

# Torque **Motors**

**TMB+ DATA SHEETS**

***ETEL***

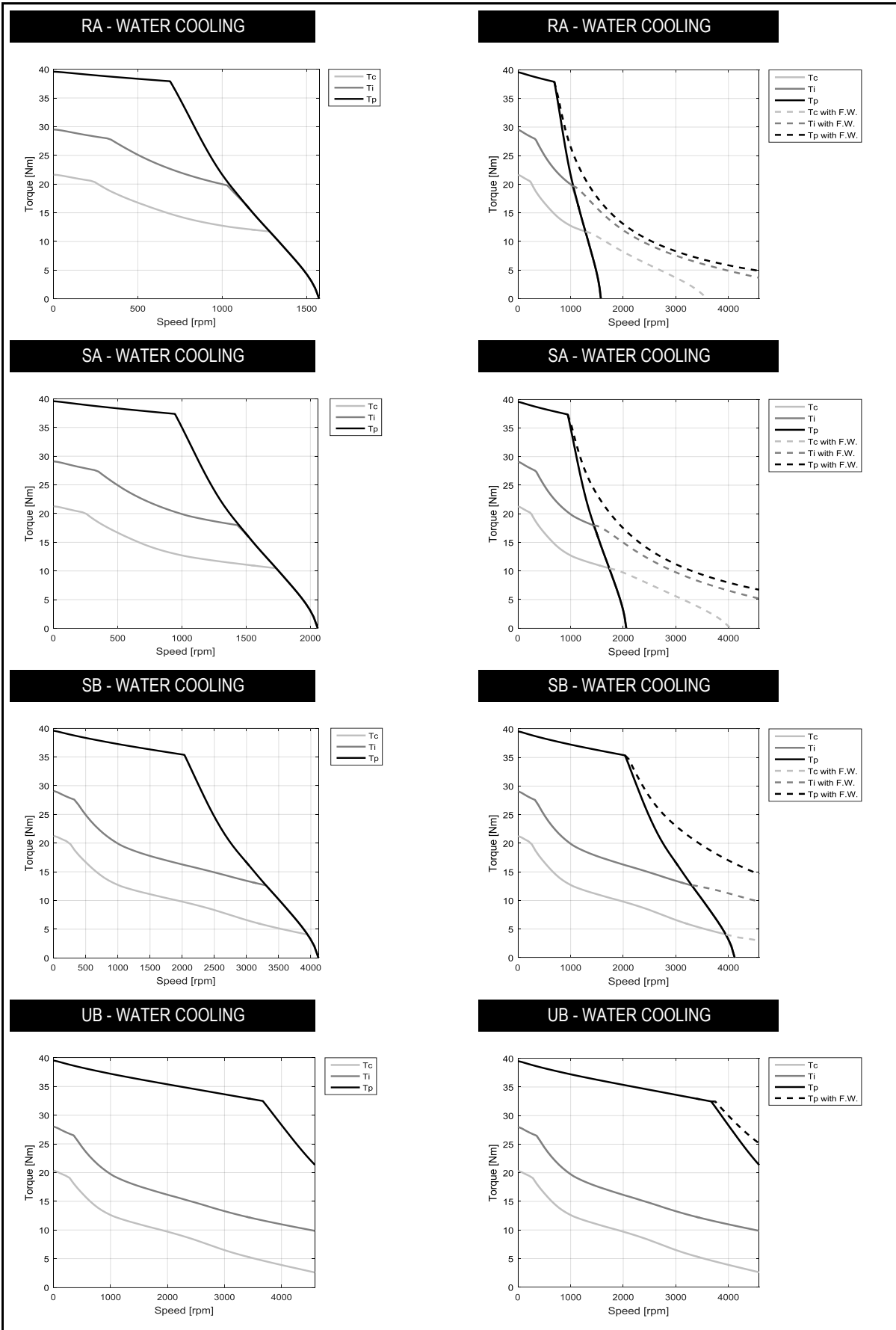
MOTOR PERFORMANCE		Winding codes	RA	SA	SB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	39.6	39.6	39.6	39.5
<b>Ti</b>	Intermittent torque	Nm	29.5	29.1	29.1	28.0
<b>Tc</b>	Continuous torque	Nm	21.6	21.3	21.3	20.3
<b>Ts</b>	Standstill torque	Nm	17.3	17.0	17.0	16.2
<b>Ip</b>	Peak current	Arms	15.8	20.6	41.2	73.0
<b>Ii</b>	Intermittent current	Arms	9.57	12.2	24.4	40.8
<b>Ic</b>	Continuous current	Arms	6.06	7.73	15.5	25.8
<b>Is</b>	Standstill current	Arms	4.59	5.86	11.7	19.5
<b>ns</b>	Rated low speed	rpm	0.75	0.75	0.75	0.78
<b>nm</b>	Maximum speed without flux weakening	rpm	1570	2060	4120	4590
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	3570	4030	4590	4590
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	4.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ Ip	W	3480	3610	3610	4070
<b>Pi</b>	Power dissipation @ Ii	W	1630	1610	1610	1580
<b>Pc</b>	Power dissipation @ Ic	W	652	643	643	633
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.20	0.20	0.20	0.20

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	4.35	3.33	1.67	0.940
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	2.52	1.93	0.965	0.545
<b>Km</b>	Motor constant	Nm/√W	1.23	1.21	1.21	1.15
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	8.32	5.03	1.26	0.446
<b>Ld/Lq</b>	Electrical inductance (*)	mH	56.6 / 49.3	33.2 / 29.1	8.29 / 7.29	2.64 / 2.37
<b>Isc</b>	Maximum short-circuit current	Arms	4.67	6.11	12.2	21.6
<b>nb</b>	Base speed	rpm	1280	1730	3950	N/A
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	1030	1430	3300	N/A
<b>nb,p</b>	Base speed at peak duty cycle	rpm	691	945	2030	3670
<b>nn</b>	Rated speed	rpm	1150	1570	3690	N/A
<b>Tn</b>	Rated torque	Nm	12.2	10.9	4.67	N/A
<b>In</b>	Rated current	Arms	3.32	3.93	3.93	N/A
<b>rth</b>	Thermal time constant	s	72.9	72.3	72.3	69.9
<b>Rth</b>	Thermal resistance	K/W	0.163	0.165	0.165	0.167
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.000993	0.000993	0.000993	0.000993
<b>mr</b>	Rotor mass	kg	0.708	0.708	0.708	0.708
<b>ms</b>	Stator mass	kg	4.73	4.71	4.71	4.67

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.018	0.018	0.018	0.018
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	2.0	2.0	2.0	2.0
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

**Notes:** (\*) terminal to terminal.  
Hypotheses and tolerances are in ETEL handbook.

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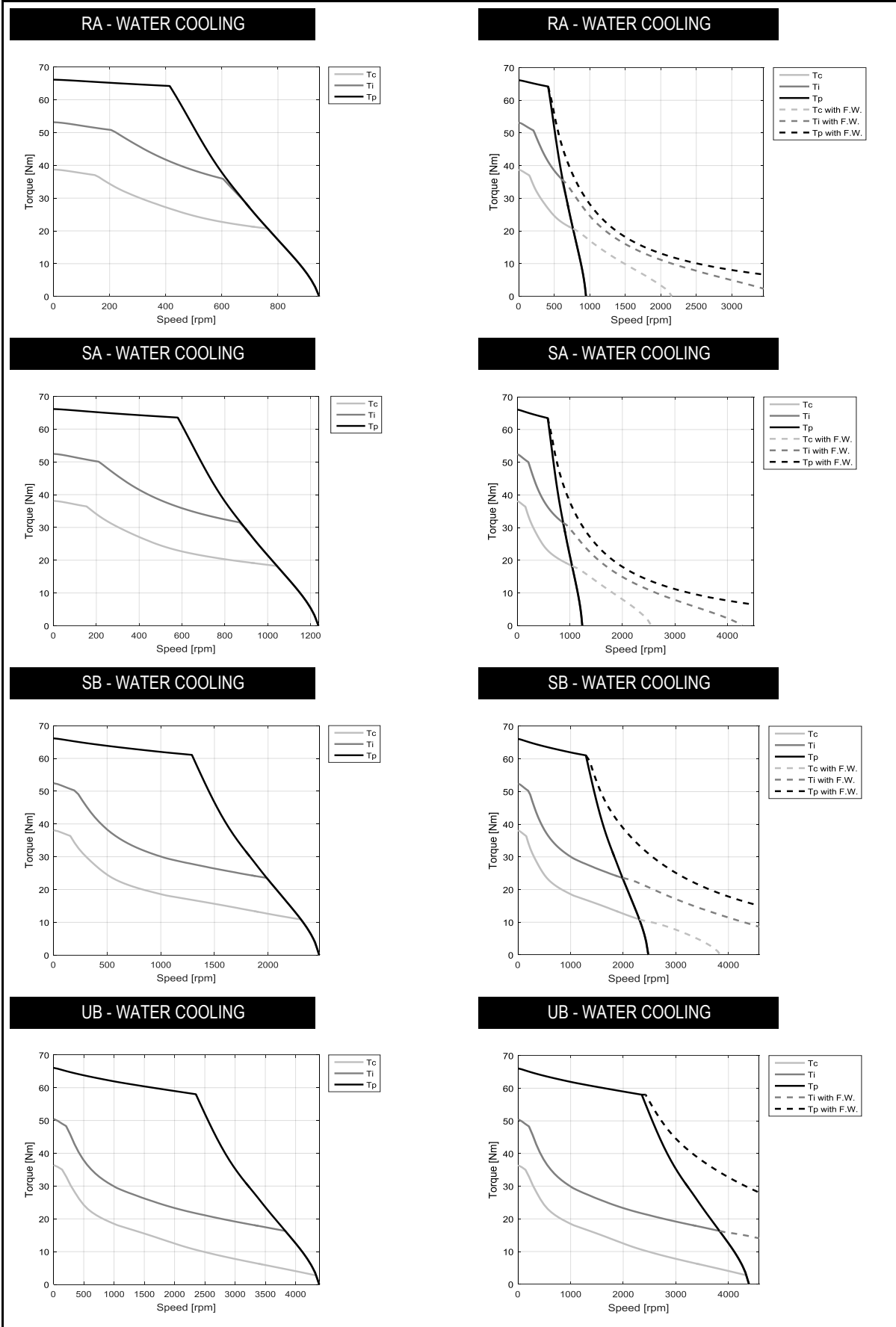
MOTOR PERFORMANCE		Winding codes	RA	SA	SB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	66.1	66.1	66.1	66.1
<b>Ti</b>	Intermittent torque	Nm	53.1	52.4	52.4	50.5
<b>Tc</b>	Continuous torque	Nm	38.7	38.1	38.1	36.4
<b>Ts</b>	Standstill torque	Nm	30.9	30.3	30.3	28.8
<b>Ip</b>	Peak current	Arms	14.0	18.3	36.7	65.0
<b>Ii</b>	Intermittent current	Arms	10.1	12.9	25.8	43.1
<b>Ic</b>	Continuous current	Arms	6.39	8.16	16.3	27.3
<b>Is</b>	Standstill current	Arms	4.84	6.19	12.4	20.7
<b>ns</b>	Rated low speed	rpm	0.84	0.84	0.84	0.87
<b>nm</b>	Maximum speed without flux weakening	rpm	947	1240	2480	4390
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	2160	2550	3850	4590
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	6.8
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.8
<b>Pp</b>	Power dissipation @ Ip	W	3780	3910	3910	4380
<b>Pi</b>	Power dissipation @ Ii	W	2560	2530	2530	2490
<b>Pc</b>	Power dissipation @ Ic	W	1020	1010	1010	996
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.33	0.33	0.33	0.33

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	7.27	5.57	2.78	1.57
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	4.19	3.21	1.60	0.906
<b>Km</b>	Motor constant	Nm/√W	1.73	1.70	1.70	1.62
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	11.8	7.12	1.78	0.629
<b>Ld/Lq</b>	Electrical inductance (*)	mH	87.7 / 75.4	51.4 / 44.5	12.9 / 11.1	4.10 / 3.62
<b>Isc</b>	Maximum short-circuit current	Arms	5.02	6.55	13.1	23.2
<b>nb</b>	Base speed	rpm	764	1040	2310	4340
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	604	868	1990	3830
<b>nb,p</b>	Base speed at peak duty cycle	rpm	414	580	1290	2350
<b>nn</b>	Rated speed	rpm	682	946	2140	4120
<b>Tn</b>	Rated torque	Nm	21.6	19.0	11.8	3.59
<b>In</b>	Rated current	Arms	3.43	3.97	5.23	3.89
<b>rth</b>	Thermal time constant	s	65.1	64.6	64.6	62.6
<b>Rth</b>	Thermal resistance	K/W	0.102	0.104	0.104	0.105
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00168	0.00168	0.00168	0.00168
<b>mr</b>	Rotor mass	kg	1.20	1.20	1.20	1.20
<b>ms</b>	Stator mass	kg	6.34	6.32	6.32	6.26

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.025	0.025	0.025	0.025
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	3.2	3.1	3.1	3.1
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

**Notes:** (\*) terminal to terminal.  
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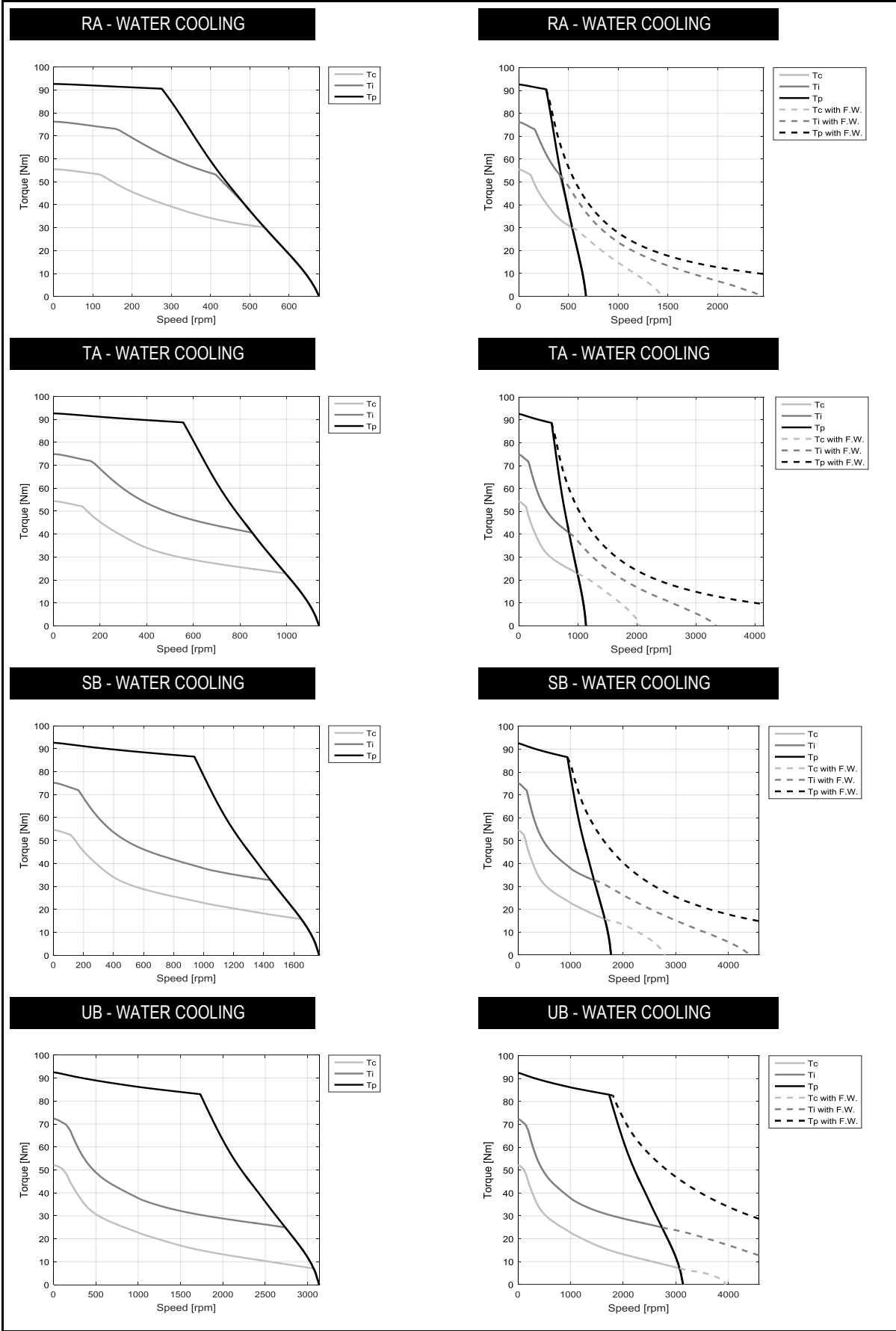
MOTOR PERFORMANCE		Winding codes	RA	TA	SB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	92.6	92.6	92.6	92.5
<b>Ti</b>	Intermittent torque	Nm	76.2	74.9	75.2	72.4
<b>Tc</b>	Continuous torque	Nm	55.4	54.3	54.6	52.2
<b>Ts</b>	Standstill torque	Nm	44.2	43.2	43.4	41.3
<b>lp</b>	Peak current	Arms	13.6	23.0	35.6	63.1
<b>li</b>	Intermittent current	Arms	10.3	16.8	26.3	43.9
<b>lc</b>	Continuous current	Arms	6.49	10.6	16.6	27.7
<b>ls</b>	Standstill current	Arms	4.92	8.06	12.6	21.0
<b>ns</b>	Rated low speed	rpm	0.86	0.87	0.87	0.89
<b>nm</b>	Maximum speed without flux weakening	rpm	676	1140	1770	3140
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	1450	2050	2790	3940
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	7.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	4590	4840	4750	5300
<b>Pi</b>	Power dissipation @ li	W	3420	3400	3380	3330
<b>Pc</b>	Power dissipation @ lc	W	1370	1360	1350	1330
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.46	0.46	0.46	0.46

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	10.2	6.06	3.90	2.20
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	5.87	3.48	2.25	1.27
<b>Km</b>	Motor constant	Nm/√W	2.13	2.08	2.10	1.99
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	15.3	5.66	2.31	0.815
<b>Ld/Lq</b>	Electrical inductance (*)	mH	116 / 99.5	41.0 / 35.4	17.0 / 14.7	5.43 / 4.77
<b>lsc</b>	Maximum short-circuit current	Arms	5.30	8.93	13.9	24.5
<b>nb</b>	Base speed	rpm	537	995	1650	3070
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	413	852	1450	2740
<b>nb,p</b>	Base speed at peak duty cycle	rpm	276	556	938	1730
<b>nn</b>	Rated speed	rpm	475	909	1540	2910
<b>Tn</b>	Rated torque	Nm	31.7	24.1	16.8	7.97
<b>In</b>	Rated current	Arms	3.54	4.61	5.17	5.08
<b>rth</b>	Thermal time constant	s	63.6	62.8	63.0	61.2
<b>Rth</b>	Thermal resistance	K/W	0.0756	0.0760	0.0765	0.0775
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00236	0.00236	0.00236	0.00236
<b>mr</b>	Rotor mass	kg	1.69	1.69	1.69	1.69
<b>ms</b>	Stator mass	kg	8.18	8.15	8.16	8.08

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.033	0.033	0.033	0.033
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	4.2	4.2	4.2	4.1
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	RA	TA	SB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	132	132	132	132
<b>Ti</b>	Intermittent torque	Nm	111	109	109	105
<b>Tc</b>	Continuous torque	Nm	80.9	79.2	79.6	76.2
<b>Ts</b>	Standstill torque	Nm	64.5	63.0	63.4	60.3
<b>lp</b>	Peak current	Arms	13.4	22.6	35.0	62.0
<b>li</b>	Intermittent current	Arms	10.4	17.1	26.7	44.6
<b>lc</b>	Continuous current	Arms	6.60	10.8	16.9	28.2
<b>ls</b>	Standstill current	Arms	5.00	8.19	12.8	21.4
<b>ns</b>	Rated low speed	rpm	0.91	0.92	0.92	0.94
<b>nm</b>	Maximum speed without flux weakening	rpm	473	798	1240	2190
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	1010	1490	2080	3230
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	7.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.7	2.7	2.5
<b>Pp</b>	Power dissipation @ lp	W	5960	6270	6160	6860
<b>Pi</b>	Power dissipation @ li	W	4750	4700	4690	4600
<b>Pc</b>	Power dissipation @ lc	W	1900	1880	1880	1840
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.65	0.65	0.65	0.65

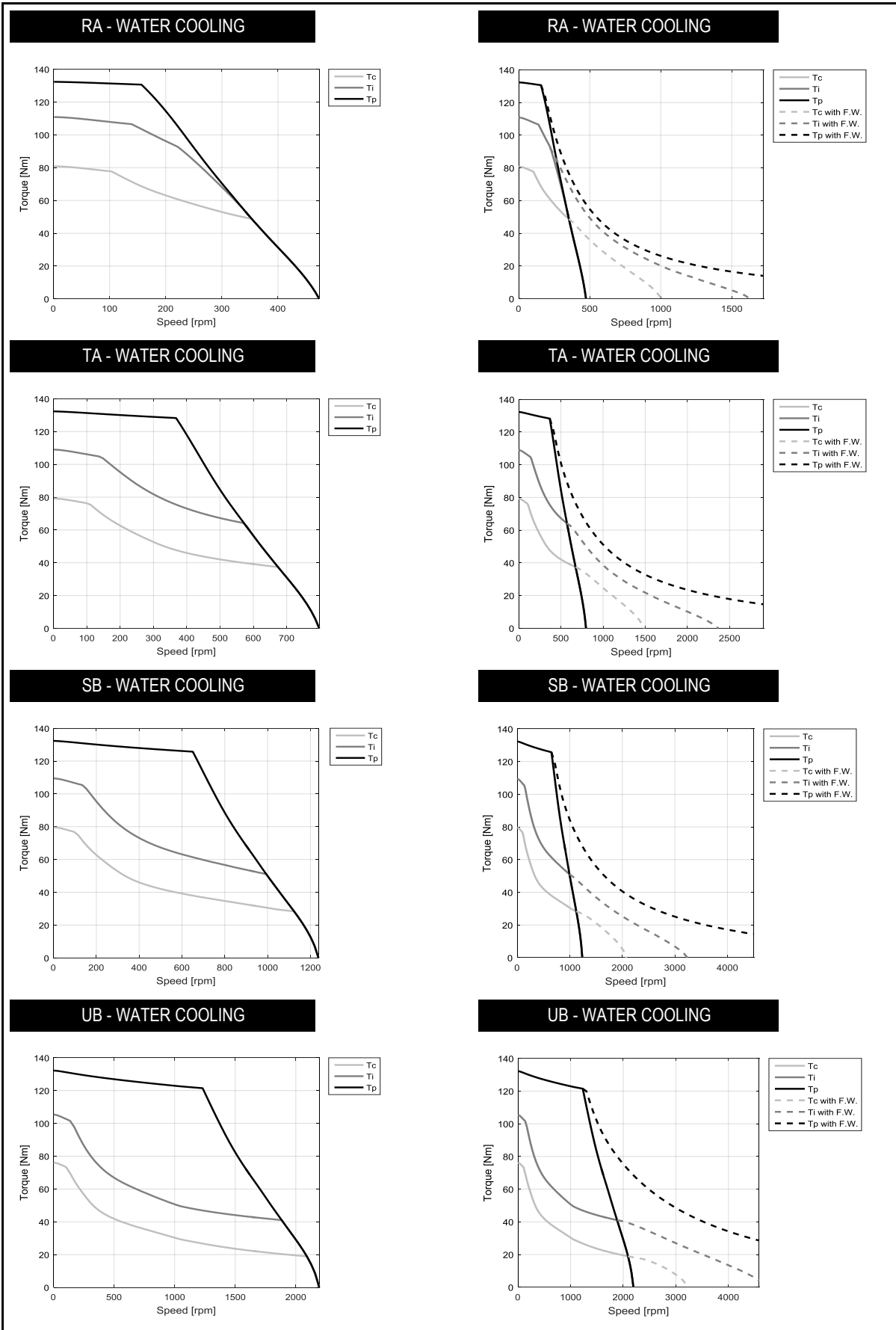
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	14.6	8.66	5.59	3.15
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	8.38	4.98	3.21	1.81
<b>Km</b>	Motor constant	Nm/√W	2.62	2.56	2.58	2.46
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	20.7	7.63	3.12	1.10
<b>Ld/Lq</b>	Electrical inductance (*)	mH	157 / 134	55.5 / 47.9	23.1 / 19.8	7.35 / 6.45
<b>lsc</b>	Maximum short-circuit current	Arms	5.59	9.42	14.6	25.9
<b>nb</b>	Base speed	rpm	353	674	1120	2090
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	221	570	994	1880
<b>nb,p</b>	Base speed at peak duty cycle	rpm	157	368	651	1230
<b>nn</b>	Rated speed	rpm	299	611	1040	1970
<b>Tn</b>	Rated torque	Nm	53.1	38.9	29.6	19.7
<b>In</b>	Rated current	Arms	4.15	5.11	6.18	7.71
<b>rth</b>	Thermal time constant	s	59.9	59.2	59.4	57.8
<b>Rth</b>	Thermal resistance	K/W	0.0533	0.0536	0.0539	0.0546
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00334	0.00334	0.00334	0.00334
<b>mr</b>	Rotor mass	kg	2.38	2.38	2.38	2.38
<b>ms</b>	Stator mass	kg	10.5	10.4	10.5	10.4

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.044	0.044	0.044	0.044
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	5.8	5.8	5.8	5.7
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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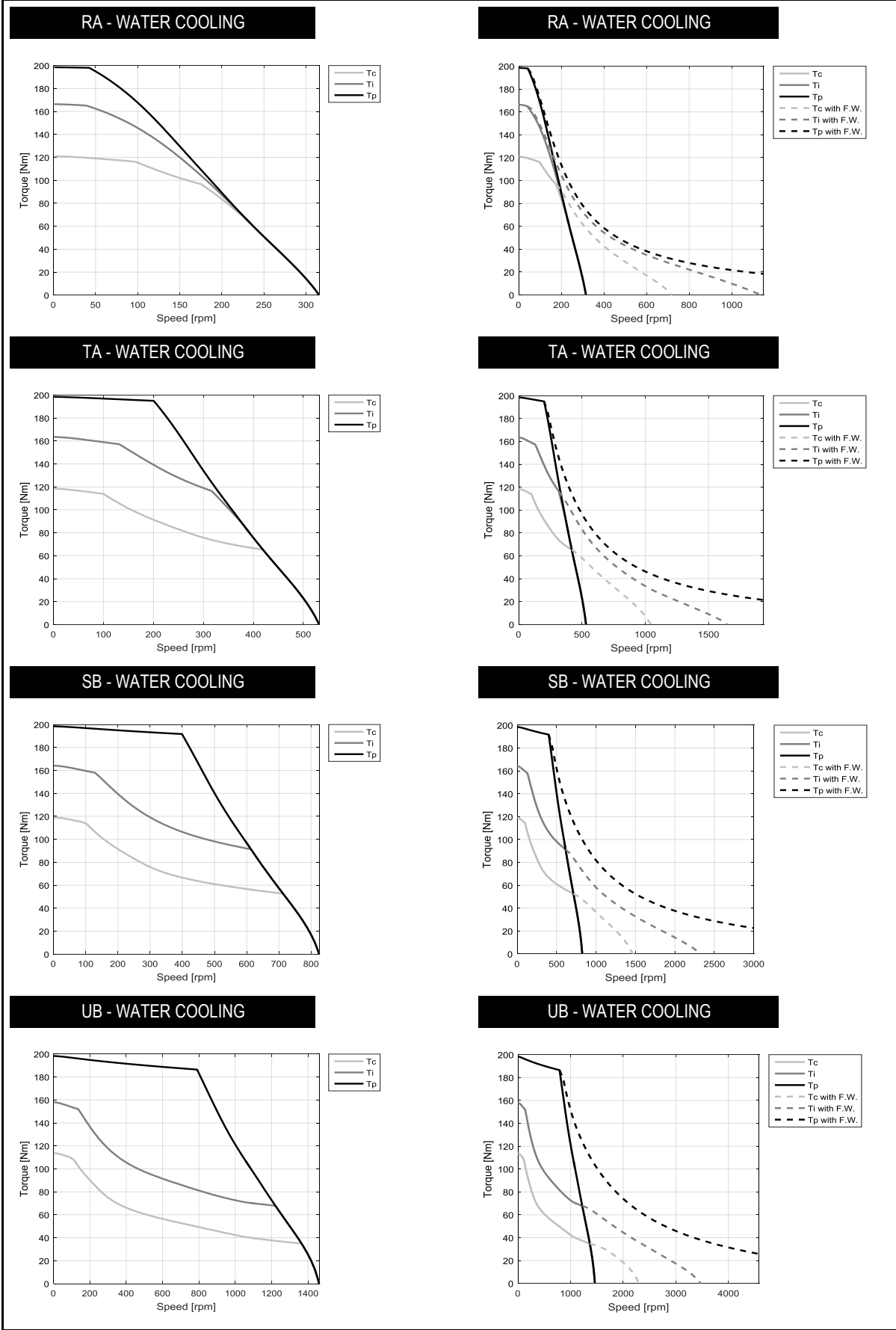
MOTOR PERFORMANCE		Winding codes	RA	TA	SB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	199	198	198	198
<b>Ti</b>	Intermittent torque	Nm	166	163	164	158
<b>Tc</b>	Continuous torque	Nm	121	118	119	114
<b>Ts</b>	Standstill torque	Nm	96.2	94.0	94.6	89.9
<b>lp</b>	Peak current	Arms	13.2	22.2	34.4	60.9
<b>li</b>	Intermittent current	Arms	10.3	16.9	26.4	44.0
<b>lc</b>	Continuous current	Arms	6.52	10.7	16.7	27.8
<b>ls</b>	Standstill current	Arms	4.94	8.09	12.6	21.1
<b>ns</b>	Rated low speed	rpm	0.90	0.91	0.91	0.94
<b>nm</b>	Maximum speed without flux weakening	rpm	316	532	825	1460
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	719	1050	1470	2300
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	6.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.4	2.3	2.3	2.2
<b>Pp</b>	Power dissipation @ lp	W	8290	8710	8560	9520
<b>Pi</b>	Power dissipation @ li	W	6590	6520	6510	6360
<b>Pc</b>	Power dissipation @ lc	W	2640	2610	2600	2540
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.98	0.98	0.98	0.98

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	21.9	13.0	8.39	4.73
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	12.6	7.47	4.81	2.72
<b>Km</b>	Motor constant	Nm/√W	3.28	3.20	3.23	3.07
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	29.8	11.0	4.50	1.58
<b>Ld/Lq</b>	Electrical inductance (*)	mH	234 / 201	82.4 / 71.4	34.2 / 29.6	10.9 / 9.62
<b>lsc</b>	Maximum short-circuit current	Arms	5.65	9.51	14.8	26.1
<b>nb</b>	Base speed	rpm	175	419	713	1360
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	38.9	316	613	1220
<b>nb,p</b>	Base speed at peak duty cycle	rpm	42.4	200	399	790
<b>nn</b>	Rated speed	rpm	119	369	651	1280
<b>Tn</b>	Rated torque	Nm	110	68.9	54.8	36.3
<b>In</b>	Rated current	Arms	6.02	5.96	7.45	9.05
<b>rth</b>	Thermal time constant	s	60.3	59.6	59.7	58.3
<b>Rth</b>	Thermal resistance	K/W	0.0365	0.0367	0.0369	0.0374
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00506	0.00506	0.00506	0.00506
<b>mr</b>	Rotor mass	kg	3.61	3.61	3.61	3.61
<b>ms</b>	Stator mass	kg	15.1	15.1	15.1	14.9

