

Stepper Motors

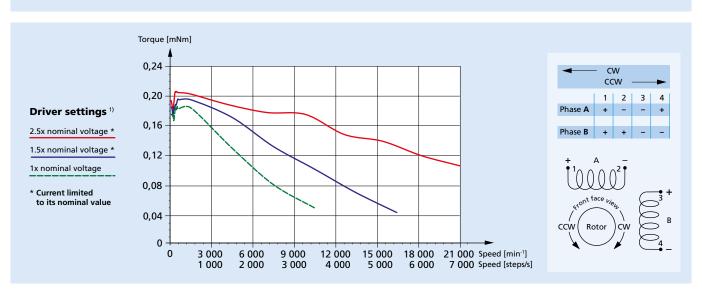
21 Mass

0,25 mNm

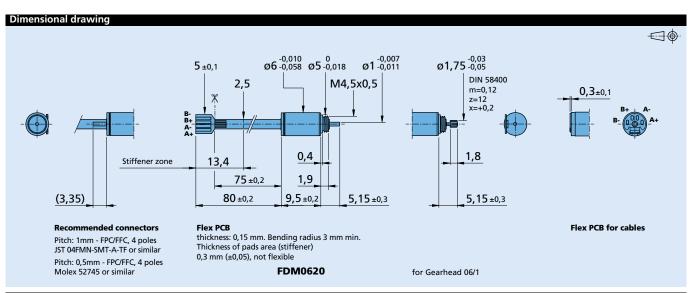
Two phase, 20 steps per revolution PRECIstep® Technology

