

DC high efficiency reverse solenoids

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Product group

G TU W

- According to DIN VDE 0580
- Linear force vs. stroke characteristic
- Push and pull type
- Armature guided in maintenance-free bearings. Long service life.
- Exciter coils correspond to insulation class F
- Electrical connection and protection class with duly executed installation:
 - Plug connection by plug connector Z KB according to DIN EN 175301-803
Cable gland (4x 90-degree rotatable)
Protection class according to DIN VDE 0470-1/
DIN EN 60529 – IP 54
 - Terminal box with cable gland (4x 90-degree rotatable)
Protection class according to DIN VDE 0470-1/
DIN EN 60529 – IP 54
- Fastening with three tapped holes at the front sides
- Modifications and special designs on request
- Application examples:
Machine tools, packing machines, textile machinery, control technology



Fig. 1: Type G TU W 070 T43 A01

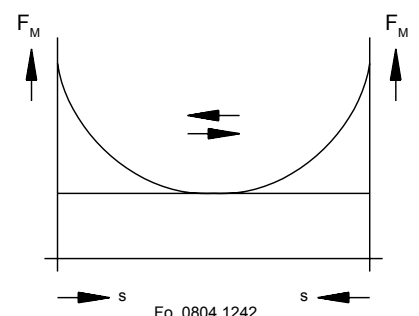


Fig. 2: force vs. stroke characteristic for reverse solenoids G TU W

Technical data

G TU W	40					50				
	S1 100%	S3 40%	S3 25%	S3 15%	S3 5%	S1 100%	S3 40%	S3 25%	S3 15%	S3 5%
Operating mode										
Stroke s (mm)	8					10				
Holding force (N)	47	83	103	128	190	117	183	204	262	350
Magnetic force F_M (N)	12,4	21	26	31,5	54,5	20,4	35	41	57	97
Rated work A_N (Ncm)	9,9	16,8	20,8	25,2	43,6	20,4	35	41	57	97
Rated power P_{20} (W)	16,5	41	66	98	262	21,2	53	60	144	335
Operating frequency S_h (1/h)	30000	16000	10000	6000	2000	27000	13000	8000	5000	1900
Actuation time t_1 (ms)	120	85	75	70	70	130	110	106	100	91
Fall time t_2 (ms)	120	85	75	70	70	130	110	106	100	91
Time constant τ										
Inductance $L = \tau \times R$ (mH)										
Armature in stroke start position (ms)			7					11		
Armature in stroke end position (ms)			5					9		
Armature weight m_A (kg)			0,13					0,2		
Solenoid weight m_M (kg)			0,75					1,3		

G TU W	60					70				
	S1 100%	S3 40%	S3 25%	S3 15%	S3 5%	S1 100%	S3 40%	S3 25%	S3 15%	S3 5%
Operating mode										
Stroke s (mm)	12					15				
Holding force (N)	200	300	365	410	595	236	450	485	580	765
Magnetic force F_M (N)	45,5	67	82	96	162	52	84	105	130	195
Rated work A_N (Ncm)	54,6	80,4	98	115	194	78	126	158	195	293
Rated power P_{20} (W)	35	77	106	148	550	32,5	85	142	230	500
Operating frequency S_h (1/h)	19000	9500	6000	4000	1600	16000	85000	5500	3600	1400
Actuation time t_1 (ms)	185	145	140	126	108	215	165	160	145	120
Fall time t_2 (ms)	185	145	140	126	108	215	165	160	145	120
Time constant τ										
Inductance $L = \tau \times R$ (mH)										
Armature in stroke start position (ms)			15					20		
Armature in stroke end position (ms)			13					18		
Armature weight m_A (kg)			0,35					0,5		
Solenoid weight m_M (kg)			2,25					3,5		

