

# Stepper Motors

0,2 mNm

Two phases, 20 steps per revolution

## ADM0620-2R-ww-ee

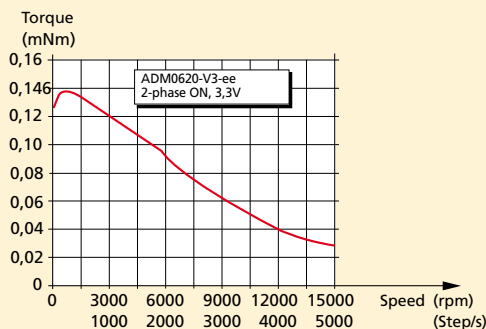
|  | ww =          | V-3     |         | V-6     |         | Drive mode                          |
|--|---------------|---------|---------|---------|---------|-------------------------------------|
|  |               | Voltage | Current | Voltage | Current |                                     |
| 1 Nominal voltage  |               | 3       | 6 – 30  | 6       | 6 – 30  | V DC                                |
| 2 Nominal current per phase (both phases ON)                       |               | –       | 0,075   | –       | 0,04    | A                                   |
| 3 Phase resistance (at 20°C)                                       |               |         | 30      |         | 120     | Ω                                   |
| 4 Phase inductance (1kHz)  |               |         | 3,5     |         | 9,9     | mH                                  |
| 5 Back-EMF amplitude   |               |         | 0,5     |         | 0,9     | V/k step/s                          |
| 6 Holding torque <sup>1)</sup> (at nominal current in both phases) | 0,2           |         |         |         |         | mNm                                 |
| 7 Holding torque <sup>1)</sup> (at twice the nominal current)      | 0,28          |         |         |         |         | mNm                                 |
| 8 Step angle (full step)   | 18            |         |         |         |         | degree                              |
| 9 Angular accuracy <sup>2)</sup>                                   | ± 5           |         |         |         |         | % of full step                      |
| 10 Residual torque   | 0,04          |         |         |         |         | mNm                                 |
| 11 Rotor inertia   | 0,7           |         |         |         |         | · 10 <sup>-9</sup> kgm <sup>2</sup> |
| 12 Resonance frequency (at no load)                                | 170           |         |         |         |         | Hz                                  |
| 13 Electrical time constant  | 0,10          |         |         |         |         | ms                                  |
| 14 Ambient temperature range                                       | –35 ... +70   |         |         |         |         | °C                                  |
| 15 Winding temperature tolerated, max.                             | 130           |         |         |         |         | °C                                  |
| 16 Thermal resistance winding-ambient air                          | 165           |         |         |         |         | °C/W                                |
| 17 Thermal time constant   | 120           |         |         |         |         | s                                   |
| 18 Shaft bearings  | ball bearings |         |         |         |         |                                     |
| 19 Shaft load, max.:   |               |         |         |         |         |                                     |
| – radial (3 mm from bearing)                                       | 0,3           |         |         |         |         | N                                   |
| – axial  | 0,5           |         |         |         |         | N                                   |
| 20 Shaft play, max.:   |               |         |         |         |         |                                     |
| – radial (0,2N)  | 20            |         |         |         |         | µm                                  |
| – axial (0,2N)   | 50            |         |         |         |         | µm                                  |
| 21 Isolation test voltage  | 200           |         |         |         |         | V DC                                |
| 22 Motor dimensions:   |               |         |         |         |         |                                     |
| – diameter   | 6             |         |         |         |         | mm                                  |
| – length   | 9,5           |         |         |         |         | mm                                  |
| – shaft diameter   | 0,8           |         |         |         |         | mm                                  |
| 23 Weight  | 1,4           |         |         |         |         | g                                   |

<sup>1)</sup> with bipolar driver

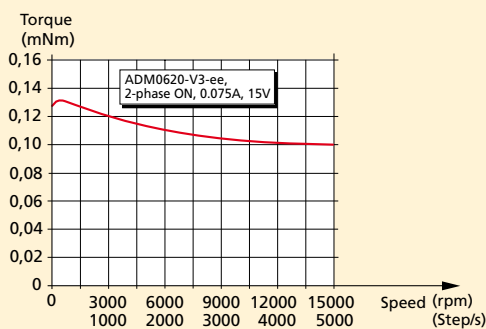
<sup>2)</sup> 2 phases ON, balanced phase currents

