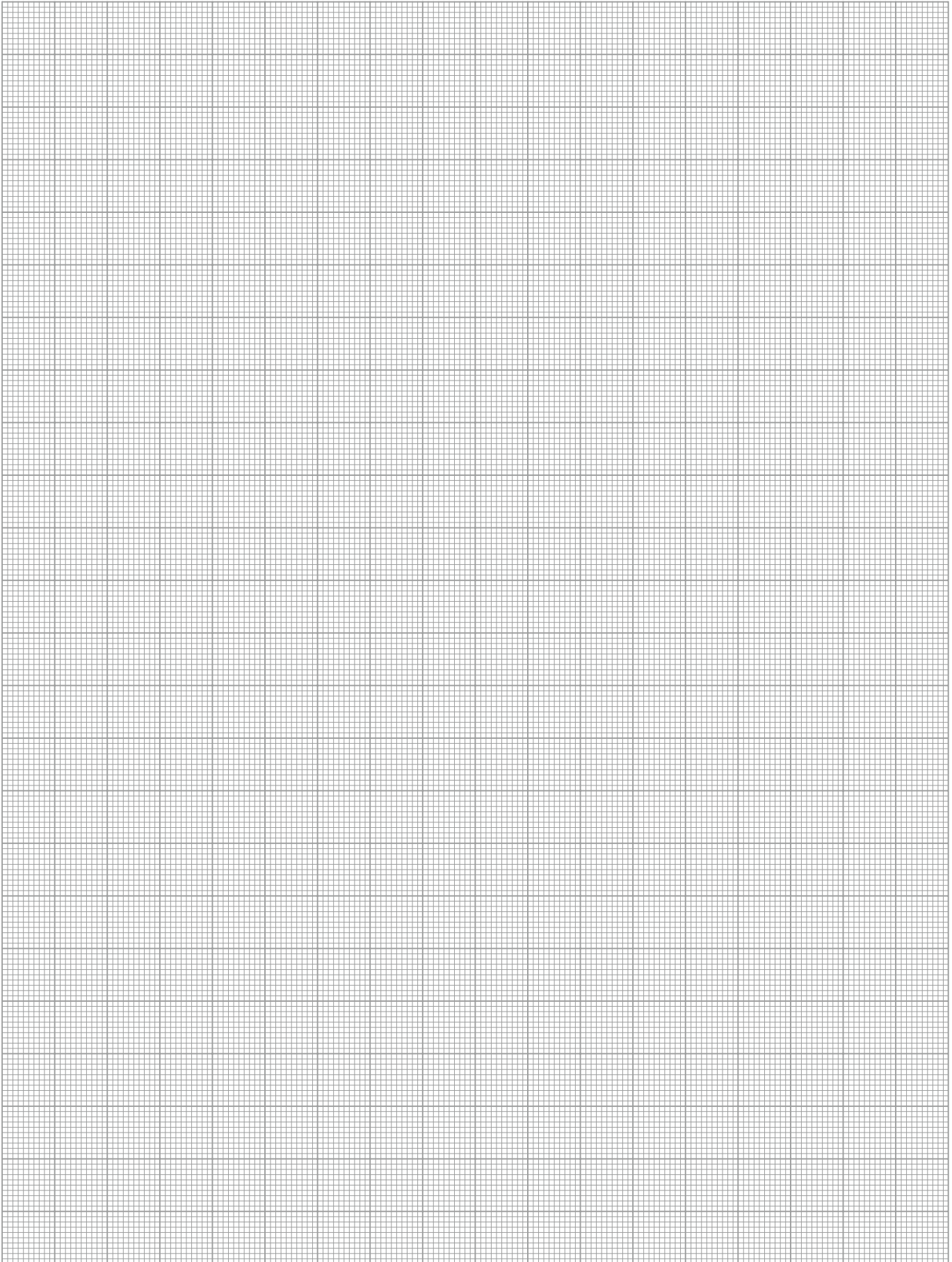
Sensor systems for centric locking



Sensor monitoring of the locking device

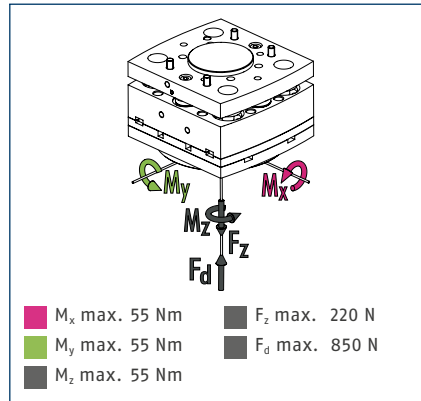
Description	ID	
Electronic Magnetic Switches MMS		
MMS-K 65-5-PNP	0301423	

① Two sensors (closer/NO) are required for each unit, plus extension cables as an option. Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.





