Electromagnetically actuated shotbolt lock unit

1
Product group

G SC X ... B01 + ZBW

Funktion

- Pull type (de-energized locked) or push type (de-energized unlocked)
- Installed return spring
- With and without positive-break limit switch

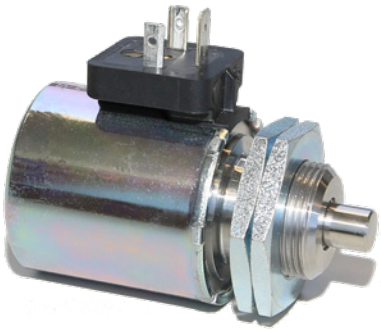

Fig. 1: Type G SC X 037 M30 B01

Construction

- Central fastening, alternative fastening via fastening angle Z BW
- 3 sizes ø (mm) 37, 45, 63
- Maintenance free bearings with high service life
- Robustly built stainless locking bolt
- Insulation materials of the excitation winding correspond to thermal class H
- Electrical connection solenoid via plug connector type Z KB according to DIN EN 175301-803
- Electrical connection signal switch via circular connector M12x1, four pole, coding A
- Protection class according to DIN VDE/DIN EN 60529 when properly installed: IP40

Fig. 2: Fastening angle

Application examples

- Blocking, limiting, interlocking of mechanical devices of all kind e.g. of doors and flaps

Options

- Further electrical connections
- Monitoring of the shotbolt position via sensor
- Further fastening types e.g. frontal threaded bores and central flange
- Versions with higher protection class
- Please contact us for application related solutions

Standards

- Design and testing according to DIN VDE 0580
- Quality management to ISO 9001

Technical data

G SC X 037	**... M30 B01** pull-type	**... N30 B01** push-type	**... M30 B10** pull-type	**... N30 B10** push-type
Rated voltage U_N	24 V			
Operating mode	S1 (100 %)			
Reference temperature ϑ_{13}	35 °C			
Max. Surface temperature	150 °C		90 °C	
Rated power P_{20}	19.1 W		10.3 W	
Stroke	8 mm			
Magnetic force F_M	8.5 N		6.3 N	5.4 N
Admissible lateral force in normal position	750 N	350 N	750 N	350 N
Service life under aboratory conditions 1)	5 Mio. operations			

G SC X 045	**... M30 B01** pull-type	**... N30 B01** push-type	**... M30 B10** pull-type
Rated voltage U_N	24 V		
Operating mode	S1 (100 %)		
Reference temperature ϑ_{13}	35 °C		
Max. Surface temperature	150 °C		90 °C
Rated power P_{20}	18.6 W		10.2 W
Stroke	10 mm		
Magnetic force F_M	10 N		6.3 N
Admissible lateral force in normal position	1200 N	650 N	1200 N
Service life under aboratory conditions 1)	5 Mio. operations		

G SC X 063	**... M30 B01** pull-type	**... N30 B01** push-type	**... M30 B10** pull-type
Rated voltage U_N	24 V		
Operating mode	S1 (100 %)		
Reference temperature ϑ_{13}	35 °C		
Max. Surface temperature	150 °C		90 °C
Rated power P_{20}	36 W		19 W
Stroke	12 mm		
Magnetic force F_M	33 N		23 N
Admissible lateral force in normal position	3000 N	1800 N	3000 N
Service life under aboratory conditions 1)	5 Mio. operations		

1) Laboratory conditions for endurance test::
- Rated voltage 24V DC,
- Room temperature, dry environment,
- horizontal assembly
- shotbolt load-free

By edition of the present list, all former unit lists lose their validity especially. Illustrations without guarantee – modifications and supply availability reserved

Notes on the tables

The force values indicated in the tables refer to 90 % of the rated voltage, (U_N = ⎓ 24 V, for other voltages deviations of magnetic force may occur) and in the normal operating temperature.

Due to natural dispersion the force values and the force values of the spring may deviate by ± 10 % from the values indicated in the tables.

The normal operating temperature is based on:

a) Mounting on badly conductive base

b) Rated voltage ⎓ 24 V

c) Operating mode S1 (100%)

d) Reference temperature 35° C

Functional description

In the illustrations 2, 5, 8, 10, 12, 15, 18, 20, 23, 26, the devices are shown in de-energised condition. The shotbolt is held in the initial position by an installed return spring. When applying the supply voltage, the shotbolt is moved by the magnetic force against the spring force.

With the pulling types (de-energised locked) GSCX … M30 …, the shotbolt is pulled into the device, at the same time the armature rod travels out on the back of the device. (Illustrations 3, 13, 21)

With the pushing types (de-energised unlocked) GSCX … N30 …, the shotbolt travels out of the device, at the same time the armature rod protruding on the back of the device disappears. (Illustrations 6, 16, 24)

In versions …B10, the armature rod actuates the respective positive-break limit switch, each covered by a plastic cap. (Illustrations 8, 10, 18, 26). Please refer to the relevant circuit diagrams in the dimensional drawings.

If the device is separated from the supply voltage again, it takes the initial position actuated by the spring force (fig. 2, 5, 8, 10, 12, 15, 18, 20, 23, 26), as long as the shotbolt is not impaired in its movement by external forces or obstacles.

Rated voltage

Rated voltage is ⎓ 24 V. An adaptation of the exciter coil to a rated voltage less than ⎓ 250 V is possible on request.

Standard values for voltage and operating mode: 24 V, S1 (100%).

The devices correspond to protection class I.

Information and remarks concerning European directives can be taken from the correspondent information sheet which is available under *Produktinfo.Magnet-Schultz.com*.

Please make sure that the described devices are suitable for your application. Our offers for these devices are based on the assumption of maximal 8 in an FMEA severity table, i. e. in case of malfunction of the device model as offered, there is, amongst others, no jeopardy to life or limb. Supplementary information concerning its proper installation can be taken also from the –Technical Explanation, the effective DIN VDE0580 as well as the relevant specifications.

This part list is a document for technically qualified personnel.

This publication is for information purposes only and is not to be regarded as a binding representation of the products, unless this is expressly confirmed by us.

Dimensional drawing and characteristic curve G SC X 037 M30 B01 (pull-type)

