

TMRW7F Torque Motor

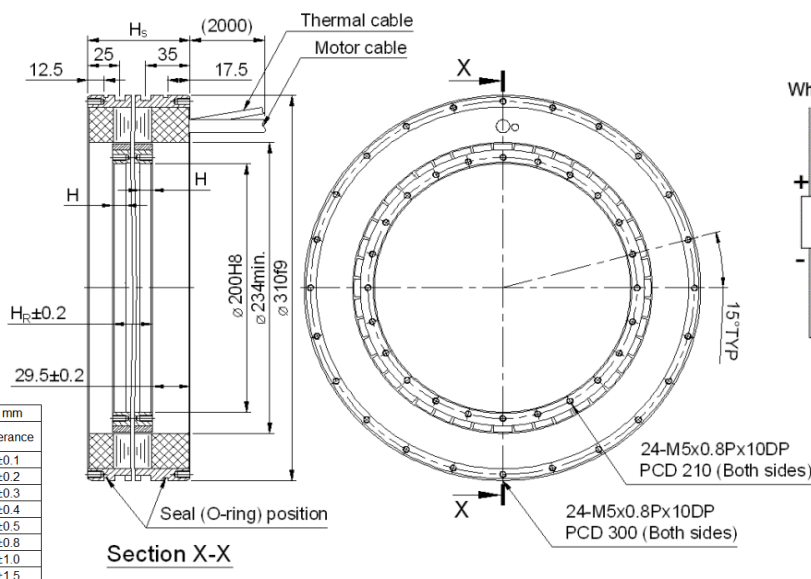
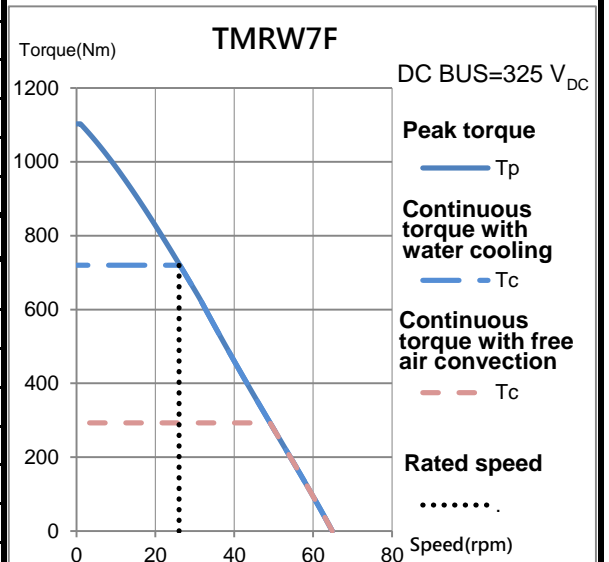
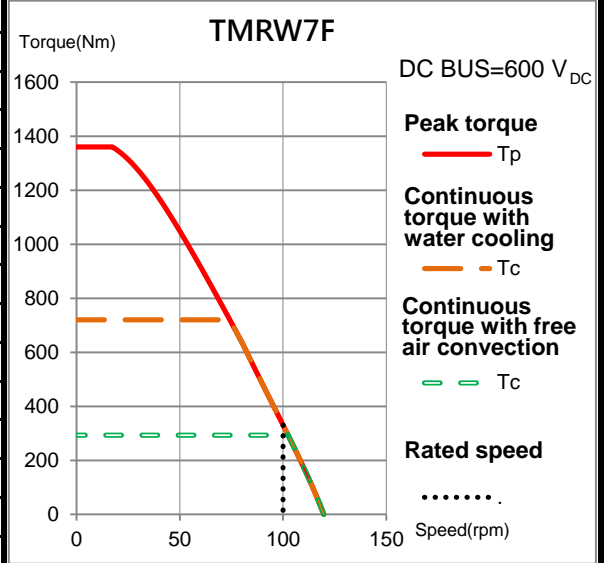
Electrical specifications

Winding code : SA	Symbol	Unit	Free air convection	Water cooling
Continuous torque	T_c	Nm	293	720
Continuous current	I_c	A_{rms}	6	15
Stall torque	T_s	Nm	205	504
Stall current	I_s	A_{rms}	4.2	10.5
Peak torque(for 1sec.)	T_p	Nm	839	1360
Peak current(for 1sec.)	I_p	A_{rms}	18	40.5
Torque constant	K_t	Nm/Arms	48.85	
Electrical time constant	T_e	ms	6	
Resistance (line to line at 25°C)	R_{25}	Ω	10	
Inductance (line to line)	L	mH	60	
Number of poles	2p		44	
Back emf constant (line to line)	K_v	Vrms/rad/s	28.2	
Motor constant (at 25°C)	K_m	Nm/ \sqrt{W}	12.61	
Thermal resistance	R_{th}	K/W	0.18	0.028
Thermal sensor			PTC SNM100+SNM120+Pt1000	
Max. DC BUS		V_{DC}	750	
Inertia of rotor	J	kgm^2	0.11	
Thermal time constant	T_{th}	s	3400	100
Max. continuous power dissipation	P_c	W	740	4630
Max. peak power dissipation	P_p	W	33756	
Rated speed(at 600VDC)		rpm	100	

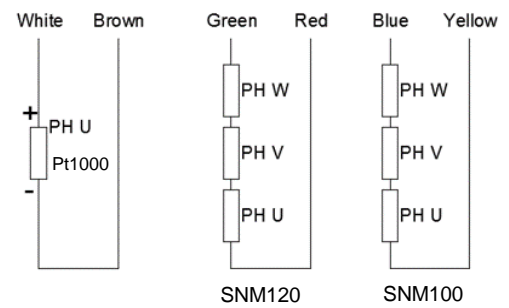
Mechanical specifications

	Symbol	Unit	Free air convection	Water cooling
Mass of rotor	M_r	kg	12.1	
Mass of stator	M_s	kg	43.6	
Height of stator	H_s	mm	200	
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	-	13.3
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
This drawing is only for reference, detail dimensions please refer to approval drawing.

Version: 2.00
Date: 2020/10/23