Forces and Moments

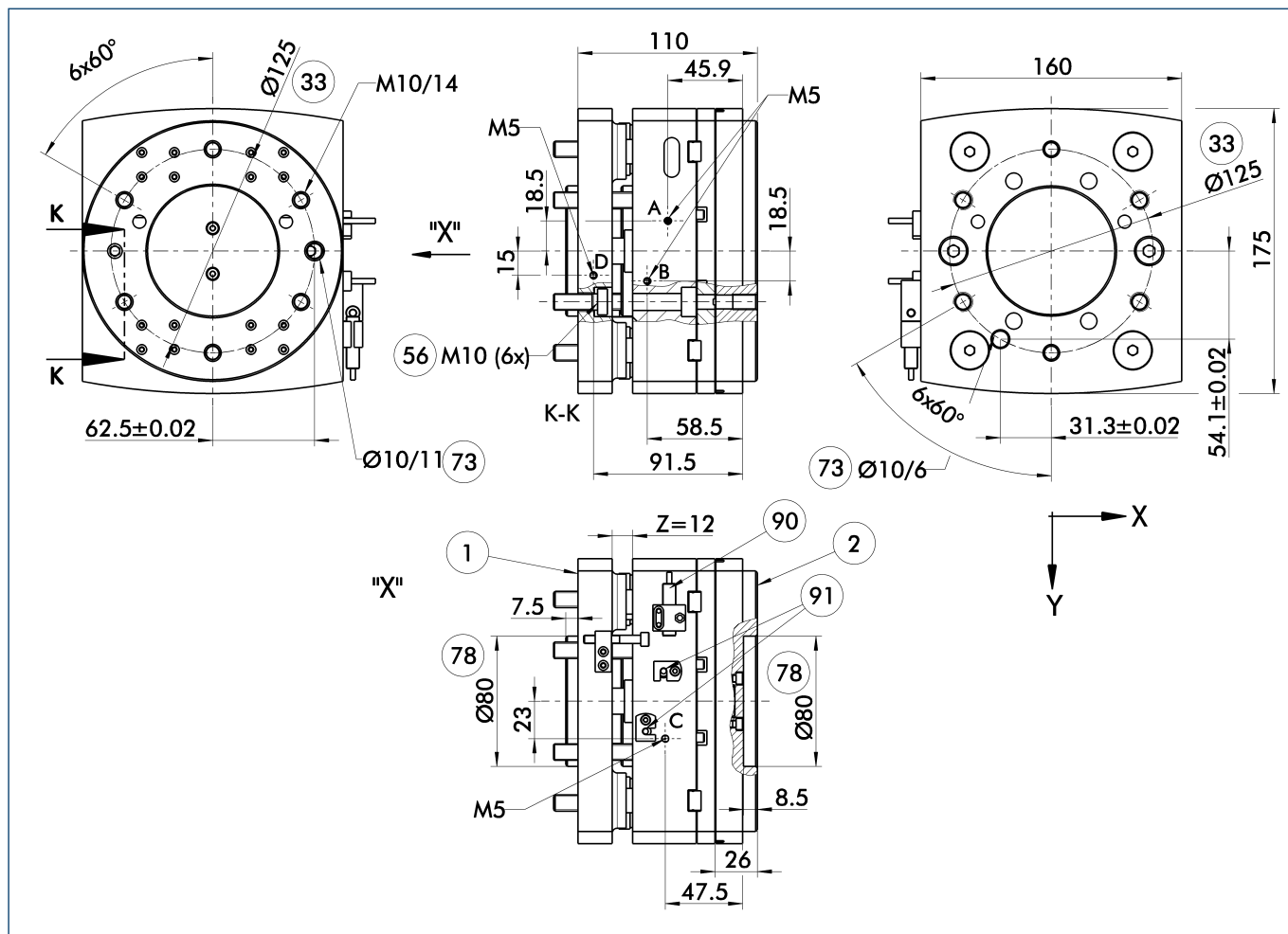


ⓘ This is the max. total of all loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to guarantee error-free function.

Technical data

Description		AGE-S-XYZ-125-0	AGE-S-XYZ-125-P	AGE-S-XY-125-0	AGE-S-XY-125-P	AGE-S-Z-125-0
ID		0324527	0324529	0324525	0324528	0324526
Compensation XY	[mm]	±7	±7	±7	±7	
Compensation Z	[mm]	12	12			12
max. vertical payload	[kg]	18	18	18	18	18
max. payload horizontal	[kg]	11	11	11	11	11
Locking force	[N]	1100	1100	1100	1100	
Position memory holding force	[N]		198		198	
Stroke Z	[N]	1200	1200			1200
min. spring force	[N]	360	360	0	0	360
min. / max. operating pressure	[bar]	2.5/8	2.5/8	2.5/8	2.5/8	2.5/8
Nominal operating pressure	[bar]	6	6	6	6	6
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot side connection		ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12
Tool side connection		ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12	ISO 9409-1-125-6-M12
Weight	[kg]	7.4	7.4	5.3	5.3	6
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60

Main view



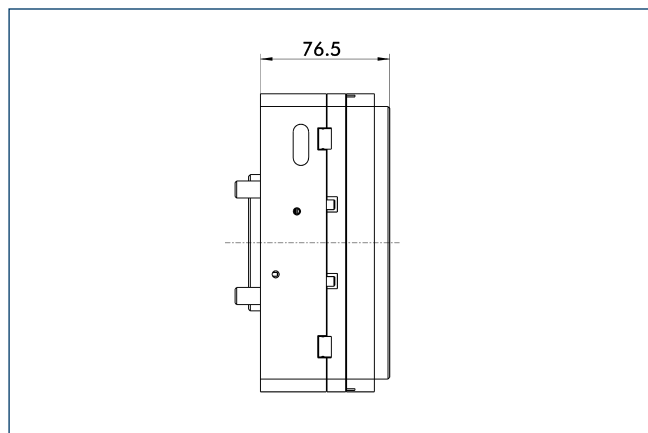
The main view shows the product with proximity switch. It is optional.