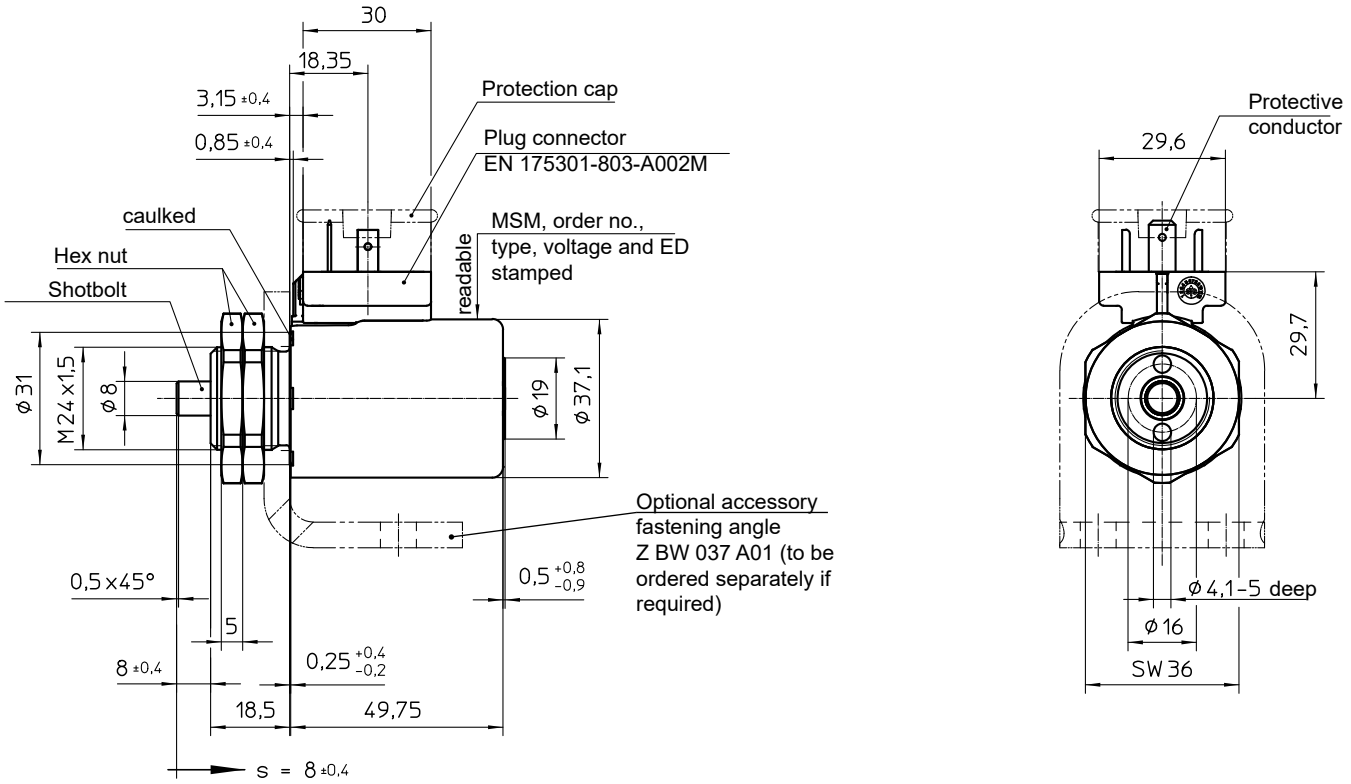

Fig. 3: Description in de-energised condition

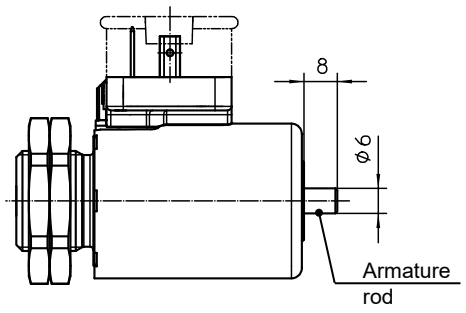

Fig. 4: Description in energised condition

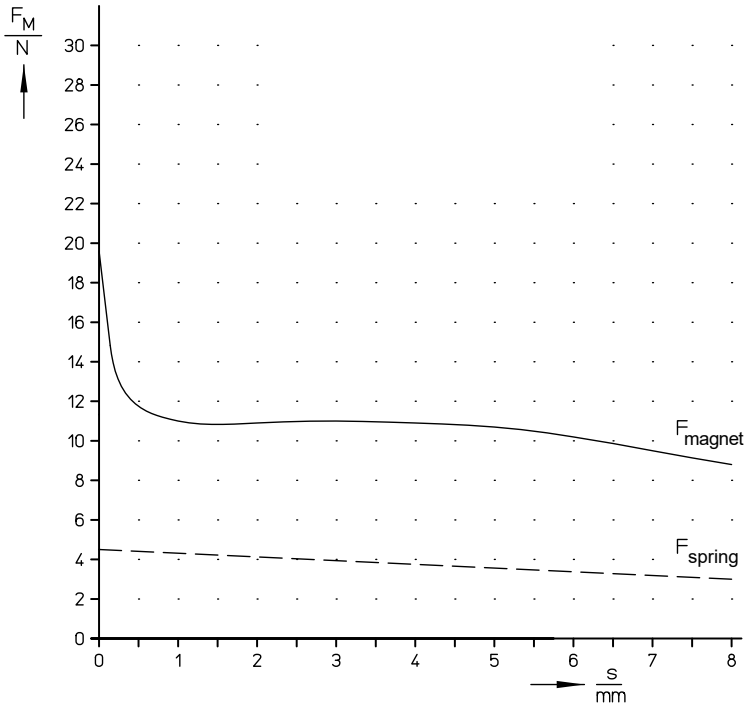

Fig. 5: Magnetic force-stroke-characteristic and return spring

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Dimensional drawing and characteristic curve G SC X 037 N30 B01 (push-type)

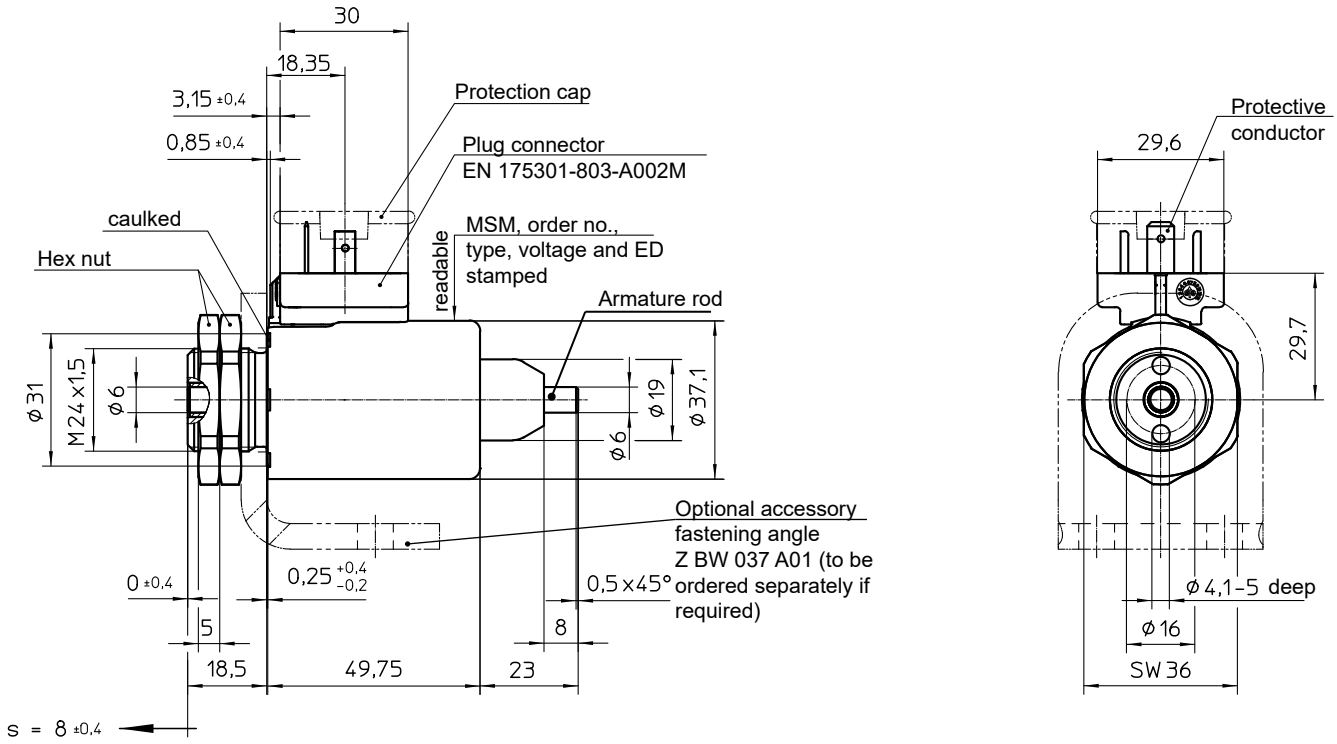


Fig. 6: Description in de-energised condition

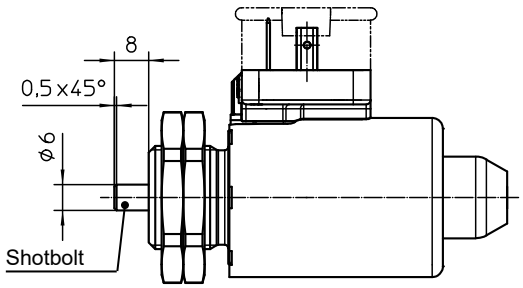


Fig. 7: Description in energised condition

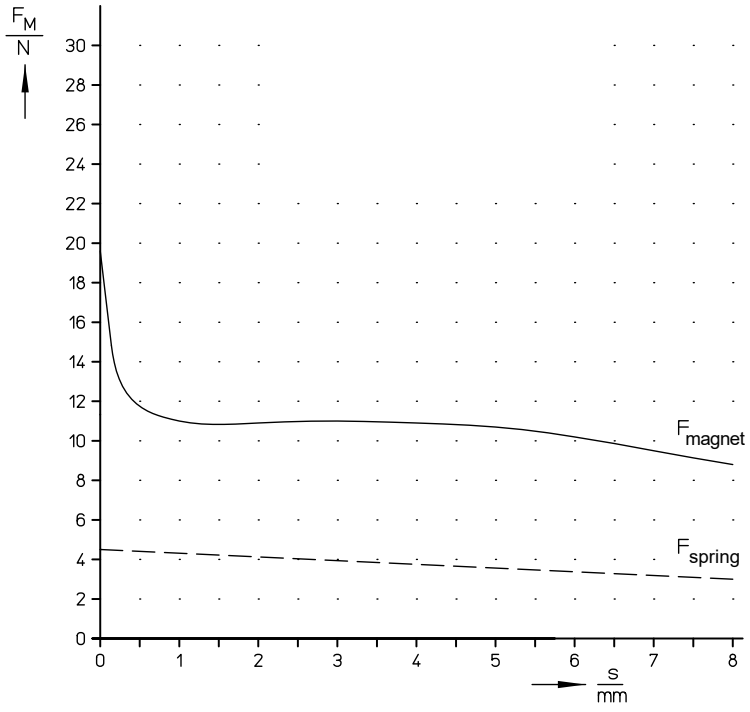
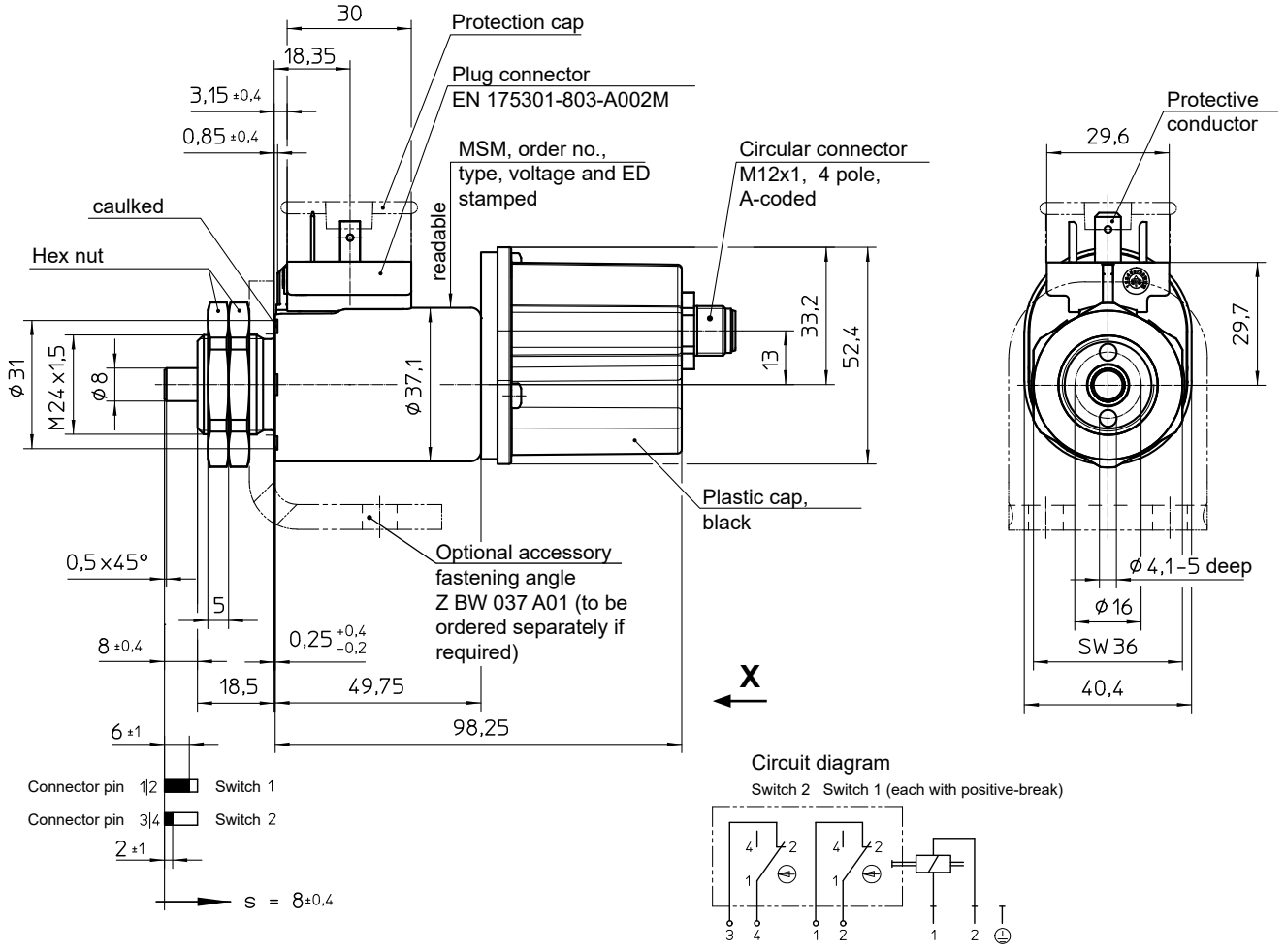
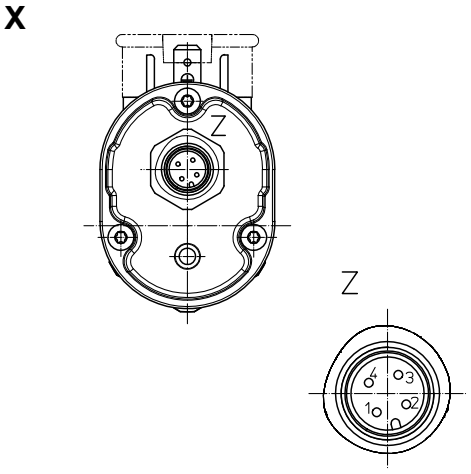


