

Stepper Motors

0,65 mNm

Two phase, 20 steps per revolution
PRECstep® Technology

AM0820-ww-ee

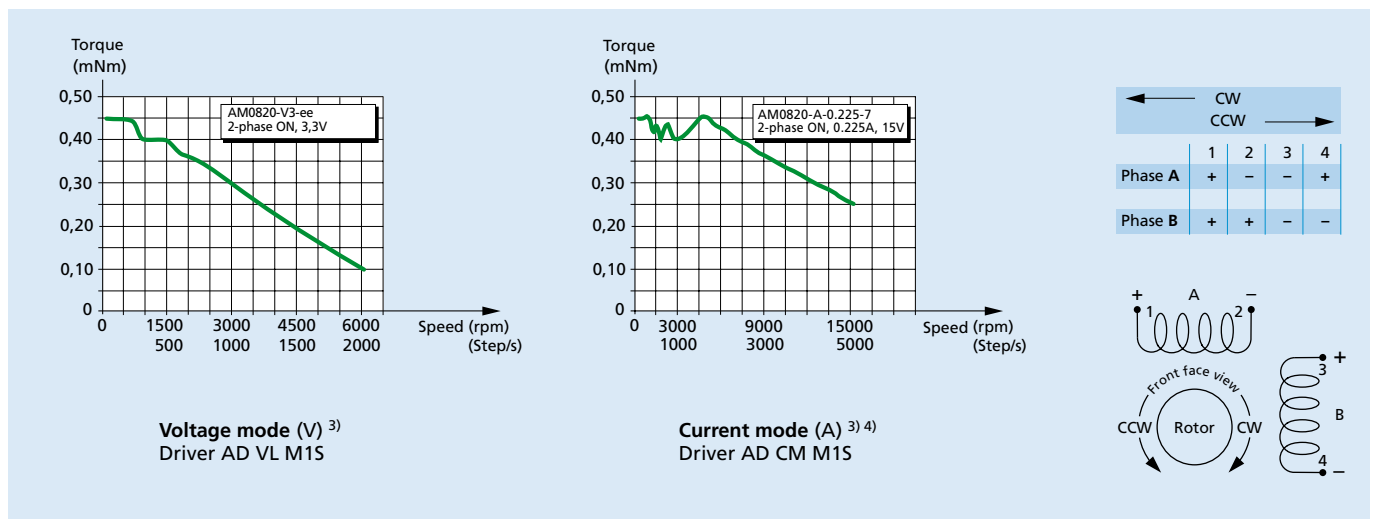
ww =		V-3-18		V-5-56		A-0,225-7		
		Voltage	Current	Voltage	Current	Voltage	Current	Drive mode
1	Nominal voltage	3	–	5	–	2	–	V DC
2	Nominal current per phase (both phases ON)	–	0,15	–	0,08	–	0,225	A
3	Phase resistance (at 20°C)	18		56		7,3		Ω
4	Phase inductance (1kHz)	5,2		16		2,1		mH
5	Back-EMF amplitude	0,8		1,4		0,5		V/k step/s
6	Holding torque ¹⁾ (at nominal current in both phases)	0,65						mNm
7	Holding torque ¹⁾ (at twice the nominal current)	1						mNm
8	Step angle (full step)	18						degree
9	Angular accuracy ²⁾	± 10						% of full step
10	Residual torque	0,06						mNm
11	Rotor inertia	2,75						·10 ⁻⁹ kgm ²
12	Resonance frequency (at no load)	170						Hz
13	Electrical time constant	0,29						ms
14	Ambient temperature range	–30 ... +70						°C
15	Winding temperature tolerated, max.	130						°C
16	Thermal resistance winding-ambient air	76						°C/W
17	Thermal time constant	180						s
18	Shaft bearings	sintered bronze sleeves (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	Isolation test voltage	200						V DC
22	Motor dimensions:							
	– diameter	8						mm
	– length	13,8						mm
	– shaft diameter	1,0						mm
23	Weight	3,3						g

¹⁾ with bipolar driver

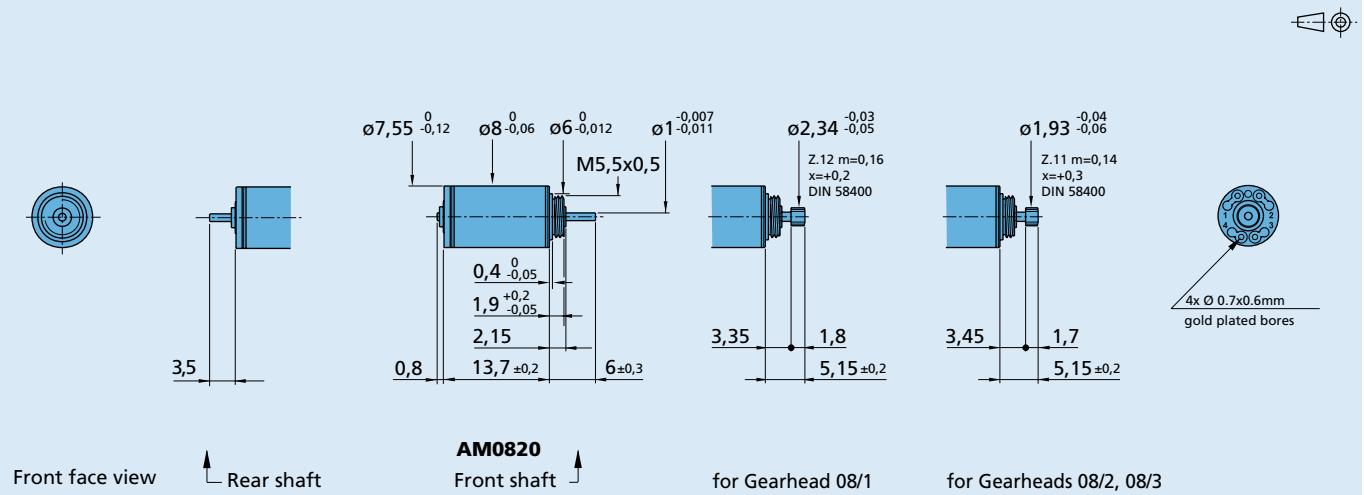
²⁾ 2 phases ON, balanced phase currents

³⁾ Curves measured with a load inertia of 10 · 10⁻⁹ kgm²

⁴⁾ Testing the motor at lower supply voltages in current mode will result in a decrease in torque at higher speed, even with the same current setting



Dimensional drawing



Combinations

Drive Electronics	Encoders	Stepper Motors	Gearheads / Lead screws
 AD VL M_S AD CM M_S		AM0820	08/1 08/2 08/3* 10/1 Lead screws M1,2 Lead screws M1,6 Lead screws M2
			* Zero Backlash Gearheads

Ordering information

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

Motor type AM = Motor design 08 = Motor diameter (mm) 20 = Steps per revolution	Bearings (rr) Special lubricant options available	Winding (wv)	Motor execution (ee)		
			Only front output shaft	With double output shaft	Front output shaft
AM0820	- (sleeve bearings) -2R (2 ball bearings)	-V-3-18 -V-5-56 -A-0,225-7	-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 Plain shaft ¹⁾ Plain shaft ²⁾ Plain shaft ³⁾

¹⁾ Prepared for assembly of lead screws size M1,2

²⁾ Idem for size M2

³⁾ Idem for size M1,6