

DC-Micromotors

Graphite Commutation

19 mNm
24 W

Series 2342 ... CR

Values at 22°C and nominal voltage		2342 S	006 CR	012 CR	018 CR	024 CR	036 CR	048 CR	
1	Nominal voltage	U_N	6	12	18	24	36	48	V
2	Terminal resistance	R	0,4	1,9	4,1	7,1	15,9	31,2	Ω
3	Output power	$P_{2nom.}$	20,5	17	18,1	19	19,4	17,7	W
4	Efficiency, max.	$\eta_{max.}$	81	80	81	81	81	81	%
5	No-load speed	n_0	9 000	8 100	8 000	8 500	8 100	8 000	min ⁻¹
6	No-load current, typ. (with shaft ø 3 mm)	I_0	0,17	0,075	0,048	0,038	0,024	0,017	A
7	Stall torque	M_H	87,2	80	86,5	85,4	91,4	84,4	mNm
8	Friction torque	M_R	0,98	1	0,99	0,99	0,99	0,95	mNm
9	Speed constant	k_n	1 650	713	462	366	231	170	min ⁻¹ /V
10	Back-EMF constant	k_E	0,604	1,4	2,16	2,73	4,34	5,87	mV/min ⁻¹
11	Torque constant	k_M	5,77	13,4	20,7	26,1	41,4	56,1	mNm/A
12	Current constant	k_I	0,173	0,075	0,048	0,038	0,024	0,018	A/mNm
13	Slope of n-M curve	$\Delta n / \Delta M$	103	101	92,5	99,5	88,6	94,8	min ⁻¹ /mNm
14	Rotor inductance	L	13,5	65	150	265	590	1 050	μ H
15	Mechanical time constant	τ_m	6	6	6	6	6	6	ms
16	Rotor inertia	J	5,6	5,7	6,2	5,8	6,5	6	gcm ²
17	Angular acceleration	$\alpha_{max.}$	160	140	140	150	140	140	·10 ³ rad/s ²
18	Thermal resistance	R_{th1} / R_{th2}	3 / 15						K/W
19	Thermal time constant	τ_{w1} / τ_{w2}	6,5 / 490						s
20	Operating temperature range:								
	– motor		-30 ... +100						°C
	– winding, max. permissible		+125						°C
21	Shaft bearings		ball bearings, preloaded						
22	Shaft load max.:								
	– with shaft diameter		3						mm
	– radial at 3 000 min ⁻¹ (3 mm from bearing)		20						N
	– axial at 3 000 min ⁻¹		2						N
	– axial at standstill		20						N
23	Shaft play:								
	– radial	≤	0,015						mm
	– axial	=	0						mm
24	Housing material		steel, black coated						
25	Mass		88						g
26	Direction of rotation		clockwise, viewed from the front face						
27	Speed up to	$n_{max.}$	11 000						min ⁻¹
28	Number of pole pairs		1						
29	Magnet material		NdFeB						
Rated values for continuous operation									
30	Rated torque	M_N	14	17	18	17	19	18	mNm
31	Rated current (thermal limit)	I_N	2,9	1,5	1	0,78	0,53	0,38	A
32	Rated speed	n_N	7 140	6 090	6 040	6 470	6 160	5 910	min ⁻¹

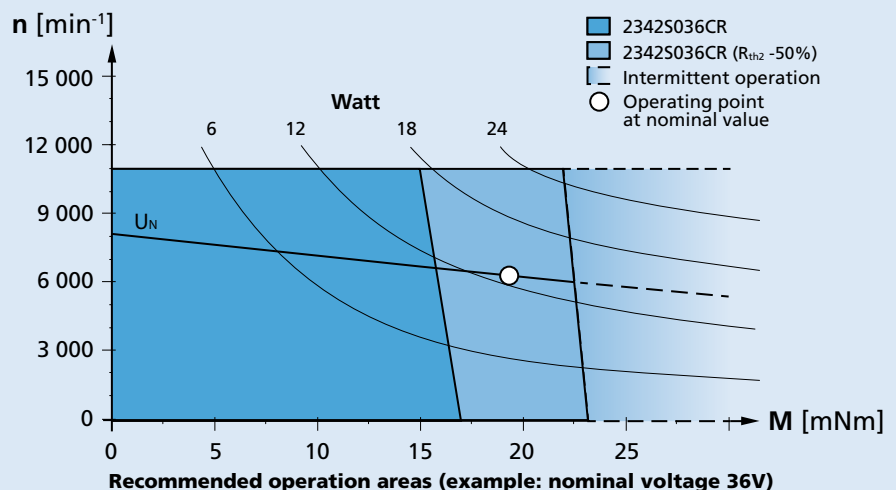
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

Note:

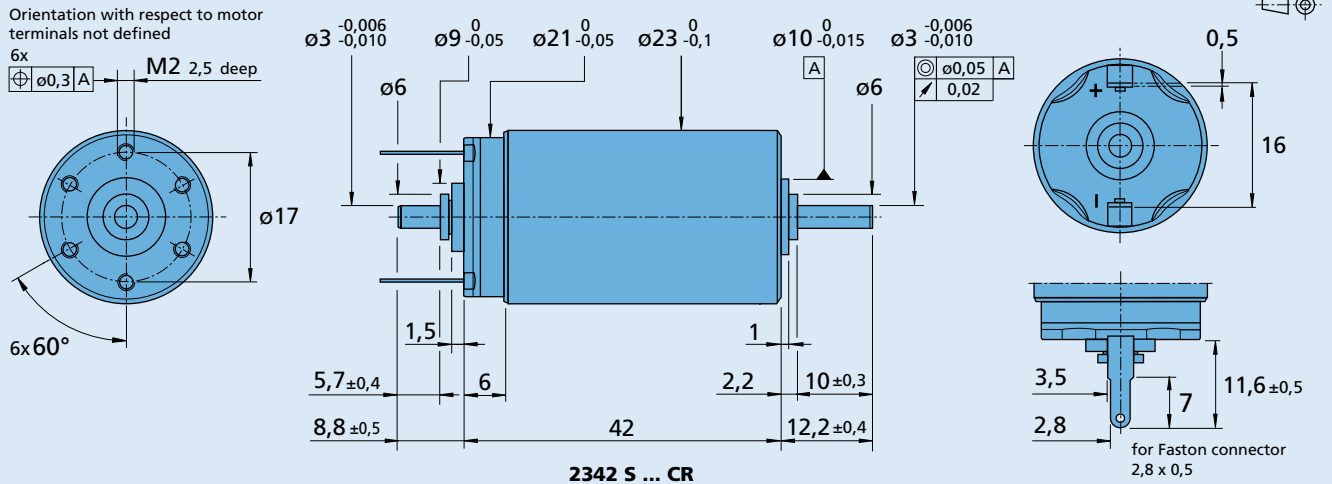
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in a completely insulated as well as thermally coupled condition (R_{th2} 50% reduced).

The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. 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



Options

Example product designation: **2342S012CR-158**

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Product Combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
22F 22/7 23/1 26A 26/1 26/1 S 30/1 30/1 S BS22-1.5	HEDS 5500 HEDM 5500 IE3-1024 IE3-1024 L HEDS 5540 HEDL 5540	SC 2402 SC 2804 SC 5004 SC 5008 MCDC 3002 MCDC 3003 MCDC 3006	MBZ