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.063	0.063	0.063	0.063
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	8.1	8.0	8.0	7.8
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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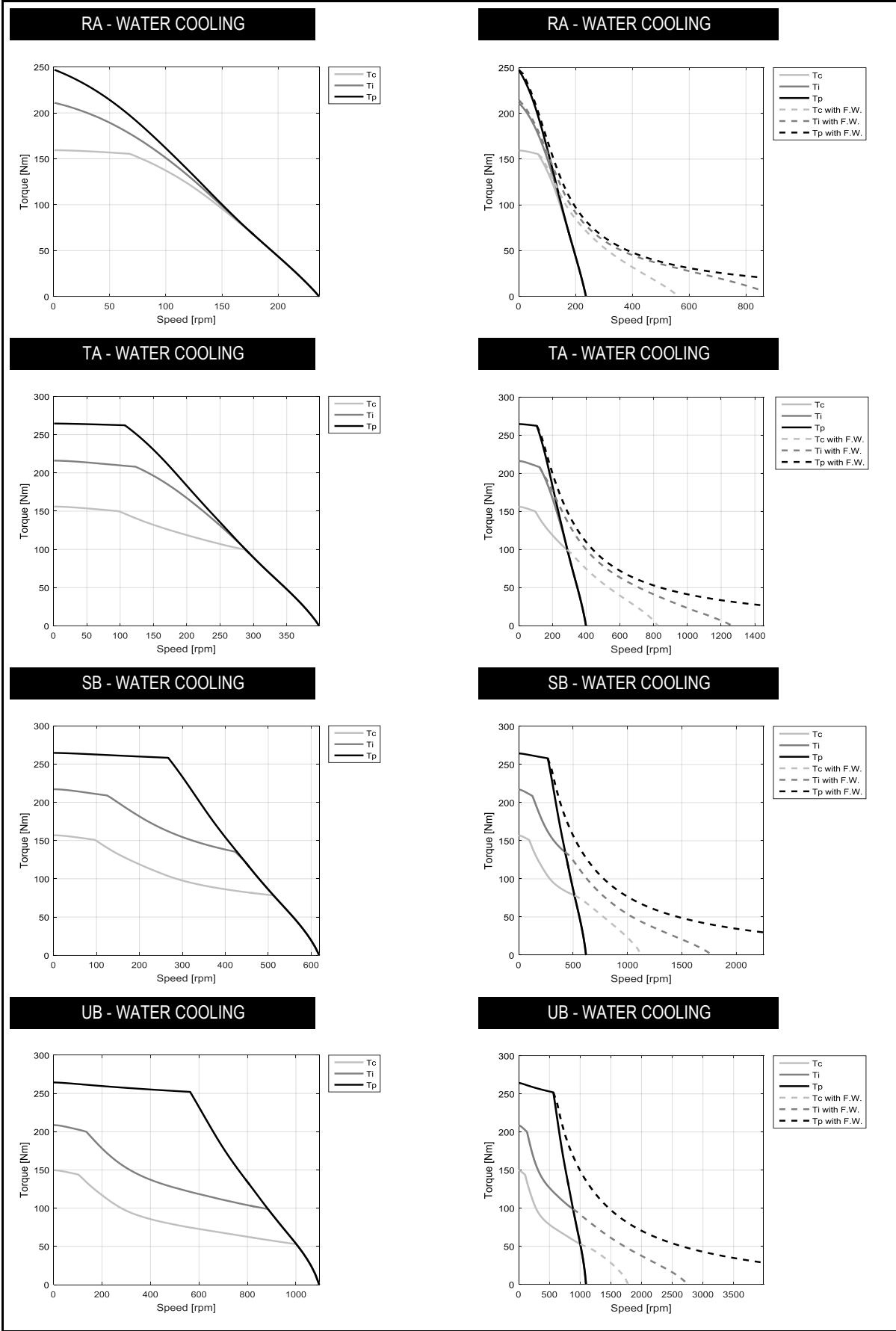
MOTOR PERFORMANCE		Winding codes	RA	TA	SB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	247	265	265	264
<b>Ti</b>	Intermittent torque	Nm	211	216	217	209
<b>Tc</b>	Continuous torque	Nm	159	156	157	150
<b>Ts</b>	Standstill torque	Nm	126	124	124	118
<b>lp</b>	Peak current	Arms	11.6	22.0	34.1	60.4
<b>li</b>	Intermittent current	Arms	9.38	16.5	25.8	43.0
<b>lc</b>	Continuous current	Arms	6.38	10.5	16.3	27.2
<b>ls</b>	Standstill current	Arms	4.84	7.92	12.4	20.6
<b>ns</b>	Rated low speed	rpm	0.92	0.93	0.93	0.95
<b>nm</b>	Maximum speed without flux weakening	rpm	237	399	619	1100
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	561	824	1130	1780
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	5.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	7.2	2.0	2.0	1.9
<b>Pp</b>	Power dissipation @ lp	W	8300	11200	11100	12300
<b>Pi</b>	Power dissipation @ li	W	6730	8070	8070	7840
<b>Pc</b>	Power dissipation @ lc	W	3270	3230	3230	3140
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.3	1.3	1.3	1.3

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	29.2	17.3	11.2	6.32
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	16.8	9.95	6.42	3.62
<b>Km</b>	Motor constant	Nm/√W	3.81	3.72	3.75	3.57
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	39.3	14.5	5.92	2.09
<b>Ld/Lq</b>	Electrical inductance (*)	mH	310 / 268	109 / 95.4	45.4 / 39.5	14.5 / 12.8
<b>lsc</b>	Maximum short-circuit current	Arms	5.68	9.56	14.8	26.3
<b>nb</b>	Base speed	rpm	67.8	287	512	1000
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	0.00	123	423	885
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	107	267	564
<b>nn</b>	Rated speed	rpm	45.5	237	461	927
<b>Tn</b>	Rated torque	Nm	157	110	81.5	56.3
<b>In</b>	Rated current	Arms	6.37	7.18	8.21	10.3
<b>rth</b>	Thermal time constant	s	59.5	58.9	58.9	57.6
<b>Rth</b>	Thermal resistance	K/W	0.0275	0.0276	0.0277	0.0281
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00679	0.00679	0.00679	0.00679
<b>mr</b>	Rotor mass	kg	4.85	4.85	4.85	4.85
<b>ms</b>	Stator mass	kg	19.5	19.4	19.4	19.2

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.080	0.080	0.080	0.080
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	10	9.9	9.9	9.7
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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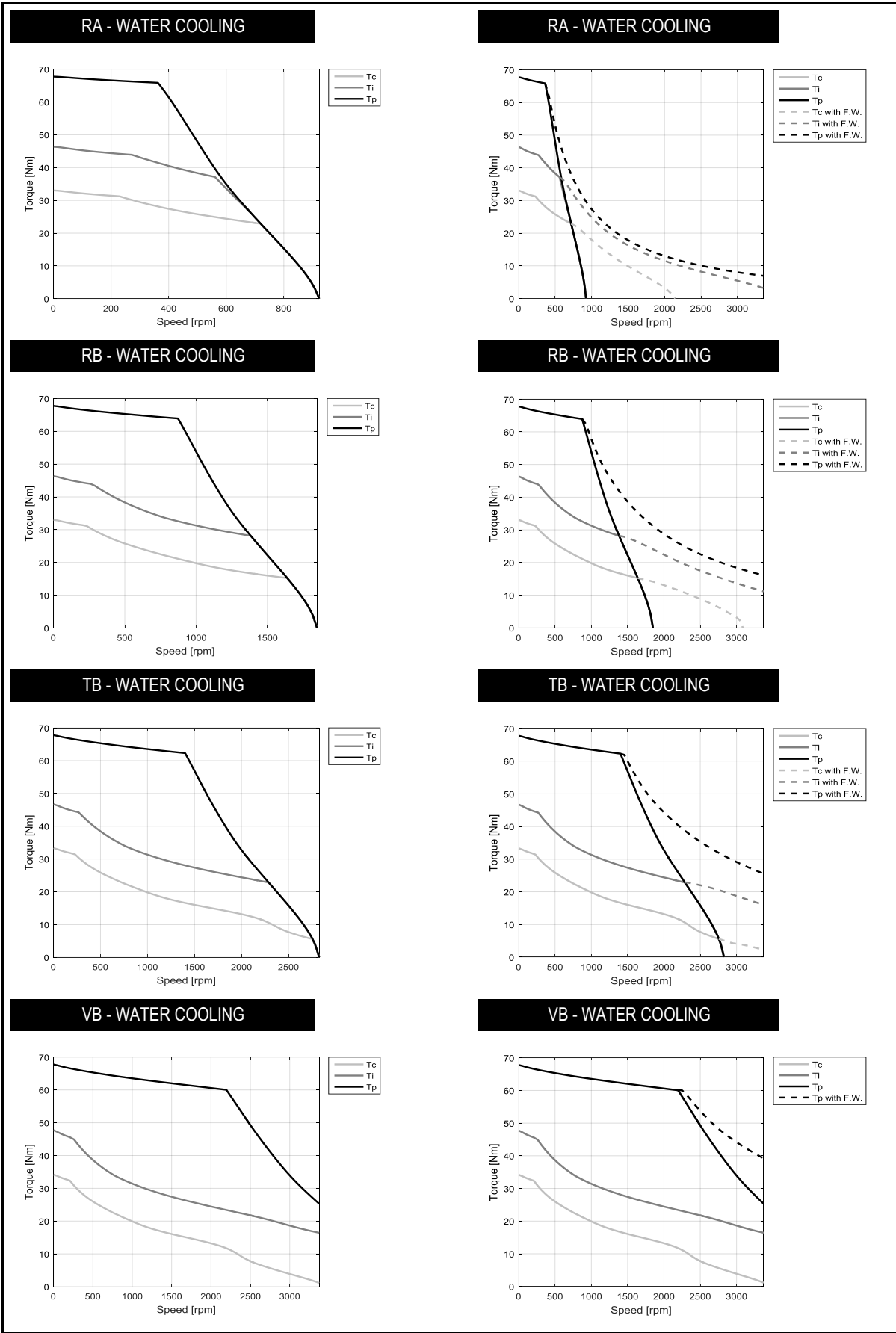
MOTOR PERFORMANCE		Winding codes	RA	RB	TB	VB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	67.7	67.7	67.8	67.8
<b>Ti</b>	Intermittent torque	Nm	46.3	46.3	46.7	47.7
<b>Tc</b>	Continuous torque	Nm	33.0	33.0	33.3	34.2
<b>Ts</b>	Standstill torque	Nm	26.1	26.1	26.4	27.1
<b>lp</b>	Peak current	Arms	15.1	30.2	46.1	70.4
<b>li</b>	Intermittent current	Arms	8.23	16.5	25.4	40.2
<b>lc</b>	Continuous current	Arms	5.20	10.4	16.1	25.4
<b>ls</b>	Standstill current	Arms	3.94	7.88	12.2	19.2
<b>ns</b>	Rated low speed	rpm	0.60	0.60	0.58	0.59
<b>nm</b>	Maximum speed without flux weakening	rpm	923	1850	2830	3370
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	2150	3090	3370	3370
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	7.6
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.0	3.0	3.0	3.0
<b>Pp</b>	Power dissipation @ lp	W	4710	4710	4530	4430
<b>Pi</b>	Power dissipation @ li	W	1740	1740	1720	1810
<b>Pc</b>	Power dissipation @ lc	W	694	694	687	723
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.57	0.57	0.57	0.57

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	7.47	3.73	2.44	1.60
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	4.30	2.15	1.41	0.922
<b>Km</b>	Motor constant	Nm/√W	1.76	1.76	1.79	1.80
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	12.0	3.00	1.24	0.525
<b>Ld/Lq</b>	Electrical inductance (*)	mH	90.3 / 84.4	22.6 / 21.1	9.67 / 9.01	4.14 / 3.83
<b>lsc</b>	Maximum short-circuit current	Arms	5.00	10.0	15.3	23.4
<b>nb</b>	Base speed	rpm	720	1640	2760	N/A
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	561	1380	2290	N/A
<b>nb,p</b>	Base speed at peak duty cycle	rpm	363	873	1400	2200
<b>nn</b>	Rated speed	rpm	629	1510	2590	N/A
<b>Tn</b>	Rated torque	Nm	24.0	16.0	6.85	N/A
<b>In</b>	Rated current	Arms	3.80	5.07	3.69	N/A
<b>rth</b>	Thermal time constant	s	90.8	90.8	93.8	92.4
<b>Rth</b>	Thermal resistance	K/W	0.153	0.153	0.155	0.147
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00273	0.00273	0.00273	0.00273
<b>mr</b>	Rotor mass	kg	1.00	1.00	1.00	1.00
<b>ms</b>	Stator mass	kg	7.68	7.68	7.74	7.77

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.026	0.026	0.026	0.026
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	2.1	2.1	2.1	2.2
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	RA	RB	TB	VB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	118	118	118	118
<b>Ti</b>	Intermittent torque	Nm	84.9	84.9	85.7	87.7
<b>Tc</b>	Continuous torque	Nm	60.0	60.0	60.7	62.4
<b>Ts</b>	Standstill torque	Nm	47.1	47.1	47.7	49.2
<b>Ip</b>	Peak current	Arms	14.3	28.5	43.6	66.6
<b>Ii</b>	Intermittent current	Arms	8.76	17.5	27.1	42.9
<b>Ic</b>	Continuous current	Arms	5.54	11.1	17.2	27.1
<b>Is</b>	Standstill current	Arms	4.20	8.39	13.0	20.6
<b>ns</b>	Rated low speed	rpm	0.68	0.68	0.66	0.67
<b>nm</b>	Maximum speed without flux weakening	rpm	554	1110	1690	2590
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	1250	2050	2490	2770
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	9.2
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.0	3.0	3.0	2.9
<b>Pp</b>	Power dissipation @ Ip	W	5640	5640	5410	5280
<b>Pi</b>	Power dissipation @ Ii	W	2710	2710	2680	2820
<b>Pc</b>	Power dissipation @ Ic	W	1080	1080	1070	1130
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.95	0.95	0.95	0.95

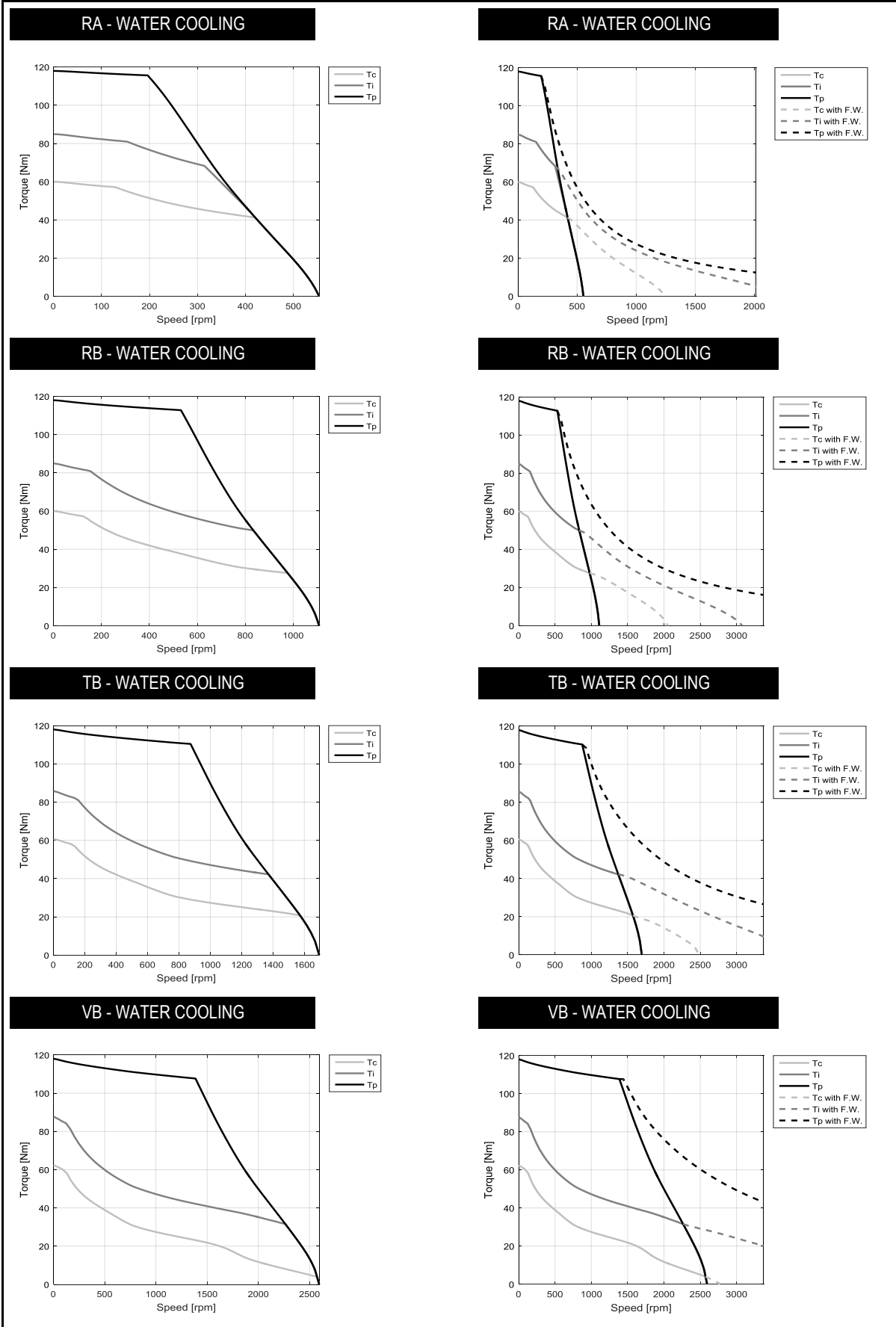
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	12.5	6.24	4.08	2.67
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	7.17	3.59	2.35	1.54
<b>Km</b>	Motor constant	Nm/√W	2.50	2.50	2.55	2.58
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	16.6	4.14	1.71	0.718
<b>Ld/Lq</b>	Electrical inductance (*)	mH	139 / 129	34.8 / 32.1	14.9 / 13.7	6.38 / 5.82
<b>Isc</b>	Maximum short-circuit current	Arms	5.41	10.8	16.5	25.3
<b>nb</b>	Base speed	rpm	419	977	1570	2570
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	314	834	1370	2260
<b>nb,p</b>	Base speed at peak duty cycle	rpm	196	532	874	1390
<b>nn</b>	Rated speed	rpm	362	897	1460	2450
<b>Tn</b>	Rated torque	Nm	43.3	28.7	22.2	5.63
<b>In</b>	Rated current	Arms	4.00	5.31	6.48	3.10
<b>rth</b>	Thermal time constant	s	79.7	79.7	82.1	81.0
<b>Rth</b>	Thermal resistance	K/W	0.0969	0.0969	0.0980	0.0929
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00458	0.00458	0.00458	0.00458
<b>mr</b>	Rotor mass	kg	1.69	1.69	1.69	1.69
<b>ms</b>	Stator mass	kg	10.1	10.1	10.2	10.2

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.037	0.037	0.037	0.037
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	3.3	3.3	3.3	3.5
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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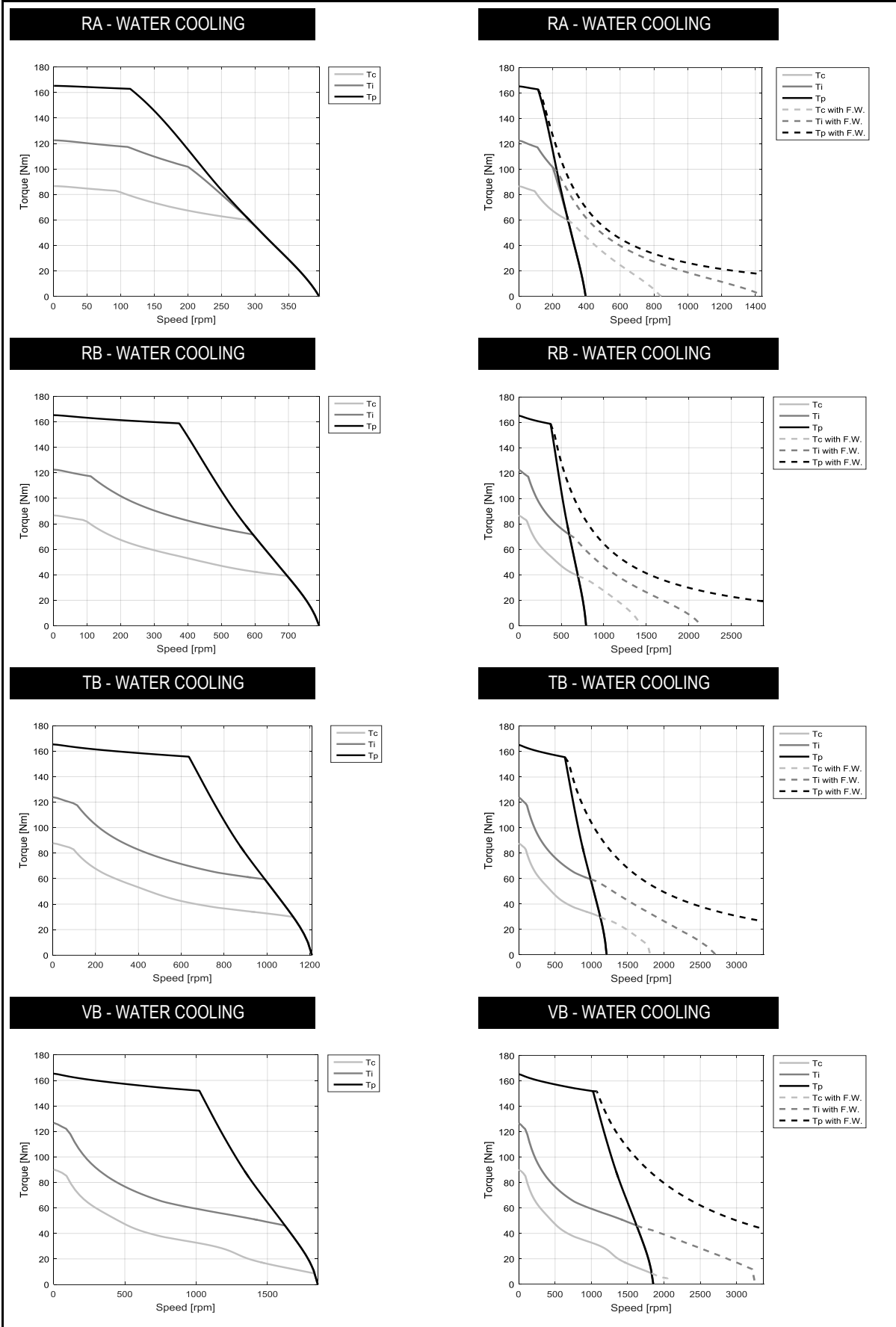
MOTOR PERFORMANCE		Winding codes	RA	RB	TB	VB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	165	165	165	165
<b>Ti</b>	Intermittent torque	Nm	122	122	124	127
<b>Tc</b>	Continuous torque	Nm	86.6	86.6	87.7	90.1
<b>Ts</b>	Standstill torque	Nm	68.0	68.0	68.9	71.0
<b>lp</b>	Peak current	Arms	13.8	27.7	42.3	64.6
<b>li</b>	Intermittent current	Arms	8.97	17.9	27.8	44.0
<b>lc</b>	Continuous current	Arms	5.67	11.3	17.6	27.8
<b>ls</b>	Standstill current	Arms	4.30	8.59	13.3	21.1
<b>ns</b>	Rated low speed	rpm	0.71	0.71	0.69	0.70
<b>nm</b>	Maximum speed without flux weakening	rpm	395	792	1210	1850
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	842	1430	1810	2080
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	5.7	10
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.0	3.0	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	6720	6720	6420	6270
<b>Pi</b>	Power dissipation @ li	W	3610	3610	3580	3760
<b>Pc</b>	Power dissipation @ lc	W	1450	1450	1430	1500
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.3	1.3	1.3	1.3

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	17.5	8.75	5.73	3.75
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	10.0	5.02	3.29	2.15
<b>Km</b>	Motor constant	Nm/√W	3.10	3.10	3.17	3.20
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	21.2	5.29	2.17	0.915
<b>Ld/Lq</b>	Electrical inductance (*)	mH	183 / 169	45.8 / 42.3	19.7 / 18.1	8.42 / 7.66
<b>lsc</b>	Maximum short-circuit current	Arms	5.75	11.5	17.6	26.8
<b>nb</b>	Base speed	rpm	288	696	1120	1830
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	200	594	990	1620
<b>nb,p</b>	Base speed at peak duty cycle	rpm	114	375	636	1020
<b>nn</b>	Rated speed	rpm	246	638	1050	1740
<b>Tn</b>	Rated torque	Nm	63.2	41.0	31.7	10.6
<b>In</b>	Rated current	Arms	4.13	5.36	6.48	3.77
<b>rth</b>	Thermal time constant	s	76.5	76.5	78.5	77.7
<b>Rth</b>	Thermal resistance	K/W	0.0716	0.0716	0.0725	0.0687
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00644	0.00644	0.00644	0.00644
<b>mr</b>	Rotor mass	kg	2.37	2.37	2.37	2.37
<b>ms</b>	Stator mass	kg	12.8	12.8	12.9	12.9

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.049	0.049	0.049	0.049
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	4.5	4.5	4.4	4.6
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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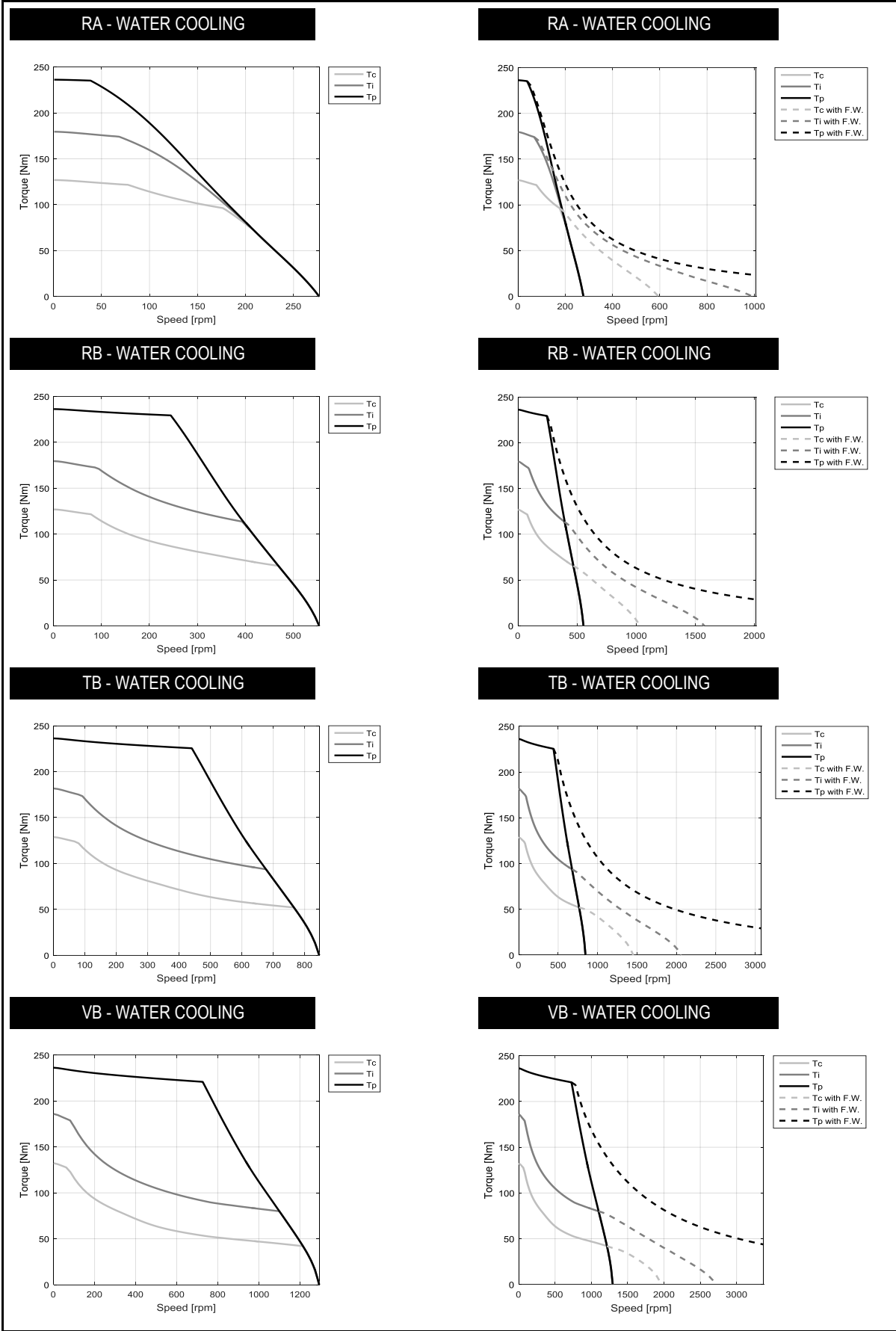
MOTOR PERFORMANCE		Winding codes	RA	RB	TB	VB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	236	236	236	236
<b>Ti</b>	Intermittent torque	Nm	180	180	182	186
<b>Tc</b>	Continuous torque	Nm	127	127	129	132
<b>Ts</b>	Standstill torque	Nm	99.6	99.6	101	104
<b>Ip</b>	Peak current	Arms	13.5	27.0	41.3	63.1
<b>Ii</b>	Intermittent current	Arms	9.15	18.3	28.5	45.0
<b>Ic</b>	Continuous current	Arms	5.79	11.6	18.0	28.5
<b>Is</b>	Standstill current	Arms	4.39	8.77	13.6	21.6
<b>ns</b>	Rated low speed	rpm	0.76	0.76	0.74	0.75
<b>nm</b>	Maximum speed without flux weakening	rpm	277	554	846	1290
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	595	1040	1450	1970
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.5	10
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ Ip	W	8450	8450	8060	7860
<b>Pi</b>	Power dissipation @ Ii	W	4990	4990	4940	5190
<b>Pc</b>	Power dissipation @ Ic	W	2000	2000	1980	2080
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.9	1.9	1.9	1.9

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	25.0	12.5	8.19	5.36
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	14.3	7.17	4.70	3.07
<b>Km</b>	Motor constant	Nm/√W	3.84	3.84	3.93	3.97
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	28.2	7.05	2.89	1.21
<b>Ld/Lq</b>	Electrical inductance (*)	mH	248 / 228	61.9 / 57.0	26.5 / 24.3	11.4 / 10.3
<b>Isc</b>	Maximum short-circuit current	Arms	6.08	12.2	18.6	28.4
<b>nb</b>	Base speed	rpm	176	469	766	1210
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	68.4	393	677	1100
<b>nb,p</b>	Base speed at peak duty cycle	rpm	38.6	244	441	727
<b>nn</b>	Rated speed	rpm	142	422	710	1140
<b>Tn</b>	Rated torque	Nm	103	69.2	53.9	43.8
<b>In</b>	Rated current	Arms	4.74	6.23	7.52	9.55
<b>rth</b>	Thermal time constant	s	71.7	71.7	73.5	72.7
<b>Rth</b>	Thermal resistance	K/W	0.0508	0.0508	0.0513	0.0487
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.00912	0.00912	0.00912	0.00912
<b>mr</b>	Rotor mass	kg	3.35	3.35	3.35	3.35
<b>ms</b>	Stator mass	kg	16.3	16.3	16.4	16.5