G TU W	80					90				
	S1 100%	S3 40%	S3 25%	S3 15%	S3 5%	S1 100%	S3 40%	S3 25%	S3 15%	S3 5%
Operating mode										
Stroke s (mm)	20					25				
Holding force (N)	340	535	630	725	850	307	520	630	765	1080
Magnetic force F_M (N)	55	87	110	135	194	73,5	124	145	173	276
Rated work A_N (Ncm)	110	174	220	270	388	184	310	362	433	690
Rated power P_{20} (W)	45	102	159	250	590	52	131	202	318	824
Operating frequency S_h (1/h)	14500	7500	4500	3200	1300	11000	5500	4000	2600	1100
Actuation time t_1 (ms)	240	190	180	160	130	310	240	220	195	155
Fall time t_2 (ms)	240	190	180	160	130	310	240	220	195	155
Time constant τ										
Inductance $L = \tau \times R$ (mH)										
Armature in stroke start position (ms)			25					31		
Armature in stroke end position (ms)			23					30		
Armature weight m_A (kg)			0,67					0,8		
Solenoid weight m_M (kg)			4,7					7,4		

Dimensional drawings

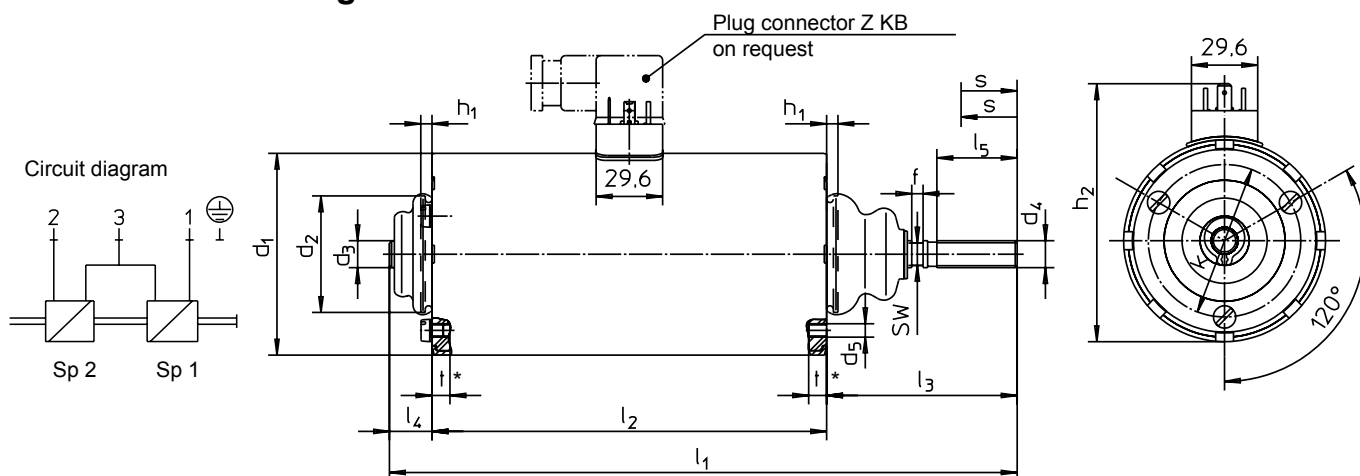


Fig. 3: Type G TU W 040 T 43 A01 to
G TU W 090 T 43 A01

Tightening moment M_A of the fastening screw for the flange: see table

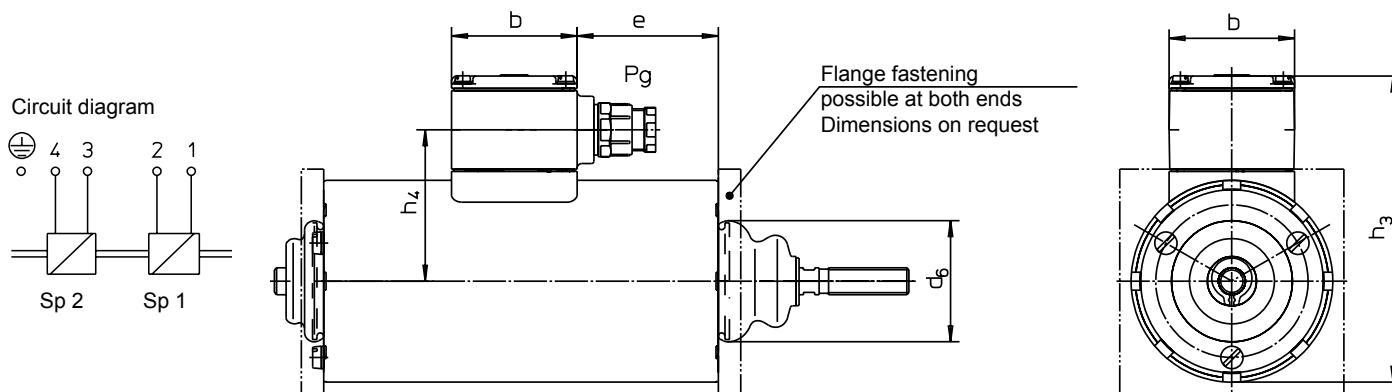


Fig. 4: Type G TU W 040 T 43 A02 to
G TU W 090 T 43 A02

GTUW													
Size	40	50	60	70	80	90	Size	40	50	60	70	80	90
Dim.	Dimensions in mm						Dim.	Dimensions in mm					
b	40	40	40	56	56	56	h_4	38,5	43,5	48,5	57,5	62,5	67,5
d_1	40	50	60	70	80	90	k	30	34	45	52	62	68
d_2	22	25	32	38	42	52	l_1	134	156	181	210	233	278
d_3	5	5	6	8	10	12	l_2	85	104	124	142	148	176
d_4	M5	M5	M6	M8	M10	M12	l_3	37	40	45	54	70	85
d_5	M3	M4	M5	M5	M6	M6	l_4	12	12	12	14	15	17
d_6	24	27	34	40	44	54	l_5	15	15	18	20	30	40
e	25,5	35	45	46	49	63	s	8	10	12	15	20	25
f	3	3	4	5	5	5	t^*	4	5	6	6	8	8
