

DC-Micromotors

Precious Metal Commutation

3,44 mNm

5,14 W

Series 1331 ... SR

Values at 22°C and nominal voltage		1331 T	006 SR	012 SR	024 SR	
Nominal voltage	U_N		6	12	24	V
Terminal resistance	R		2,83	13,7	52,9	Ω
Rotor inductance	L		70	310	1 100	μH
Efficiency, max.	η_{max}		80	79	79	%
No-load current, typ.	I_0		0,0226	0,0105	0,0055	A
No-load speed	n_0		10 700	9 910	10 500	min^{-1}
Stall torque	M_H		11,2	9,94	9,74	mNm
Rotor inertia	J		0,71	0,67	0,63	gcm^2
Friction torque	M_R		0,12	0,12	0,12	mNm
Torque constant	k_M		5,33	11,5	21,7	mNm/A
Speed constant	k_n		1 790	833	439	min^{-1}/V
Slope of n-M curve	$\Delta n/\Delta M$		950	993	1 070	$\text{min}^{-1}/\text{mNm}$
Thermal resistance:						
– winding to housing	R_{th1}	11				K/W
– housing to ambient (external plastic flange)	$R_{\text{th2 p}}$	28				K/W
– housing to ambient (external metal flange)	$R_{\text{th2 m}}$	6				K/W
Thermal time constant:						
– winding	τ_{w1}	8,1				s
– housing (external plastic flange)	$\tau_{w2 p}$	220				s
– housing (external metal flange)	$\tau_{w2 m}$	48				s
Operating temperature range:						
– motor		-30 ... +85 (optional version +125)	-30 ... +125			°C
– winding, max. permissible						°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}	12 000				min^{-1}
Number of pole pairs		1				
Mass		19				g
Housing material		steel, nickel plated				
Magnet material		NdFeB				

Rated values for continuous operation						
Rated torque	M_N		1,96	3,44	3,31	mNm
Rated current (thermal limit)	I_N		0,4	0,343	0,174	A
Rated speed	n_N		8 750	5 260	5 650	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%.

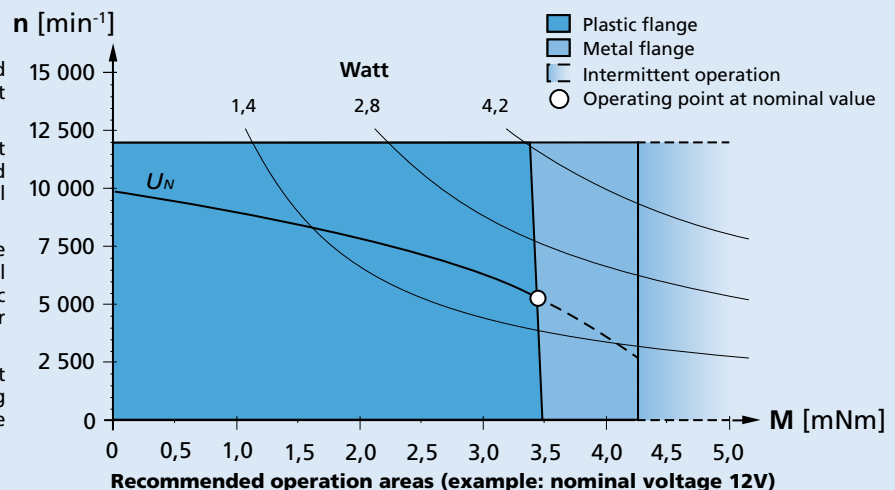
Note:

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.





Example product designation: **1331T012SR-277**

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Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
13A 14GPT 14/1 15/5 15/5 S	IE2-400	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.