

MOTOR PERFORMANCE		Winding codes	WB	UD	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
Tp	Peak torque	Nm	5190	5190	5190	5190
Ti	Intermittent torque	Nm	4240	4150	4130	4130
Tc	Continuous torque	Nm	3190	3110	3090	3090
Ts	Standstill torque	Nm	2600	2530	2610	2610
Ip	Peak current	Arms	70.7	97.5	141	283
Ii	Intermittent current	Arms	49.8	66.2	94.6	189
Ic	Continuous current	Arms	31.5	41.9	59.8	120
Is	Standstill current	Arms	23.9	31.7	47.8	95.5
ns	Rated low speed	rpm	0.11	0.11	0.11	0.11
nm	Maximum speed without flux weakening	rpm	54.1	74.6	108	217
nm,FW	Maximum speed with flux weakening	rpm	156	190	244	386
ton,p	Maximum ON time for peak cycle	s	12	10	12	12
ton,i	Maximum ON time for intermittent cycle	s	2.8	2.8	9.4	9.4
Pp	Power dissipation @ Ip	W	45700	48800	45700	45700
Pi	Power dissipation @ Ii	W	29300	28800	25400	25400
Pc	Power dissipation @ Ic	W	11700	11500	10100	10100
Td	Max. detent torque (average to peak)	Nm	15	15	15	15

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	128	92.8	63.9	32.0
Ku	Back EMF constant (*)	Vrms/(rad/s)	73.4	53.2	36.7	18.3
Km	Motor constant	Nm/√W	44.1	42.8	44.1	44.1
R20	Electrical resistance at 20°C (*)	Ohm	5.62	3.14	1.40	0.351
Ld/Lq	Electrical inductance (*)	mH	90.7 / 72.8	47.7 / 39.0	22.7 / 18.7	5.67 / 4.66
Isc	Maximum short-circuit current	Arms	21.2	29.3	42.5	85.0
nb	Base speed	rpm	29.0	49.8	83.4	192
nb,i	Base speed at intermittent duty cycle	rpm	10.3	31.3	64.1	161
nb,p	Base speed at peak duty cycle	rpm	6.13	20.2	43.8	107
nn	Rated speed	rpm	22.7	42.1	73.0	177
Tn	Rated torque	Nm	2770	2280	1900	1220
In	Rated current	Arms	27.1	29.1	34.0	43.5
rth	Thermal time constant	s	127	125	127	127
Rth	Thermal resistance	K/W	0.00847	0.00859	0.00847	0.00847
2p	Number of poles	-	88	88	88	88
J	Rotor inertia	kg·m²	1.41	1.41	1.41	1.41
mr	Rotor mass	kg	29.2	29.2	29.2	29.2
ms	Stator mass	kg	110	109	110	110

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	0.450	0.450	0.450	0.450
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	37	36	32	32
Δpw	Max. pressure drop at qw	bar	2.9	2.8	2.3	2.3

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.

