ETEL

TMB+ Standard

CONVENTIONAL TORQUE MOTOR TMB+0291-150

		Winding codes	UA	SB	UB	UD
MOTOR PERFORMANCE		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
Tp	Peak torque	Nm	1220	1300	1300	1300
Ti	Intermittent torque	Nm	1040	1080	1090	1090
Tc	Continuous torque	Nm	795	783	795	795
Ts	Standstill torque	Nm	636	625	636	636
Ip	Peak current	Arms	20.1	28.9	45.1	90.2
Ii	Intermittent current	Arms	16.2	22.1	35.3	70.6
Ic	Continuous current	Arms	11.2	14.0	22.3	44.6
Is	Standstill current	Arms	8.45	10.6	16.9	33.8
ns	Rated low speed	rpm	0.31	0.31	0.31	0.31
nm	Maximum speed without flux weakening	rpm	80.8	103	162	324
nm,FW	Maximum speed with flux weakening	rpm	220	257	348	581
τon,p	Maximum ON time for peak cycle	s	19	13	14	14
τon,i	Maximum ON time for intermittent cycle	s	13	2.9	2.8	2.8
Pp	Power dissipation @ Ip	W	14400	18900	18400	18400
Pi	Power dissipation @ Ii	W	11600	14400	14600	14600
Pc	Power dissipation @ Ic	W	5860	5750	5860	5860
Td	Max. detent torque (average to peak)	Nm	5.6	5.6	5.6	5.6
MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	85.7	67.0	42.9	21.4
Ku	Back EMF constant (*)	Vrms/(rad/s)	49.1	38.4	24.6	12.3
Km	Motor constant	Nm/√W	14.7	14.6	14.7	14.7
R20	Electrical resistance at 20°C (*)	Ohm	22.5	14.1	5.63	1.41
Ld/Lq	Electrical inductance (*)	mH	257 / 221	157 / 136	64.2 / 55.3	16.0 / 13.8
Isc	Maximum short-circuit current	Arms	10.0	12.8	20.1	40.1
nb	Base speed	rpm	25.3	56.6	120	284
nb,i	Base speed at intermittent duty cycle	rpm	0.00	11.5	86.6	242
nb,p	Base speed at peak duty cycle	rpm	0.00	10.7	60.4	171
nn	Rated speed	rpm	14.6	43.7	104	260
Tn	Rated torque	Nm	774	673	548	378
In	Rated current	Arms	11.1	12.0	14.7	19.9
τth	Thermal time constant	s	88.1	87.6	88.1	88.1
Rth	Thermal resistance	K/W	0.0167	0.0170	0.0167	0.0167
2p	Number of poles	-	44	44	44	44
J	Rotor inertia	kg·m²	0.121	0.121	0.121	0.121
mr	Rotor mass	kg	10.6	10.6	10.6	10.6
ms	Stator mass	kg	40.9	40.7	40.9	40.9
MOTOR ENVIRONMENT		UNIT				
Udc	Nominal DC bus voltage	VDC	600	600	600	600
Di	Intermittent duty cycle	%	40	40	40	40
Dp	Peak duty cycle	%	5.0	5.0	5.0	5.0
Sr	Rotor exchange surface	m²	0.210	0.210	0.210	0.210
θamb	Ambient temperature	°C	20	20	20	20
θmax	Maximum coil temperature	°C	130	130	130	130
θw	Inlet water temperature	°C	20	20	20	20
Δθw	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
qw	Minimum water flow for Δθw	l/min	18	18	18	18
Δpw	Max. pressure drop at qw	bar	1.8	1.7	1.8	1.8

