

Stepper Motors

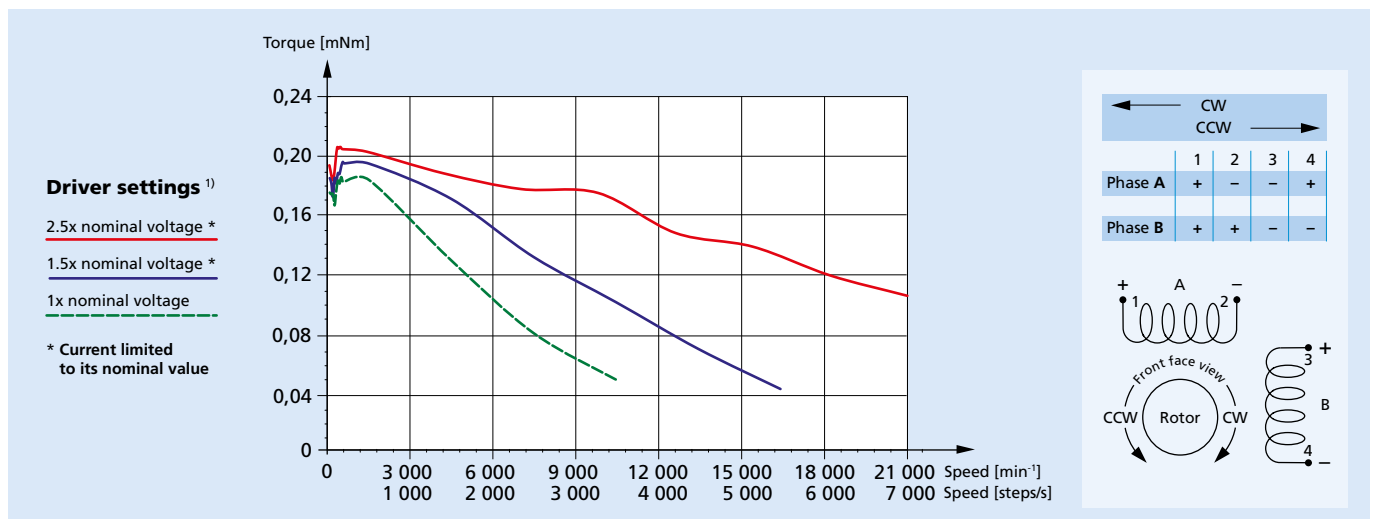
0,25 mNm

Two phase, 20 steps per revolution
PREClstep® Technology

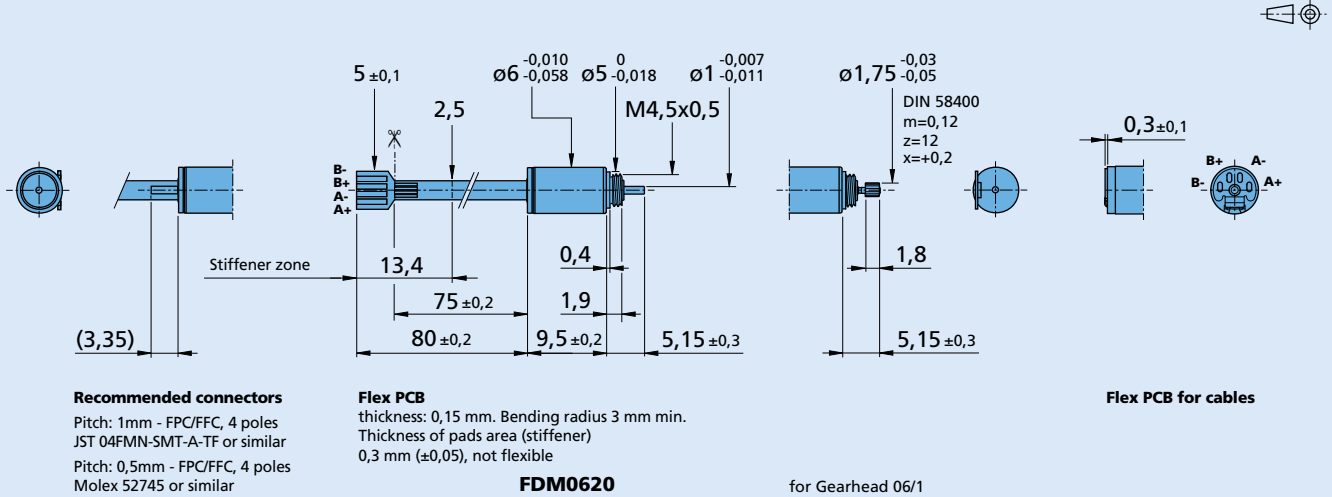
FDM0620-ww-ee

ww =		V2		V3		V6		Drive mode	
		Current	Voltage	Current	Voltage	Current	Voltage		
1	Nominal current per phase (both phases ON)	0,13	–	0,08	–	0,04	–	A	
2	Nominal voltage per phase (both phases ON)	–	2	–	3	–	6	V DC	
3	Phase resistance (at 20°C)	13,6		30		120		Ω	
4	Phase inductance (1kHz)	2		4,5		18,5		mH	
5	Back-EMF amplitude	0,53		0,83		1,6		V/k step/s	
6	Holding torque (at nominal current in both phases)	0,25						mNm	
7	Holding torque (at twice the nominal current)	0,39						mNm	
8	Step angle (full step)	18						degree	
9	Angular accuracy	± 5						% of full step	
10	Residual torque, max.	0,06						mNm	
11	Rotor inertia	0,5						·10 ⁻⁹ kgm ²	
12	Resonance frequency (at no load)	60						Hz	
13	Electrical time constant	0,15						ms	
14	Ambient temperature range	–35 ... +70						°C	
15	Winding temperature tolerated, max.	130						°C	
16	Thermal resistance	<i>R_{th1} / R_{th2}</i>	15 / 96,6						°C/W
17	Thermal time constant	<i>τ_{w1} / τ_{w2}</i>	3,2 / 120						s
18	Shaft bearings	Sintered sleeve bearing (standard)		ball bearings, preloaded (optional)					
19	Shaft load, max.:								
	– radial (3 mm from bearing)	0,3		3,0				N	
	– axial	0,5		0,5				N	
20	Shaft play, max.:								
