TM-5-2F-SB6 Torque Motor

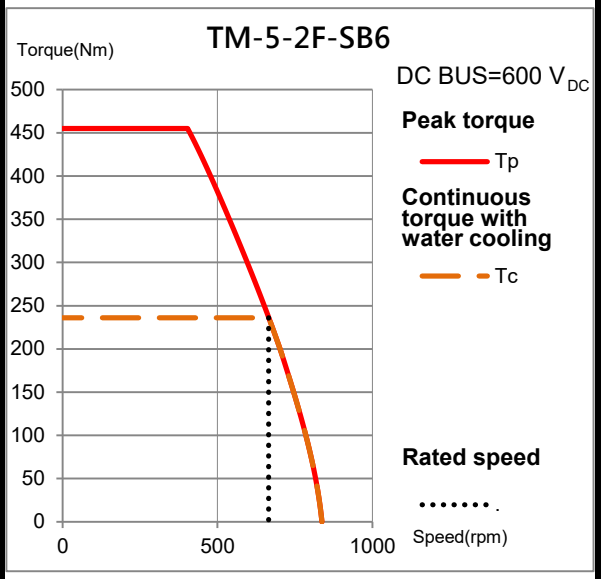
Electrical specifications

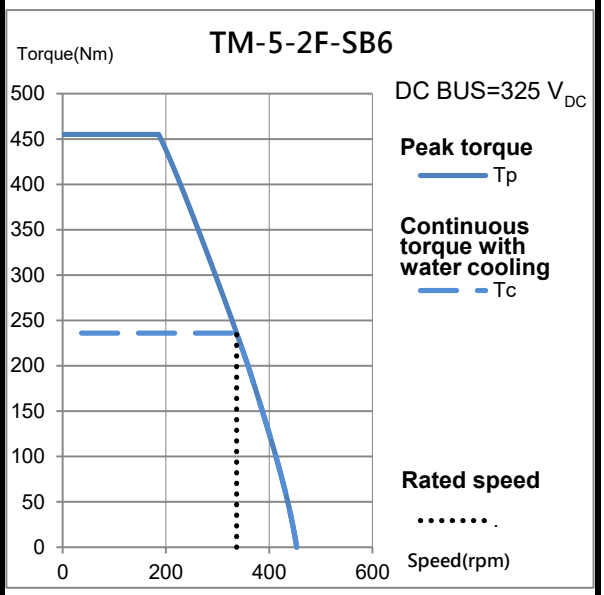
Winding code : SB6	Symbol	Unit	Water cooling
Continuous torque	T_c	Nm	236
Continuous current	I_c	A_{rms}	32.2
Stall torque	T_s	Nm	193
Stall current	I_s	A_{rms}	25.8
Peak torque(for 1sec.)	T_p	Nm	455
Peak current(for 1sec.)	I_p	A_{rms}	80.4
Torque constant	K_t	Nm/Arms	7.62
Electrical time constant	T_e	ms	7.1
Resistance (line to line at 25℃)	R_{25}	Ω	1.23
Inductance (line to line)	L	mH	8.7
Number of poles	2p		22
Back emf constant (line to line)	K_v	Vrms/rad/s	4.4
Motor constant (at 25℃)	K_m	Nm/√W	5.5
Thermal resistance	R_{th}	K/W	0.055
Thermal sensor			PTC 100+PTC 130+Pt1000
Max. DC BUS		V_{DC}	600/ 750 refer to manual for details
Inertia of rotor	J	kgm^2	0.014
Thermal time constant	T_{th}	s	100
Max. continuous power dissipation	P_c	W	2706
Max. peak power dissipation	P_p	W	16871
Rated speed(at 600VDC)		rpm	665

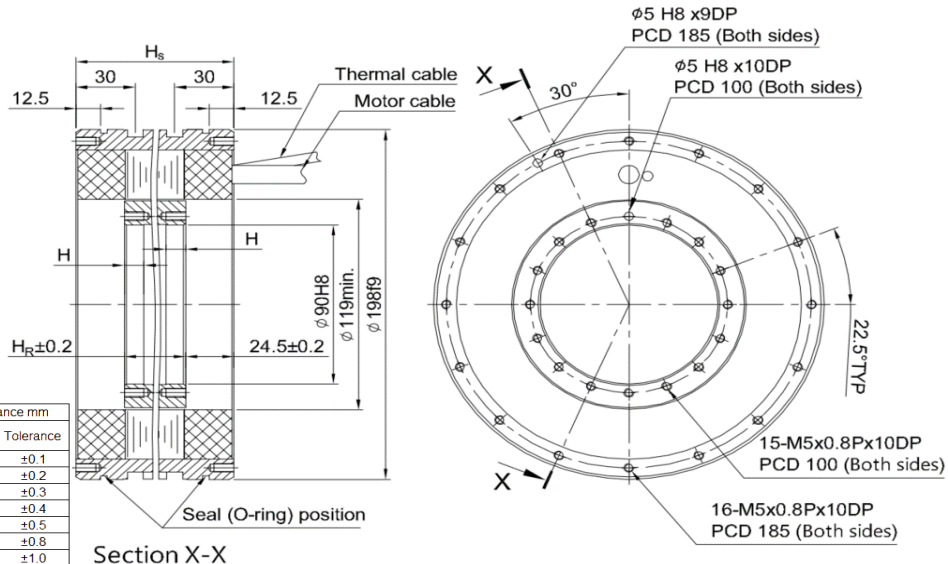
Mechanical specifications

	Symbol	Unit	Water cooling
Mass of rotor	M_r	kg	5.1
Mass of stator	M_S	kg	22.7
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 Pc	△θ	K	5
Minimum water flow	q	l/min	7.8
Max. pressure drop	△p	bar	0.4

T-N curve

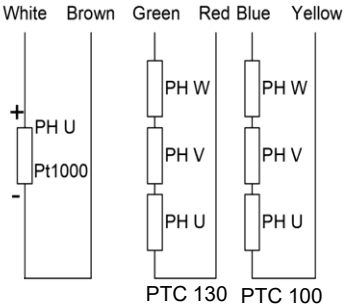




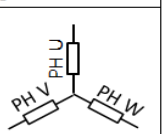


General tolerance mm	
Nominal dimension	Tolerance
~ 6	±0.1
> 6 ~ 30	±0.2
> 30 ~ 120	±0.3
> 120 ~ 300	±0.4
> 300 ~ 600	±0.5
> 600 ~ 1200	±0.8
> 1200 ~ 2400	±1.0
> 2400	±1.5

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



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

The drawing and values are only for reference.

Version: 2.10

Date: 2025/9/3