

D.C. Rotary Solenoid

6

Product group

G DA 025

Pamphlet

- To DIN VDE 0580
- Increasing torque graph
(almost horizontal for short duty ratings)
- Design:
 - Shaft exiting on both sides
 - Clockwise and anti-clockwise operation
 - Rotation angles of 35°, 65° and 95°
 - Optional spring return
 - Adjustable return force of the spring
- Armature guided in ball bearings
- Coil to insulation rating B
- Electrical connection and protection rating if mounted properly:
 - Flexible flying leads
Protection rating to VDE 0470/EN 60529
- Mounting through tapped holes
on solenoid faces (2 x 180°)
- Modifications and special designs on request
- Reversing-stroke rotaries and polarised rotaries on request
- Application examples:
Machine tools, office machines, textile machinery,
control technology



Fig. 1: Type G DA X 025 X20 B01

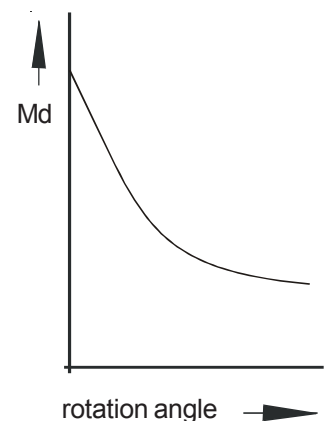


Fig. 2: torque graph



Technical data

without spring return

G DA X 025 X20 B01						
Angle of rotation (°)	95 ⁺³					
Operating mode	S1	S3 40 %	S3 25 %	S3 15 %	S3 5 %	
Torque M_d (Ncm) at Δ	0°	0,63	0,95	1,05	1,15	1,10
	30°	0,22	0,50	0,70	0,85	1,15
	60°	0,10	0,25	0,40	0,55	0,85
	95°	0,065	0,17	0,27	0,40	0,80
Rated Power P_{20} (W)	4,2	10,9	16,6	24,3	57,6	
Mass inertia (kgm ²)	1,02 x 10 ⁻⁷					
Time constant τ (ms)	6					
Solenoid weight m_M (kg)	0,07					

G DA Y 025 X20 B01						
Angle of rotation (°)	65 ⁺³					
Operating mode	S1	S3 40 %	S3 25 %	S3 15 %	S3 5 %	
Torque M_d (Ncm) at Δ	0°	0,98	1,50	1,65	1,80	1,80
	20°	0,46	1,00	1,30	1,55	1,85
	40°	0,25	0,60	0,85	1,15	1,60
	65°	0,16	0,40	0,60	0,85	1,50
Rated Power P_{20} (W)	4,2	10,9	16,6	24,3	57,6	
Mass inertia (kgm ²)	1,15 x 10 ⁻⁷					
Time constant τ (ms)	9					
Solenoid weight m_M (kg)	0,07					

G DA Y 025 X20 B03						
Angle of rotation (°)	35 ⁺³					
Operating mode	S1	S3 40 %	S3 25 %	S3 15 %	S3 5 %	
Torque M_d (Ncm) at Δ	0°	1,05	1,60	1,90	2,00	2,10
	10°	0,84	1,55	1,90	2,15	2,55
	20°	0,66	1,35	1,80	2,20	2,90
	35°	0,38	0,90	1,30	1,70	2,60
Rated Power P_{20} (W)	4,2	10,9	16,6	24,3	57,6	
Mass inertia (kgm ²)	1,40 x 10 ⁻⁷					
Time constant τ (ms)	9					
Solenoid weight m_M (kg)	0,07					

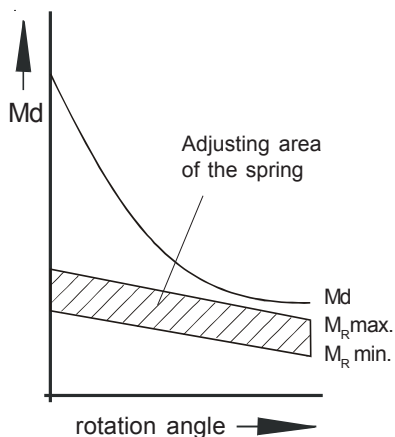


Fig. 3: torque graph and spring return graph

with spring return

G DA X 025 X20 B21 (clockwise operation)					
G DA X 025 X20 B25 (anti-clockwise operation)					
Angle of rotation (°)	95 ⁺³				
Operating mode	S1	S3 40 %	S3 25 %	S3 15 %	S3 5 %
Spring return force M_R (Ncm)	min.	---	0,1	0,1	0,1
	max.	---	0,1	0,2	0,3
Spring rating (Ncm/°)	0,00206				