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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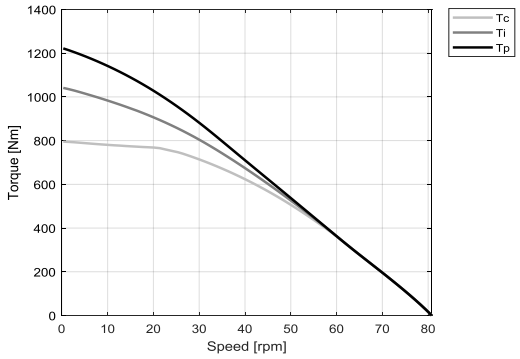
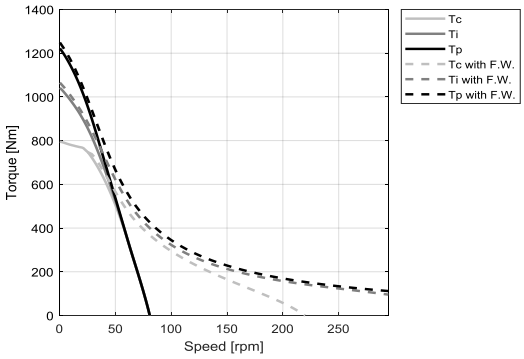
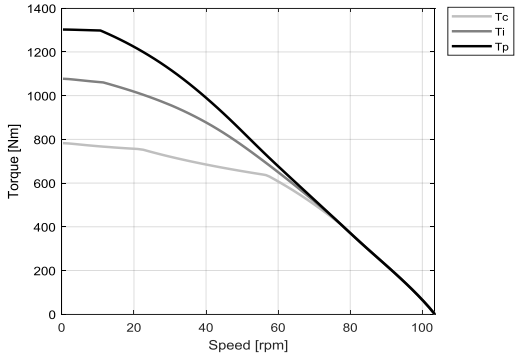
UA - WATER COOLING



UA - WATER COOLING



SB - WATER COOLING



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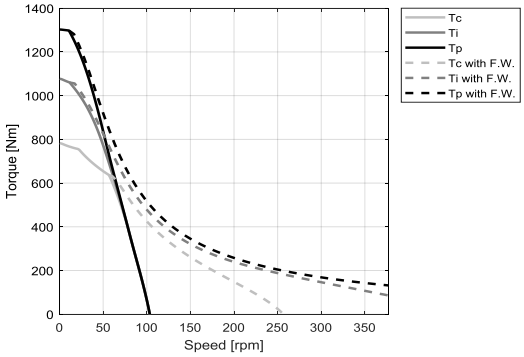
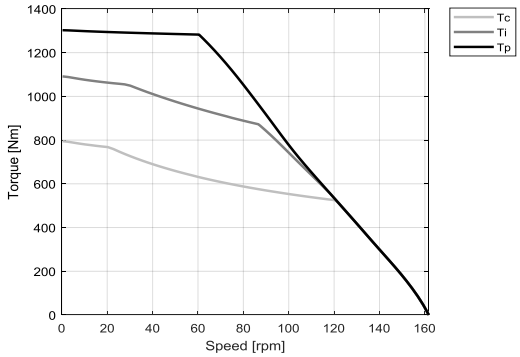


UB - WATER COOLING



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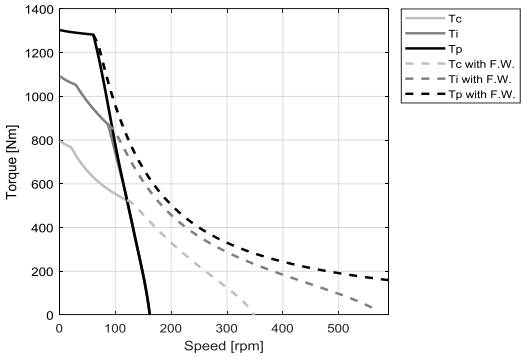

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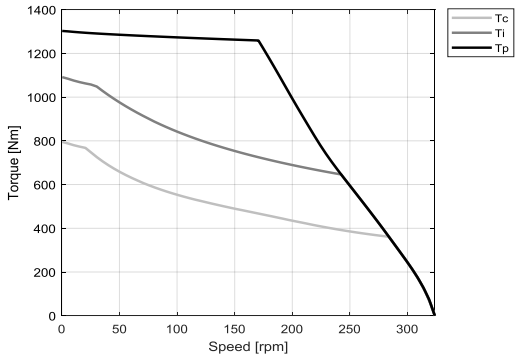

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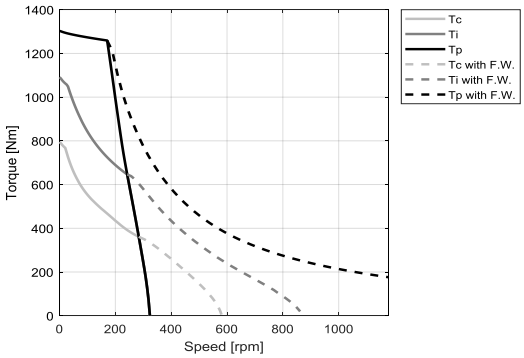

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