

DC-Micromotors

224 mNm

Graphite Commutation

160 W

	eries 3890 CR							
	ues at 22°C and nominal voltage	3890 H		018 CR	024 CR	036 CR	048 CR	
	Nominal voltage	UN		18	24	36	48	V
	Terminal resistance	R		0,21	0,36	0,78	1,38	Ω
3		η max.		86	87	87	88	%
	No-load speed	n o		5 400	5 400	5 400	5 500	min ⁻¹
5	No-load current, typ. (with shaft ø 6 mm)	I o		0,323	0,242	0,161	0,121	Α
6	Stall torque	Мн		2 642	2 760	2 887	2 911	mNm
7	Friction torque	M_R		10	10	10	10	mNm
8	Speed constant	k n		300	225	150	112	min ⁻¹ /V
9	Back-EMF constant	Kε		3,332	4,443	6,665	8,887	mV/min ⁻¹
10	Torque constant	k м		31,82	42,43	63,65	84,86	mNm/A
11	Current constant	k ı		0,031	0,024	0,016	0,012	A/mNm
12	Slope of n-M curve	$\Delta n I \Delta M$		2	1,9	1,8	1,8	min-1/mNm
13	Rotor inductance	L		60	110	240	430	μH
14	Mechanical time constant	$ au_m$		3,4	3,3	3,3	3,3	ms
15	Rotor inertia	J		164	164	171	171	qcm²
	Angular acceleration	α_{max}		161	168	169	170	·10³rad/s²
. •	7 m. garar accereration	Comun.					1.70	10 10075
17	Thermal resistance	Rth1 / Rth2	1,9 / 4,2					K/W
	Thermal time constant	τ_{w_1}/τ_{w_2}	58 / 910					S
	Operating temperature range:	CW11 CW2	307 310					,
כו	- motor		-30 +125					°C
	– winding, max. permissible		+155					°C
20	Shaft bearings		ball bearings, preloaded				_	
	Shaft load max.:							
21	– with shaft diameter		6					mm
	- radial at 3 000 min ⁻¹ (3 mm from bearing)		60					N
	- axial at 3 000 min ⁻¹	6					N	
	– axial at 5 000 mm ·		50					N
22			50					IN
22	Shaft play:		0.045					
	– radial	≤	0,015					mm
22	– axial	=	0					mm
	Housing material		steel, black coated					
	Mass							g
	Direction of rotation		clockwise, viewed from the front face					
	Speed up to	n max.						min ⁻¹
	Number of pole pairs		1					
28	Magnet material		NdFeB					
	ted values for continuous operation							
	Rated torque	Mn		139	182	222	224	mNm
30	Rated current (thermal limit)	IN		5	5	4,3	3,2	Α
31	Rated speed	nn		5 190	5 240	5 350	5 360	min ⁻¹
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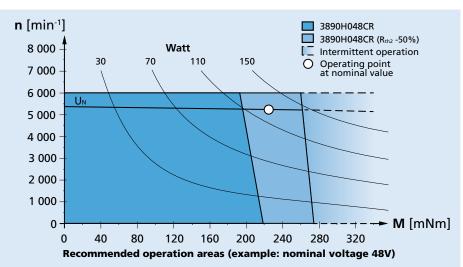
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The Rth2 value has been reduced by 25%.

Note:

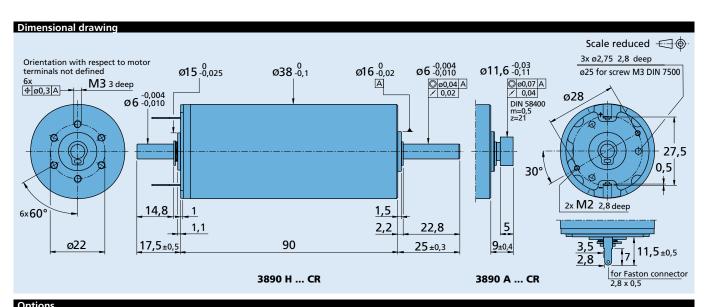
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in 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.







Options									
Example product designation: 3890H024CR-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							
1387	Brakes combination	For combination with Brakes MBZ							

Product combination											
Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories								
38/1 38/1 S 38/2 38/2 S 42GPT 44/1	IE3-1024 IE3-1024 L IERS3-500 IERS3-500 L IER3-10000 IER3-10000 L	SC 2804 S SC 5004 P SC 5008 S MC 5010 S	MBZ To view our large range of accessory parts, please refer to the "Accessories" chapter.								