

DC Single-Acting Solenoid in Explosion-Proof Design ATEX + IECEX

1

Product group

G TC E

Function

- Increasing force vs. stroke characteristic
- Size 050, 100 in pull type and push type
Size 140 in push type

Construction

- Armature guided in maintenance free bearings.
High service life
- Insulation materials of the excitation winding correspond to thermal class F
- Electrical connection via terminal box
- Protection class according to DIN VDE/DIN EN 60529, when properly installed
 - Electrical part: IP 65
 - Functional part: IP 54
- Explosion protection:
 - Size 050: Ex II 2G Ex eb mb IIC T4 Gb
 Ex II 2D Ex tb IIIC T130°C Db
 - Size 100/140: Ex II 2G Ex eb mb IIC T5/T4 Gb
 Ex II 2D Ex tb IIIC T95°C/T130°C Db
- Flange mounting via three threaded bore holes or with additional flange

Application examples

- Application in explosive areas
(gas, dust, zones: 1.21, EPL: Gb, Db)
e.g. in chemical companies, refineries and tank plants

Options and accessories

- Version in higher protection class and for humid atmospheres
- Modifications and special designs
- Please contact us for application related solutions

Standards and approvals

- Design and testing according to DIN VDE 0580
- Quality management to ISO 9001, DIN EN ISO/IEC 80079-34
- ATEX, IECEX



Fig. 1: Type G TC E 100 A GD A01

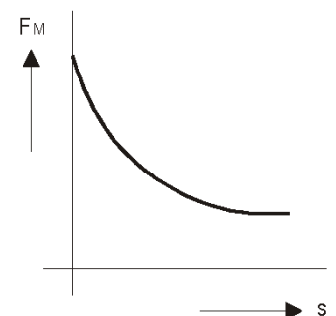
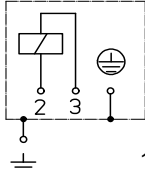
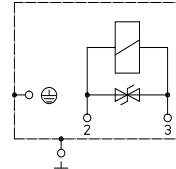
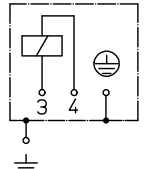


Fig. 2: Magnetic force vs. stroke characteristic

Technical Data of series

		G T C E ... A G D ...				
Construction size		050	100	140		
Design number		A01/A02	A01	A01		
Operating Mode		S1	S1	S1		
Stroke s	(mm)	Magnetic force F_M (N)				
	0	90	317	549		
	2	23	143	342		
	3	21	130	333		
	4	19	126	328		
	5	18	124	324		
	6	17	122	319		
	8	14	121	315		
	10	12	116	306		
	12		113	299		
	15		106	288		
	20		96	266		
	25		84	227		
	30		67	189		
	35			153		
	40			122		
Rated voltage		=== 24 V	=== 24 V	=== 24 V		
an adaptation of the exciter coil to a rated voltage of max. === 230 V is possible on request						
Rated work A_N	(Ncm)	12	201	488		
Rated power P_{20}	(W)	14	52	87		
Max. reference temperature	(°C)	40	40	40		
Max. switching frequency S_h	(1/h)	15.000	5.700	3.400		
Actuation time t_1	(ms)	128	400	625		
Fall time t_2	(ms)	101	230	410		
Inductance $L = \pi \times R$ ($\pi \times 10^{-3}$)	Time constant π Armature in stroke start position	(ms)	15	52		
	Armature in stroke end position	(ms)	18	45		
Armature weight m_A	(kg)	0.14	1.25	1.85		
Solenoid weight m_M	(kg)	1.14	7.04	17.33		
Circuit diagram						

The times listed in above table refer to rated voltage, max. stroke, weight load of 70 % of rated magnetic force. These values may decrease considerably with higher load.

The magnetic force values stated in the table refer to 90% of the rated voltage and normal operating temperature. There may be deviations with other rated voltages. Due to natural dispersion, the magnetic force values may deviate by approx. 10% from the values indicated in the tables.

The normal operating temperature is based on:

- a) Mounting on heat conducting base
 - b) Rated voltage === 24 V or 230 V/50 - 60 Hz (other voltages on request)
 - c) Operating mode S1 (100 % ED)
 - d) Reference temperature 40°C
- 1) The user has to ensure by the activation that with a rated voltage
- up to 30 V the disconnect-overvoltage of 480 V
 - up to 60 V the disconnect-overvoltage of 800 V
 - up to 110 V the disconnect-overvoltage of 1200 V
 - up to 250 V the disconnect-overvoltage of 1600 V will not be exceeded.

