

## DC Control Solenoids for Hydraulics

# 4

Product group

### G AA 3. Supplement

- To VDE 0580
- Armature space pressure-tight up to 200 bar static pressure
- Increasing magnetic force vs stroke graph
- Push type
- Armature guided in pressure-tight armature tube
- Coil to insulation rating F
- Electrical connection and protection if mounted properly:
  - Connection with sockets to DIN 46 247  
Protection to DIN VDE 0470/EN 60 529 – IP00
  - Connection with plug connector Z KB to DIN 43 650  
Screwed cable glands (4 x 90° positions)  
Protection to DIN VDE 0470/EN 60 529 – IP 65 (P54)
- Mounting with 4 screws
- Manual override
- Sealing between solenoid and valve through O-ring
- Modifications and special designs on request
- Application examples:  
Actuation of hydraulic valves and special valves



Fig. 1: Type G AA X 035 F20 D02

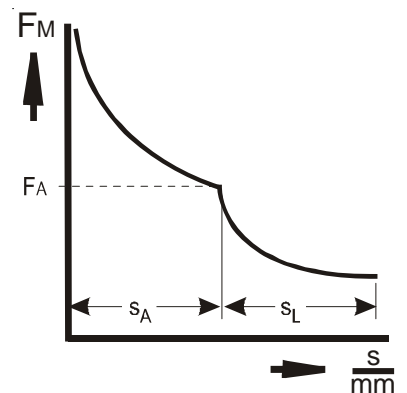



Fig. 2: Magnetic force vs stroke graph

**Technical data**

<b>G AA X 035</b>		
Operating mode		S1
Stroke s	(mm)	Magnetic force $F_M$ (N)
	0	86
	1	55
	2	48
	2,5	36
	3	25
	4	14,5
	5	10
	5,5	8,5
Work rating $W_N$ 1)	(Ncm)	9
Rated power P	(W)	37
Operating frequency $S_h$ max.	(1/h)	3600
Closing time $t_1$	(ms)	70
Opening time $t_2$	(ms)	30
Armature weight $m_A$	(kg)	0,05
Solenoid weight $m_M$	(kg)	0,55

1) Work at working stroke  $s_w = 2.5$  mm

**Please make sure that the described devices are suitable for your application. Please find further details and definitions in our  Technical Explanation or, respectively, in VDE 0580.**

**Note on the technical harmonisation guidelines within the EU**


Electromagnetic solenoids of this product range are subject to the low-voltage guideline 73 / 23 EWG.

To guarantee the targets of this regulation, products are manufactured and inspected to the valid edition of DIN VDE 0580. This also equals a declaration of conformity by the manufacturer.

Rated voltage  $U_N = 24$  V, on request the winding can be adjusted to a max. rated voltage of  $U_N = 250$  V.

**Table values (times)**

The time values mentioned in the table refer to rated voltage, maximum stroke, strain through weight, 70% of the rated magnetic force. They may decrease considerably in case of hydraulic strain (slide against spring).

**Table values (magnetic force)**

The force values mentioned in the table refer to 90 % of the rated voltage ( $U_N = 24$  V, at other voltages, the magnetic force may deviate) and hot condition.

Owing to natural dispersion, the force values may deviate by 10 % from the values indicated in the table.

Hot condition is based on:

- a) mounting on hydraulic slide filled with oil, minimum dimensions 46 x 46 x 66 mm and base plate 46 x 66 x 30 mm
- b) rated voltage  $U_N = 24$  VDC
- c) operating mode S1 (100 % ED)
- d) reference temperature 50° C

In case of deviations from the given application conditions, a winding reduction becomes necessary. For other slide dimensions and reference temperatures, the magnetic force can be adjusted through modification of the exciting winding.

**Note on the EMC (electromagnetic compatibility) guideline 89/336 EWG**

Electromagnetic solenoids are not affected by this guideline because neither do they cause electromagnetic disturbances nor can they be disturbed through electromagnetic disturbances. Therefore, the adherence to the EMC guideline has to be guaranteed by the user through appropriate circuitry wiring. Examples for protection circuits can be taken from the corresponding technical documents.

