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.	$\eta_{max.}$	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 ø 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	µH
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	gcm²
16	Angular acceleration	$\alpha_{max.}$	121	138	128	125	123	124	·10³rad/s²
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	≤	0,03			0,015			mm
	– axial	≤	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

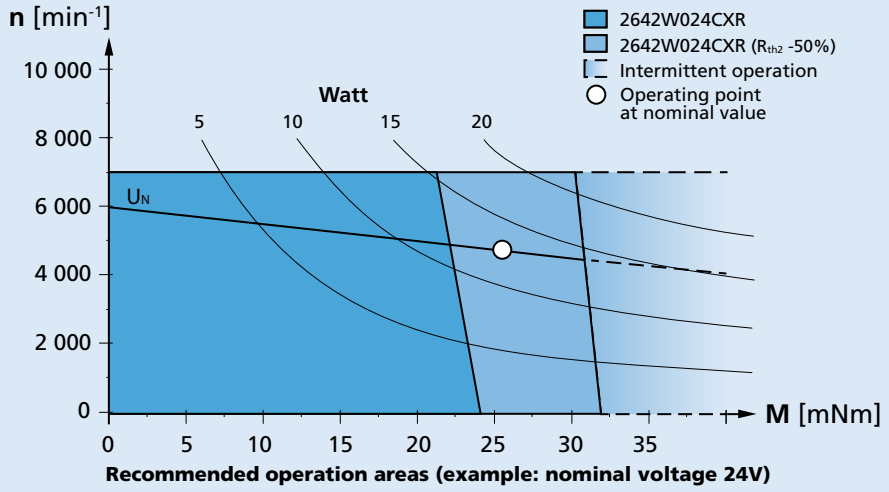
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

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.



Recommended operation areas (example: nominal voltage 24V)

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

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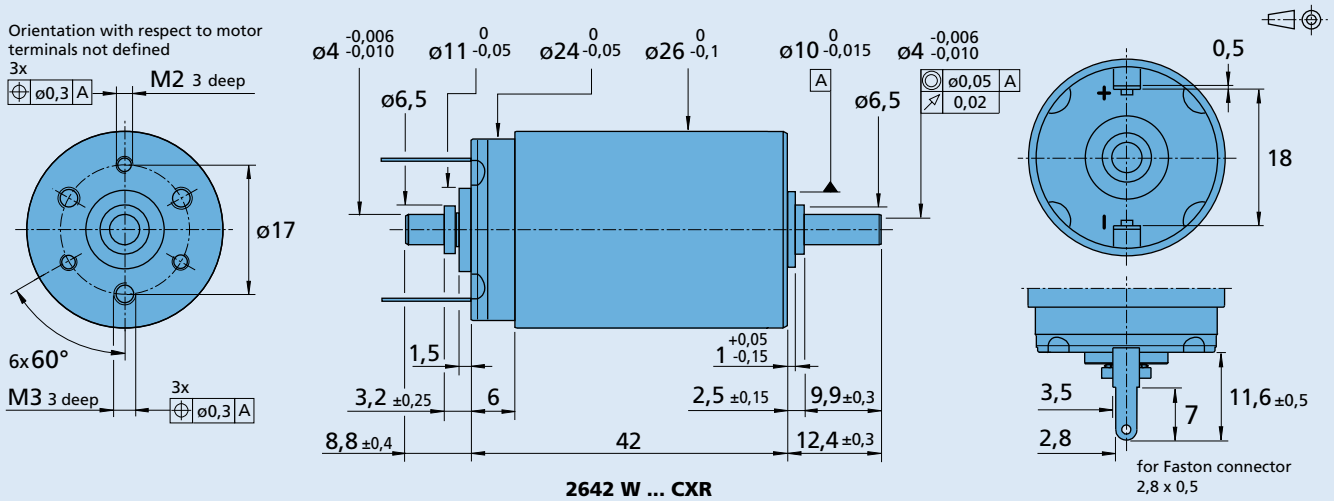
Dimensional drawing



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.

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