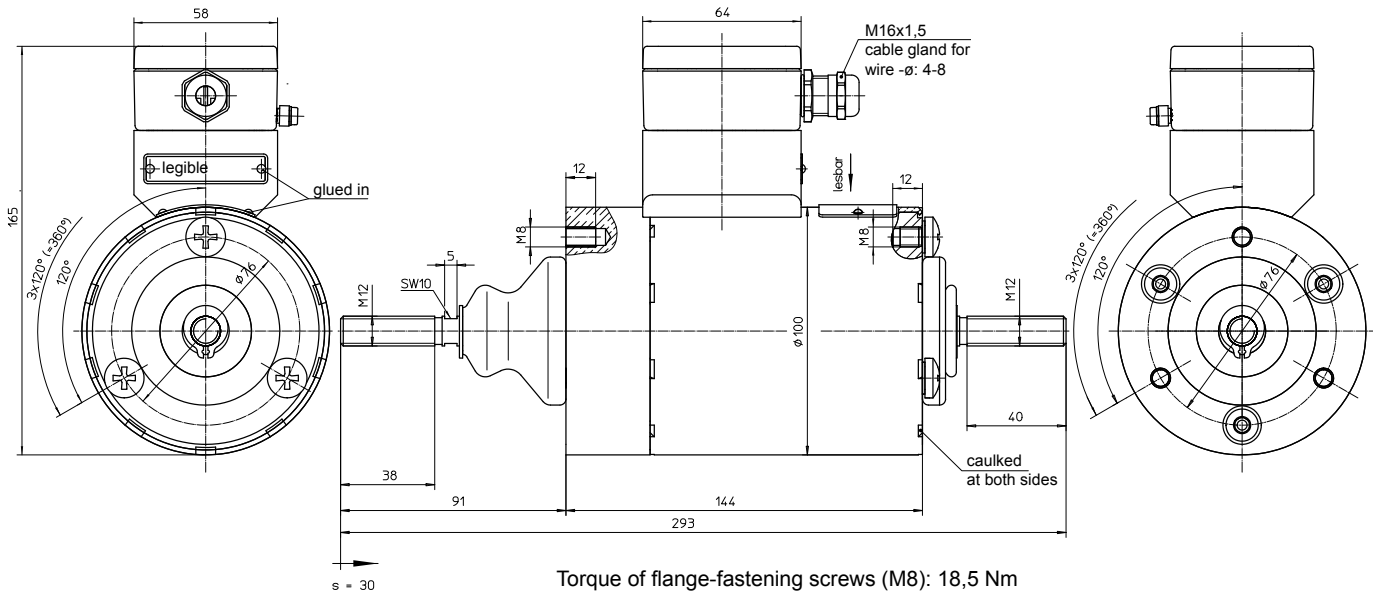


Fig. 5: Type G TC E 100 A GD A01 (DC)

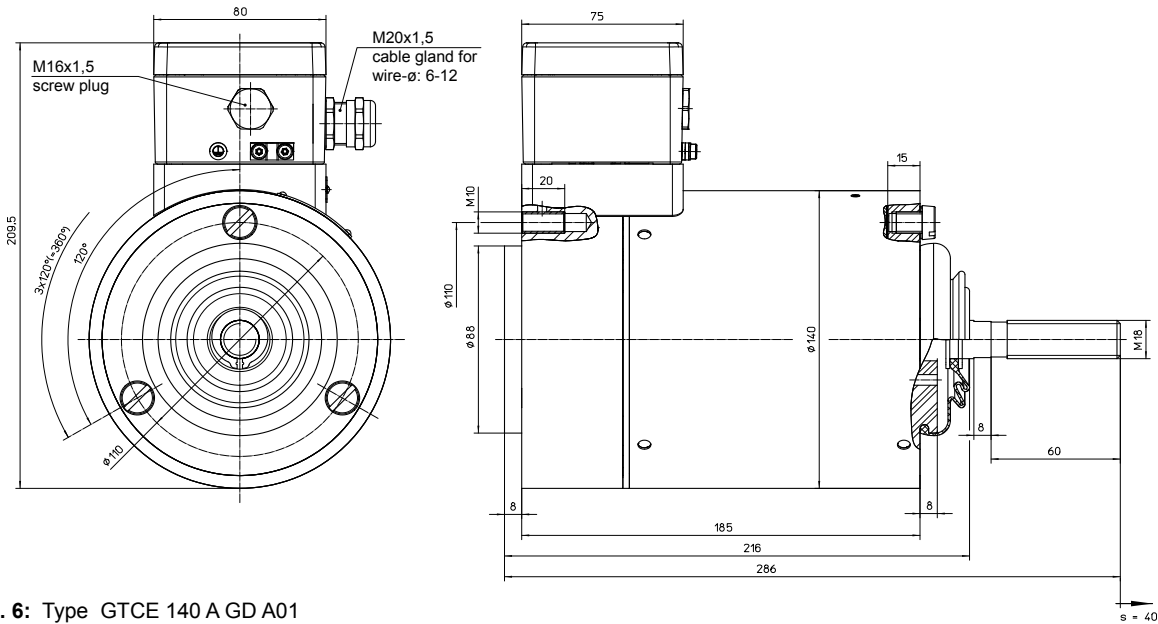


Fig. 6: Type GTCE 140 A GD A01


Type code

Designation	Size	Working mode
G TC E 050 AGD A01	50 mm	Pull-type
G TC E 050 AGD A02		Pull-type and push-type
G TC E 100 AGD A01	100 mm	Push-type
G TC E 140 AGD A01	140 mm	

Example

Type	G TC E 100 A GD A01
Voltage	== 24 V DC
Operating mode	S1 (100 %)

Specials designs

Please do not hesitate to ask for our assistance with the solution of your application-oriented task. 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.