**Dimensions sheet**

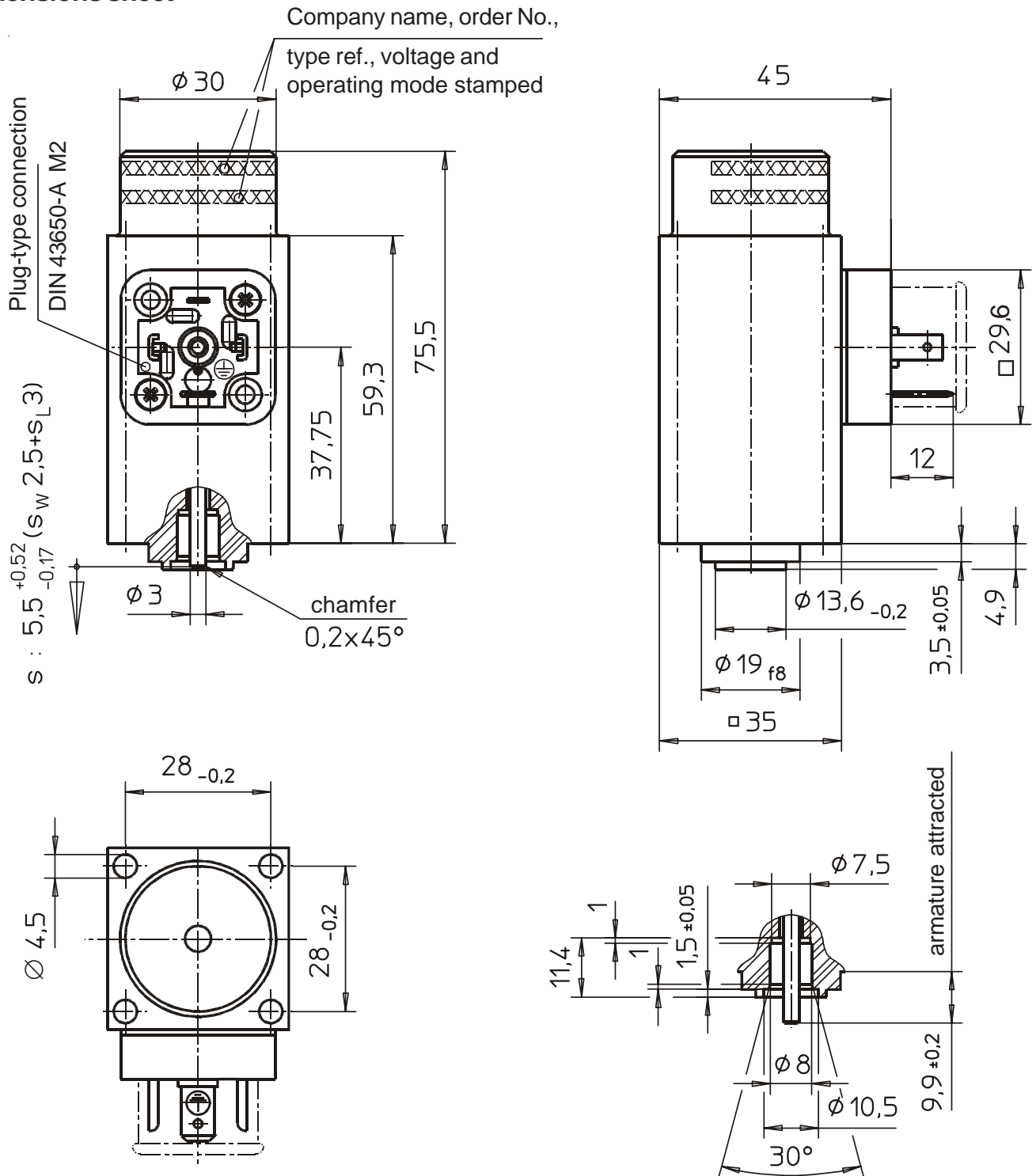


Fig. 3: Type G AA X 035 F20 D02

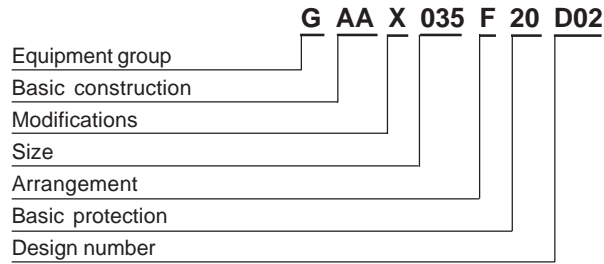
This design is supplied without mounting screws. The following has to be provided.

Screws with internal hexagon M 4 x 65 DIN 912 60-1181  
 and lock washers A4 DIN 128 63-1122

The solenoid shown is not a ready-to-use device in the sense of DIN VDE 0580. The general requirements and protective measures to be taken by the user, are included in DIN VDE 0580. The use of the shown device in safety relevant applications needs always the written agreement of MSM.




## Type code



## Order Example

Type	G AA X 035 F20 D02
Voltage	<b>==</b> 24 V DC
Operating mode	S1 (100 %)

## Specials

Special designs and modifications are available on request for which full application conditions should be specified in accordance withour  Technical Explanations.