

MOTOR PERFORMANCE		Winding codes	SB	UB	SD	UD
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
Tp	Peak torque	Nm	1590	1740	1740	1740
Ti	Intermittent torque	Nm	1360	1450	1430	1450
Tc	Continuous torque	Nm	1040	1050	1040	1050
Ts	Standstill torque	Nm	825	840	825	840
Ip	Peak current	Arms	24.6	44.7	57.3	89.5
Ii	Intermittent current	Arms	20.0	34.8	43.6	69.6
Ic	Continuous current	Arms	13.8	22.0	27.6	44.0
Is	Standstill current	Arms	10.4	16.7	20.9	33.4
ns	Rated low speed	rpm	0.32	0.32	0.32	0.32
nm	Maximum speed without flux weakening	rpm	77.6	121	155	243
nm,FW	Maximum speed with flux weakening	rpm	203	275	327	458
ton,p	Maximum ON time for peak cycle	s	18	12	11	12
ton,i	Maximum ON time for intermittent cycle	s	12	2.8	2.8	2.8
Pp	Power dissipation @ Ip	W	17700	23600	24300	23600
Pi	Power dissipation @ Ii	W	14300	18400	18000	18400
Pc	Power dissipation @ Ic	W	7220	7350	7220	7350
Td	Max. detent torque (average to peak)	Nm	7.5	7.5	7.5	7.5

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	89.3	57.2	44.7	28.6
Ku	Back EMF constant (*)	Vrms/(rad/s)	51.2	32.7	25.6	16.4
Km	Motor constant	Nm/√W	17.0	17.2	17.0	17.2
R20	Electrical resistance at 20°C (*)	Ohm	18.5	7.37	4.61	1.84
Ld/Lq	Electrical inductance (*)	mH	208 / 182	85.3 / 73.8	52.1 / 45.4	21.3 / 18.5
Isc	Maximum short-circuit current	Arms	12.9	20.1	25.8	40.3
nb	Base speed	rpm	24.3	80.9	116	205
nb,i	Base speed at intermittent duty cycle	rpm	0.00	43.8	83.6	169
nb,p	Base speed at peak duty cycle	rpm	0.00	31.2	55.8	118
nn	Rated speed	rpm	14.2	67.6	99.9	184
Tn	Rated torque	Nm	1010	796	714	575
In	Rated current	Arms	13.7	16.2	18.3	22.6
rth	Thermal time constant	s	86.0	86.4	86.0	86.4
Rth	Thermal resistance	K/W	0.0128	0.0125	0.0128	0.0125
2p	Number of poles	-	44	44	44	44
J	Rotor inertia	kg·m²	0.161	0.161	0.161	0.161
mr	Rotor mass	kg	14.0	14.0	14.0	14.0
ms	Stator mass	kg	52.3	52.5	52.3	52.5

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	0.275	0.275	0.275	0.275
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	23	23	23	23
Δpw	Max. pressure drop at qw	bar	3.3	3.3	3.3	3.3

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.

