TM-5-2F-PB0 Torque Motor

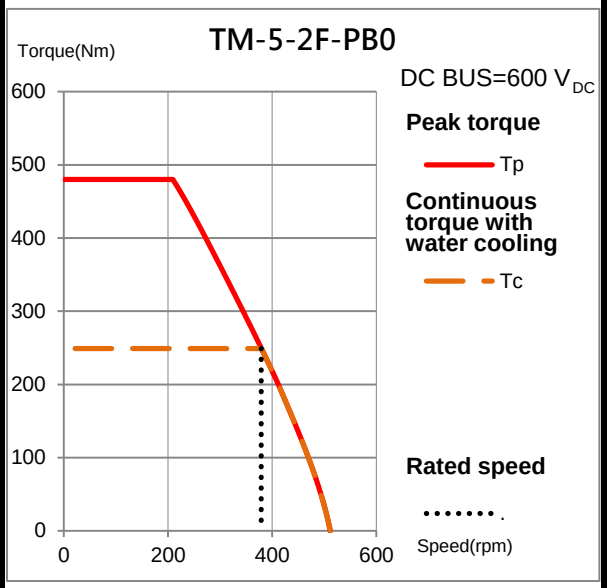
Electrical specifications

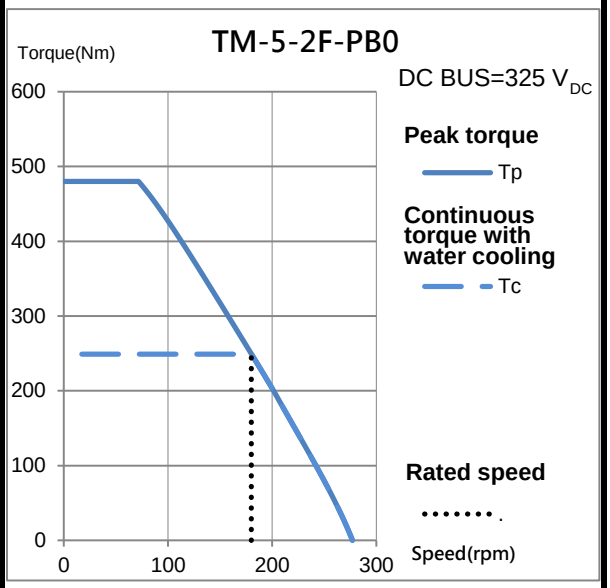
Winding code : PB0	Symbol	Unit	Water cooling
Continuous torque	T_c	Nm	249
Continuous current	I_c	A_{rms}	20.4
Stall torque	T_s	Nm	203
Stall current	I_s	A_{rms}	16.3
Peak torque(for 1sec.)	T_p	Nm	480
Peak current(for 1sec.)	I_p	A_{rms}	51
Torque constant	K_t	Nm/Arms	12.47
Electrical time constant	T_e	ms	6.9
Resistance (line to line at 25℃)	R_{25}	Ω	3.4
Inductance (line to line)	L	mH	23.4
Number of poles	2p		22
Back emf constant (line to line)	K_v	Vrms/rad/s	7.2
Motor constant (at 25℃)	K_m	Nm/√W	5.52
Thermal resistance	R_{th}	K/W	0.049
Thermal sensor			PTC 100+PTC 130+Pt1000
Max. DC BUS		V_{DC}	750
Inertia of rotor	J	kgm^2	0.0139
Thermal time constant	T_{th}	s	110
Max. continuous power dissipation	P_c	W	2996
Max. peak power dissipation	P_p	W	18727
Rated speed(at 600VDC)		rpm	379

Mechanical specifications

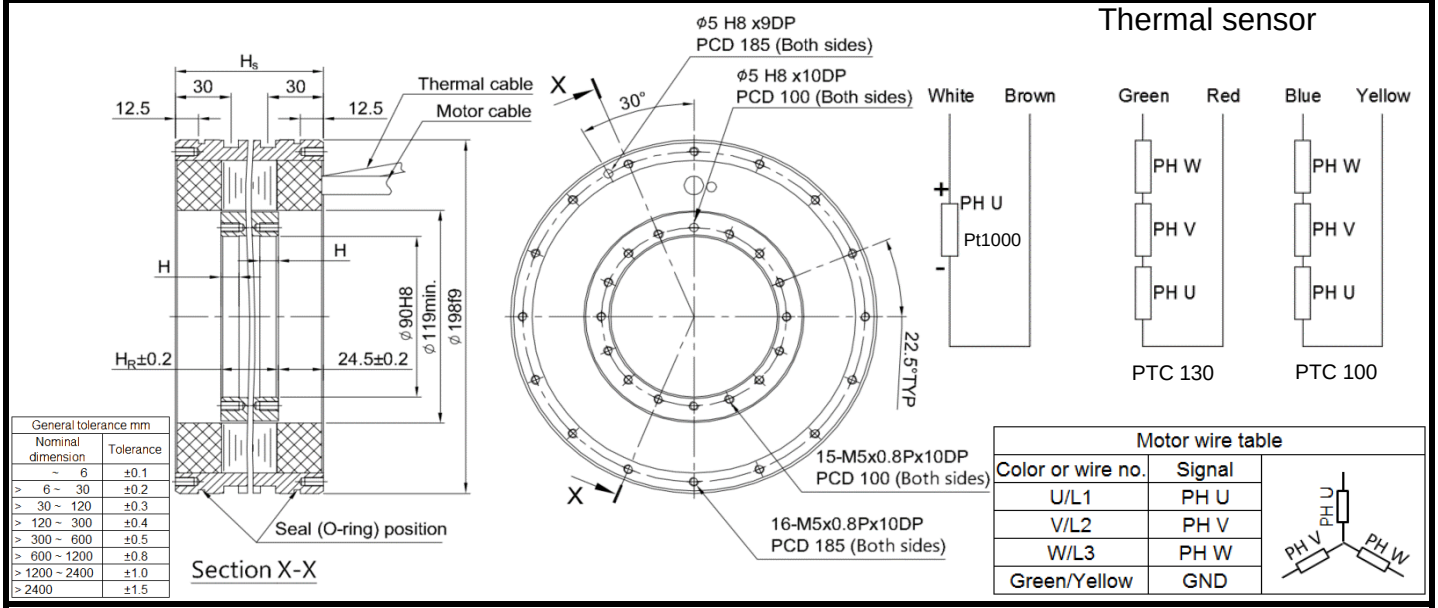
	Symbol	Unit	Water cooling
Mass of rotor	M_r	kg	5
Mass of stator	M_S	kg	23.2
Height of stator	H_S	mm	200
Height of rotor	H_R	mm	151
Length of rotor centring fit	H	mm	15
Water temperature difference for Pc	△θ	K	5
Minimum water flow	q	l/min	8.6
Max. pressure drop	△p	bar	1

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 ±10% of tolerance

Version: 2.00

The drawing and values are only for reference.

Date: 2024/6/27