Fig. 8: Magnetic force-stroke-characteristic and return spring

Dimensional drawing and characteristic curve G SC X 037 M30 B10 (pull-type with limit switch)





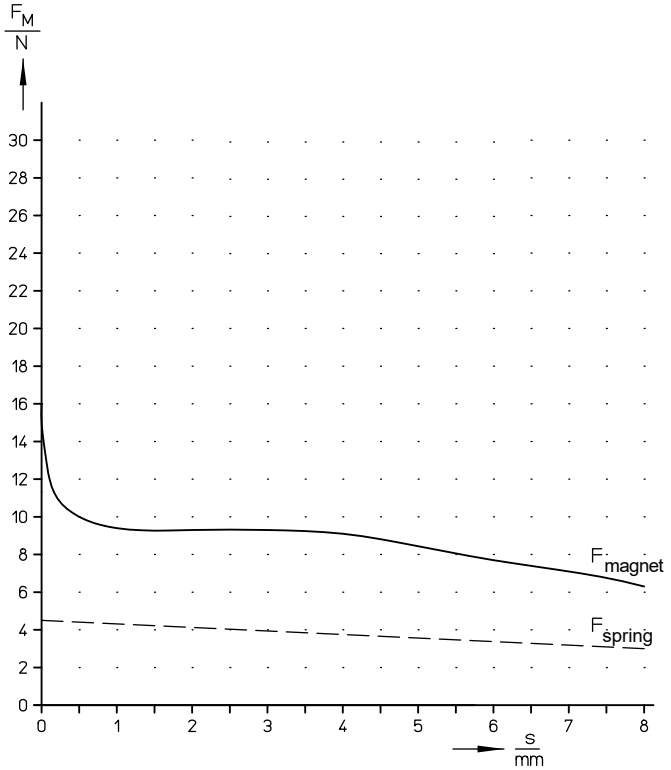
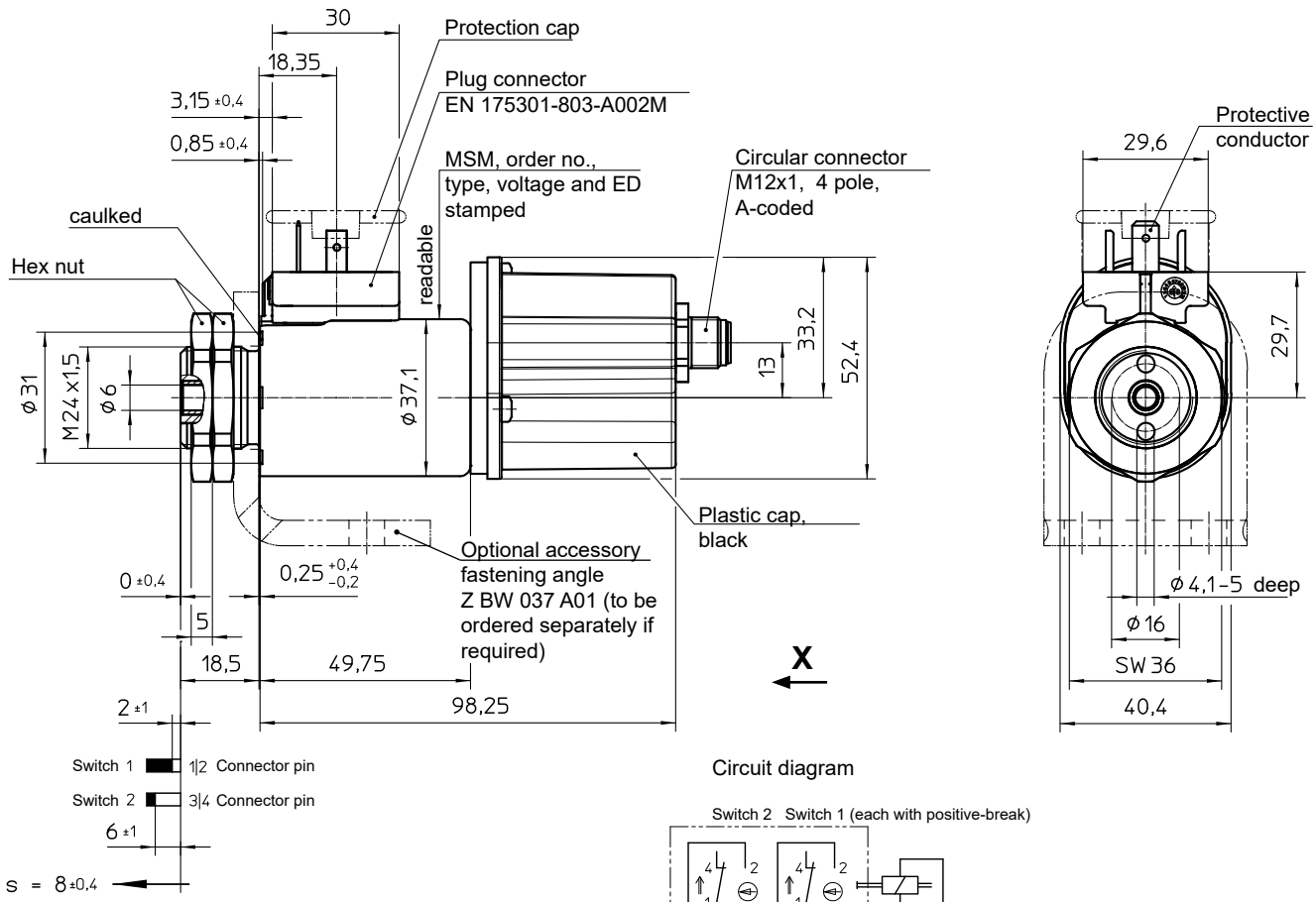
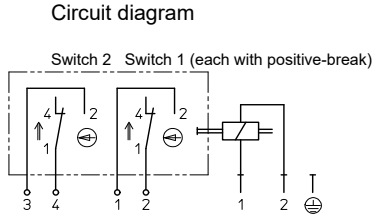
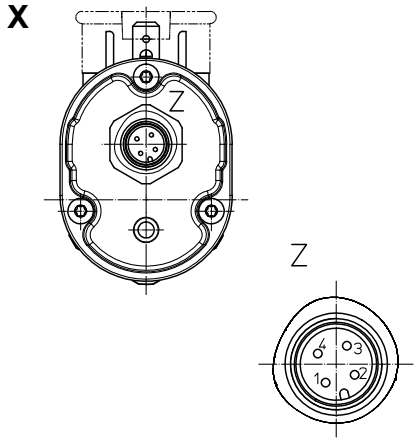


Fig. 9: Magnetic force-stroke-characteristic and return spring

Dimensional drawing and characteristic curve G SC X 037 N30 B10 (push-type with limit switch)







