

Stepper Motors

6 mNm

Two phase, 24 steps per revolution

Series AM1524

Values at 20°C	AM1524	0450	0250	0150	0075	
Nominal current per phase (both phases ON)		0,45	0,25	0,15	0,075	A
Boosted current per phase (both phases ON)		0,9	0,5	0,3	0,15	A
Nominal voltage per phase (both phases ON)		2	3,5	6	12	V
Phase resistance		3,6	12,5	35	145	Ω
Phase inductance (1 kHz)		1,9	6,3	16,5	70,6	mH
Holding torque (at nominal current in both phases)		6	6	6	6	mNm
Holding torque at boosted current		10	10	10	10	mNm
Residual torque, typ.		0,51	0,51	0,51	0,51	mNm
Back-EMF amplitude		2,4	4,4	7,2	14,7	V/k step/s
Electrical time constant	0,5					ms
Rotor inertia	45·10 ⁻⁹					kgm ²
Step angle (full step)	15					°
Angular accuracy	±10					%
Angular acceleration, max.	222·10 ³					rad/s ²
Resonance frequency (at no load)	60					Hz
Thermal resistance	12,9 / 31,6					K/W
Thermal time constant	6 / 350					s
Operating temperature range	-35 ... +70					°C
Winding temperature, max.	+130					°C
Shaft bearings ^{1) 2)}	sintered bearings (Bearing code: SB)		ball bearings, preloaded (Bearing code: 2R)			
Shaft load max.:						
– with shaft diameter	1,5		1,5			mm
– radial at 5 000 min ⁻¹ (3 mm from bearing)	0,5		6			N
– axial at 5 000 min ⁻¹	0,5		2			N
– axial at standstill	0,5		17			N
Shaft play:						
– radial	0,015		0,012			mm
– axial	0,15		0			mm
Housing material	aluminium, black anodized					
Mass	12					g
Magnet material	NdFeB					

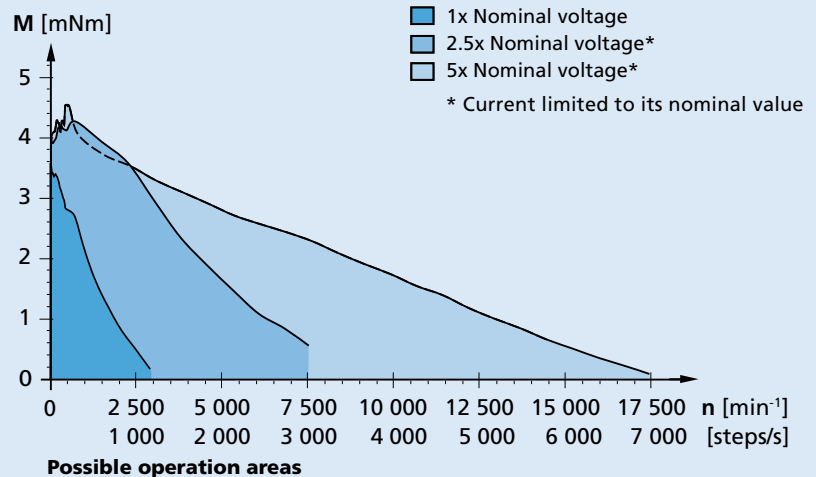
¹⁾ Special lubricant options available on request.