- A, a Air connection unlocked
- B, b Air connection locked
- C, c Air connection position memory XY
- D, d Air connection locked Z

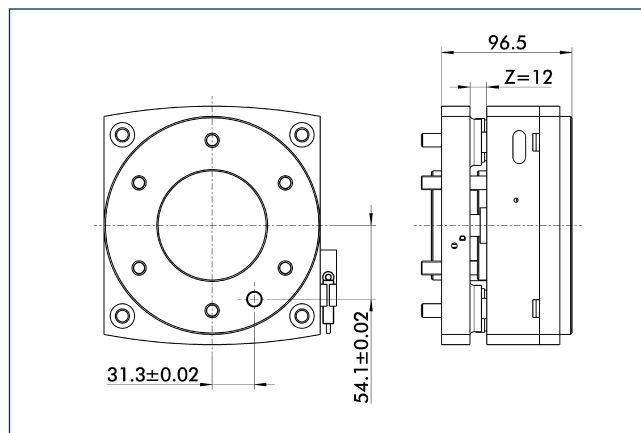
- ① Robot side connection
- ② Tool side connection

- ③③ DIN ISO-9409 bolt-hole circle diameter
- ⑤⑤ Included in delivery
- ⑦⑦ Fit for a centering pin
- ⑧⑧ Fitting for centering
- ⑨⑨ Sensor IN ...
- ⑩⑩ MMS-K 65

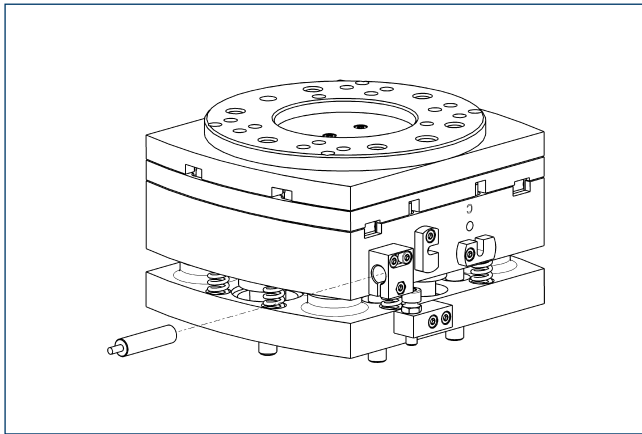
Dimensional change AGE-S-125-XY



Dimensional change AGE-S-125-Z



Sensor systems for Z-stroke

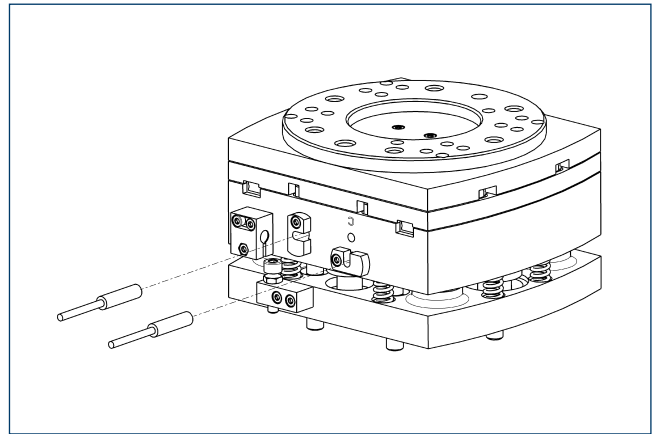


Can be mounted directly for Z-stroke or end position monitoring

Description	ID	often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80 S-M8	0301477	
INK 80-S	0301550	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Clip		
CLI-M12	0301464	
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Sensor Distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

① Per unit one sensor (closer/S) is required, optionally a cable extension.