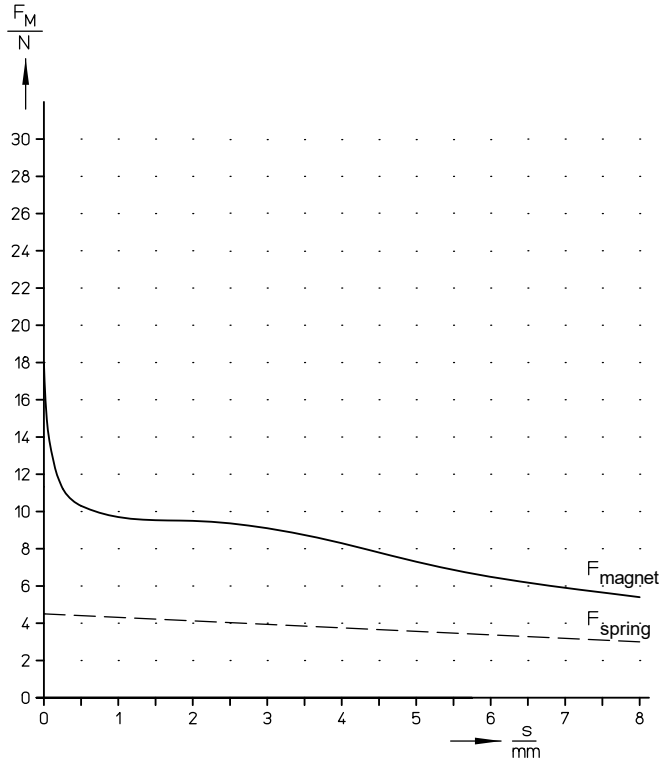


Fig. 10: Magnetic force-stroke-characteristic and return spring

Dimensional drawing and characteristic curve G SC X 045 M30 B01 (pull-type)

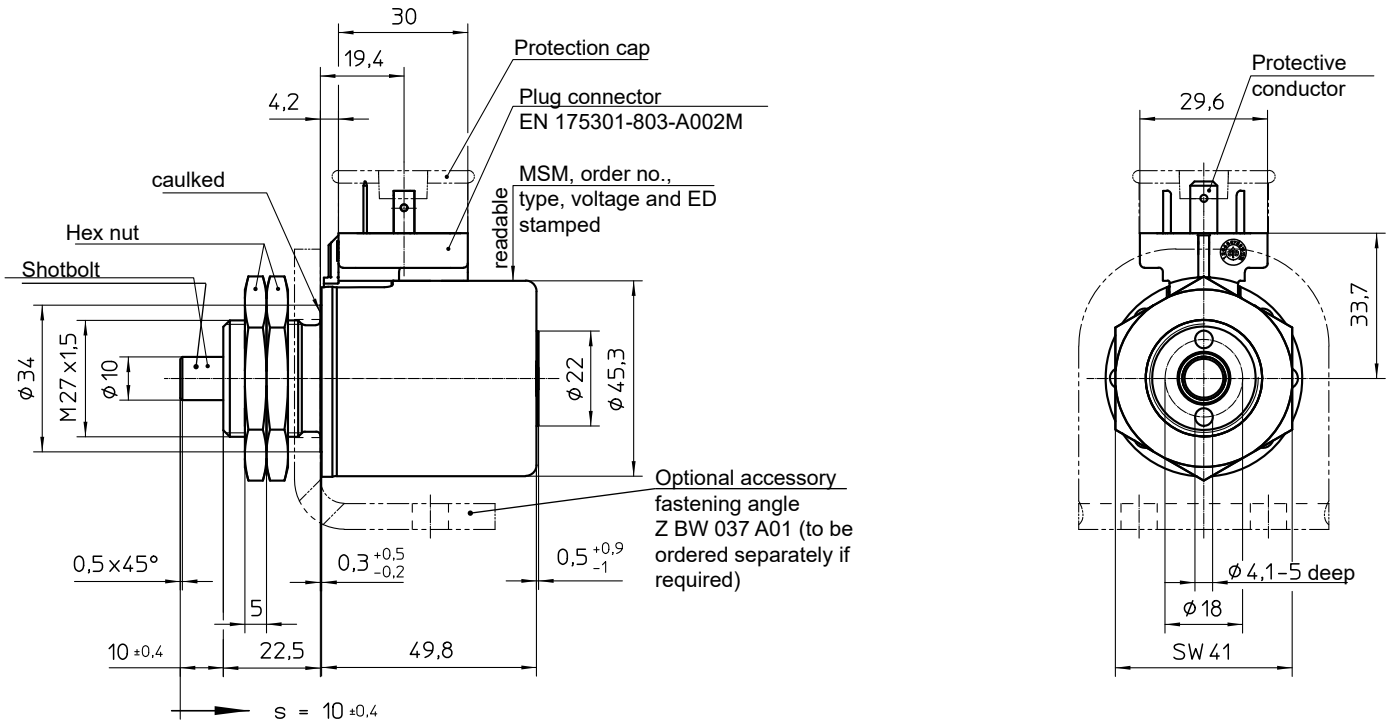


Fig. 11: Description in de-energised condition

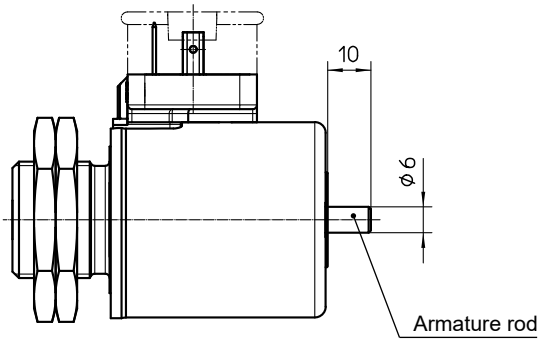


Fig. 12: Description in energised condition

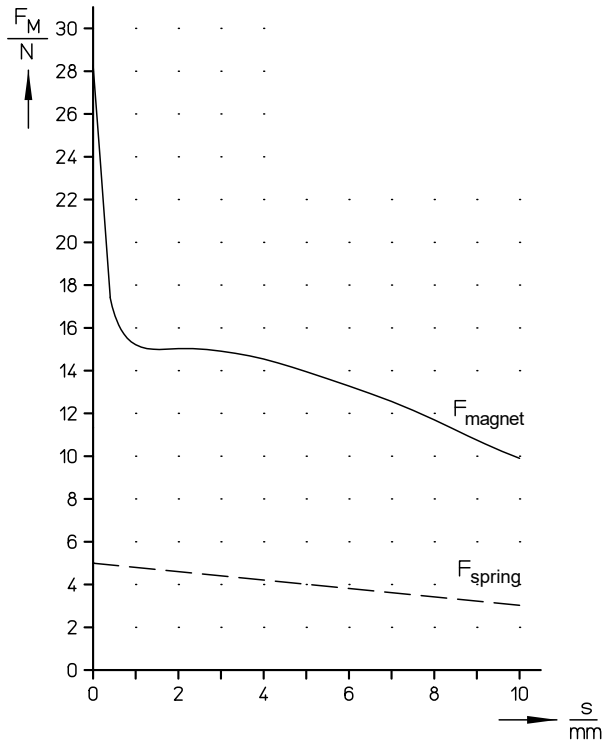


Fig. 13: Magnetic force-stroke-characteristic and return spring

Dimensional drawing and characteristic curve G SC X 045 N30 B01 (push-type)

