

## DC single-acting high performance solenoids

# 1

Product group

## G MC X ... B01

### Function

- Push or pull type
- Increasing force vs. stroke characteristic

### Construction

- Fastening with 3 frontal threaded holes
- 3 sizes  $\varnothing$  (mm) 37, 45, 63
- Maintenance free bearings with high service life
- Insulation materials of the excitation winding correspond to thermal class H
- Electrical connection via connector plug type Z KB according to DIN EN 175301-803
- Protection class according to DIN VDE/DIN EN 60529, when properly installed
  - Receptacles according to DIN 46247 IP 00
  - Plug connection via connector plug: IP54

### Application examples

- Tooling machines, packing machines, textile machines
- Measuring and control technology

### Options

- Further electrical connections on request
- Please contact us for application related solutions

### Standards

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

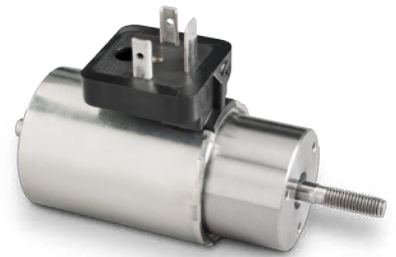


Fig. 1: Type G MC X 037 M43 B01



Fig. 2: Type G MC X 037 N43 B01

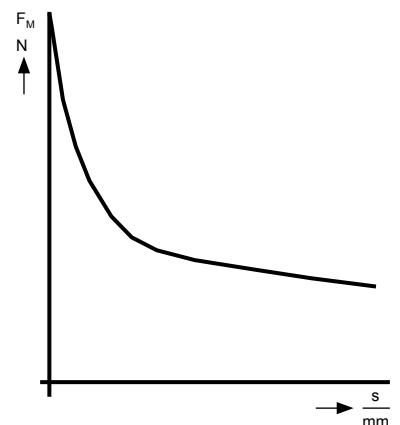


Fig. 3: force vs. stroke characteristic

## Technical data

<b>G MC X ... M43 (pull-type)</b>	<b>037</b>					<b>045</b>					<b>063</b>				
Operating mode	S1	S3	S3	S3	S3	S1	S3	S3	S3	S3	S1	S3	S3	S3*	S3*
Rel. duty cycle	100 %	40 %	25 %	15 %	5 %	100 %	40 %	25 %	15 %	5 %	100 %	40 %	25 %	15 %	5 %
Stroke s (mm)	Magnetkraft F <sub>M</sub> (N)					Magnetkraft F <sub>M</sub> (N)					Magnetkraft F <sub>M</sub> (N)				
0	24	32	40,5	52	67	42	54	72	81	105	62	90	108	132	197
1	13,3	19	22,5	29,7	41,4	19,8	28,8	37,3	43,2	63,9	42,5	60,5	72,4	89	143
2	11,7	17	19,8	25,6	36	17,1	24,3	31,5	36	54	41,3	57	67,5	82	128
4	10,8	16,1	18,2	23,8	34,2	15,3	21,6	27,9	32,4	48,6	39,7	55,3	65,3	79,6	120
6	9,9	15,3	18	23,8	35,1	13,5	19,8	26,1	30,6	47,7	37	53,4	63,5	78,3	120
8	8	14,8	18	24,3	38	11,2	18,9	24,6	28,9	47,7	34,5	51,2	61,7	77,1	121
10						9	17,1	24,3	28,8	47,7	32	48,6	59,6	75,6	123
12											29	46,8	57,6	74	124
15											24,9	44,6	55,7	72	125
Rated work A <sub>N</sub> (Ncm)	6,4	11,8	14,4	19,4	30,4	9	17,1	24,3	28,8	47,7	37,3	67	83,5	108	180
Max. Surface temperature (°C)	150														
Rated power P <sub>20</sub> (W)	19,1	44,3	65,4	105	254	18,6	41,1	78,2	96	213	36	78	126,6	183	570
Actuation time t <sub>1</sub> ** (ms)	89	76	73	65	61	100	94	83	82	74	178	150	129	122	93
Fall time t <sub>2</sub> ** (ms)	52	49	47	46	45	62	56	54	51	37	80	71	69	64	58
Armature weight (kg)	0,05					0,07					0,18				
Solenoid weight m <sub>M</sub> (kg)	0,43					0,62					1,56				