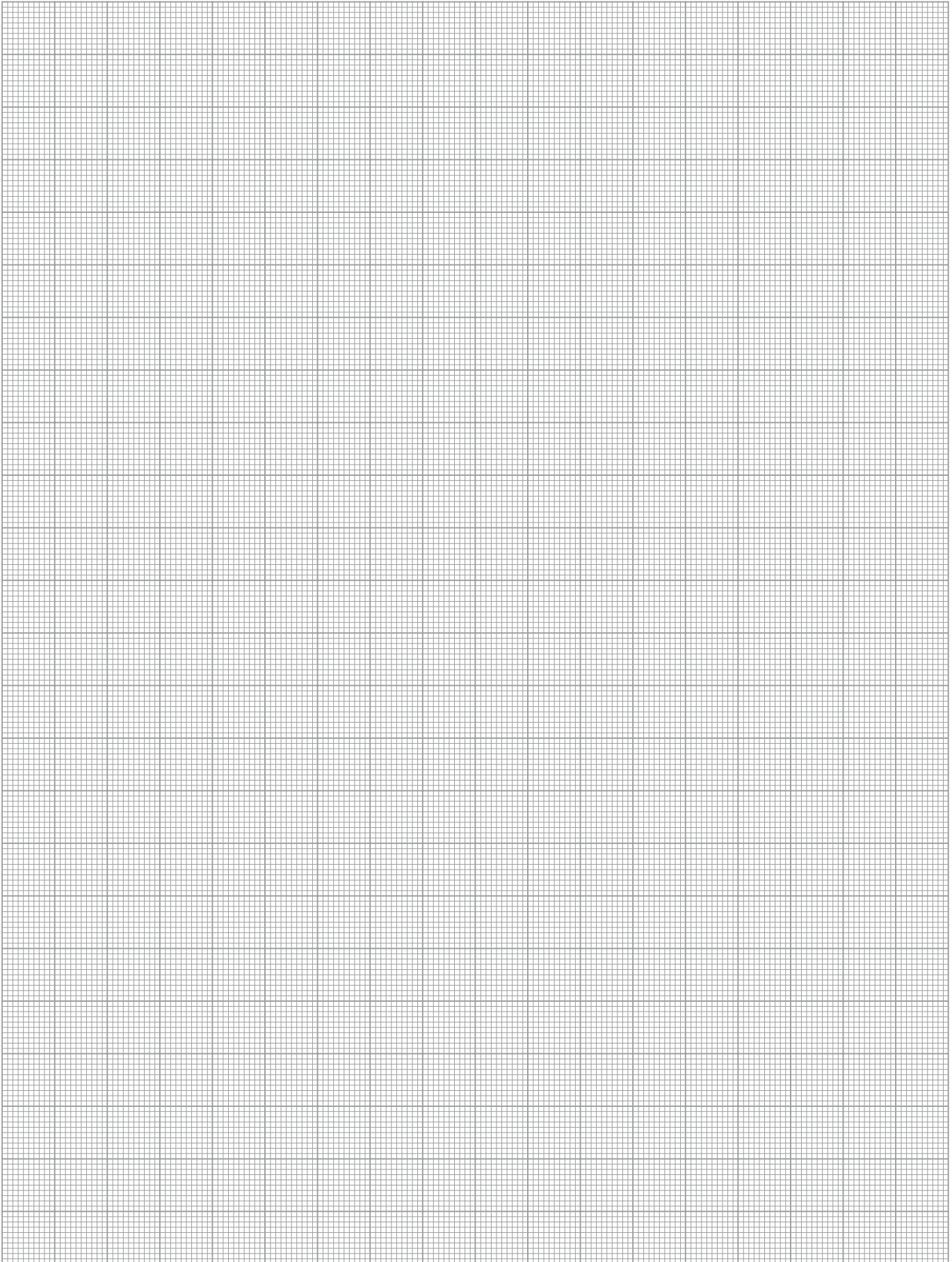
Sensor systems for centric locking



Sensor monitoring of the locking device

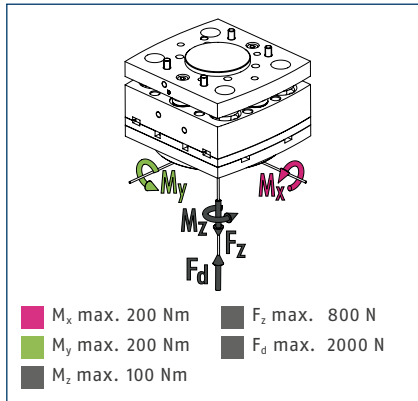
Description	ID	
Electronic Magnetic Switches MMS		
MMS-K 65-5-PNP	0301423	

① Two sensors (closer/NO) are required for each unit, plus extension cables as an option. Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.





