

## D.C. or A.C. Valve Solenoid in explosion-protected Design ATEX

# 3

Product group

## G BR E 2<sup>nd</sup> Supplement

- To VDE 0580
- Armature space pressure-tight up to max. 50 bar static pressure  
nominal working pressure 5 bar
- Armature equipped with suspended seal nipples on both sides
- Coil winding corresponds to insulation classification F,  
it is encapsulated into a metal housing
- Electrical connection and protection class  
if mounted properly:
  - connection H 05 GG-F 3 G 0.75 mm<sup>2</sup>
  - protection class to  
⊕ II 2G EEx m II T5 - ⊕ II 2D IP65 T95°C  
EN 50014 - EN 50028/-1-1
- Mounting via central thread, or flange with  
4 screws respectively
- Sealing between solenoid and valve by round  
sealing ring
- Simple exchange of the magnetic body without  
opening the pneumatic circuit
- Special designs on request
- Application examples:  
Actuation of 2/2- and 3/2-Way-Poppet-Valves,  
especially for pneumatic and for other  
gaseous and liquid, neutral media



Fig. 1 Type G BR E 022 AMX B01



**Technical Data**

G BR E 022 AMX			B01 - B03	B11 - B13
Operating mode			S1 (100 %)	
rated	D.C.	(W)	4.5	-
power P <sub>20</sub>	A.C.	(VA)	-	4.4
stroke s	(mm)		0.5	
reference temperature	(°C)		40	
Magnetic force F <sub>M</sub>	stroke 0 mm (N)		16	
	without spring stroke s mm (N)		2.6	
Solenoid weight m <sub>M</sub>	(kg)		0.17	
Armature weight m <sub>A</sub>	(kg)		0.005	

Rated voltage  $\text{U}_N = 24 \text{ VDC}$ , or 230 V/ 50 Hz respectively, on request the coil winding can be adjusted to a rated voltage of max.  $\text{U}_N = 215 \text{ VDC}$ , or 220 V/50 Hz respectively.

The force values mentioned in the tables refer to 90 % of the rated voltage ( $\text{U}_N = 24 \text{ VDC}$ , or 220 V/50 Hz respectively), without spring and on warm operating condition.

There may be deviations in magnetic force with other rated voltages. Owing to natural dispersion, the magnetic force values may deviate by approx. 10 % from the values indicated in the tables.

Hot condition is based on:

- a) mounting on heat-insulating base
- b) rated voltage  $\text{U}_N = 24 \text{ VDC}$  or 230 V/50 Hz, respectively (other voltages on request)
- c) operating mode S1 (100 % ED)
- d) reference temperature 40° C

The switching times and max. switching frequency are not indicated as these values depend on the relevant operation case and pressure.

We recommend to use compressed air which corresponds to DIN ISO 8573/1, class 3. To lubricate the compressed air, elastomer-neutral lubricants have to be used, otherwise please contact the manufacturer for further consultation.

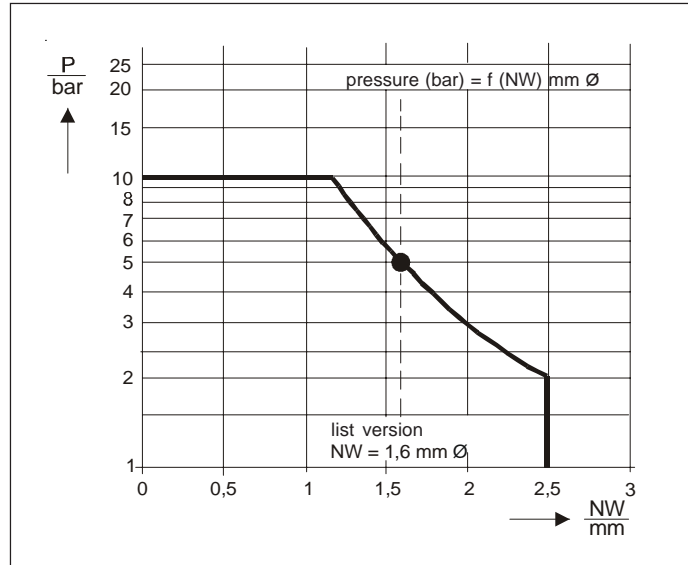
**Please make sure that the described devices are suitable for your application. Please find further details and definitions in our Technical Explanation or, respectively, in VDE 0580.**

