

MOTOR PERFORMANCE		Winding codes	TA	WA		
		UNIT	WATER COOLING	WATER COOLING		
Tp	Peak torque	Nm	407	376		
Ti	Intermittent torque	Nm	286	275		
Tc	Continuous torque	Nm	194	185		
Ts	Standstill torque	Nm	147	140		
Ip	Peak current	Arms	24.1	44.6		
Ii	Intermittent current	Arms	15.3	30.4		
Ic	Continuous current	Arms	9.66	19.3		
Is	Standstill current	Arms	7.32	14.6		
ns	Rated low speed	rpm	0.93	0.93		
nm	Maximum speed without flux weakening	rpm	322	677		
nm,FW	Maximum speed with flux weakening	rpm	1180	2390		
ton,p	Maximum ON time for peak cycle	s	4.2	5.2		
ton,i	Maximum ON time for intermittent cycle	s	2.7	2.7		
Pp	Power dissipation @ Ip	W	15400	12700		
Pi	Power dissipation @ Ii	W	7520	7270		
Pc	Power dissipation @ Ic	W	3010	2910		
Td	Max. detent torque (average to peak)	Nm	2.8	2.8		

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	21.3	10.1		
Ku	Back EMF constant (*)	Vrms/(rad/s)	12.3	5.87		
Km	Motor constant	Nm/√W	4.33	4.16		
R20	Electrical resistance at 20°C (*)	Ohm	16.1	3.95		
Ld/Lq	Electrical inductance (*)	mH	133 / 128	30.1 / 29.1		
Isc	Maximum short-circuit current	Arms	13.4	28.2		
nb	Base speed	rpm	169	482		
nb,i	Base speed at intermittent duty cycle	rpm	94.7	373		
nb,p	Base speed at peak duty cycle	rpm	37.1	309		
nn	Rated speed	rpm	141	422		
Tn	Rated torque	Nm	193	182		
In	Rated current	Arms	9.65	19.1		
rth	Thermal time constant	s	81.0	80.8		
Rth	Thermal resistance	K/W	0.0274	0.0276		
2p	Number of poles	-	16	16		
J	Rotor inertia	kg·m²	0.00887	0.00887		
mr	Rotor mass	kg	5.89	5.89		
ms	Stator mass	kg	18.8	18.7		

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	0.098	0.098		
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	9.4	9.1		
Δpw	Max. pressure drop at qw	bar	0.8	0.8		

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.

