

DC-Micromotors

Graphite Commutation

32 mNm
28 W

Series 2642 ... CR

Values at 22°C and nominal voltage	2642 W	012 CR	018 CR	024 CR	036 CR	048 CR			
1 Nominal voltage	U_N		12	18	24	36	48	V	
2 Terminal resistance	R		1,45	3,1	5,78	13,6	23,8	Ω	
3 Efficiency, max.	η_{max}		78	76	79	76	79	%	
4 No-load speed	n_0		6 400	6 400	6 400	6 500	6 400	min ⁻¹	
5 No-load current, typ. (with shaft \varnothing 4 mm)	I_0		0,118	0,079	0,058	0,039	0,029	A	
6 Stall torque	M_H		132	144	139	134	137	mNm	
7 Friction torque	M_R		2	2	2	2	2	mNm	
8 Speed constant	k_n		565	370	276	183	137	min ⁻¹ /V	
9 Back-EMF constant	k_E		1,77	2,7	3,62	5,47	7,31	mV/min ⁻¹	
10 Torque constant	k_M		16,9	25,8	34,6	52,2	69,8	mNm/A	
11 Current constant	k_I		0,059	0,039	0,029	0,019	0,014	A/mNm	
12 Slope of n-M curve	$\Delta n / \Delta M$		48,5	44,5	46	47,7	46,7	min ⁻¹ /mNm	
13 Rotor inductance	L		130	300	550	1 200	2 200	μ H	
14 Mechanical time constant	τ_m		5,4	5,4	5,4	5,4	5,4	ms	
15 Rotor inertia	J		11	12	11	11	11	gcm ²	
16 Angular acceleration	α_{max}		120	120	120	120	120	$\cdot 10^3$ rad/s ²	
17 Thermal resistance	R_{th1} / R_{th2}	2,1 / 11						K/W	
18 Thermal time constant	τ_{w1} / τ_{w2}	10 / 510						s	
19 Operating temperature range:									
– motor			-30 ... +125					°C	
– winding, max. permissible			+155					°C	
20 Shaft bearings			ball bearings, preloaded						
21 Shaft load max.:									
– with shaft diameter			4					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	
22 Shaft play:									
– radial	\leq	0,015						mm	
– axial	$=$	0						mm	
23 Housing material			steel, black coated						
24 Mass			114					g	
25 Direction of rotation			clockwise, viewed from the front face						
26 Speed up to	n_{max}		7 000					min ⁻¹	
27 Number of pole pairs			1						
28 Magnet material			NdFeB						
Rated values for continuous operation									
29 Rated torque	M_N		30	32	32	31	32	mNm	
30 Rated current (thermal limit)	I_N		2,2	1,5	1,1	0,74	0,56	A	
31 Rated speed	n_N		4 390	4 490	4 370	4 340	4 330	min ⁻¹	

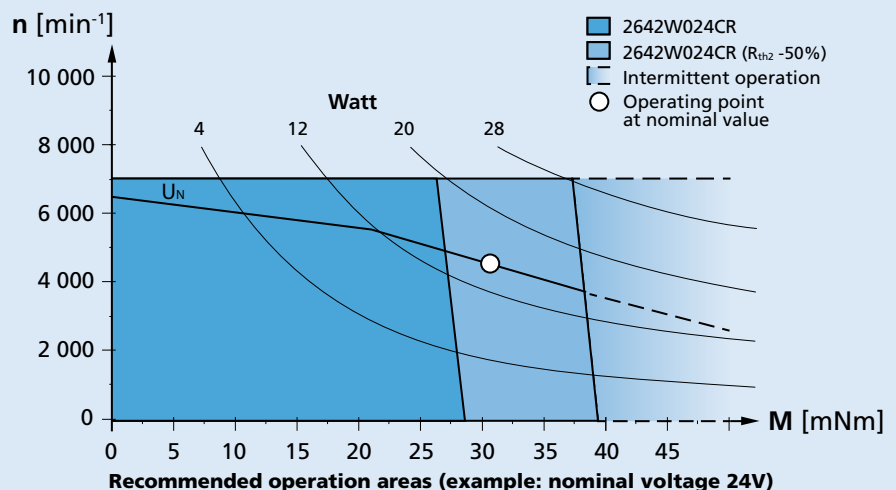
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

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.

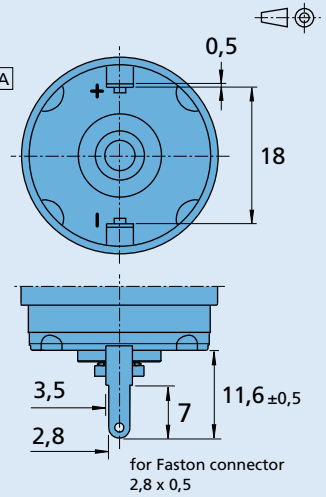
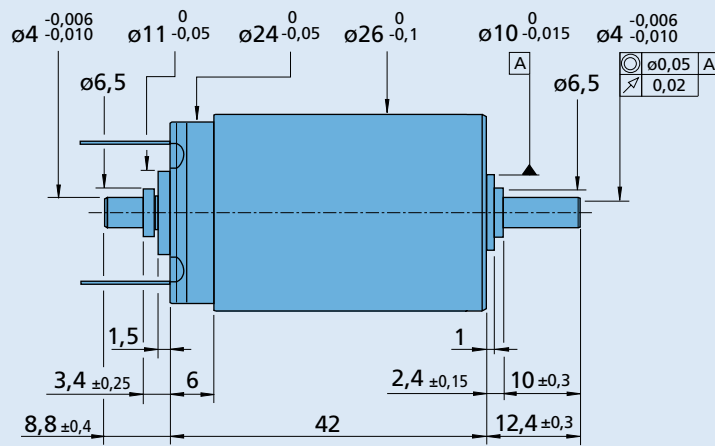
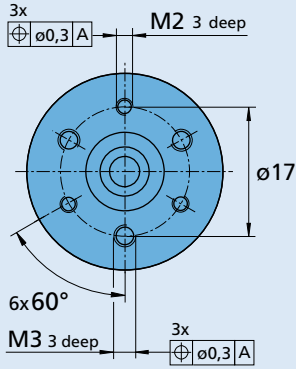
The diagram shows the motor in a completely insulated as well as thermally coupled condition (R_{th2} 50% reduced).

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

Orientation with respect to motor terminals not defined



2642 W ... CR

Options

Example product designation: **2642W012CR-158**

Option	Type	Description
U	Single Leads	For motors with single leads (PTFE), length 160 mm, red (+) / black (-)
158	Shaft end	No second shaft end

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
22GPT 26A 26/1 26/1R 30/1 30/1 S 32GPT	IE3-1024 IE3-1024 L IERS3-500 IERS3-500 L IER3-10000 IER3-10000 L	SC 2402 P SC 2804 S SC 5004 P SC 5008 S MCDC 3003 P MCDC 3006 S MC 3001 B MC 3001 P MC 5004 P MC 5005 S	MBZ To view our large range of accessory parts, please refer to the "Accessories" chapter.

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