

# Stepper Motors

6,0 mNm

Two phase, 24 steps per revolution  
PRECistep® Technology

## AM1524-ww-ee

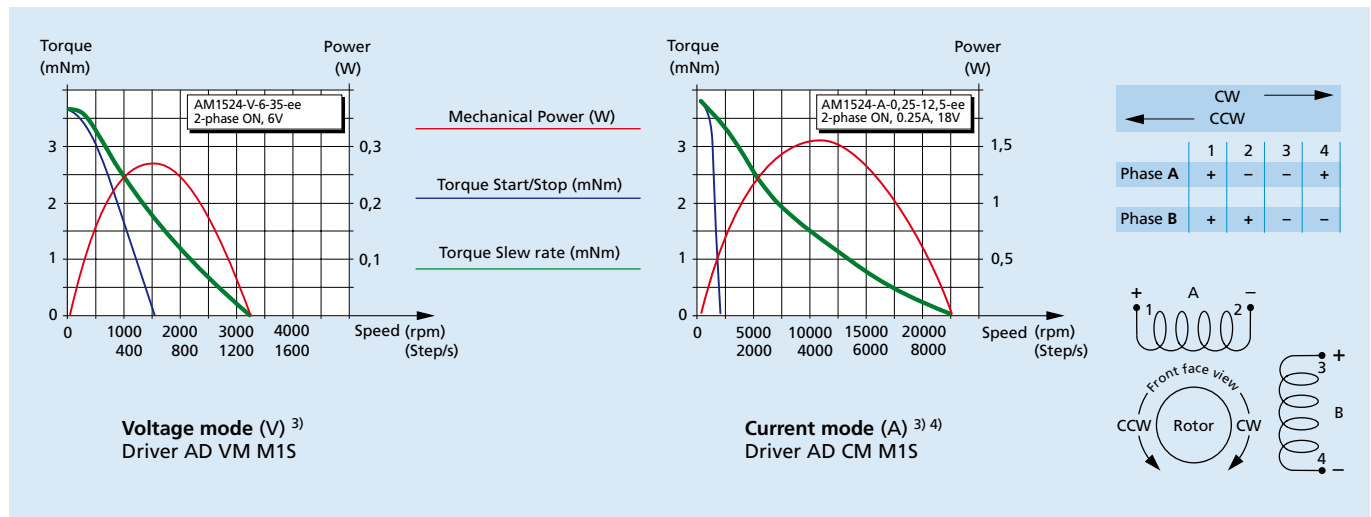
| ww =   | V-6-35                             |         | V-12-150 |         | A-0,25-12,5                         |         | A-0,45-3,6 |         | Drive mode                         |
|--|------------------------------------|---------|----------|---------|-------------------------------------|---------|------------|---------|------------------------------------|
|  | Voltage                            | Current | Voltage  | Current | Voltage                             | Current | Voltage    | Current |                                    |
| 1 Nominal voltage per phase (both phases ON) <sup>1)</sup> | 6                                  | –       | 12       | –       | 3,5                                 | –       | 2          | –       | V DC                               |
| 2 Nominal current per phase (both phases ON)               | –                                  | 0,15    | –        | 0,075   | –                                   | 0,25    | –          | 0,45    | A                                  |
| 3 Phase resistance (at 20°C)                               | 35                                 |         | 138      |         | 12,5                                |         | 3,6        |         | Ω                                  |
| 4 Phase inductance (1kHz)                                  | 16,5                               |         | 70,6     |         | 6,3                                 |         | 1,9        |         | mH                                 |
| 5 Back-EMF amplitude                                       | 7,2                                |         | 14,7     |         | 4,4                                 |         | 2,4        |         | 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>2)</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 winding-ambient air                  | 37                                 |         |          |         |                                     |         |            |         | °C/W                               |
| 17 Thermal time constant                                   | 220                                |         |          |         |                                     |         |            |         | s                                  |
| 18 Shaft bearings  | sintered bronze sleeves (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 Isolation test voltage                                  | 200                                |         |          |         |                                     |         |            |         | V DC                               |
| 22 Weight  | 12                                 |         |          |         |                                     |         |            |         | g                                  |