G DA Y 025 X20 B21 (clockwise operation)					
G DA Y 025 X20 B25 (anti-clockwise operation)					
Angle of rotation (°)	65 ⁺³				
Operating mode	S1	S3 40 %	S3 25 %	S3 15 %	S3 5 %
Spring return force M_R (Ncm)	min.	0,1	0,1	0,1	0,1
	max.	0,1	0,3	0,4	0,6
Spring rating (Ncm/°)	0,00206				

G DA Y 025 X20 B23 (clockwise operation)					
G DA Y 025 X20 B27 (anti-clockwise operation)					
Angle of rotation (°)	35 ⁺³				
Operating mode	S1	S3 40 %	S3 25 %	S3 15 %	S3 5 %
Spring return force M_R (Ncm)	min.	0,1	0,1	0,1	0,1
	max.	0,3	0,6	0,6	0,6
Spring rating (Ncm/°)	0,00206				

M_d = Torque

M_R min. }
 M_R max } controlling torque of spring, de-energised

The spring return force may be varied by location of spring in the castellations for coarse setting and rotation of spring housing for fine adjustment.

Rated voltage \approx 24 VDC, on request the coil winding can be adjusted to a rated voltage of \approx 60 VDC maximum.

The torque values mentioned in the tables refer to 90 % of the rated voltage, (UN = \approx 24 VDC, for other voltages the torque may differ) and to hot condition.

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

Hot condition is based on:

- mounting on heat-insulating base
- rated voltage \approx 24 VDC
- operating mode S1 - S3 5% (according to pamphlet GXX, 4.)
- reference temperature 35° C

