

# TM-2-4A-SA0

# Torque Motor

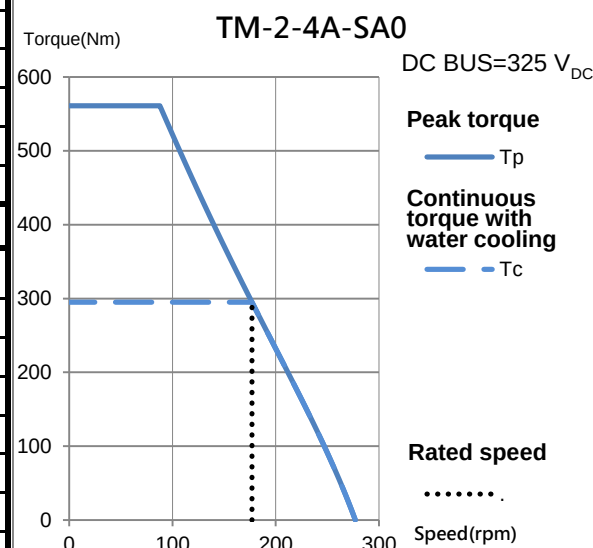
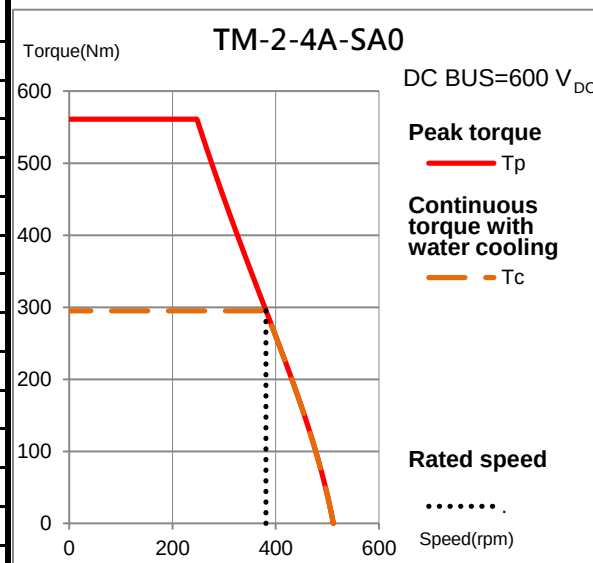
## Electrical specifications

| Winding code : SA                 | Symbol   | Unit           | Water cooling               |
|-----------------------------------|----------|----------------|-----------------------------|
| Continuous torque                 | $T_c$    | Nm             | 295                         |
| Continuous current                | $I_c$    | $A_{rms}$      | 24.9                        |
| Stall torque                      | $T_s$    | Nm             | 239                         |
| Stall current                     | $I_s$    | $A_{rms}$      | 19.9                        |
| Peak torque(for 1sec.)            | $T_p$    | Nm             | 561                         |
| Peak current(for 1sec.)           | $I_p$    | $A_{rms}$      | 52                          |
| Torque constant                   | $K_t$    | Nm/Arms        | 12.47                       |
| Electrical time constant          | $T_e$    | ms             | 2.8                         |
| Resistance (line to line at 25°C) | $R_{25}$ | $\Omega$       | 3.1                         |
| Inductance (line to line)         | $L$      | mH             | 8.75                        |
| Number of poles                   | 2p       |                | 44                          |
| Back emf constant (line to line)  | $K_v$    | Vrms/rad/s     | 7.2                         |
| Motor constant (at 25°C)          | $K_m$    | Nm/ $\sqrt{W}$ | 5.74                        |
| Thermal resistance                | $R_{th}$ | K/W            | 0.036                       |
| Thermal sensor                    |          |                | PTC<br>SNM100+SNM130+Pt1000 |
| Max. DC BUS                       |          | $V_{DC}$       | 750                         |
| Inertia of rotor                  | $J$      | $kgm^2$        | 0.029                       |
| Thermal time constant             | $T_{th}$ | s              | 55                          |
| Max. continuous power dissipation | $P_c$    | W              | 4073                        |
| Max. peak power dissipation       | $P_p$    | W              | 17765                       |
| Rated speed(at 600VDC)            |          | rpm            | 381                         |

