

DC-Micromotors

Graphite Commutation

32 mNm

For combination with

Gearheads:

26/1, 26/1 S, 26A, 30/1, 30/1 S, 32A, 32ALN

Encoders:

HEDL 5540, HEDM 5500, HEDS 5500, HEDS 5540, IE3-1024, IE3-1024 L

Series 2642 ... CR

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

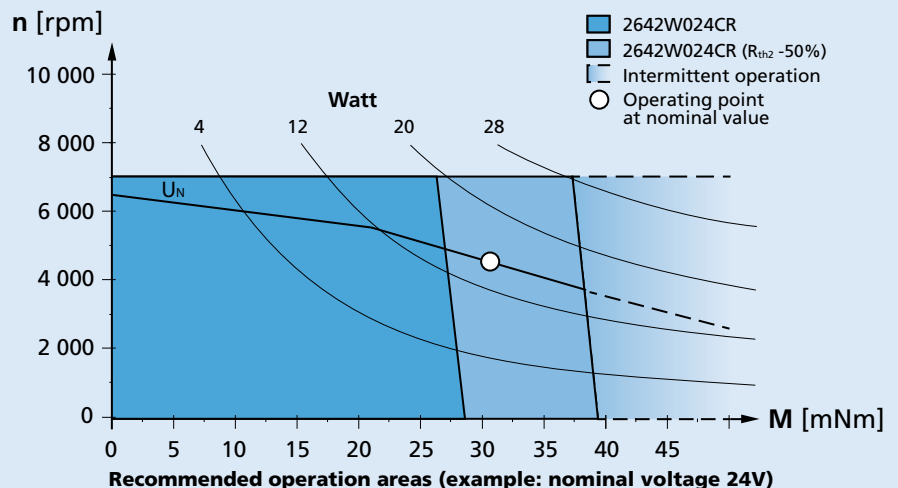
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

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.

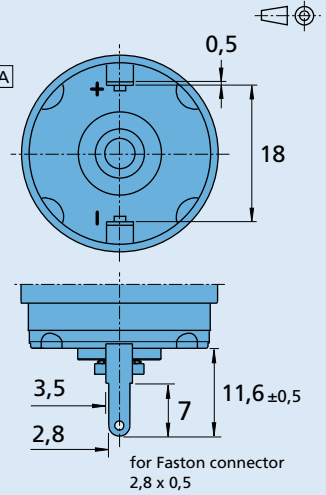
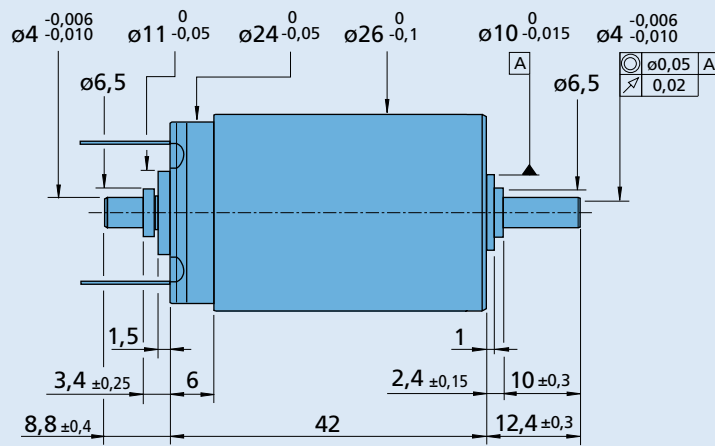
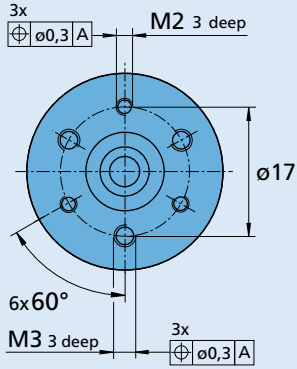
The diagram shows the motor in a completely insulated as well as thermally coupled condition (R_{th2} 50% reduced).

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