

**NEW**

# Stepper Motors

2,4 mNm

Two phases, 20 steps per revolution

## ADM1220-ww-ee

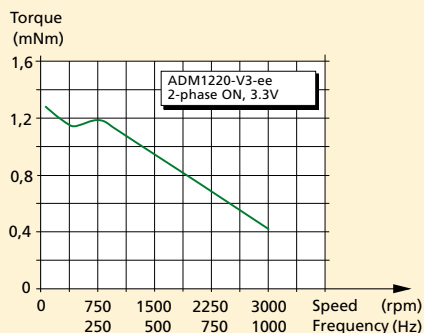
	ww =		V2		V3		V6		V12		Drive mode
	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current	
1 Nominal voltage	2	6 – 48	3	6 – 48	6	6 – 48	12	6 – 48	V DC		
2 Nominal current per phase (both phases ON)	–	0,3	–	0,2	–	0,09	–	0,055	A		
3 Phase resistance (at 20°C)		4,4		13		48		156	Ω		
4 Phase inductance (1kHz)		2,6		3,8		7,2		13	mH		
5 Back-EMF amplitude		1,5		2,2		4,2		7,4	V/k step/s		
6 Holding torque <sup>1)</sup> (at nominal current in both phases)	2,4								mNm		
7 Holding torque <sup>1)</sup> (at twice the nominal current)	4,1								mNm		
8 Step angle (full step)	18								degree		
9 Angular accuracy <sup>2)</sup>	± 5								% of full step		
10 Residual torque	0,3								mNm		
11 Rotor inertia	7,6								· 10 <sup>-9</sup> kgm <sup>2</sup>		
12 Resonance frequency (at no load)	187								Hz		
13 Electrical time constant	0,3								ms		
14 Ambient temperature range	–35 ... +70								°C		
15 Winding temperature tolerated, max.	130								°C		
16 Thermal resistance winding-ambient air	62								°C/W		
17 Thermal time constant	205								s		
18 Shaft bearings	sintered sleeve bearings (standard)				ball bearings, preloaded (optional)						
19 Shaft load, max.:											
– radial (3 mm from bearing)	0,5				6,0				N		
– axial	0,5				3,0				N		
20 Shaft play, max.:											
– radial (0,2N)	15				12				µm		
– axial (0,2N)	~0				~0				µm		
21 Isolation test voltage	200								V DC		
22 Motor dimensions:											
– diameter	12								mm		
– length	17,4								mm		
– shaft diameter	1,5								mm		
23 Weight	9								g		

<sup>1)</sup> with bipolar driver

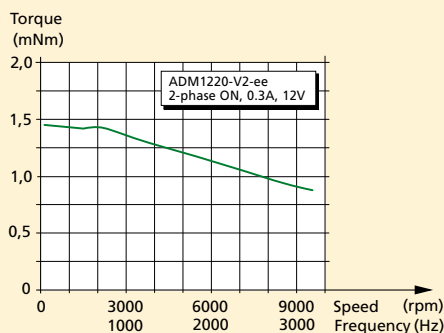
<sup>2)</sup> 2 phases ON, balanced phase currents

<sup>3)</sup> Curves measured with a load inertia of 10 · 10<sup>-9</sup> kgm<sup>2</sup>

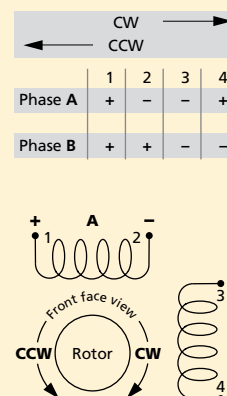
<sup>4)</sup> Testing the motor at lower supply voltages in current mode will result in a decrease in torque at higher speed, even with the same current setting.



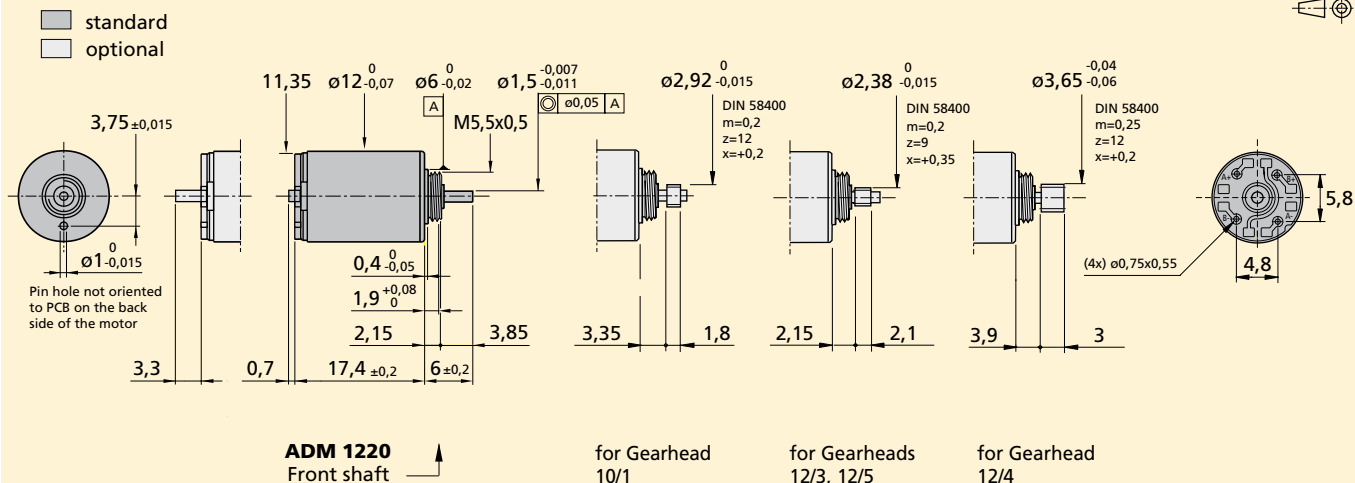
Voltage mode (V) <sup>3)</sup>  
Driver AD VL M15



Current mode (A) <sup>3) 4)</sup>  
Driver AD CM M15



### Dimensional drawing



### Combinations

Drive Electronics	Encoders	Stepper Motors	Precision Gearheads
AD VL M_S		ADM1220	10/1
AD VM M_S			12/3
AD CM M_S			12/4
			12/5*
			* Zero Backlash Gearheads

### Ordering information

Example: **ADM1220-2R-V2-01**

Motor type	Bearings (rr)	Winding (ww)	Motor execution (ee)		
			Only front output shaft	With double output shaft	Front output shaft
ADM = ARSAPE Disk Motor 12 = Motor diameter (mm) 20 = Steps per revolution	Standard, sintered sleeve bearings (no indication)				
<b>ADM1220</b>	<b>-2R</b> (optional)	<b>-V2</b> <b>-V3</b> <b>-V6</b> <b>-V12</b>	<b>-01</b> <b>-05</b> <b>-07</b> <b>-09</b>	<b>-00</b> <b>-06</b> <b>-08</b> <b>-10</b>	Plain shaft Pinion 10/1 Pinion 12/3, 12/5 Pinion 12/4