

DC-Micromotors

131 mNm

Graphite Commutation

Series 3863 ... CR

110 W

Val	ues at 22°C and nominal voltage	3863 H		012 CR	018 CR	024 CR	036 CR	048 CR	
1	Nominal voltage	UN		12	18	24	36	48	V
2	Terminal resistance	R		0,16	0,36	0,64	1,55	2,58	Ω
3	Efficiency, max.	$\eta_{\scriptscriptstyle max.}$		83	84	85	86	86	%
4	No-load speed	n _o		5 600	5 900	5 800	5 800	5 800	min ⁻¹
5	No-load current, typ. (with shaft ø 6 mm)	l o		0,335	0,232	0,168	0,112	0,084	Α
6	Stall torque	Мн		1 424	1 394	1 455	1 363	1 461	mNm
7	Friction torque	M_R		6,5	6,5	6,5	6,5	6,5	mNm
8	Speed constant	K n		480	332	240	160	120	min ⁻¹ /V
9	Back-EMF constant	K E		2,08	3,01	4,17	6,25	8,33	mV/min⁻¹
10	Torque constant	k м		19,9	28,8	39,8	59,8	79,7	mNm/A
11	Current constant	k ı		0,05	0,035	0,025	0,017	0,013	A/mNm
12	Slope of n-M curve	Δ n/ Δ M		3,9	4,1	3,9	4,1	3,9	min-1/mNm
13	Rotor inductance	L		45	90	180	400	700	μH
14	Mechanical time constant	$ au_m$		4,8	4,8	4,8	4,8	4,7	ms
15	Rotor inertia	J		120	110	120	110	115	gcm²
16	Angular acceleration	lphamax.		119	127	121	124	127	·10³rad/s²
47	- 1	2 / 2	25/6						14004
17	Thermal resistance	Rth1 / Rth2	2,5 / 6						K/W
18			50 / 900						S
19	Operating temperature range:		20 42	-					0.5
	- motor		-30 +125						°C
20	– winding, max. permissible			+155					
20		ball bearings, preloaded							
21	Shaft load max.:		_						mm
	 with shaft diameter radial at 3 000 min-1 (3 mm from bearing) 			6					
				60					
	- axial at 3 000 min ⁻¹		6 50						N N
22	– axial at standstill			OU					
22	22 Shaft play:								

Rated values for continuous operation								
29 Rated torque	MΝ		69	99	129	126	131	mNm
30 Rated current (thermal limit)	I N		4	4	4	2,6	2	Α
31 Rated speed	n N		5 430	5 660	5 510	5 500	5 550	min ⁻¹

steel, black coated

clockwise, viewed from the front face

0,015

390

7 000

NdFeB

nmax.

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:

– radial

- axial

26

23 Housing material24 Mass

Speed up to

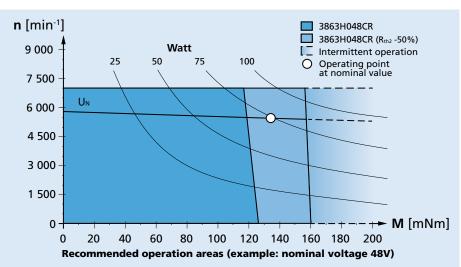
25 Direction of rotation

Number of pole pairsMagnet material

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 (Rth2 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.

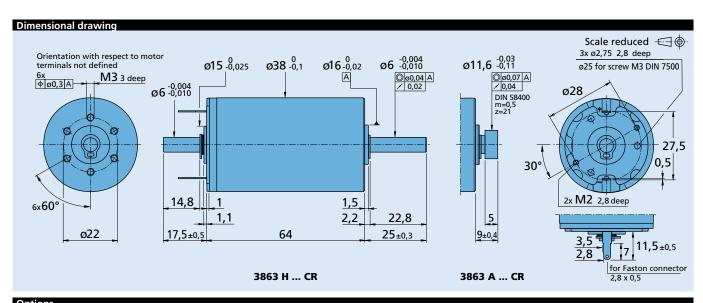


mm

mm

min-1





Options								
Example pr	Example product designation: 3863H012CR-158							
Option	Туре	Description						
U Single Leads For motors with single leads (PTFE), length 160 mm, red (+) / black (-)								
158 Shaft end No second shaft end								
2016 Encoder combination Motor with rear end shaft for combination with Encoder IE3, IERS3 and IER3								

Prod	luct combination			
	ision Gearheads / d Screws	Encoders	Drive Electronics	Cables / Accessories
38A 38/1 38/1 38/2 38/2 44/1	S S	IE3-1024 IE3-1024 L IERS3-500 IERS3-500 L IER3-10000 IER3-10000 L	SC 2804 SC 5004 SC 5008 MC 5010 MCDC 3006	MBZ To view our large range of accessory parts, please refer to the "Accessories" chapter.