

# TORQUE MOTOR

# TMB0210-150

PERFORMANCE		Winding codes	3TBN	3UBS	3TBN	3UBS
		UNIT	FREE AIR CONVECTION		WATER COOLING	
Tp	Peak torque	Nm	672	672	672	672
Tc	Continuous torque	Nm	140	133	373	357
Ts	Stall torque	Nm	106	101	294	281
Kt	Torque constant	Nm/Arms	16.9	12.7	16.9	12.7
Ku	Back EMF constant (*)	Vrms/(rad/s)	9.79	7.35	9.79	7.35
Km	Motor constant	Nm/√W	7.02	6.69	7.02	6.69
R20	Electrical resistance at 20°C (*)	Ohm	3.88	2.40	3.88	2.40
L1	Electrical inductance (*)	mH	22.8	12.8	21.5	12.2
Ip	Peak current	Arms	56.2	74.9	56.2	74.9
Ic	Continuous current	Arms	8.38	10.6	23.7	30.0
Is	Stall current	Arms	6.35	8.06	17.9	22.8
Pc	Max. continuous power dissipation	W	566	566	4670	4670

SPECIFICATIONS		UNIT				
Udc	Nominal input voltage	VDC	600	600	600	600
τth	Thermal time constant	s	1890	1890	50.9	50.7
Rth	Thermal resistance	K/W	0.175	0.175	0.0230	0.0230
2p	Number of poles	-	44	44	44	44
J	Rotor inertia	kg.m <sup>2</sup>	0.0451	0.0451	0.0451	0.0451
Mr	Rotor mass	kg	7.57	7.57	7.57	7.57
Ms	Stator mass	kg	19.8	19.7	19.8	19.7
Td	Max. detent torque (average to peak)	Nm	3.2	3.2	3.2	3.2
ns	Stall speed	rpm	0.014	0.014	0.54	0.54
Δθw	Water temperature difference for Pc	K	N/A	N/A	5.0	5.0
qw	Minimum water flow for Δθw	l/min	N/A	N/A	13	13
Δpw	Max. pressure drop at qw	bar	N/A	N/A	2.0	2.0

Notes: (\*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C. Inlet water temperature = 20 °C.  
 Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.35 m<sup>2</sup> and rotor to a total surface of 0.140 m<sup>2</sup>.

Caution: Any use of the motor beyond speed/torque limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

