

MOTOR PERFORMANCE		Winding codes	3SDN	3UHN	3UPN	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
Tp	Peak torque	Nm	1760	1760	1760	
Ti	Intermittent torque	Nm	1390	1380	1370	
Tc	Continuous torque	Nm	1060	1050	1040	
Ts	Standstill torque	Nm	859	856	846	
Ip	Peak current	Arms	70.0	226	458	
Ii	Intermittent current	Arms	44.0	141	283	
Ic	Continuous current	Arms	27.8	89.4	179	
Is	Standstill current	Arms	21.1	67.7	136	
ns	Rated low speed	rpm	0.074	0.074	0.075	
nm	Maximum speed without flux weakening	rpm	151	487	990	
nm,FW	Maximum speed with flux weakening	rpm	551	1360	1360	
ton,p	Maximum ON time for peak cycle	s	21	21	20	
ton,i	Maximum ON time for intermittent cycle	s	3.1	3.1	3.1	
Pp	Power dissipation @ Ip	W	23800	24000	24800	
Pi	Power dissipation @ Ii	W	12100	12100	12100	
Pc	Power dissipation @ Ic	W	4840	4840	4840	
Td	Max. detent torque (average to peak)	Nm	7.0	7.0	7.0	

MOTOR SETTING		UNIT				
Kt	Torque constant	Nm/Arms	45.4	14.1	6.94	
Ku	Back EMF constant (*)	Vrms/(rad/s)	26.3	8.15	4.01	
Km	Motor constant	Nm/√W	21.7	21.6	21.3	
R20	Electrical resistance at 20°C (*)	Ohm	2.91	0.283	0.0705	
Ld/Lq	Electrical inductance (*)	mH	34.7 / 28.4	3.34 / 2.73	0.810 / 0.664	
Isc	Maximum short-circuit current	Arms	19.9	64.0	130	
nb	Base speed	rpm	85.0	323	754	
nb,i	Base speed at intermittent duty cycle	rpm	62.0	249	543	
nb,p	Base speed at peak duty cycle	rpm	50.0	209	440	
nn	Rated speed	rpm	74.5	287	657	
Tn	Rated torque	Nm	1050	1010	860	
In	Rated current	Arms	27.7	85.0	143	
rth	Thermal time constant	s	183	184	183	
Rth	Thermal resistance	K/W	0.0222	0.0222	0.0222	
2p	Number of poles	-	88	88	88	
J	Rotor inertia	kg·m²	1.37	1.37	1.37	
mr	Rotor mass	kg	33.1	33.1	33.1	
ms	Stator mass	kg	50.0	50.0	50.0	

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	0.147	0.147	0.147	
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	5.0	5.0	5.0	
qw	Minimum water flow for Δθw	l/min	14	14	14	
Δpw	Max. pressure drop at qw	bar	0.4	0.4	0.4	

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.

