

MOTOR PERFORMANCE		Winding codes	3SPN	3UPN	3UZN	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
Tp	Peak torque	Nm	13800	13800	13800	
Ti	Intermittent torque	Nm	9750	9700	9590	
Tc	Continuous torque	Nm	7290	7250	7140	
Ts	Standstill torque	Nm	5840	5800	5690	
Ip	Peak current	Arms	357	575	1170	
Ii	Intermittent current	Arms	164	262	521	
Ic	Continuous current	Arms	104	166	330	
Is	Standstill current	Arms	78.5	125	250	
ns	Rated low speed	rpm	0.030	0.030	0.031	
nm	Maximum speed without flux weakening	rpm	84.9	137	278	
nm,FW	Maximum speed with flux weakening	rpm	309	498	682	
ton,p	Maximum ON time for peak cycle	s	6.6	6.3	5.7	
ton,i	Maximum ON time for intermittent cycle	s	3.0	3.0	3.0	
Pp	Power dissipation @ Ip	W	143000	146000	153000	
Pi	Power dissipation @ Ii	W	35000	35000	35000	
Pc	Power dissipation @ Ic	W	14000	14000	14000	
Td	Max. detent torque (average to peak)	Nm	28	28	28	

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	81.0	50.3	24.8	
Ku	Back EMF constant (*)	Vrms/(rad/s)	46.8	29.0	14.3	
Km	Motor constant	Nm/√W	84.9	84.2	82.5	
R20	Electrical resistance at 20°C (*)	Ohm	0.608	0.238	0.0600	
Ld/Lq	Electrical inductance (*)	mH	8.36 / 6.91	3.22 / 2.66	0.781 / 0.647	
Isc	Maximum short-circuit current	Arms	73.5	118	240	
nb	Base speed	rpm	49.8	85.9	191	
nb,i	Base speed at intermittent duty cycle	rpm	37.0	65.3	143	
nb,p	Base speed at peak duty cycle	rpm	22.7	44.9	101	
nn	Rated speed	rpm	44.0	76.4	170	
Tn	Rated torque	Nm	7240	7120	6630	
In	Rated current	Arms	103	162	302	
rth	Thermal time constant	s	224	224	223	
Rth	Thermal resistance	K/W	0.00751	0.00752	0.00752	
2p	Number of poles	-	176	176	176	
J	Rotor inertia	kg·m²	27.0	27.0	27.0	
mr	Rotor mass	kg	147	147	147	
ms	Stator mass	kg	217	217	217	

MOTOR ENVIRONMENT		UNIT				
Udc	Nominal DC bus voltage	VDC	600	600	600	
Di	Intermittent duty cycle	%	40	40	40	
Dp	Peak duty cycle	%	5.0	5.0	5.0	
Sr	Rotor exchange surface	m²	0.449	0.449	0.449	
θamb	Ambient temperature	°C	20	20	20	
θmax	Maximum coil temperature	°C	130	130	130	
θw	Inlet water temperature	°C	20	20	20	
Δθw	Water temperature difference for Pc	K	10	10	10	
qw	Minimum water flow for Δθw	l/min	20	20	20	
Δpw	Max. pressure drop at qw	bar	0.7	0.7	0.7	

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.