**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.

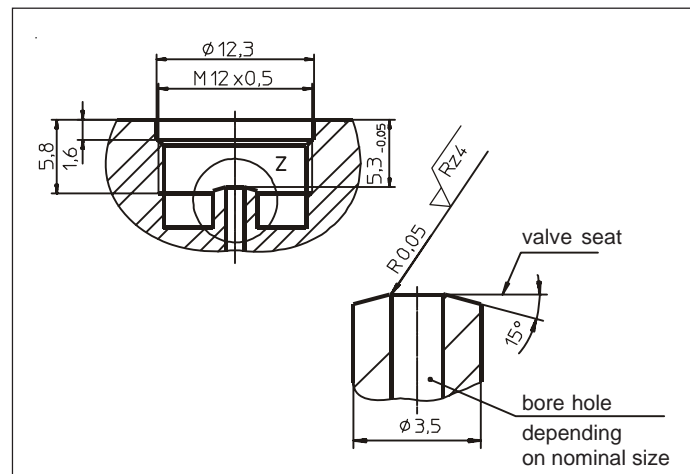
To guarantee the targets of this regulation, products are manufactured and inspected to the valid edition of DIN VDE 0580. This also equals a declaration of conformity by the manufacturer.



**Fig. 2** switchable pressure as function of the valve seat nominal size for Type G BR E 022

**Valve Construction**

The valve construction is to be designed according to figure 3. A valve seat with most possible rectangularity to the armature axle and conical profile with smooth surface ensure a maximum performance and service life of the solenoid valve.

