

## DC or AC Valve Solenoid

# 3

Product group

## X BR

- According to DIN VDE 0580
- Armature space pressure tight up to 50 bar static pressure
- Armature with spring-supported sealing nipples at both ends
- Insulation materials of the excitation winding correspond to thermal class F
- Electrical connection and protection class when properly installed:
  - Plug connection by spade connectors according to DIN 46247  
Protection class according to DIN VDE 0470/  
DIN EN 60529 - IP 00

Size 022:

- Plug connection via plug connector type Z KC  
Cable gland (2 positions x 180°)  
Protection class according to DIN VDE 0470/  
DIN EN 60529 - IP 65

Size 032:

- Plug connection via plug connector type Z KB  
according to DIN EN 175301-803  
Cable gland (4 positions x 90°)  
Protection class according to DIN VDE 0470/  
DIN EN 60529 - IP 65
- Mounting via central thread
- Simple exchange of the solenoid body without opening the pneumatic circuit
- Sealing between solenoid and valve by o-ring
- Please contact us for application related solutions
- Please take into consideration that the physically generated noise caused by AC solenoids may be disturbing in quiet rooms, particularly if mounted on a resonant base!
- Application examples:  
Actuation of 2/2 and 3/2-way-seat-valves, especially for pneumatics and other gasiform and fluid neutral media



Fig. 1: X BR X 022 K54 A01



Fig. 2: X BR X 032 K54 A01

## Technical data

| X BR X                                   |      |          | 022        | 032        |
|--|------|----------|------------|------------|
| Operating mode                           |      |          | S1 (100 %) | S1 (100 %) |
| Rated Power $P_{20}$                     | D.C. | (W)      | 4.5        | 10.6       |
|  | A.C. | (VA)     | 10 / 8     | 24 / 15    |
| Stroke s                                 |      | (mm)     | 0.5        | 1          |
| Reference temperature $\vartheta_{11}$   |      | (°C)     | 40         | 60         |
| Magnetic Force $F_M$<br>(without spring) | D.C. | stroke 0 | mm         | 15.7       |
|  |      | stroke s | mm         | 2.6        |
|  | A.C. | stroke 0 | mm         | 3.4        |
|  |      | stroke s | mm         | 3.1        |
| Solenoid weight $m_M$                    |      | (kg)     | 0.07       | 0.23       |
| Armature weight $m_A$                    |      | (kg)     | 0.005      | 0.02       |

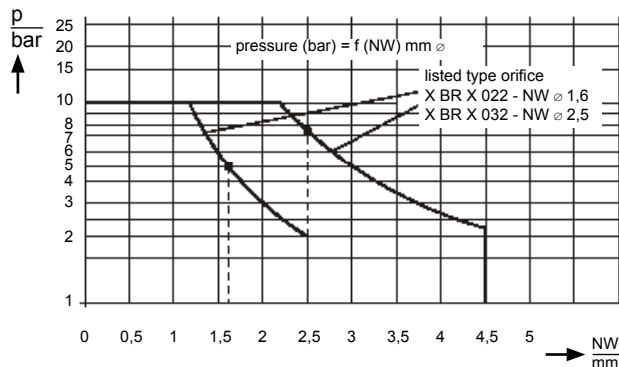


Fig. 3 Switchable pressure as a function of the poppet valve orifice, Listed type orifice = ø 1,6 mm

These data are valid for the medium compressed air with application as 3/2 way valves de-energize to lock. The exhaust orifice has to be adapted to the valve orifice.

We recommend to use compressed air to DIN ISO 8573/1, rating 3. For lubricating the compressed air, elastomer neutral oils are to be used, otherwise please contact the manufacturer.

Rated voltage  $\approx$  24 V, or 230 V / 50 resp., on request an adaption of the winding to a rated voltage of max.  $\approx$  230 V, or 250 V / 50 Hz resp. is possible.

The magnetic force values indicated in the table refer to 90 % of the rated voltage, without spring ( $U_N = \approx$  24 V, or 230 V / 50 Hz resp., magnetic force may deviate with other voltages) and hot condition. The magnetic-force values may deviate by approx.  $\pm$  10 % from the table values due to natural dispersion.

The hot condition is based on


- mounting on a valve block of brass with dimensions 26 x 16 x 14 mm at size 022 and 50 x 32 x 25 mm at size 032
- rated voltage  $\approx$  24 V, or 230 V / 50 Hz resp.
- operating mode S1 100%
- reference temperature 40° C - at size 022 and 60° C - at size 032

Operating times and max. switching frequency are not indicated, because they depend on the particular operating case and on the pressure. The max. switching frequency may be up to 36,000 S/h, depending on the application.

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

### Note on the RoHS Directive

According to our current state of knowledge the devices pictured in this document do not contain any substances in concentration values or applications for which putting into circulation with products manufactured from them is prohibited in accordance to RoHS.

**Please make sure that the described devices are suitable for your application. 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.

