

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	0,5·10 ⁻⁹				kgm ²
Step angle (full step)	18				°
Angular accuracy	±5				%
Angular acceleration, max.	780·10 ³				rad/s ²
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				

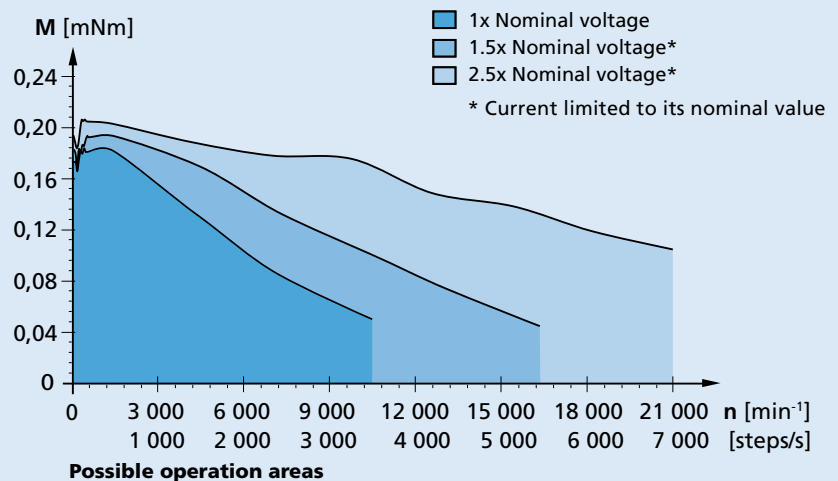
¹⁾ Special lubricant options available on request.

²⁾ 2 preloaded ball bearings available on request for vacuum / low temperature (bearing code: RC).

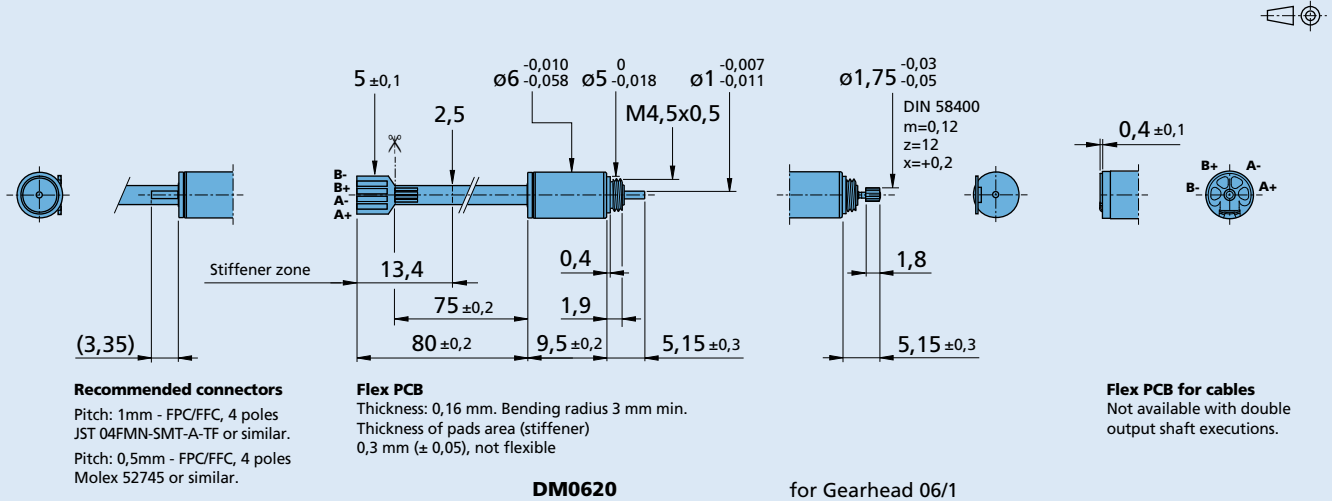
Driver settings

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 3·10⁻⁹ kgm², in half-step mode for the "1 x nominal voltage" curve, in 1/4 micro-stepping mode for the other curves.



Dimensional drawing



Options and connection information

Example product designation: **DM06202R008011**

Motor executions		PCB type	Front shaft description	Connection	
front shaft	double shaft			No.	Function
31	30	Flex PCB 80mm p=1mm	Plain shaft, $\phi 1$ mm	1	Phase A +
35	36	Flex PCB 80mm p=1mm	With pinion for gearheads 06/1	2	Phase A -
76	75	Flex PCB 80mm p=1mm	Plain shaft, for lead screw M1.2	3	Phase B +
78	77	Flex PCB 80mm p=1mm	Plain shaft, for lead screw M1.6	4	Phase B -
11		Flex PCB for cable	Plain shaft, $\phi 1$ 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		

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.

Option	Description
Single leads	PTFE single leads length 50/100/150/300 mm
Connector	PVC single leads length 50/100/150/300 mm or ETFE/PTFE single leads length 150 mm with connector Molex 51021-0400

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 06L ... SL 06L ... HL		MCST 3601	Detailed cable options can be found in Application Note AN 010 to be downloaded on FAULHABER website.