

Stepper Motors

Two phases, 20 steps per revolution

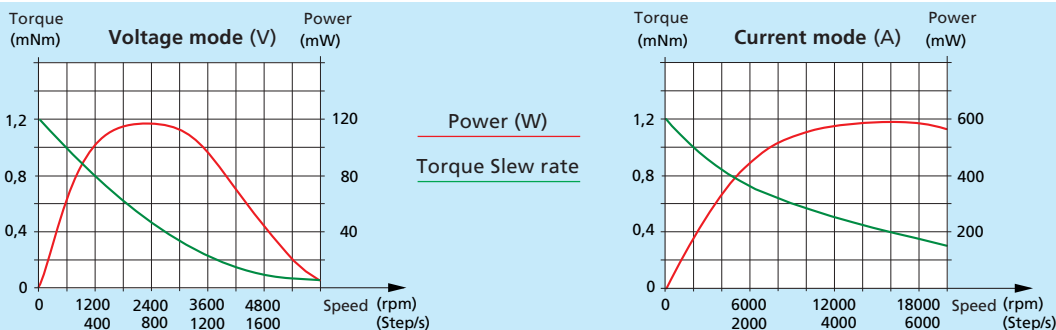
For combination with:
 Gearheads: 08/1, 10/1, 12/3, 12/5
 Encoders: AE 30B19
 Drive Electronics: AD VL M, AD VM M, AD CM M

Series AM 1020

	V 3	V 6	V 12	A 0,25	
1 Nominal voltage U_N	3	6	12		V DC
2 Phase resistance (at 20°C)	16	65	250	7,4	Ω
3 Phase inductance (1kHz)	4,5	18	70	2,1	mH
4 Nominal current per phase (both phases ON)	0,175	0,09	0,045	0,25	A
5 Back-EMF amplitude	2,25	4,5	9	1,5	V/k step/s
6 Holding torque ¹⁾ (at nominal current in both phases)	1,6				mNm
7 Holding torque ¹⁾ (at twice the nominal current)	2,4				mNm
8 Detent torque ¹⁾	0,25				mNm
9 Thermal resistance winding-ambient air	73				K/W
10 Winding temperature tolerated, max.	130				°C
11 Ambient temperature range	-40 ... +70				°C
12 Thermal time constant	90				s
13 Step angle (full step)	18				degree
14 Angular accuracy ²⁾	± 5				% of full step
15 Rotor inertia	9				$\cdot 10^{-9} \text{ kgm}^2$
16 Shaft bearings	sintered bronze sleeves	ball bearings, preloaded			
17 Shaft load, max.:	(standard)	(optional)			
- radial (3 mm from bearing)	0,3	4,0		N	
- axial	0,3	2,0		N	
18 Shaft play, max.:					
- radial (0,2N)	15	12		μm	
- axial (0,2N)	150	-0		μm	
19 Weight	5,5				g
20 Test voltage (1 min.)	500				Vrms
21 Resonance frequency	140				Hz
22 Electrical time constant	0,28				ms

¹⁾ with bipolar driver

²⁾ 2 phases ON, balanced phase current



Torque/Speed curves measured with a load inertia of $10 \cdot 10^{-9} \text{ kgm}^2$

