

# TMRW77 Torque Motor

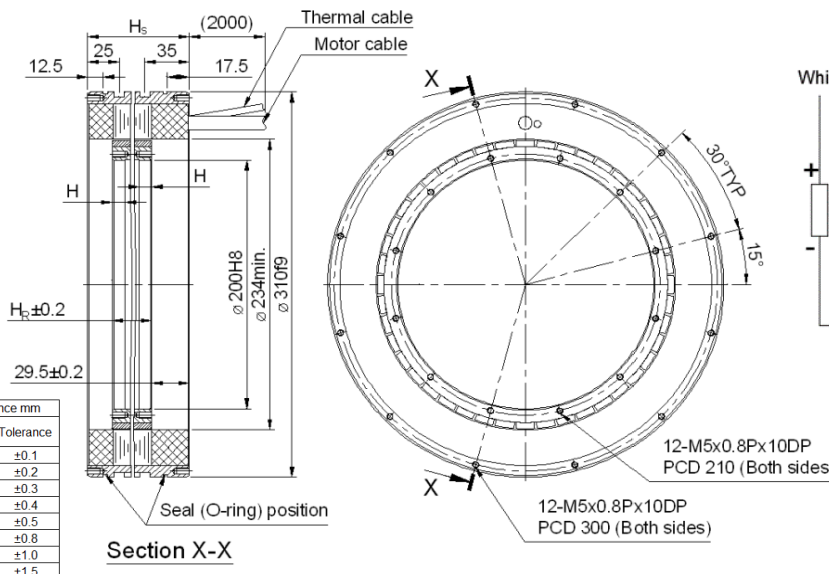
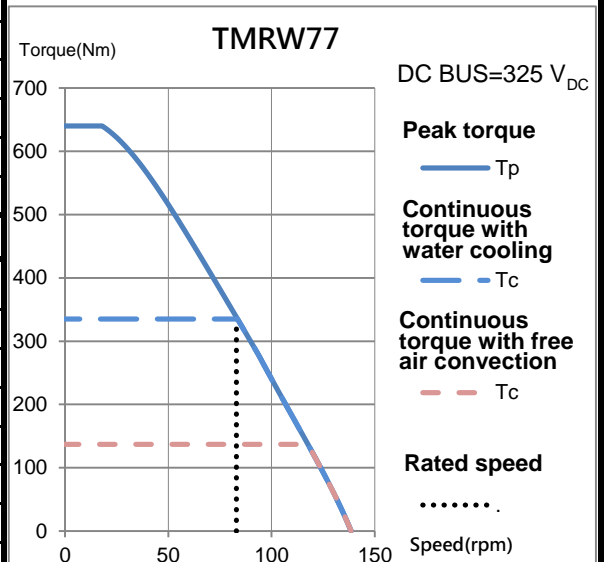
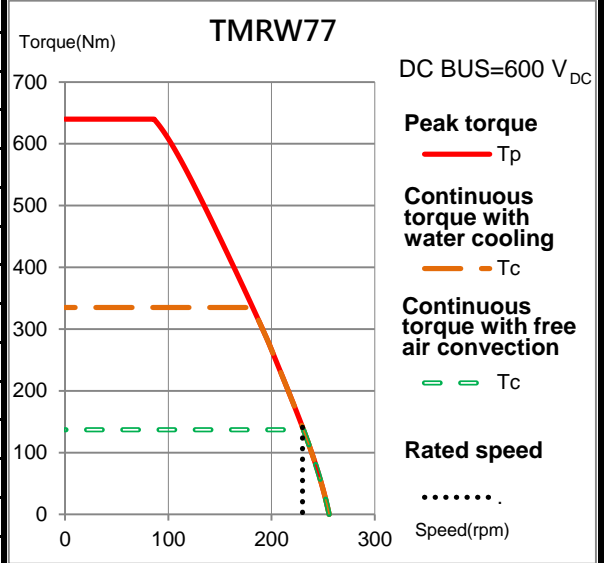
## Electrical specifications

Winding code : SA	Symbol	Unit	Free air convection	Water cooling
Continuous torque	$T_c$	Nm	137	335
Continuous current	$I_c$	$A_{rms}$	6	15
Stall torque	$T_s$	Nm	96	235
Stall current	$I_s$	$A_{rms}$	4.2	10.5
Peak torque(for 1sec.)	$T_p$	Nm	390.5	640
Peak current(for 1sec.)	$I_p$	$A_{rms}$	18	40.5
Torque constant	$K_t$	Nm/Arms	22.8	
Electrical time constant	$T_e$	ms	5.6	
Resistance (line to line at 25°C)	$R_{25}$	$\Omega$	5.52	
Inductance (line to line)	L	mH	30.9	
Number of poles	2p		44	
Back emf constant (line to line)	$K_v$	Vrms/rad/s	13.2	
Motor constant (at 25°C)	$K_m$	Nm/ $\sqrt{W}$	7.92	
Thermal resistance	$R_{th}$	K/W	0.32	0.051
Thermal sensor			PTC SNM100+SNM120+Pt1000	
Max. DC BUS		$V_{DC}$	750	
Inertia of rotor	J	$kgm^2$	0.059	
Thermal time constant	$T_{th}$	s	4450	170
Max. continuous power dissipation	$P_c$	W	409	2558
Max. peak power dissipation	$P_p$	W	18649	
Rated speed(at 600VDC)		rpm	230	

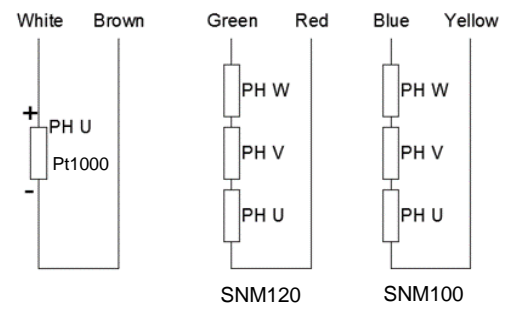
## Mechanical specifications

	Symbol	Unit	Free air convection	Water cooling
Mass of rotor	$M_r$	kg	5.7	
Mass of stator	$M_s$	kg	23.7	
Height of stator	$H_s$	mm	120	
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	-	7.4
Max. pressure drop	$\Delta p$	bar	-	1

## T-N curve



## Thermal sensor



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