<b>G MC X ... N43 (push-type)</b>	<b>037</b>					<b>045</b>					<b>063</b>				
Operating mode	S1	S3	S3	S3	S3	S1	S3	S3	S3	S3	S1	S3	S3	S3*	S3*
Rel. duty cycle	100 %	40 %	25 %	15 %	5 %	100 %	40 %	25 %	15 %	5 %	100 %	40 %	25 %	15 %	5 %
Stroke s (mm)	Magnetkraft F <sub>M</sub> (N)					Magnetkraft F <sub>M</sub> (N)					Magnetkraft F <sub>M</sub> (N)				
0	21	26	30	38	52	34	40,5	49,5	54	80	74	10,2	118	141	202
1	12,6	17	19,3	23,4	32,4	18	24,3	29,7	32,8	45	48,5	67,3	78	92,8	141
2	12,1	16,3	19,3	22,5	30,6	17,1	22,5	27,5	32,8	41,4	44,4	60,6	70,5	83,6	125
4	11,7	16,2	19	23,4	31,5	15,3	21,6	27	32,8	43,2	41,6	57,1	67	80	119
6	10,3	16,1	19,8	25,6	35,1	13,7	21,6	27	31,5	45,9	39,5	55,6	65,7	80	120
8	8	15,3	20,7	27,9	40,5	10,8	20,7	27	30,6	50,4	37	54	64,9	80	125
10						9	18	27	30,6	54,9	34,2	52,4	63,7	80	129
12											30,8	50,7	62,4	80	134
15											26,1	47,7	60,7	79,3	139
Rated work A <sub>N</sub> (Ncm)	6,4	12,2	16,5	22,3	32,4	9	18	27	30,6	54,9	39,1	71,5	91	119	208
Max. Surface temperature (°C)	150														
Rated power P <sub>20</sub> (W)	19,1	44,3	65,4	105	254	18,6	41,1	78,2	96	213	36	78	127	183	570
Actuation time t <sub>1</sub> ** (ms)	85	71	69	62	63	99	89	76	75	69	165	131	115	109	87
Fall time t <sub>2</sub> ** (ms)	50	47	46	45	42	60	49	42	38	44	78	72	70	68	65
Armature weight (kg)	0,06					0,08					0,21				
Solenoid weight m <sub>M</sub> (kg)	0,36					0,54					1,44				

\* Only for rated voltages > 48 V.

\*\* Attraction and fall times are measured without sealing rings, with 70% of the magnetic force with rated voltage at normal operating temperature.

#### Note for application of series G MC X via rectifier

A connection to the AC-network is possible when using a rectifier installed in connector Z KB G (part list Z BK X / Z KB G / Z KC X / Z KC G).

Please consider that the AC-networks are widely free of voltage peaks. If within spitting distance of the devices higher inductances and capacities are switched, it must be ensured that those voltage peaks can be made ineffective by suitable switch means (choke resp. band-pass filters).

Switching at the AC side should be striven at.

#### Notes on the tables

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

Due to natural dispersion, the magnetic force values may deviate by about  $\pm 10 \%$  from the table values. As a result of friction, the mounted sealing rings will reduce the magnetic force values by up to 2 N.

The normal operating temperature is based on:


- a) Mounting on badly conductive base
- b) Rated voltage  $\text{---} 24 \text{ V}$
- c) Operating mode S1 (100%)
- d) Reference temperature  $35^\circ \text{ C}$

#### Rated voltage

Rated voltage  $24 \text{ V}$  (exception size 063 15%/5% ED see tables), the winding can be adapted to a rated voltage of max.  $250 \text{ V}$  on request.

Winding variants with smaller rated voltages or reduced duty cycle are possible subject to a verification of the technical feasibility of production.

**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 of 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.

The present publication is for informational purposes only and shall not be construed as mandatory illustration of the products unless otherwise confirmed expressively.