h_1	4	4	4	5	5	5	sw	4,5	4,5	5	7	9	10
h_2	51,5	61,5	71,5	81,5	91,5	101,5	Pg	11	11	11	11	11	11
h_3	75	85	95	116,5	126,5	136,5	M_q (inMn)	1,6	2,3	4,4	4,4	7,7	7,7

* We cannot exceed the thread depth t , this could damage the coil.

Rated voltage \approx 24 V, the exciter coil can be adjusted to a rated voltage of max. \approx 250 V on request.

The force values indicated in the tables refer to series G TU W... T43 A01 at 90% of the rated voltage ($U_N = \approx$ 24 V, for other voltages deviations of magnetic force may occur) and to normal operating temperature.

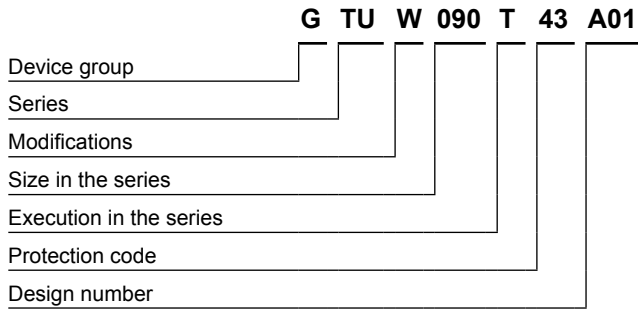
Due to natural dispersion the force values may deviate by \pm 10% from the values indicated in the tables.

The normal operating temperature is based on:

- Designs with flange and terminal box: assembly on poorly heat conducting base.
Designs without flange and without terminal box: assembly on heat conductive base.
- Rated voltage \approx 24 V
- Duty cycle S1-S3 5%
- Reference temperature 35 °C

For connection with plug connector Z KB X and Z KB G please note the max. continuous current of the connector.


Type code



Order example

Type	G TU W 090 T43 A01
Voltage	\approx 24 V DC
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.

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

The devices presented in this document do not fall into the scope of RoHS Directive and to our knowledge they do not become part of products which fall into this scope. In case of surfaces zinc coating with yellow chromating and zinc iron with black chromating separate agreements are necessary for applications within the scope of 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.