MOTOR PERFORMANCE		Winding codes	3VBS	3VDS		
		UNIT	WATER COOLING	WATER COOLING		
Tp	Peak torque	Nm	617	617		
Ti	Intermittent torque	Nm	501	501		
Tc	Continuous torque	Nm	386	386		
Ts	Standstill torque	Nm	316	316		
Ip	Peak current	Arms	75.6	151		
Ii	Intermittent current	Arms	52.8	106		
Ic	Continuous current	Arms	33.4	66.7		
Is	Standstill current	Arms	25.3	50.6		
ns	Rated low speed	rpm	0.24	0.24		
nm	Maximum speed without flux weakening	rpm	473	946		
nm,FW	Maximum speed with flux weakening	rpm	1720	2730		
τon,p	Maximum ON time for peak cycle	s	14	18		
τon,i	Maximum ON time for intermittent cycle	s	2.9	2.9		
Pp	Power dissipation @ Ip	W	15400	15400		
Pi	Power dissipation @ Ii	W	9800	9800		
Pc	Power dissipation @ Ic	W	3920	3920		
Td	Max. detent torque (average to peak)	Nm	2.8	2.8		

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	14.5	7.24		
Ku	Back EMF constant (*)	Vrms/(rad/s)	8.40	4.20		
Km	Motor constant	Nm/√W	9.24	9.24		
R20	Electrical resistance at 20°C (*)	Ohm	1.64	0.410		
Ld/Lq	Electrical inductance (*)	mH	18.1 / 13.8	4.52 / 3.45		
Isc	Maximum short-circuit current	Arms	24.4	48.7		
nb	Base speed	rpm	303	656		
nb,i	Base speed at intermittent duty cycle	rpm	233	515		
nb,p	Base speed at peak duty cycle	rpm	201	442		
nn	Rated speed	rpm	268	584		
Tn	Rated torque	Nm	384	375		
In	Rated current	Arms	33.0	64.0		
τth	Thermal time constant	s	115	115		
Rth	Thermal resistance	K/W	0.0274	0.0274		
2p	Number of poles	-	44	44		
J	Rotor inertia	kg·m²	0.136	0.136		
mr	Rotor mass	kg	15.6	15.6		
ms	Stator mass	kg	22.4	22.4		

MOTOR ENVIRONMENT		UNIT				
Udc	Nominal DC bus voltage	VDC	600	600		
Di	Intermittent duty cycle	%	40	40		
Dp	Peak duty cycle	%	5.0	5.0		
Sr	Rotor exchange surface	m²	0.074	0.074		
θamb	Ambient temperature	°C	20	20		
θmax	Maximum coil temperature	°C	130	130		
θw	Inlet water temperature	°C	20	20		
Δθw	Water temperature difference for Pc	K	5.0	5.0		
qw	Minimum water flow for Δθw	l/min	11	11		
Δpw	Max. pressure drop at qw	bar	0.5	0.5		

Notes: (*) terminal to terminal.
Hypotheses and tolerances are in ETEL Integration Manual.

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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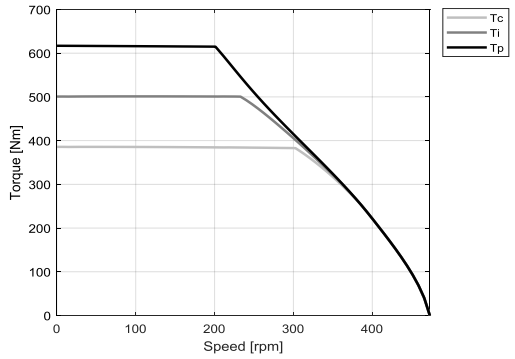
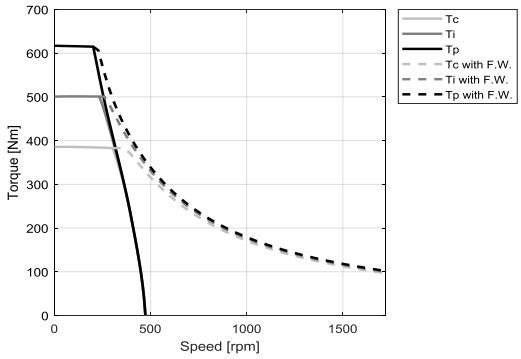
ETEL

HIGH SPEED TORQUE MOTOR TMK0291-070

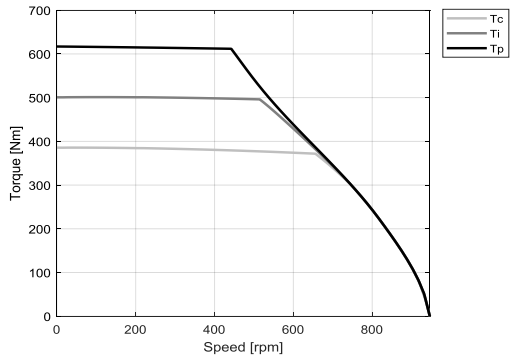
3VBS - WATER COOLING



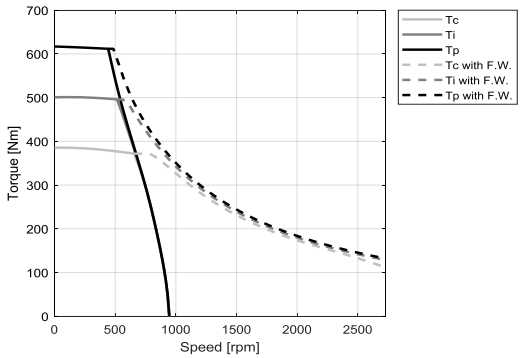
3VBS - WATER COOLING



3VDS - WATER COOLING



3VDS - WATER COOLING



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