

MOTOR PERFORMANCE		Winding codes	3SPN	3UPN	3UZN	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
<b>Tp</b>	Peak torque	Nm	9710	9710	9700	
<b>Ti</b>	Intermittent torque	Nm	6820	6810	6740	
<b>Tc</b>	Continuous torque	Nm	5100	5090	5020	
<b>Ts</b>	Standstill torque	Nm	4080	4070	4000	
<b>Ip</b>	Peak current	Arms	357	575	1170	
<b>Ii</b>	Intermittent current	Arms	163	262	522	
<b>Ic</b>	Continuous current	Arms	103	166	330	
<b>Is</b>	Standstill current	Arms	78.2	126	250	
<b>ns</b>	Rated low speed	rpm	0.030	0.030	0.030	
<b>nm</b>	Maximum speed without flux weakening	rpm	121	195	397	
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	441	682	682	
<b>ton,p</b>	Maximum ON time for peak cycle	s	7.8	7.7	7.0	
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.0	3.0	3.0	
<b>Pp</b>	Power dissipation @ Ip	W	108000	109000	114000	
<b>Pi</b>	Power dissipation @ Ii	W	26400	26400	26400	
<b>Pc</b>	Power dissipation @ Ic	W	10500	10500	10500	
<b>Td</b>	Max. detent torque (average to peak)	Nm	20	20	20	

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	56.7	35.2	17.3	
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	32.8	20.3	10.0	
<b>Km</b>	Motor constant	Nm/√W	68.2	68.0	66.7	
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	0.461	0.179	0.0450	
<b>Ld/Lq</b>	Electrical inductance (*)	mH	5.97 / 4.91	2.30 / 1.89	0.557 / 0.459	
<b>Isc</b>	Maximum short-circuit current	Arms	72.0	116	236	
<b>nb</b>	Base speed	rpm	73.7	126	287	
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	55.9	96.0	210	
<b>nb,p</b>	Base speed at peak duty cycle	rpm	36.9	67.0	145	
<b>nn</b>	Rated speed	rpm	65.4	112	252	
<b>Tn</b>	Rated torque	Nm	5040	4930	4340	
<b>In</b>	Rated current	Arms	101	159	281	
<b>rth</b>	Thermal time constant	s	229	229	228	
<b>Rth</b>	Thermal resistance	K/W	0.0102	0.0102	0.0102	
<b>2p</b>	Number of poles	-	176	176	176	
<b>J</b>	Rotor inertia	kg·m²	20.4	20.4	20.4	
<b>mr</b>	Rotor mass	kg	111	111	111	
<b>ms</b>	Stator mass	kg	176	176	175	

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	
<b>Di</b>	Intermittent duty cycle	%	40	40	40	
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	
<b>Sr</b>	Rotor exchange surface	m²	0.369	0.369	0.369	
<b>θamb</b>	Ambient temperature	°C	20	20	20	
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	
<b>θw</b>	Inlet water temperature	°C	20	20	20	
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	
<b>qw</b>	Minimum water flow for Δθw	l/min	30	30	30	
<b>Δpw</b>	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.

