

# Stepper Motors

6,0 mNm

Two phase, 24 steps per revolution  
PRECIstep® Technology

## Series AM1524

	AM1524 ...	0450	0250	0150	0075					
		Current	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Drive mode
1	Nominal current per phase (both phases ON) <sup>1)</sup>	0,45	–	0,25	–	0,15	–	0,075	–	A
2	Nominal voltage per phase (both phases ON) <sup>1)</sup>	–	2	–	3,5	–	6	–	12	V DC
3	Phase resistance (at 20°C)		3,6		12,5		35		138	Ω
4	Phase inductance (1kHz)		1,9		6,3		16,5		70,6	mH
5	Back-EMF amplitude		2,4		4,4		7,2		14,7	V/k step/s
6	Holding torque (at nominal current in both phases)	6,0								mNm
7	Holding torque (at twice the nominal current)	10								mNm
8	Step angle (full step)	15								degree
9	Angular accuracy <sup>1)</sup>	± 10								% of full step
10	Residual torque, max.	0,9								mNm
11	Rotor inertia	45								·10 <sup>-9</sup> kgm <sup>2</sup>
12	Resonance frequency (at no load)	120								Hz
13	Electrical time constant	0,5								ms
14	Ambient temperature range	–35 ... +70								°C
15	Winding temperature tolerated, max.	130								°C
16	Thermal resistance	<i>R<sub>th1</sub> / R<sub>th2</sub></i>	12,9 / 31,6							°C/W
17	Thermal time constant	<i>τ<sub>w1</sub> / τ<sub>w2</sub></i>	6 / 350							s
18	Shaft bearings	sintered sleeve bearings (standard)			ball bearings, preloaded (optional)					
19	Shaft load, max.:									
	– radial (3 mm from bearing)	0,5				6,0				N
	– axial	0,5				2,0				N
20	Shaft play, max.:									
	– radial (0,2N)	15				12				μm
	– axial (0,2N)	150				–0				μm
21	Mass	12								g

<sup>1)</sup> 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 5x higher than the nominal voltage.

<sup>2)</sup> Curves measured with a load inertia of 50 · 10<sup>-9</sup> kgm<sup>2</sup>, in half-step mode for the “1 x nominal voltage” curve, in 1/4 micro-stepping mode for the other curves.

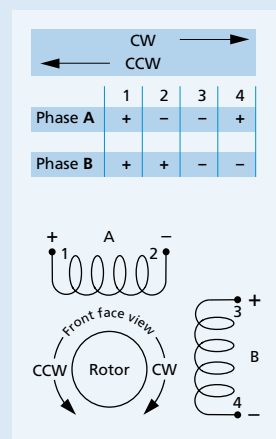
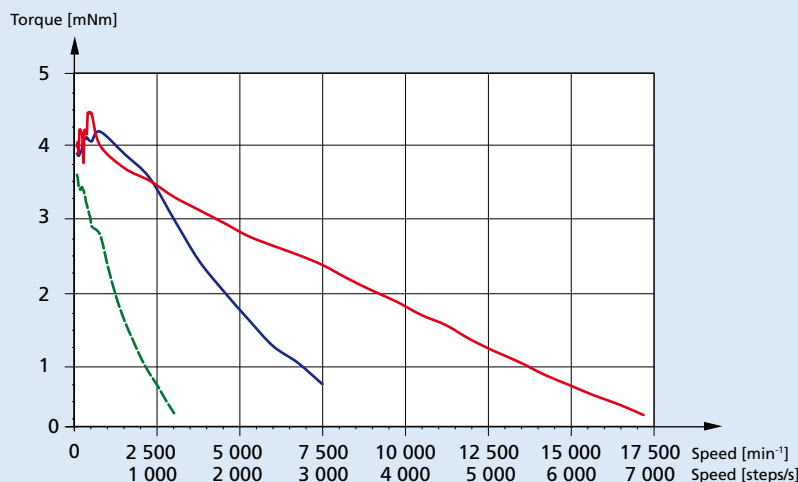
### Driver settings <sup>1) 2)</sup>