## Dimensions sheet

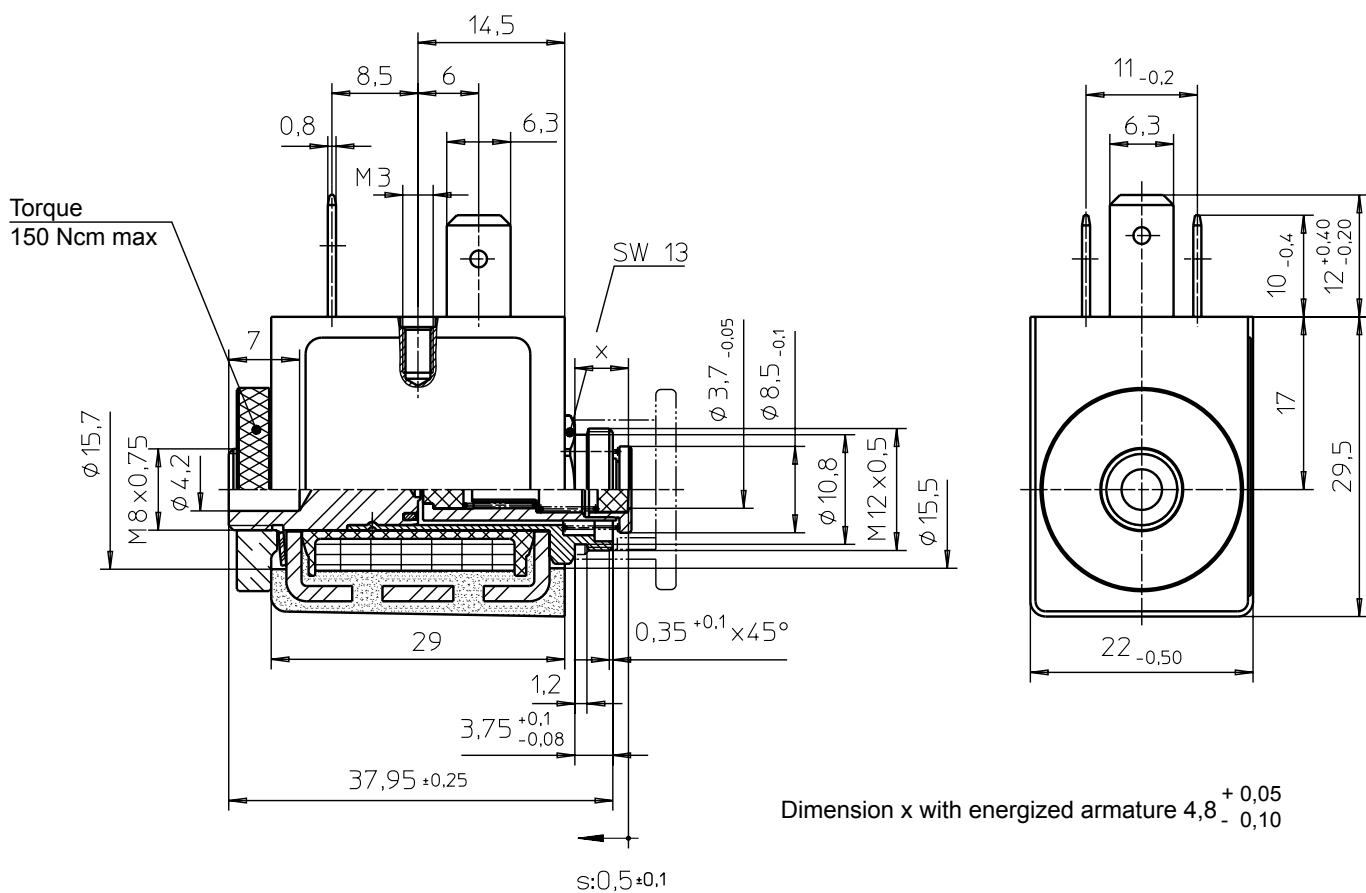
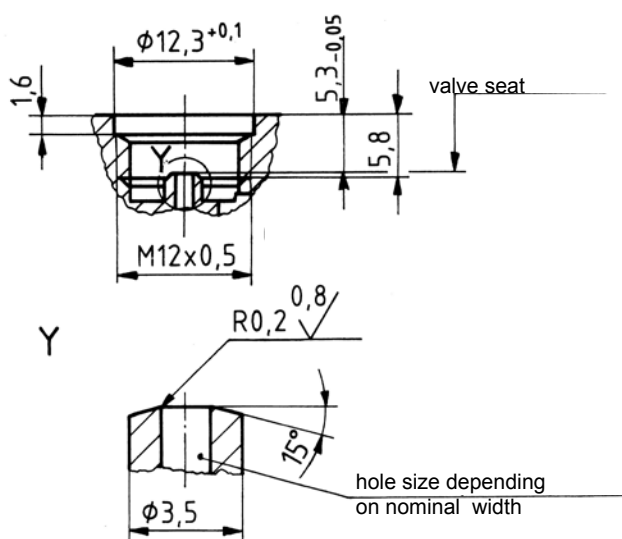