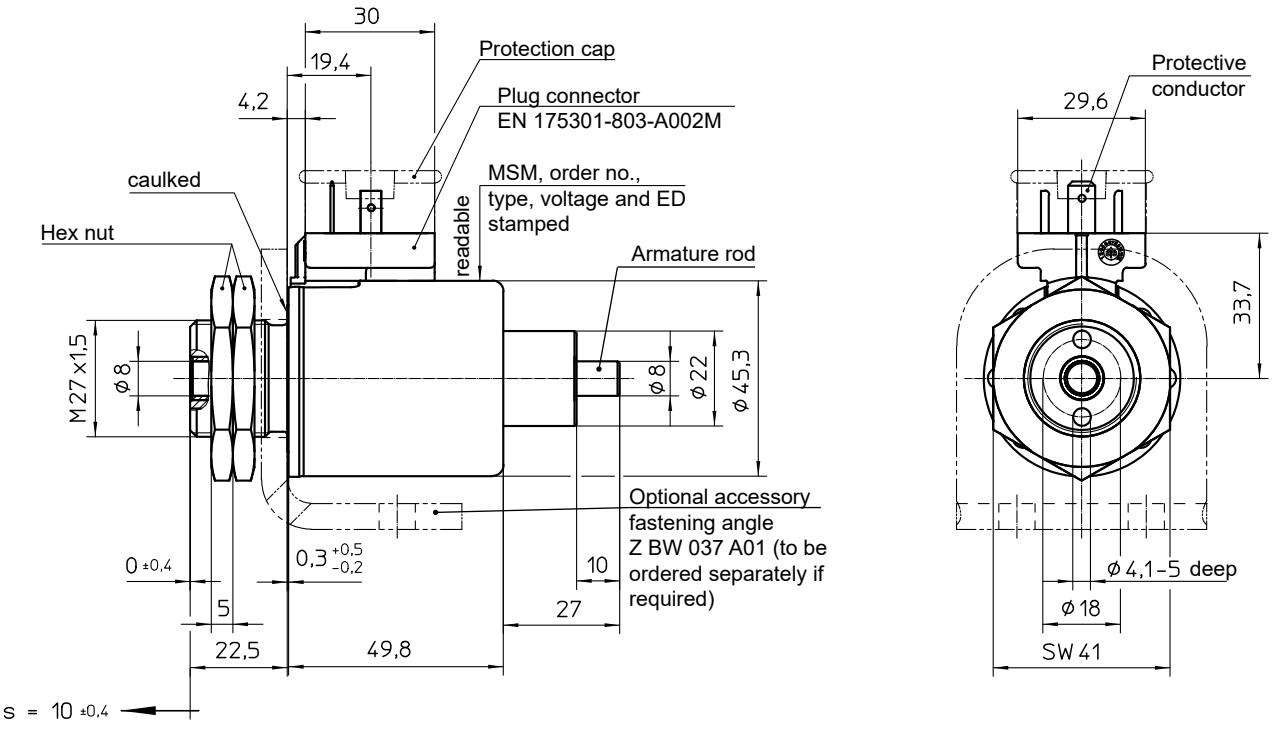


Fig. 14: Description in de-energised condition

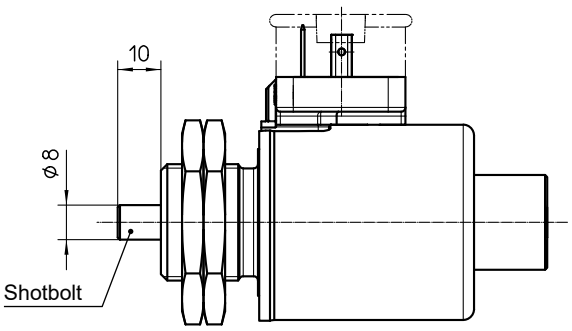


Fig. 15: Description in energised condition

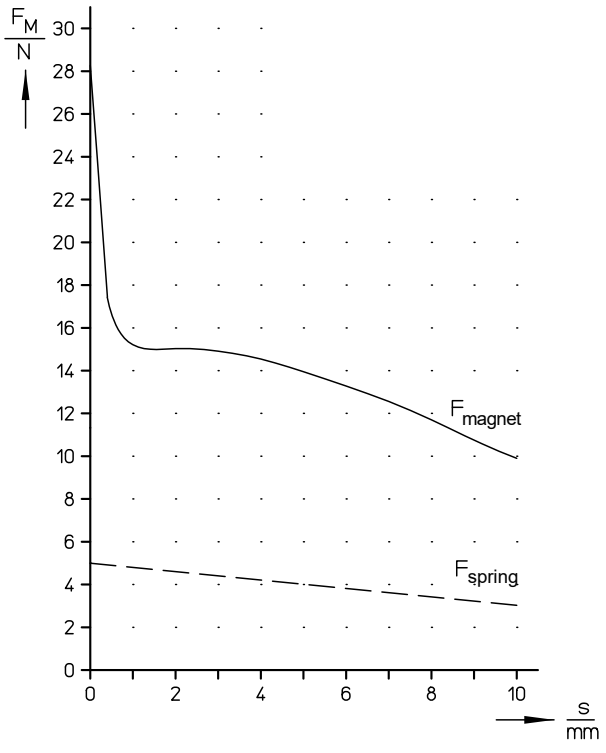
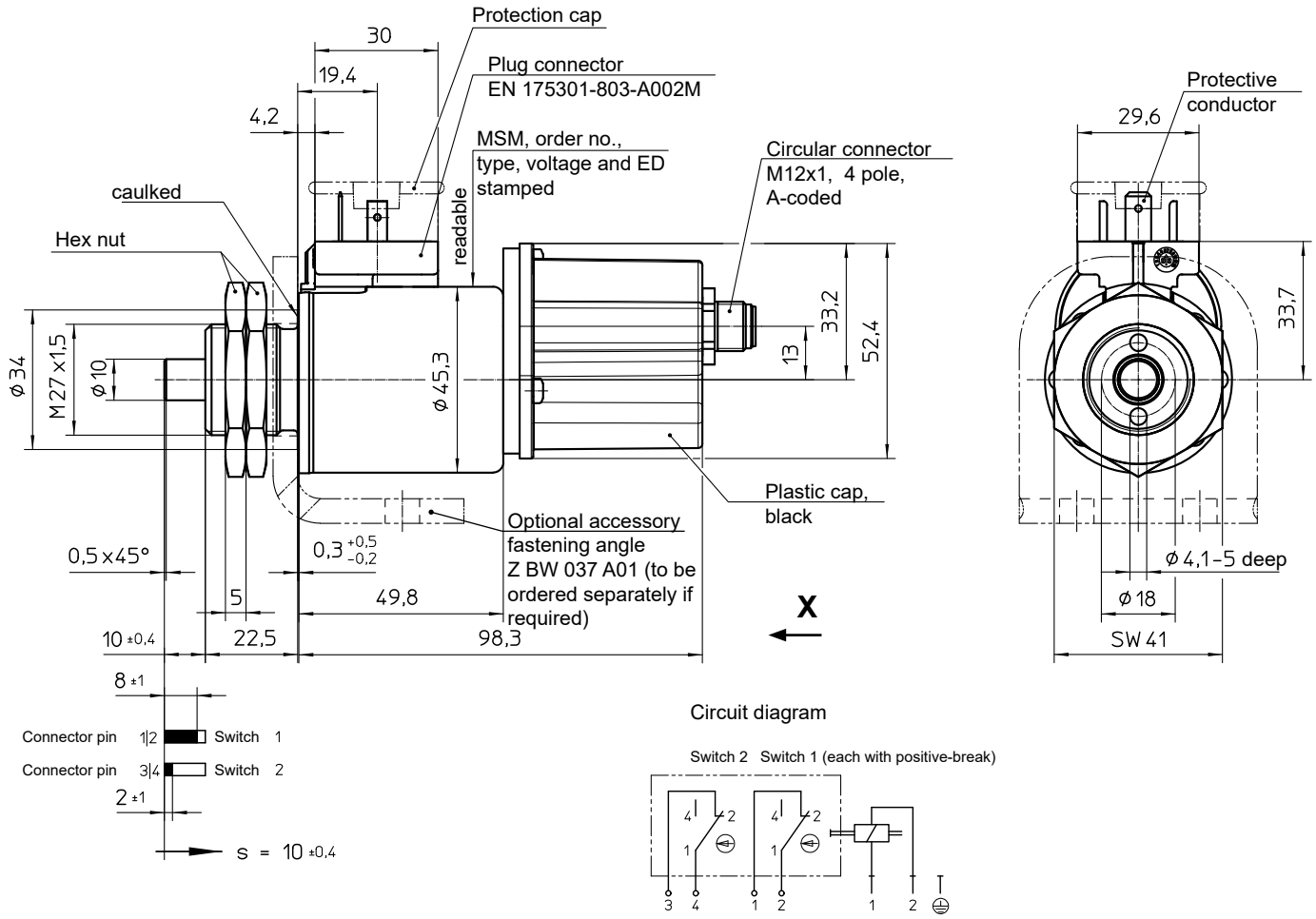
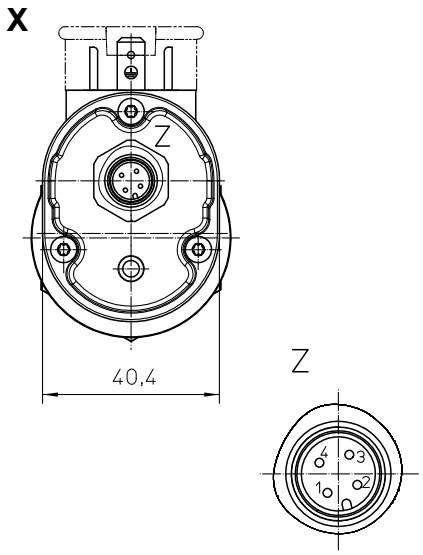


Fig. 16: Magnetic force-stroke-characteristic and return spring

Dimensional drawing and characteristic curve G SC X 045 M30 B10 (pull-type with limit switch)



Circuit diagram



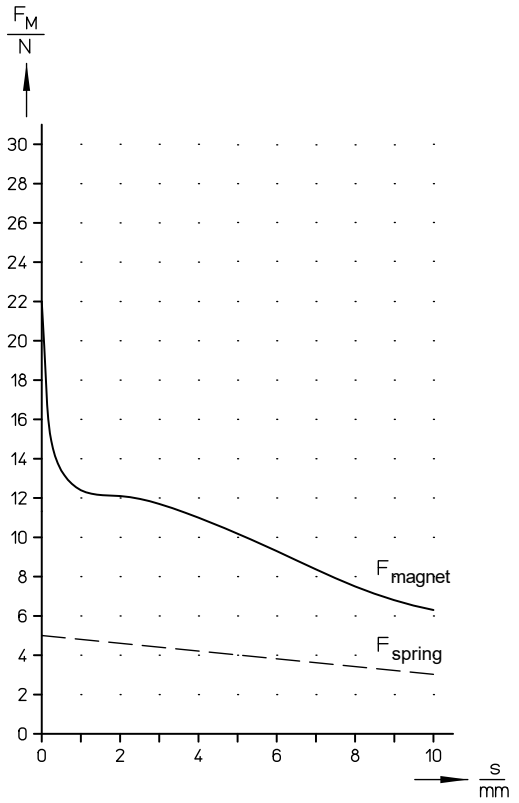


Fig. 17: Magnetic force-stroke-characteristic and return spring

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Dimensional drawing and characteristic curve G SC X 063 M30 B01 (pull-type)