5x nominal voltage \*

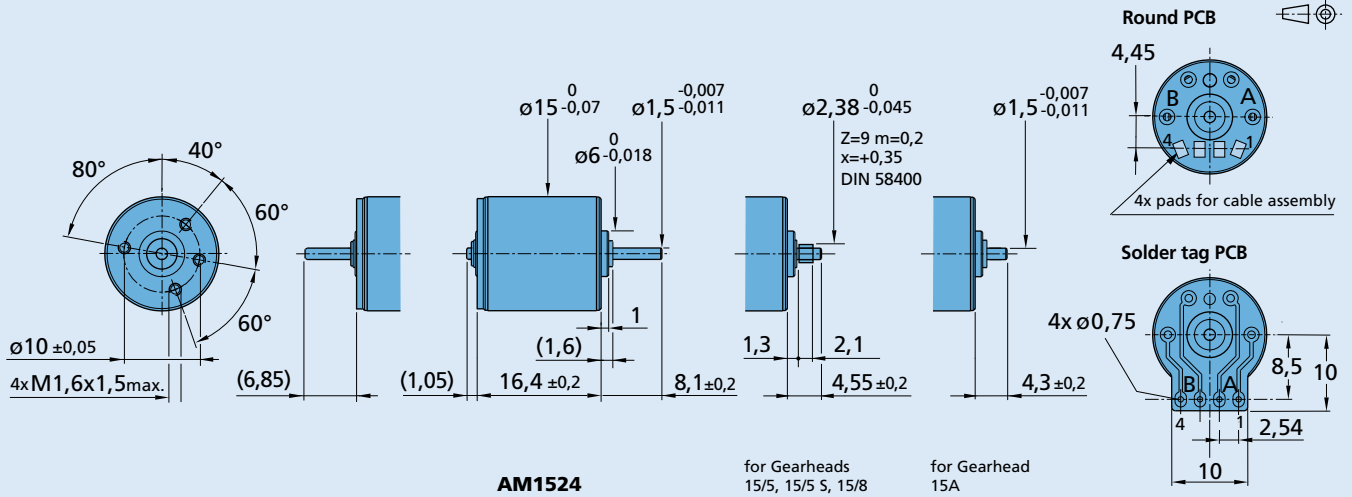
2.5x nominal voltage \*

1 x nominal voltage

\* Current limited to its nominal value



### Dimensional drawing



### Combinations

Drive Electronics	Encoders	Cables	Gearheads / Lead screws
<b>MCST3601</b>	Available on request	List available on request	<b>15A</b> <b>15/5(S)</b> <b>15/8*</b> <b>15/10</b> <b>16/7</b> <b>17/1</b> Lead screws <b>M2 - M3</b>

\* Zero Backlash Gearheads

### Ordering information

Example: **AM15242R015057**

Motor type	Bearings	Winding	Motor execution		
AM = Motor design 15 = Motor diameter (mm) 24 = Steps per revolution	Special lubricant options available		Only front output shaft	With double output shaft	Front output shaft
<b>AM1524</b>	<b>SB</b> (sleeve bearings) <b>2R</b> (2 ball bearings) <b>RC</b> (2 ball bearings, vacuum/low temp.)	<b>0150</b> <b>0075</b> <b>0250</b> <b>0450</b>	<b>55</b> (Round PCB) <b>57</b> (Round PCB) <b>70</b> (Round PCB) <b>83</b> (Round PCB) <b>05</b> (Solder tag PCB) <b>07</b> (Solder tag PCB) <b>72</b> (Solder tag PCB) <b>23</b> (Solder tag PCB)	<b>54</b> (Round PCB) <b>56</b> (Round PCB) <b>71</b> (Round PCB) <b>82</b> (Round PCB) <b>04</b> (Solder tag PCB) <b>06</b> (Solder tag PCB) <b>73</b> (Solder tag PCB) <b>22</b> (Solder tag PCB) <b>94</b> <b>96</b> <b>97</b>	Plain shaft, L=8,1 mm for 15/10,16/7, 17/1, M3 Pinion 15/5(S), 15/8 Plain shaft, L=4,3 mm for gearhead 15A Plain shaft for lead screw M2 Plain shaft, L=8,1 mm for 15/10,16/7, 17/1, M3 Pinion 15/5(S), 15/8 Plain shaft, L=4,3 mm for gearhead 15A Plain shaft for lead screw M2 Idem -04 & for encoder Idem -06 & for encoder Idem -73 & for encoder