WW = V2 V3 V6 Current In Nominal current per phase (both phases ON) Current Only only only only only only only only o	F	DM0620-ww-ee								
Nominal current per phase (both phases ON) 0,13 - 0,08 - 0,04 - 0 A A Current Voltage				V2 V3 V6				/ 6		
2 Nominal voltage per phase (both phases ON) - 2 - 3 - 6 V DC 3 Phase resistance (at 20°C) 4 Phase inductance (1kHz) 5 Back-EMF amplitude 5 Back-EMF amplitude 6 Holding torque (at nominal current in both phases) 7 Holding torque (at twice the nominal current) 8 Step angle (full step) 9 Angular accuracy 10 Residual torque, max. 11 Rotor inertia 12 Resonance frequency (at no load) 13 Electrical time constant 14 Ambient temperature range 15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 20 - 3 3 - 6 V DC 13,6 30 120 Ω 14 A,5 18,5 mH V/k step/s mNm mNm mNm mNm mNm mNm mNm mNm mNm m				Current	Voltage			Current	Voltage	Drive mode
2 Nominal voltage per phase (both phases ON) 3 Phase resistance (at 20°C) 4 Phase inductance (1kHz) 5 Back-EMF amplitude 5 Back-EMF amplitude 6 Holding torque (at nominal current in both phases) 7 Holding torque (at twice the nominal current) 8 Step angle (full step) 9 Angular accuracy 10 Residual torque, max. 11 Rotor inertia 12 4 Ab Manier temperature range 12 Resonance frequency (at no load) 13 Electrical time constant 14 Ambient temperature range 15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 2 - 3 - 6 V DC 13,6 30 120 Ω 14 Ab,5 18,5 mH V/k step/s 0,25 0,25 0,39 18 18 4 Applient temperature value tolerated, max. 130 15/96,6 3,2/120 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 10 Constant 11 Constant 12 - 3 - 6 V DC Ω Ω Ω ΠΗΣ	1	Nominal current per phase (both phases ON)		0,13	-	0,08	_	0,04	-	Α
4 Phase inductance (1kH2) 5 Back-EMF amplitude 0,53 0,83 1,6 V/k step/s 6 Holding torque (at nominal current in both phases) 7 Holding torque (at twice the nominal current) 8 Step angle (full step) 9 Angular accuracy 10 Residual torque, max. 11 Rotor inertia 12 Resonance frequency (at no load) 13 Electrical time constant 14 Ambient temperature range 15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 2 4,5 0,53 0,83 11,6 W/k step/s mNM mNm mNm mNm mNm degree % of full step % of ful	2			-	2	_	3	-	6	V DC
4 Phase inductance (1kH2) 5 Back-EMF amplitude 0,53 0,83 1,6 V/k step/s 6 Holding torque (at nominal current in both phases) 7 Holding torque (at twice the nominal current) 8 Step angle (full step) 9 Angular accuracy 10 Residual torque, max. 11 Rotor inertia 12 Resonance frequency (at no load) 13 Electrical time constant 14 Ambient temperature range 15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 2 4,5 0,53 0,83 11,6 W/k step/s mNM mNm mNm mNm mNm degree % of full step % of ful										
5 Back-EMF amplitude	3	Phase resistance (at 20°C)		13,6		30		120		Ω
6 Holding torque (at nominal current in both phases) 7 Holding torque (at twice the nominal current) 0,39 8 Step angle (full step) 9 Angular accuracy 10 Residual torque, max. 0,06 11 Rotor inertia 12 Resonance frequency (at no load) 13 Electrical time constant 0,15 14 Ambient temperature range 15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 O,5 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 20 Shaft play, max.: - radial (0,2N) 20 18 Shaft play, max.: - radial (0,2N)	4	Phase inductance (1kHz)		2		4,5		18,5		mH
7 Holding torque (at twice the nominal current) 0,39 mNm	5	Back-EMF amplitude		0,53		0,83		1,6		V/k step/s
7 Holding torque (at twice the nominal current) 0,39 mNm										
8 Step angle (full step) 9 Angular accuracy 10 Residual torque, max. 11 Rotor inertia 12 Resonance frequency (at no load) 13 Electrical time constant 14 Ambient temperature range 15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 degree 9% of full step 9 My of full step 10 % of full step 11 Notor inertia 12 (standard) 13 (standard) 14 Ambient temperature range 15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: 19	6	Holding torque (at nominal current in both phases)							mNm	
9 Angular accuracy ± 5 % of full step 10 Residual torque, max. 0,06 mNm 11 Rotor inertia 0,5 -10-9 kgm² 12 Resonance frequency (at no load) 60 13 Electrical time constant 0,15 ms 14 Ambient temperature range -35 +70 °C 15 Winding temperature tolerated, max. 130 °C 16 Thermal resistance Rth1/Rth2 15 / 96,6 °C/W 17 Thermal time constant 15 / 96,6 °C/W 18 Shaft bearings Sintered sleeve bearing (standard) (optional) 19 Shaft load, max.: - radial (3 mm from bearing) 0,3 3,0 N - axial 0,5 0,5 0,5 N 20 Shaft play, max.: - radial (0,2N) 20 12 μμm	7	Holding torque (at twice the nominal current)	0,39	0,39						mNm
9 Angular accuracy ± 5 % of full step 10 Residual torque, max. 0,06 mNm 11 Rotor inertia 0,5 -10-9 kgm² 12 Resonance frequency (at no load) 60 13 Electrical time constant 0,15 ms 14 Ambient temperature range -35 +70 °C 15 Winding temperature tolerated, max. 130 °C 16 Thermal resistance Rth1/Rth2 15 / 96,6 °C/W 17 Thermal time constant 15 / 96,6 °C/W 18 Shaft bearings Sintered sleeve bearing (standard) (optional) 19 Shaft load, max.: - radial (3 mm from bearing) 0,3 3,0 N - axial 0,5 0,5 0,5 N 20 Shaft play, max.: - radial (0,2N) 20 12 μμm										
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15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 20 Shaft play, max.: - radial (0,2N) 20 Thermal time constant 130 °C °C/W 15 / 96,6 °C/W 3,2 / 120 s s **Comparison of the play in the play in the plant of the plant of the plant of the play in the play in the plant of the plant of the play in the plant of the play in the plant of the plant	13	Electrical time constant	0,15							ms
15 Winding temperature tolerated, max. 16 Thermal resistance 17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 20 Shaft play, max.: - radial (0,2N) 20 Thermal time constant 130 °C °C/W 15 / 96,6 °C/W 3,2 / 120 s s **Comparison of the play in the play in the plant of the plant of the plant of the play in the play in the plant of the plant of the play in the plant of the play in the plant of the plant										
16 Thermal resistance										
17 Thermal time constant 18 Shaft bearings 19 Shaft load, max.: - radial (3 mm from bearing) - axial 20 Shaft play, max.: - radial (0,2N) 5 Sintered sleeve bearing (optional) 8 Sintered sleeve bearing (optional) 9 Shaft load, max.: 0,3 0,5 0,5 N 10 N 11 N 12 μm									_	
Shaft bearings Sintered sleeve bearing (standard) Shaft load, max.: - radial (3 mm from bearing) 0,3 3,0 N - axial 0,5 0,5 N - radial (0,2N) 20 12 μm										°C/W
(standard) (optional) 19 Shaft load, max.:	17	Thermal time constant τ_{w1}/τ_{w2}	3,2 / 120							S
(standard) (optional) 19 Shaft load, max.:										
19 Shaft load, max.:	18	Shaft bearings		earing				loaded		
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- axial 0,5 0,5 N 20 Shaft play, max.: - radial (0,2N) 20 12 μm	19									
20 Shaft play, max.: - radial (0,2N) 20 12 μm										
– radial (0,2N) 20 12 μm		– axial	0,5			0,5				N
– radial (0,2N) 20 12 μm										
radia (v/211)	20		20			42				
– axial (0,2N) ~0 μm										
		– axial (0,2N)	~0			~0				μm

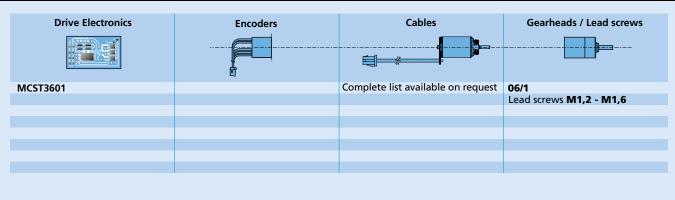
¹⁾ On PWM drivers or chopper (current mode), the current is set to the nominal value and the supply voltage is typically 1 to 3x higher than the nominal voltage. Microstepping is recommended below 200 steps/s. Curves measured with a load inertia of 3.10-9 kgm².







Combinations



Ordering information