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.066	0.066	0.066	0.066
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	6.1	6.1	6.1	6.4
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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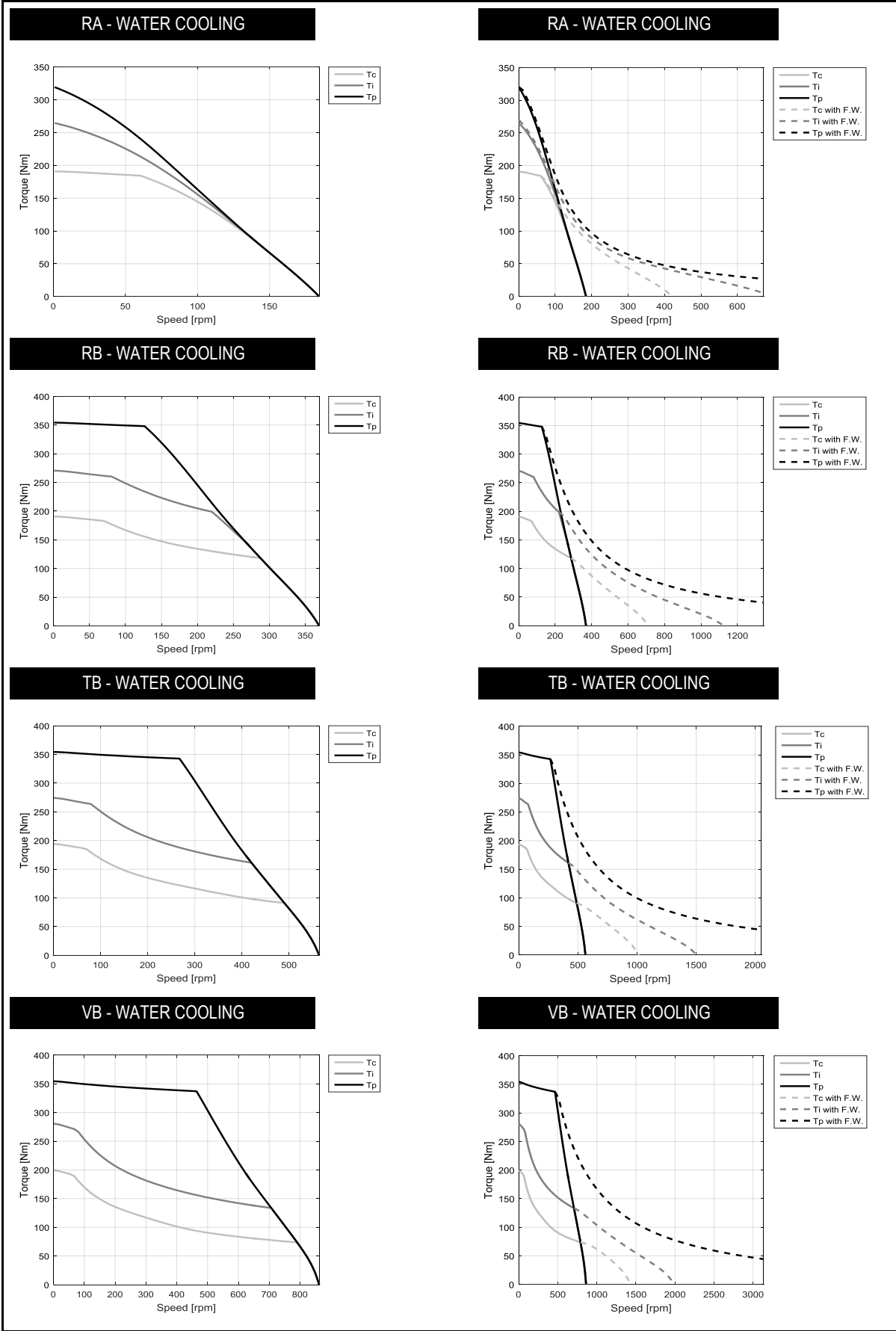
MOTOR PERFORMANCE		Winding codes	RA	RB	TB	VB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	319	354	354	354
<b>Ti</b>	Intermittent torque	Nm	265	271	274	281
<b>Tc</b>	Continuous torque	Nm	191	191	194	199
<b>Ts</b>	Standstill torque	Nm	149	149	152	157
<b>lp</b>	Peak current	Arms	11.2	26.5	40.5	61.9
<b>li</b>	Intermittent current	Arms	8.78	18.2	28.4	44.9
<b>lc</b>	Continuous current	Arms	5.76	11.5	17.9	28.4
<b>ls</b>	Standstill current	Arms	4.36	8.73	13.6	21.5
<b>ns</b>	Rated low speed	rpm	0.77	0.77	0.75	0.76
<b>nm</b>	Maximum speed without flux weakening	rpm	184	369	564	862
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	421	708	1020	1440
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.5	9.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	6.4	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	8010	11600	11000	10700
<b>Pi</b>	Power dissipation @ li	W	6300	6960	6900	7240
<b>Pc</b>	Power dissipation @ lc	W	2780	2780	2760	2890
<b>Td</b>	Max. detent torque (average to peak)	Nm	2.9	2.9	2.9	2.9

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	37.5	18.8	12.3	8.05
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	21.5	10.8	7.04	4.61
<b>Km</b>	Motor constant	Nm/√W	4.83	4.83	4.95	5.00
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	40.3	10.1	4.11	1.73
<b>Ld/Lq</b>	Electrical inductance (*)	mH	367 / 339	91.8 / 84.7	39.4 / 36.1	16.9 / 15.3
<b>lsc</b>	Maximum short-circuit current	Arms	6.15	12.3	18.8	28.7
<b>nb</b>	Base speed	rpm	60.5	288	490	790
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	0.00	220	420	707
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	127	267	464
<b>nn</b>	Rated speed	rpm	42.9	250	447	736
<b>Tn</b>	Rated torque	Nm	186	125	95.2	76.2
<b>In</b>	Rated current	Arms	5.74	7.44	8.71	10.8
<b>rth</b>	Thermal time constant	s	71.0	71.0	72.7	72.1
<b>Rth</b>	Thermal resistance	K/W	0.0348	0.0348	0.0352	0.0334
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.0138	0.0138	0.0138	0.0138
<b>mr</b>	Rotor mass	kg	5.06	5.06	5.06	5.06
<b>ms</b>	Stator mass	kg	23.1	23.1	23.3	23.3

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.094	0.094	0.094	0.094
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	8.6	8.6	8.5	8.9
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	TA	RB	TB	VB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	472	472	472	473
<b>Ti</b>	Intermittent torque	Nm	364	358	364	372
<b>Tc</b>	Continuous torque	Nm	256	252	256	263
<b>Ts</b>	Standstill torque	Nm	201	197	201	207
<b>lp</b>	Peak current	Arms	20.1	26.3	40.1	61.3
<b>li</b>	Intermittent current	Arms	14.0	17.9	28.0	44.2
<b>lc</b>	Continuous current	Arms	8.84	11.3	17.7	28.0
<b>ls</b>	Standstill current	Arms	6.70	8.59	13.4	21.2
<b>ns</b>	Rated low speed	rpm	0.76	0.78	0.76	0.77
<b>nm</b>	Maximum speed without flux weakening	rpm	211	277	423	647
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	453	551	778	1110
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	7.8	8.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	14100	14800	14100	13700
<b>Pi</b>	Power dissipation @ li	W	8630	8680	8630	9030
<b>Pc</b>	Power dissipation @ lc	W	3450	3470	3450	3610
<b>Td</b>	Max. detent torque (average to peak)	Nm	3.8	3.8	3.8	3.8

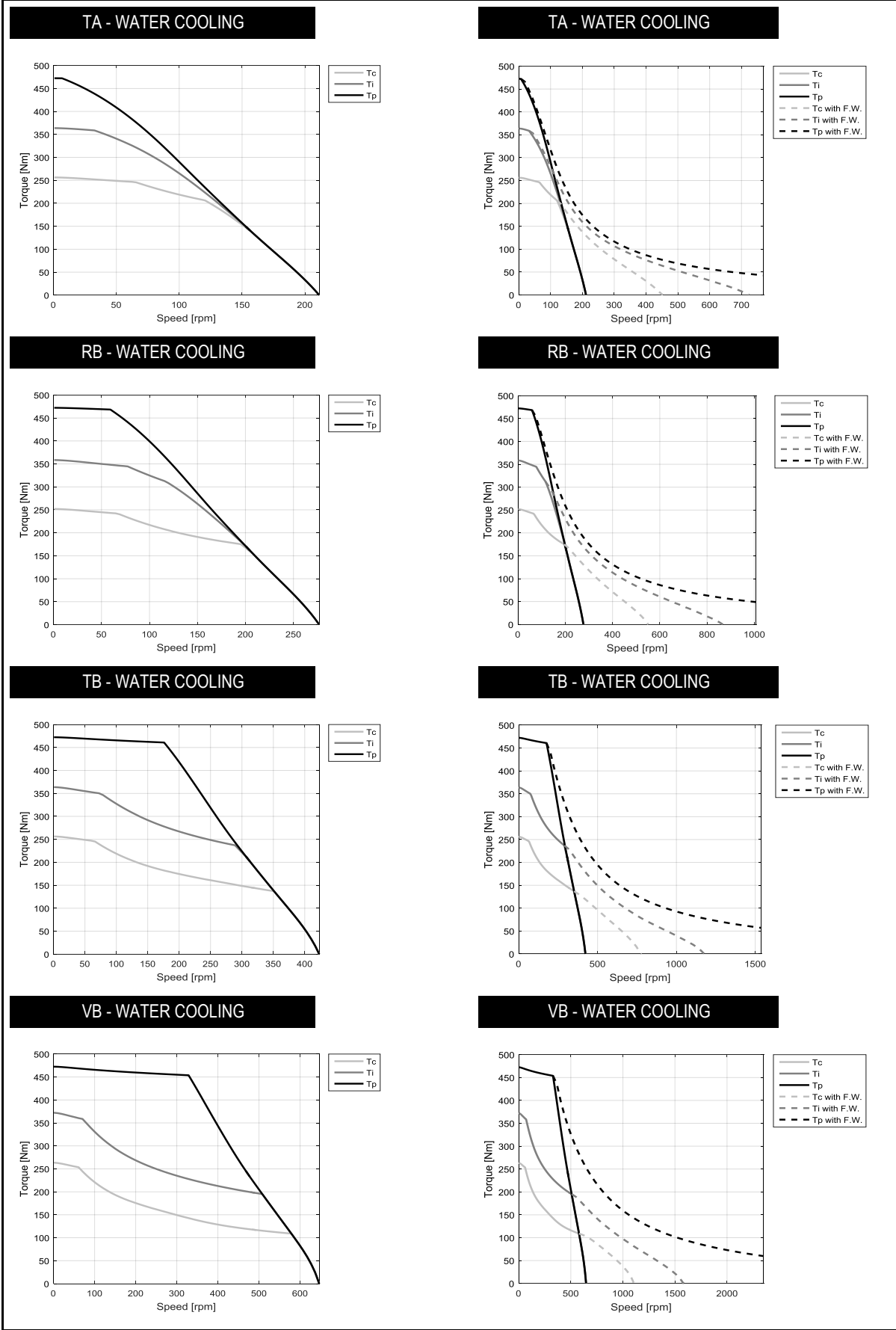
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	32.8	25.0	16.4	10.7
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	18.8	14.3	9.39	6.15
<b>Km</b>	Motor constant	Nm/√W	5.77	5.63	5.77	5.83
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	21.5	13.2	5.38	2.26
<b>Ld/Lq</b>	Electrical inductance (*)	mH	209 / 192	122 / 113	52.2 / 48.1	22.4 / 20.4
<b>lsc</b>	Maximum short-circuit current	Arms	9.44	12.4	18.9	28.8
<b>nb</b>	Base speed	rpm	120	195	351	579
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	32.5	116	289	508
<b>nb,p</b>	Base speed at peak duty cycle	rpm	6.78	59.3	176	329
<b>nn</b>	Rated speed	rpm	87.6	163	314	535
<b>Tn</b>	Rated torque	Nm	228	186	145	113
<b>In</b>	Rated current	Arms	8.01	8.35	9.91	11.9
<b>rth</b>	Thermal time constant	s	71.3	69.7	71.3	70.7
<b>Rth</b>	Thermal resistance	K/W	0.0265	0.0262	0.0265	0.0251
<b>2p</b>	Number of poles	-	22	22	22	22
<b>J</b>	Rotor inertia	kg·m²	0.0185	0.0185	0.0185	0.0185
<b>mr</b>	Rotor mass	kg	6.79	6.79	6.79	6.79
<b>ms</b>	Stator mass	kg	29.7	29.6	29.7	29.8

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.120	0.120	0.120	0.120
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	11	11	11	11
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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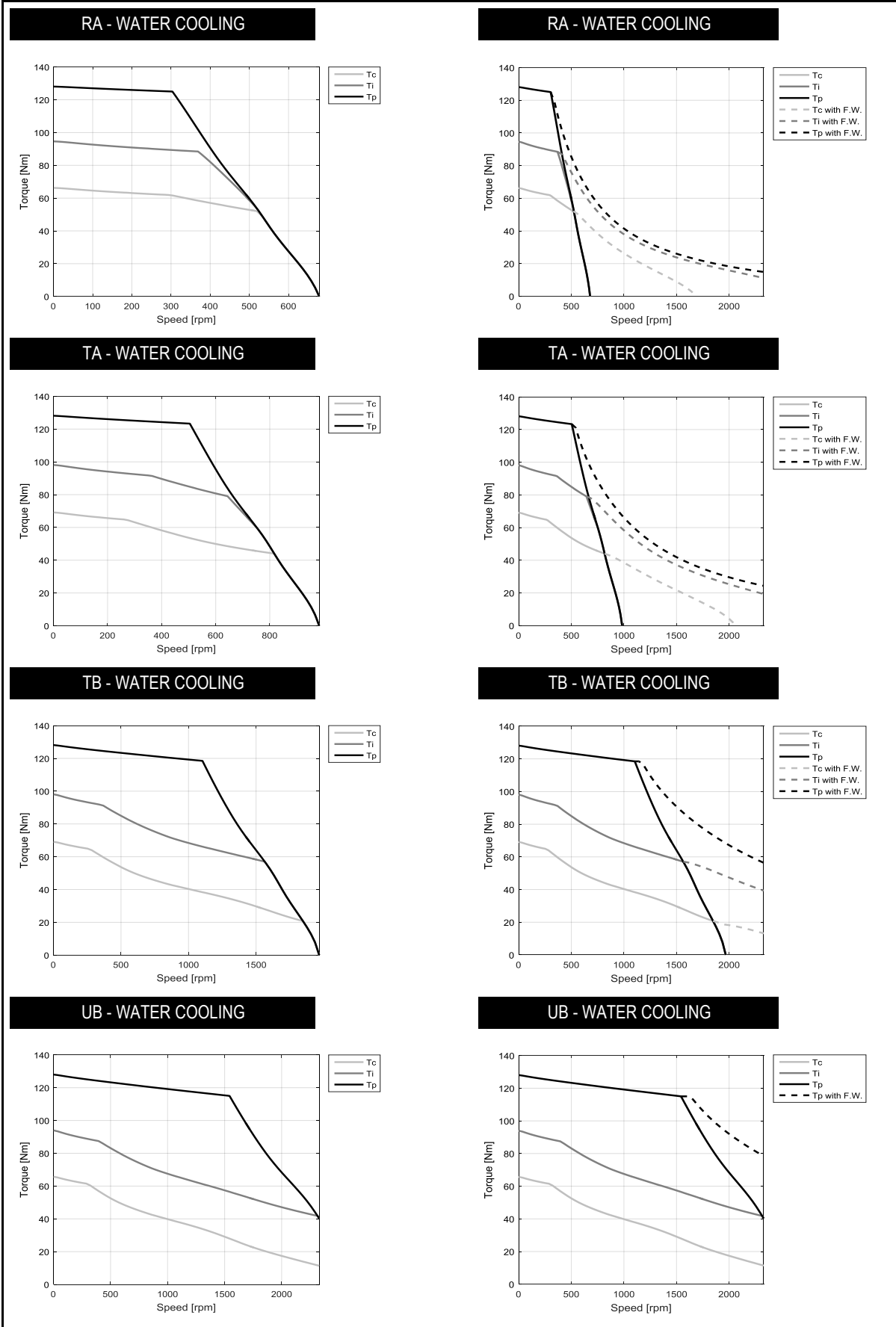
MOTOR PERFORMANCE		Winding codes	RA	TA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	128	128	128	128
<b>Ti</b>	Intermittent torque	Nm	94.6	98.1	98.1	94.0
<b>Tc</b>	Continuous torque	Nm	66.2	69.1	69.1	65.7
<b>Ts</b>	Standstill torque	Nm	51.5	54.0	54.0	51.0
<b>lp</b>	Peak current	Arms	17.3	25.0	50.1	69.1
<b>li</b>	Intermittent current	Arms	11.3	17.2	34.3	44.6
<b>lc</b>	Continuous current	Arms	7.12	10.9	21.7	28.2
<b>ls</b>	Standstill current	Arms	5.40	8.23	16.5	21.4
<b>ns</b>	Rated low speed	rpm	0.53	0.51	0.51	0.53
<b>nm</b>	Maximum speed without flux weakening	rpm	678	983	1970	2330
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	1690	2060	2330	2330
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	7.0	5.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.8
<b>Pp</b>	Power dissipation @ lp	W	4970	4550	4550	5060
<b>Pi</b>	Power dissipation @ li	W	2720	2790	2790	2720
<b>Pc</b>	Power dissipation @ lc	W	1090	1110	1110	1090
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.58	0.58	0.58	0.58

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	10.2	7.05	3.52	2.55
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	5.85	4.04	2.02	1.46
<b>Km</b>	Motor constant	Nm/√W	2.63	2.73	2.73	2.61
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	10.0	4.43	1.11	0.639
<b>Ld/Lq</b>	Electrical inductance (*)	mH	39.7 / 35.9	18.9 / 16.9	4.73 / 4.24	2.48 / 2.25
<b>lsc</b>	Maximum short-circuit current	Arms	7.74	11.2	22.4	31.0
<b>nb</b>	Base speed	rpm	519	817	1850	N/A
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	369	644	1560	2310
<b>nb,p</b>	Base speed at peak duty cycle	rpm	304	504	1100	1540
<b>nn</b>	Rated speed	rpm	447	734	1710	N/A
<b>Tn</b>	Rated torque	Nm	55.0	46.0	24.1	N/A
<b>In</b>	Rated current	Arms	6.18	7.52	8.60	N/A
<b>rth</b>	Thermal time constant	s	51.5	53.6	53.6	51.9
<b>Rth</b>	Thermal resistance	K/W	0.0971	0.0948	0.0948	0.0972
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.00908	0.00908	0.00908	0.00908
<b>mr</b>	Rotor mass	kg	1.52	1.52	1.52	1.52
<b>ms</b>	Stator mass	kg	6.45	6.54	6.54	6.49

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.038	0.038	0.038	0.038
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	3.4	3.4	3.4	3.3
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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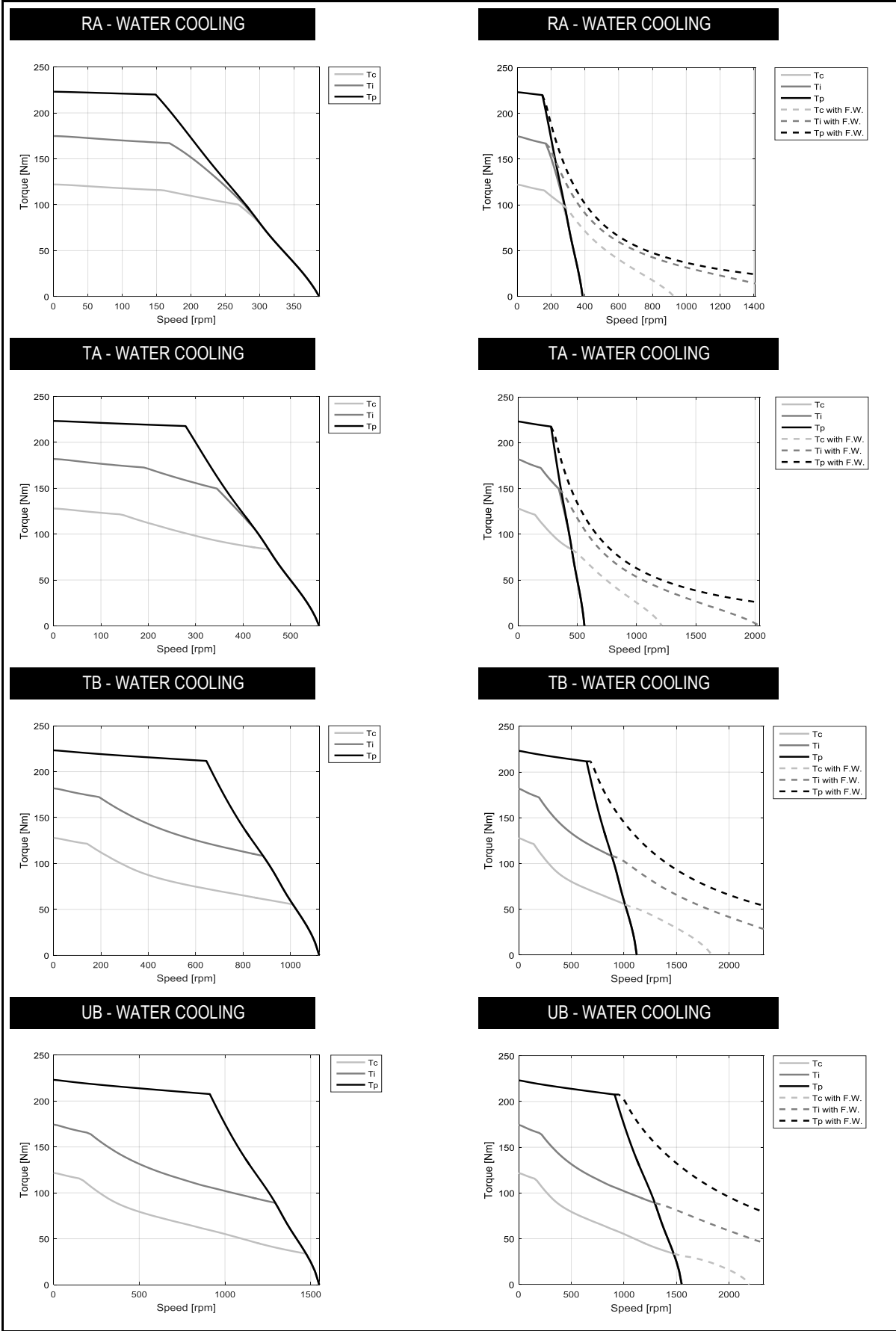
MOTOR PERFORMANCE		Winding codes	RA	TA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	223	223	223	223
<b>Ti</b>	Intermittent torque	Nm	175	182	182	174
<b>Tc</b>	Continuous torque	Nm	122	128	128	122
<b>Ts</b>	Standstill torque	Nm	94.9	99.8	99.8	94.6
<b>lp</b>	Peak current	Arms	16.5	23.9	47.8	66.0
<b>li</b>	Intermittent current	Arms	12.0	18.3	36.7	47.8
<b>lc</b>	Continuous current	Arms	7.58	11.6	23.2	30.2
<b>ls</b>	Standstill current	Arms	5.74	8.78	17.6	22.9
<b>ns</b>	Rated low speed	rpm	0.59	0.57	0.57	0.59
<b>nm</b>	Maximum speed without flux weakening	rpm	387	560	1120	1550
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	927	1210	1830	2190
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.3	6.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.5	2.6	2.6	2.4
<b>Pp</b>	Power dissipation @ lp	W	6460	5870	5870	6500
<b>Pi</b>	Power dissipation @ li	W	4450	4550	4550	4440
<b>Pc</b>	Power dissipation @ lc	W	1780	1820	1820	1780
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.0	1.0	1.0	1.0

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	17.8	12.3	6.14	4.44
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	10.3	7.08	3.54	2.56
<b>Km</b>	Motor constant	Nm/√W	3.80	3.97	3.97	3.79
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	14.6	6.37	1.59	0.917
<b>Ld/Lq</b>	Electrical inductance (*)	mH	64.7 / 57.9	30.8 / 27.3	7.71 / 6.82	4.04 / 3.62
<b>lsc</b>	Maximum short-circuit current	Arms	8.33	12.1	24.1	33.3
<b>nb</b>	Base speed	rpm	269	454	1010	1470
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	169	344	884	1290
<b>nb,p</b>	Base speed at peak duty cycle	rpm	149	278	645	912
<b>nn</b>	Rated speed	rpm	224	403	930	1380
<b>Tn</b>	Rated torque	Nm	106	87.2	59.2	37.1
<b>In</b>	Rated current	Arms	6.82	8.04	11.3	10.4
<b>rth</b>	Thermal time constant	s	45.9	47.6	47.6	46.1
<b>Rth</b>	Thermal resistance	K/W	0.0584	0.0571	0.0571	0.0584
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0152	0.0152	0.0152	0.0152
<b>mr</b>	Rotor mass	kg	2.56	2.56	2.56	2.56
<b>ms</b>	Stator mass	kg	8.68	8.81	8.81	8.73

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.056	0.056	0.056	0.056
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	5.5	5.6	5.6	5.5
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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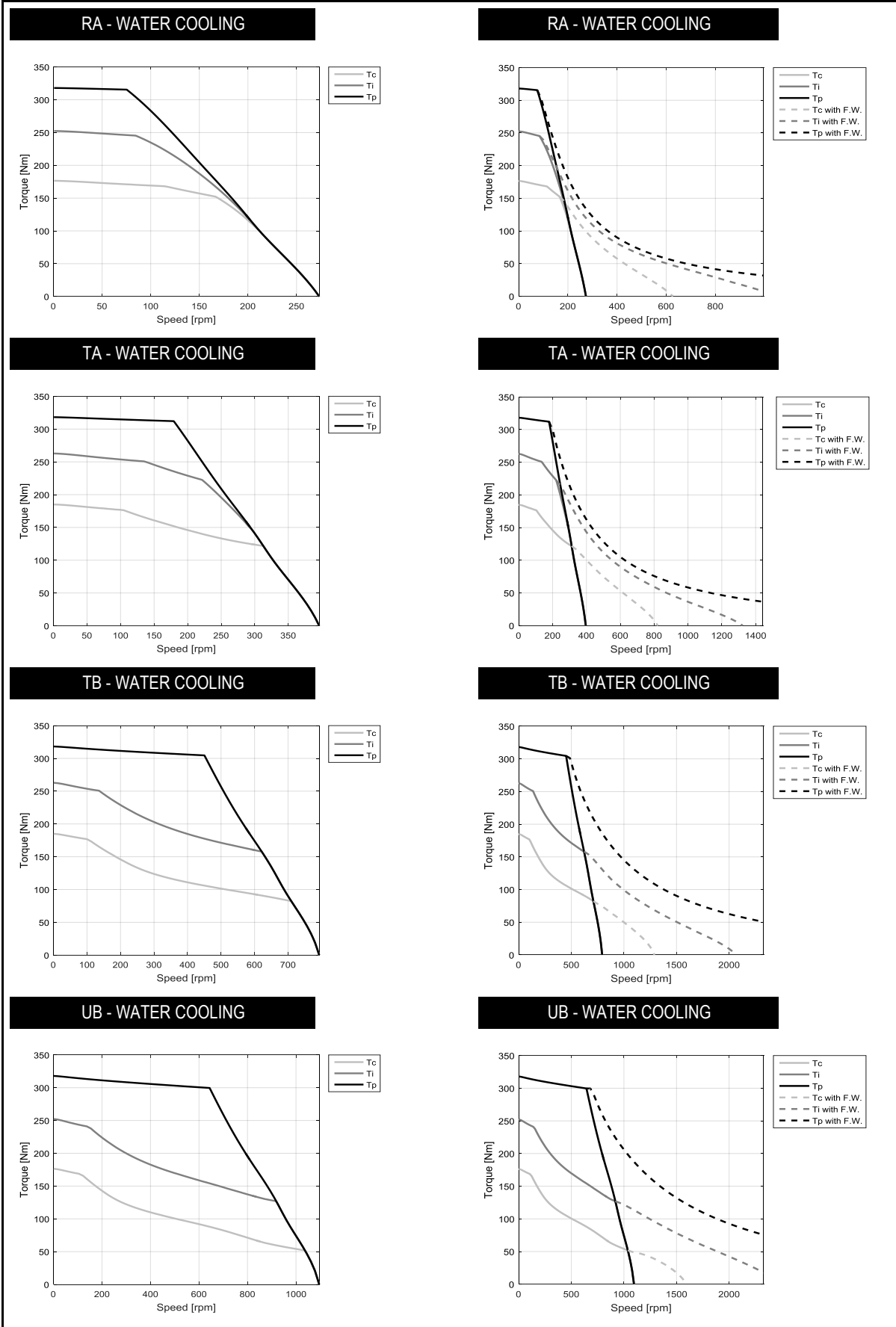
MOTOR PERFORMANCE		Winding codes	RA	TA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	318	318	318	318
<b>Ti</b>	Intermittent torque	Nm	252	263	263	252
<b>Tc</b>	Continuous torque	Nm	176	185	185	176
<b>Ts</b>	Standstill torque	Nm	137	145	145	137
<b>Ip</b>	Peak current	Arms	16.4	23.8	47.6	65.7
<b>Ii</b>	Intermittent current	Arms	12.2	18.7	37.3	48.7
<b>Ic</b>	Continuous current	Arms	7.70	11.8	23.6	30.8
<b>Is</b>	Standstill current	Arms	5.83	8.94	17.9	23.3
<b>ns</b>	Rated low speed	rpm	0.60	0.58	0.58	0.60
<b>nm</b>	Maximum speed without flux weakening	rpm	273	396	793	1100
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	627	823	1290	1590
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.3	6.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.3	2.4	2.4	2.2
<b>Pp</b>	Power dissipation @ Ip	W	8370	7580	7580	8370
<b>Pi</b>	Power dissipation @ Ii	W	6020	6150	6150	6000
<b>Pc</b>	Power dissipation @ Ic	W	2410	2460	2460	2400
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.4	1.4	1.4	1.4

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	25.3	17.5	8.75	6.34
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	14.5	10.0	5.01	3.63
<b>Km</b>	Motor constant	Nm/√W	4.72	4.95	4.95	4.73
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	19.2	8.34	2.09	1.20
<b>Ld/Lq</b>	Electrical inductance (*)	mH	87.4 / 78.2	41.7 / 36.8	10.4 / 9.21	5.46 / 4.89
<b>Isc</b>	Maximum short-circuit current	Arms	8.71	12.6	25.2	34.9
<b>nb</b>	Base speed	rpm	167	313	710	1040
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	84.6	222	621	918
<b>nb,p</b>	Base speed at peak duty cycle	rpm	75.3	179	450	644
<b>nn</b>	Rated speed	rpm	129	273	651	971
<b>Tn</b>	Rated torque	Nm	163	129	88.1	56.0
<b>In</b>	Rated current	Arms	7.39	8.26	11.6	10.6
<b>rth</b>	Thermal time constant	s	45.2	46.9	46.9	45.4
<b>Rth</b>	Thermal resistance	K/W	0.0425	0.0416	0.0416	0.0424
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0214	0.0214	0.0214	0.0214
<b>mr</b>	Rotor mass	kg	3.60	3.60	3.60	3.60
<b>ms</b>	Stator mass	kg	11.3	11.4	11.4	11.3

