ETEL

TMB Standard

CONVENTIONAL TORQUE MOTOR TMB+0990-200

MOTOR PERFORMANCE		Winding codes	WH	UP	WP	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
Tp	Peak torque	Nm	27500	27500	27500	
Ti	Intermittent torque	Nm	20400	20000	20400	
Tc	Continuous torque	Nm	15100	14800	15100	
Ts	Standstill torque	Nm	12200	11900	12200	
Ip	Peak current	Arms	317	437	634	
Ii	Intermittent current	Arms	180	240	360	
Ic	Continuous current	Arms	114	152	227	
Is	Standstill current	Arms	86.2	115	172	
ns	Rated low speed	rpm	0.045	0.046	0.045	
nm	Maximum speed without flux weakening	rpm	42.8	59.1	85.7	
nm,FW	Maximum speed with flux weakening	rpm	106	130	163	
τon,p	Maximum ON time for peak cycle	s	6.0	5.2	6.0	
τon,i	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	
Pp	Power dissipation @ Ip	W	157000	169000	157000	
Pi	Power dissipation @ Ii	W	61900	61500	61900	
Pc	Power dissipation @ Ic	W	24800	24600	24800	
Td	Max. detent torque (average to peak)	Nm	73	73	73	

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	162	117	80.9	
Ku	Back EMF constant (*)	Vrms/(rad/s)	92.8	67.3	46.4	
Km	Motor constant	Nm/√W	138	134	138	
R20	Electrical resistance at 20°C (*)	Ohm	0.919	0.514	0.230	
Ld/Lq	Electrical inductance (*)	mH	15.1 / 12.8	7.93 / 6.83	3.77 / 3.20	
Isc	Maximum short-circuit current	Arms	80.8	111	162	
nb	Base speed	rpm	30.6	46.6	73.5	
nb,i	Base speed at intermittent duty cycle	rpm	22.0	35.0	57.9	
nb,p	Base speed at peak duty cycle	rpm	11.3	20.4	36.3	
nn	Rated speed	rpm	26.3	40.8	66.9	
Tn	Rated torque	Nm	10200	8690	6770	
In	Rated current	Arms	72.5	83.4	94.3	
τth	Thermal time constant	s	151	148	151	
Rth	Thermal resistance	K/W	0.00382	0.00383	0.00382	
2p	Number of poles	-	176	176	176	
J	Rotor inertia	kg·m²	20.0	20.0	20.0	
mr	Rotor mass	kg	100	100	100	
ms	Stator mass	kg	294	291	294	

MOTOR ENVIRONMENT		UNIT				
Udc	Nominal DC bus voltage	VDC	600	600	600	
Di	Intermittent duty cycle	%	40	40	40	
Dp	Peak duty cycle	%	5.0	5.0	5.0	
Sr	Rotor exchange surface	m²	1.200	1.200	1.200	
θamb	Ambient temperature	°C	20	20	20	
θmax	Maximum coil temperature	°C	130	130	130	
θw	Inlet water temperature	°C	20	20	20	
Δθw	Water temperature difference for Pc	K	10	10	10	
qw	Minimum water flow for Δθw	l/min	39	38	39	
Δpw	Max. pressure drop at qw	bar	2.6	2.5	2.6	

Notes: (*) terminal to terminal.
Hypotheses and tolerances are in ETEL Integration Manual.
Please refer to ETEL Integration Manual for the mass of the optional cooling jacket and the possible additional pressure drop.

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.

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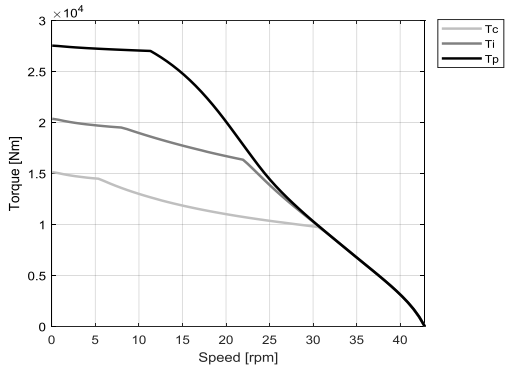
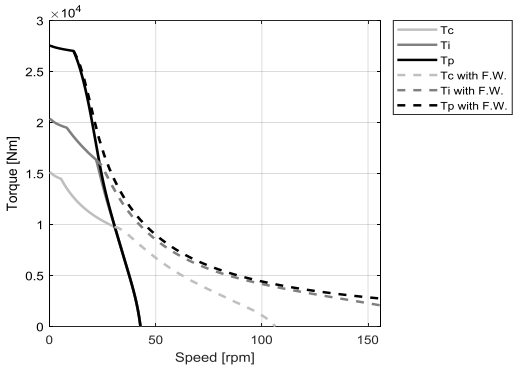
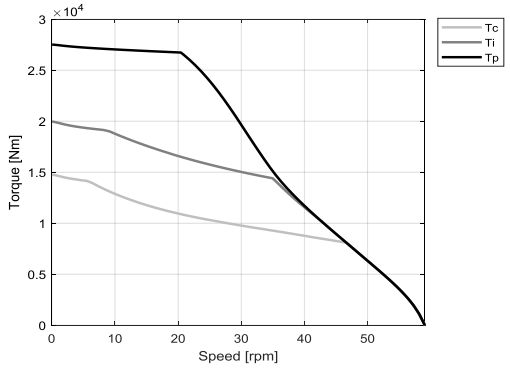
WH - WATER COOLING



WH - WATER COOLING



UP - WATER COOLING



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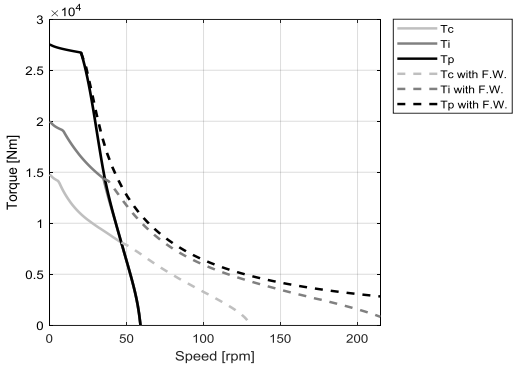

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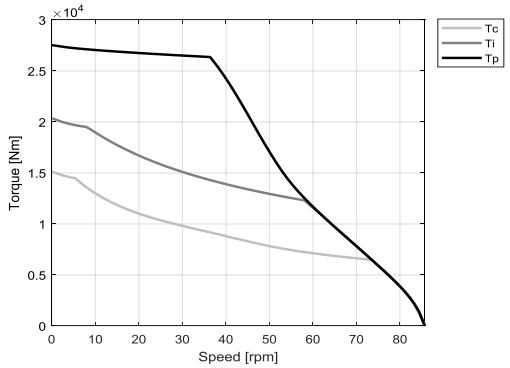

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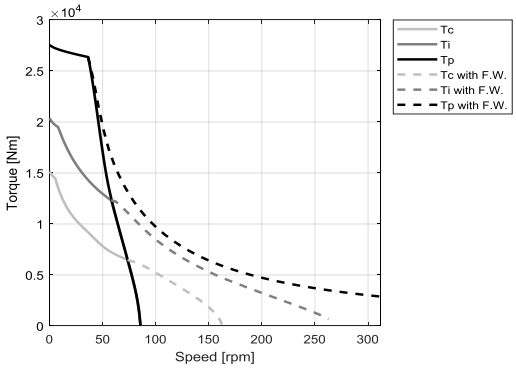

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