

Stepper Motors

22 mNm

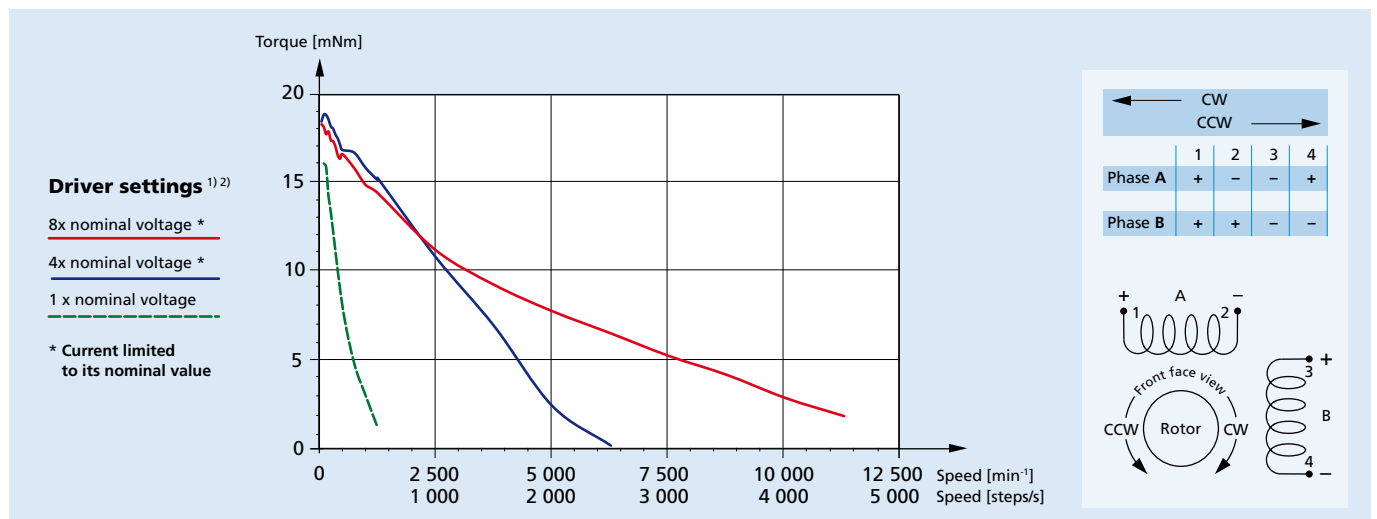
Two phase, 24 steps per revolution
PRECiStep® Technology

Series AM2224

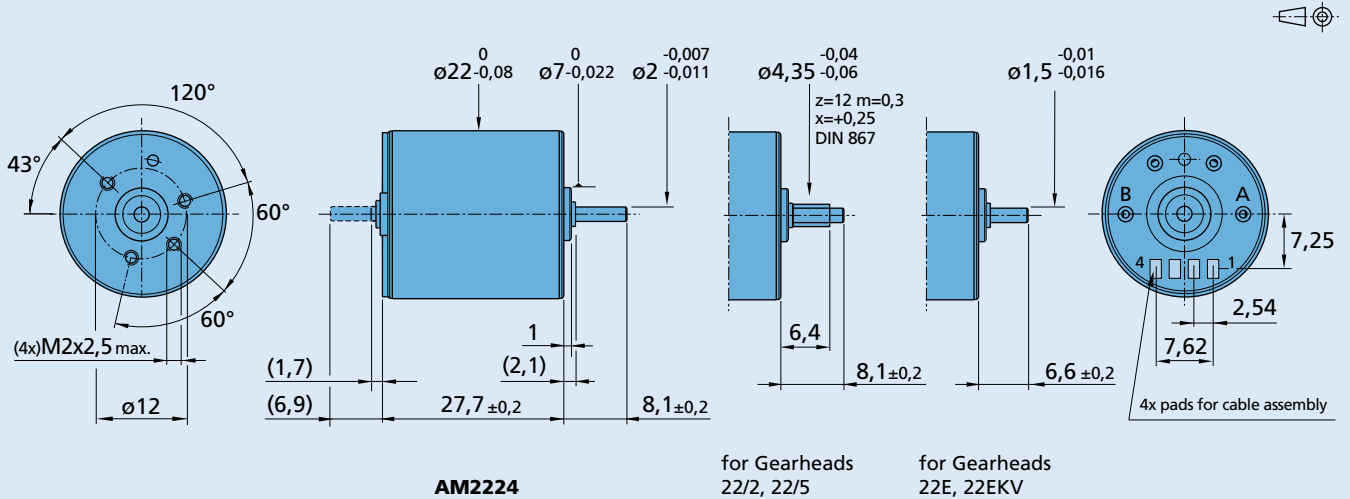
AM2224 ...	1000		0500		0250		0125		Drive mode
	Current	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	
1 Nominal current per phase (both phases ON) ¹⁾	1,0	–	0,5	–	0,25	–	0,125	–	A
2 Nominal voltage per phase (both phases ON) ¹⁾	–	1,4	–	3	–	6	–	12	V DC
3 Phase resistance (at 20°C)		0,9		4,8		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	PE22-120	List available on request	20/1R 22E 22EKV 22/2 22/5* 22/7 23/1

* Zero Backlash Gearheads

Ordering information

Example: **AM22242R025010**

Motor type	Bearings	Winding	Motor execution		
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	SB (sleeve bearings)	1000	10	11	Plain shaft, L=8,1 mm $\varnothing 2$ mm for 20/1R, 22/7, 23/1
	2R (2 ball bearings)	0500	12	13	Plain shaft, L=6,6 mm $\varnothing 1,5$ for 22E, 22EKV
	RC (2 ball bearings, vacuum/low temp.)	0250	14	15	Pinion 22/2, 22/5
		0125		16	Plain shaft for 20/1R, 22/7, 23/1, encoder PE22-120
				17	Plain shaft for 22E, encoder PE22-120
				18	Pinion 22/2, 22/5, encoder PE22-120