

DC-Micromotors

Graphite Commutation

26 mNm
21 W

Series 2642 ... CXR

Values at 22°C and nominal voltage	2642 W	012 CXR	015 CXR	018 CXR	024 CXR	036 CXR	048 CXR		
1 Nominal voltage	U_N	12	15	18	24	36	48	V	
2 Terminal resistance	R	1,46	2,17	3,29	5,84	13,78	24,06	Ω	
3 Efficiency, max.	η_{max}	76	81	80	78	80	79	%	
4 No-load speed	n_0	5 800	5 600	5 800	5 900	5 800	5 900	min ⁻¹	
5 No-load current, typ. (with shaft \varnothing 4 mm)	I_0	0,092	0,07	0,06	0,045	0,03	0,022	A	
6 Stall torque	M_H	144,6	165,3	153,2	150,5	148	149	mNm	
7 Friction torque	M_R	1,7	1,7	1,7	1,7	1,7	1,7	mNm	
8 Speed constant	k_n	514	395	337	252	167	125	min ⁻¹ /V	
9 Back-EMF constant	k_E	1,945	2,53	2,965	3,962	6,001	7,994	mV/min ⁻¹	
10 Torque constant	k_M	18,57	24,16	28,31	37,83	57,31	76,34	mNm/A	
11 Current constant	k_I	0,054	0,041	0,035	0,026	0,017	0,013	A/mNm	
12 Slope of n-M curve	$\Delta n / \Delta M$	40,4	35,5	39,2	39	40,1	39,4	min ⁻¹ /mNm	
13 Rotor inductance	L	135	232	313	560	1 283	2 280	μ H	
14 Mechanical time constant	τ_m	5,1	4,5	4,9	4,9	5	5	ms	
15 Rotor inertia	J	12	12	12	12	12	12	gcm ²	
16 Angular acceleration	α_{max}	121	138	128	125	123	124	$\cdot 10^3$ rad/s ²	
17 Thermal resistance	R_{th1} / R_{th2}	4,7 / 15,2						K/W	
18 Thermal time constant	τ_{w1} / τ_{w2}	20 / 720						s	
19 Operating temperature range:									
– motor		-30 ... +100						°C	
– winding, max. permissible		+125						°C	
20 Shaft bearings		sintered bearings			ball bearings, preloaded				
21 Shaft load max.:		(standard)			(optional version)				
– with shaft diameter		4			4				mm
– radial at 3 000 min ⁻¹ (3 mm from bearing)		10			20				N
– axial at 3 000 min ⁻¹		2			2				N
– axial at standstill		50			20				N
22 Shaft play:									
– radial	\leq	0,03			0,015			mm	
– axial	\leq	0,15			0			mm	
23 Housing material		steel, zinc galvanized and passivated							
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	25	26	26	26	26	26	mNm	
30 Rated current (thermal limit)	I_N	1,6	1,32	1,08	0,82	0,54	0,41	A	
31 Rated speed	n_N	4 770	4 660	4 750	4 770	4 710	4 750	min ⁻¹	

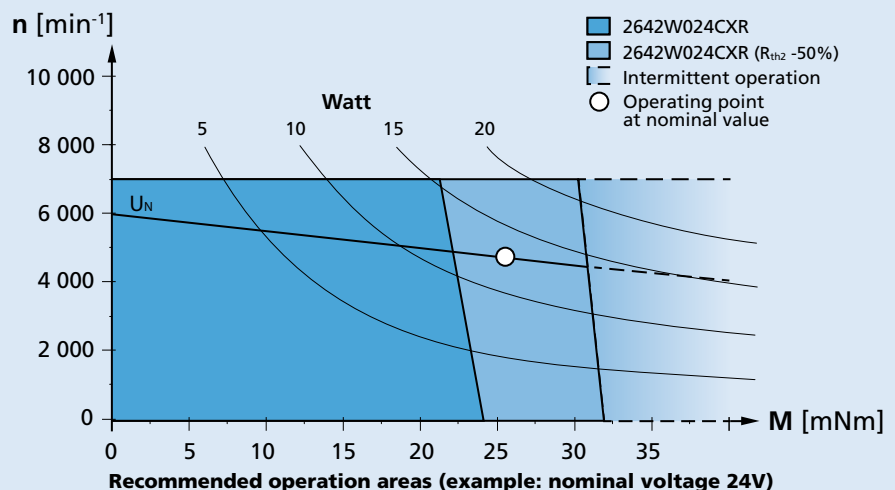
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

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.

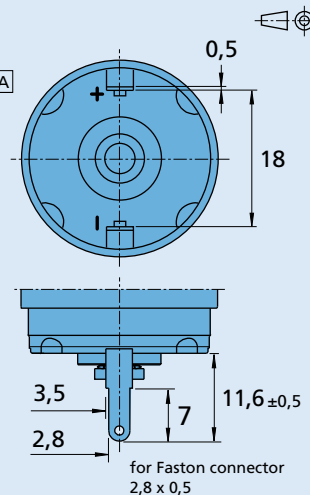
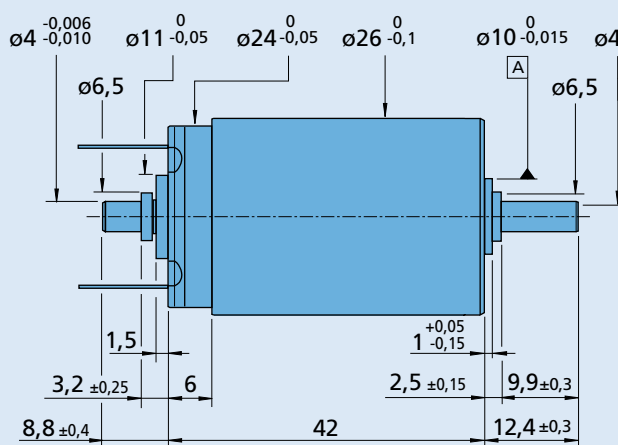
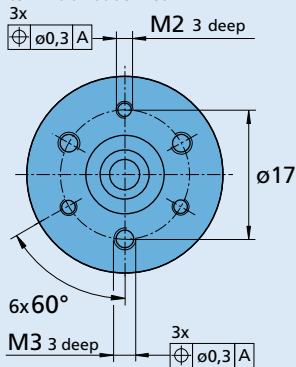
The diagram shows the motor in a completely insulated as well as thermally coupled condition (R_{th2} 50% reduced).

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 ... CXR

Options

Example product designation: **2642W012CXR-275**

Option	Type	Description
U	Single Leads	For motors with single leads (PTFE), length 160 mm, red (+) / black (-)
158	Shaft end	No second shaft end
275	Ball bearings	Motor with 2 preloaded ball bearings.

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
26A 26/1 26/1 R 30/1 30/1 S 32A BS22-1.5	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 3002 P MCDC 3002 S MCDC 3003 P MCDC 3006 S MC 5004 P MC 5005 S	MBZ To view our large range of accessory parts, please refer to the "Accessories" chapter.