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.074	0.074	0.074	0.074
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	7.4	7.6	7.6	7.4
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	RA	TA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	460	461	461	460
<b>Ti</b>	Intermittent torque	Nm	370	386	386	371
<b>Tc</b>	Continuous torque	Nm	259	272	272	259
<b>Ts</b>	Standstill torque	Nm	202	213	213	202
<b>lp</b>	Peak current	Arms	16.4	23.7	47.4	65.4
<b>li</b>	Intermittent current	Arms	12.4	19.0	38.0	49.6
<b>lc</b>	Continuous current	Arms	7.82	12.0	24.0	31.3
<b>ls</b>	Standstill current	Arms	5.93	9.11	18.2	23.7
<b>ns</b>	Rated low speed	rpm	0.64	0.62	0.62	0.64
<b>nm</b>	Maximum speed without flux weakening	rpm	189	274	547	756
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	429	584	969	1210
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.0	6.4
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.0	2.1	2.1	2.0
<b>Pp</b>	Power dissipation @ lp	W	11300	10200	10200	11200
<b>Pi</b>	Power dissipation @ li	W	8400	8590	8590	8370
<b>Pc</b>	Power dissipation @ lc	W	3360	3440	3440	3350
<b>Td</b>	Max. detent torque (average to peak)	Nm	2.1	2.1	2.1	2.1

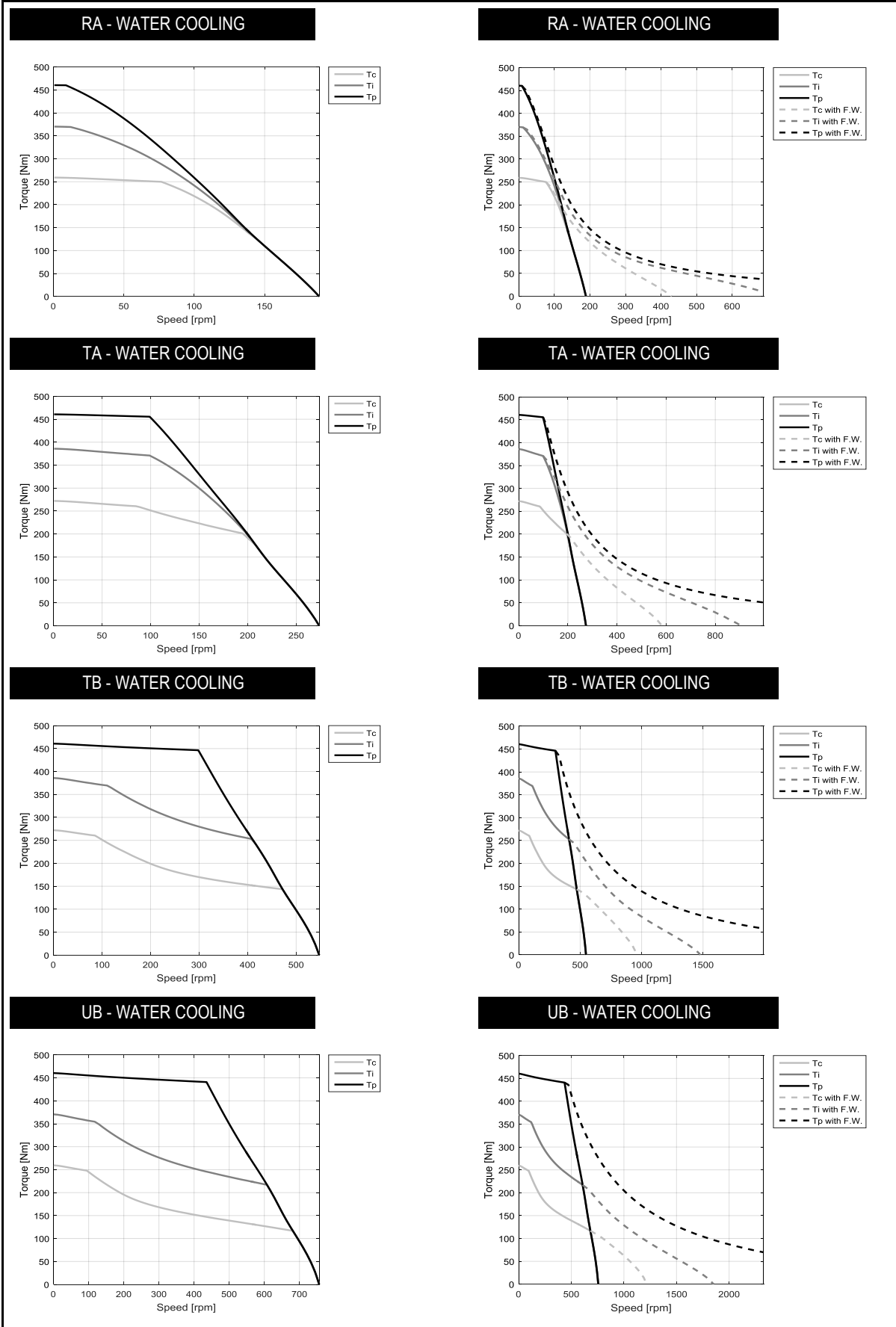
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	36.7	25.3	12.7	9.18
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	21.0	14.5	7.25	5.25
<b>Km</b>	Motor constant	Nm/√W	5.85	6.14	6.14	5.87
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	26.2	11.3	2.84	1.63
<b>Ld/Lq</b>	Electrical inductance (*)	mH	120 / 108	57.2 / 50.6	14.3 / 12.7	7.49 / 6.72
<b>lsc</b>	Maximum short-circuit current	Arms	9.20	13.3	26.6	36.8
<b>nb</b>	Base speed	rpm	76.5	195	472	681
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	12.1	98.8	407	608
<b>nb,p</b>	Base speed at peak duty cycle	rpm	8.81	99.0	298	436
<b>nn</b>	Rated speed	rpm	58.3	160	431	627
<b>Tn</b>	Rated torque	Nm	252	218	149	124
<b>In</b>	Rated current	Arms	7.79	9.73	13.3	15.5
<b>rth</b>	Thermal time constant	s	42.5	44.0	44.0	42.7
<b>Rth</b>	Thermal resistance	K/W	0.0294	0.0288	0.0288	0.0294
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0303	0.0303	0.0303	0.0303
<b>mr</b>	Rotor mass	kg	5.08	5.08	5.08	5.08
<b>ms</b>	Stator mass	kg	14.4	14.6	14.6	14.5

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.100	0.100	0.100	0.100
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	10	11	11	10
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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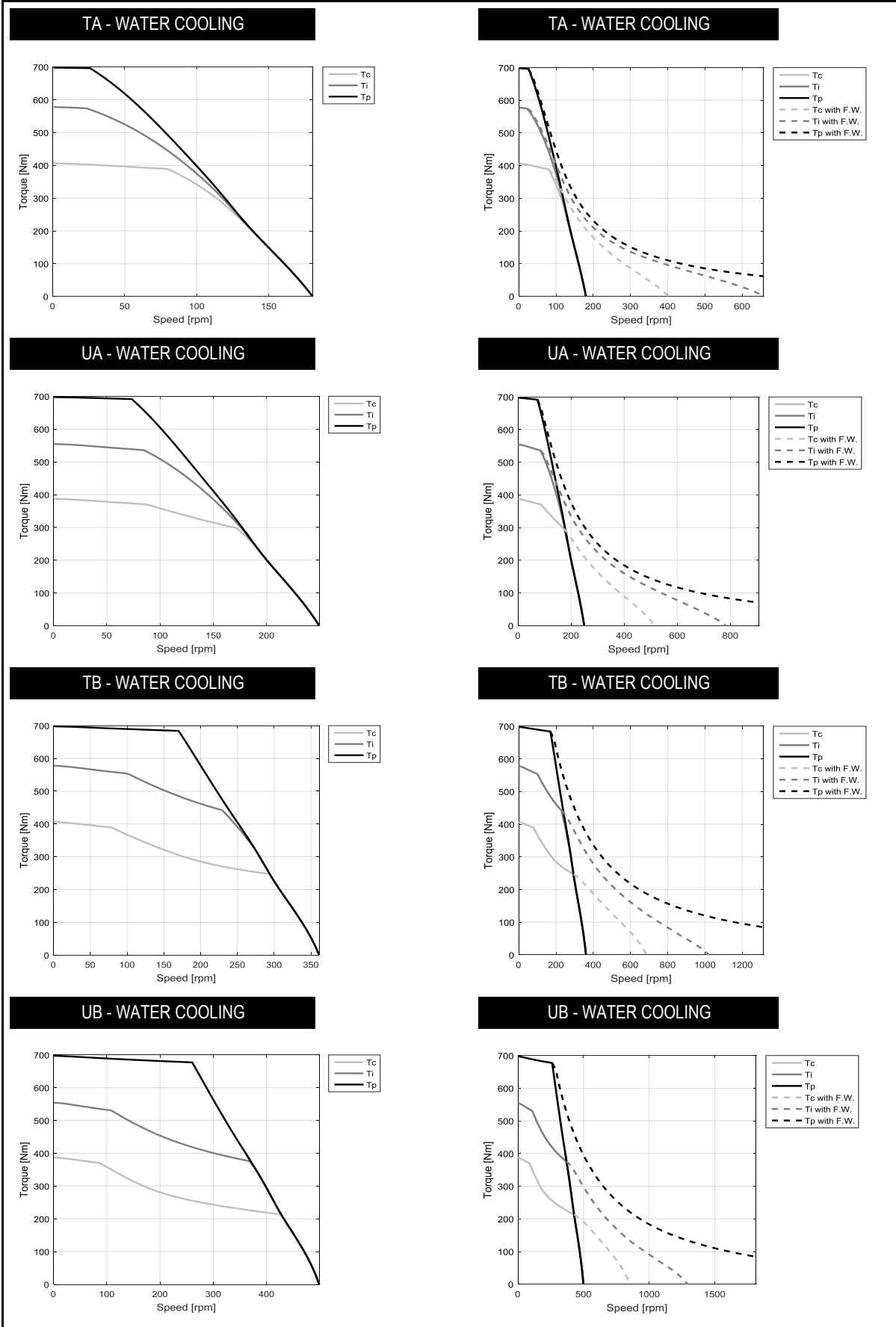
MOTOR PERFORMANCE		Winding codes	TA	UA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	698	697	698	697
<b>Ti</b>	Intermittent torque	Nm	578	554	578	554
<b>Tc</b>	Continuous torque	Nm	406	387	406	387
<b>Ts</b>	Standstill torque	Nm	317	301	317	301
<b>lp</b>	Peak current	Arms	23.6	32.6	47.2	65.2
<b>li</b>	Intermittent current	Arms	18.7	24.3	37.3	48.7
<b>lc</b>	Continuous current	Arms	11.8	15.4	23.6	30.8
<b>ls</b>	Standstill current	Arms	8.94	11.7	17.9	23.3
<b>ns</b>	Rated low speed	rpm	0.61	0.62	0.61	0.62
<b>nm</b>	Maximum speed without flux weakening	rpm	180	249	361	499
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	402	517	687	859
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.4	6.8	5.4
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	1.8	1.7	1.8	1.7
<b>Pp</b>	Power dissipation @ lp	W	14700	16200	14700	16200
<b>Pi</b>	Power dissipation @ li	W	11800	11500	11800	11500
<b>Pc</b>	Power dissipation @ lc	W	4740	4600	4740	4600
<b>Td</b>	Max. detent torque (average to peak)	Nm	3.2	3.2	3.2	3.2

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	38.4	27.8	19.2	13.9
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	22.0	15.9	11.0	7.96
<b>Km</b>	Motor constant	Nm/√W	7.72	7.38	7.72	7.38
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	16.5	9.46	4.12	2.36
<b>Ld/Lq</b>	Electrical inductance (*)	mH	86.0 / 76.4	45.1 / 40.6	21.5 / 19.1	11.3 / 10.1
<b>lsc</b>	Maximum short-circuit current	Arms	13.4	18.5	26.8	37.1
<b>nb</b>	Base speed	rpm	79.8	171	294	428
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	23.5	84.7	229	367
<b>nb,p</b>	Base speed at peak duty cycle	rpm	26.0	73.5	170	260
<b>nn</b>	Rated speed	rpm	62.3	138	262	389
<b>Tn</b>	Rated torque	Nm	393	324	258	221
<b>In</b>	Rated current	Arms	11.7	13.1	15.0	18.0
<b>rth</b>	Thermal time constant	s	44.9	43.7	44.9	43.7
<b>Rth</b>	Thermal resistance	K/W	0.0196	0.0200	0.0196	0.0200
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0457	0.0457	0.0457	0.0457
<b>mr</b>	Rotor mass	kg	7.67	7.67	7.67	7.67
<b>ms</b>	Stator mass	kg	21.2	21.0	21.2	21.0

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.140	0.140	0.140	0.140
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	15	14	15	14
<b>Δpw</b>	Max. pressure drop at qw	bar	2.0	2.0	2.0	2.0

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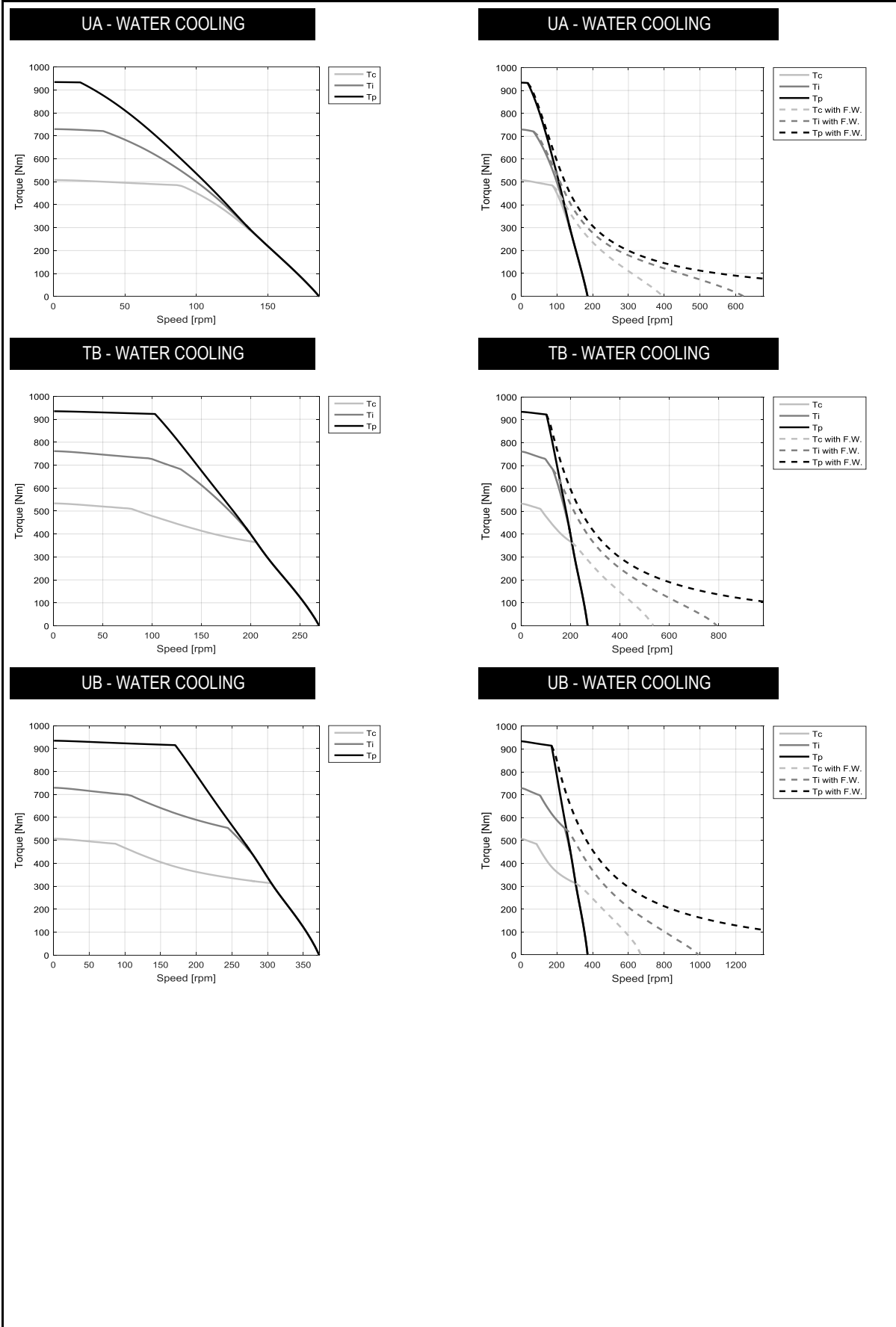
MOTOR PERFORMANCE		Winding codes	UA	TB	UB	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
<b>Tp</b>	Peak torque	Nm	934	935	934	
<b>Ti</b>	Intermittent torque	Nm	729	761	729	
<b>Tc</b>	Continuous torque	Nm	507	533	507	
<b>Ts</b>	Standstill torque	Nm	394	416	394	
<b>lp</b>	Peak current	Arms	32.6	47.2	65.1	
<b>li</b>	Intermittent current	Arms	23.7	36.4	47.3	
<b>lc</b>	Continuous current	Arms	15.0	23.0	29.9	
<b>ls</b>	Standstill current	Arms	11.3	17.4	22.7	
<b>ns</b>	Rated low speed	rpm	0.63	0.61	0.63	
<b>nm</b>	Maximum speed without flux weakening	rpm	186	269	372	
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	397	536	670	
<b>ton,p</b>	Maximum ON time for peak cycle	s	4.3	5.4	4.3	
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	1.5	1.6	1.5	
<b>Pp</b>	Power dissipation @ lp	W	21300	19400	21300	
<b>Pi</b>	Power dissipation @ li	W	14000	14500	14000	
<b>Pc</b>	Power dissipation @ lc	W	5620	5810	5620	
<b>Td</b>	Max. detent torque (average to peak)	Nm	4.2	4.2	4.2	

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	37.3	25.7	18.6	
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	21.3	14.7	10.7	
<b>Km</b>	Motor constant	Nm/√W	8.61	9.00	8.61	
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	12.5	5.45	3.12	
<b>Ld/Lq</b>	Electrical inductance (*)	mH	60.2 / 54.5	28.7 / 25.6	15.0 / 13.6	
<b>lsc</b>	Maximum short-circuit current	Arms	18.6	26.9	37.2	
<b>nb</b>	Base speed	rpm	89.8	206	305	
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	34.8	129	244	
<b>nb,p</b>	Base speed at peak duty cycle	rpm	18.8	103	171	
<b>nn</b>	Rated speed	rpm	70.8	175	273	
<b>Tn</b>	Rated torque	Nm	489	388	325	
<b>In</b>	Rated current	Arms	14.9	16.8	19.5	
<b>rth</b>	Thermal time constant	s	43.2	44.4	43.2	
<b>Rth</b>	Thermal resistance	K/W	0.0149	0.0147	0.0149	
<b>2p</b>	Number of poles	-	44	44	44	
<b>J</b>	Rotor inertia	kg·m²	0.0614	0.0614	0.0614	
<b>mr</b>	Rotor mass	kg	10.3	10.3	10.3	
<b>ms</b>	Stator mass	kg	27.0	27.3	27.0	

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	0.175	0.175	0.175	
<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	17	18	17	
<b>Δpw</b>	Max. pressure drop at qw	bar	2.0	2.0	2.0	

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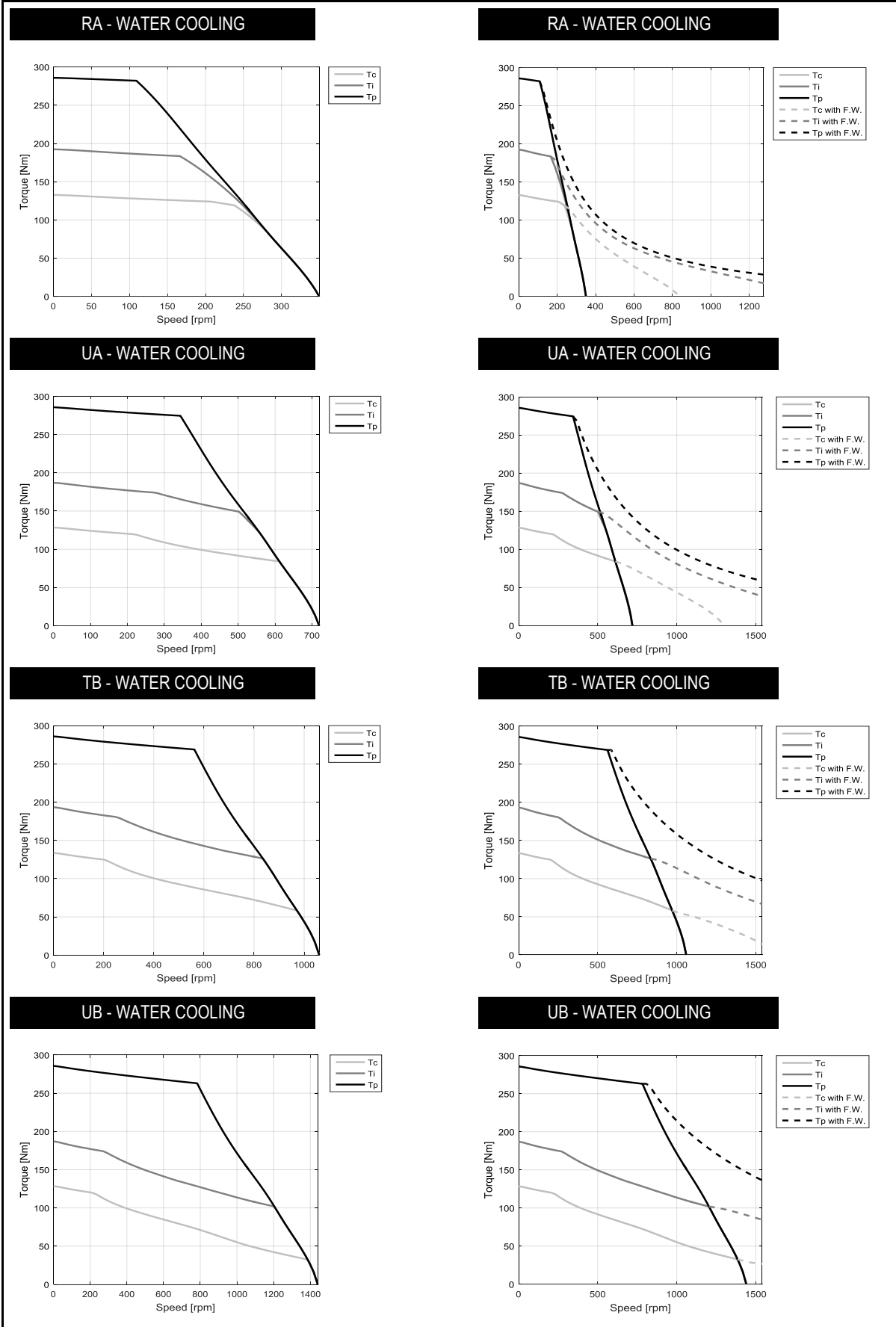
MOTOR PERFORMANCE		Winding codes	RA	UA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	286	286	286	286
<b>Ti</b>	Intermittent torque	Nm	192	187	193	187
<b>Tc</b>	Continuous torque	Nm	133	128	133	128
<b>Ts</b>	Standstill torque	Nm	103	99.2	103	99.2
<b>Ip</b>	Peak current	Arms	20.6	42.3	62.2	84.5
<b>Ii</b>	Intermittent current	Arms	11.9	23.5	36.1	47.0
<b>Ic</b>	Continuous current	Arms	7.50	14.9	22.9	29.7
<b>Is</b>	Standstill current	Arms	5.68	11.3	17.3	22.5
<b>ns</b>	Rated low speed	rpm	0.40	0.40	0.39	0.40
<b>nm</b>	Maximum speed without flux weakening	rpm	350	719	1060	1440
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	835	1300	1540	1540
<b>ton,p</b>	Maximum ON time for peak cycle	s	3.7	3.3	4.0	3.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.6	2.6	2.7	2.6
<b>Pp</b>	Power dissipation @ Ip	W	9410	10000	9130	10000
<b>Pi</b>	Power dissipation @ Ii	W	3930	3840	3870	3840
<b>Pc</b>	Power dissipation @ Ic	W	1570	1540	1550	1540
<b>Td</b>	Max. detent torque (average to peak)	Nm	0.71	0.71	0.71	0.71

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	19.6	9.55	6.49	4.78
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	11.3	5.51	3.74	2.76
<b>Km</b>	Motor constant	Nm/√W	4.43	4.32	4.49	4.32
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	13.1	3.26	1.39	0.816
<b>Ld/Lq</b>	Electrical inductance (*)	mH	42.3 / 39.2	10.0 / 9.32	4.62 / 4.27	2.50 / 2.33
<b>Isc</b>	Maximum short-circuit current	Arms	9.37	19.3	28.4	38.5
<b>nb</b>	Base speed	rpm	238	612	971	1380
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	166	502	835	1200
<b>nb,p</b>	Base speed at peak duty cycle	rpm	109	343	562	783
<b>nn</b>	Rated speed	rpm	199	550	891	1300
<b>Tn</b>	Rated torque	Nm	124	88.2	65.0	36.9
<b>In</b>	Rated current	Arms	7.39	10.8	12.2	10.3
<b>rth</b>	Thermal time constant	s	45.3	45.3	46.8	45.3
<b>Rth</b>	Thermal resistance	K/W	0.0670	0.0685	0.0681	0.0685
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.0380	0.0380	0.0380	0.0380
<b>mr</b>	Rotor mass	kg	2.73	2.73	2.73	2.73
<b>ms</b>	Stator mass	kg	8.78	8.81	8.86	8.81

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.056	0.056	0.056	0.056
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	4.8	4.7	4.8	4.7
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	RA	TA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	498	499	499	498
<b>Ti</b>	Intermittent torque	Nm	363	366	366	354
<b>Tc</b>	Continuous torque	Nm	249	252	252	242
<b>Ts</b>	Standstill torque	Nm	192	194	194	186
<b>lp</b>	Peak current	Arms	19.0	28.8	57.7	78.4
<b>li</b>	Intermittent current	Arms	12.6	19.3	38.6	50.3
<b>lc</b>	Continuous current	Arms	7.97	12.2	24.4	31.8
<b>ls</b>	Standstill current	Arms	6.04	9.25	18.5	24.1
<b>ns</b>	Rated low speed	rpm	0.45	0.43	0.43	0.45
<b>nm</b>	Maximum speed without flux weakening	rpm	200	303	607	825
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	462	625	997	1220
<b>ton,p</b>	Maximum ON time for peak cycle	s	4.7	5.0	5.0	4.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.2	2.3	2.3	2.1
<b>Pp</b>	Power dissipation @ lp	W	11400	10900	10900	11900
<b>Pi</b>	Power dissipation @ li	W	6400	6310	6310	6250
<b>Pc</b>	Power dissipation @ lc	W	2560	2520	2520	2500
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.2	1.2	1.2	1.2

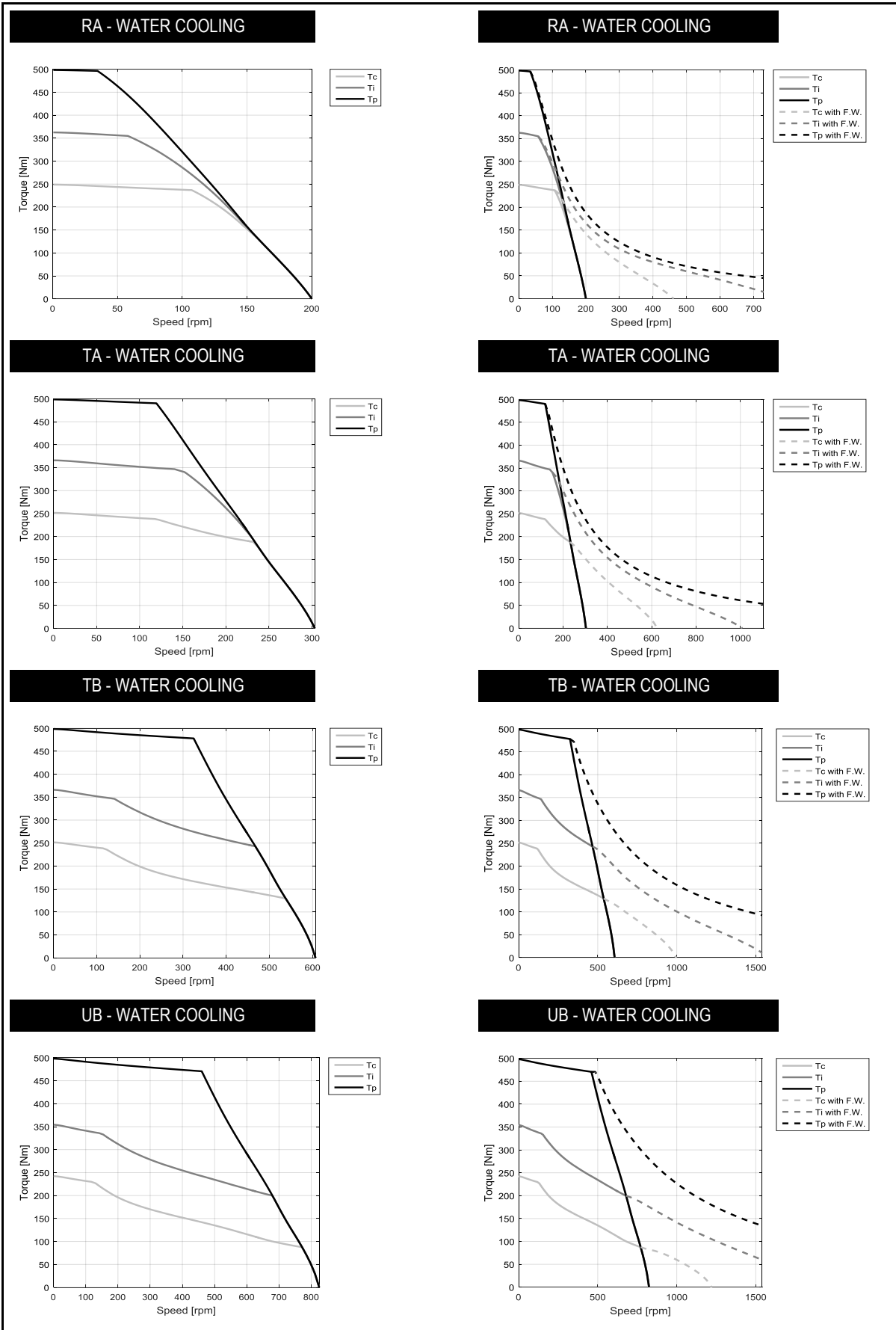
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	34.3	22.7	11.3	8.34
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	19.8	13.1	6.54	4.82
<b>Km</b>	Motor constant	Nm/√W	6.43	6.56	6.56	6.31
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	19.0	7.97	1.99	1.17
<b>Ld/Lq</b>	Electrical inductance (*)	mH	69.4 / 63.7	30.3 / 27.7	7.57 / 6.93	4.10 / 3.79
<b>lsc</b>	Maximum short-circuit current	Arms	9.99	15.1	30.2	41.1
<b>nb</b>	Base speed	rpm	107	232	538	772
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	58.0	152	467	679
<b>nb,p</b>	Base speed at peak duty cycle	rpm	34.6	119	325	460
<b>nn</b>	Rated speed	rpm	88.5	197	491	719
<b>Tn</b>	Rated torque	Nm	239	200	138	94.3
<b>In</b>	Rated current	Arms	7.91	10.0	14.1	13.6
<b>rth</b>	Thermal time constant	s	40.7	41.8	41.8	40.6
<b>Rth</b>	Thermal resistance	K/W	0.0404	0.0410	0.0410	0.0412
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.0633	0.0633	0.0633	0.0633
<b>mr</b>	Rotor mass	kg	4.54	4.54	4.54	4.54
<b>ms</b>	Stator mass	kg	11.9	12.0	12.0	11.9

