NEW

FAULHABER

DC-Micromotors

Graphite Commutation

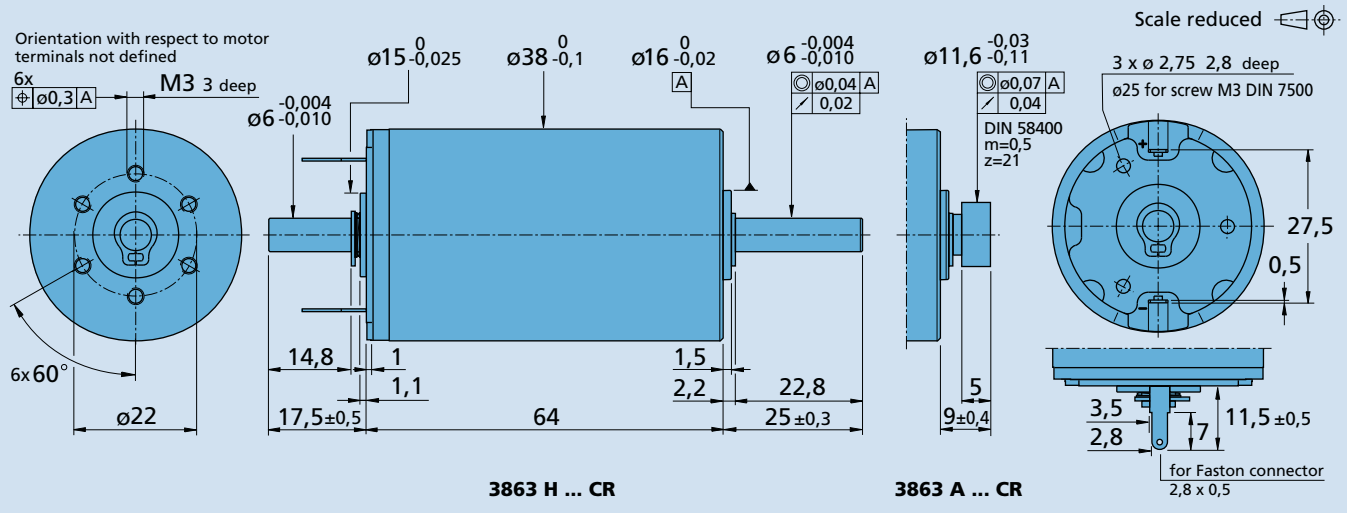
150 mNm

For combination with
Gearheads:
38/1(S), 38/2(S), 38A, 44/1
Encoders:
HEDL 5540, HEDM 5500, HEDS 5500, HEDS 5540, IE2-1024, IE2-16, IE3-1024(L)

Series 3863 ... CR

		3863 H		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		0,16	0,36	0,64	1,55	2,58	Ω
3	Output power	$P_{2\ max.}$		205	211	214	201	217	W
4	Efficiency, max.	$\eta_{max.}$		83	84	85	86	86	%
5	No-load speed	n_0		5 600	5 900	5 800	5 800	5 800	rpm
6	No-load current (with shaft ø 6 mm)	I_0		0,335	0,232	0,168	0,112	0,084	A
7	Stall torque	M_H		1 424	1 394	1 455	1 363	1 461	mNm
8	Friction torque	M_R		6,5	6,5	6,5	6,5	6,5	mNm
9	Speed constant	k_n		480	332	240	160	120	rpm/V
10	Back-EMF constant	k_E		2,08	3,01	4,17	6,25	8,33	mV/rpm
11	Torque constant	k_M		19,9	28,8	39,8	59,8	79,7	mNm/A
12	Current constant	k_I		0,503	0,035	0,025	0,017	0,013	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$		3,9	4,1	3,9	4,1	3,9	rpm/mNm
14	Rotor inductance	L		45	90	180	400	700	µH
15	Mechanical time constant	τ_m		4,8	4,8	4,8	4,8	4,7	ms
16	Rotor inertia	J		120	110	120	110	115	gcm²
17	Angular acceleration	$\alpha_{max.}$		119	127	121	124	127	$\cdot 10^3$rad/s²
18	Thermal resistance	$R_{th\,1}$ / $R_{th\,2}$		2,5 / 6					K/W
19	Thermal time constant	τ_{w1} / τ_{w2}		50 / 900					s
20	Operating temperature range:								
	– motor			-30 ... +125					°C
	– rotor, max. permissible			+155					°C
21	Shaft bearings			ball bearings, preloaded					
22	Shaft load max.:								
	– with shaft diameter			6					mm
	– radial at 3 000 rpm (3 mm from bearing)			60					N
	– axial at 3 000 rpm			6					N
	– axial at standstill			50					N
23	Shaft play								
	– radial	≤		0,015					mm
	– axial	=		0					mm
24	Housing material			steel, black coated					
25	Weight			390					g
26	Direction of rotation			clockwise, viewed from the front face					
Recommended values - mathematically independent of each other									
27	Speed up to	$n_{e\ max.}$		8 000	8 000	8 000	8 000	8 000	rpm
28	Torque up to [1]	$M_{e\ max.}$		120	150	157	153	159	mNm
29	Current up to (thermal limits) [1]	$I_{e\ max.}$		6,9	6,3	4,8	3,1	2,4	A

[1] thermal resistance $R_{th\,2}$ by 55% reduced



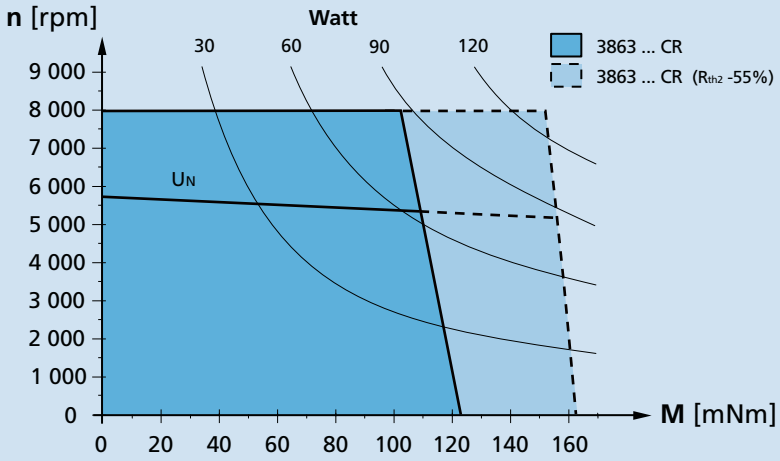
Note:

The left portion of the diagram indicates the recommended area of motor operation for continuous duty in a thermally insulated condition (not mounted) at room temperature 22°C.

The right portion of the diagram indicates the possible area of operation if the motor is cooled (ex. R_{th2} -55%) by mounting or ambient air flow conditions.

The diagram indicates the area of continuous operation for maximum lifetime performance of the motor. The motor can be driven intermittently outside of the recommended area of operation. Please consult your local product representative for more information.

The nominal voltage curve (U_N) shows the operating points at nominal voltage. Any points of operation above the curve will require a higher operating voltage, points below will require less voltage.



Recommended areas for continuous operation