<sup>3)</sup> Curves measured with a load inertia of  $8 \cdot 10^{-9}$  kgm<sup>2</sup>

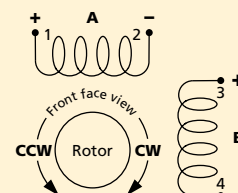
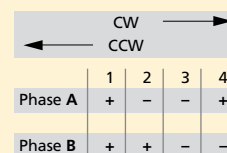
<sup>4)</sup> Testing the motor at lower supply voltages in current mode will result in a decrease in torque at higher speed, even with the same current setting.



Voltage mode (V) <sup>3)</sup>  
Driver AD VL M1S

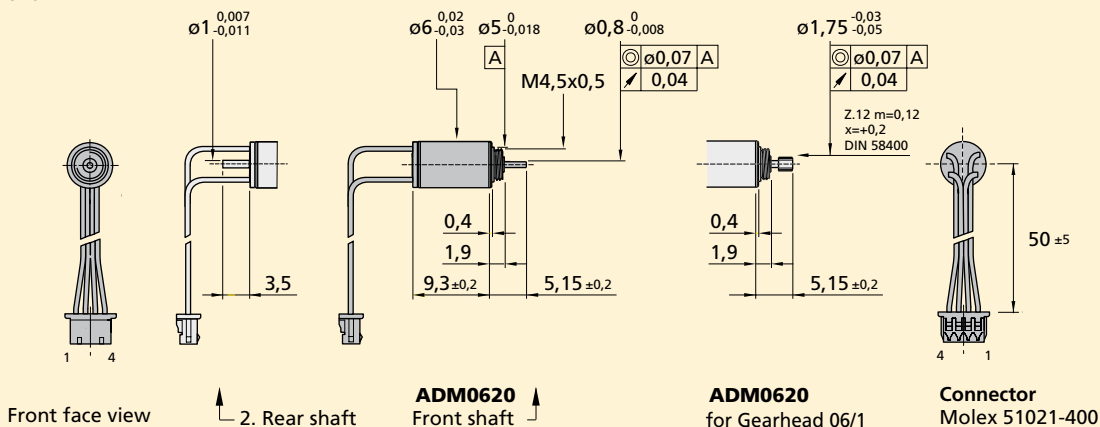


Current mode (A) <sup>3) 4)</sup>  
Driver AD CM M1S

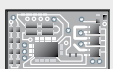
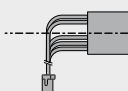
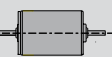
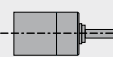


### Dimensional drawing

- standard
- optional



### Combinations

| Drive Electronics   | Encoders  | Stepper Motors   | Precision Gearheads   |
|---|---|--|---|
|  |  |  |  |
| <b>AD VL M_S</b><br><b>AD CM M_S</b>  |   | <b>ADM0620</b>   | <b>06/1</b>   |
|   |   |  |   |
|   |   |  |   |
|   |   |  |   |

### Ordering information

Example: **ADM0620-2R-V3-05**

| Motor type   | Bearings (rr)           | Winding (ww)  | Motor execution (ee)     |                          |   |
|--|-------------------------|---|--------------------------|--------------------------|---|
|  |                         |   | Only front output shaft  | With double output shaft | Front output shaft                        |
| ADM = ARSAPE Disk Motor<br>06 = Motor diameter (mm)<br>20 = Steps per revolution | Standard: ball bearings |   |                          |                          |   |
| <b>ADM0620</b>   | <b>-2R</b> (standard)   | <b>-V2<sup>1)</sup></b><br><b>-V3</b><br><b>-V6</b> | <b>-01</b><br><b>-05</b> | <b>-00</b><br><b>-06</b> | Plain shaft<br>Plain shaft<br>Pinion 06/1 |
|  |                         |   |                          |                          |   |
|  |                         |   |                          |                          |   |
|  |                         |   |                          |                          |   |

<sup>1)</sup> Non-standard windings, for data please inquire with your point of sales.