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.082	0.082	0.082	0.082
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	7.9	7.8	7.8	7.7
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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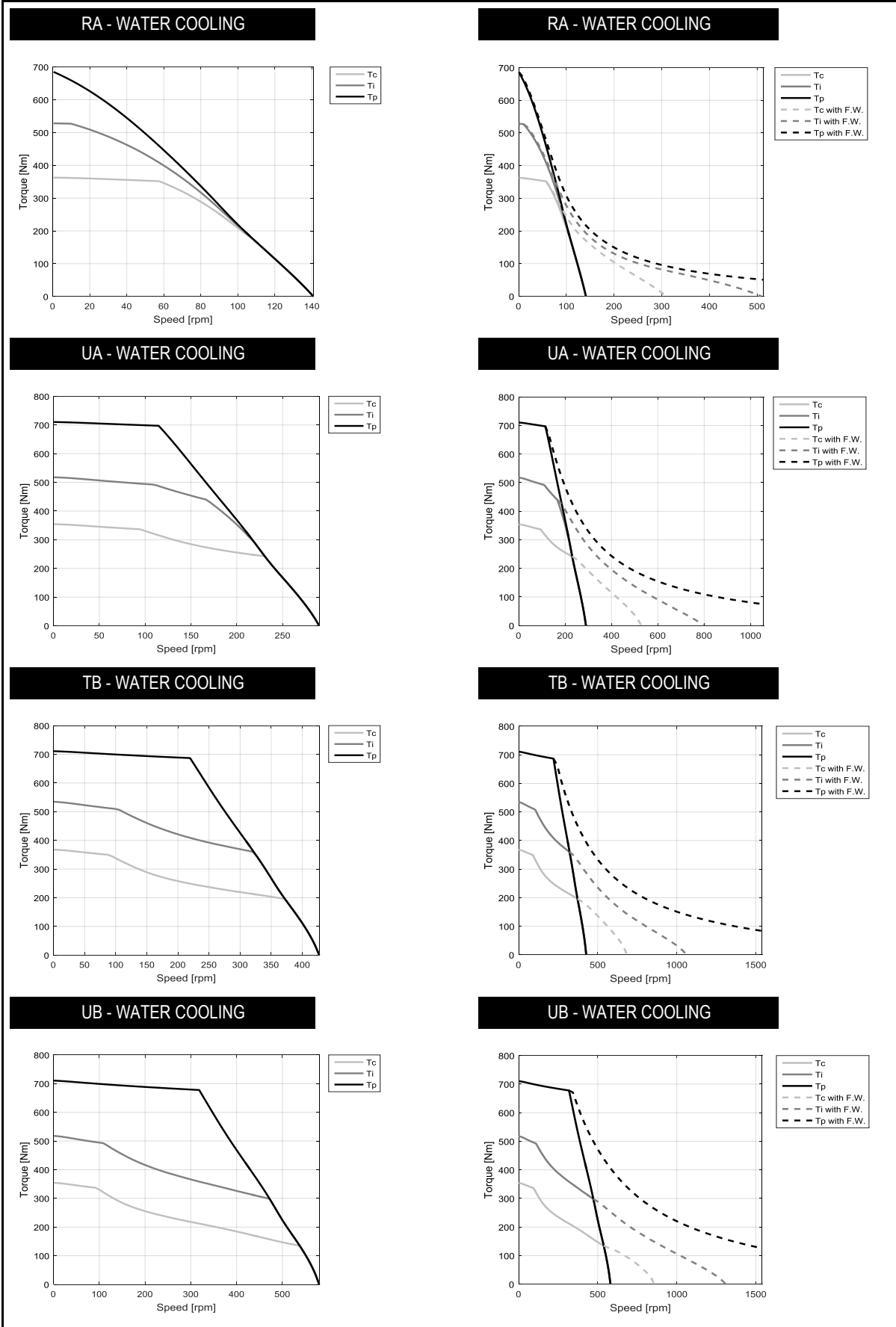
MOTOR PERFORMANCE		Winding codes	RA	UA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	685	710	711	710
<b>Ti</b>	Intermittent torque	Nm	528	518	534	518
<b>Tc</b>	Continuous torque	Nm	363	354	368	354
<b>Ts</b>	Standstill torque	Nm	279	272	284	272
<b>lp</b>	Peak current	Arms	17.7	38.5	56.7	77.0
<b>li</b>	Intermittent current	Arms	12.8	25.6	39.4	51.3
<b>lc</b>	Continuous current	Arms	8.09	16.2	24.9	32.4
<b>ls</b>	Standstill current	Arms	6.13	12.3	18.9	24.6
<b>ns</b>	Rated low speed	rpm	0.45	0.45	0.44	0.45
<b>nm</b>	Maximum speed without flux weakening	rpm	141	290	427	581
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	310	529	689	857
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.6	4.4	5.2	4.4
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.0	1.9	2.1	1.9
<b>Pp</b>	Power dissipation @ lp	W	12700	14900	13700	14900
<b>Pi</b>	Power dissipation @ li	W	8630	8430	8510	8430
<b>Pc</b>	Power dissipation @ lc	W	3450	3370	3400	3370
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.8	1.8	1.8	1.8

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	49.0	23.8	16.2	11.9
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	28.1	13.7	9.29	6.84
<b>Km</b>	Motor constant	Nm/√W	8.01	7.88	8.19	7.88
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	25.0	6.09	2.60	1.52
<b>Ld/Lq</b>	Electrical inductance (*)	mH	93.8 / 86.3	22.2 / 20.5	10.2 / 9.38	5.55 / 5.13
<b>lsc</b>	Maximum short-circuit current	Arms	10.5	21.6	31.8	43.2
<b>nb</b>	Base speed	rpm	57.5	231	372	538
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	9.84	166	320	472
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	115	220	318
<b>nn</b>	Rated speed	rpm	43.8	200	338	498
<b>Tn</b>	Rated torque	Nm	355	255	207	148
<b>In</b>	Rated current	Arms	8.06	12.1	14.7	14.5
<b>rth</b>	Thermal time constant	s	40.3	40.1	41.2	40.1
<b>Rth</b>	Thermal resistance	K/W	0.0294	0.0299	0.0298	0.0299
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.0887	0.0887	0.0887	0.0887
<b>mr</b>	Rotor mass	kg	6.36	6.36	6.36	6.36
<b>ms</b>	Stator mass	kg	15.3	15.4	15.5	15.4

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.110	0.110	0.110	0.110
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	11	10	10	10
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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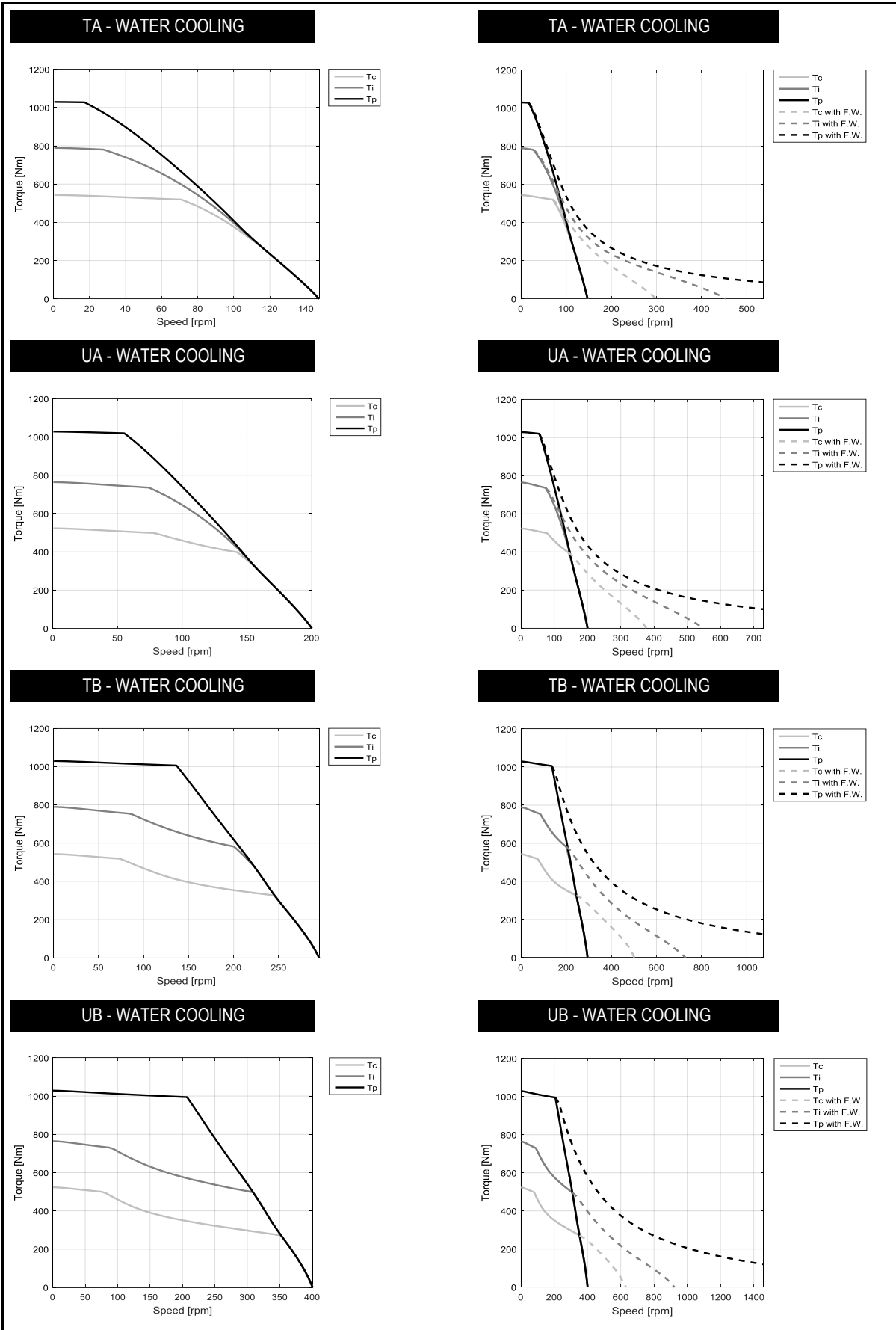
MOTOR PERFORMANCE		Winding codes	TA	UA	TB	UB
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	1030	1030	1030	1030
<b>Ti</b>	Intermittent torque	Nm	789	764	789	764
<b>Tc</b>	Continuous torque	Nm	543	523	543	523
<b>Ts</b>	Standstill torque	Nm	419	402	419	402
<b>lp</b>	Peak current	Arms	28.0	38.0	55.9	76.0
<b>li</b>	Intermittent current	Arms	20.0	26.1	40.0	52.1
<b>lc</b>	Continuous current	Arms	12.7	16.5	25.3	33.0
<b>ls</b>	Standstill current	Arms	9.58	12.5	19.2	25.0
<b>ns</b>	Rated low speed	rpm	0.47	0.48	0.47	0.48
<b>nm</b>	Maximum speed without flux weakening	rpm	147	200	295	401
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	300	377	502	632
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.0	4.2	5.0	4.2
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	1.8	1.7	1.8	1.7
<b>Pp</b>	Power dissipation @ lp	W	18000	19500	18000	19500
<b>Pi</b>	Power dissipation @ li	W	11800	11700	11800	11700
<b>Pc</b>	Power dissipation @ lc	W	4730	4680	4730	4680
<b>Td</b>	Max. detent torque (average to peak)	Nm	2.5	2.5	2.5	2.5

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	46.9	34.5	23.5	17.3
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	26.9	19.8	13.5	9.90
<b>Km</b>	Motor constant	Nm/√W	10.2	9.81	10.2	9.81
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	14.2	8.26	3.54	2.07
<b>Ld/Lq</b>	Electrical inductance (*)	mH	56.2 / 51.7	30.4 / 28.3	14.0 / 12.9	7.61 / 7.06
<b>lsc</b>	Maximum short-circuit current	Arms	16.8	22.8	33.5	45.5
<b>nb</b>	Base speed	rpm	70.8	142	245	352
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	27.7	74.2	200	309
<b>nb,p</b>	Base speed at peak duty cycle	rpm	17.1	55.2	137	207
<b>nn</b>	Rated speed	rpm	56.5	116	219	321
<b>Tn</b>	Rated torque	Nm	524	432	342	287
<b>In</b>	Rated current	Arms	12.6	14.0	16.4	18.9
<b>rth</b>	Thermal time constant	s	38.9	37.9	38.9	37.9
<b>Rth</b>	Thermal resistance	K/W	0.0207	0.0207	0.0207	0.0207
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.126	0.126	0.126	0.126
<b>mr</b>	Rotor mass	kg	9.01	9.01	9.01	9.01
<b>ms</b>	Stator mass	kg	20.0	19.8	20.0	19.8

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.140	0.140	0.140	0.140
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	15	14	15	14
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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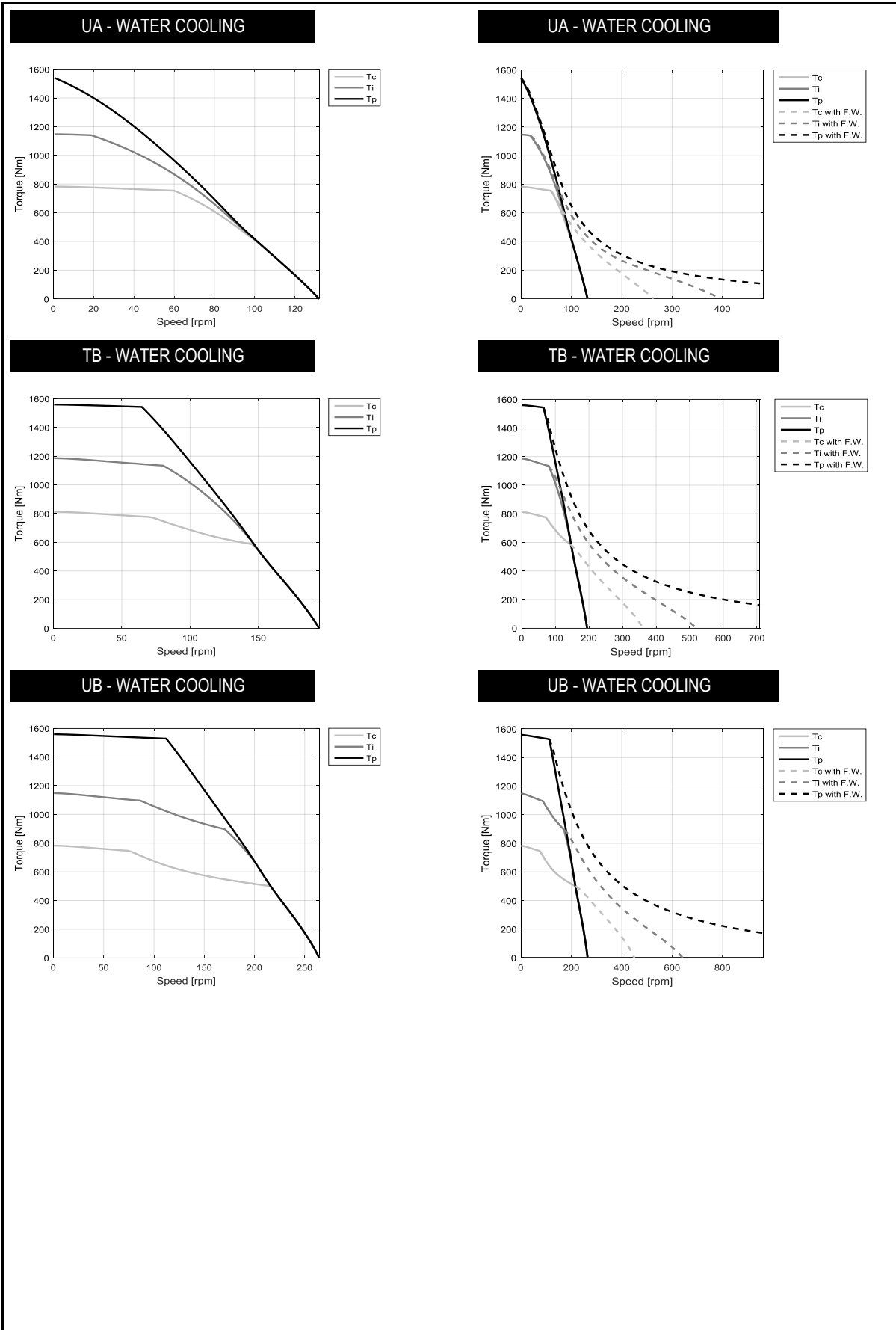
MOTOR PERFORMANCE		Winding codes	UA	TB	UB	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
<b>Tp</b>	Peak torque	Nm	1540	1560	1560	
<b>Ti</b>	Intermittent torque	Nm	1150	1190	1150	
<b>Tc</b>	Continuous torque	Nm	782	813	782	
<b>Ts</b>	Standstill torque	Nm	600	625	600	
<b>lp</b>	Peak current	Arms	36.9	55.3	75.2	
<b>li</b>	Intermittent current	Arms	25.5	39.2	51.1	
<b>lc</b>	Continuous current	Arms	16.1	24.8	32.3	
<b>ls</b>	Standstill current	Arms	12.2	18.8	24.5	
<b>ns</b>	Rated low speed	rpm	0.47	0.46	0.47	
<b>nm</b>	Maximum speed without flux weakening	rpm	132	195	264	
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	263	363	452	
<b>ton,p</b>	Maximum ON time for peak cycle	s	3.8	4.3	3.6	
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	1.5	1.6	1.5	
<b>Pp</b>	Power dissipation @ lp	W	26500	25500	27600	
<b>Pi</b>	Power dissipation @ li	W	15900	16200	15900	
<b>Pc</b>	Power dissipation @ lc	W	6380	6480	6380	
<b>Td</b>	Max. detent torque (average to peak)	Nm	3.9	3.9	3.9	

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	52.4	35.6	26.2	
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	30.0	20.4	15.0	
<b>Km</b>	Motor constant	Nm/√W	12.4	12.8	12.4	
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	12.0	5.13	2.99	
<b>Ld/Lq</b>	Electrical inductance (*)	mH	45.8 / 42.7	21.2 / 19.5	11.5 / 10.7	
<b>lsc</b>	Maximum short-circuit current	Arms	22.9	33.7	45.8	
<b>nb</b>	Base speed	rpm	60.0	145	216	
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	18.8	80.3	170	
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	64.7	112	
<b>nn</b>	Rated speed	rpm	47.1	122	191	
<b>Tn</b>	Rated torque	Nm	761	631	524	
<b>In</b>	Rated current	Arms	16.1	19.8	22.4	
<b>rth</b>	Thermal time constant	s	38.8	39.8	38.8	
<b>Rth</b>	Thermal resistance	K/W	0.0141	0.0140	0.0141	
<b>2p</b>	Number of poles	-	66	66	66	
<b>J</b>	Rotor inertia	kg·m²	0.189	0.189	0.189	
<b>mr</b>	Rotor mass	kg	13.6	13.6	13.6	
<b>ms</b>	Stator mass	kg	28.5	28.7	28.5	

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	0.210	0.210	0.210	
<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	20	20	20	
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	

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MOTOR PERFORMANCE		Winding codes	TB	UB		
		UNIT	WATER COOLING	WATER COOLING		
<b>Tp</b>	Peak torque	Nm	2090	2090		
<b>Ti</b>	Intermittent torque	Nm	1560	1510		
<b>Tc</b>	Continuous torque	Nm	1070	1020		
<b>Ts</b>	Standstill torque	Nm	817	781		
<b>lp</b>	Peak current	Arms	55.1	74.8		
<b>li</b>	Intermittent current	Arms	38.1	49.5		
<b>lc</b>	Continuous current	Arms	24.1	31.3		
<b>ls</b>	Standstill current	Arms	18.3	23.7		
<b>ns</b>	Rated low speed	rpm	0.46	0.47		
<b>nm</b>	Maximum speed without flux weakening	rpm	145	197		
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	281	356		
<b>ton,p</b>	Maximum ON time for peak cycle	s	3.5	2.9		
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	1.4	1.4		
<b>Pp</b>	Power dissipation @ lp	W	33200	36000		
<b>Pi</b>	Power dissipation @ li	W	19700	19300		
<b>Pc</b>	Power dissipation @ lc	W	7880	7710		
<b>Td</b>	Max. detent torque (average to peak)	Nm	5.2	5.2		

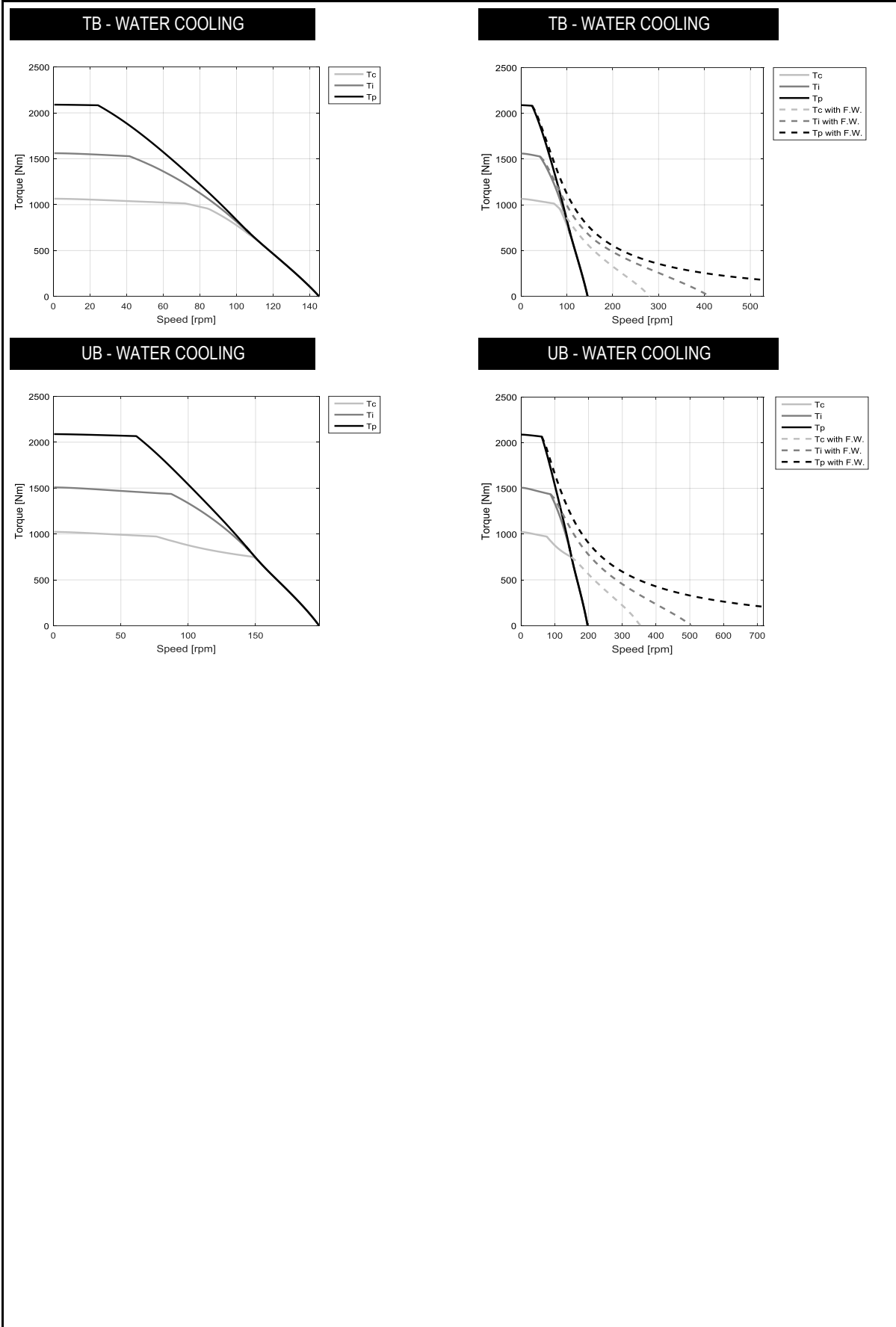
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	47.7	35.1		
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	27.3	20.1		
<b>Km</b>	Motor constant	Nm/√W	15.0	14.4		
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	6.78	3.95		
<b>Ld/Lq</b>	Electrical inductance (*)	mH	28.3 / 26.3	15.3 / 14.4		
<b>lsc</b>	Maximum short-circuit current	Arms	33.8	46.0		
<b>nb</b>	Base speed	rpm	83.9	148		
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	41.5	87.4		
<b>nb,p</b>	Base speed at peak duty cycle	rpm	24.3	61.5		
<b>nn</b>	Rated speed	rpm	64.7	125		
<b>Tn</b>	Rated torque	Nm	1020	801		
<b>In</b>	Rated current	Arms	23.9	25.4		
<b>rth</b>	Thermal time constant	s	39.4	38.6		
<b>Rth</b>	Thermal resistance	K/W	0.0105	0.0105		
<b>2p</b>	Number of poles	-	66	66		
<b>J</b>	Rotor inertia	kg·m²	0.252	0.252		
<b>mr</b>	Rotor mass	kg	18.0	18.0		
<b>ms</b>	Stator mass	kg	37.0	36.8		

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600		
<b>Di</b>	Intermittent duty cycle	%	40	40		
<b>Dp</b>	Peak duty cycle	%	5.0	5.0		
<b>Sr</b>	Rotor exchange surface	m²	0.275	0.275		
<b>θamb</b>	Ambient temperature	°C	20	20		
<b>θmax</b>	Maximum coil temperature	°C	130	130		
<b>θw</b>	Inlet water temperature	°C	20	20		
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0		
<b>qw</b>	Minimum water flow for Δθw	l/min	24	24		
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0		

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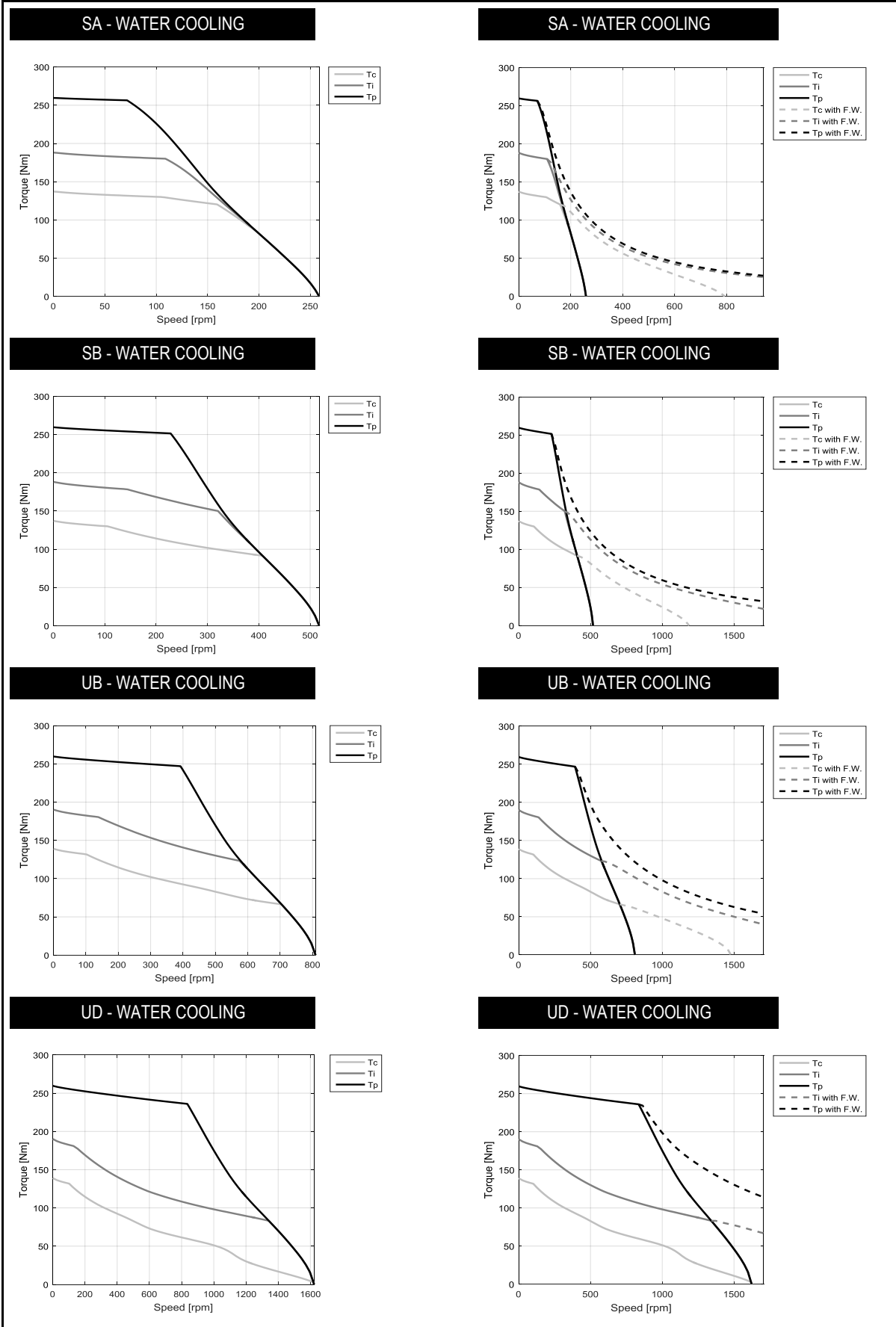
MOTOR PERFORMANCE		Winding codes	SA	SB	UB	UD
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	260	260	260	260
<b>Ti</b>	Intermittent torque	Nm	188	188	190	190
<b>Tc</b>	Continuous torque	Nm	137	137	139	139
<b>Ts</b>	Standstill torque	Nm	110	110	111	111
<b>Ip</b>	Peak current	Arms	17.3	34.5	53.9	108
<b>Ii</b>	Intermittent current	Arms	10.0	20.0	31.8	63.6
<b>Ic</b>	Continuous current	Arms	6.32	12.6	20.1	40.2
<b>Is</b>	Standstill current	Arms	4.79	9.58	15.2	30.5
<b>ns</b>	Rated low speed	rpm	0.24	0.24	0.24	0.24
<b>nm</b>	Maximum speed without flux weakening	rpm	259	518	809	1620
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	792	1190	1480	1650
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.5	8.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.0	3.0	3.0	3.0
<b>Pp</b>	Power dissipation @ Ip	W	8410	8410	8240	8240
<b>Pi</b>	Power dissipation @ Ii	W	3550	3550	3620	3620
<b>Pc</b>	Power dissipation @ Ic	W	1420	1420	1450	1450
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.1	1.1	1.1	1.1

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	26.6	13.3	8.52	4.26
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	15.3	7.67	4.91	2.46
<b>Km</b>	Motor constant	Nm/√W	5.34	5.34	5.38	5.38
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	16.6	4.15	1.67	0.418
<b>Ld/Lq</b>	Electrical inductance (*)	mH	150 / 133	37.5 / 33.2	15.4 / 13.5	3.84 / 3.38
<b>Isc</b>	Maximum short-circuit current	Arms	5.37	10.7	16.8	33.5
<b>nb</b>	Base speed	rpm	159	407	704	1620
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	109	320	574	1340
<b>nb,p</b>	Base speed at peak duty cycle	rpm	71.6	228	392	836
<b>nn</b>	Rated speed	rpm	134	358	641	1540
<b>Tn</b>	Rated torque	Nm	125	96.1	70.1	8.46
<b>In</b>	Rated current	Arms	5.92	8.69	9.75	3.59
<b>rth</b>	Thermal time constant	s	111	111	112	112
<b>Rth</b>	Thermal resistance	K/W	0.0748	0.0748	0.0733	0.0733
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0242	0.0242	0.0242	0.0242
<b>mr</b>	Rotor mass	kg	2.12	2.12	2.12	2.12
<b>ms</b>	Stator mass	kg	13.0	13.0	13.1	13.1