## Dimension table

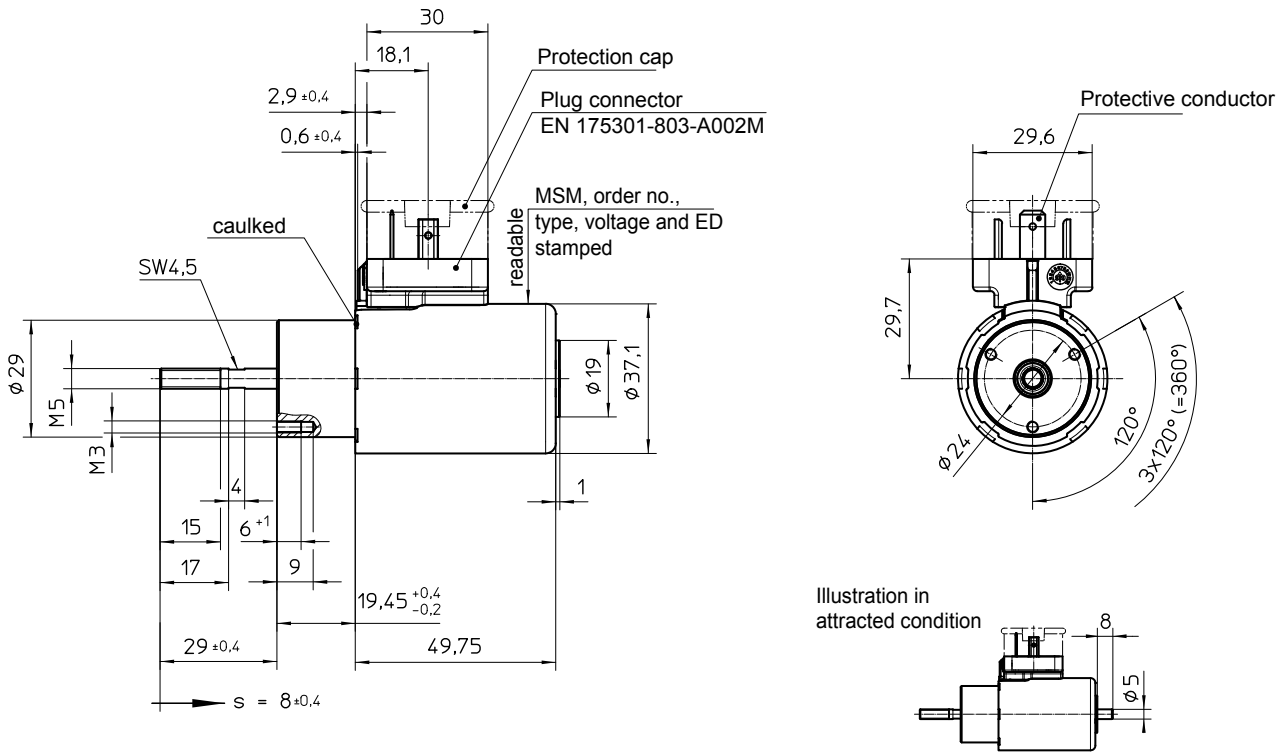


Fig. 4: Type G MC X 037 M43 B01

