

DC-Micromotors

Precious Metal Commutation

4,13 mNm

5,68 W

Series 1724 ... SR

Values at 22°C and nominal voltage		1724 T	003 SR	006 SR	012 SR	018 SR	024 SR	
Nominal voltage	U_N		3	6	12	18	24	V
Terminal resistance	R		0,775	3,4	16,1	31,9	54,4	Ω
Rotor inductance	L		20,7	75,6	360	712	1 210	μH
Efficiency, max.	η_{max}		81	80	79	80	80	%
No-load current, typ.	I_0		0,0379	0,0198	0,0091	0,006	0,005	A
No-load speed	n_0		8 270	8 630	7 900	8 450	8 630	min^{-1}
Stall torque	M_H		13,2	11,5	10,6	11,3	11,5	mNm
Rotor inertia	J		1,2	1	1	1	1	gcm^2
Friction torque	M_R		0,13	0,13	0,13	0,12	0,13	mNm
Torque constant	k_M		3,44	6,58	14,4	20,2	26,3	mNm/A
Speed constant	k_n		2 770	1 450	665	473	363	min^{-1}/V
Slope of n-M curve	$\Delta n/\Delta M$		624	749	745	747	748	$\text{min}^{-1}/\text{mNm}$
Thermal resistance:								
– winding to housing	R_{th1}	10						K/W
– housing to ambient (external plastic flange)	$R_{\text{th2 p}}$	27						K/W
– housing to ambient (external metal flange)	$R_{\text{th2 m}}$	3,1						K/W
Thermal time constant:								
– winding	τ_{w1}	7,2						s
– housing (external plastic flange)	$\tau_{w2 p}$	310						s
– housing (external metal flange)	$\tau_{w2 m}$	36						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} (3 mm from bearing)		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}	10 000						min^{-1}
Number of pole pairs		1						
Mass		27						g
Housing material		steel, nickel plated						
Magnet material		NdFeB						

Rated values for continuous operation							
Rated torque	M_N	2,23	4,06	4,13	4,13	4,12	mNm
Rated current (thermal limit)	I_N	0,7	0,7	0,328	0,233	0,178	A
Rated speed	n_N	6 850	4 540	3 610	4 200	4 420	min^{-1}

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

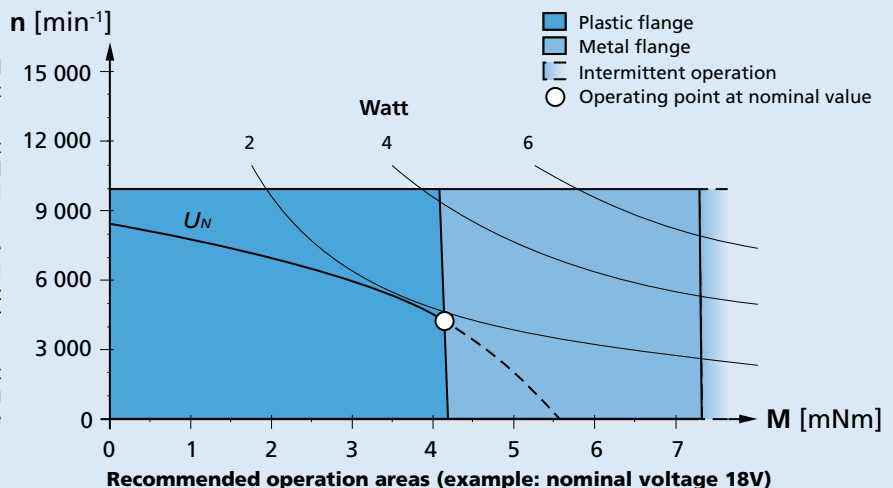
Note:

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

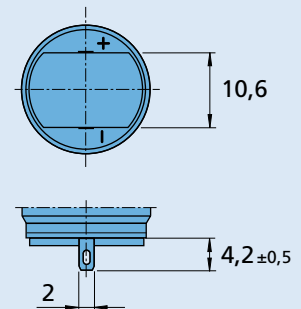
The diagram shows the motor in different conditions of thermal coupling, i.e. mounted respectively on a plastic flange and a metal flange.

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.



Dimensional drawing



1724 T ... SR

Options

Example product designation: **1724T012SR-277**

[illegible]

Product combination	
1	2
3	4
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9	10
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97	98
99	100

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.