

TMRWD7 Torque Motor

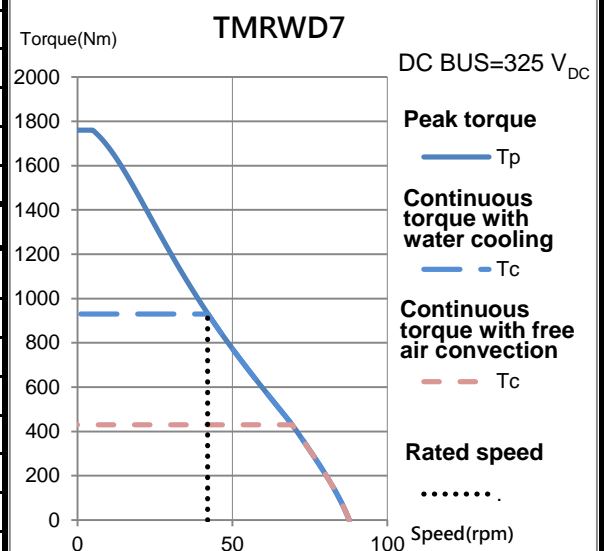
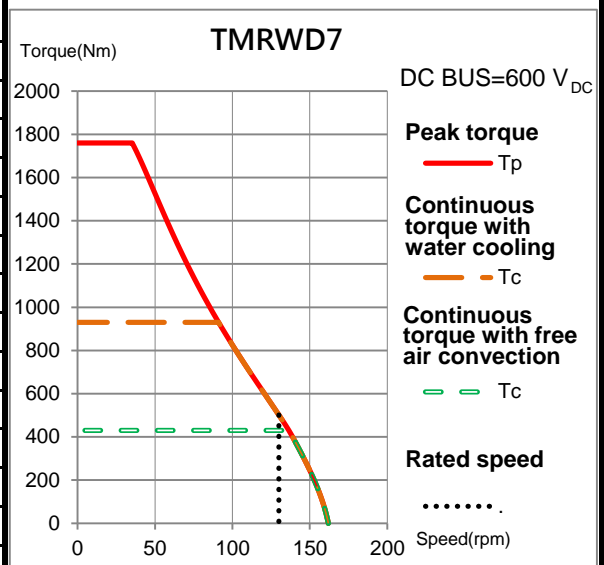
Electrical specifications

| Winding code : SB | Symbol | Unit | Free air convection | Water cooling |
|-----------------------------------|----------|----------------|-----------------------------|---------------|
| Continuous torque | T_c | Nm | 430 | 930 |
| Continuous current | I_c | A_{rms} | 12 | 30 |
| Stall torque | T_s | Nm | 301 | 651 |
| Stall current | I_s | A_{rms} | 8.4 | 21 |
| Peak torque(for 1sec.) | T_p | Nm | 1072.7 | 1760 |
| Peak current(for 1sec.) | I_p | A_{rms} | 36 | 81 |
| Torque constant | K_t | Nm/Arms | 36.11 | |
| Electrical time constant | T_e | ms | 7.1 | |
| Resistance (line to line at 25°C) | R_{25} | Ω | 3.04 | |
| Inductance (line to line) | L | mH | 21.5 | |
| Number of poles | 2p | | 88 | |
| Back emf constant (line to line) | K_v | Vrms/rad/s | 20.85 | |
| Motor constant (at 25°C) | K_m | Nm/ \sqrt{W} | 16.78 | |
| Thermal resistance | R_{th} | K/W | 0.14 | 0.023 |
| Thermal sensor | | | PTC SNM100+SNM120+Pt1000 | |
| Max. DC BUS | | V_{DC} | 750 | |
| Inertia of rotor | J | kgm^2 | 0.37 | |
| Thermal time constant | T_{th} | s | 3940 | 160 |
| Max. continuous power dissipation | P_c | W | 900 | 5629 |
| Max. peak power dissipation | P_p | W | 41039 | |
| Rated speed(at 600VDC) | | rpm | 130 | |

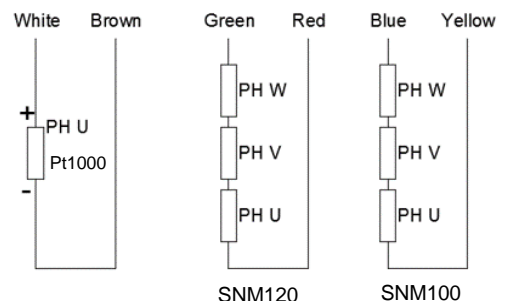
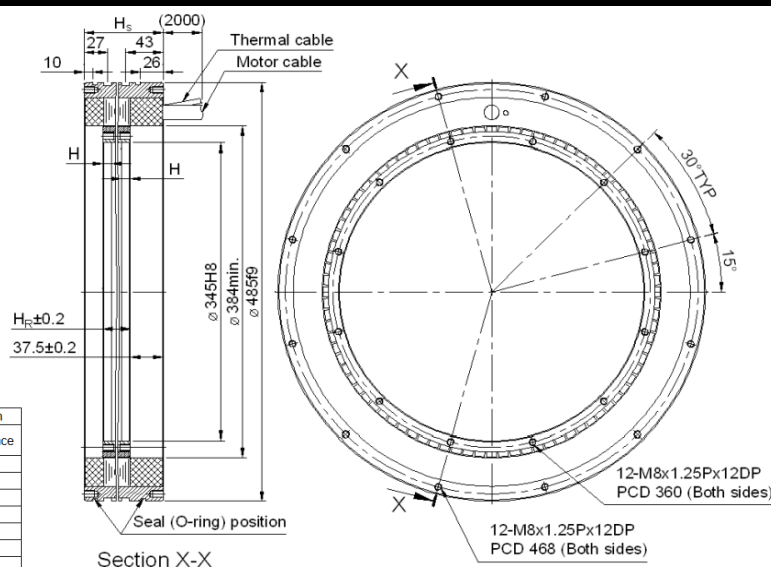
Mechanical specifications

| | Symbol | Unit | Free air convection | Water cooling |
|--|----------------|-------|---------------------|---------------|
| Mass of rotor | M_r | kg | 12.8 | |
| Mass of stator | M_s | kg | 53.2 | |
| Height of stator | H_s | mm | 130 | |
| Height of rotor | H_r | mm | 71 | |
| Length of rotor centring fit | H | mm | 15 | |
| Water temperature difference for P_c | $\Delta\theta$ | K | - | 5 |
| Minimum water flow | q | l/min | - | 16.1 |
| Max. pressure drop | Δp | bar | - | 1 |

T-N curve



Thermal sensor



| General tolerance mm | |
|----------------------|-----------|
| Nominal dimension | Tolerance |
| ~ 6 | ± 0.1 |
| > 6 ~ 30 | ± 0.2 |
| > 30 ~ 120 | ± 0.3 |
| > 120 ~ 300 | ± 0.4 |
| > 300 ~ 600 | ± 0.5 |
| > 600 ~ 1200 | ± 0.8 |
| > 1200 ~ 2400 | ± 1.0 |
| > 2400 | ± 1.5 |

| Motor wire table | |
|-------------------|--------|
| Color or wire no. | Signal |
| U/L1 | PH U |
| V/L2 | PH V |
| W/L3 | PH W |
| Green/Yellow | GND |

Except dimensions, all the specifications in the table are in $\pm 10\%$ of tolerance

Version: 2.00

This drawing is only for reference, detail dimensions please refer to approval drawing.

Date: 2020/10/23