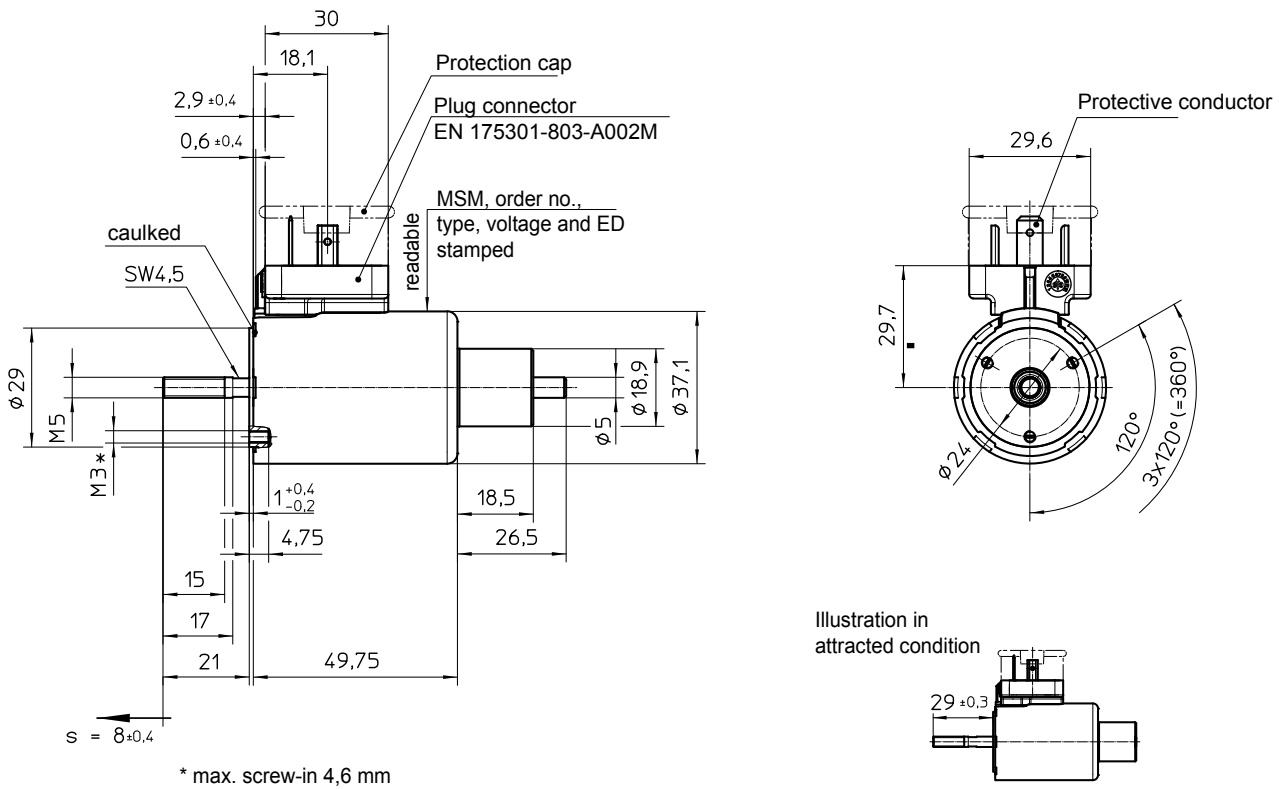


Fig. 5: Type G MC X 037 N43 B01

