FAULHABER

73,1 mNm
52,2 W

DC-Micromotors
Graphite Commutation

Series 3257 ... CR

Values at 22°C and nominal voltage	3257 G		012 CR	018 CR	024 CR	036 CR	048 CR	
Nominal voltage	U_N		12	18	24	36	48	V
Terminal resistance	R		0,407	0,837	1,63	4,15	6,56	Ω
Rotor inductance	L		68,6	142	274	697	1 100	µH
Efficiency, max.	$\eta_{max.}$		79	80	80	80	81	%
No-load current, typ.	I_0		0,265	0,185	0,133	0,083	0,0663	A
No-load speed	n_0		5 880	6 240	6 010	5 680	6 070	min⁻¹
Stall torque	M_H		536	570	548	517	549	mNm
Rotor inertia	J		42	41	41	42	42	gcm²
Friction torque	M_R		4,9	4,9	4,9	4,9	4,9	mNm
Torque constant	k_M		19,1	27,5	38,3	61,1	76,6	mNm/A
Speed constant	k_n		499	347	250	157	125	min⁻¹/V
Slope of n-M curve	$\Delta n/\Delta M$		10,6	10,6	10,6	10,6	10,7	min⁻¹/mNm
Thermal resistance:								
– winding to housing	R_{th1}	3,4						K/W
– housing to ambient (external plastic flange)	$R_{th2\,p}$	9,8						K/W
– housing to ambient (external metal flange)	$R_{th2\,m}$	1,5						K/W
Thermal time constant:								
– winding	τ_{w1}	36						s
– housing (external plastic flange)	$\tau_{w2\,p}$	970						s
– housing (external metal flange)	$\tau_{w2\,m}$	150						s
Operating temperature range:								
– motor		-30 ... +125						°C
– winding, max. permissible		+155						°C
Shaft bearings		ball bearings, preloaded						
Shaft diameter		5						mm
Radial shaft load max.:								
– dynamic at 3 000 min⁻¹ (4,5 mm from mounting flange)		50						N
Axial shaft load max.:								
– dynamic at 3 000 min⁻¹		5						N
– static (shaft unsupported)		50						N
– static (shaft supported)		2 000						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		242						g
Housing material		steel, nickel plated						
Magnet material		NdFeB						
Rated values for continuous operation								
Rated torque	M_N		63,4	71,3	72,2	73,1	72,8	mNm
Rated current (thermal limit)	I_N		4	3,24	2,36	1,5	1,19	A
Rated speed	n_N		5 170	5 430	5 160	4 780	5 210	min⁻¹

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

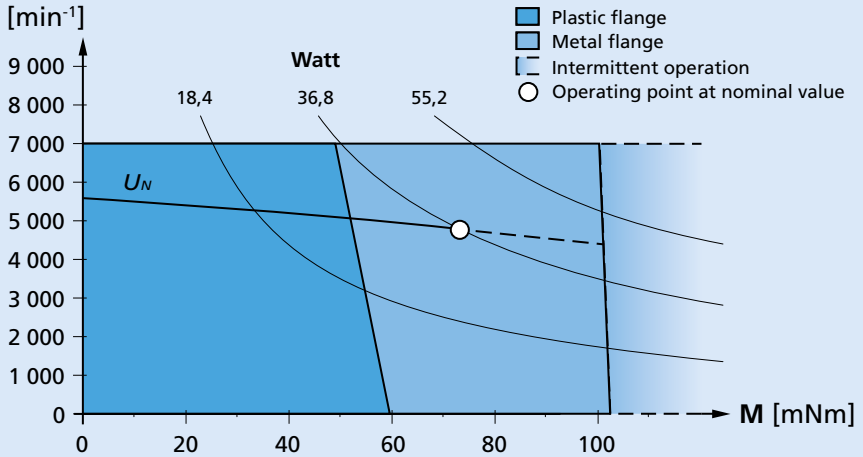
Note:

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.



Recommended operation areas (example: nominal voltage 36V)

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

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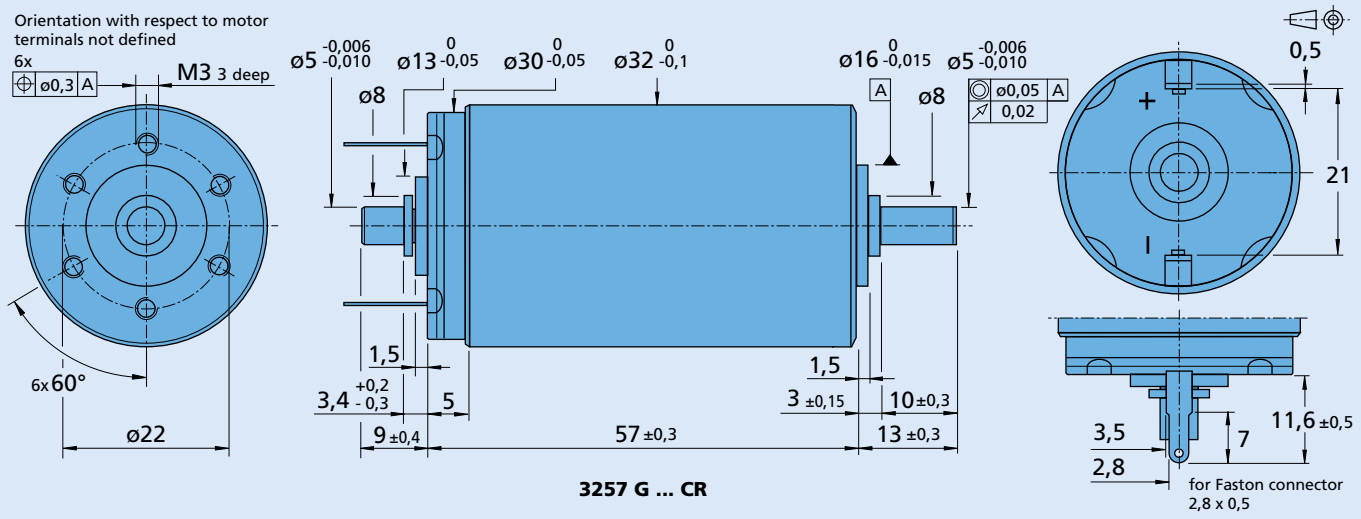
Dimensional drawing



3257 G ... CR

Options

Example product designation: **3257G012CR-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
32GPT 32GPT LN 32GPT HT 32/3R 38/1 38/1 S 38/2 38/2 S 42GPT 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 3602 B MC 3603 S MC 3606 B MC 5004 P MC 5005 S MC 5010 S	MBZ To view our large range of accessory parts, please refer to the “Accessories” chapter.

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