

# TM-2-13-SA0 Torque Motor

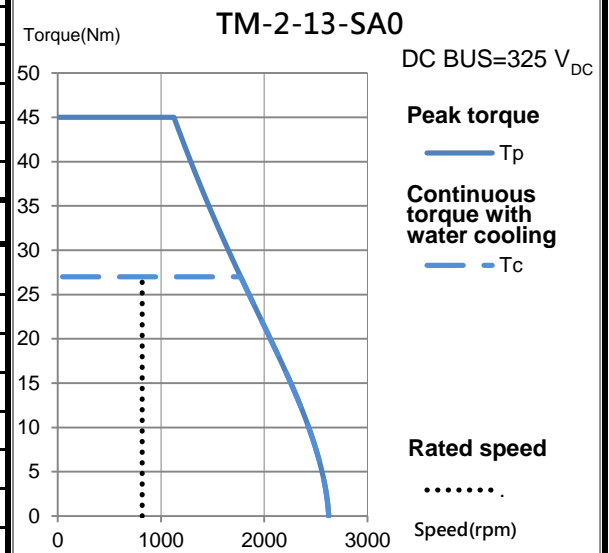
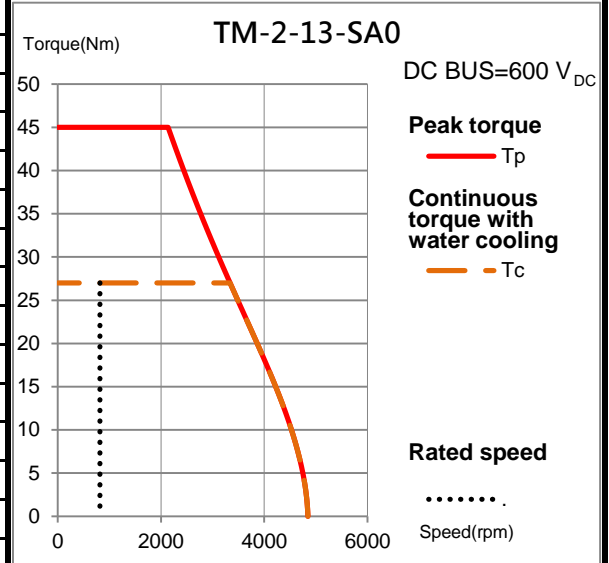
## Electrical specifications

Winding code : SA	Symbol	Unit	Water cooling
Continuous torque	$T_c$	Nm	27
Continuous current	$I_c$	$A_{rms}$	22.3
Stall torque	$T_s$	Nm	22
Stall current	$I_s$	$A_{rms}$	17.8
Peak torque(for 1sec.)	$T_p$	Nm	45
Peak current(for 1sec.)	$I_p$	$A_{rms}$	43.4
Torque constant	$K_t$	Nm/Arms	1.32
Electrical time constant	$T_e$	ms	5.1
Resistance (line to line at 25°C)	$R_{25}$	$\Omega$	0.7
Inductance (line to line)	L	mH	3.6
Number of poles	2p		22
Back emf constant (line to line)	$K_v$	Vrms/rad/s	0.76
Motor constant (at 25°C)	$K_m$	Nm/ $\sqrt{W}$	1.26
Thermal resistance	$R_{th}$	K/W	0.201
Thermal sensor			PTC SNM100+SNM130+Pt1000
Max. DC BUS		$V_{DC}$	750
Inertia of rotor	J	$kgm^2$	0.001
Thermal time constant	$T_{th}$	s	210
Max. continuous power dissipation	$P_c$	W	738
Max. peak power dissipation	$P_p$	W	2797
Rated speed(at 600VDC)		rpm	818

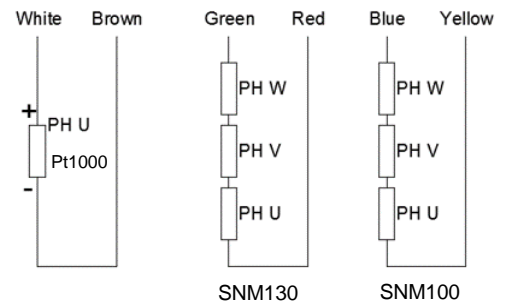
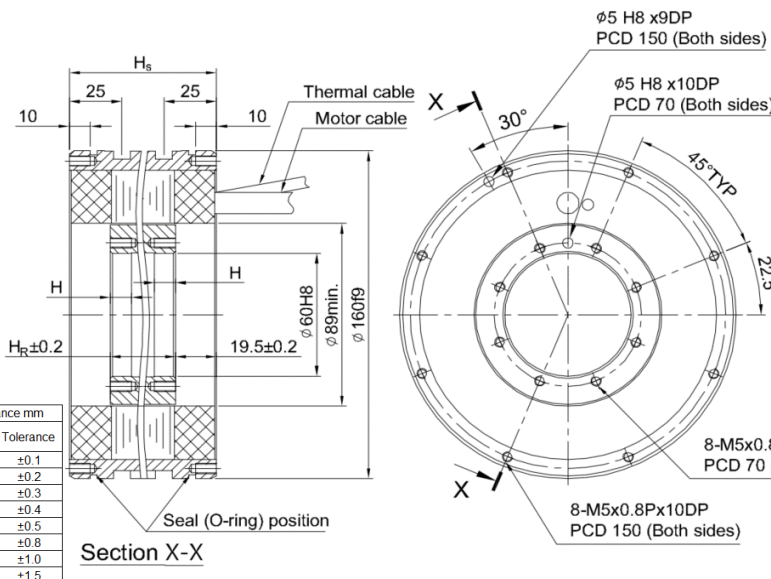
## Mechanical specifications

	Symbol	Unit	Water cooling
Mass of rotor	$M_r$	kg	0.7
Mass of stator	$M_s$	kg	4.5
Height of stator	$H_s$	mm	70
Height of rotor	$H_r$	mm	31
Length of rotor centring fit	H	mm	10
Water temperature difference for $P_c$	$\Delta\theta$	K	5
Minimum water flow	q	l/min	2.2
Max. pressure drop	$\Delta p$	bar	1

## T-N curve



## Thermal sensor



Motor wire table	
Color or wire no.	Signal
U/L1	PH U
V/L2	PH V
W/L3	PH W
Green/Yellow	GND

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

Except dimensions, all the specifications in the table are in ±10% of tolerance

This drawing is only for reference, detail dimensions please refer to approval drawing.

Version: 2.00

Date: 2020/10/23