## Dimension table

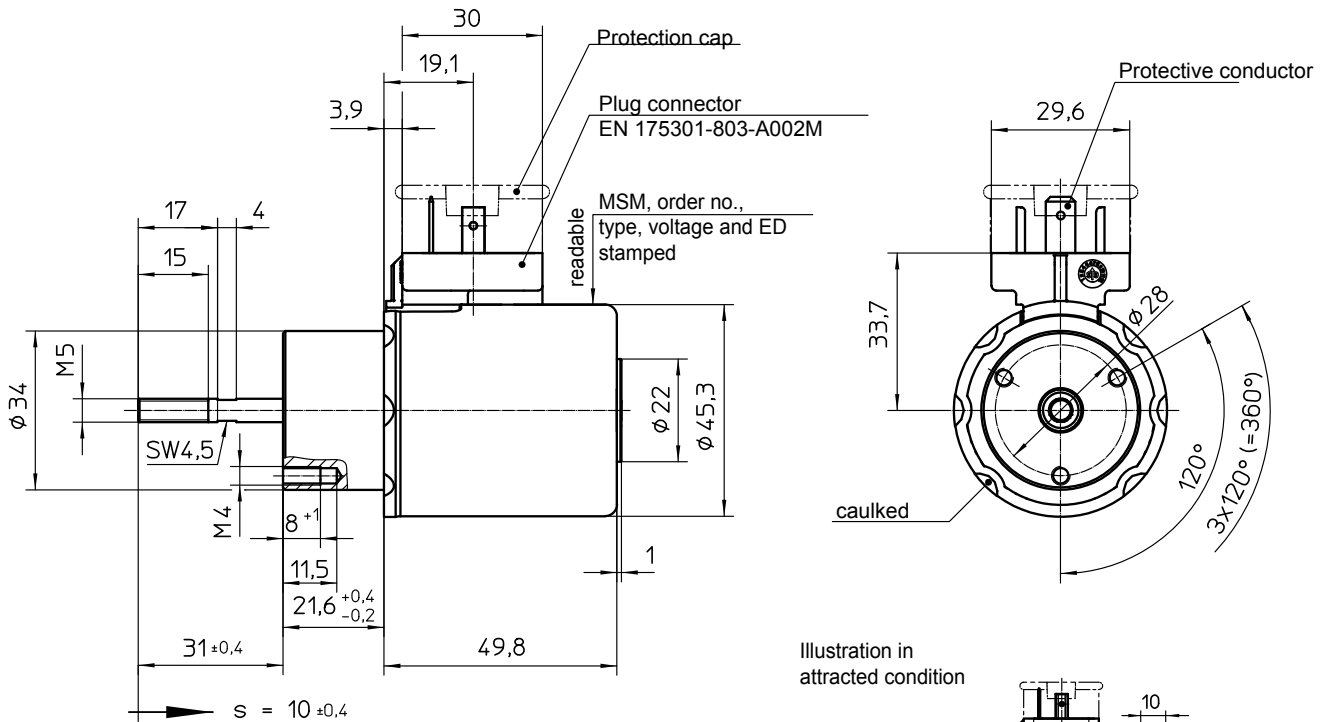
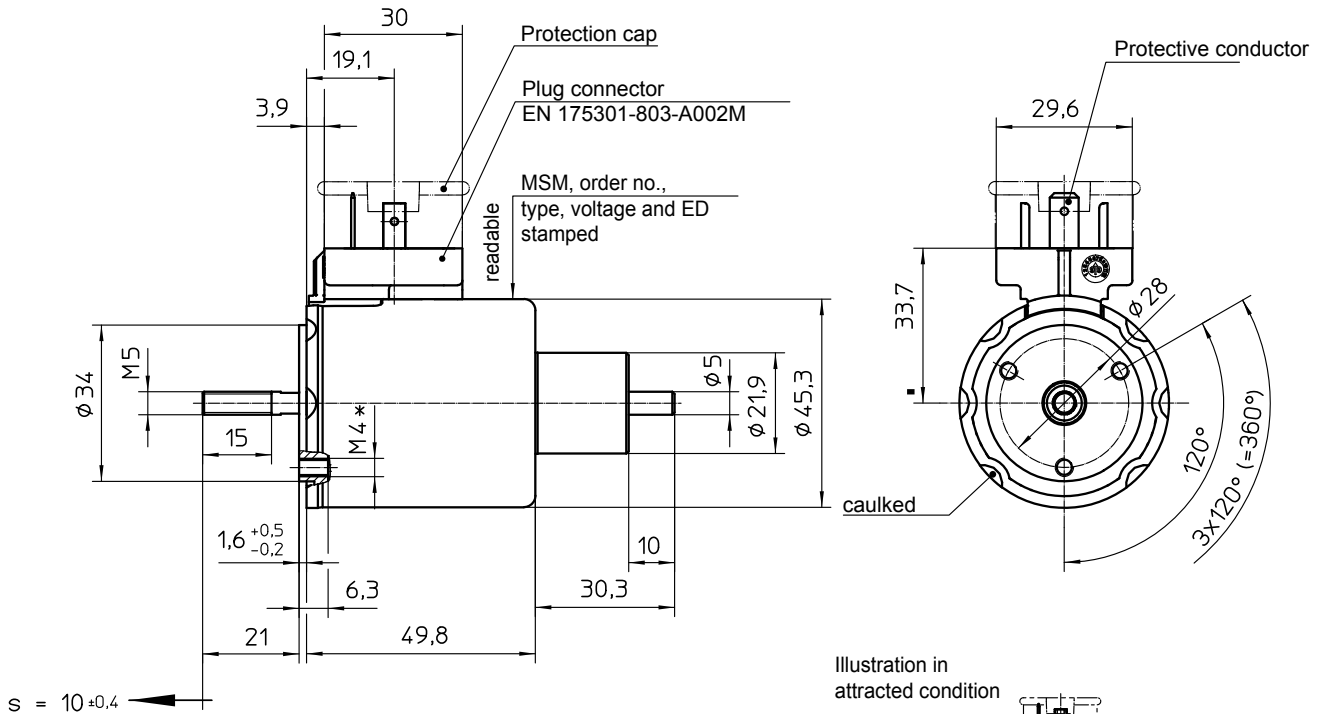