<sup>1)</sup> Nominal voltage specified for voltage mode operation only

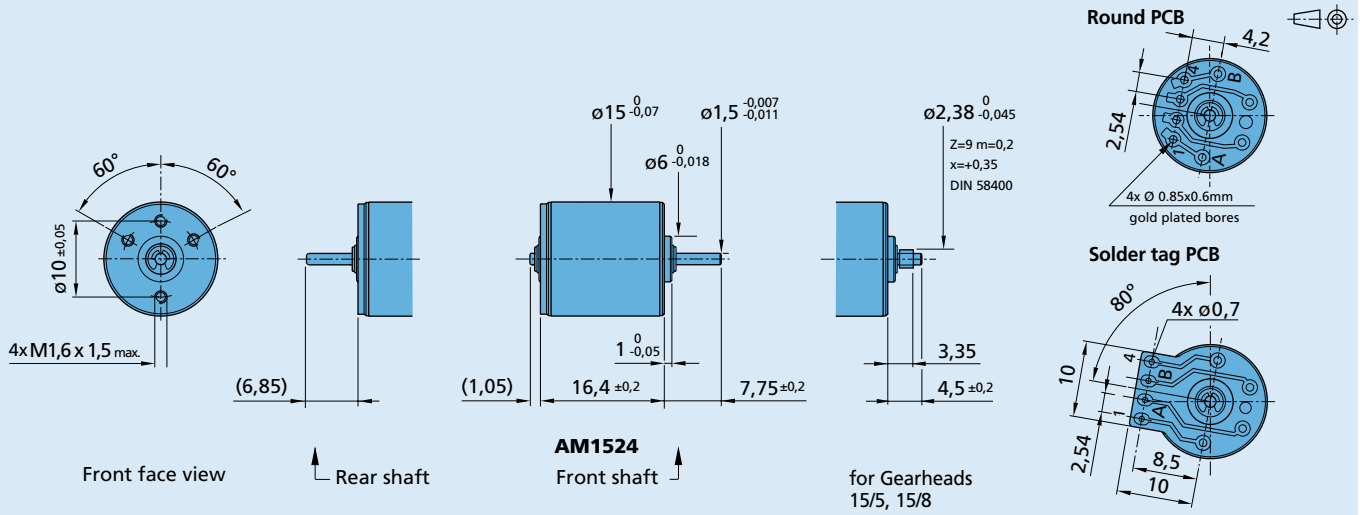
<sup>2)</sup> 2 phases ON, balanced phase currents

<sup>3)</sup> Curves measured with a load inertia of 10 · 10<sup>-9</sup> kgm<sup>2</sup>

<sup>4)</sup> Testing the motor at lower supply voltages in current mode will result in a decrease in torque at higher speed, even with the same current setting



### Dimensional drawing



### Combinations

| Drive Electronics  | Encoders       | Stepper Motors | Gearheads / Lead screws   |
|--|----------------|----------------|---|
|  |                |                |   |
| <b>AD VL M_S</b><br><b>AD VM M_S</b><br><b>AD CM M_S</b> | <b>AE 23B8</b> | <b>AM1524</b>  | <b>15A</b><br><b>15/5</b><br><b>15/8*</b><br><b>16/7</b><br><b>Lead screws M2 - M2,5 - M3</b> |

\* Zero Backlash Gearheads

### Ordering information

Example: **AM1524-2R-V-6-35-57**

| Motor type   | Bearings (rr)                                       | Winding (ww)  | Motor execution (ee)   |  | Front output shaft  |
|--|---|---|--|--|---|
| AM = Motor design<br>15 = Motor diameter (mm)<br>24 = Steps per revolution | Special lubricant options available                 |   | Only front output shaft  | With double output shaft   |   |
| <b>AM1524</b>  | - (sleeve bearings)<br><b>-2R</b> (2 ball bearings) | <b>-V-3-10*</b><br><b>-V-6-35</b><br><b>-V-12-150</b><br><b>-V-24-590*</b><br><b>-A-0,25-12,5</b><br><b>-A-0,45-3,6</b> | <b>-55</b> (Round PCB)<br><b>-57</b> (Round PCB)<br><b>-70</b> (Round PCB)<br><b>-83</b> (Round PCB)<br><b>-05</b> (Solder tag PCB)<br><b>-07</b> (Solder tag PCB)<br><b>-72</b> (Solder tag PCB)<br><b>-23</b> (Solder tag PCB) | <b>-54</b> (Round PCB)<br><b>-56</b> (Round PCB)<br><b>-71</b> (Round PCB)<br><b>-82</b> (Round PCB)<br><b>-04</b> (Solder tag PCB)<br><b>-06</b> (Solder tag PCB)<br><b>-73</b> (Solder tag PCB)<br><b>-22</b> (Solder tag PCB) | Plain shaft, L=7,75 mm for 16/7, M3<br>Pinion 15/5, 15/8<br>Plain shaft, L=4,5 mm for gearhead 15A<br>Plain shaft for lead screw M2 - M2,5<br>Plain shaft, L=7,75 mm for 16/7, M3<br>Pinion 15/5, 15/8<br>Plain shaft, L=4,5 mm for gearhead 15A<br>Plain shaft for lead screw M2 - M2,5<br>Idem -04 & for encoder AE23B8<br>Idem -06 & for encoder AE23B8<br>Idem -73 & for encoder AE23B8 |
| * Non-standard windings, for data please inquire with your point of sales  |   |   |  |  |   |