

DC-Micromotors

Graphite Commutation

31,3 mNm
22,5 W

Series 2642 ... CR

Values at 22°C and nominal voltage		2642 W	012 CR	018 CR	024 CR	036 CR	048 CR	
Nominal voltage	U_N		12	18	24	36	48	V
Terminal resistance	R		1,45	3,1	5,79	13,6	23,8	Ω
Rotor inductance	L		130	300	539	1 230	2 200	μH
Efficiency, max.	η_{max}		74	76	76	76	77	%
No-load current, typ.	I_0		0,117	0,0772	0,0575	0,0381	0,0285	A
No-load speed	n_0		6 340	6 360	6 360	6 360	6 370	min^{-1}
Stall torque	M_H		136	148	142	137	141	mNm
Rotor inertia	J		11	12	11	11	11	gcm^2
Friction torque	M_R		2	2	2	2	2	mNm
Torque constant	k_M		17,4	26,5	35,5	53,6	71,7	mNm/A
Speed constant	k_n		548	361	269	178	133	min^{-1}/V
Slope of n-M curve	$\Delta n/\Delta M$		45,6	42,2	43,8	45,4	44,3	$\text{min}^{-1}/\text{mNm}$
Thermal resistance:								
– winding to housing	R_{th1}	4,9						K/W
– housing to ambient (external plastic flange)	$R_{\text{th2 p}}$	14						K/W
– housing to ambient (external metal flange)	$R_{\text{th2 m}}$	1,9						K/W
Thermal time constant:								
– winding	τ_{w1}	25						s
– housing (external plastic flange)	$\tau_{w2 p}$	650						s
– housing (external metal flange)	$\tau_{w2 m}$	89						s
Operating temperature range:								
– motor		-30 ... +125						°C
– winding, max. permissible		+155						°C
Shaft bearings		ball bearings, preloaded						
Shaft diameter		4						mm
Radial shaft load max.:								
– dynamic at 3 000 min^{-1} (3 mm from bearing)		20						N
Axial shaft load max.:								
– dynamic at 3 000 min^{-1}		2						N
– static (shaft unsupported)		20						N
– static (shaft supported)		1 400						N
Shaft play, max.:								
– radial		0,015						mm
– axial		0						mm
Speed up to	n_{max}	7 000						min^{-1}
Number of pole pairs		1						
Mass		114						g
Housing material		steel, nickel plated						
Magnet material		NdFeB						
Rated values for continuous operation								
Rated torque	M_N		29,7	31,3	30,8	30,5	30,9	mNm
Rated current (thermal limit)	I_N		2,13	1,47	1,08	0,709	0,538	A
Rated speed	n_N		4 360	4 450	4 400	4 340	4 370	min^{-1}

Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The $R_{\text{th2 p}}$ value has been reduced by 50%.

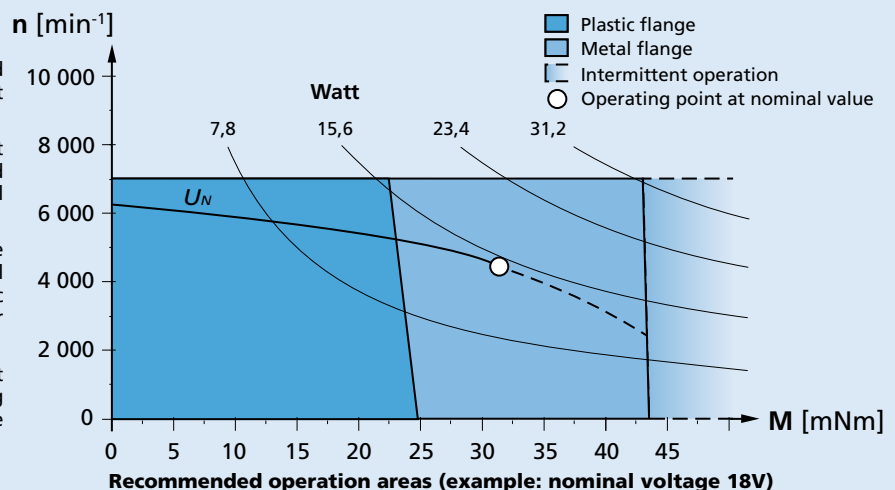
Note:

The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

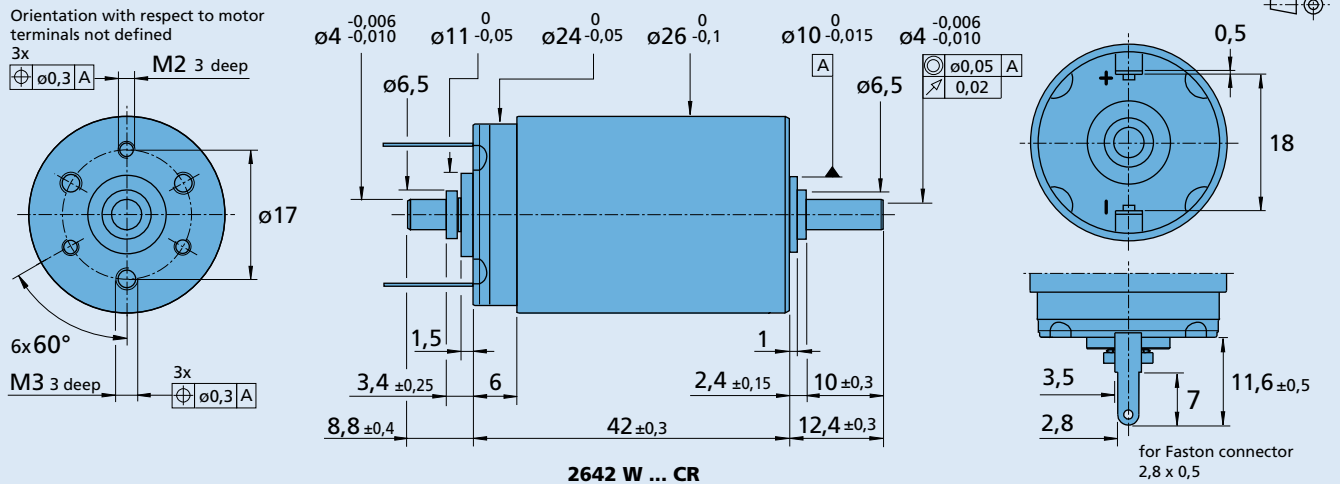
The diagram shows the motor in different conditions of thermal coupling, i.e. mounted respectively on a plastic flange and a metal flange.

The nominal voltage (U_N) curve shows, up to the thermal limit, the operating point at nominal voltage for the motor mounted on a plastic flange. Higher torque can be achieved by further reducing the thermal resistance.

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



Options

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

[illegible]

Product combination
1. Product A and Product B: This combination is highly popular among customers, leading to a significant increase in sales volume. 2. Product C and Product D: This combination is also popular, but it requires more inventory space and is more expensive to produce. 3. Product E and Product F: This combination is less popular, but it has a higher profit margin and is easier to produce. 4. Product G and Product H: This combination is the least popular, but it has a low production cost and is easy to produce.

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
22GPT 22GPT HT 26A 26/1R 30/1 30/1 S 32GPT 32GPT HT 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 3602 B MC 3603 S MC 3606 B MC 5004 P MC 5005 S	MBZ To view our large range of accessory parts, please refer to the “Accessories” chapter.