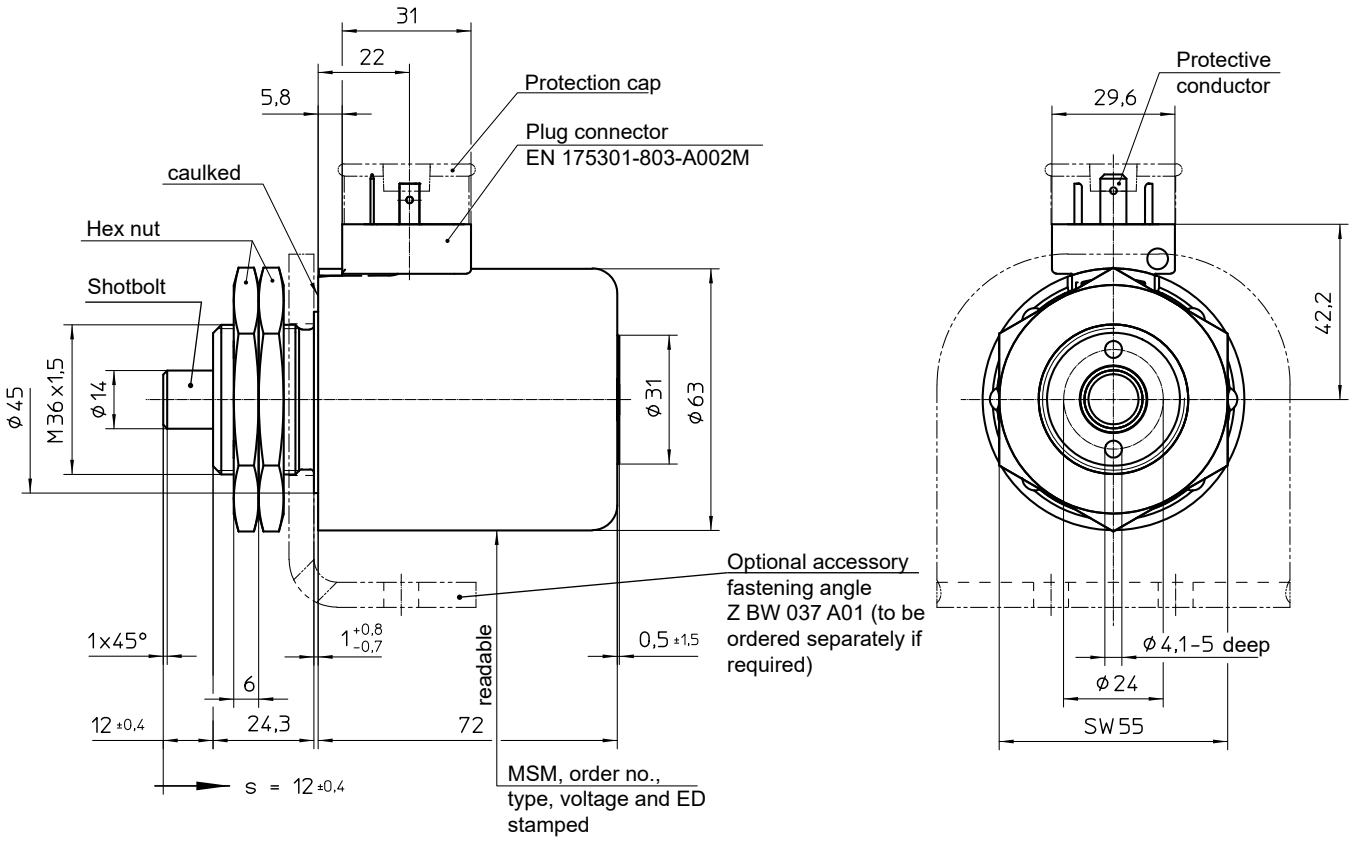


Fig. 18: Description in de-energised condition

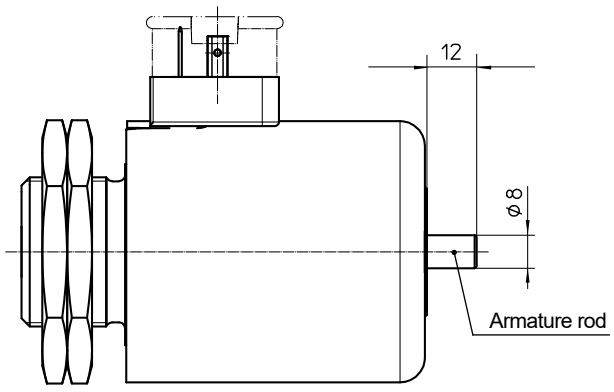


Fig. 19: Description in energised condition

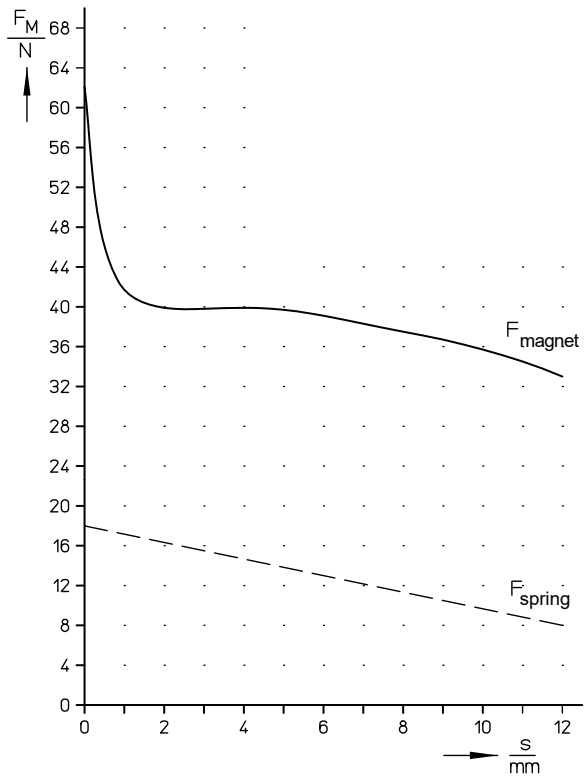


Fig. 20: Magnetic force-stroke-characteristic and return spring

Dimensional drawing and characteristic curve G SC X 063 N30 B01 (push-type)

