ETEL

TMC Standard

HIGH DENSITY TORQUE MOTOR — TMC0290-200

MOTOR PERFORMANCE		Winding codes	UC			
		UNIT	WATER COOLING			
Tp	Peak torque	Nm	2600			
Ti	Intermittent torque	Nm	1760			
Tc	Continuous torque	Nm	1260			
Ts	Standstill torque	Nm	991			
Ip	Peak current	Arms	88.5			
Ii	Intermittent current	Arms	46.6			
Ic	Continuous current	Arms	29.5			
Is	Standstill current	Arms	22.3			
ns	Rated low speed	rpm	0.30			
nm	Maximum speed without flux weakening	rpm	144			
nm,FW	Maximum speed with flux weakening	rpm	525			
τon,p	Maximum ON time for peak cycle	s	4.3			
τon,i	Maximum ON time for intermittent cycle	s	2.8			
Pp	Power dissipation @ Ip	W	54000			
Pi	Power dissipation @ Ii	W	17900			
Pc	Power dissipation @ Ic	W	7160			
Td	Max. detent torque (average to peak)	Nm	6.3			

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	47.6			
Ku	Back EMF constant (*)	Vrms/(rad/s)	27.6			
Km	Motor constant	Nm/√W	19.4			
R20	Electrical resistance at 20°C (*)	Ohm	4.01			
Ld/Lq	Electrical inductance (*)	mH	67.9 / 62.9			
Isc	Maximum short-circuit current	Arms	31.3			
nb	Base speed	rpm	83.2			
nb,i	Base speed at intermittent duty cycle	rpm	57.8			
nb,p	Base speed at peak duty cycle	rpm	22.1			
nn	Rated speed	rpm	71.3			
Tn	Rated torque	Nm	1240			
In	Rated current	Arms	29.3			
τth	Thermal time constant	s	135			
Rth	Thermal resistance	K/W	0.0129			
2p	Number of poles	-	30			
J	Rotor inertia	kg·m²	0.229			
mr	Rotor mass	kg	23.8			
ms	Stator mass	kg	56.7			

MOTOR ENVIRONMENT		UNIT				
Udc	Nominal DC bus voltage	VDC	600			
Di	Intermittent duty cycle	%	40			
Dp	Peak duty cycle	%	5.0			
Sr	Rotor exchange surface	m²	0.282			
θamb	Ambient temperature	°C	20			
θmax	Maximum coil temperature	°C	130			
θw	Inlet water temperature	°C	20			
Δθw	Water temperature difference for Pc	K	5.0			
qw	Minimum water flow for Δθw	l/min	22			
Δpw	Max. pressure drop at qw	bar	3.2			

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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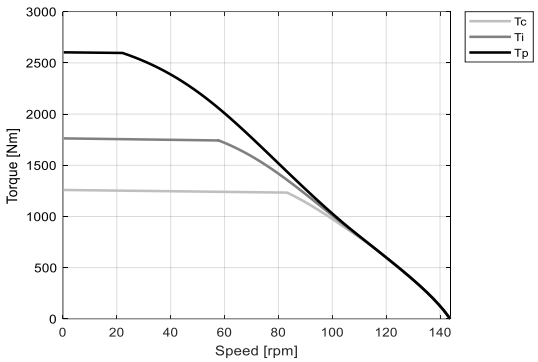
UC - WATER COOLING



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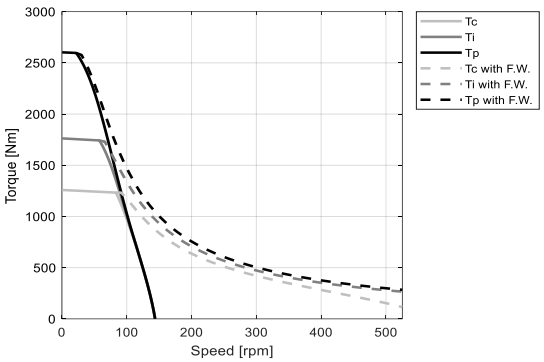

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