

Stepper Motors

22 mNm

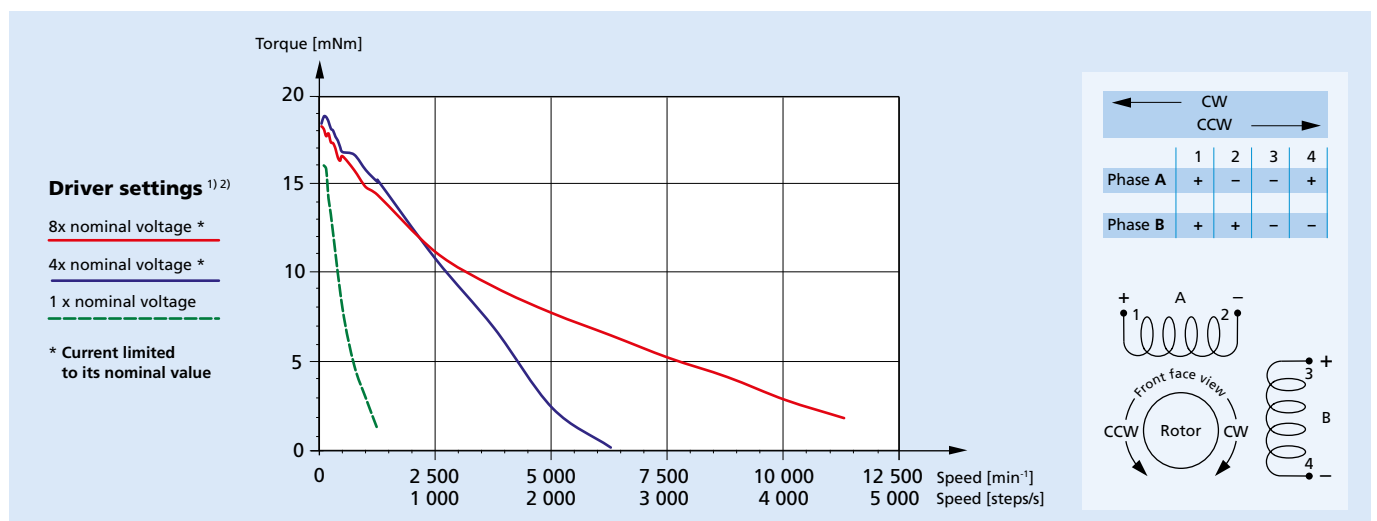
Two phase, 24 steps per revolution
PRECiStep® Technology

AM2224-ww-ee

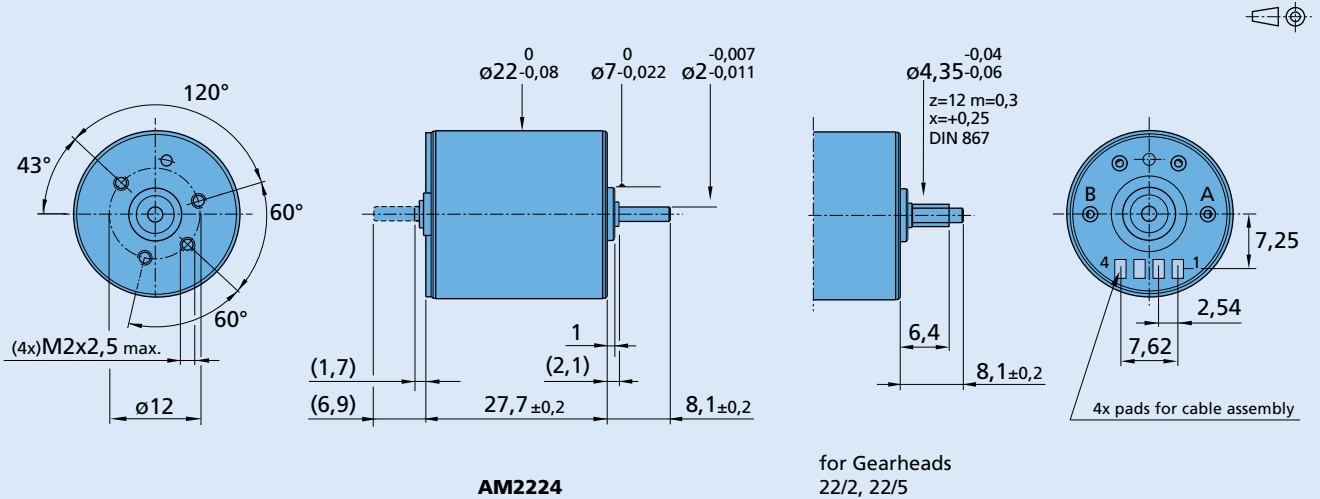
	ww =		AV-0,9		AV-4,8		AV-18		V-12-75		Drive mode
	Current	Voltage	Current	Voltage	Current	Voltage	Current	Voltage			
1 Nominal current per phase (both phases ON) ¹⁾	1,0	–	0,5	–	0,25	–	0,125	–	A		
2 Nominal voltage per phase (both phases ON) ¹⁾	–	1,4	–	3	–	6	–	12	V DC		
3 Phase resistance (at 20°C)		0,9		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 (at nominal current in both phases)		22							mNm		
7 Holding torque (at twice the nominal current)		37							mNm		
8 Step angle (full step)		15							degree		
9 Angular accuracy ¹⁾		± 10							% of full step		
10 Residual torque, max.		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	<i>R_{th1} / R_{th2}</i>	4,8 / 20,4							°C/W		
17 Thermal time constant	<i>τ_{w1} / τ_{w2}</i>	10 / 620							s		
18 Shaft bearings		sintered sleeve bearings (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 Mass		43							g		

¹⁾ Relevant for 2 phases ON only. On PWM drivers or chopper (current mode), the current is set to the nominal value and the supply voltage is typically 3 to 8x higher than the nominal voltage.

²⁾ Curves measured with a load inertia of 600 · 10⁻⁹ kgm², in half-step mode for the “1 x nominal voltage” curve, in 1/4 micro-stepping mode for the other curves.



Dimensional drawing



Combinations

Drive Electronics	Encoders	Cables	Gearheads / Lead screws
MCST3601	PE 22-120	List available on request	20/1R 22E 22EKV 22/2 22/5* 22/7 23/1

* Zero Backlash Gearheads

Ordering information

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

Motor type	Bearings (rr)	Winding (wv)	Motor execution (ee)		
AM = Motor design 22 = Motor diameter (mm) 24 = Steps per revolution	Special lubricant options available		Only front output shaft	With double output shaft	Front output shaft
AM2224	- (sleeve bearings) -2R (2 ball bearings)	-AV-0,9 -AV-4,8 -AV-18 -V-12-75	-10 -12 -14	-11 -13 -15 -16 -17 -18	Plain shaft, L=8,1 mm $\phi 2$ mm for 22/7, 23/1 Plain shaft, L=6,6 mm $\phi 1,5$ for 22E, 22EKV Pinion 22/2, 22/5 Plain shaft for 22/7, 23/1, encoder PE22-120 Plain shaft for 22E, encoder PE22-120 Pinion 22/2, 22/5, encoder PE22-120