DC-Micromotors

Graphite Commutation

20,5 mNm

21,7 W

Series 2342 ... CR

Values at 22°C and nominal voltage	2342 S	006 CR	012 CR	018 CR	024 CR	036 CR	048 CR	
Nominal voltage	U_N	6	12	18	24	36	48	V
Terminal resistance	R	0,362	1,93	4,14	7,14	15,9	31,2	Ω
Rotor inductance	L	13,1	69,1	142	264	569	1 130	µH
Efficiency, max.	$\eta_{max.}$	75	77	78	79	79	80	%
No-load current, typ.	I_0	0,157	0,0694	0,0479	0,0351	0,024	0,0163	A
No-load speed	n_0	8 310	7 530	7 990	7 870	8 110	7 690	min^{-1}
Stall torque	M_H	95,6	86,1	87,7	93,2	92,9	89	mNm
Rotor inertia	J	5,6	5,7	6,2	5,8	6,5	6	gcm²
Friction torque	M_R	0,98	1	0,99	0,99	0,99	0,95	mNm
Torque constant	k_M	6,36	14,6	21	28,6	42	59,1	mNm/A
Speed constant	k_n	1 500	653	455	334	228	162	min^{-1}/V
Slope of n-M curve	$\Delta n/\Delta M$	85,5	86,2	89,8	83,3	86,1	85,3	min^{-1}/mNm
Thermal resistance:								
– winding to housing	R_{th1}	5,6						K/W
– housing to ambient (external plastic flange)	$R_{th2\,p}$	15						K/W
– housing to ambient (external metal flange)	$R_{th2\,m}$	2,1						K/W
Thermal time constant:								
– winding	τ_{w1}	12						s
– housing (external plastic flange)	$\tau_{w2\,p}$	580						s
– housing (external metal flange)	$\tau_{w2\,m}$	78						s
Operating temperature range:								
– motor		-30 ... +100						°C
– winding, max. permissible		+125						°C
Shaft bearings		ball bearings, preloaded						
Shaft diameter		3						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)		900						N
Shaft play, max.:								
– radial		0,015						mm
– axial		0						mm
Speed up to	$n_{max.}$	11 000						min^{-1}
Number of pole pairs		1						
Mass		88						g
Housing material		steel, nickel plated						
Magnet material		NdFeB						
Rated values for continuous operation								
Rated torque	M_N	16,6	19,8	19,6	20,5	20,2	20,5	mNm
Rated current (thermal limit)	I_N	3	1,6	1,11	0,846	0,57	0,409	A
Rated speed	n_N	6 700	5 270	5 690	5 660	5 850	5 390	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 50%.

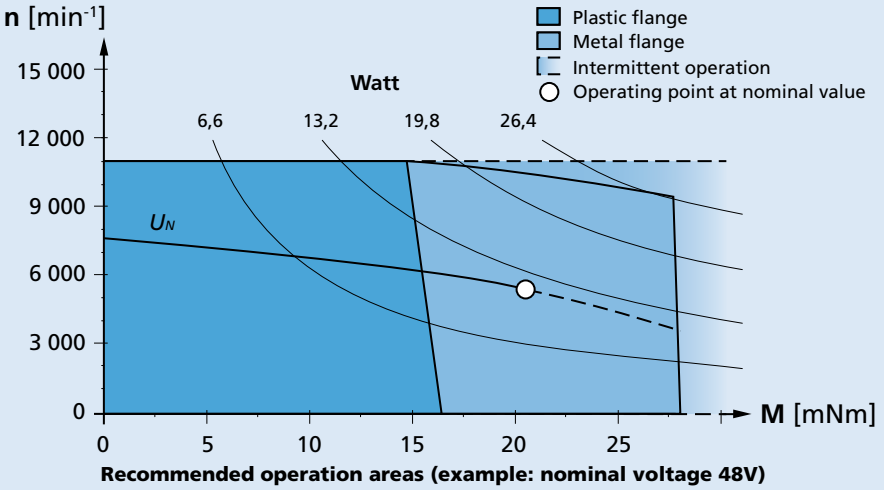
Note:

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.

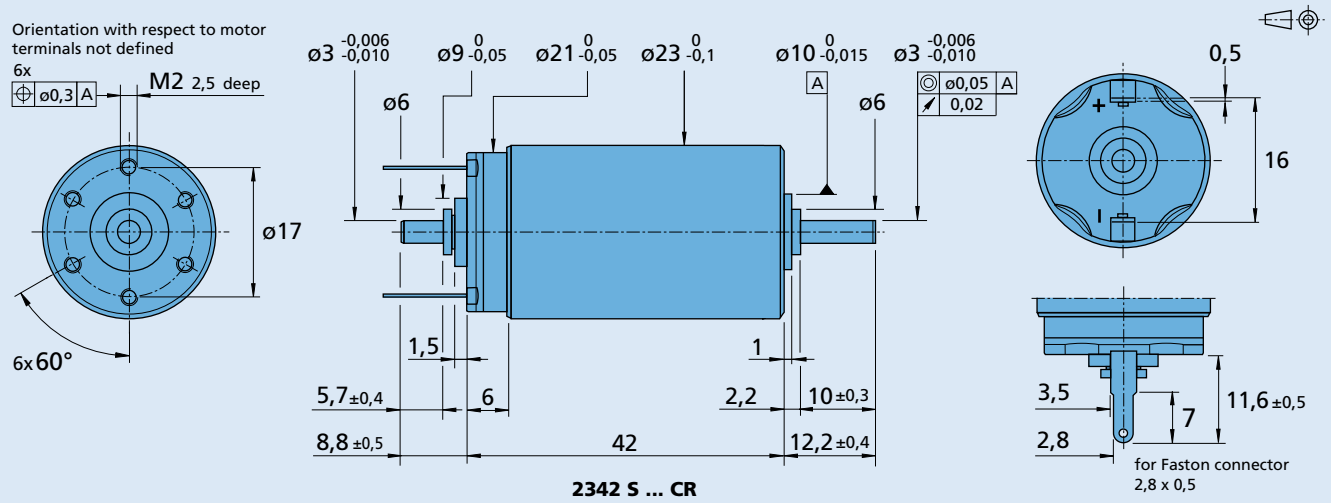
Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



Recommended operation areas (example: nominal voltage 48V)

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

Dimensional drawing



2342 S ... CR

Options

Example product designation: **2342S012CR-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
X188	Brakes combination	For combination with Brakes MBZ

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
22GPT	IE3-1024	SC 2402 P	MBZ
22/7	IE3-1024 L	SC 2804 S	
23/1	IERS3-500	SC 5004 P	To view our large range of accessory parts, please refer to the “Accessories” chapter.
26A	IERS3-500 L	SC 5008 S	
26/1R	IER3-10000	MC 3001 B	
30/1	IER3-10000 L	MC 3001 P	
30/1 S		MC 3603 S	
22L ... ML		MC 5004 P	
22L ... SB		MC 5005 S	
22L ... PB			

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