

# DC-Micromotors

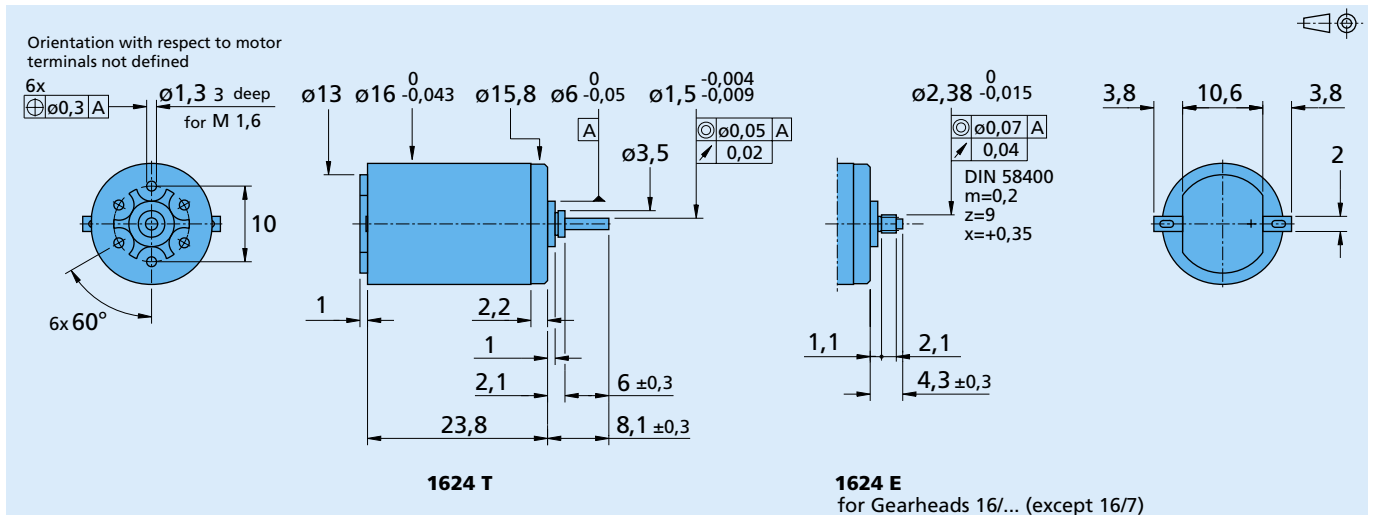
## 1,5 mNm

### Precious Metal Commutation

For combination with  
Gearheads:  
15A, 16A, 16/3, 16/5, 16/7, 16/8  
DC-Motor-Tacho Combinations:  
1841 ... S

### Series 1624 ... S

	1624 T	003 S	006 S	009 S	012 S	018 S	024 S	
1 Nominal voltage	$U_N$	3	6	9	12	18	24	Volt
2 Terminal resistance	$R$	1,6	9,1	14,5	24,0	42,0	75,0	$\Omega$
3 Output power	$P_{2 \max.}$	1,36	0,93	1,34	1,44	1,87	1,85	W
4 Efficiency	$\eta_{\max.}$	78	71	75	75	77	76	%
5 No-load speed	$n_0$	12 000	10 500	11 500	13 000	13 800	14 400	rpm
6 No-load current (with shaft $\varnothing$ 1,5 mm)	$I_0$	0,030	0,019	0,012	0,010	0,007	0,006	A
7 Stall torque	$M_H$	4,33	3,39	4,46	4,23	5,16	4,91	mNm
8 Friction torque	$M_R$	0,07	0,10	0,09	0,09	0,09	0,09	mNm
9 Speed constant	$k_n$	4 070	1 800	1 300	1 110	779	611	rpm/V
10 Back-EMF constant	$k_E$	0,246	0,555	0,767	0,905	1,280	1,640	mV/rpm
11 Torque constant	$k_M$	2,35	5,30	7,33	8,64	12,30	15,60	mNm/A
12 Current constant	$k_i$	0,426	0,189	0,136	0,116	0,082	0,064	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	2 770	3 100	2 580	3 070	2 670	2 930	rpm/mNm
14 Rotor inductance	$L$	85	200	400	750	1 200	3 000	$\mu H$
15 Mechanical time constant	$\tau_m$	19	22	19	19	19	24	ms
16 Rotor inertia	$J$	0,65	0,68	0,70	0,59	0,68	0,78	gcm <sup>2</sup>
17 Angular acceleration	$\alpha_{\max.}$	66	50	63	72	76	63	$\cdot 10^3 \text{ rad/s}^2$
18 Thermal resistance	$R_{th 1} / R_{th 2}$	8 / 39						K/W
19 Thermal time constant	$\tau_{w1} / \tau_{w2}$	4 / 335						s
20 Operating temperature range:		- 30 ... + 85 (optional - 55 ... + 125)						°C
- motor								
- rotor, max. permissible		+125						°C
21 Shaft bearings		sintered bronze sleeves	ball bearings	ball bearings, preloaded				
22 Shaft load max.:		(standard)	(optional)	(optional)				
- with shaft diameter		1,5	1,5	1,5	mm			
- radial at 3 000 rpm (3 mm from bearing)		1,2	5	5	N			
- axial at 3 000 rpm		0,2	0,5	0,5	N			
- axial at standstill		20	10	10	N			
23 Shaft play:								
- radial	$\leq$	0,03	0,015	0,015				mm
- axial	$\leq$	0,2	0,2	0				mm
24 Housing material		steel, zinc galvanized and passivated						
25 Weight		21						g
26 Direction of rotation		clockwise, viewed from the front face						
<b>Recommended values</b>								
27 Speed up to	$n_{e \max.}$	10 000	10 000	10 000	10 000	10 000	10 000	rpm
28 Torque up to	$M_{e \max.}$	1,5	1,5	1,5	1,5	1,5	1,5	mNm
29 Current up to (thermal limits)	$I_{e \max.}$	0,980	0,370	0,320	0,250	0,190	0,140	A



For notes on technical data and lifetime performance refer to "Technical Information".

For options on DC-Micromotors refer to page 62. Specifications subject to change without notice.

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