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

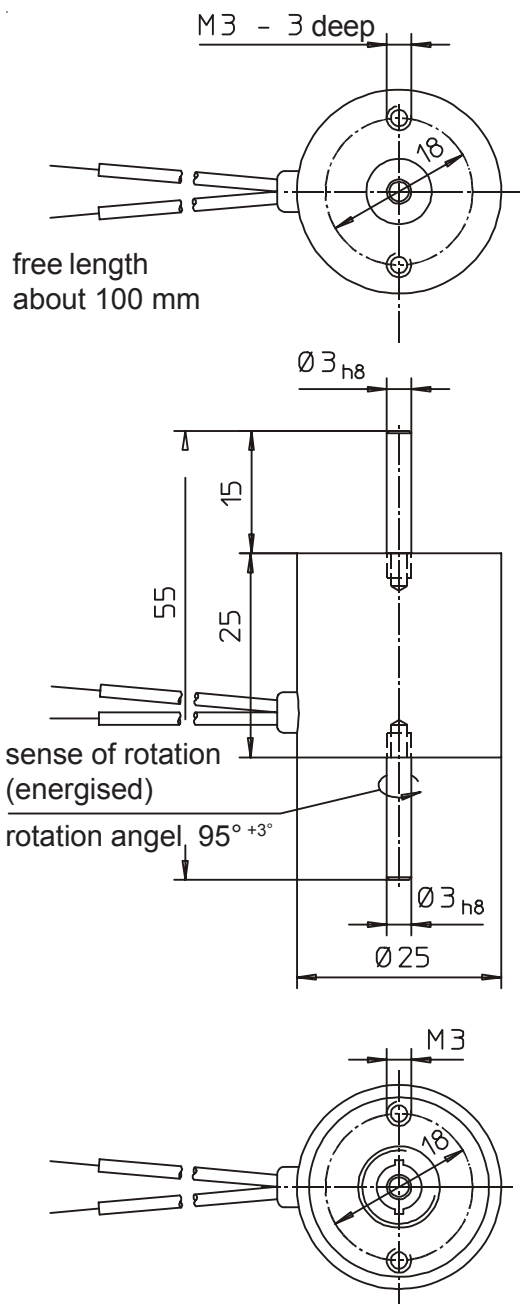


Fig. 4: Type G DA X 025 X20 B01

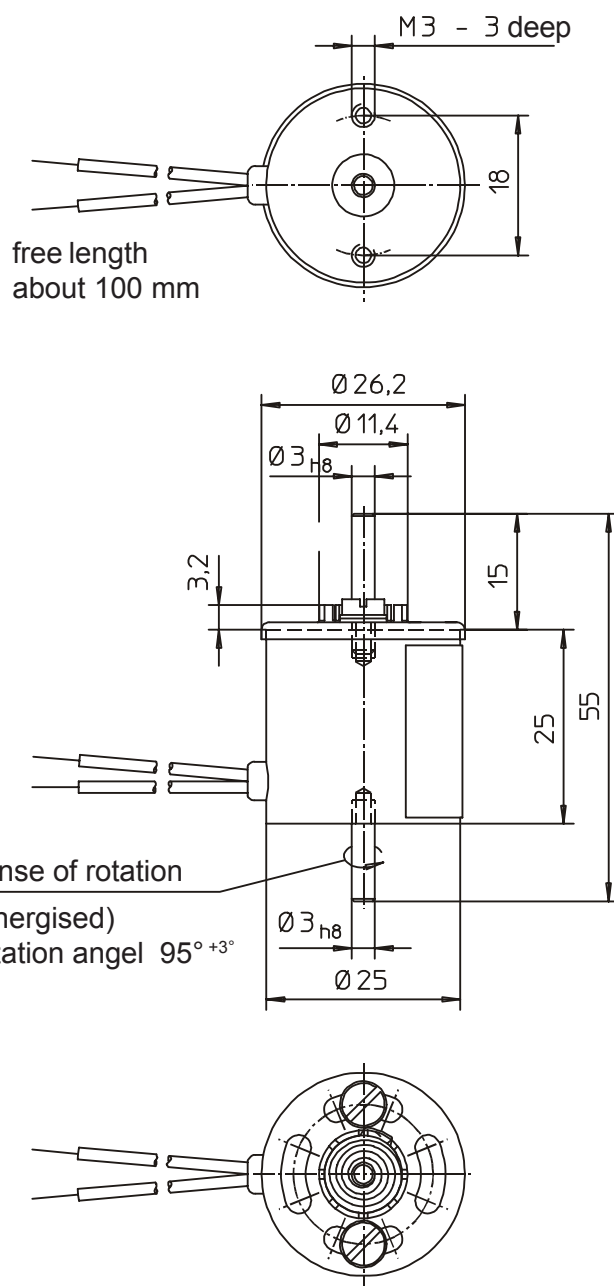


Fig. 5: Type G DA X 025 X20 B21
(with return spring)

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.



Mounting Instructions

The rotaries can be used in any mounting position. To secure long life of the bearings and to maintain their proper function, please make sure that shocks and higher pressure on the rotation axis in axial direction are avoided.

In case of vertical mounting, support of annexed masses should be arranged outside the solenoid. It is also advisable to support bigger masses, which are connected to the shaft, outside the solenoid and not with the stops inside the solenoid.

Note on the technical harmonisation guidelines within the EU



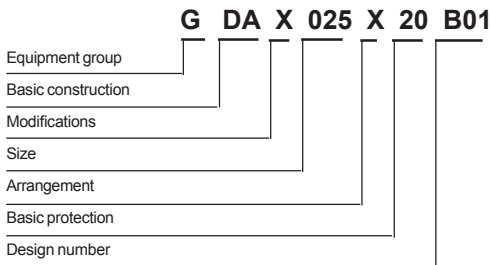
Electromagnetic solenoids of this product range are subject to the low-voltage guideline 73 / 23 EWG.

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 DA X 025 X20 B01
Voltage	== 24 V DC
Operating mode	S1 (100% ED)

Specials

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

In case of connection via plug connector ZKBX or ZKBG, allow for the max. constant current of the connector.