

Stepper Motors

22 mNm

Two phase, 24 steps per revolution

Series AM2224R3

Values at 20°C	AM2224R3	1000	0500	0250	0125	
Nominal current per phase (both phases ON)		1	0,5	0,25	0,125	A
Boosted current per phase (both phases ON)		2	1	0,5	0,25	A
Nominal voltage per phase (both phases ON)		1,4	3	6	12	V
Phase resistance		0,9	4,8	18	75	Ω
Phase inductance (1 kHz)		0,9	4,3	16,3	65,6	mH
Holding torque (at nominal current in both phases)		22	22	22	22	mNm
Holding torque at boosted current		37	37	37	37	mNm
Residual torque, typ.		1,47	1,47	1,47	1,47	mNm
Back-EMF amplitude		3,8	8,3	16,3	32,7	V/k step/s
Electrical time constant	0,92					ms
Rotor inertia	253·10 ⁻⁹					kgm ²
Step angle (full step)	15					°
Angular accuracy	±10					%
Angular acceleration, max.	146·10 ³					rad/s ²
Resonance frequency (at no load)	45					Hz
Thermal resistance	4,8 / 20,4					K/W
Thermal time constant	10 / 620					s
Operating temperature range	-35 ... +70					°C
Winding temperature, max.	+130					°C
Shaft bearings ^{1) 2)}	ball bearings, preloaded (Bearing code: R3)					
Shaft load max.:						
– with shaft diameter	3					mm
– radial at 5 000 min ⁻¹ (3 mm from bearing)	20					N
– axial at 5 000 min ⁻¹	4					N
– axial at standstill	56,5					N
Shaft play:						
– radial	0,015					mm
– axial	0					mm
Housing material	aluminium, black anodized					
Mass	50,5					g
Magnet material	NdFeB					

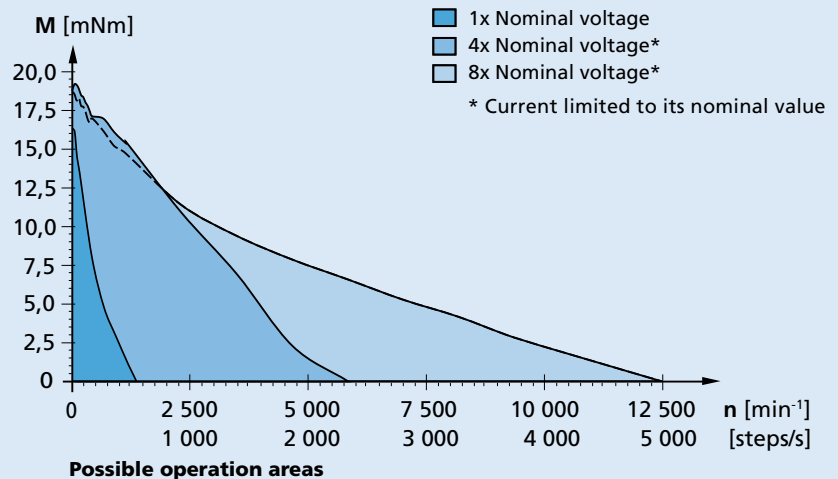
¹⁾ Special lubricant options available on request.

²⁾ 2 preloaded ball bearings available on request for vacuum / low temperature (bearing code: RC).

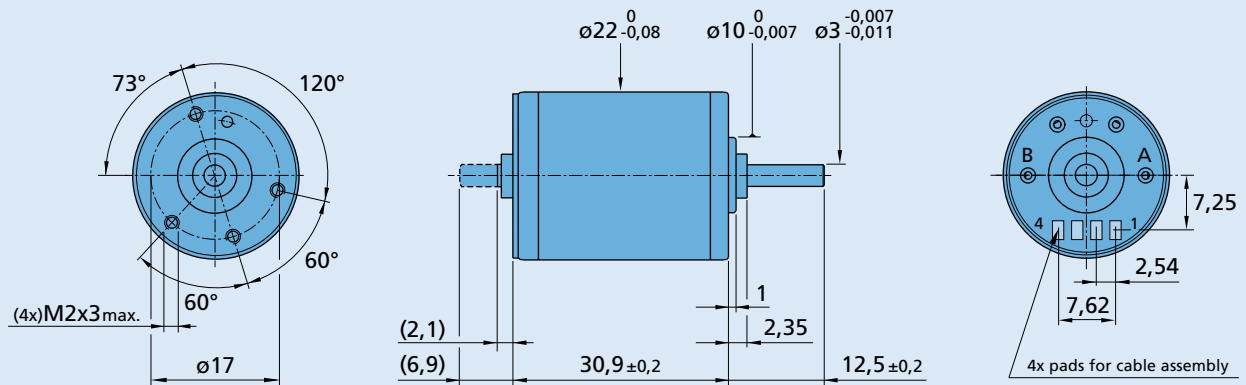
Driver settings

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 4 to 8x higher than the nominal voltage.

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



AM2224R3

Option, cable and connection information

Example product designation: **AM2224R3025031**

Motor executions		Front shaft description	Connection	
front shaft	double shaft		No.	Function
30	31	Plain shaft for gearheads 26/1R	1	Phase A +
85	84	Plain shaft for lead screw M3	2	Phase A -
	36	Plain shaft for gearheads 26/1R or encoder PE22-120	3	Phase B +
	86	Plain shaft for lead screw M3 and encoder PE22-120	4	Phase B -

Option	Description
Single leads	PTFE single leads length 50/100/150/300 mm
Connector	PVC single leads length 50/100/150/300 mm or ETFE/PTFE single leads length 150 mm with connector Molex 51021-0400

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
26/1R M3 x 0,5 x L1	PE22-120	MCST 3601	Detailed cable options can be found in Application Note AN 010 to be downloaded on FAULHABER website.