FAULHABER

1,86 mNm
4,09 W

DC-Micromotors

Precious Metal Commutation

Series 1717 ... SR

Values at 22°C and nominal voltage	1717 T	003 SR	006 SR	012 SR	018 SR	024 SR	
Nominal voltage	U_N	3	6	12	18	24	V
Terminal resistance	R	1,07	4,31	17,2	50,2	69	Ω
Rotor inductance	L	16,4	65,6	263	766	1 050	µH
Efficiency, max.	$\eta_{max.}$	67	67	67	65	68	%
No-load current, typ.	I_0	0,0918	0,0459	0,0229	0,0134	0,0108	A
No-load speed	n_0	14 100	14 100	14 100	12 300	14 100	min⁻¹
Stall torque	M_H	5,35	5,33	5,35	4,67	5,34	mNm
Rotor inertia	J	0,59	0,58	0,59	0,58	0,59	gcm²
Friction torque	M_R	0,18	0,18	0,18	0,18	0,17	mNm
Torque constant	k_M	1,98	3,96	7,92	13,5	15,8	mNm/A
Speed constant	k_n	4 820	2 410	1 210	706	603	min⁻¹/V
Slope of n-M curve	$\Delta n/\Delta M$	2 610	2 630	2 620	2 620	2 630	min⁻¹/mNm
Thermal resistance:							
– winding to housing	R_{th1}	13					K/W
– housing to ambient (external plastic flange)	$R_{th2\,p}$	32					K/W
– housing to ambient (external metal flange)	$R_{th2\,m}$	2,6					K/W
Thermal time constant:							
– winding	τ_{w1}	6,4					s
– housing (external plastic flange)	$\tau_{w2\,p}$	250					s
– housing (external metal flange)	$\tau_{w2\,m}$	20					s
Operating temperature range:							
– motor		-30 ... +85 (optional version -30 ... +125)					°C
– winding, max. permissible		+125					°C
Shaft bearings		sintered bearings		ball bearings, preloaded			
Shaft diameter		1,5		1,5			mm
Radial shaft load max.:							
– dynamic at 3 000 min⁻¹ (4 mm from mounting flange)		1,2		5			N
Axial shaft load max.:							
– dynamic at 3 000 min⁻¹		0,2		0,5			N
– static (shaft unsupported)		20		10			N
Shaft play, max.:							
– radial		0,03		0,015			mm
– axial		0,2		0			mm
Speed up to	$n_{max.}$	16 000					min⁻¹
Number of pole pairs		1					
Mass		18					g
Housing material		steel, nickel plated					
Magnet material		NdFeB					

Rated values for continuous operation							
Rated torque	M_N	1,16	1,84	1,84	1,86	1,85	mNm
Rated current (thermal limit)	I_N	0,7	0,564	0,282	0,167	0,141	A
Rated speed	n_N	10 800	7 290	7 310	5 260	7 280	min⁻¹

Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The $R_{th2\,p}$ value has been reduced by 0%.

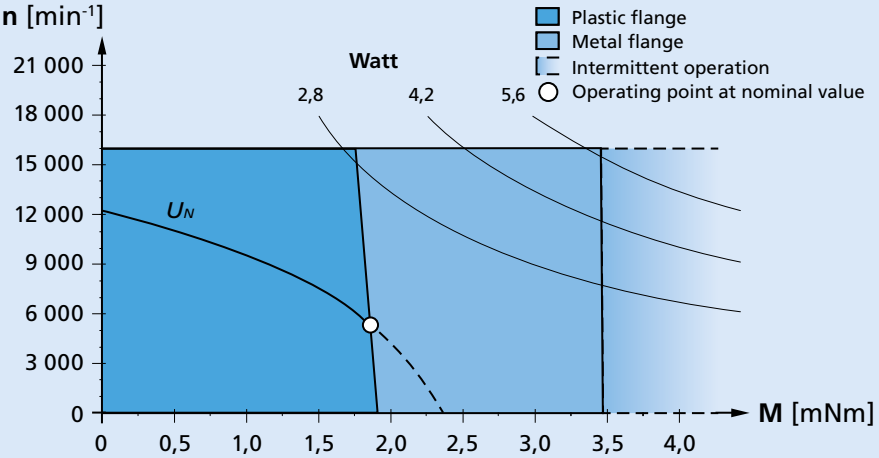
Note:

The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in different conditions of thermal coupling, i.e. mounted respectively on a plastic flange and a metal flange.

