

Stepper Motors

180 mNm

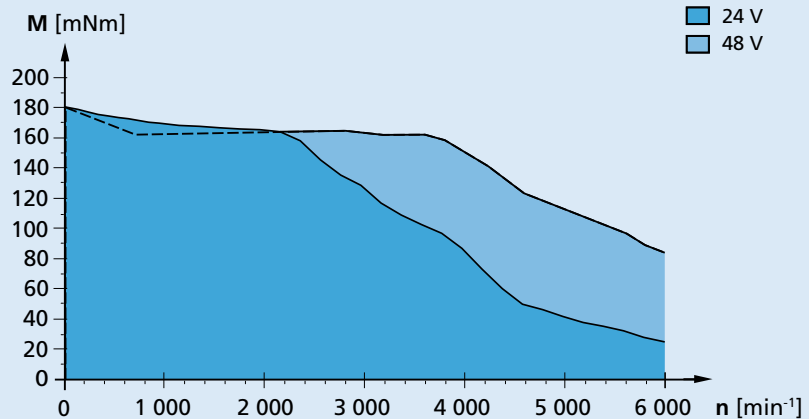
Two phase with Disc Magnet,
100 steps per revolution, microstepping motor

Series DM52100R

Values at 20°C	DM52100R	5300		2000		
		Parallel	Serial	Parallel	Serial	
Connection						
Nominal current per phase (1 phases ON)		5,3	2,6	2	1	A
Boosted current per phase (1 phases ON)		12,2	6,1	4,6	2,3	A
Phase resistance		0,35	1,4	2,2	8,8	Ω
Phase inductance (1 kHz)		0,7	2,8	5	20	mH
Holding torque at nominal current (1 phases ON)		180	180	180	180	mNm
Holding torque at boosted current		400	400	400	400	mNm
Residual torque, typ.		10	10	10	10	mNm
Back-EMF amplitude		2,15	4,3	5,65	11,4	V/k step/s
Electrical time constant	2					ms
Rotor inertia	9,4·10 ⁻⁷					kgm ²
Step angle (full step)	3,6					°
Angular accuracy	±6					%
Angular acceleration, max.	425·10 ³					rad/s ²
Speed up to	5 000					min ⁻¹
Resonance frequency (at no load)	70					Hz
Thermal resistance	7,3					K/W
Thermal time constant	18					min
Operating temperature range	-20 ... +50					°C
Winding temperature, max.	+130					°C
Shaft bearings	ball bearings (Bearing code: 2R)					
Shaft load max.:						
– with shaft diameter	5					mm
– radial at 5 000 min ⁻¹ (5 mm from bearing)	54					N
– axial at 5 000 min ⁻¹	12					N
– axial at standstill	167					N
Shaft play:						
– radial	0,015					mm
– axial	0					mm
Housing material	Polyphenylensulfid (PPS)					
Mass	250					g
Magnet material	NdFeB					

Driver settings

Curve measured with a load inertia of $3,96 \cdot 10^{-5} \text{ kgm}^2$ on the DM52100R2R530000 motor using a Technosoft IDS640 controller in sin/cos control mode, 256 micro-steps per full step and a peak phase current of 5,3A.



Possible operation areas