	– radial (0,2N)	20		12				μm	
	– axial (0,2N)	~0		~0				μm	
21	Mass	1,1						g	

¹⁾ On PWM drivers or chopper (current mode), the current is set to the nominal value and the supply voltage is typically 1 to 3x higher than the nominal voltage. Microstepping is recommended below 200 steps/s. Curves measured with a load inertia of 3.10-9 kgm².



Dimensional drawing



Combinations

Drive Electronics	Encoders	Cables	Gearheads / Lead screws
MCST3601			
		Complete list available on request	06/1 Lead screws M1,2 - M1,6

Ordering information

Example: **FDM0620-2R-V3-10**

Motor type	Bearings (rr)	Winding (ww)	Motor execution (ee)		
FDM = Motor design 06 = Motor diameter (mm) 20 = Steps per revolution FDM0620	Special lubricant options available - (sleeve bearing) -2R (2 ball bearings)	-V2 -V3 -V6	Only front output shaft	With double output shaft	Front output shaft
			-31 (Flex PCB 80mm p=1mm) -35 (Flex PCB 80mm p=1mm) -76 (Flex PCB 80mm p=1mm) -78 (Flex PCB 80mm p=1mm) -11 (Flex PCB for cable) -15 (Flex PCB for cable) -26 (Flex PCB for cable) -28 (Flex PCB for cable)	-30 (Flex PCB 80mm p=1mm) -36 (Flex PCB 80mm p=1mm) -75 (Flex PCB 80mm p=1mm) -77 (Flex PCB 80mm p=1mm)	Plain shaft Ø1mm Pinion 06/1 for lead screw M1,2 for lead screw M1,6 Plain shaft Ø1mm Pinion 06/1 for lead screw M1,2 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.					