

TMRW4F Torque Motor

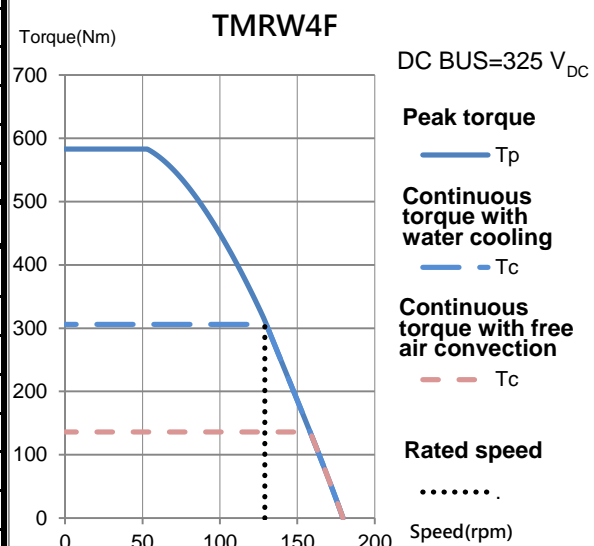
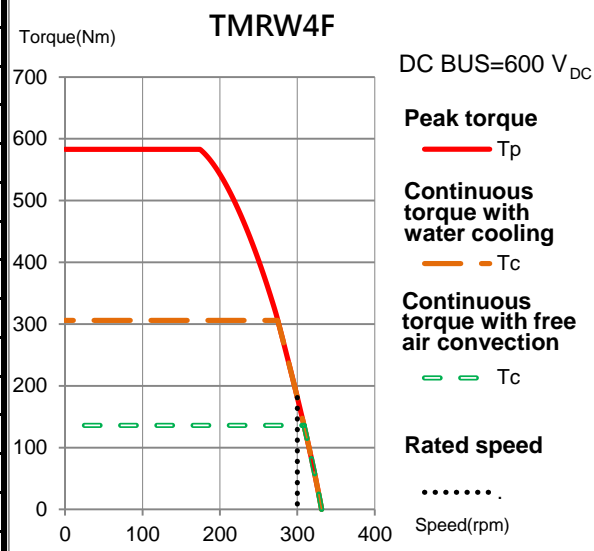
Electrical specifications

Winding code : PB	Symbol	Unit	Free air convection	Water cooling
Continuous torque	T_c	Nm	136	307
Continuous current	I_c	A_{rms}	8	18
Stall torque	T_s	Nm	95	215
Stall current	I_s	A_{rms}	5.6	12.6
Peak torque(for 1sec.)	T_p	Nm	390.5	583
Peak current(for 1sec.)	I_p	A_{rms}	24	48.6
Torque constant	K_t	Nm/Arms	17.65	
Electrical time constant	T_e	ms	5.2	
Resistance (line to line at 25°C)	R_{25}	Ω	3.66	
Inductance (line to line)	L	mH	19.13	
Number of poles	2p		22	
Back emf constant (line to line)	K_v	Vrms/rad/s	10.19	
Motor constant (at 25°C)	K_m	Nm/ \sqrt{W}	7.26	
Thermal resistance	R_{th}	K/W	0.27	0.053
Thermal sensor			PTC SNM100+SNM120+Pt1000	
Max. DC BUS		V_{DC}	750	
Inertia of rotor	J	kgm^2	0.045	
Thermal time constant	T_{th}	s	2080	68
Max. continuous power dissipation	P_c	W	481	2439
Max. peak power dissipation	P_p	W	17785	
Rated speed(at 600VDC)		rpm	300	

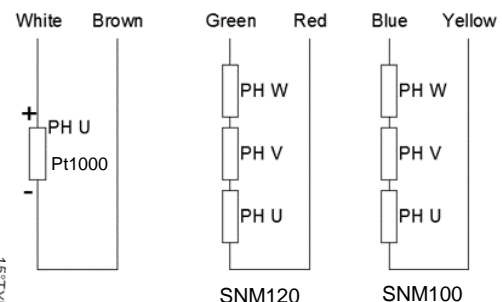
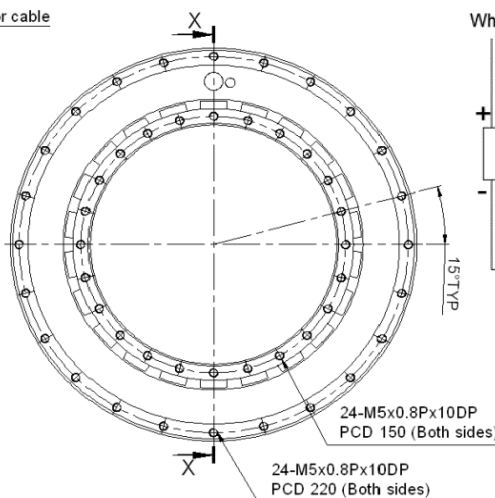
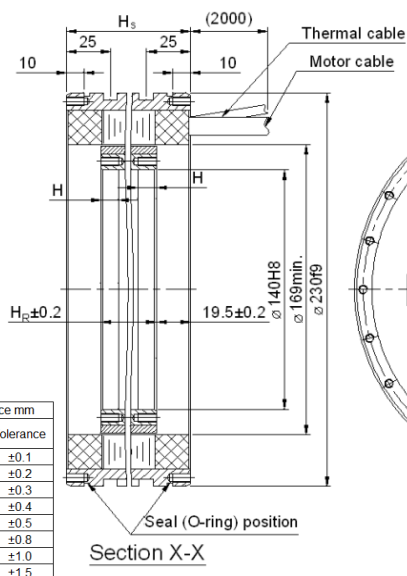
Mechanical specifications

	Symbol	Unit	Free air convection	Water cooling
Mass of rotor	M_r	kg	7.1	
Mass of stator	M_s	kg	18.7	
Height of stator	H_s	mm	190	
Height of rotor	H_r	mm	151	
Length of rotor centring fit	H	mm	15	
Water temperature difference for P_c	$\Delta\theta$	K	-	5
Minimum water flow	q	l/min	-	7
Max. pressure drop	Δp	bar	-	2

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