

Stepper Motors

0,65 mNm

Two phase, 20 steps per revolution
PRECIstep® Technology

Series AM0820

AM0820 ...		0225		0150		0080		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.

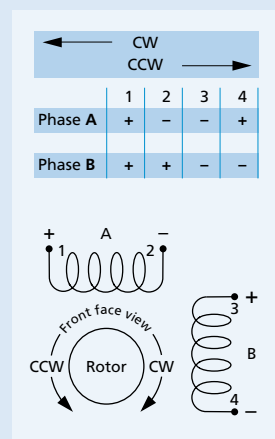
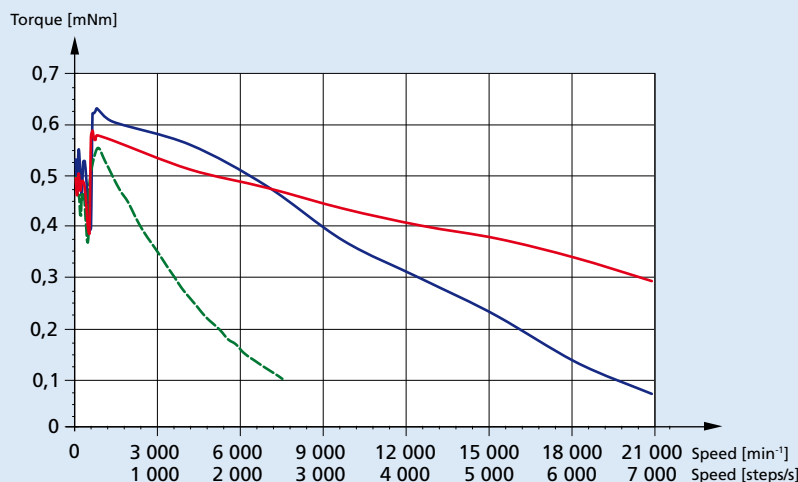
Driver settings ^{1) 2)}

5x nominal voltage *

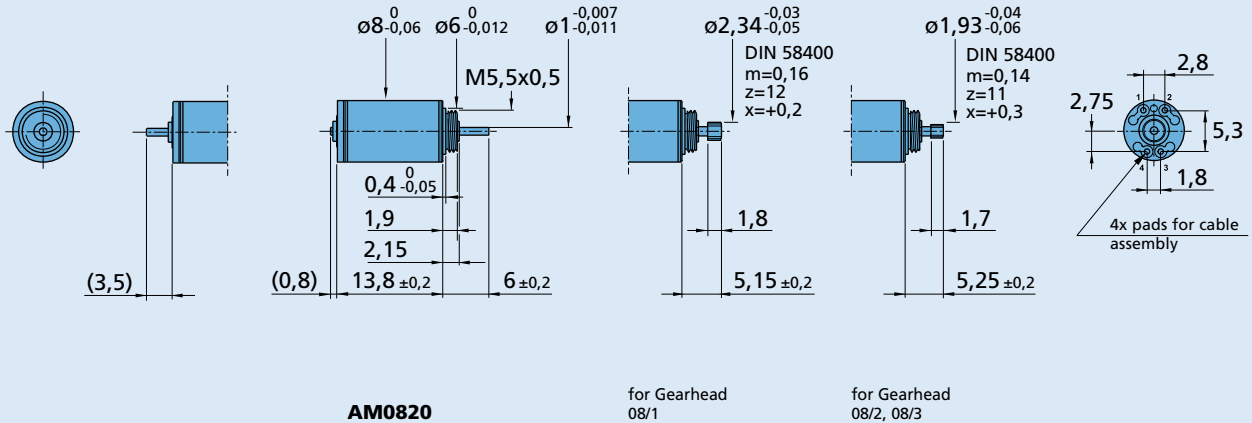
2.5x nominal voltage *

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: **AM08202R015008**

Motor type	Bearings	Winding	Motor execution		
AM = Motor design 08 = Motor diameter (mm) 20 = Steps per revolution	Special lubricant options available		Only front output shaft	With double output shaft	Front output shaft
AM0820	SB (sleeve bearings) 2R (2 ball bearings) RC (2 ball bearings, vacuum/low temp.)	0080 0150 0225	01 08 10 12 21 23 25	00 09 11 13 20 22 24	Plain shaft Pinion 08/1 Pinion 10/1 Pinion 08/2, 08/3 Shaft for lead screw M1,2 Shaft for lead screw M2 - M3 Shaft for lead screw M1,6