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.	$\eta_{max.}$		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 ø 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	µH
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	gcm²
16	Angular acceleration	$\alpha_{max.}$		120	120	120	120	120	·10^{3}rad/s²
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	≤		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}

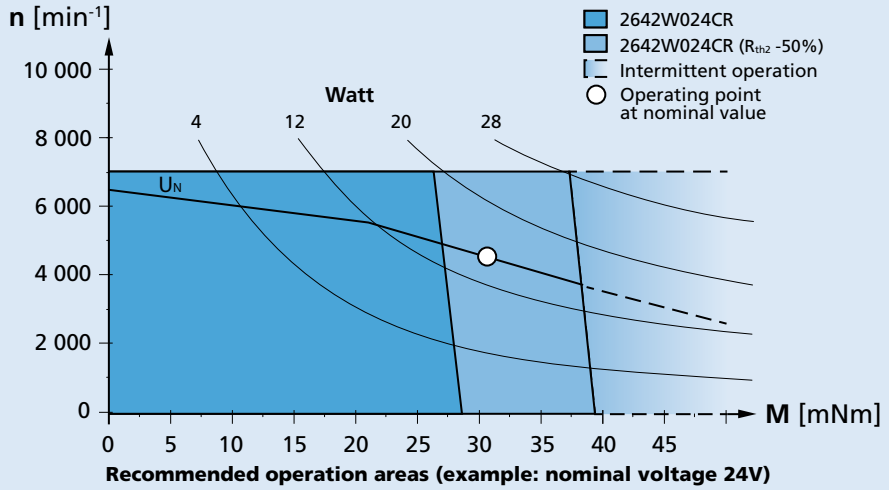
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

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).

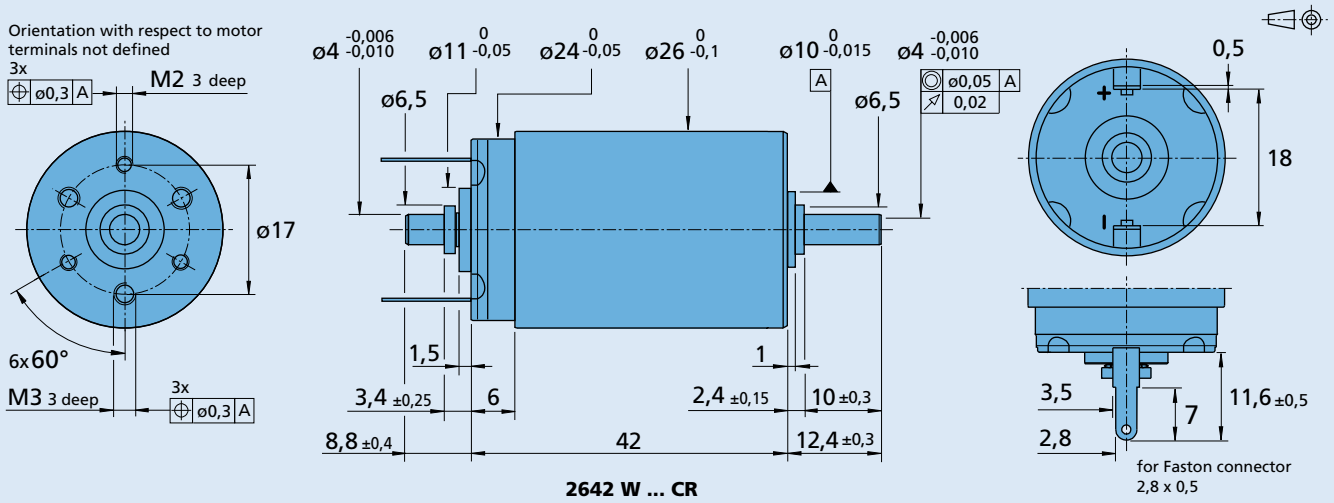
The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



Recommended operation areas (example: nominal voltage 24V)

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

Dimensional drawing



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 26/1R 30/1 30/1 S 32GPT 22L ... ML 22L ... SB 22L ... PB 32L ... TL 32L ... ML 32L ... SB 32L ... PB	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 MC 3001 B MC 3001 P MC 3603 S MC 5004 P MC 5005 S	MBZ To view our large range of accessory parts, please refer to the “Accessories” chapter.