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.056	0.056	0.056	0.056
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	4.4	4.4	4.5	4.5
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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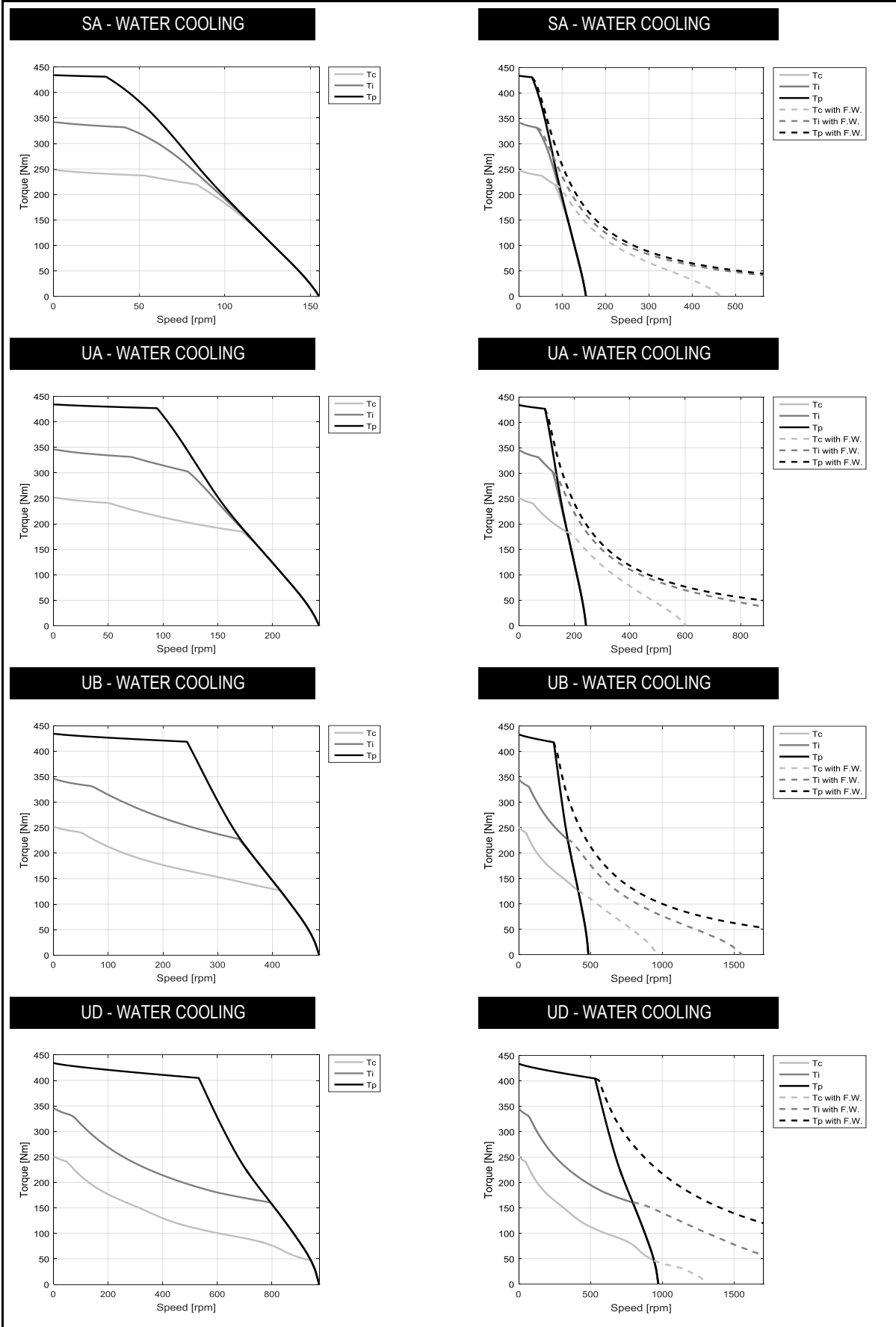
MOTOR PERFORMANCE		Winding codes	SA	UA	UB	UD
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	434	434	434	434
<b>Ti</b>	Intermittent torque	Nm	342	346	346	346
<b>Tc</b>	Continuous torque	Nm	248	251	251	251
<b>Ts</b>	Standstill torque	Nm	198	201	201	201
<b>lp</b>	Peak current	Arms	15.3	23.9	47.8	95.6
<b>li</b>	Intermittent current	Arms	10.6	17.0	33.9	67.8
<b>lc</b>	Continuous current	Arms	6.73	10.7	21.4	42.9
<b>ls</b>	Standstill current	Arms	5.10	8.12	16.2	32.5
<b>ns</b>	Rated low speed	rpm	0.28	0.28	0.28	0.28
<b>nm</b>	Maximum speed without flux weakening	rpm	155	243	486	973
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	466	603	961	1290
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.5	8.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.0	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	8810	8610	8610	8610
<b>Pi</b>	Power dissipation @ li	W	5560	5660	5660	5660
<b>Pc</b>	Power dissipation @ lc	W	2220	2270	2270	2270
<b>Td</b>	Max. detent torque (average to peak)	Nm	1.9	1.9	1.9	1.9

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	44.5	28.5	14.2	7.12
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	25.6	16.4	8.18	4.09
<b>Km</b>	Motor constant	Nm/√W	7.58	7.65	7.65	7.65
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	23.0	9.25	2.31	0.578
<b>Ld/Lq</b>	Electrical inductance (*)	mH	234 / 204	95.8 / 83.0	24.0 / 20.7	5.99 / 5.19
<b>lsc</b>	Maximum short-circuit current	Arms	5.74	8.97	17.9	35.9
<b>nb</b>	Base speed	rpm	83.5	172	414	943
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	41.5	123	339	795
<b>nb,p</b>	Base speed at peak duty cycle	rpm	30.6	94.5	244	532
<b>nn</b>	Rated speed	rpm	66.4	148	373	884
<b>Tn</b>	Rated torque	Nm	229	193	136	55.8
<b>In</b>	Rated current	Arms	6.39	8.08	11.0	9.76
<b>rth</b>	Thermal time constant	s	97.7	98.1	98.1	98.1
<b>Rth</b>	Thermal resistance	K/W	0.0473	0.0464	0.0464	0.0464
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0405	0.0405	0.0405	0.0405
<b>mr</b>	Rotor mass	kg	3.54	3.54	3.54	3.54
<b>ms</b>	Stator mass	kg	17.5	17.5	17.5	17.5

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.082	0.082	0.082	0.082
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	6.8	7.0	7.0	7.0
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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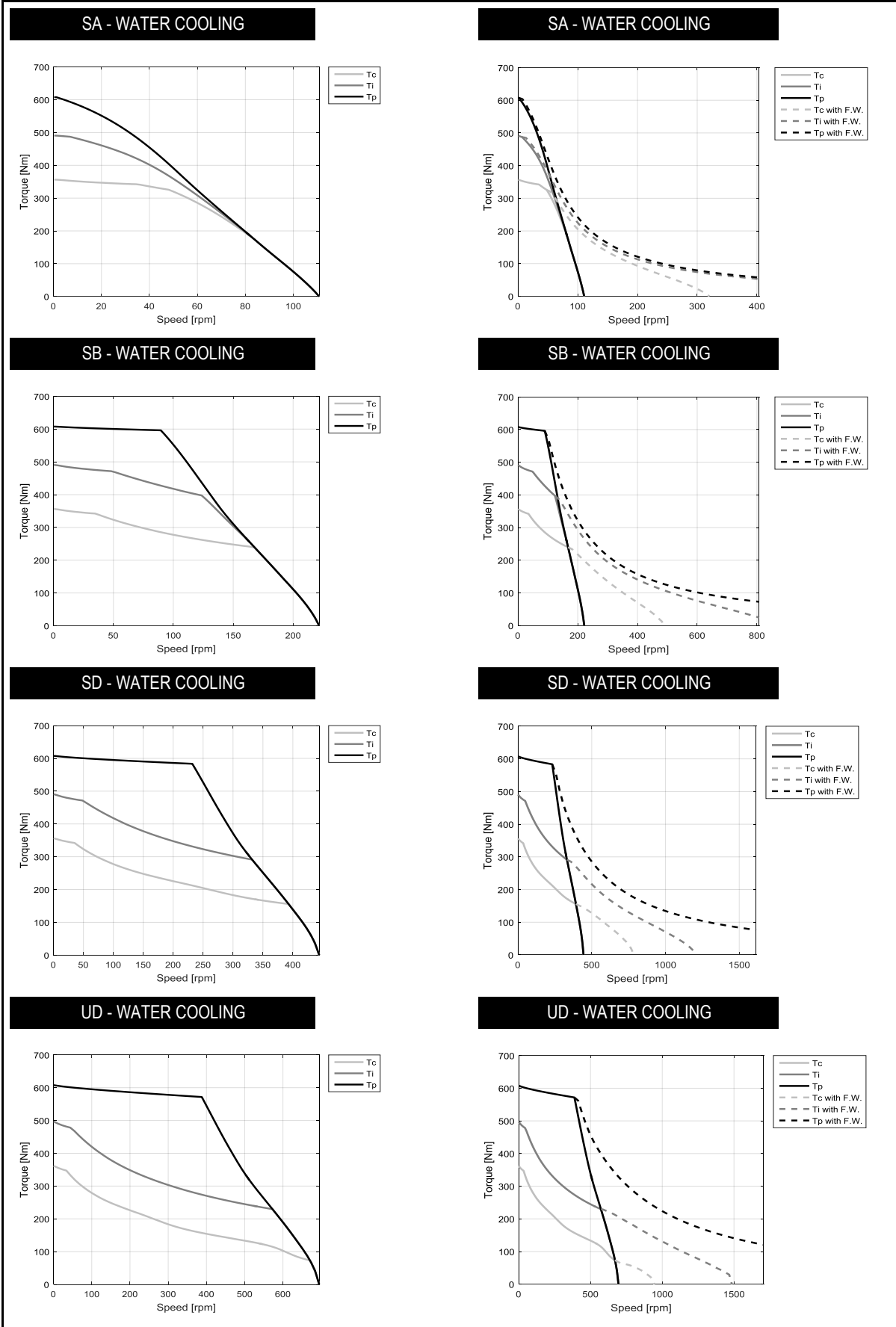
MOTOR PERFORMANCE		Winding codes	SA	SB	SD	UD
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	608	608	608	608
<b>Ti</b>	Intermittent torque	Nm	491	491	491	497
<b>Tc</b>	Continuous torque	Nm	356	356	356	362
<b>Ts</b>	Standstill torque	Nm	285	285	285	289
<b>Ip</b>	Peak current	Arms	14.9	29.8	59.6	93.1
<b>Ii</b>	Intermittent current	Arms	10.9	21.8	43.5	69.4
<b>Ic</b>	Continuous current	Arms	6.88	13.8	27.5	43.9
<b>Is</b>	Standstill current	Arms	5.21	10.4	20.8	33.2
<b>ns</b>	Rated low speed	rpm	0.29	0.29	0.29	0.29
<b>nm</b>	Maximum speed without flux weakening	rpm	111	222	444	695
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	320	490	788	945
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	12	8.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ Ip	W	10600	10600	10600	10400
<b>Pi</b>	Power dissipation @ Ii	W	7420	7420	7420	7560
<b>Pc</b>	Power dissipation @ Ic	W	2970	2970	2970	3020
<b>Td</b>	Max. detent torque (average to peak)	Nm	2.6	2.6	2.6	2.6

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	62.4	31.2	15.6	9.98
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	35.8	17.9	8.95	5.73
<b>Km</b>	Motor constant	Nm/√W	9.38	9.38	9.38	9.48
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	29.5	7.38	1.84	0.740
<b>Ld/Lq</b>	Electrical inductance (*)	mH	310 / 270	77.6 / 67.4	19.4 / 16.9	7.94 / 6.86
<b>Isc</b>	Maximum short-circuit current	Arms	6.06	12.1	24.2	37.9
<b>nb</b>	Base speed	rpm	48.1	167	393	671
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	6.90	124	332	573
<b>nb,p</b>	Base speed at peak duty cycle	rpm	1.24	89.6	232	388
<b>nn</b>	Rated speed	rpm	32.8	145	361	626
<b>Tn</b>	Rated torque	Nm	343	250	163	89.4
<b>In</b>	Rated current	Arms	6.84	9.37	12.0	10.8
<b>rth</b>	Thermal time constant	s	94.1	94.1	94.1	94.6
<b>Rth</b>	Thermal resistance	K/W	0.0350	0.0350	0.0350	0.0343
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0567	0.0567	0.0567	0.0567
<b>mr</b>	Rotor mass	kg	4.96	4.96	4.96	4.96
<b>ms</b>	Stator mass	kg	22.2	22.2	22.2	22.3

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.110	0.110	0.110	0.110
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	9.1	9.1	9.1	9.3
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	UA	SB	UB	UD
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	869	868	869	869
<b>Ti</b>	Intermittent torque	Nm	726	717	726	726
<b>Tc</b>	Continuous torque	Nm	529	521	529	529
<b>Ts</b>	Standstill torque	Nm	424	416	424	424
<b>lp</b>	Peak current	Arms	22.8	29.2	45.6	91.3
<b>li</b>	Intermittent current	Arms	17.7	22.2	35.5	70.9
<b>lc</b>	Continuous current	Arms	11.2	14.1	22.4	44.9
<b>ls</b>	Standstill current	Arms	8.50	10.7	17.0	34.0
<b>ns</b>	Rated low speed	rpm	0.31	0.31	0.31	0.31
<b>nm</b>	Maximum speed without flux weakening	rpm	121	155	243	486
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	300	352	484	808
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.5	8.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	13200	13600	13200	13200
<b>Pi</b>	Power dissipation @ li	W	10500	10300	10500	10500
<b>Pc</b>	Power dissipation @ lc	W	4190	4120	4190	4190
<b>Td</b>	Max. detent torque (average to peak)	Nm	3.8	3.8	3.8	3.8

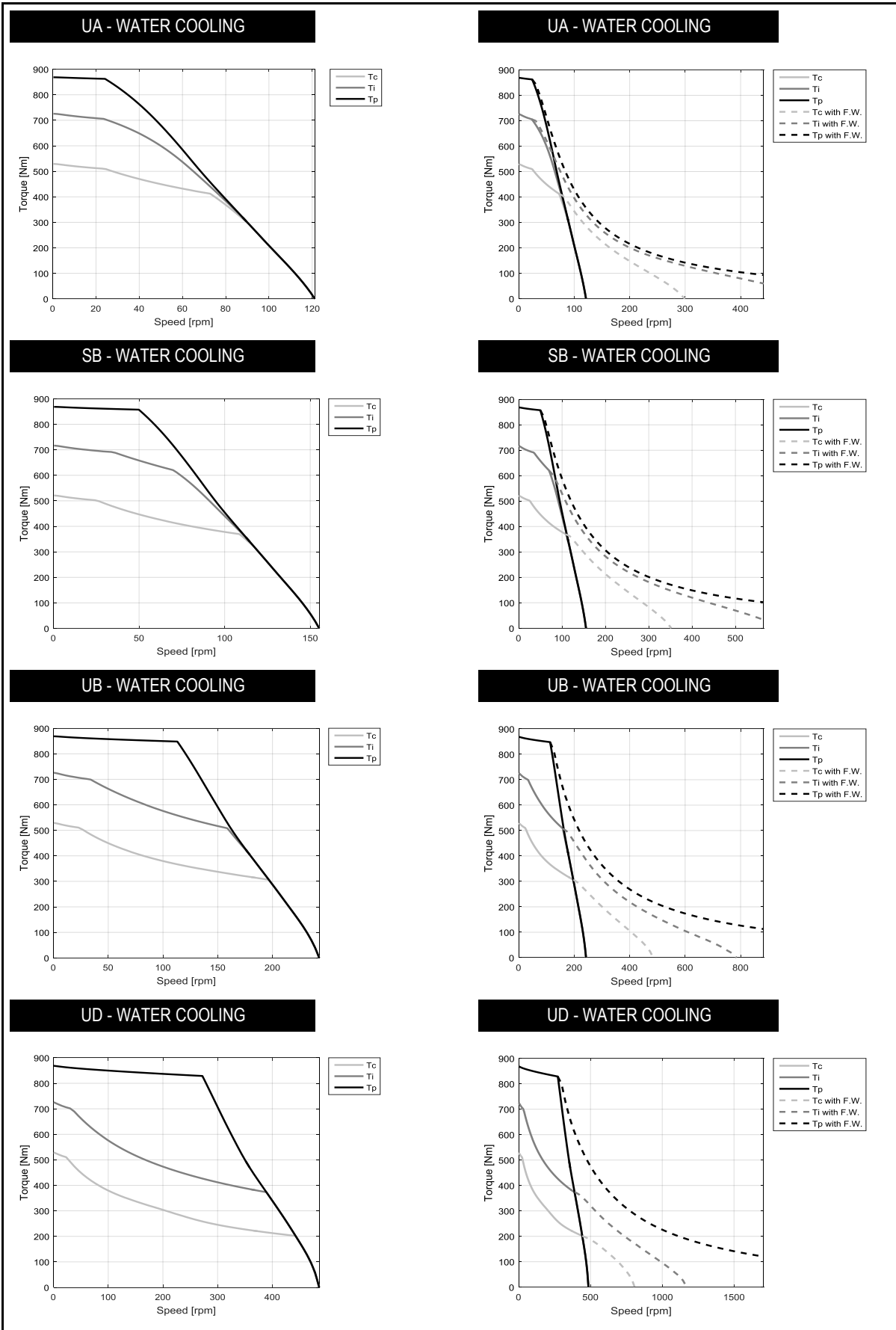
MOTOR SETTING		UNIT	UA	SB	UB	UD
<b>Kt</b>	Torque constant	Nm/Arms	57.1	44.6	28.6	14.3
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	32.7	25.6	16.4	8.18
<b>Km</b>	Motor constant	Nm/√W	11.7	11.6	11.7	11.7
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	15.8	9.85	3.94	0.986
<b>Ld/Lq</b>	Electrical inductance (*)	mH	172 / 148	105 / 91.2	43.1 / 37.1	10.8 / 9.26
<b>lsc</b>	Maximum short-circuit current	Arms	9.96	12.8	19.9	39.8
<b>nb</b>	Base speed	rpm	72.7	109	197	443
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	23.5	69.9	159	389
<b>nb,p</b>	Base speed at peak duty cycle	rpm	24.2	49.8	113	272
<b>nn</b>	Rated speed	rpm	58.6	92.0	175	411
<b>Tn</b>	Rated torque	Nm	434	387	320	210
<b>In</b>	Rated current	Arms	9.09	10.1	12.8	16.9
<b>rth</b>	Thermal time constant	s	88.4	88.0	88.4	88.4
<b>Rth</b>	Thermal resistance	K/W	0.0243	0.0247	0.0243	0.0243
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.0804	0.0804	0.0804	0.0804
<b>mr</b>	Rotor mass	kg	7.02	7.02	7.02	7.02
<b>ms</b>	Stator mass	kg	28.8	28.7	28.8	28.8

MOTOR ENVIRONMENT		UNIT	UA	SB	UB	UD
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.140	0.140	0.140	0.140
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	13	13	13	13
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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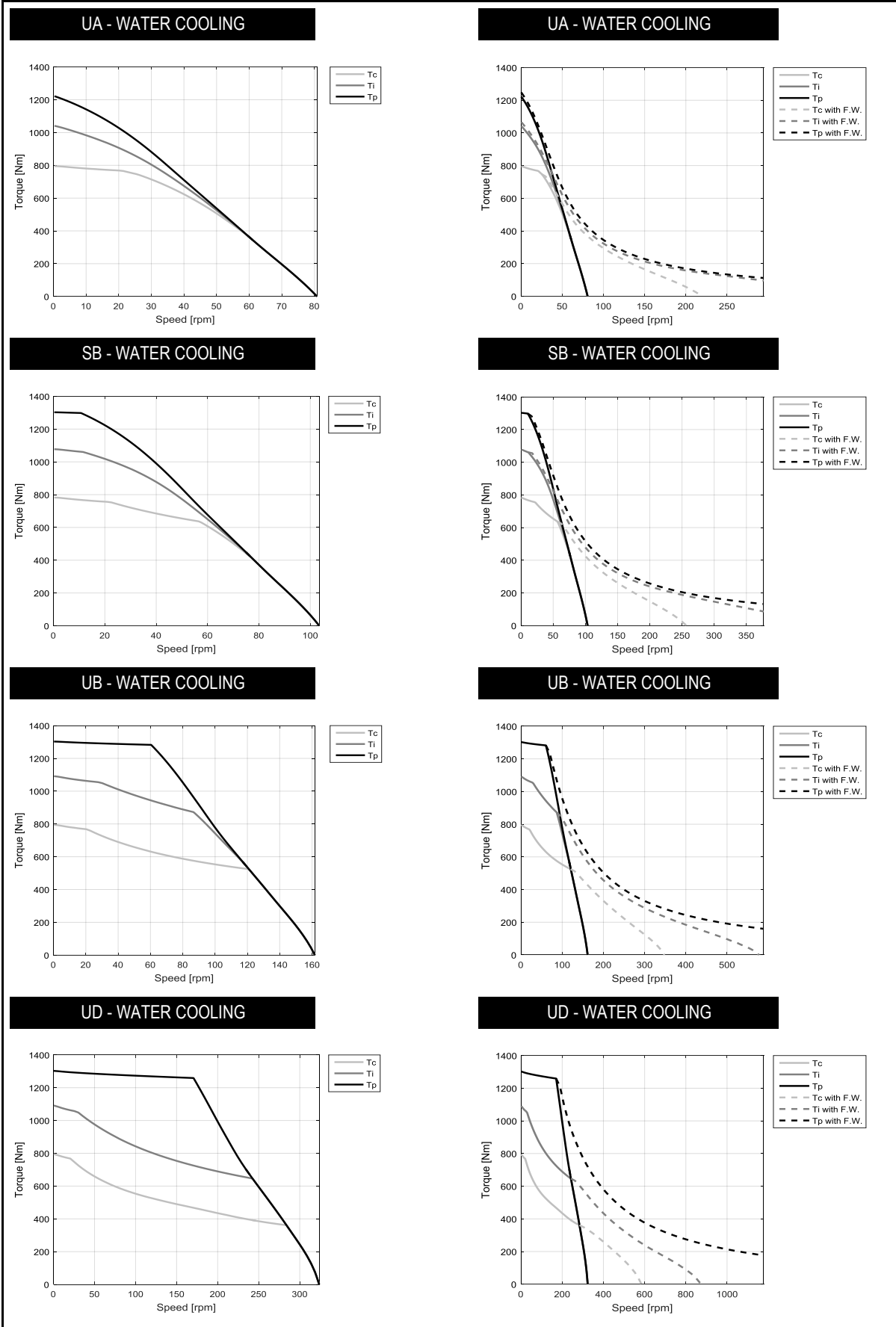
MOTOR PERFORMANCE		Winding codes	UA	SB	UB	UD
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	1220	1300	1300	1300
<b>Ti</b>	Intermittent torque	Nm	1040	1080	1090	1090
<b>Tc</b>	Continuous torque	Nm	795	783	795	795
<b>Ts</b>	Standstill torque	Nm	636	625	636	636
<b>lp</b>	Peak current	Arms	20.1	28.9	45.1	90.2
<b>li</b>	Intermittent current	Arms	16.2	22.1	35.3	70.6
<b>lc</b>	Continuous current	Arms	11.2	14.0	22.3	44.6
<b>ls</b>	Standstill current	Arms	8.45	10.6	16.9	33.8
<b>ns</b>	Rated low speed	rpm	0.31	0.31	0.31	0.31
<b>nm</b>	Maximum speed without flux weakening	rpm	80.8	103	162	324
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	220	258	348	585
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	8.5	8.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	13	2.9	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	14400	18900	18400	18400
<b>Pi</b>	Power dissipation @ li	W	11600	14400	14600	14600
<b>Pc</b>	Power dissipation @ lc	W	5860	5750	5860	5860
<b>Td</b>	Max. detent torque (average to peak)	Nm	5.6	5.6	5.6	5.6

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	85.7	67.0	42.9	21.4
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	49.1	38.4	24.6	12.3
<b>Km</b>	Motor constant	Nm/√W	14.7	14.6	14.7	14.7
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	22.5	14.1	5.63	1.41
<b>Ld/Lq</b>	Electrical inductance (*)	mH	257 / 221	157 / 136	64.2 / 55.3	16.0 / 13.8
<b>lsc</b>	Maximum short-circuit current	Arms	10.0	12.8	20.1	40.1
<b>nb</b>	Base speed	rpm	25.3	56.6	120	284
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	0.00	11.5	86.6	242
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	10.7	60.4	171
<b>nn</b>	Rated speed	rpm	14.6	43.7	104	260
<b>Tn</b>	Rated torque	Nm	774	673	548	377
<b>In</b>	Rated current	Arms	11.1	12.0	14.7	19.9
<b>rth</b>	Thermal time constant	s	88.1	87.6	88.1	88.1
<b>Rth</b>	Thermal resistance	K/W	0.0167	0.0170	0.0167	0.0167
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.121	0.121	0.121	0.121
<b>mr</b>	Rotor mass	kg	10.6	10.6	10.6	10.6
<b>ms</b>	Stator mass	kg	40.9	40.7	40.9	40.9

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.210	0.210	0.210	0.210
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	18	18	18	18
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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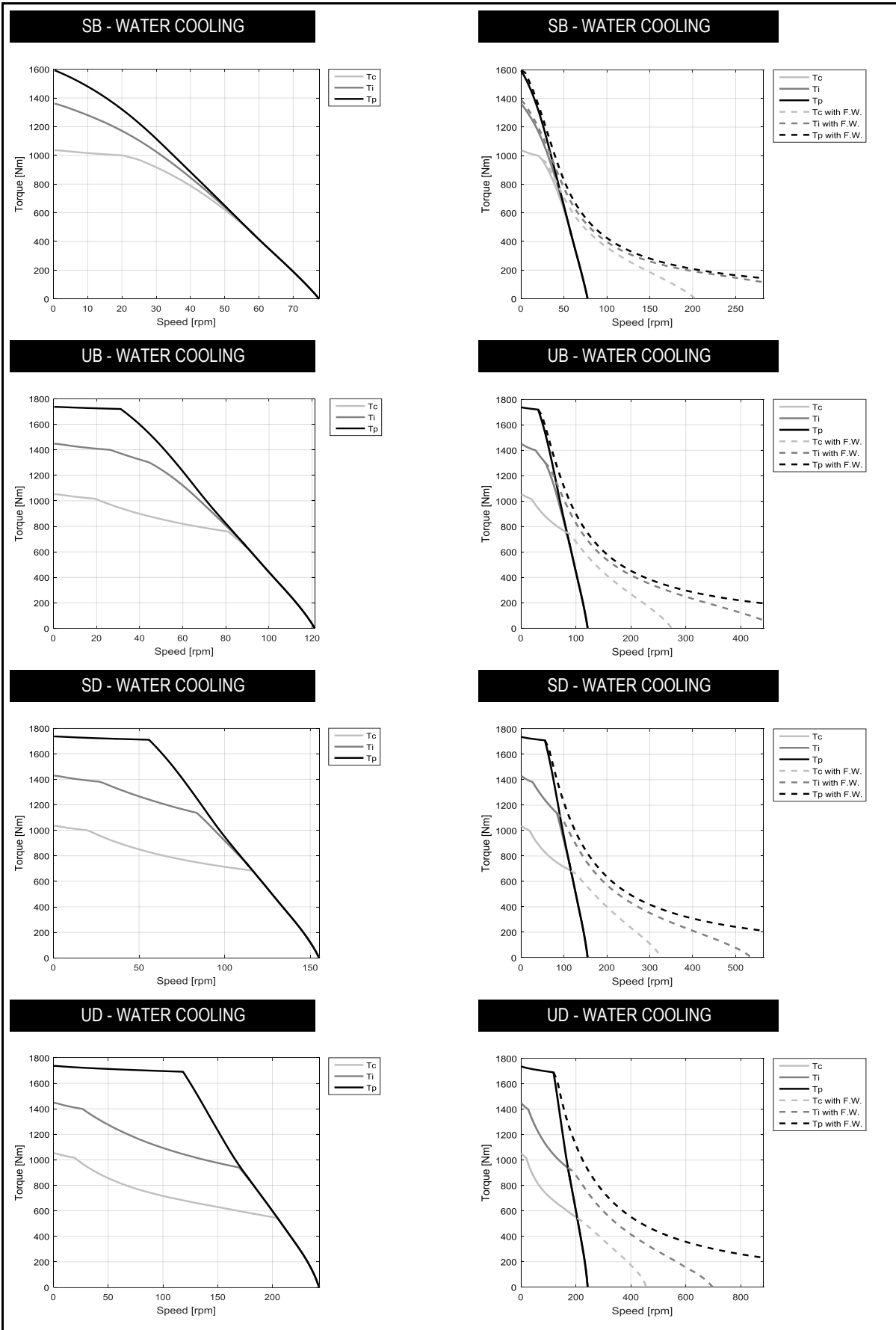
MOTOR PERFORMANCE		Winding codes	SB	UB	SD	UD
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	1590	1740	1740	1740
<b>Ti</b>	Intermittent torque	Nm	1360	1450	1430	1450
<b>Tc</b>	Continuous torque	Nm	1040	1050	1040	1050
<b>Ts</b>	Standstill torque	Nm	825	840	825	840
<b>lp</b>	Peak current	Arms	24.6	44.7	57.3	89.5
<b>li</b>	Intermittent current	Arms	20.0	34.8	43.6	69.6
<b>lc</b>	Continuous current	Arms	13.8	22.0	27.6	44.0
<b>ls</b>	Standstill current	Arms	10.4	16.7	20.9	33.4
<b>ns</b>	Rated low speed	rpm	0.32	0.32	0.32	0.32
<b>nm</b>	Maximum speed without flux weakening	rpm	77.6	121	155	243
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	203	274	326	457
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	8.5	11	8.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	12	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	17700	23600	24300	23600
<b>Pi</b>	Power dissipation @ li	W	14300	18400	18000	18400
<b>Pc</b>	Power dissipation @ lc	W	7220	7350	7220	7350
<b>Td</b>	Max. detent torque (average to peak)	Nm	7.5	7.5	7.5	7.5

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	89.3	57.2	44.7	28.6
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	51.2	32.7	25.6	16.4
<b>Km</b>	Motor constant	Nm/√W	17.0	17.2	17.0	17.2
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	18.5	7.37	4.61	1.84
<b>Ld/Lq</b>	Electrical inductance (*)	mH	208 / 182	85.3 / 73.8	52.1 / 45.4	21.3 / 18.5
<b>lsc</b>	Maximum short-circuit current	Arms	12.9	20.1	25.8	40.3
<b>nb</b>	Base speed	rpm	24.3	80.9	116	205
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	0.00	43.8	83.6	169
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	31.2	55.8	118
<b>nn</b>	Rated speed	rpm	14.2	67.6	99.9	184
<b>Tn</b>	Rated torque	Nm	1010	796	714	575
<b>In</b>	Rated current	Arms	13.7	16.2	18.3	22.6
<b>rth</b>	Thermal time constant	s	86.0	86.4	86.0	86.4
<b>Rth</b>	Thermal resistance	K/W	0.0128	0.0125	0.0128	0.0125
<b>2p</b>	Number of poles	-	44	44	44	44
<b>J</b>	Rotor inertia	kg·m²	0.161	0.161	0.161	0.161
<b>mr</b>	Rotor mass	kg	14.0	14.0	14.0	14.0
<b>ms</b>	Stator mass	kg	52.3	52.5	52.3	52.5

