MOTOR PERFORMANCE		Winding codes	UB	XB		
		UNIT	WATER COOLING	WATER COOLING		
Tp	Peak torque	Nm	844	773		
Ti	Intermittent torque	Nm	657	630		
Tc	Continuous torque	Nm	495	468		
Ts	Standstill torque	Nm	401	376		
Ip	Peak current	Arms	61.0	108		
Ii	Intermittent current	Arms	38.5	77.4		
Ic	Continuous current	Arms	24.4	48.9		
Is	Standstill current	Arms	18.5	37.1		
ns	Rated low speed	rpm	0.18	0.18		
nm	Maximum speed without flux weakening	rpm	272	590		
nm,FW	Maximum speed with flux weakening	rpm	1000	1820		
τon,p	Maximum ON time for peak cycle	s	10	15		
τon,i	Maximum ON time for intermittent cycle	s	3.1	3.1		
Pp	Power dissipation @ Ip	W	17100	12600		
Pi	Power dissipation @ Ii	W	8660	8480		
Pc	Power dissipation @ Ic	W	3470	3390		
Td	Max. detent torque (average to peak)	Nm	3.0	3.0		

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	24.0	11.1		
Ku	Back EMF constant (*)	Vrms/(rad/s)	14.6	6.73		
Km	Motor constant	Nm/√W	11.8	11.0		
R20	Electrical resistance at 20°C (*)	Ohm	2.76	0.673		
Ld/Lq	Electrical inductance (*)	mH	19.2 / 17.1	4.08 / 3.70		
Isc	Maximum short-circuit current	Arms	26.6	57.8		
nb	Base speed	rpm	188	462		
nb,i	Base speed at intermittent duty cycle	rpm	153	394		
nb,p	Base speed at peak duty cycle	rpm	129	354		
nn	Rated speed	rpm	165	410		
Tn	Rated torque	Nm	490	443		
In	Rated current	Arms	24.1	46.5		
τth	Thermal time constant	s	104	103		
Rth	Thermal resistance	K/W	0.0292	0.0296		
2p	Number of poles	-	66	66		
J	Rotor inertia	kg·m²	0.267	0.267		
mr	Rotor mass	kg	16.3	16.3		
ms	Stator mass	kg	25.9	25.7		

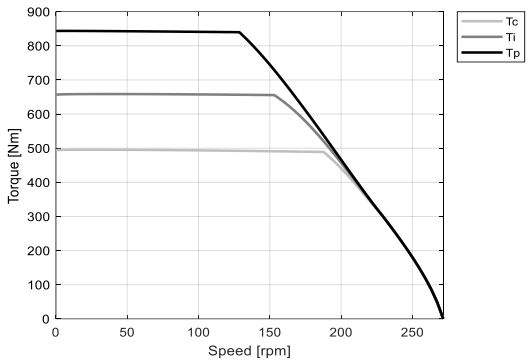
MOTOR ENVIRONMENT		UNIT				
Udc	Nominal DC bus voltage	VDC	600	600		
Di	Intermittent duty cycle	%	40	40		
Dp	Peak duty cycle	%	5.0	5.0		
Sr	Rotor exchange surface	m²	0.087	0.087		
θamb	Ambient temperature	°C	20	20		
θmax	Maximum coil temperature	°C	130	130		
θw	Inlet water temperature	°C	20	20		
Δθw	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	0.4	0.4		

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

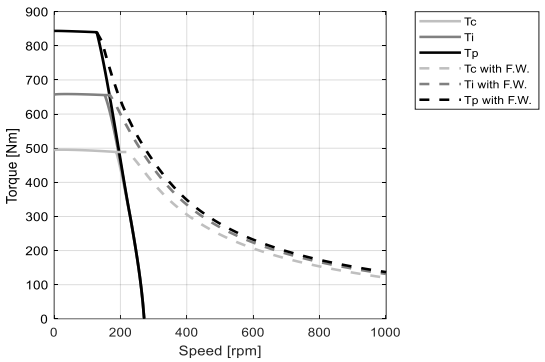
Caution: Any use of the motor beyond speed/torque limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

ETEL S.A. Zone Industrielle, CH-2112 Môtiers, Switzerland
T +41 (0)32 862 01 00 • F +41 (0)32 862 01 01 • etel@etel.ch • www.etel.ch

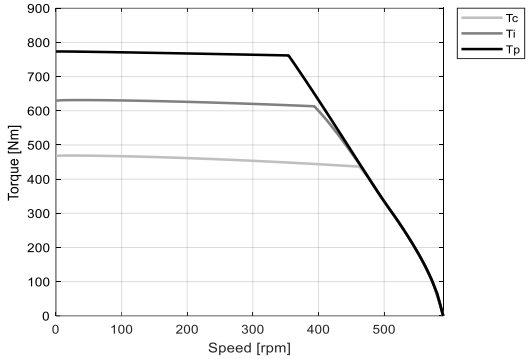
UB - WATER COOLING



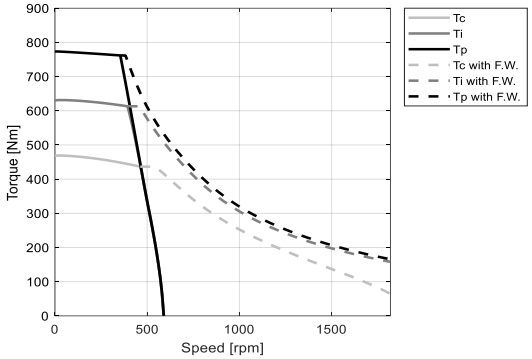
UB - WATER COOLING



XB - WATER COOLING



XB - WATER COOLING



ETEL S.A. Zone Industrielle, CH-2112 Môtiers, Switzerland
T +41 (0)32 862 01 00 • F +41 (0)32 862 01 01 • etel@etel.ch • www.etel.ch