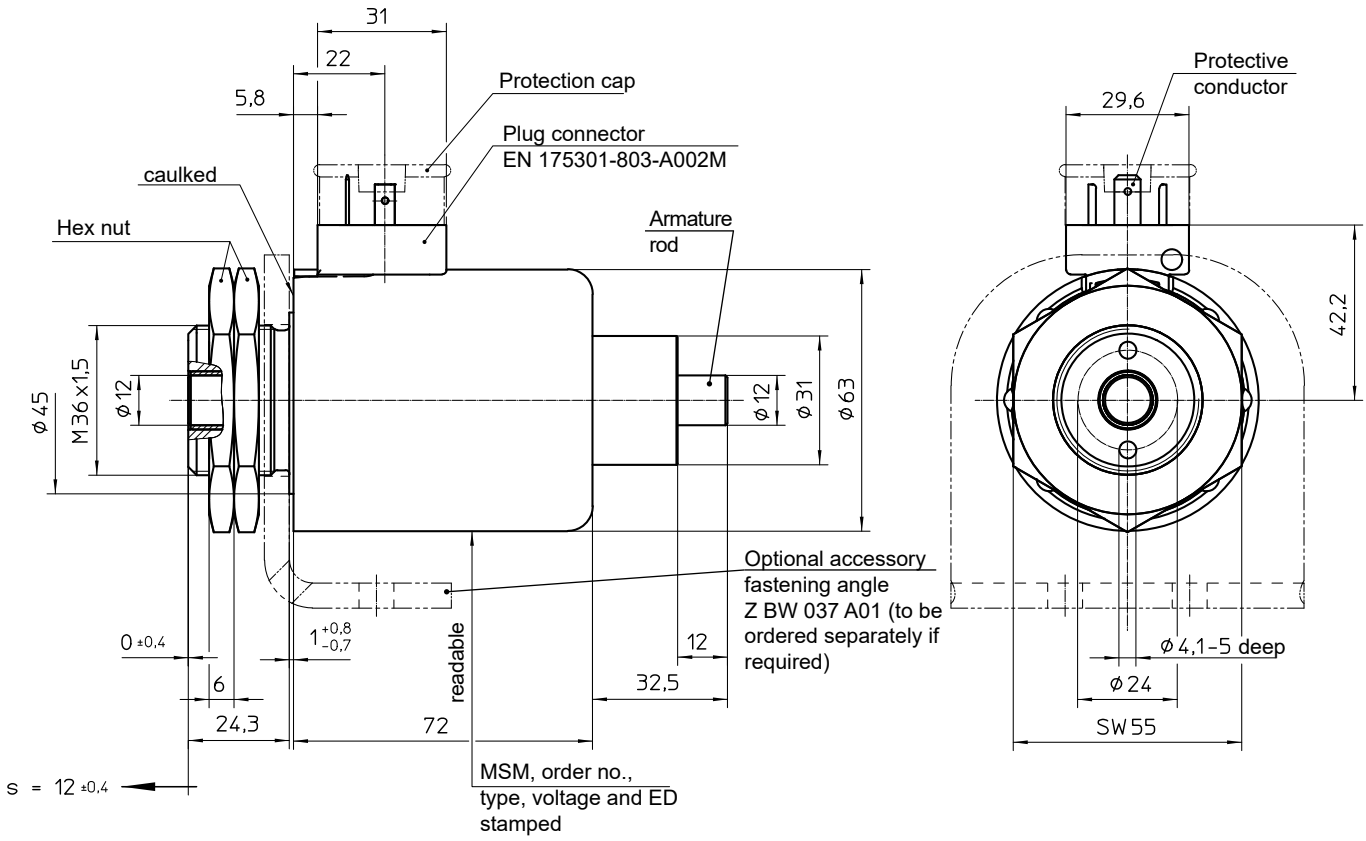


Fig. 21: Description in de-energised condition

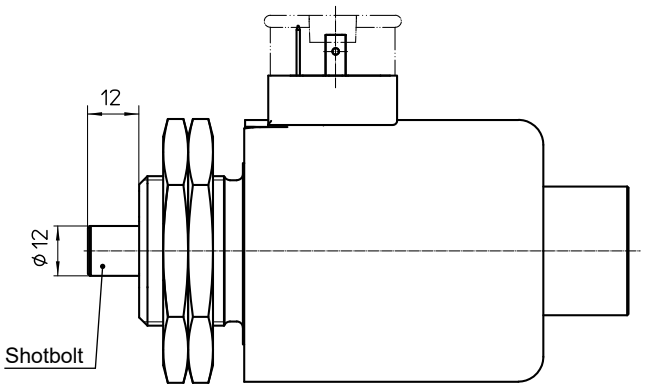


Fig. 22: Description in energised condition

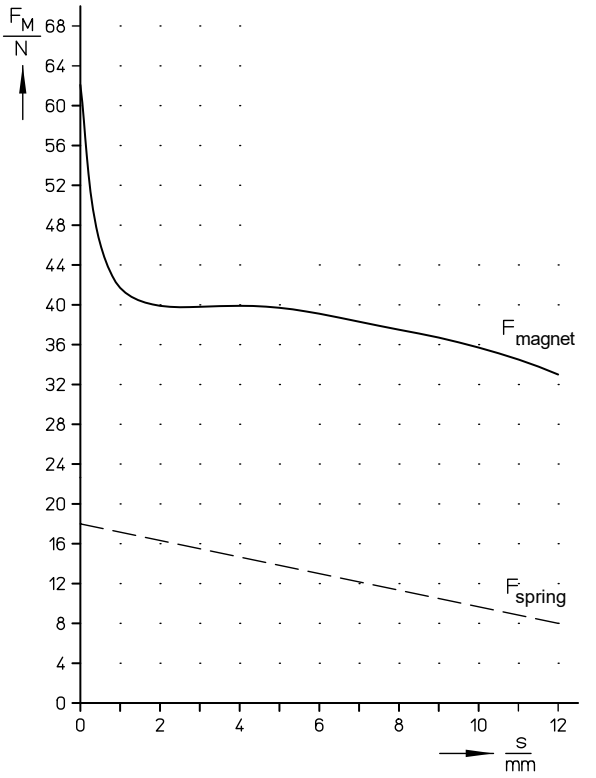
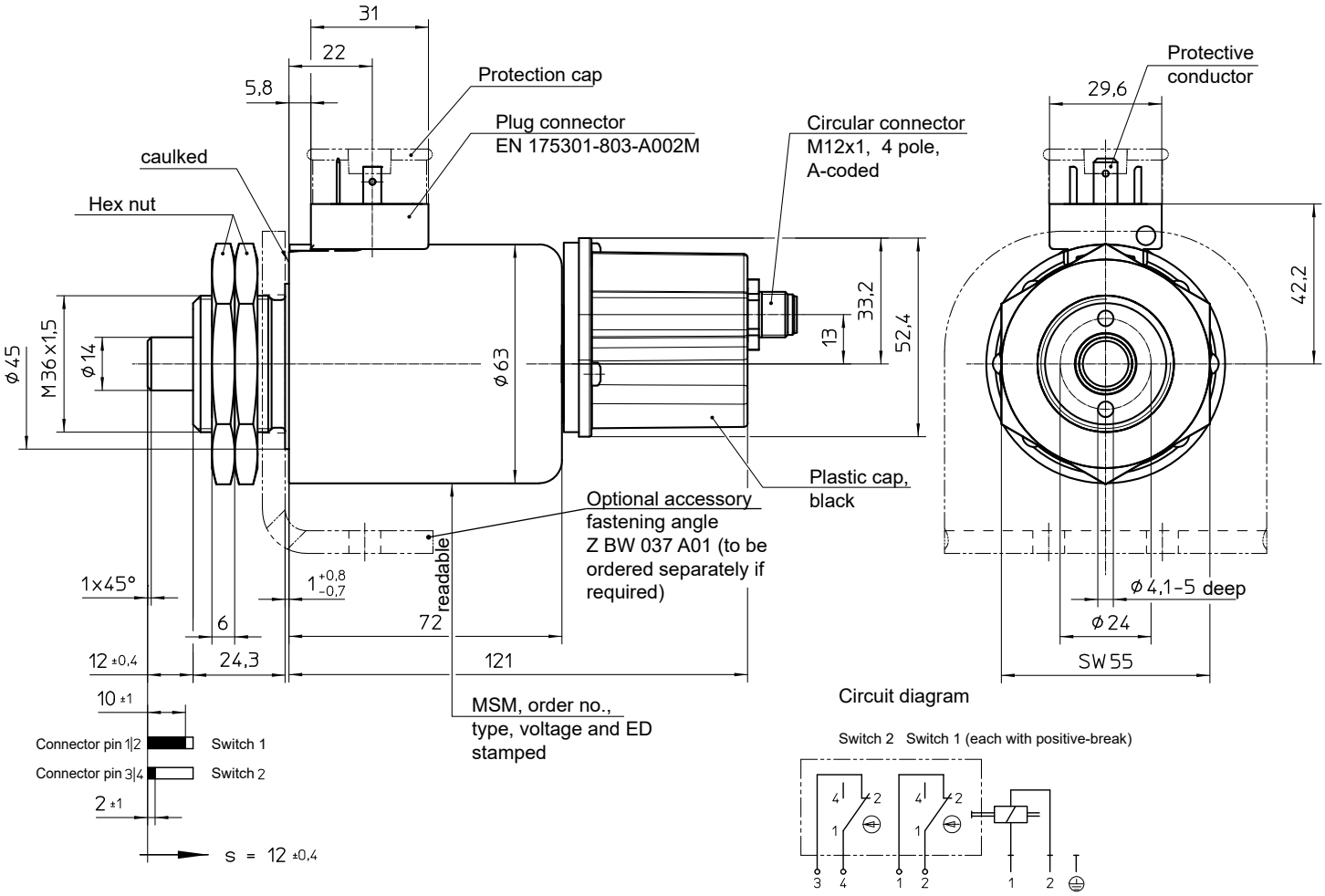
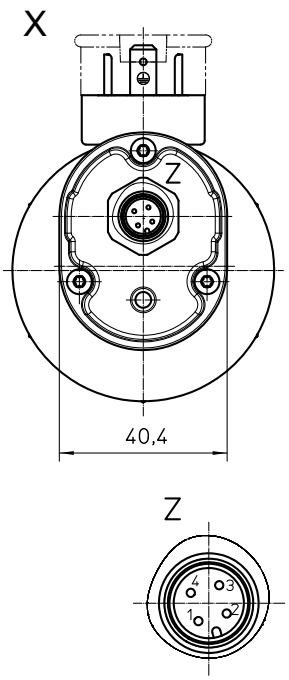


Fig. 23: Magnetic force-stroke-characteristic and return spring

Dimensional drawing and characteristic curve G SC X 063 M30 B10 (pull-type with limit switch)