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.275	0.275	0.275	0.275
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	22	23	22	23
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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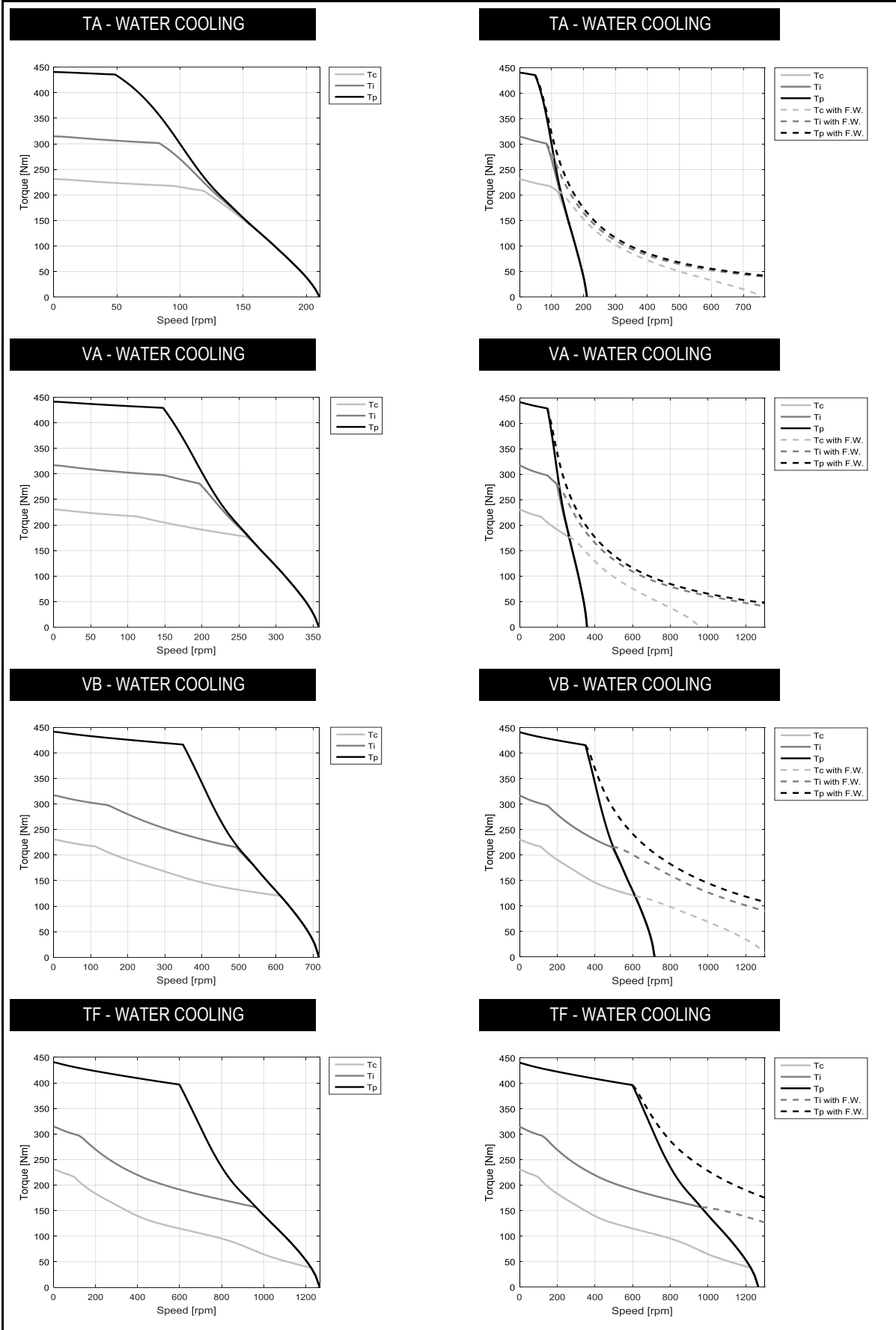
MOTOR PERFORMANCE		Winding codes	TA	VA	VB	TF
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	440	441	441	440
<b>Ti</b>	Intermittent torque	Nm	315	317	317	315
<b>Tc</b>	Continuous torque	Nm	231	230	230	231
<b>Ts</b>	Standstill torque	Nm	186	184	184	186
<b>lp</b>	Peak current	Arms	25.3	40.1	80.3	152
<b>li</b>	Intermittent current	Arms	13.8	22.9	45.8	83.0
<b>lc</b>	Continuous current	Arms	8.75	14.5	28.9	52.5
<b>ls</b>	Standstill current	Arms	6.63	11.0	21.9	39.8
<b>ns</b>	Rated low speed	rpm	0.19	0.20	0.20	0.19
<b>nm</b>	Maximum speed without flux weakening	rpm	211	358	716	1270
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	759	953	1300	1300
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	6.2	5.8
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	13300	11800	11800	13300
<b>Pi</b>	Power dissipation @ li	W	4950	4820	4820	4950
<b>Pc</b>	Power dissipation @ lc	W	1980	1930	1930	1980
<b>Td</b>	Max. detent torque (average to peak)	Nm	2.6	2.6	2.6	2.6

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	32.6	19.2	9.61	5.44
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	18.8	11.1	5.55	3.14
<b>Km</b>	Motor constant	Nm/√W	7.67	7.56	7.56	7.67
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	12.1	4.31	1.08	0.336
<b>Ld/Lq</b>	Electrical inductance (*)	mH	99.0 / 87.9	30.5 / 27.9	7.62 / 6.97	2.75 / 2.44
<b>lsc</b>	Maximum short-circuit current	Arms	6.65	12.7	25.5	39.9
<b>nb</b>	Base speed	rpm	119	260	612	1230
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	83.5	197	492	964
<b>nb,p</b>	Base speed at peak duty cycle	rpm	48.7	148	349	599
<b>nn</b>	Rated speed	rpm	99.4	226	555	1150
<b>Tn</b>	Rated torque	Nm	216	185	126	46.2
<b>In</b>	Rated current	Arms	8.54	11.8	15.7	11.7
<b>rth</b>	Thermal time constant	s	93.8	89.4	89.4	93.8
<b>Rth</b>	Thermal resistance	K/W	0.0537	0.0549	0.0549	0.0537
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.0647	0.0647	0.0647	0.0647
<b>mr</b>	Rotor mass	kg	3.27	3.27	3.27	3.27
<b>ms</b>	Stator mass	kg	19.7	19.4	19.4	19.7

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.079	0.079	0.079	0.079
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	6.1	5.9	5.9	6.1
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	TA	VA	VB	TF
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	736	735	735	736
<b>Ti</b>	Intermittent torque	Nm	567	538	538	567
<b>Tc</b>	Continuous torque	Nm	415	390	390	415
<b>Ts</b>	Standstill torque	Nm	333	311	311	333
<b>lp</b>	Peak current	Arms	22.5	40.4	80.9	135
<b>li</b>	Intermittent current	Arms	14.7	24.3	48.5	87.9
<b>lc</b>	Continuous current	Arms	9.27	15.3	30.7	55.6
<b>ls</b>	Standstill current	Arms	7.02	11.6	23.3	42.1
<b>ns</b>	Rated low speed	rpm	0.21	0.22	0.22	0.21
<b>nm</b>	Maximum speed without flux weakening	rpm	126	226	453	756
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	413	599	906	1150
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	6.3	8.6
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.8	2.8	2.9
<b>Pp</b>	Power dissipation @ lp	W	14100	16600	16600	14100
<b>Pi</b>	Power dissipation @ li	W	7740	7560	7560	7740
<b>Pc</b>	Power dissipation @ lc	W	3100	3020	3020	3100
<b>Td</b>	Max. detent torque (average to peak)	Nm	4.4	4.4	4.4	4.4

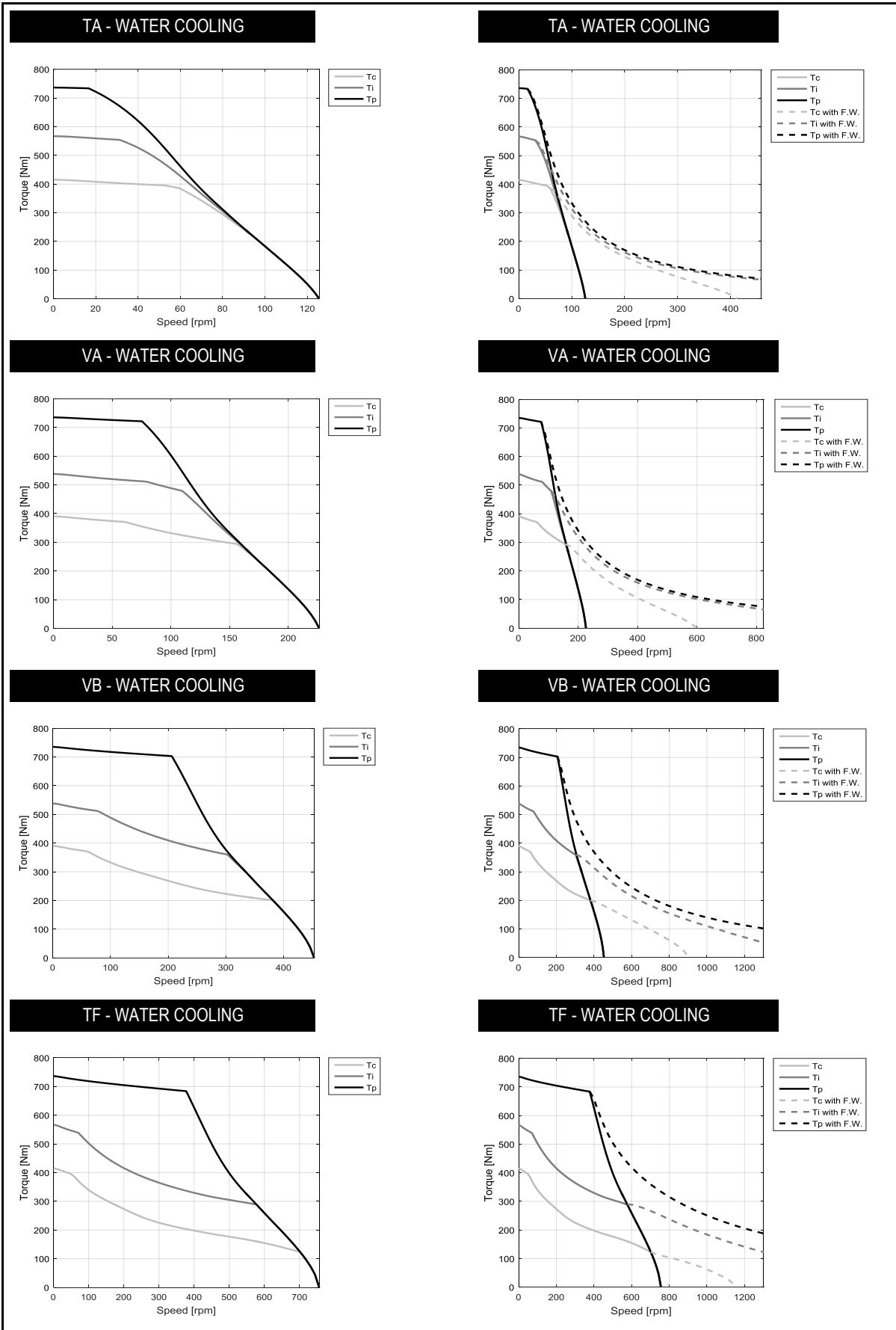
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	54.7	30.4	15.2	9.11
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	31.6	17.5	8.77	5.26
<b>Km</b>	Motor constant	Nm/√W	10.9	10.1	10.1	10.9
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	16.9	6.03	1.51	0.470
<b>Ld/Lq</b>	Electrical inductance (*)	mH	155 / 136	47.9 / 43.1	12.0 / 10.8	4.31 / 3.77
<b>lsc</b>	Maximum short-circuit current	Arms	7.12	12.8	25.6	42.7
<b>nb</b>	Base speed	rpm	59.2	156	381	701
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	31.3	110	303	577
<b>nb,p</b>	Base speed at peak duty cycle	rpm	16.6	75.4	206	377
<b>nn</b>	Rated speed	rpm	47.6	134	345	644
<b>Tn</b>	Rated torque	Nm	397	308	210	142
<b>In</b>	Rated current	Arms	9.19	12.1	16.1	18.8
<b>rth</b>	Thermal time constant	s	86.1	82.4	82.4	86.1
<b>Rth</b>	Thermal resistance	K/W	0.0339	0.0346	0.0346	0.0339
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.108	0.108	0.108	0.108
<b>mr</b>	Rotor mass	kg	5.47	5.47	5.47	5.47
<b>ms</b>	Stator mass	kg	25.7	25.3	25.3	25.7

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.110	0.110	0.110	0.110
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	9.5	9.3	9.3	9.5
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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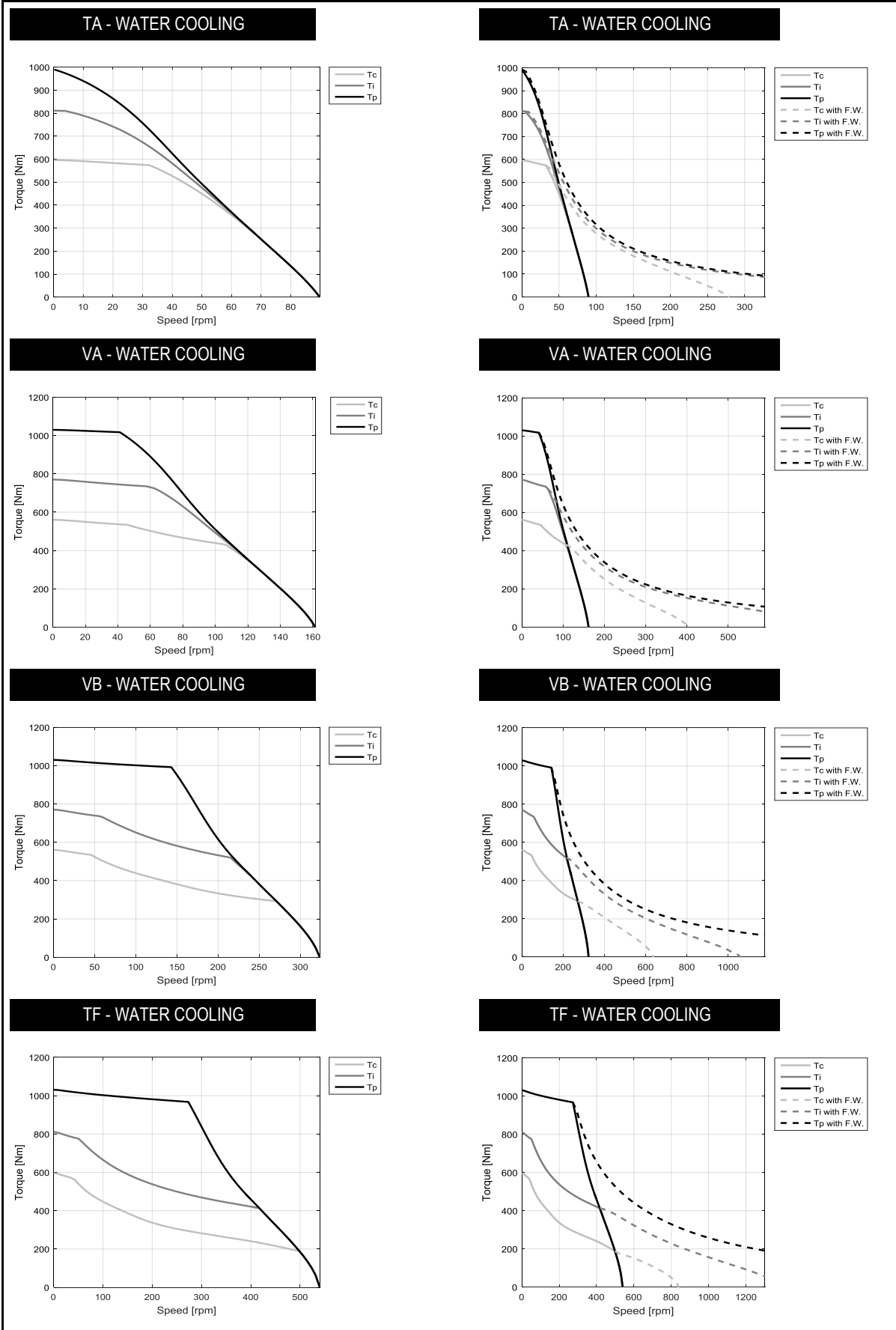
MOTOR PERFORMANCE		Winding codes	TA	VA	VB	TF
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	990	1030	1030	1030
<b>Ti</b>	Intermittent torque	Nm	811	770	770	811
<b>Tc</b>	Continuous torque	Nm	596	560	560	596
<b>Ts</b>	Standstill torque	Nm	478	447	447	478
<b>lp</b>	Peak current	Arms	20.3	39.7	79.4	132
<b>li</b>	Intermittent current	Arms	14.9	24.7	49.5	89.6
<b>lc</b>	Continuous current	Arms	9.45	15.6	31.3	56.7
<b>ls</b>	Standstill current	Arms	7.16	11.9	23.7	42.9
<b>ns</b>	Rated low speed	rpm	0.21	0.22	0.22	0.21
<b>nm</b>	Maximum speed without flux weakening	rpm	89.7	162	323	540
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	279	405	638	840
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.7	6.5	9.0
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.8	2.8	2.9
<b>Pp</b>	Power dissipation @ lp	W	14600	20400	20400	17400
<b>Pi</b>	Power dissipation @ li	W	10300	10100	10100	10300
<b>Pc</b>	Power dissipation @ lc	W	4140	4040	4040	4140
<b>Td</b>	Max. detent torque (average to peak)	Nm	6.1	6.1	6.1	6.1

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	76.7	42.6	21.3	12.8
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	44.2	24.6	12.3	7.37
<b>Km</b>	Motor constant	Nm/√W	13.4	12.5	12.5	13.4
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	21.8	7.77	1.94	0.606
<b>Ld/Lq</b>	Electrical inductance (*)	mH	207 / 180	63.7 / 57.2	15.9 / 14.3	5.74 / 5.01
<b>lsc</b>	Maximum short-circuit current	Arms	7.49	13.5	27.0	44.9
<b>nb</b>	Base speed	rpm	32.2	106	271	499
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	4.01	62.7	215	417
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	41.2	143	273
<b>nn</b>	Rated speed	rpm	24.6	89.2	244	459
<b>Tn</b>	Rated torque	Nm	580	453	306	211
<b>In</b>	Rated current	Arms	9.40	12.6	16.4	19.3
<b>rth</b>	Thermal time constant	s	84.9	81.5	81.5	84.9
<b>Rth</b>	Thermal resistance	K/W	0.0251	0.0256	0.0256	0.0251
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.152	0.152	0.152	0.152
<b>mr</b>	Rotor mass	kg	7.66	7.66	7.66	7.66
<b>ms</b>	Stator mass	kg	32.2	31.7	31.7	32.2

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.150	0.150	0.150	0.150
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	13	12	12	13
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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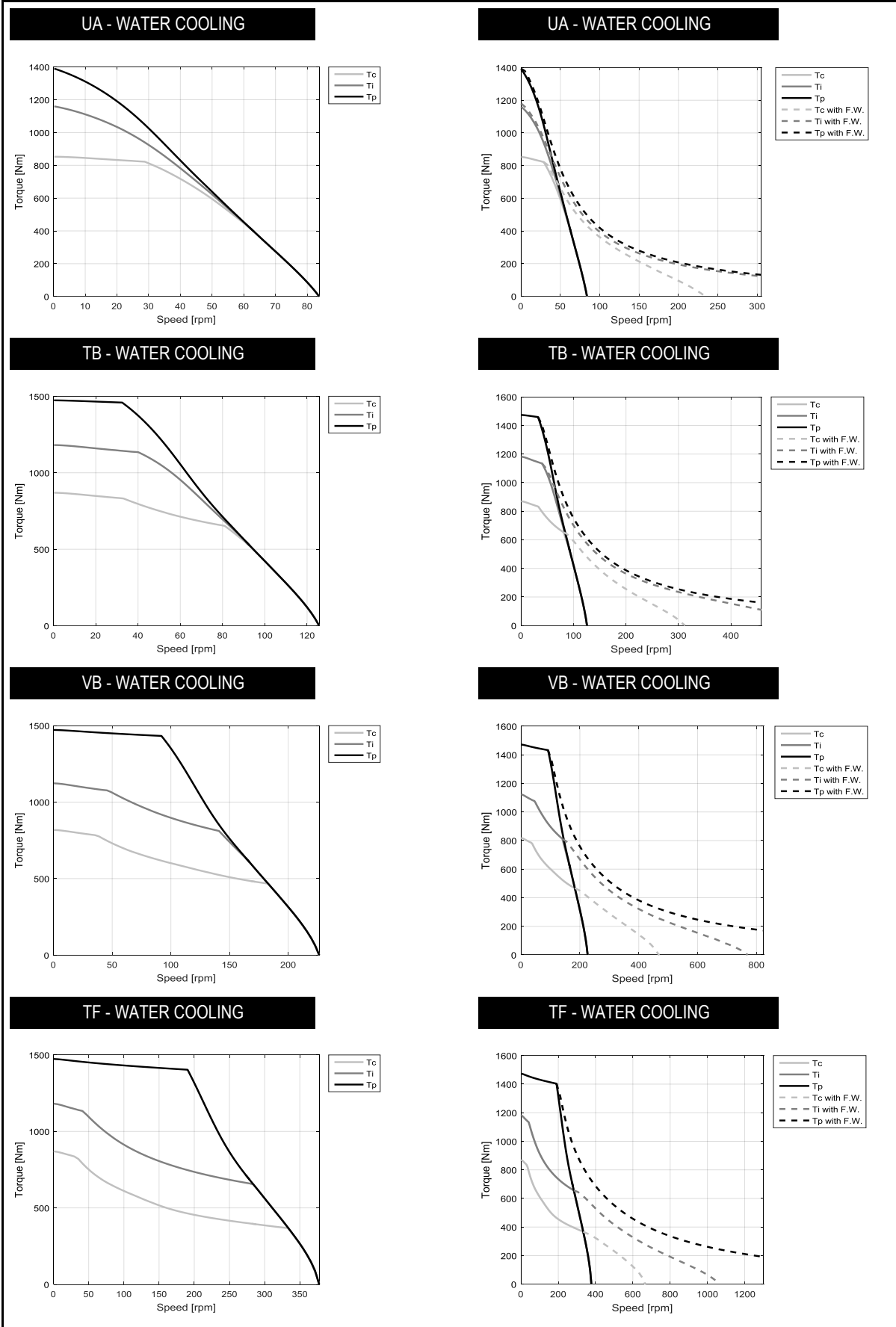
MOTOR PERFORMANCE		Winding codes	UA	TB	VB	TF
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	1390	1470	1470	1470
<b>Ti</b>	Intermittent torque	Nm	1160	1180	1120	1180
<b>Tc</b>	Continuous torque	Nm	853	870	818	870
<b>Ts</b>	Standstill torque	Nm	684	699	653	699
<b>Ip</b>	Peak current	Arms	25.7	43.2	77.7	129
<b>Ii</b>	Intermittent current	Arms	19.7	30.4	50.4	91.2
<b>Ic</b>	Continuous current	Arms	12.5	19.2	31.9	57.7
<b>Is</b>	Standstill current	Arms	9.46	14.6	24.1	43.7
<b>ns</b>	Rated low speed	rpm	0.23	0.22	0.23	0.22
<b>nm</b>	Maximum speed without flux weakening	rpm	83.8	126	226	378
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	234	313	470	667
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	8.5	6.6	9.2
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.1	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ Ip	W	18400	22300	26000	22300
<b>Pi</b>	Power dissipation @ Ii	W	14100	14300	13900	14300
<b>Pc</b>	Power dissipation @ Ic	W	5710	5720	5570	5720
<b>Td</b>	Max. detent torque (average to peak)	Nm	8.7	8.7	8.7	8.7

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	82.3	54.9	30.5	18.3
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	47.3	31.6	17.5	10.5
<b>Km</b>	Motor constant	Nm/√W	16.1	16.6	15.4	16.6
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	17.4	7.33	2.61	0.814
<b>Ld/Lq</b>	Electrical inductance (*)	mH	158 / 139	70.3 / 61.2	21.7 / 19.4	7.81 / 6.80
<b>Isc</b>	Maximum short-circuit current	Arms	10.5	15.7	28.3	47.2
<b>nb</b>	Base speed	rpm	28.7	81.0	183	334
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	0.00	40.1	141	284
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	32.5	92.0	191
<b>nn</b>	Rated speed	rpm	21.4	67.4	162	307
<b>Tn</b>	Rated torque	Nm	831	689	492	382
<b>In</b>	Rated current	Arms	12.4	14.9	18.3	23.8
<b>rth</b>	Thermal time constant	s	79.6	81.0	77.9	81.0
<b>Rth</b>	Thermal resistance	K/W	0.0177	0.0177	0.0181	0.0177
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.215	0.215	0.215	0.215
<b>mr</b>	Rotor mass	kg	10.9	10.9	10.9	10.9
<b>ms</b>	Stator mass	kg	40.6	40.9	40.3	40.9

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.200	0.200	0.200	0.200
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	18	18	17	18
<b>Δpw</b>	Max. pressure drop at qw	bar	2.0	2.0	2.0	2.0

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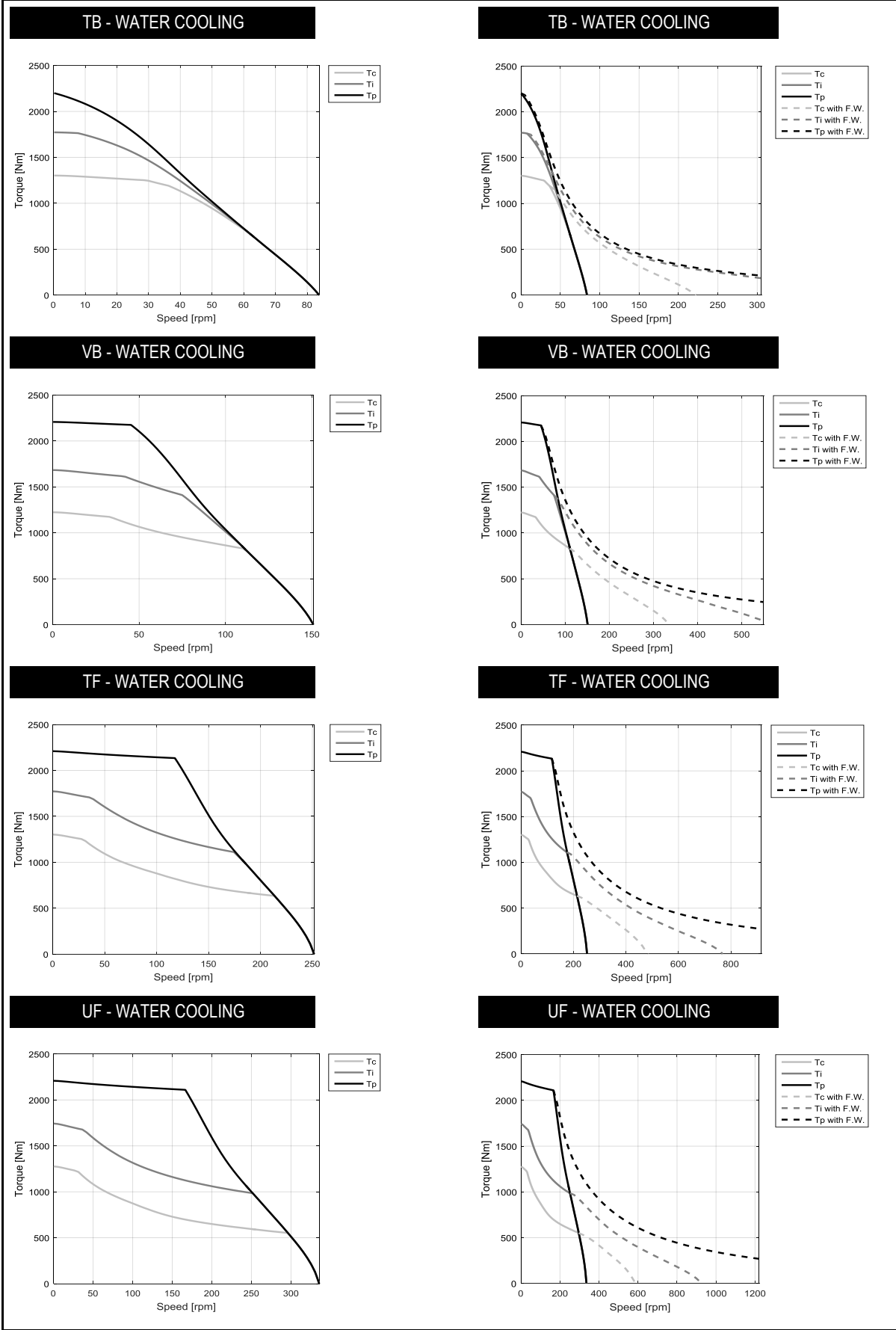
MOTOR PERFORMANCE		Winding codes	TB	VB	TF	UF
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	2200	2210	2210	2210
<b>Ti</b>	Intermittent torque	Nm	1770	1680	1770	1740
<b>Tc</b>	Continuous torque	Nm	1300	1220	1300	1280
<b>Ts</b>	Standstill torque	Nm	1050	976	1050	1020
<b>lp</b>	Peak current	Arms	42.1	76.4	127	170
<b>li</b>	Intermittent current	Arms	30.1	49.8	90.3	117
<b>lc</b>	Continuous current	Arms	19.0	31.5	57.1	74.1
<b>ls</b>	Standstill current	Arms	14.4	23.9	43.3	56.2
<b>ns</b>	Rated low speed	rpm	0.22	0.23	0.22	0.22
<b>nm</b>	Maximum speed without flux weakening	rpm	83.8	151	252	336
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	223	335	484	587
<b>ton,p</b>	Maximum ON time for peak cycle	s	8.5	5.8	8.3	7.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.7	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	30200	36000	30800	32600
<b>Pi</b>	Power dissipation @ li	W	19900	19300	19900	19800
<b>Pc</b>	Power dissipation @ lc	W	7960	7720	7960	7930
<b>Td</b>	Max. detent torque (average to peak)	Nm	13	13	13	13

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	82.4	45.8	27.5	20.6
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	47.3	26.3	15.8	11.8
<b>Km</b>	Motor constant	Nm/√W	20.7	19.3	20.7	20.2
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	10.5	3.75	1.17	0.693
<b>Ld/Lq</b>	Electrical inductance (*)	mH	105 / 91.6	32.3 / 29.0	11.6 / 10.2	6.54 / 5.78
<b>lsc</b>	Maximum short-circuit current	Arms	15.8	28.5	47.5	63.3
<b>nb</b>	Base speed	rpm	36.3	110	214	296
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	7.71	74.9	174	252
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	45.3	118	166
<b>nn</b>	Rated speed	rpm	25.3	93.4	194	272
<b>Tn</b>	Rated torque	Nm	1260	886	659	574
<b>In</b>	Rated current	Arms	18.9	22.2	27.0	31.5
<b>rth</b>	Thermal time constant	s	82.4	79.5	82.4	81.1
<b>Rth</b>	Thermal resistance	K/W	0.0122	0.0124	0.0122	0.0122
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.323	0.323	0.323	0.323
<b>mr</b>	Rotor mass	kg	16.3	16.3	16.3	16.3
<b>ms</b>	Stator mass	kg	57.3	56.4	57.3	57.0

