Stepper Motors 0,25 mNm

Two phase with Disc Magnet,
20 steps per revolution

Series DM0620

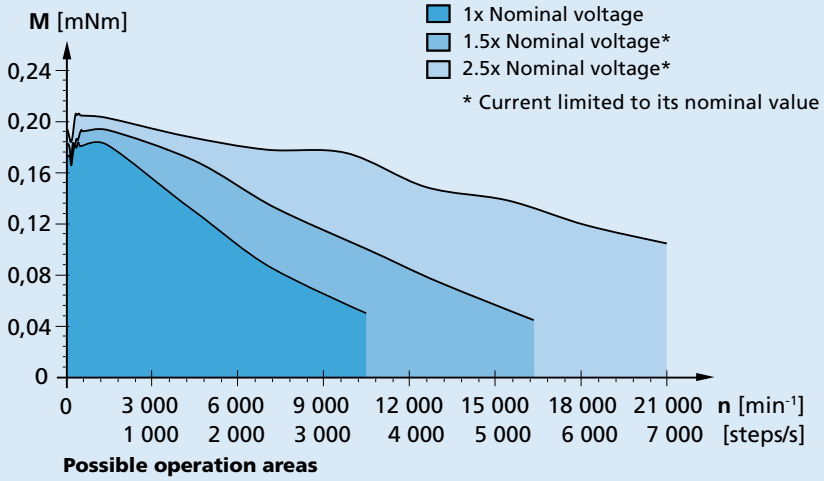
Values at 20°C	DM0620	0130	0080	0040	
Nominal current per phase (both phases ON)		0,13	0,08	0,04	A
Boosted current per phase (both phases ON)		0,26	0,16	0,08	A
Nominal voltage per phase (both phases ON)		2	3	6	V
Phase resistance		13,6	30	120	Ω
Phase inductance (1 kHz)		2	4,5	18,5	mH
Holding torque (at nominal current in both phases)		0,25	0,25	0,25	mNm
Holding torque at boosted current		0,39	0,39	0,39	mNm
Residual torque, typ.		0,03	0,03	0,03	mNm
Back-EMF amplitude		0,53	0,83	1,6	V/k step/s
Electrical time constant	0,15				ms
Rotor inertia	$0{,}5 \cdot 10^{-9}$				kgm²
Step angle (full step)	18				°
Angular accuracy	±5				%
Angular acceleration, max.	$780 \cdot 10^{3}$				rad/s²
Resonance frequency (at no load)	110				Hz
Thermal resistance	15 / 96,6				K/W
Thermal time constant	3,2 / 120				s
Operating temperature range	-35 ... +70				°C
Winding temperature, max.	+130				°C
Shaft bearings [1] [2]	sintered bearing (Bearing code: SB)	ball bearings, preloaded (Bearing code: 2R)			
Shaft load max.:					
– with shaft diameter	1	1			mm
– radial at 5 000 min^{-1} (3 mm from bearing)	0,3	3			N
– axial at 5 000 min^{-1}	0,5	0,5			N
– axial at standstill	0,5	5,8			N
Shaft play:					
– radial	0,02	0,012			mm
– axial	0	0			mm
Housing material	aluminium, black anodized				
Mass	1,1				g
Magnet material	NdFeB				

[1] Special lubricant options available on request.
[2] 2 preloaded ball bearings available on request for vacuum / low temperature (bearing code: RC).

Driver settings

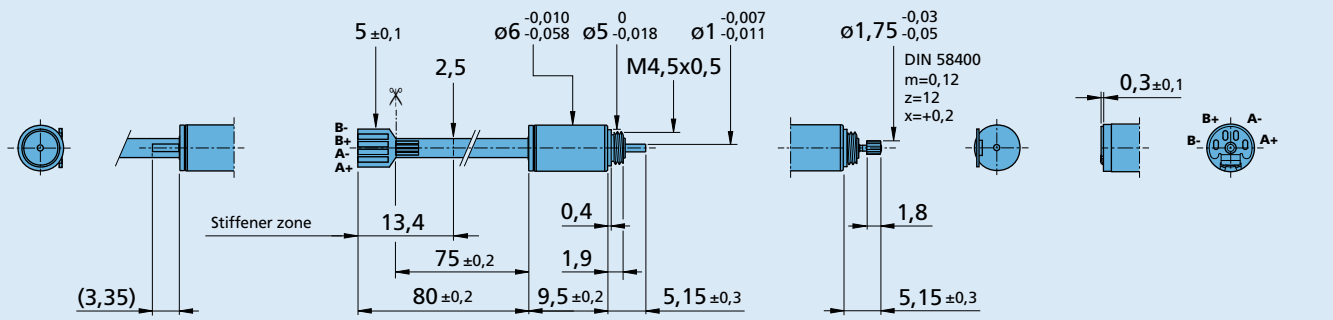
Relevant for 2 phases ON only.
On PWM drivers or chopper (current mode), the current is set to the nominal value and the supply voltage is typically 1.5 to 2.5x higher than the nominal voltage.

Curves measured with a load inertia of $3 \cdot 10^{-9}$ kgm², in half-step mode for the "1 x nominal voltage" curve, in 1/4 micro-stepping mode for the other curves.



Possible operation areas

Dimensional drawing



Recommended connectors
Pitch: 1mm - FPC/FFC, 4 poles
JST 04FMN-SMT-A-TF or similar.
Pitch: 0,5mm - FPC/FFC, 4 poles
Molex 52745 or similar.

Flex PCB
Thickness: 0,15 mm. Bending radius 3 mm min.
Thickness of pads area (stiffener)
0,3 mm (± 0,05), not flexible

Flex PCB for cables
Not available with double output shaft executions.

DM0620 for Gearhead 06/1

Options and connection information

Example product designation: **DM06202R008011**

Motor executions front shaft	Motor executions double shaft	PCB type	Front shaft description
31	30	Flex PCB 80mm p=1mm	Plain shaft, ø1 mm
35	36	Flex PCB 80mm p=1mm	With pinion for gearheads 06/1
76	75	Flex PCB 80mm p=1mm	Plain shaft, for lead screw M1.2
78	77	Flex PCB 80mm p=1mm	Plain shaft, for lead screw M1.6
11		Flex PCB for cable	Plain shaft, ø1 mm
15		Flex PCB for cable	With pinion for gearheads 06/1
26		Flex PCB for cable	Plain shaft, for lead screw M1.2
28		Flex PCB for cable	Plain shaft, for lead screw M1.6

Connection

No.	Function
1	Phase A +
2	Phase A -
3	Phase B +
4	Phase B -

Note : Standard version is delivered with a flex PCB of 80mm that the user can cut himself as indicated on the drawing above. A version with pre-cut PCB is available on request.

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
06/1 M1,2 x 0,25 x L1 M1,6 x 0,35 x L1		MCST 3601	List available on request