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

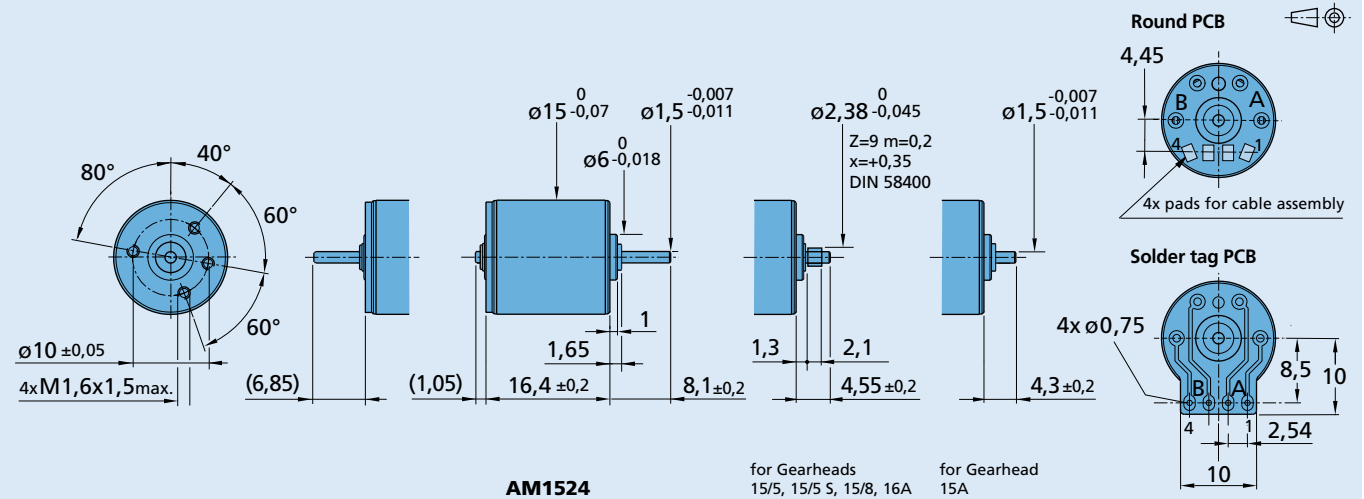
Driver settings

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 2.5 to 5x higher than the nominal voltage.

Curves measured with a load inertia of 50·10⁻⁹ kgm², in half-step mode for the "1 x nominal voltage" curve, in 1/4 micro-stepping mode for the other curves.



Dimensional drawing



Options and connection information

Example product designation: **AM15242R015055**

Motor executions		PCB type	Front shaft description	Connection	
front shaft	double shaft			No.	Function
55	54	Round PCB	Plain shaft, L=8,1 mm for gearheads 15/10, 16/7, 17/1 and lead screw M3	1	Phase A +
57	56	Round PCB	With pinion for gearheads 15/5, 15/5 S, 15/8 and 16A	2	Phase A -
70	71	Round PCB	Plain shaft, L=4,3 mm for gearheads 15A	3	Phase B +
83	82	Round PCB	Plain shaft, for lead screw M2	4	Phase B -
05	04	Solder tag PCB	Plain shaft, L=8,1 mm for gearheads 15/10, 16/7, 17/1 and lead screw M3		
07	06	Solder tag PCB	With pinion for gearheads 15/5, 15/5 S, 15/8 and 16A		
72	73	Solder tag PCB	Plain shaft, L=4,3 mm for gearheads 15A		
23	22	Solder tag PCB	Plain shaft, for lead screw M2		
	40	Round PCB	Plain shaft, for lead screw M2, with encoder IEP3-4096 (an additional motor cable is mandatory)		
	41	Round PCB	Plain shaft, L=8,1 mm for gearheads 15/10, 16/7, 17/1 and lead screw M3, with encoder IEP3-4096 (an additional motor cable is mandatory)		
	42	Round PCB	With pinion for gearheads 15/5, 15/5 S, 15/8 and 16A, with encoder IEP3-4096 (an additional motor cable is mandatory)		
	43	Round PCB	Plain shaft, L=4,3 mm for gearheads 15A, with encoder IEP3-4096 (an additional motor cable is mandatory)		

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
15A 15/5 15/5 S 15/8 15/10 16A 16/7 17/1 M2 x 0,2 x L1 M3 x 0,5 x L1	IEP3-4096	MCST 3601	Detailed cable options can be found in Application Note AN 010 to be downloaded on FAULHABER website.