

Stepper Motors

0,65 mNm

Two phase, 20 steps per revolution
PRECiStep® Technology

AM0820-ww-ee

ww =		A-0,225-7		V-3-18		V-5-56		Drive mode	
		Current	Voltage	Current	Voltage	Current	Voltage		
1	Nominal current per phase (both phases ON) ¹⁾	0,225	–	0,15	–	0,08	–	A	
2	Nominal voltage per phase (both phases ON) ¹⁾	–	2	–	3	–	5	V DC	
3	Phase resistance (at 20°C)	7,3		18		56		Ω	
4	Phase inductance (1kHz)	1,4		3,9		12,6		mH	
5	Back-EMF amplitude	0,8		1,3		2,4		V/k step/s	
6	Holding torque (at nominal current in both phases)	0,65							mNm
7	Holding torque (at twice the nominal current)	1							mNm
8	Step angle (full step)	18							degree
9	Angular accuracy ¹⁾	± 10							% of full step
10	Residual torque, max.	0,17							mNm
11	Rotor inertia	2,75							·10 ⁻⁹ kgm ²
12	Resonance frequency (at no load)	170							Hz
13	Electrical time constant	0,21							ms
14	Ambient temperature range	–30 ... +70							°C
15	Winding temperature tolerated, max.	130							°C
16	Thermal resistance	<i>R_{th1} / R_{th2}</i>		4,1 / 65,3				°C/W	
17	Thermal time constant	<i>τ_{w1} / τ_{w2}</i>		3,5 / 160				s	
18	Shaft bearings	sintered sleeve bearings (standard)			ball bearings, preloaded (optional)				
19	Shaft load, max.:								
	– radial (3 mm from bearing)	0,3			3,0				N
	– axial	0,2			1,5				N
20	Shaft play, max.:								
	– radial (0,2N)	15			12				μm
	– axial (0,2N)	140			–0				μm
21	Mass	3,3							g

¹⁾ 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 3 to 5x higher than the nominal voltage.

²⁾ Curves measured with a load inertia of 6 · 10⁻⁹ kgm², in half-step mode for the “1 x nominal voltage” curve, in 1/4 micro-stepping mode for the other curves.

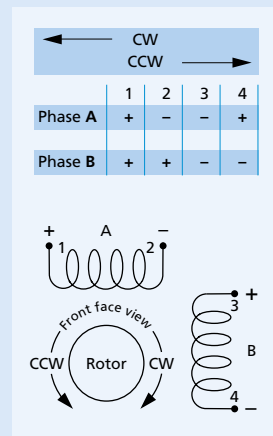
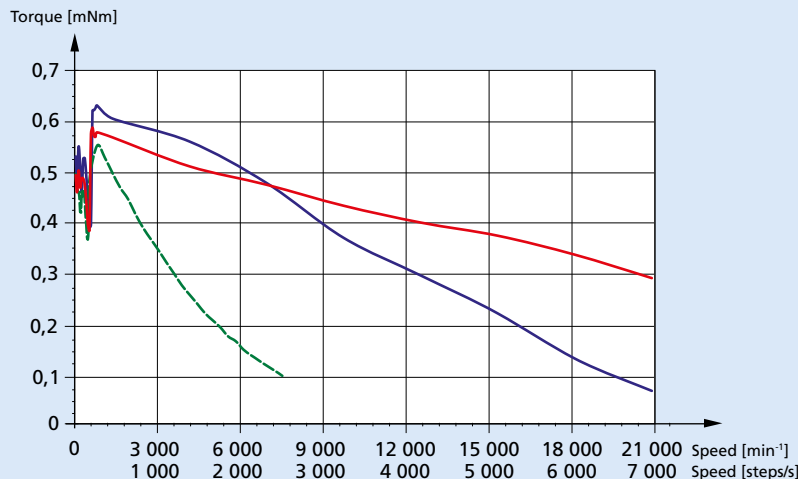
Driver settings ^{1) 2)}

5x nominal voltage *

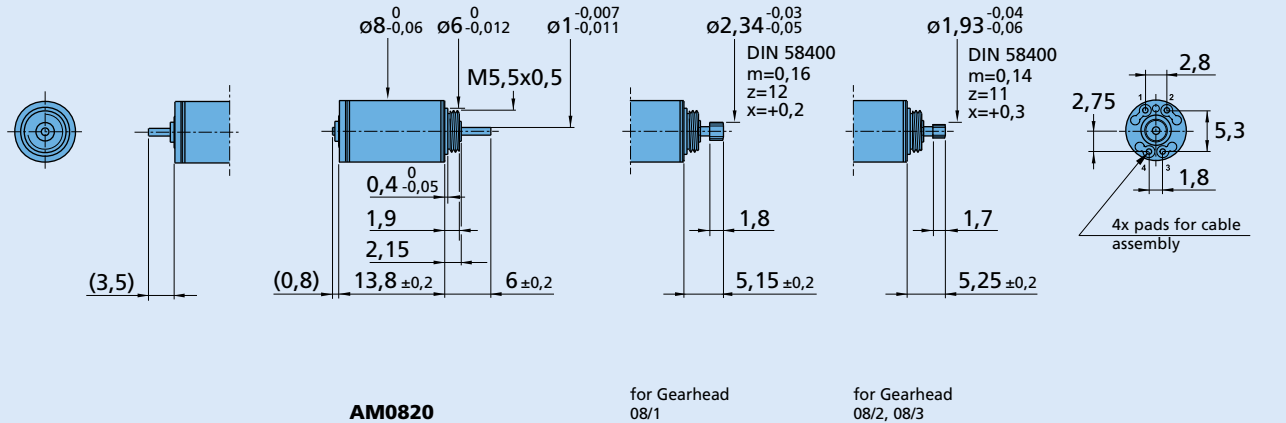
2.5x nominal voltage *

1 x nominal voltage

* Current limited to its nominal value



Dimensional drawing



Combinations

Drive Electronics	Encoders	Cables	Gearheads / Lead screws
MCST3601	Available on request	List available on request	08/1 08/2 08/3* 10/1 Lead screws M1,2 - M1,6 Lead screws M2 - M3

* Zero Backlash Gearheads

Ordering information

Example: **AM0820-2R-V-3-18-08**

Motor type	Bearings (rr)	Winding (wv)	Motor execution (ee)		
AM = Motor design	Special lubricant options available		Only front output shaft	With double output shaft	Front output shaft
08 = Motor diameter (mm)	- (sleeve bearings)	-V-3-18	-01	-00	Plain shaft
20 = Steps per revolution	-2R (2 ball bearings)	-V-5-56	-08	-09	Pinion 08/1
		-A-0,225-7	-10	-11	Pinion 10/1
			-12	-13	Pinion 08/2, 08/3
			-21	-20	Shaft for lead screw M1,2
			-23	-22	Shaft for lead screw M2 - M3
			-25	-24	Shaft for lead screw M1,6