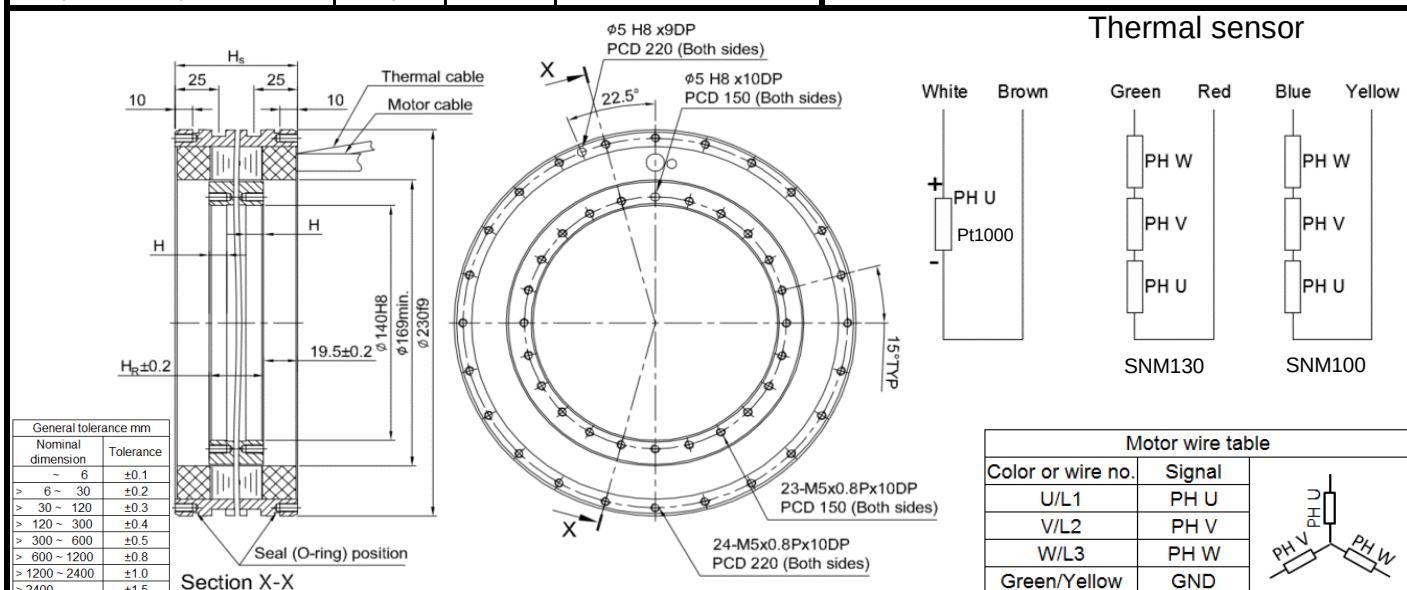
## Mechanical specifications

|                                        | Symbol         | Unit  | Water cooling |
|----------------------------------------|----------------|-------|---------------|
| Mass of rotor                          | $M_r$          | kg    | 5             |
| Mass of stator                         | $M_s$          | kg    | 15            |
| Height of stator                       | $H_s$          | mm    | 140           |
| Height of rotor                        | $H_r$          | mm    | 101           |
| Length of rotor centring fit           | $H$            | mm    | 15            |
| Water temperature difference for $P_c$ | $\Delta\theta$ | K     | 5             |
| Minimum water flow                     | $q$            | l/min | 11.7          |
| Max. pressure drop                     | $\Delta p$     | bar   | 1             |

## T-N curve



## Thermal sensor



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