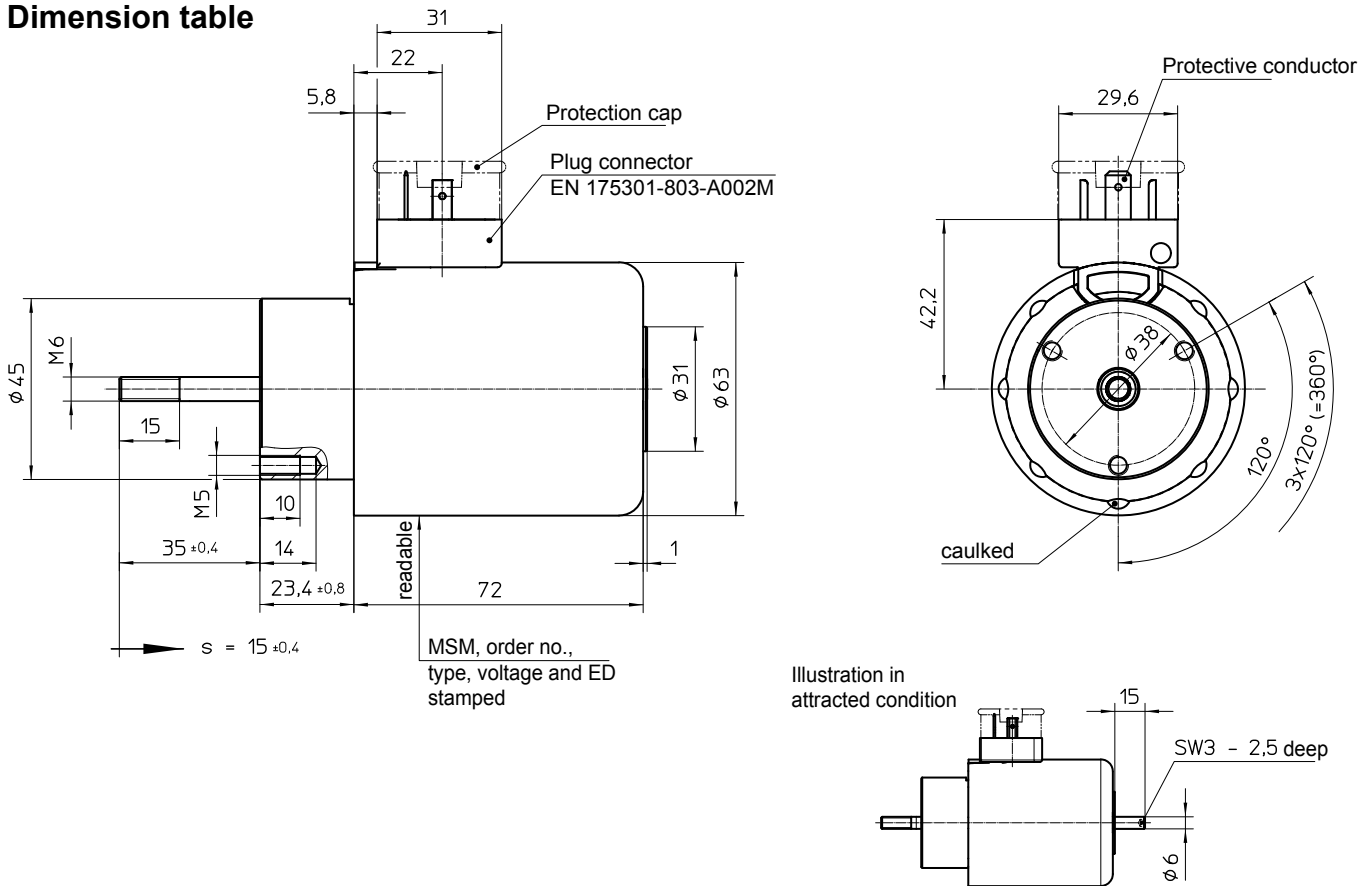
Fig. 6: Type G MC X 045 M43 B01



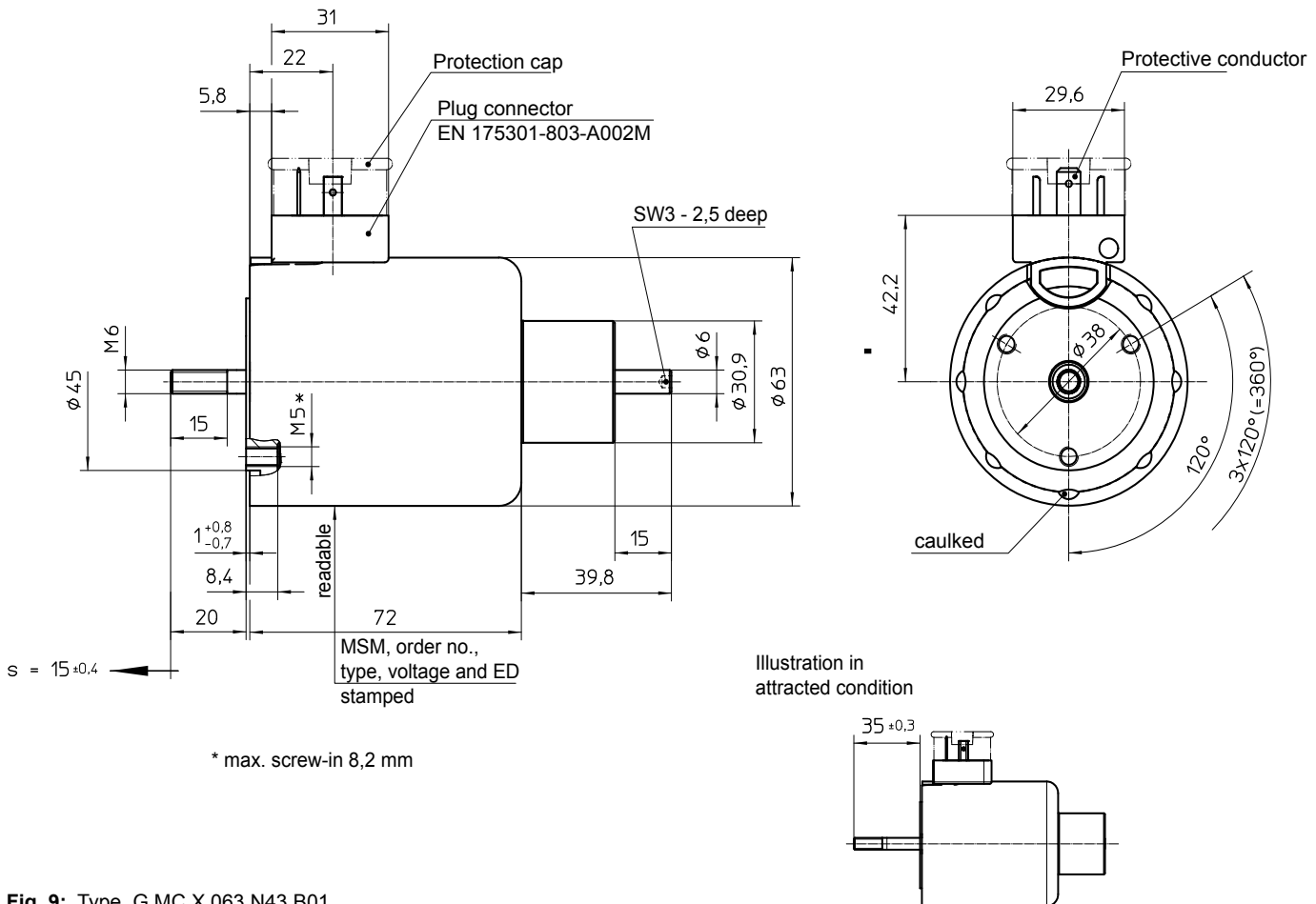
\* max. screw-in 6,1 mm

Fig. 7: Type G MC X 045 N43 B01

**Dimension table**



**Fig. 8:** Type G MC X 063 M43 B01



**Fig. 9:** Type G MC X 063 N43 B01


## Type code

Example	G MC X	037	M43 B01	Description
Type	G MC X			
Size		037		
		045		
		063		
Code for execution & protection class			M43 B01	pull-type
			N43 B01	push-type

## Order example

Type                    G MC X 043 M43 B01  
Voltage                 $\text{---}$  24 V DC  
Operating mode        S1 (100 %)

## 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.