Forces and Moments

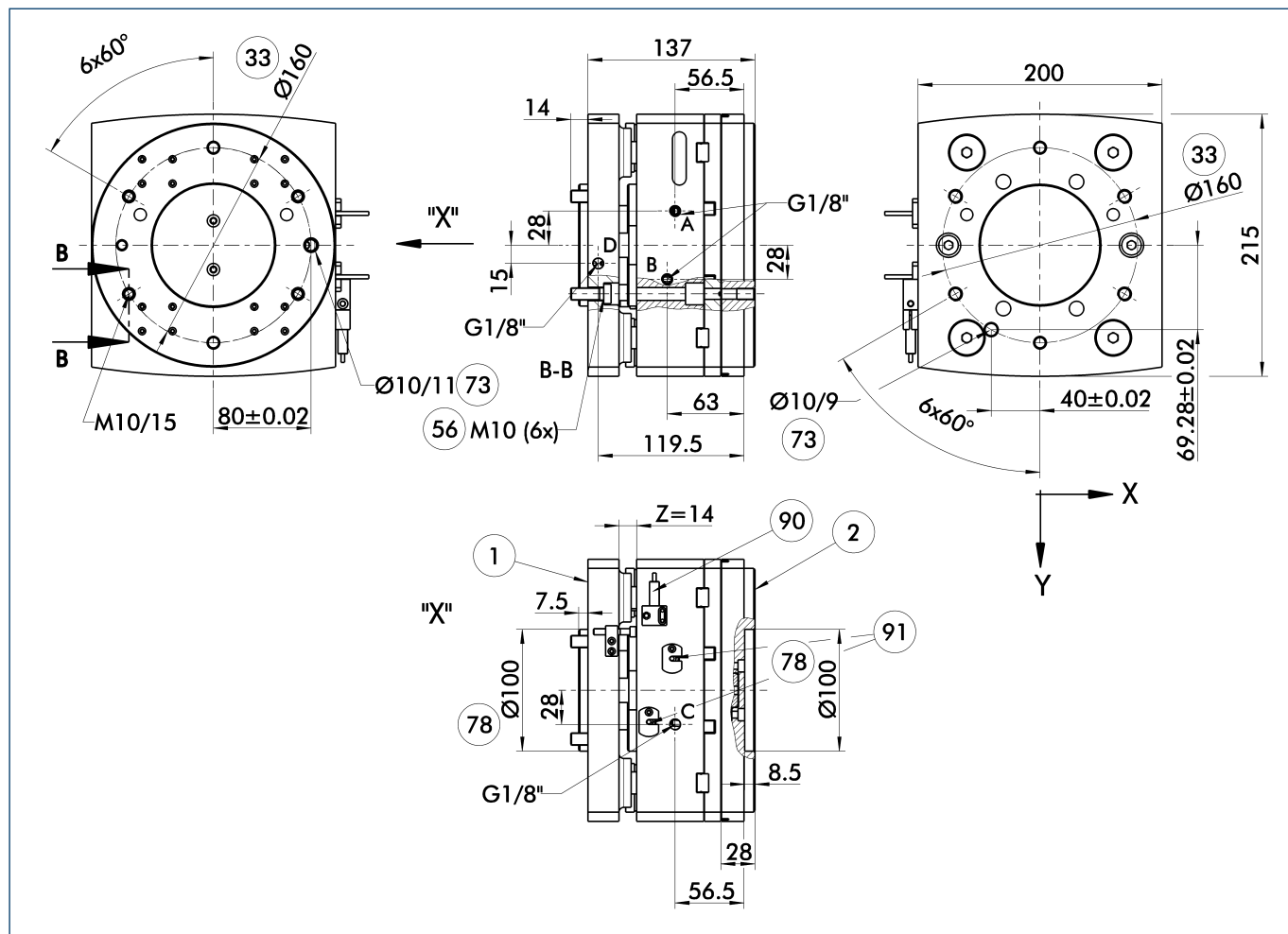


ⓘ This is the max. total of all loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to guarantee error-free function.

Technical data

Description		AGE-S-XYZ-160-0	AGE-S-XYZ-160-P	AGE-S-XY-160-0	AGE-S-XY-160-P	AGE-S-Z-160-0
ID		0324562	0324564	0324560	0324563	0324561
Compensation XY	[mm]	±10	±10	±10	±10	
Compensation Z	[mm]	14	14			14
max. vertical payload	[kg]	60	60	60	60	60
max. payload horizontal	[kg]	40	40	40	40	40
Locking force	[N]	1800	1800	1800	1800	
Position memory holding force	[N]		309		309	
Stroke Z	[N]	1900	1900			1900
min. spring force	[N]	640	640			640
min. / max. operating pressure	[bar]	2.5/8	2.5/8	2.5/8	2.5/8	2.5/8
Nominal operating pressure	[bar]	6	6	6	6	6
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot side connection		ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10
Tool side connection		ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10
Weight	[kg]	14.5	14.5	10.5	10.5	11.8
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60

Main view



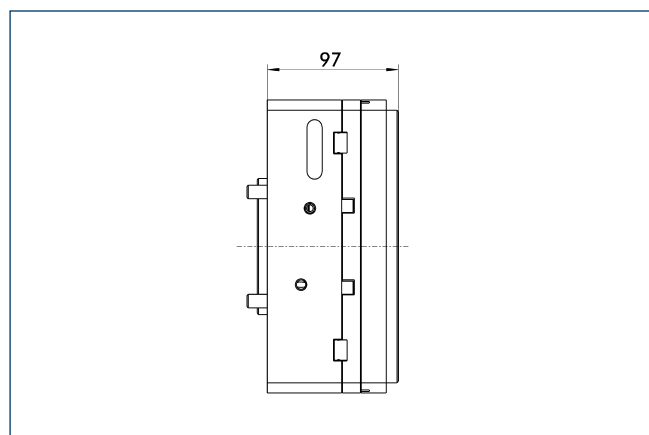
The main view shows the product with proximity switch. It is optional.

- A, a Air connection unlocked
- B, b Air connection locked
- C, c Air connection position memory XY
- D, d Air connection locked Z

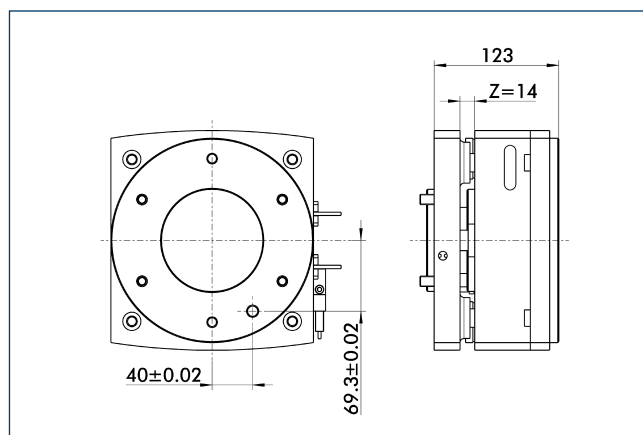
- ① Robot side connection
- ② Tool side connection

- ③③ DIN ISO-9409 bolt-hole circle diameter
- ⑤⑥ Included in delivery
- ⑦③ Fit for a centering pin
- ⑦⑧ Fitting for centering
- ⑨⑦ Sensor IN ...
- ⑨① MMS-K 65