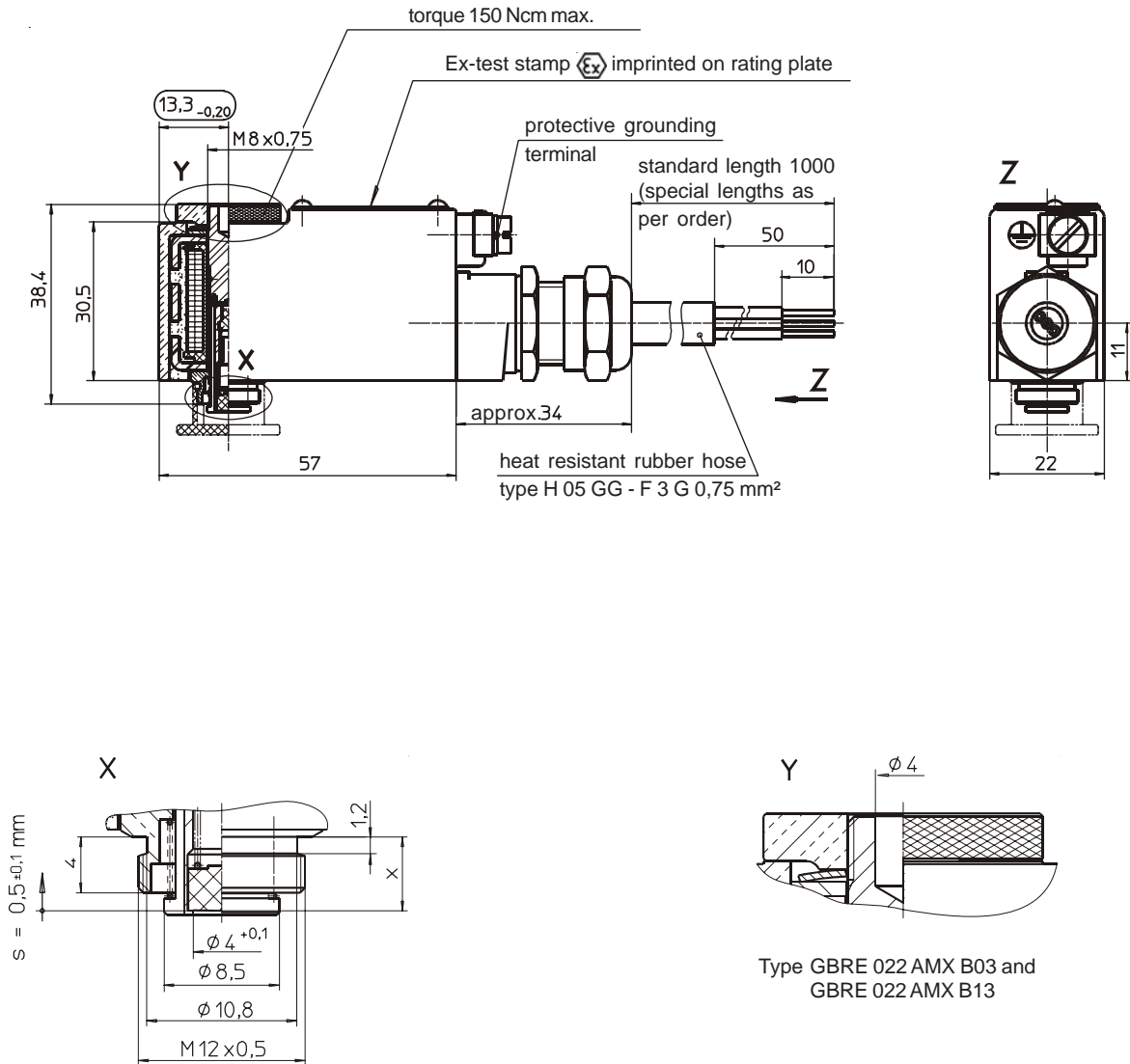


**Fig. 3** valve to type GBRE 022 AMX B01 and B11

**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.

**Constructive data**

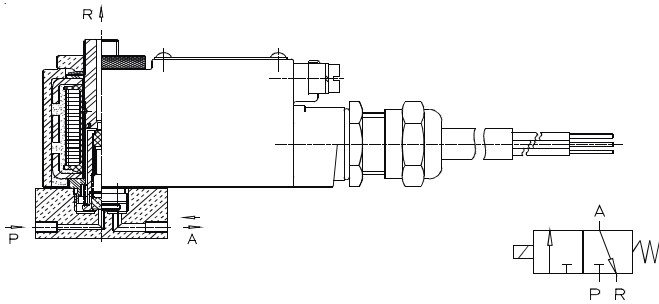


**Fig. 4** Type GBRE 022 AMX B01 (DC)  
 GBRE 022 AMX B02 (DC)  
 GBRE 022 AMX B03 (DC)  
 Type GBRE 022 AMX B11 (AC)  
 GBRE 022 AMX B12 (AC)  
 GBRE 022 AMX B13 (AC)

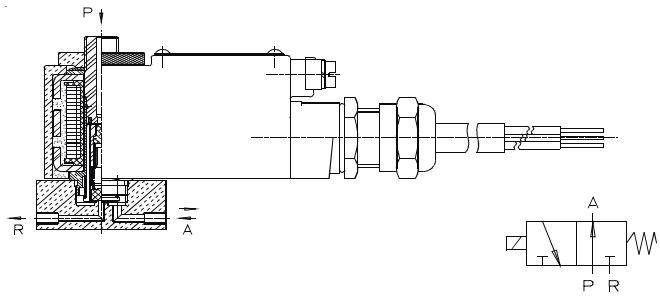
The solenoid shown is not a ready-to-use device in the sense of DIN VDE 0580. The general requirements and protective measures to be taken by the user, are included in DIN VDE 0580. The use of the shown device in safety relevant applications needs always the written agreement of MSM.



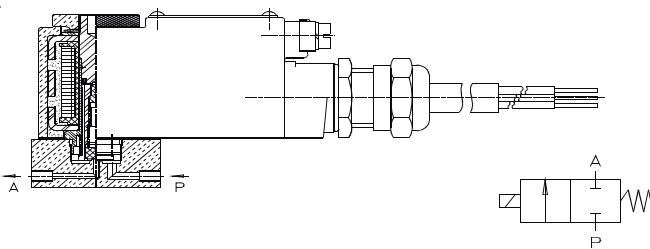
**Application example and switching function**



**Fig. 5** Type GBRE 022 AMX B01 (DC), Type GBRE 022 AMX B22 (AC) for 3/2-way valve, de-energized to lock

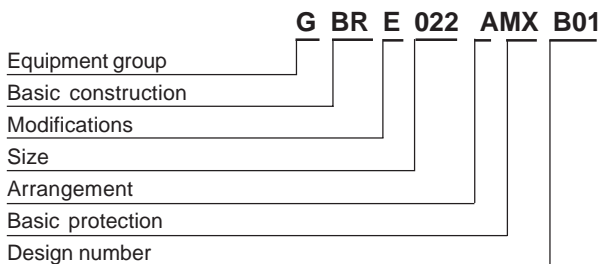


**Fig. 6** Type GBRE 022 AMX B02 (DC), Type GBRE 022 AMX B12 (AC) for 3/2-way valve, de-energized to unlock



**Fig. 7** Type GBRE 022 AMX B03 (DC), Type GBRE 022 AMX B13 (AC) for 2/2-way valve

**Type code**



**Order example**

**D.C.**

Type G BR E 022 AMX B01  
Voltage **≡** 24 V DC  
Operating mode S1 (100 %)

**A.C.**

Type G BR E 022 AMX B11  
Voltage 220 V / 50 Hz  
Operating mode S1 (100 %)

**Specials**

Special designs, AC-design and modifications are available on request for which full application conditions should be specified in accordance with our Technical Explanations.