Fig. 4: X BR X 022 K54 A01 to A03

**Plug connector DIN 43650-BM2 or  
Plug connector ZKC (2 positions x 180°  
see pamphlet Z KB Z KC) on request**

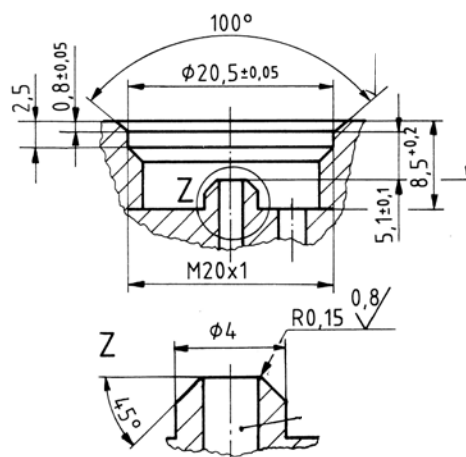




**Fig. 6:** Valve to X BR X 022

Guiding values for the valve construction corresponding to the indicated listed values (stroke and rated orifice).

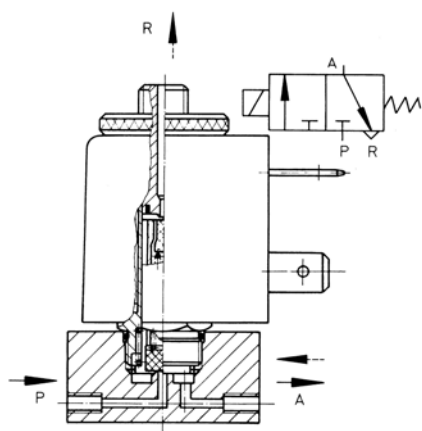
The valve construction to be made according to fig. 6 and 7.



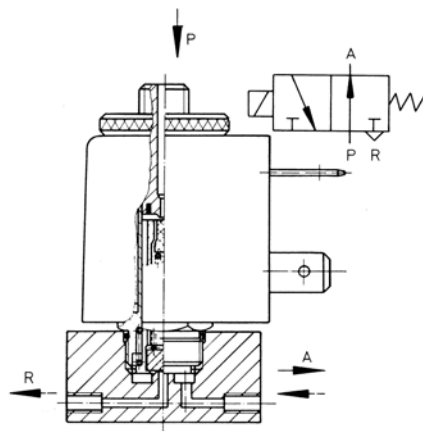
**Fig. 7:** Valve to X BR X 032

The valve seat with largest possible rectangularity to the armature axis of the solenoid and a conical profile with a smooth surface ensure a maximum performance and service life of the solenoid valve.

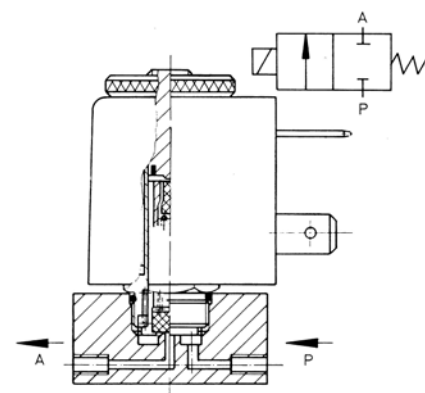
## Application example



**Fig. 8:** X BR X 022 K 54 A01 or X BR X 032 K 54 A01 for 3/2-way valve, NC

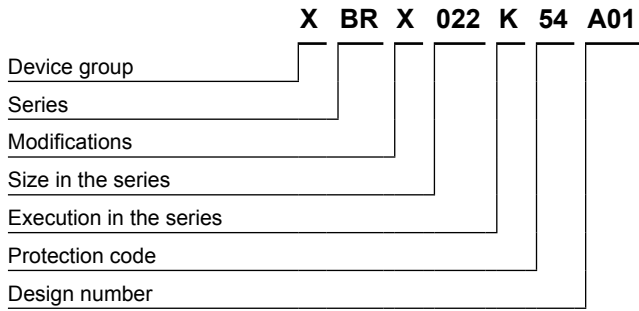


**Fig. 9:** X BR X 022 K 54 A02 or X BR X 032 K 54 A02 for 3/2-way valve, NO



**Fig. 10:** X BR X 022 K 54 A03 or X BR X 032 K 54 A03 for 2/2-way valve


## Type code



## Order example

|    |                |                    |
|----|----------------|--------------------|
| DC | Type           | X BR X 022 K54 A01 |
|    | Voltage        | ≡ 24 V DC          |
|    | Operating mode | S1 (100 %)         |
| AC | Type           | X BR X 022 K54 A01 |
|    | Voltage        | 230 V / 50 Hz      |
|    | Operating mode | S1 (100 %)         |

## Specials designs

Please do not hesitate to ask us for application-oriented problem solutions. 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.