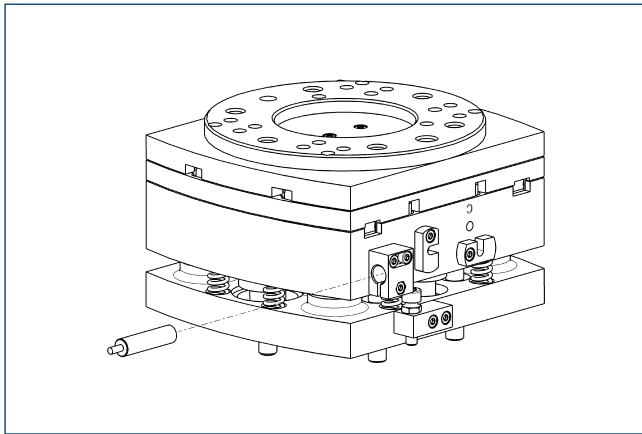
Dimensional change AGE-S-160-XY



Dimensional change AGE-S-160-Z



Sensor systems for Z-stroke

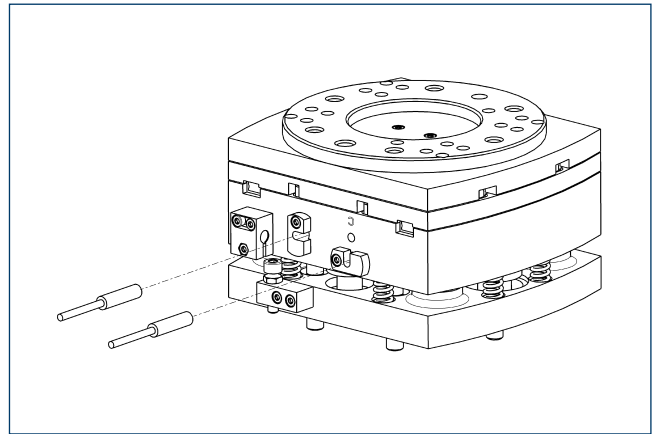


Can be mounted directly for Z-stroke or end position monitoring

Description	ID	often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80 S-M8	0301477	
INK 80-S	0301550	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Clip		
CLI-M12	0301464	
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Sensor Distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

① Per unit one sensor (closer/S) is required, optionally a cable extension.

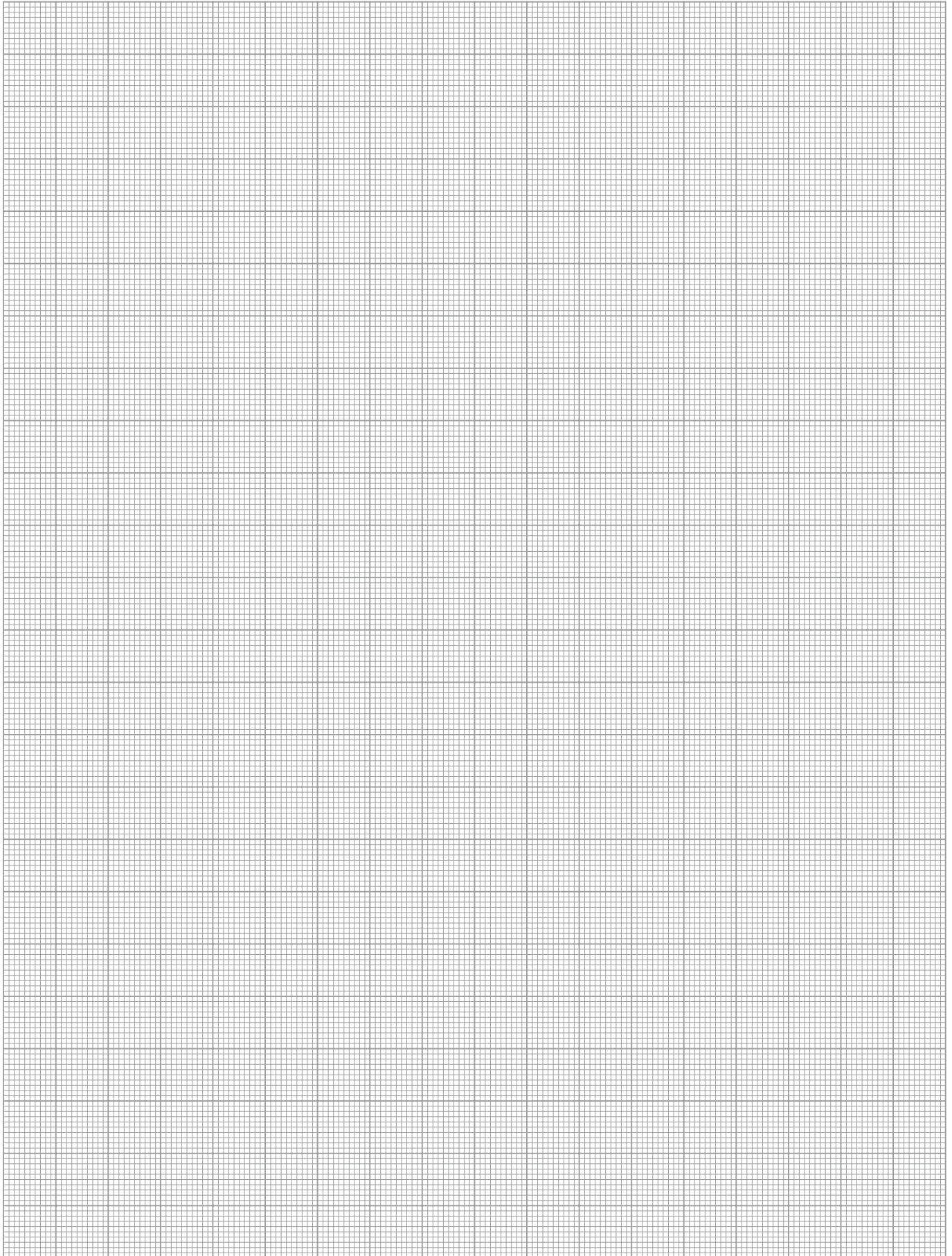
Sensor systems for centric locking



Sensor monitoring of the locking device

Description	ID	
Electronic Magnetic Switches MMS		
MMS-K 65-5-PNP	0301423	

① Two sensors (closer/NO) are required for each unit, plus extension cables as an option. Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