The nominal voltage (U_N) curve shows, up to the thermal limit, the operating point at nominal voltage for the motor mounted on a plastic flange. Higher torque can be achieved by further reducing the thermal resistance.

Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



Recommended operation areas (example: nominal voltage 18V)

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

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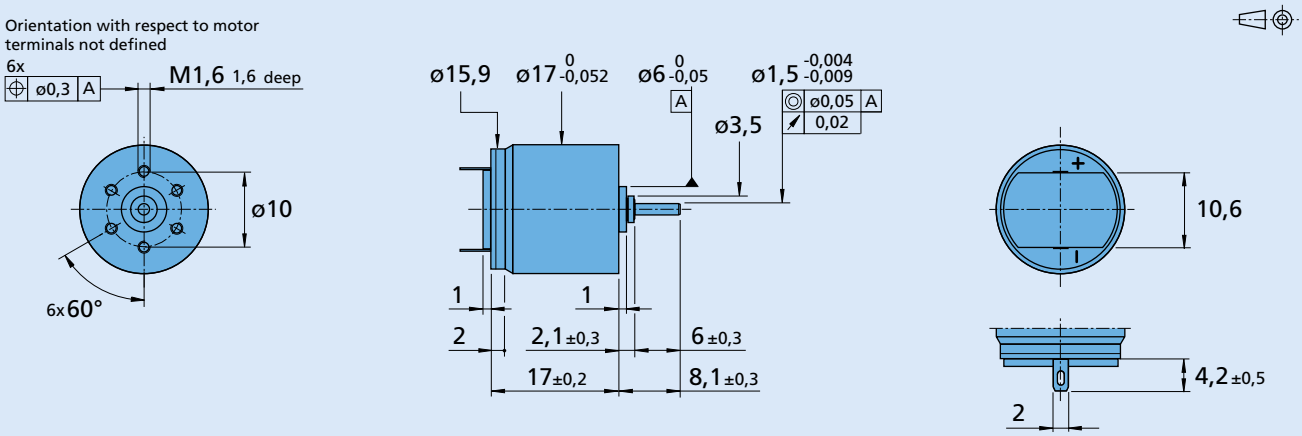
Dimensional drawing



1717 T ... SR

Options

Example product designation: **1717T012SR-277**

Option	Type	Description
L	Twin Leads	For motors with twin leads (PVC), length 150 mm, red (+) / black (-)
4924	Twin Leads	For motors with twin leads (PVC), length 300 mm, red (+) / black (-)
X4924	Twin Leads	For motors with twin leads (PVC), length 600 mm, red (+) / black (-)
4925	Twin Leads	For motors with twin leads (PVC), length 150 mm, red (+) / black (-), with connector AMP 179228-2
X4925	Twin Leads	For motors with twin leads (PVC), length 300 mm, red (+) / black (-), with connector AMP 179228-2
Y4925	Twin Leads	For motors with twin leads (PVC), length 600 mm, red (+) / black (-), with connector AMP 179228-2
F	Single Leads	For motors with single leads (PTFE), length 150 mm, red (+) / black (-)
277	Bearings	2 preloaded ball bearings

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
15A 15/10 16A 16/7 17/1	IE2-1024 IEH2-4096 IEH3-4096 IEH3-4096L	SC 1801 P SC 1801 S MC 3001 B MC 3001 P MC 3602 B MC 3603 S MC 5004 P	To view our large range of accessory parts, please refer to the “Accessories” chapter.

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