

Proportional Control Solenoids for Pneumatics and Hydraulics

4

Product group

G RF 025 ... B01

Pamphlet

- To VDE 0580
- Armature space pressure-tight up to 350 bar
- Also suitable for dry operation
- Magnetic-force vs stroke graph in the operating range horizontal to slightly decreasing
- To a great extent proportional relation between force and current
- Very small hysteresis through precise special bearing of the armature
- Short operating times
- Push type design
- Coil winding to insulation rating F
- Electrical connection and protection rating if mounted properly:
 - Spade connectors to DIN 46247
Protection rating to DIN VDE 0470/EN 60529 – IP 00
 - Plug connector type Z KB G to DIN 43650
cable gland (4 x 90°)
Protection rating to DIN VDE 0470/EN 60529 – IP 65
- Mounting with 4 screws
- Sealing between solenoid and valve through O-ring
- Modifications and special designs as well as accessories such as LVDT's and control circuit on request
- Application examples:
Particularly used as proportional actuator in pneumatic and hydraulic control chains and control circuits



Fig. 1: Type G RF Y 025 F20 B01

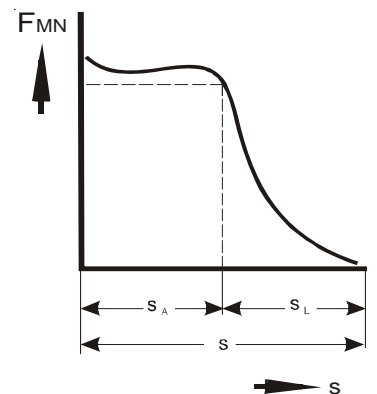


Fig. 2: Magnetic force vs stroke graph



Technical data

G R F Y 025 F20 B01		S1 (100 %)
Operating mode		
Reference Temperature ϑ_{11}	(°C)	50
Stroke s	(mm)	1 + 1,5 ¹⁾
Rated magnetic force F_{MN}	(N)	19
Rated force hysteresis H_{FN}	(%)	~ 4,5
Rated current hysteresis H_{IN}	(%)	< 4
Rated linearity deviation L_N	(%)	3
Armature weight m_A	(kg)	0,010
Solenoid weight m_M	(kg)	0,140
Rated resistance R_{20}	(Ω)	26
Rated current I_N	(A)	0,44
Maximum current I_G	(A)	0,44
Linearity current I_L	(A)	0,1
Response current I_A	(A)	0,01
Rated power $P_{ON} = I_N^2 \cdot R_{20}$	(W)	5,0
Maximum power $P_G = I_G^2 \cdot R_{20}$	(W)	7,7
Linearity power $P_L = I_L^2 \cdot R_{20}$	(W)	0,26
Response power $P_A = I_A^2 \cdot R_{20}$	(W)	0,0026

1) The stroke given is indicative only. On account of tolerances we recommend a stable working range of 0,2 to 0,8 mm.

Die hysteresis rated force has been measured dynamically (measuring speed 10 mm / min.).

$$F_M = f(s)$$

parameter = I (A)
 $I_G = 0,44 \text{ A}$

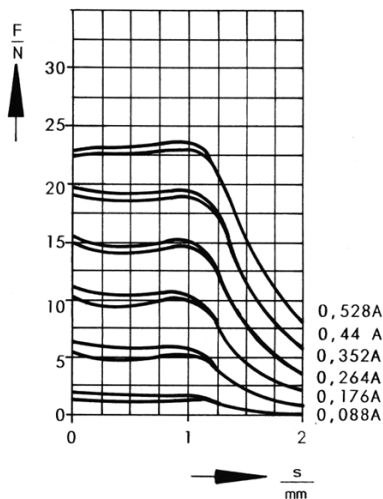


Fig. 3: Magnetic force vs stroke graph

$$F_M = f(I)$$

stroke s = 1 mm
 $I_G = 0,44 \text{ A}$

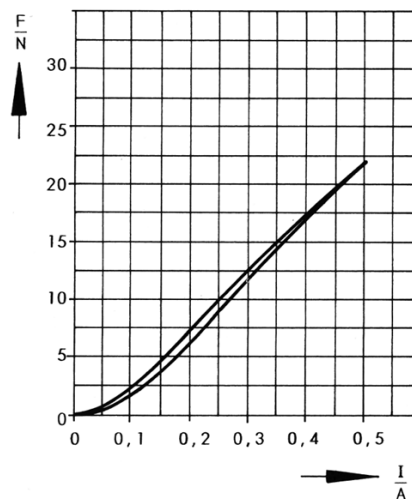


Fig. 4: Magnetic force vs current graph at constant stroke

Rated voltage \approx 24 V. For power supply via an electronic gain control amplifier, the rated voltage has to be adjusted correspondingly.

The indicated technical data refer to an A.C. power supply with bridge rectifier. The coil winding can be adjusted to other current and resistance values on request.

Owing to natural dispersion magnetic-force values may deviate by $\pm 5\%$ from the listed values.

Maximum power is based on mounting on a valve housing with the minimum dimensions 25 x 25 x 50 mm.

Interior of the solenoid and armature bearing are resistant to all neutral fluids that are commonly used in hydraulics. Please contact us if you use other operating media.

Please find further details and definitions in our -Technical Explanation or, in VDE 0580 respectively.

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.

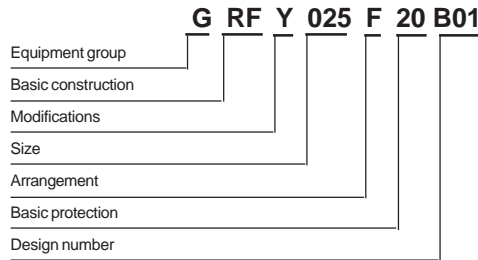
To guarantee the targets of this regulation, products are manufactured and inspected to the valid edition of DIN VDE 0580. This also equals a declaration of conformity by the manufacturer.

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.



Type code



Order Example

Type	G RF Y 025 F20 B01
Voltage	== 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 with our -Technical Explanations.

Special designs such as adjustable pushrod, optional deaeration of the armature space, flame-proof design, integrated inductive transducer, available on request.