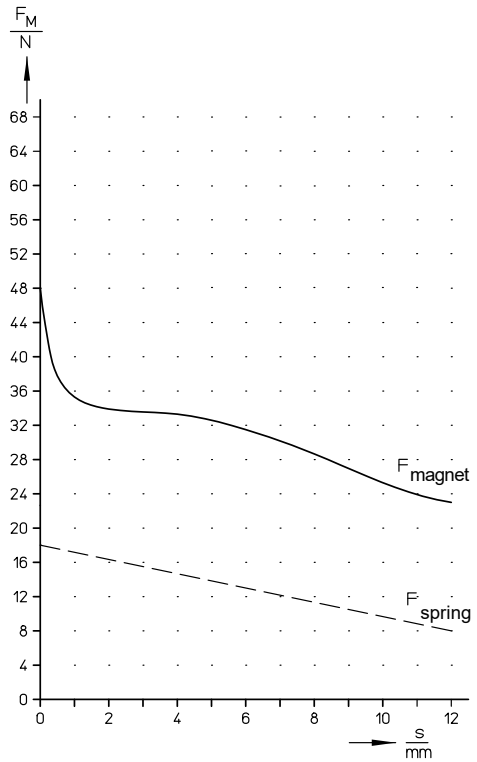


Fig. 24: Magnetic force-stroke-characteristic and return spring

Dimension drawing fastening angle Z BW

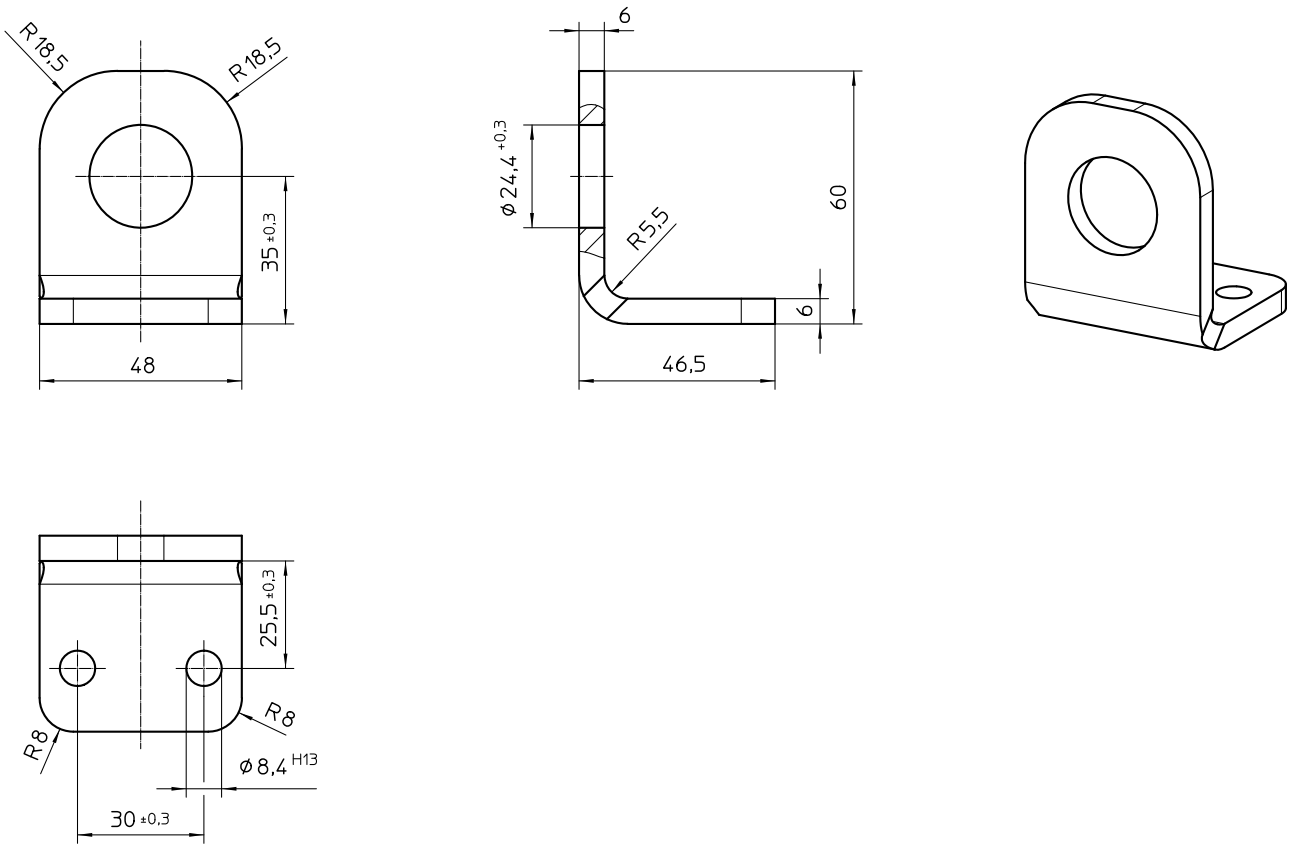


Fig. 25: Fastening angle Z BW 037 A01

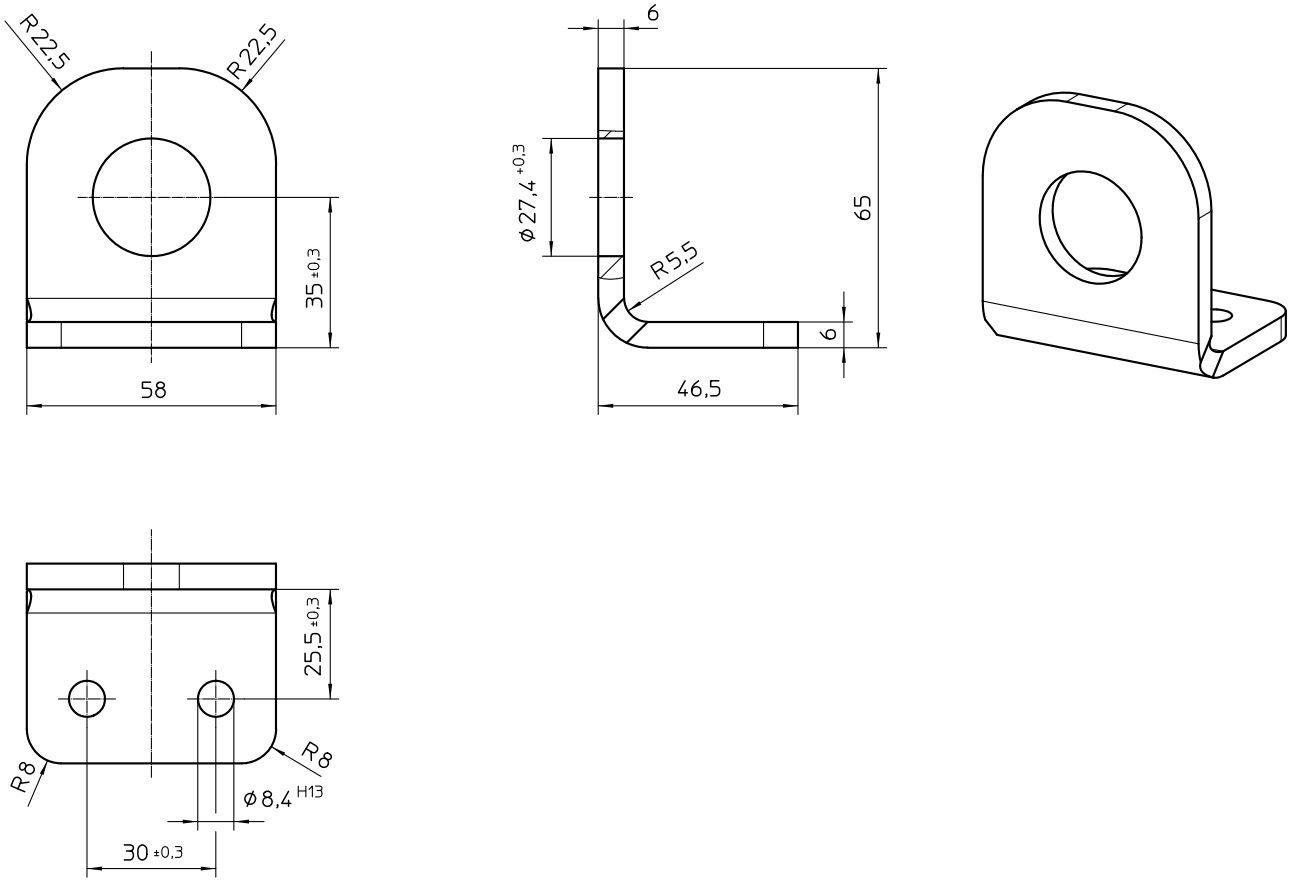


Fig. 26: Fastening angle Z BW 045 A01

Dimension drawing fastening angle Z BW

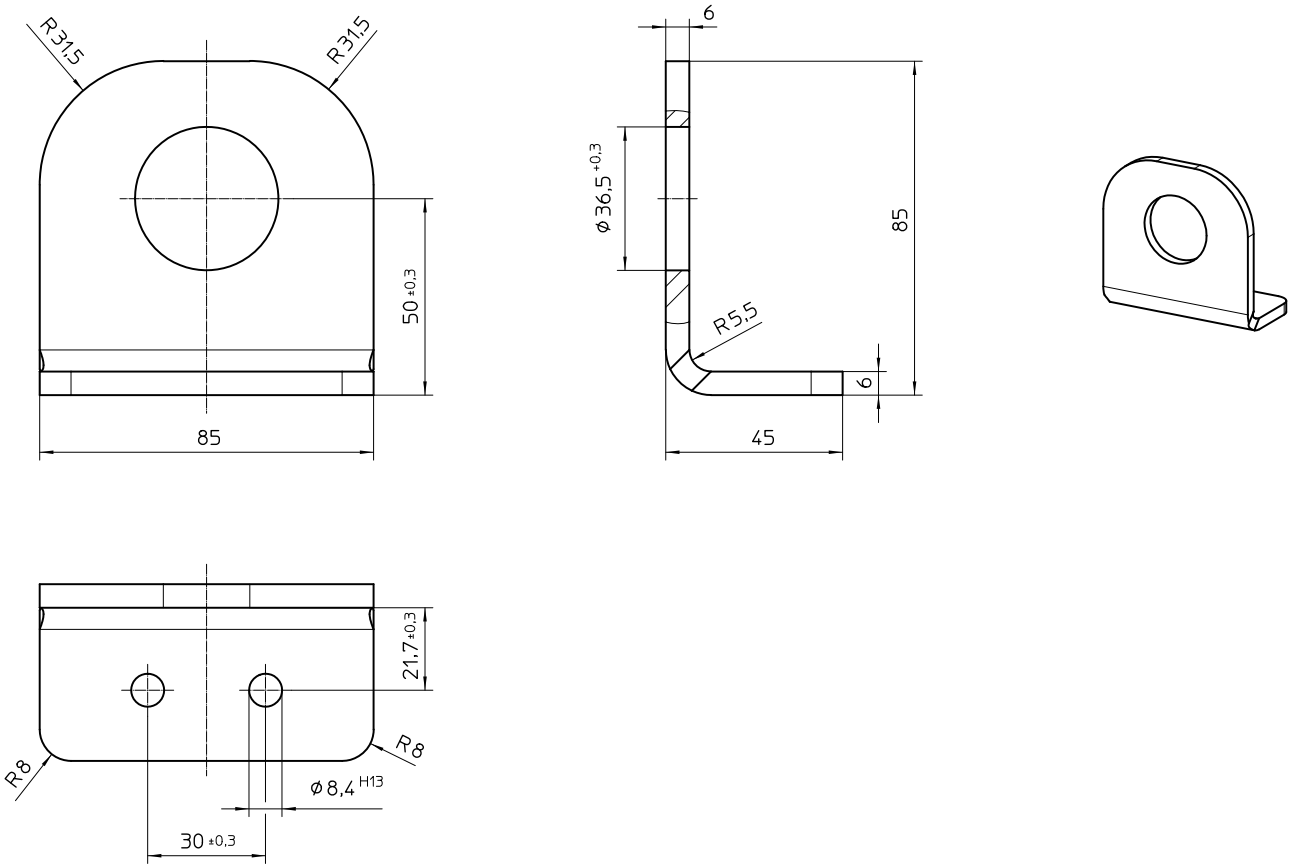


Fig. 27: Fastening angle Z BW 063 A01

Type code

Designation	Construction size (ø)	Stroke	Working method	Signal switch
G SC X 037 M30 B01	37 mm	8 mm	pull-type (de-energized locked)	without signal switch
G SC X 037 N30 B01			push-type (de-energized unlocked)	
G SC X 037 M30 B10			pull-type (de-energized locked)	with signal switch
G SC X 037 N30 B10			push-type (de-energized unlocked)	
G SC X 045 M30 B01	45 mm	10 mm	pull-type (de-energized locked)	without signal switch
G SC X 045 N30 B01			push-type (de-energized unlocked)	
G SC X 045 M30 B10			pull-type (de-energized locked)	with signal switch
G SC X 063 M30 B01	63 mm	12 mm	pull-type (de-energized locked)	without signal switch
G SC X 063 N30 B01			push-type (de-energized unlocked)	
G SC X 063 M30 B10			pull-type (de-energized locked)	with signal switch

Type code fastening angle

Designation	Suitable for	Bore hole
Z BW 037 A01	**G SC X 037**	24.4 mm
Z BW 045 A01	**G SC X 045**	27.4 mm
Z BW 063 A01	**G SC X 063**	36.5 mm

Order example **(fastening angle to be ordered separately)**

Type G SC X 037 M30 B01
Voltage ⎓ 24 V DC
Operating mode S1 (100 %)

Order example fastening angle

Typ Z BW 037 A01

Specials designs

Please do not hesitate to ask for our assistance with the solution of your application-oriented task. In order to find rapidly a reliable solution we need complete details about your application conditions. The details should be specified as precisely as possible in accordance with the relevant -Technical Explanations.

If necessary, please request the support of our corresponding technical office.