

Stepper Motors

62 mNm

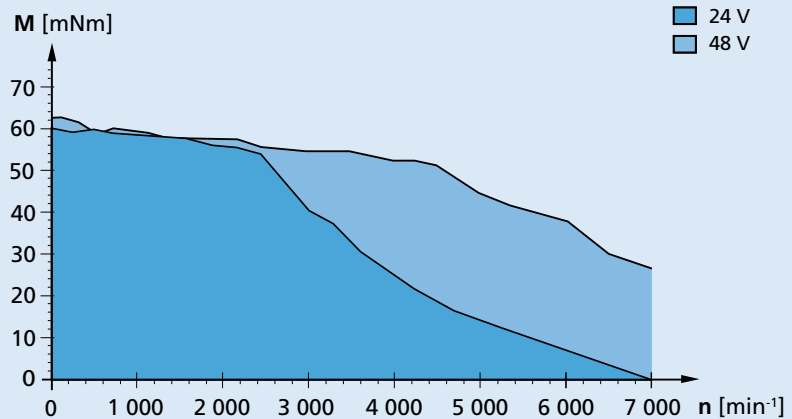
Two phase with Disc Magnet,
100 steps per revolution, microstepping motor

Series DM40100R

| Values at 20°C | DM40100R | | 2630 | | 1550 | | 0940 | |
|---|-------------------------------------|--------|----------|--------|----------|--------|--------------------|--------|
| | Parallel | Serial | Parallel | Serial | Parallel | Serial | Parallel | Serial |
| Connection | Parallel | Serial | Parallel | Serial | Parallel | Serial | Parallel | Serial |
| Nominal current per phase (1 phases ON) | 2,63 | 1,32 | 1,55 | 0,78 | 0,94 | 0,47 | A | |
| Boosted current per phase (1 phases ON) | 5,09 | 2,55 | 4,6 | 2,3 | 1,81 | 0,91 | A | |
| Phase resistance | 0,9 | 3,8 | 2,9 | 11,8 | 7,5 | 30 | Ω | |
| Phase inductance (1 kHz) | 1,15 | 4,6 | 3,3 | 13,2 | 9 | 36 | mH | |
| Holding torque at nominal current (1 phases ON) | 62 | 62 | 62 | 62 | 62 | 62 | mNm | |
| Holding torque at boosted current | 120 | 120 | 120 | 120 | 120 | 120 | mNm | |
| Residual torque, typ. | 3 | 3 | 3 | 3 | 3 | 3 | mNm | |
| Back-EMF amplitude | 1,47 | 2,95 | 2,5 | 5 | 4,14 | 8,27 | V/k step/s | |
| Electrical time constant | 1,2 | | | | | | ms | |
| Rotor inertia | 2,7·10 ⁻⁷ | | | | | | kgm ² | |
| Step angle (full step) | 3,6 | | | | | | ° | |
| Angular accuracy | ±6 | | | | | | % | |
| Angular acceleration, max. | 444·10 ³ | | | | | | rad/s ² | |
| Speed up to | 10 000 | | | | | | min ⁻¹ | |
| Resonance frequency (at no load) | 75 | | | | | | Hz | |
| Thermal resistance | 14 | | | | | | K/W | |
| Thermal time constant | 12 | | | | | | min | |
| Operating temperature range | -20 ... +50 | | | | | | °C | |
| Winding temperature, max. | +130 | | | | | | °C | |
| Shaft bearings | ball bearings (Bearing code: 2R) | | | | | | | |
| Shaft load max.: | | | | | | | | |
| – with shaft diameter | 5 | | | | | | mm | |
| – radial at 5 000 min ⁻¹ (5 mm from bearing) | 29 | | | | | | N | |
| – axial at 5 000 min ⁻¹ | 8 | | | | | | N | |
| – axial at standstill | 100 | | | | | | N | |
| Shaft play: | | | | | | | | |
| – radial | 0,015 | | | | | | mm | |
| – axial | 0 | | | | | | mm | |
| Housing material | Polyphenylensulfid (PPS) | | | | | | | |
| Mass | 125 | | | | | | g | |
| Magnet material | NdFeB | | | | | | | |


Driver settings

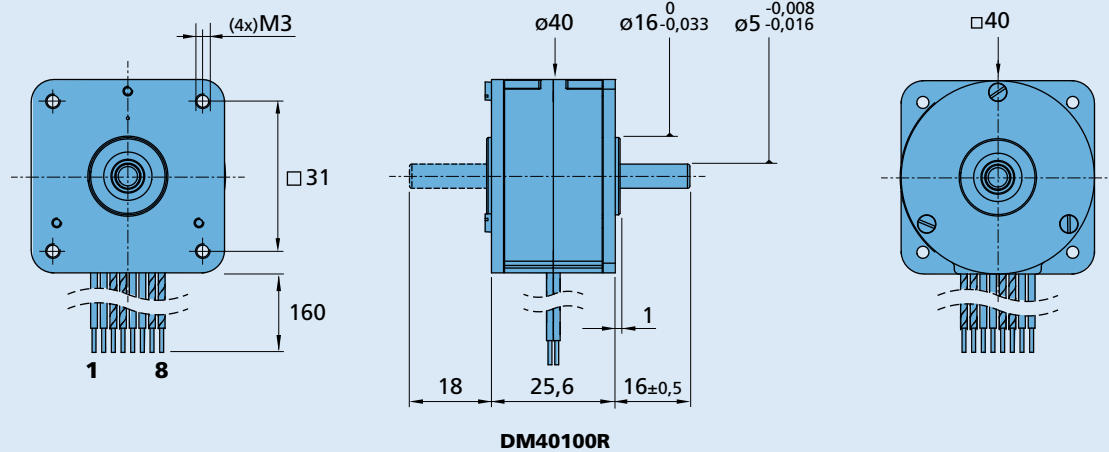
Curve measured with a load inertia of $1,49 \cdot 10^{-5} \text{ kgm}^2$ on the DM40100R2R263000 motor using a Technosoft IDS640 controller in sin/cos control mode, 256 micro-steps per full step and a peak phase current of 2,63A.



Possible operation areas

Dimensional drawing

Scale reduced 



Options and connection information

Example product designation: **DM40100R2R155000**

| Motor executions | | Front shaft description | Parallel connection | | |
|------------------|--------------|----------------------------------|---------------------|--------------|-------|
| front shaft | double shaft | | No. | Colour | Phase |
| 00 | 01 | Plain shaft, L=16mm | 1 | brown | A+ |
| | 02 | Plain shaft, L=16mm, for encoder | 2 | orange | A+ |
| | | | 3 | brown-white | A- |
| | | | 4 | orange-white | A- |
| | | | 5 | red | B+ |
| | | | 6 | yellow | B+ |
| | | | 7 | red-white | B- |
| | | | 8 | yellow-white | B- |

Product combination

| Precision Gearheads / Lead Screws | Encoders | Drive Electronics | Cables / Accessories |
|-----------------------------------|----------|-------------------|----------------------|
| | IE3-1024 | | |