

# TORQUE MOTOR

# TMM0360-030

| PERFORMANCE |                                   | Winding codes | 3VAS                                    | 3VBS                                    |
|-------------|-----------------------------------|---------------|---|---|
|             |                                   | UNIT          | FREE AIR CONVECTION (with glued stator) | FREE AIR CONVECTION (with glued stator) |
| Tp          | Peak torque                       | Nm            | 424                                     | 424                                     |
| Tc          | Continuous torque                 | Nm            | 114                                     | 114                                     |
| Ts          | Stall torque                      | Nm            | 87.8                                    | 87.8                                    |
| Kt          | Torque constant                   | Nm/Arms       | 17.8                                    | 8.90                                    |
| Ku          | Back EMF constant (*)             | Vrms/(rad/s)  | 10.3                                    | 5.14                                    |
| Km          | Motor constant                    | Nm/√W         | 6.72                                    | 6.72                                    |
| R20         | Electrical resistance at 20°C (*) | Ohm           | 4.68                                    | 1.17                                    |
| L1          | Electrical inductance (*)         | mH            | 27.4                                    | 6.86                                    |
| Ip          | Peak current                      | Arms          | 37.9                                    | 75.7                                    |
| Ic          | Continuous current                | Arms          | 6.60                                    | 13.2                                    |
| Is          | Stall current                     | Arms          | 5.00                                    | 10.0                                    |
| Pc          | Max. continuous power dissipation | W             | 428                                     | 428                                     |

| SPECIFICATIONS |                                      | UNIT              |        |        |
|----------------|--------------------------------------|-------------------|--------|--------|
| Udc            | Nominal input voltage                | VDC               | 600    | 600    |
| τth            | Thermal time constant                | s                 | 2190   | 2190   |
| Rth            | Thermal resistance                   | K/W               | 0.237  | 0.237  |
| 2p             | Number of poles                      | -                 | 66     | 66     |
| J              | Rotor inertia                        | kg.m <sup>2</sup> | 0.0655 | 0.0655 |
| Mr             | Rotor mass                           | kg                | 3.30   | 3.30   |
| Ms             | Stator mass                          | kg                | 10.0   | 10.0   |
| Td             | Max. detent torque (average to peak) | Nm                | 2.6    | 2.6    |
| ns             | Stall speed                          | rpm               | 0.0083 | 0.0083 |

Notes: (\*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.  
 Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.10 m<sup>2</sup> and rotor to a total surface of 0.079 m<sup>2</sup>

Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