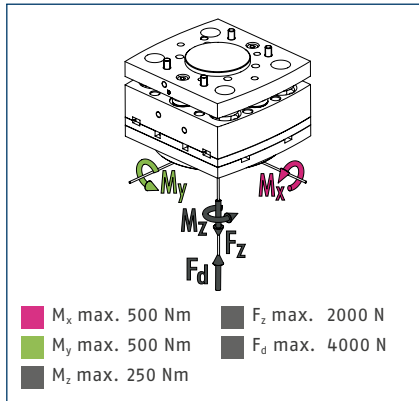


AGE-S 200

Compensating | XYZ-Compensation Unit



Forces and Moments

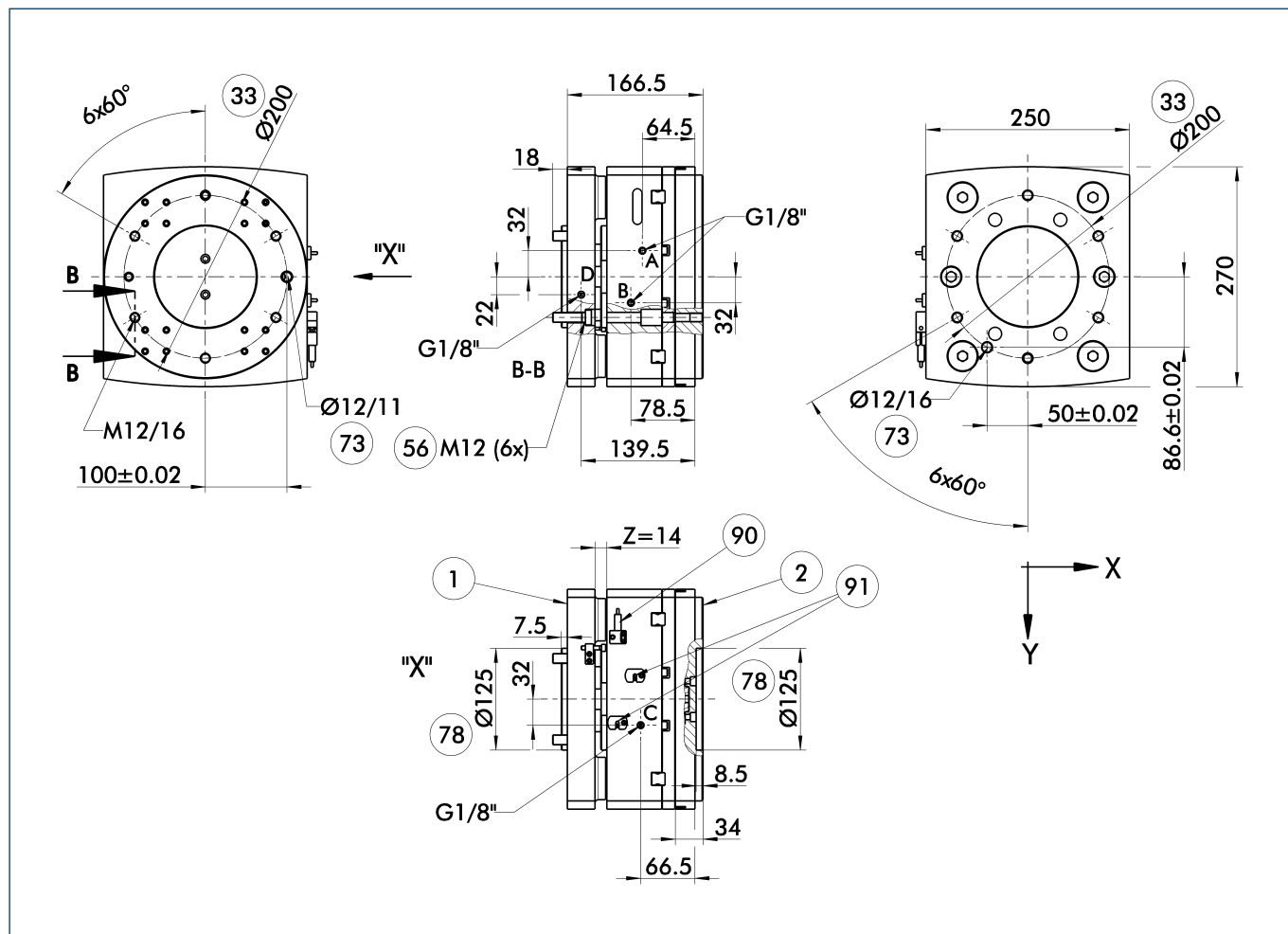


ⓘ This is the max. total of all loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to guarantee error-free function.

