

Stepper Motors

22 mNm

Two phase, 24 steps per revolution
PRECiStep® Technology

AM2224-ww-ee

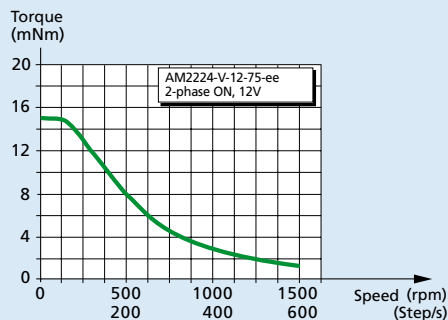
	ww =		AV-0,9		AV-4,8		AV-18		V-12-75		Drive mode
	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current			
1 Nominal voltage	1,4	–	3	–	6	–	12	–	V DC		
2 Nominal current per phase (both phases ON)	–	1,0	–	0,5	–	0,25	–	0,125	A		
3 Phase resistance (at 20°C)		0,9		4,8		18		75	Ω		
4 Phase inductance (1kHz)		0,9		4,3		16,3		65,6	mH		
5 Back-EMF amplitude		3,8		8,3		16,3		32,7	V/k step/s		
6 Holding torque ¹⁾ (at nominal current in both phases)		22							mNm		
7 Holding torque ¹⁾ (at twice the nominal current)		37							mNm		
8 Step angle (full step)		15							degree		
9 Angular accuracy ²⁾		± 10							% of full step		
10 Residual torque		2							mNm		
11 Rotor inertia		253							·10 ⁻⁹ kgm ²		
12 Resonance frequency (at no load)		100							Hz		
13 Electrical time constant		1,7							ms		
14 Ambient temperature range		-35 ... +70							°C		
15 Winding temperature tolerated, max.		130							°C		
16 Thermal resistance winding-ambient air		28							°C/W		
17 Thermal time constant		600							s		
18 Shaft bearings		sintered bronze sleeves (standard with 2 mm shaft)				ball bearings, preloaded (optional)					
19 Shaft load, max.:											
– radial (3 mm from bearing)		1,5				8,0			N		
– axial		0,5				4,0			N		
20 Shaft play, max.:											
– radial (0,2N)		30				15			µm		
– axial (0,2N)		200				-0			µm		
21 Isolation test voltage		200							V DC		
22 Weight		43							g		

¹⁾ with bipolar driver

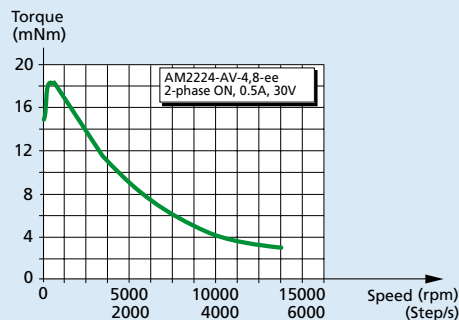
²⁾ 2 phases ON, balanced phase currents

³⁾ Curves measured with a load inertia of 8 · 10⁻⁹ kgm²

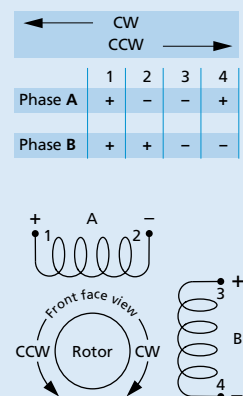
⁴⁾ Testing the motor at lower supply voltages in current mode will result in a decrease in torque at higher speed, even with the same current setting



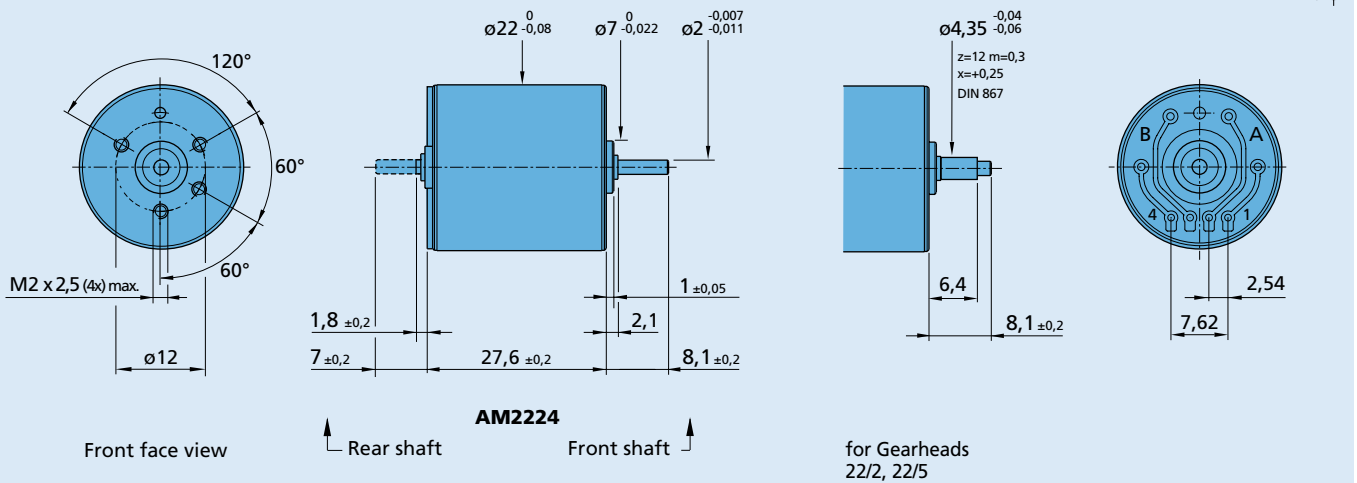
Voltage mode (V) ³⁾
Driver AD VM M15



Current mode (A) ^{3) 4)}
Driver AD CM M15



Dimensional drawing



Combinations

Drive Electronics	Encoders	Stepper Motors	Gearheads / Lead screws
AD VM M_S AD CM M_S	PE 22-120	AM2224	22E 22EKV 22/2 22/5* 23/1

* Zero Backlash Gearheads

Ordering information

Example: **AM2224-2R-AV-18-10**

Motor type	Bearings (rr)	Winding (wvv)	Motor execution (ee)		
			Only front output shaft	With double output shaft	Front output shaft
AM = Motor design 22 = Motor diameter (mm) 24 = Steps per revolution	Special lubricant options available				
AM2224	- (sleeve bearings) -2R (2 ball bearings)	-AV-0,9 -AV-4,8 -AV-18 -V-12-75 -V-24-290 *	-10 -12 -14	-11 -13 -15 -16 -17 -18	Plain shaft, L=8,1 mm for gearhead 23/1 Plain shaft, L=6,6 mm for gearhead 22E Pinion 22/2, 22/5 Plain shaft for 23/1, encoder PE22-120 Plain shaft for 22E, encoder PE22-120 Pinion 22/2, 22/5, encoder PE22-120
* Non-standard windings, for data please inquire with your point of sales					