

TMRWAAL Torque Motor

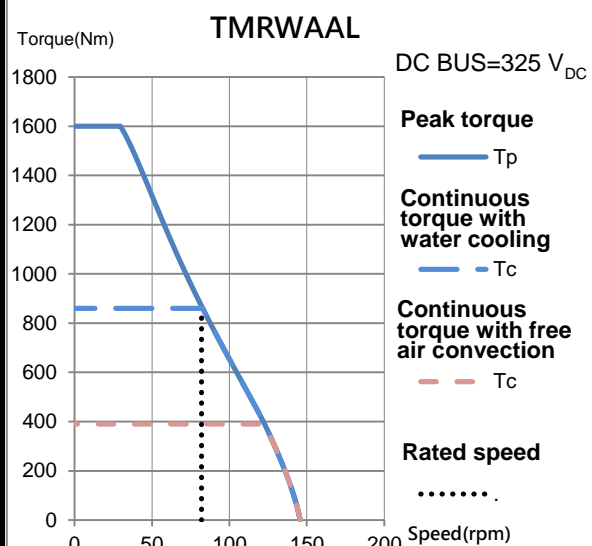
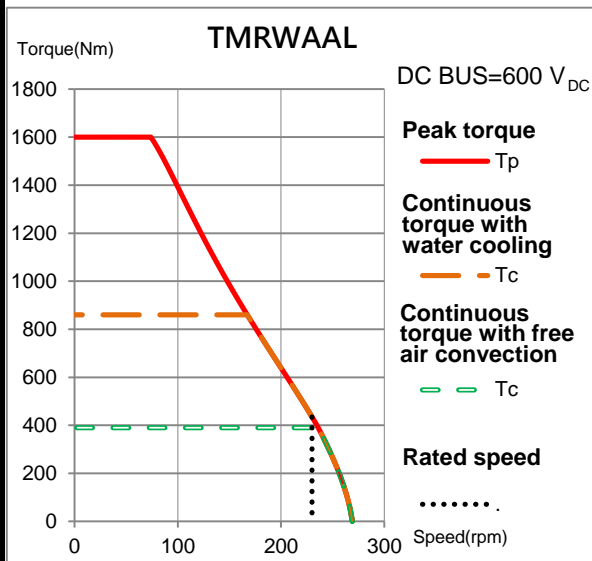
Electrical specifications

Winding code : SC	Symbol	Unit	Free air convection	Water cooling
Continuous torque	T_c	Nm	390	860
Continuous current	I_c	A_{rms}	18	45
Stall torque	T_s	Nm	273	602
Stall current	I_s	A_{rms}	12.6	31.5
Peak torque(for 1sec.)	T_p	Nm	992.5	1600
Peak current(for 1sec.)	I_p	A_{rms}	54	121.5
Torque constant	K_t	Nm/Arms	21.75	
Electrical time constant	T_e	ms	8	
Resistance (line to line at 25°C)	R_{25}	Ω	1.32	
Inductance (line to line)	L	mH	10.5	
Number of poles	2p		66	
Back emf constant (line to line)	K_v	Vrms/rad/s	12.55	
Motor constant (at 25°C)	K_m	Nm/ \sqrt{W}	15.4	
Thermal resistance	R_{th}	K/W	0.15	0.024
Thermal sensor			PTC SNM100+SNM120+Pt1000	
Max. DC BUS		V_{DC}	750	
Inertia of rotor	J	kgm^2	0.21	
Thermal time constant	T_{th}	s	3670	99
Max. continuous power dissipation	P_c	W	879	5497
Max. peak power dissipation	P_p	W	40079	
Rated speed(at 600VDC)		rpm	230	

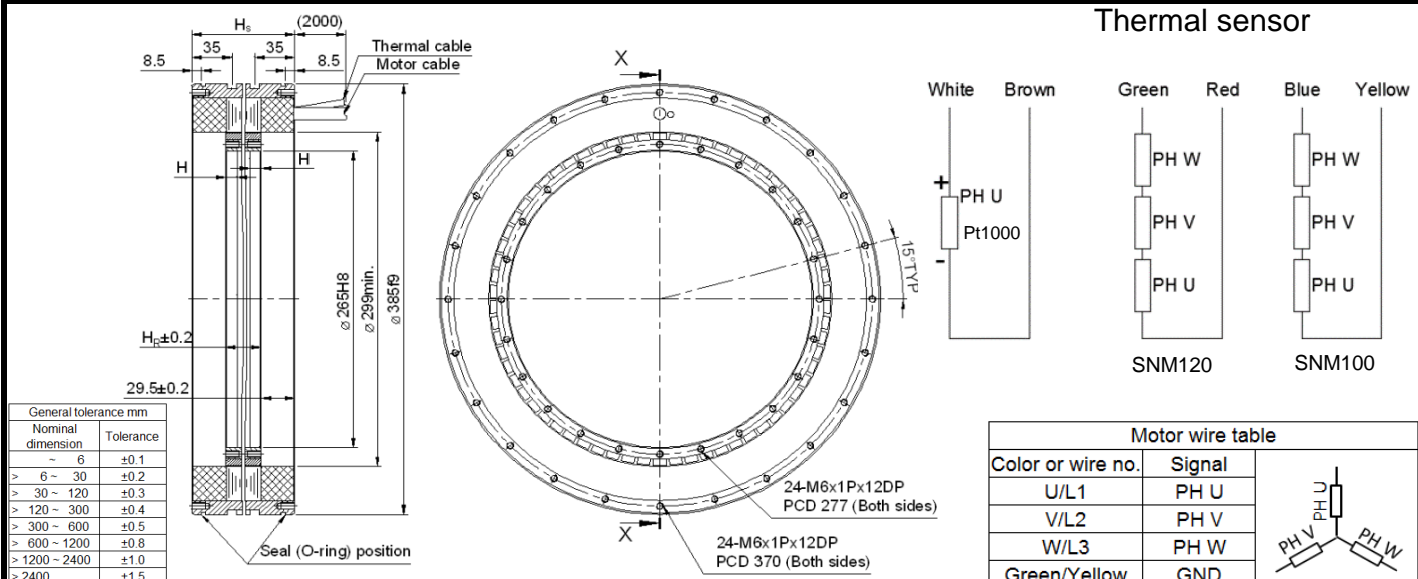
Mechanical specifications

	Symbol	Unit	Free air convection	Water cooling
Mass of rotor	M_r	kg	10.2	
Mass of stator	M_s	kg	44.9	
Height of stator	H_s	mm	160	
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	-	15.8
Max. pressure drop	Δp	bar	-	2

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