Technical data

Description		AGE-S-XYZ-200-0	AGE-S-XYZ-200-P	AGE-S-XY-200-0	AGE-S-XY-200-P	AGE-S-Z-200-0
ID		0324602	0324604	0324600	0324603	0324601
Compensation XY	[mm]	±12	±12	±12	±12	
Compensation Z	[mm]	14	14			14
max. vertical payload	[kg]	160	160	160	160	160
max. payload horizontal	[kg]	100	100	100	100	100
Locking force	[N]	2700	2700	2700	2700	
Position memory holding force	[N]		492		492	
Stroke Z	[N]	3000	3000			3000
min. spring force	[N]	1100	1100			1100
min. / max. operating pressure	[bar]	2.5/8	2.5/8	2.5/8	2.5/8	2.5/8
Nominal operating pressure	[bar]	6	6	6	6	6
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot side connection		ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12
Tool side connection		ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12
Weight	[kg]	29.5	29.5	21	21	23.5
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60

Main view

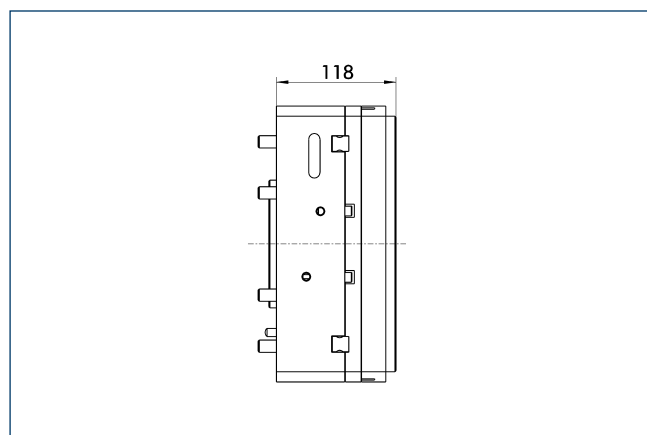


The main view shows the product with proximity switch. It is optional.

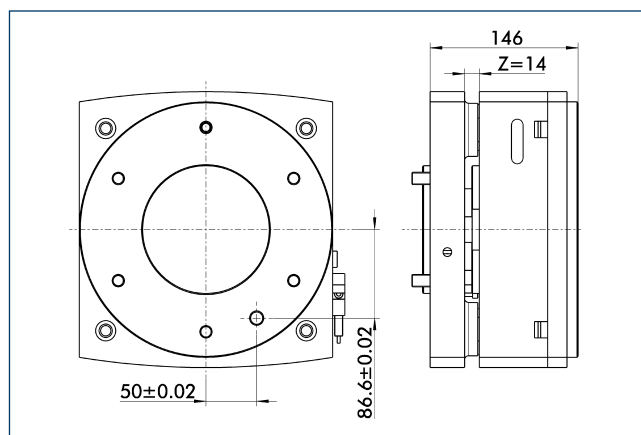
- A, a Air connection unlocked
- B, b Air connection locked
- C, c Air connection position memory XY
- D, d Air connection locked Z
- ① Robot side connection
- ② Tool side connection

- ③③ DIN ISO-9409 bolt-hole circle diameter
- ⑤⑥ Included in delivery
- ⑦③ Fit for a centering pin
- ⑦⑧ Fitting for centering
- ⑨⑦ Sensor IN ...
- ⑨① MMS-K 65

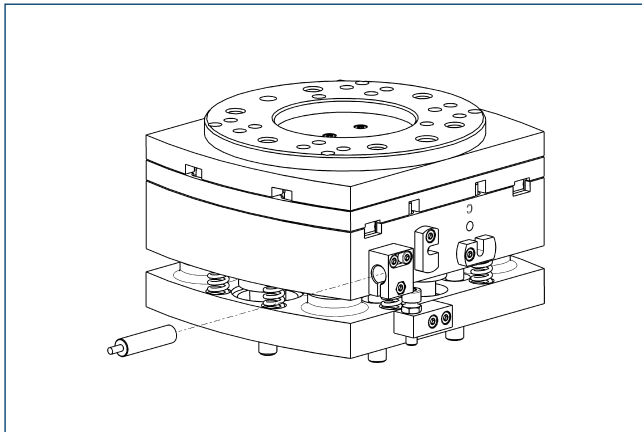
Dimensional change AGE-S-200-XY



Dimensional change AGE-S-200-Z



Sensor systems for Z-stroke

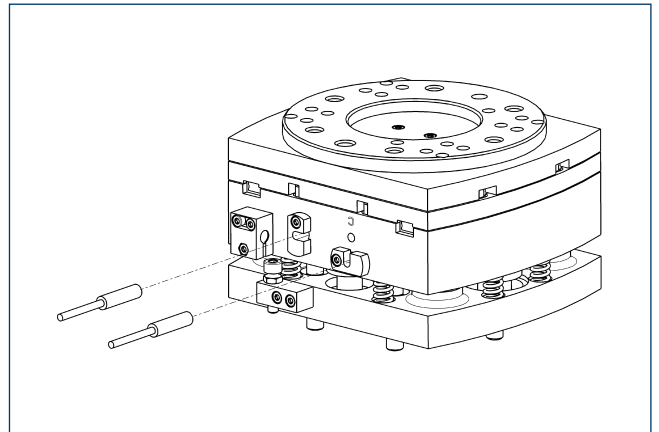


Can be mounted directly for Z-stroke or end position monitoring

Description	ID	often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-B 80 S-M8	0301477	
INK 80-S	0301550	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Clip		
CLI-M12	0301464	
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Sensor Distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

① Per unit one sensor (closer/S) is required, optionally a cable extension.

Sensor systems for centric locking



Sensor monitoring of the locking device

Description	ID	
Electronic Magnetic Switches MMS		
MMS-K 65-5-PNP	0301423	

① Two sensors (closer/NO) are required for each unit, plus extension cables as an option. Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.