

MOTOR PERFORMANCE		Winding codes	3SPN	3UPN	3UZN	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
Tp	Peak torque	Nm	20800	20700	20700	
Ti	Intermittent torque	Nm	14600	14600	14500	
Tc	Continuous torque	Nm	11000	10900	10800	
Ts	Standstill torque	Nm	8800	8730	8640	
Ip	Peak current	Arms	357	575	1170	
Ii	Intermittent current	Arms	165	264	530	
Ic	Continuous current	Arms	104	167	335	
Is	Standstill current	Arms	79.1	126	254	
ns	Rated low speed	rpm	0.032	0.032	0.032	
nm	Maximum speed without flux weakening	rpm	56.6	91.3	185	
nm,FW	Maximum speed with flux weakening	rpm	206	332	674	
ton,p	Maximum ON time for peak cycle	s	5.7	5.5	5.2	
ton,i	Maximum ON time for intermittent cycle	s	3.0	3.0	3.0	
Pp	Power dissipation @ Ip	W	199000	203000	209000	
Pi	Power dissipation @ Ii	W	49800	49700	49700	
Pc	Power dissipation @ Ic	W	19900	19900	19900	
Td	Max. detent torque (average to peak)	Nm	42	42	42	

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	122	75.4	37.1	
Ku	Back EMF constant (*)	Vrms/(rad/s)	70.2	43.6	21.5	
Km	Motor constant	Nm/√W	108	107	106	
R20	Electrical resistance at 20°C (*)	Ohm	0.850	0.333	0.0825	
Ld/Lq	Electrical inductance (*)	mH	11.9 / 10.1	4.56 / 3.87	1.11 / 0.940	
Isc	Maximum short-circuit current	Arms	77.7	125	254	
nb	Base speed	rpm	31.3	55.5	123	
nb,i	Base speed at intermittent duty cycle	rpm	22.4	42.1	94.8	
nb,p	Base speed at peak duty cycle	rpm	10.1	27.3	67.8	
nn	Rated speed	rpm	27.3	49.2	110	
Tn	Rated torque	Nm	10900	10800	10400	
In	Rated current	Arms	104	165	320	
rth	Thermal time constant	s	211	211	210	
Rth	Thermal resistance	K/W	0.00528	0.00529	0.00529	
2p	Number of poles	-	176	176	176	
J	Rotor inertia	kg·m²	38.1	38.1	38.1	
mr	Rotor mass	kg	207	207	207	
ms	Stator mass	kg	290	290	290	

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	0.583	0.583	0.583	
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	29	29	29	
Δpw	Max. pressure drop at qw	bar	1.2	1.2	1.2	

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.

