Stepper Motors

Two phases, 20 steps per revolution

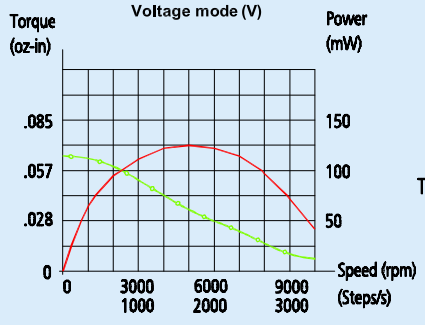
For combination with:
Gearheads: 08/1, 10/1
Encoder: HE
Drive Electronics: AD VL M, AD VM M, AD CM M

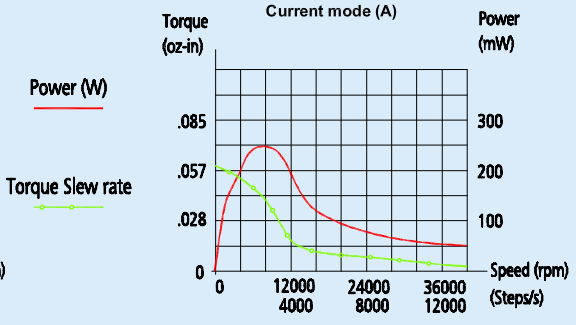
Series AM 0820

See beginning of the Stepper Motor Section for Ordering Information

		V 3	V 5	A 0.225	
		Voltage mode		Current mode	
1	Nominal supply voltage U_N	3	5		V DC
2	Phase resistance at 20°C (68°F)	18	56	7.3	Ω
3	Phase inductance (1kHz)	5.2	16	2.1	mH
4	Nominal current per phase (both phases ON)	0.14	0.08	0.225	A
5	Back-EMF amplitude	0.8	1.4	0.5	V/k step/s
6	Holding torque [1] (with nominal current in both phases)	0.092			oz-in
7	Holding torque [1] (with twice the nominal current)	0.142			oz-in
8	Residual and friction torque	0.008			oz-in
9	Thermal resistance winding-ambient air	76			°C/W
10	Winding temperature tolerated, max.	130 (266)			°C (°F)
11	Ambient working temperature range	–40 to +70 (–40 to +158)			°C (°F)
12	Thermal time constant	180			s
13	Full step angle	18			degree
14	Angular accuracy [2]	± 10			% of full step
15	Rotor inertia	$3.89 \cdot 10^{-7}$			oz-in-sec²
16	Shaft bearings	sintered bronze sleeve	ball bearings, preloaded		
17	Shaft load, max.:	(standard)	(optional)		
	– radial (2.5 mm (0.098 in) from bearing)	1.08	10.8		oz
	– axial	0.72	5.40		oz
18	Shaft play, max.:				
	– radial (0.720 oz)	$5.91 \cdot 10^{-4}$	$3.94 \cdot 10^{-4}$		in
	– axial (0.720 oz)	$5.51 \cdot 10^{-3}$	~0		in
19	Weight	0.116			oz
20	Isolation test voltage	200			V DC
21	Resonance frequency	170			Hz
22	Electrical time constant	0.29			ms

[1] with bipolar drtiver
[2] 2 phases ON, balanced phase current





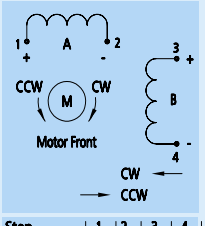
Power (W)

Torque Slew rate

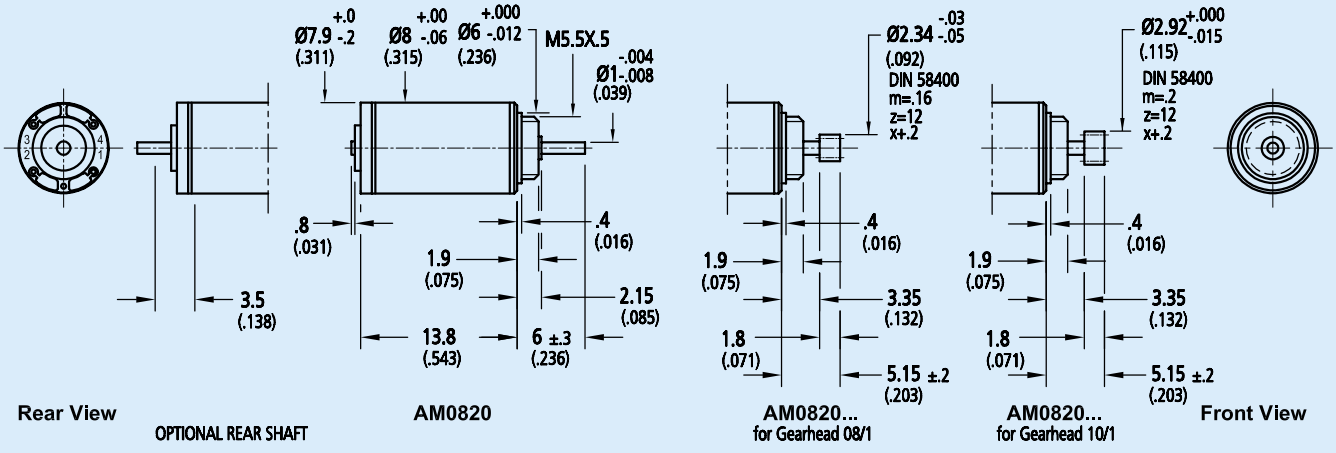
Torque / speed curves measured with a load inertia of 1.416 x10^{-6} oz-in-sec²

Cable Connection

Driving sequence



Step	1	2	3	4
Phase A	+	-	-	+
Phase B	+	+	-	-



For notes on technical data refer to "Technical Information". Specifications subject to change without notice. MME1102