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.280	0.280	0.280	0.280
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	25	24	25	24
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	3.0

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MOTOR PERFORMANCE		Winding codes	UB	VB	TF	UF
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	2890	2940	2950	2940
<b>Ti</b>	Intermittent torque	Nm	2310	2220	2350	2310
<b>Tc</b>	Continuous torque	Nm	1680	1610	1720	1680
<b>Ts</b>	Standstill torque	Nm	1350	1280	1380	1350
<b>lp</b>	Peak current	Arms	54.1	75.8	126	168
<b>li</b>	Intermittent current	Arms	38.4	48.8	88.8	115
<b>lc</b>	Continuous current	Arms	24.3	30.9	56.1	72.8
<b>ls</b>	Standstill current	Arms	18.4	23.4	42.5	55.1
<b>ns</b>	Rated low speed	rpm	0.23	0.23	0.22	0.23
<b>nm</b>	Maximum speed without flux weakening	rpm	83.8	113	189	252
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	213	262	382	463
<b>ton,p</b>	Maximum ON time for peak cycle	s	6.8	4.8	6.9	6.0
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.4	2.3	2.5	2.4
<b>Pp</b>	Power dissipation @ lp	W	38900	46400	39800	42100
<b>Pi</b>	Power dissipation @ li	W	24700	23900	24800	24700
<b>Pc</b>	Power dissipation @ lc	W	9870	9570	9930	9870
<b>Td</b>	Max. detent torque (average to peak)	Nm	17	17	17	17

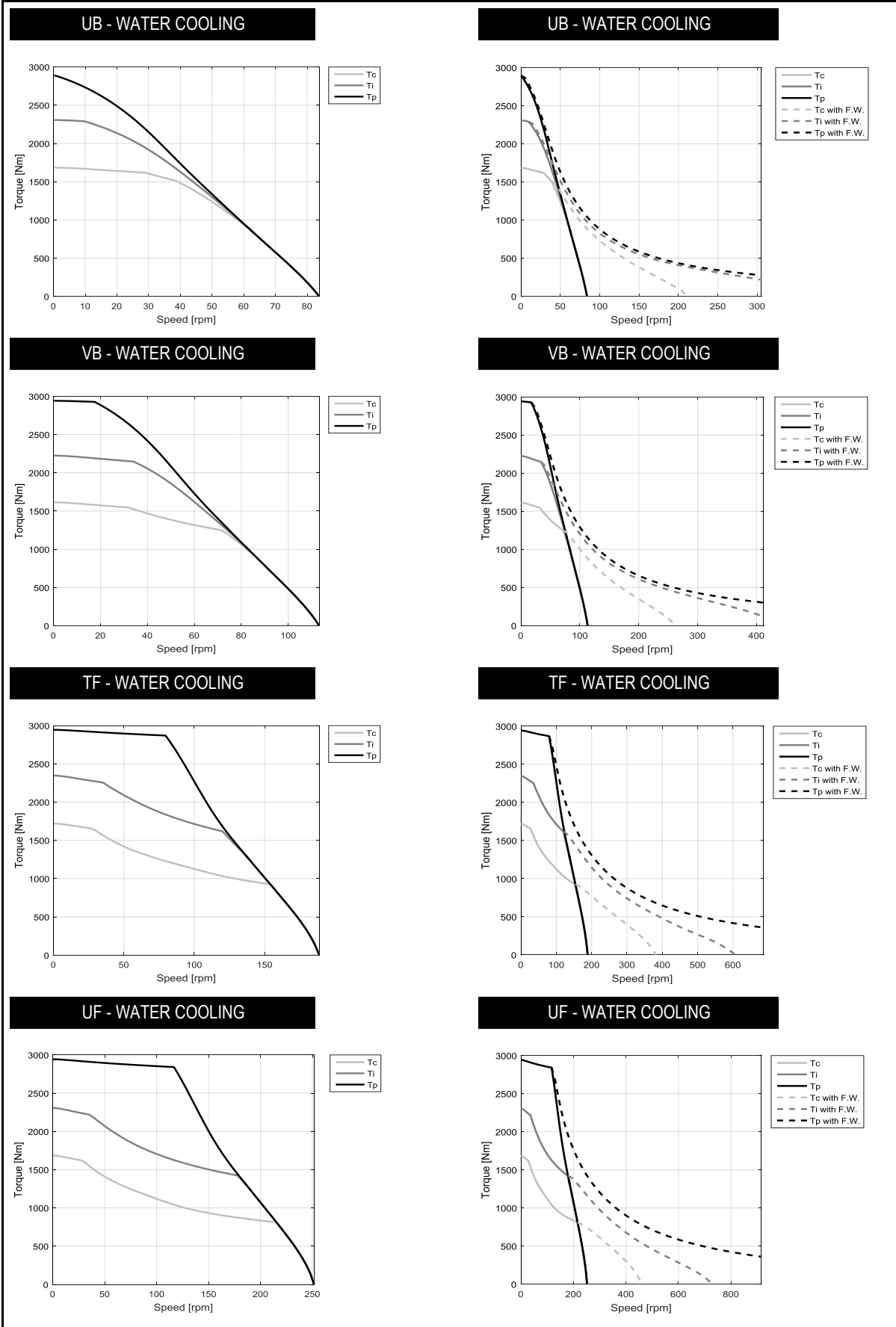
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	82.5	61.1	36.7	27.5
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	47.3	35.1	21.0	15.8
<b>Km</b>	Motor constant	Nm/√W	23.5	22.5	24.2	23.5
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	8.20	4.92	1.54	0.911
<b>Ld/Lq</b>	Electrical inductance (*)	mH	78.2 / 69.5	42.9 / 38.8	15.5 / 13.6	8.69 / 7.72
<b>lsc</b>	Maximum short-circuit current	Arms	21.2	28.6	47.6	63.5
<b>nb</b>	Base speed	rpm	38.2	71.7	154	215
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	9.71	33.9	120	178
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	17.5	79.6	117
<b>nn</b>	Rated speed	rpm	26.5	58.4	138	196
<b>Tn</b>	Rated torque	Nm	1620	1330	971	841
<b>In</b>	Rated current	Arms	24.1	25.3	29.7	34.3
<b>rth</b>	Thermal time constant	s	80.4	78.9	81.6	80.4
<b>Rth</b>	Thermal resistance	K/W	0.00916	0.00935	0.00919	0.00916
<b>2p</b>	Number of poles	-	66	66	66	66
<b>J</b>	Rotor inertia	kg·m²	0.434	0.434	0.434	0.434
<b>mr</b>	Rotor mass	kg	21.9	21.9	21.9	21.9
<b>ms</b>	Stator mass	kg	72.6	71.9	73.0	72.6

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.360	0.360	0.360	0.360
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	30	29	31	30
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	3.0

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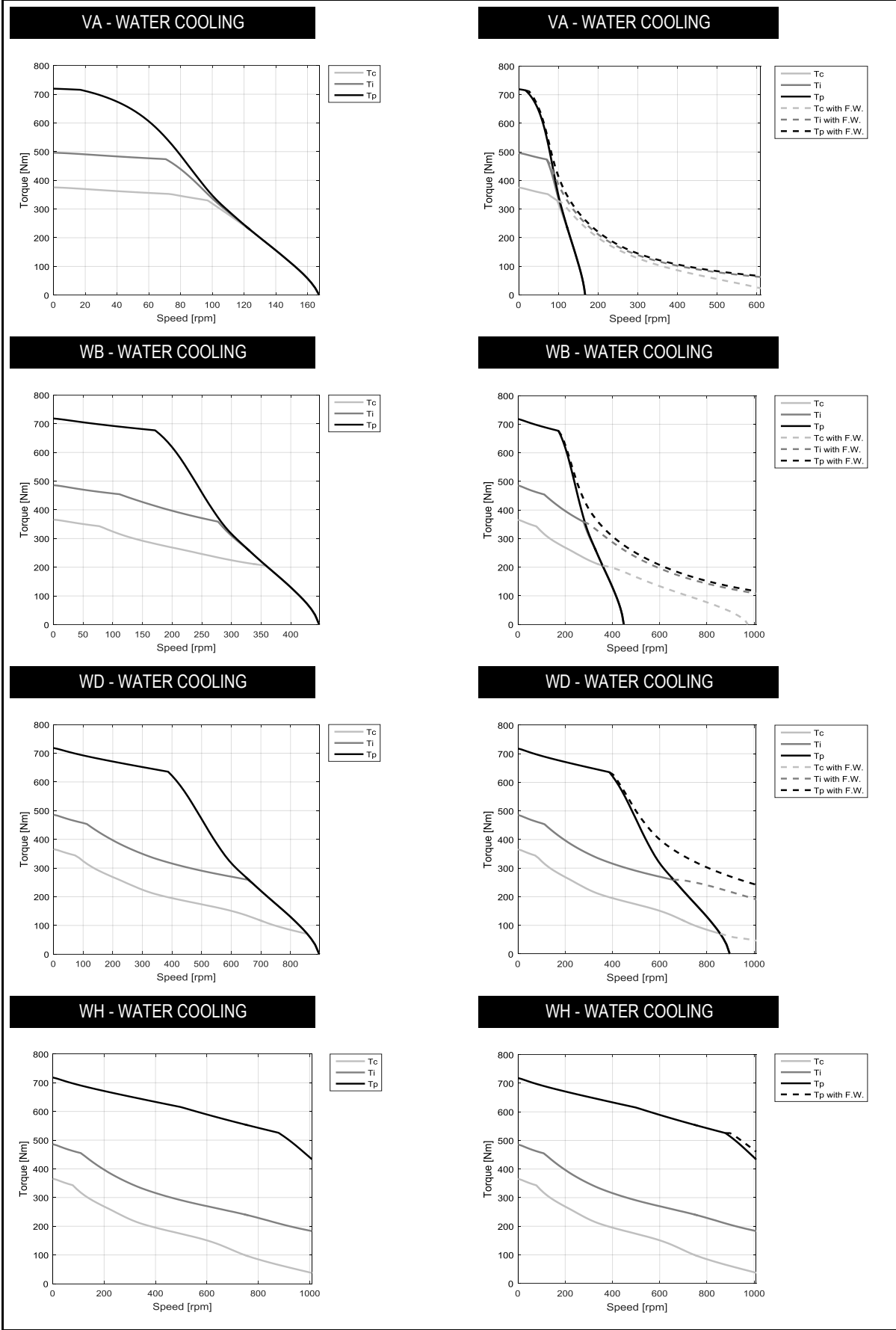
MOTOR PERFORMANCE		Winding codes	VA	WB	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	719	718	718	718
<b>Ti</b>	Intermittent torque	Nm	496	486	486	486
<b>Tc</b>	Continuous torque	Nm	375	366	366	366
<b>Ts</b>	Standstill torque	Nm	307	298	298	298
<b>lp</b>	Peak current	Arms	43.8	117	235	469
<b>li</b>	Intermittent current	Arms	19.0	48.9	97.8	196
<b>lc</b>	Continuous current	Arms	12.0	30.9	61.9	124
<b>ls</b>	Standstill current	Arms	9.11	23.4	46.9	93.7
<b>ns</b>	Rated low speed	rpm	0.10	0.10	0.10	0.10
<b>nm</b>	Maximum speed without flux weakening	rpm	167	448	897	1010
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	610	973	1010	1010
<b>ton,p</b>	Maximum ON time for peak cycle	s	3.0	2.4	2.4	2.4
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	28800	31300	31300	31300
<b>Pi</b>	Power dissipation @ li	W	6150	6080	6080	6080
<b>Pc</b>	Power dissipation @ lc	W	2460	2430	2430	2430
<b>Td</b>	Max. detent torque (average to peak)	Nm	4.5	4.5	4.5	4.5

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	41.1	15.4	7.68	3.84
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	23.7	8.86	4.43	2.22
<b>Km</b>	Motor constant	Nm/√W	11.9	11.5	11.5	11.5
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	7.96	1.19	0.297	0.0743
<b>Ld/Lq</b>	Electrical inductance (*)	mH	77.6 / 63.8	10.8 / 9.08	2.71 / 2.27	0.678 / 0.567
<b>lsc</b>	Maximum short-circuit current	Arms	8.02	21.4	42.9	85.8
<b>nb</b>	Base speed	rpm	97.1	358	856	N/A
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	70.7	277	656	N/A
<b>nb,p</b>	Base speed at peak duty cycle	rpm	16.9	171	387	879
<b>nn</b>	Rated speed	rpm	82.1	318	794	N/A
<b>Tn</b>	Rated torque	Nm	344	218	86.1	N/A
<b>In</b>	Rated current	Arms	11.4	17.4	15.1	N/A
<b>rth</b>	Thermal time constant	s	135	132	132	132
<b>Rth</b>	Thermal resistance	K/W	0.0433	0.0438	0.0438	0.0438
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.160	0.160	0.160	0.160
<b>mr</b>	Rotor mass	kg	4.83	4.83	4.83	4.83
<b>ms</b>	Stator mass	kg	31.1	31.0	31.0	31.0

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.110	0.110	0.110	0.110
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	7.6	7.5	7.5	7.5
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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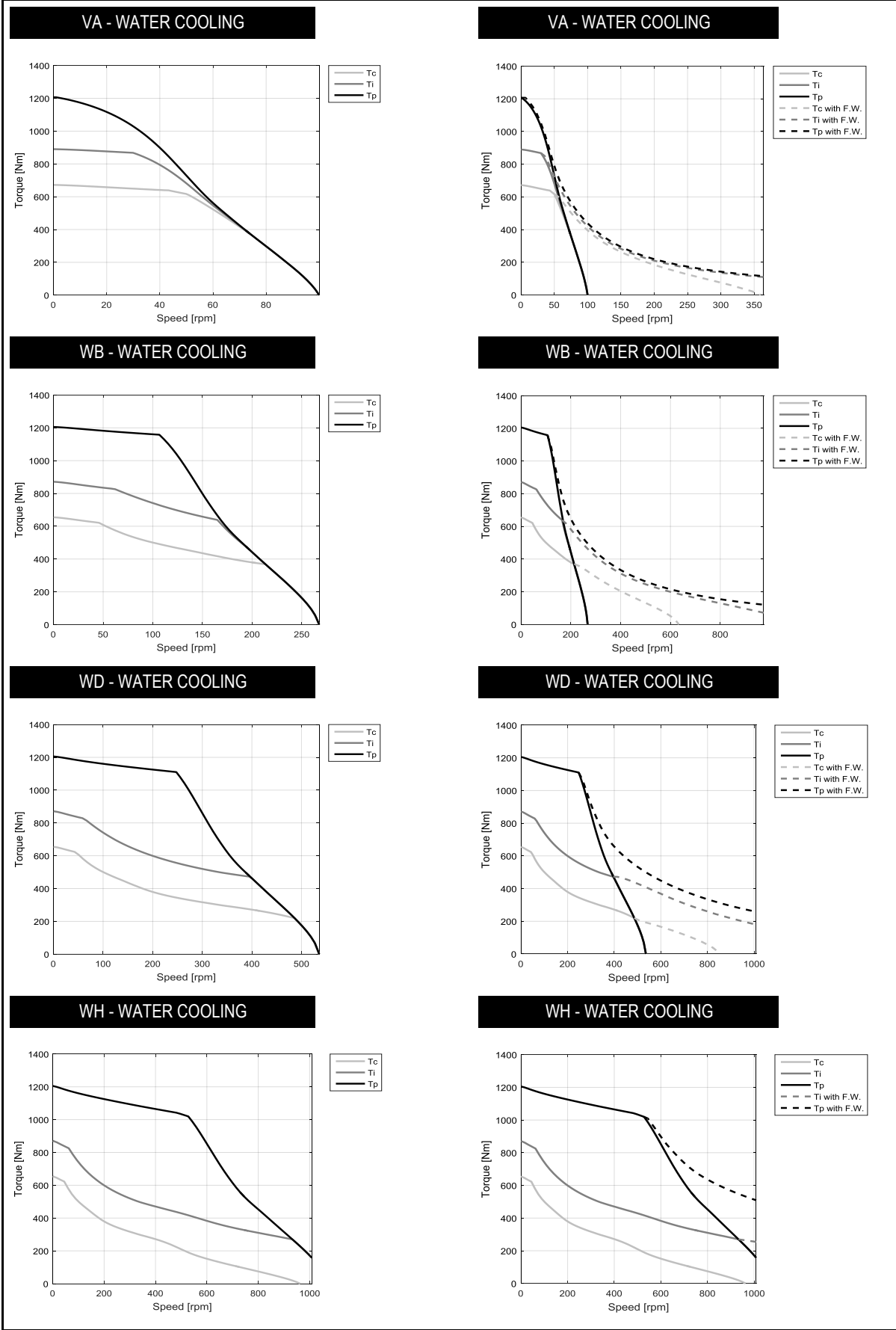
MOTOR PERFORMANCE		Winding codes	VA	WB	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	1210	1210	1210	1210
<b>Ti</b>	Intermittent torque	Nm	890	871	871	871
<b>Tc</b>	Continuous torque	Nm	672	655	655	655
<b>Ts</b>	Standstill torque	Nm	549	533	533	533
<b>Ip</b>	Peak current	Arms	37.2	99.4	199	398
<b>Ii</b>	Intermittent current	Arms	20.2	51.9	104	208
<b>Ic</b>	Continuous current	Arms	12.8	32.8	65.7	131
<b>Is</b>	Standstill current	Arms	9.67	24.9	49.8	99.5
<b>ns</b>	Rated low speed	rpm	0.11	0.11	0.11	0.11
<b>nm</b>	Maximum speed without flux weakening	rpm	100	268	536	963
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	360	634	846	963
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	5.4	5.4	5.4
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ Ip	W	26600	28700	28700	28700
<b>Pi</b>	Power dissipation @ Ii	W	9690	9560	9560	9560
<b>Pc</b>	Power dissipation @ Ic	W	3880	3830	3830	3830
<b>Td</b>	Max. detent torque (average to peak)	Nm	7.5	7.5	7.5	7.5

MOTOR SETTING		UNIT	VA	WB	WD	WH
<b>Kt</b>	Torque constant	Nm/Arms	68.8	25.7	12.9	6.43
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	39.7	14.8	7.42	3.71
<b>Km</b>	Motor constant	Nm/√W	16.8	16.3	16.3	16.3
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	11.1	1.66	0.416	0.104
<b>Ld/Lq</b>	Electrical inductance (*)	mH	122 / 98.8	17.1 / 14.1	4.26 / 3.51	1.07 / 0.878
<b>Isc</b>	Maximum short-circuit current	Arms	8.54	22.8	45.7	91.3
<b>nb</b>	Base speed	rpm	49.9	213	486	N/A
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	29.9	165	396	933
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.974	107	248	528
<b>nn</b>	Rated speed	rpm	40.3	189	443	N/A
<b>Tn</b>	Rated torque	Nm	641	390	249	N/A
<b>In</b>	Rated current	Arms	12.6	18.0	23.2	N/A
<b>rth</b>	Thermal time constant	s	122	120	120	120
<b>Rth</b>	Thermal resistance	K/W	0.0272	0.0275	0.0275	0.0275
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.268	0.268	0.268	0.268
<b>mr</b>	Rotor mass	kg	8.11	8.11	8.11	8.11
<b>ms</b>	Stator mass	kg	40.3	40.0	40.0	40.0

MOTOR ENVIRONMENT		UNIT	VA	WB	WD	WH
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.150	0.150	0.150	0.150
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	12	12	12	12
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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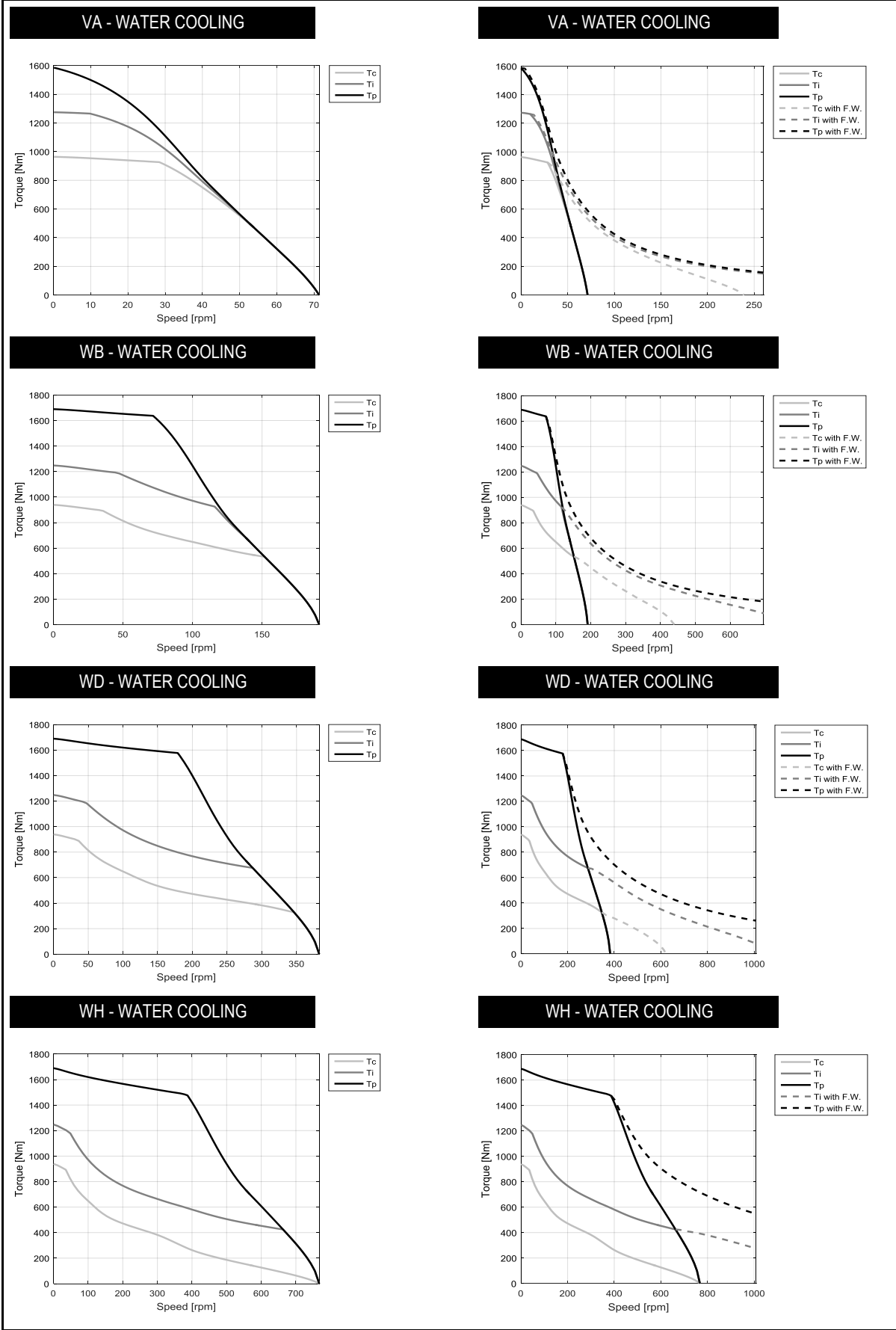
MOTOR PERFORMANCE		Winding codes	VA	WB	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	1590	1690	1690	1690
<b>Ti</b>	Intermittent torque	Nm	1270	1250	1250	1250
<b>Tc</b>	Continuous torque	Nm	964	939	939	939
<b>Ts</b>	Standstill torque	Nm	788	765	765	765
<b>lp</b>	Peak current	Arms	30.4	95.8	192	383
<b>li</b>	Intermittent current	Arms	20.6	52.9	106	212
<b>lc</b>	Continuous current	Arms	13.0	33.5	67.0	134
<b>ls</b>	Standstill current	Arms	9.86	25.4	50.7	101
<b>ns</b>	Rated low speed	rpm	0.11	0.12	0.12	0.12
<b>nm</b>	Maximum speed without flux weakening	rpm	71.4	191	383	767
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	239	440	621	767
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	6.0	6.0	6.0
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	21900	33800	33800	33800
<b>Pi</b>	Power dissipation @ li	W	13000	12800	12800	12800
<b>Pc</b>	Power dissipation @ lc	W	5180	5110	5110	5110
<b>Td</b>	Max. detent torque (average to peak)	Nm	11	11	11	11

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	96.5	36.1	18.0	9.02
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	55.6	20.8	10.4	5.19
<b>Km</b>	Motor constant	Nm/√W	20.8	20.1	20.1	20.1
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	14.4	2.14	0.536	0.134
<b>Ld/Lq</b>	Electrical inductance (*)	mH	163 / 131	22.7 / 18.7	5.69 / 4.67	1.42 / 1.17
<b>lsc</b>	Maximum short-circuit current	Arms	8.96	24.0	47.9	95.9
<b>nb</b>	Base speed	rpm	28.4	152	346	767
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	9.79	116	287	663
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	71.6	179	387
<b>nn</b>	Rated speed	rpm	22.7	134	317	730
<b>Tn</b>	Rated torque	Nm	935	566	365	40.4
<b>In</b>	Rated current	Arms	12.9	18.4	23.7	9.04
<b>rth</b>	Thermal time constant	s	120	118	118	118
<b>Rth</b>	Thermal resistance	K/W	0.0202	0.0204	0.0204	0.0204
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.377	0.377	0.377	0.377
<b>mr</b>	Rotor mass	kg	11.4	11.4	11.4	11.4
<b>ms</b>	Stator mass	kg	50.1	49.8	49.8	49.8

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.200	0.200	0.200	0.200
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	16	16	16	16
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	WA	WB	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	2230	2420	2420	2420
<b>Ti</b>	Intermittent torque	Nm	1820	1820	1820	1820
<b>Tc</b>	Continuous torque	Nm	1370	1370	1370	1370
<b>Ts</b>	Standstill torque	Nm	1120	1120	1120	1120
<b>lp</b>	Peak current	Arms	38.3	93.3	187	373
<b>li</b>	Intermittent current	Arms	27.0	54.1	108	216
<b>lc</b>	Continuous current	Arms	17.1	34.2	68.4	137
<b>ls</b>	Standstill current	Arms	13.0	25.9	51.8	104
<b>ns</b>	Rated low speed	rpm	0.12	0.12	0.12	0.12
<b>nm</b>	Maximum speed without flux weakening	rpm	66.8	134	268	536
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	200	317	495	773
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	6.3	6.3	6.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	27600	42400	42400	42400
<b>Pi</b>	Power dissipation @ li	W	17800	17800	17800	17800
<b>Pc</b>	Power dissipation @ lc	W	7120	7120	7120	7120
<b>Td</b>	Max. detent torque (average to peak)	Nm	15	15	15	15

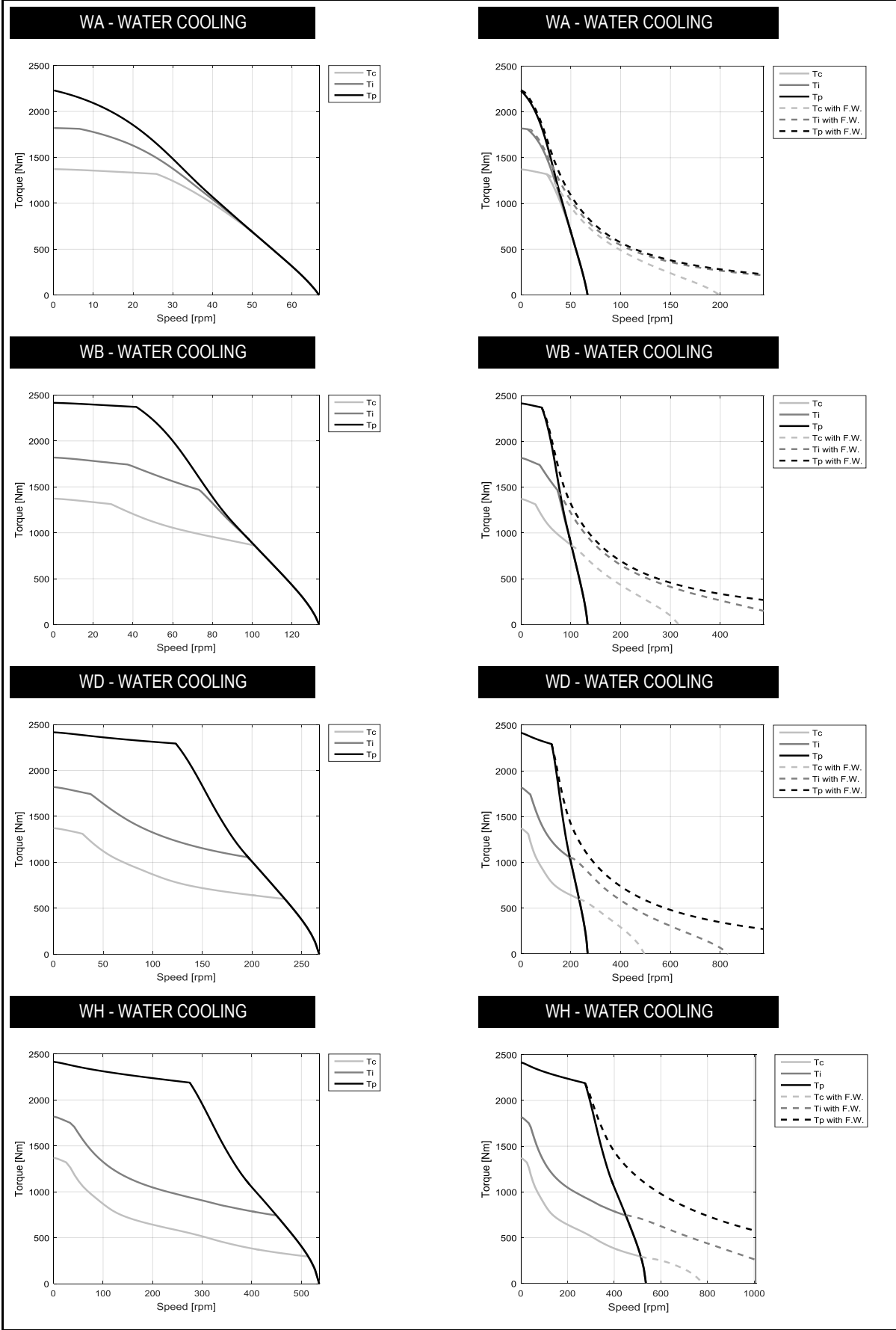
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	103	51.6	25.8	12.9
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	59.4	29.7	14.8	7.42
<b>Km</b>	Motor constant	Nm/√W	24.9	24.9	24.9	24.9
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	11.5	2.88	0.719	0.180
<b>Ld/Lq</b>	Electrical inductance (*)	mH	124 / 101	31.0 / 25.3	7.75 / 6.33	1.94 / 1.58
<b>lsc</b>	Maximum short-circuit current	Arms	12.6	25.1	50.2	100
<b>nb</b>	Base speed	rpm	25.9	101	233	514
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	6.52	73.1	196	450
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	41.7	123	275
<b>nn</b>	Rated speed	rpm	20.2	86.7	213	484
<b>Tn</b>	Rated torque	Nm	1330	926	625	314
<b>In</b>	Rated current	Arms	17.0	21.3	27.8	30.0
<b>rth</b>	Thermal time constant	s	111	111	111	111
<b>Rth</b>	Thermal resistance	K/W	0.0144	0.0144	0.0144	0.0144
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.533	0.533	0.533	0.533
<b>mr</b>	Rotor mass	kg	16.1	16.1	16.1	16.1
<b>ms</b>	Stator mass	kg	62.9	62.9	62.9	62.9

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.260	0.260	0.260	0.260
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	22	22	22	22
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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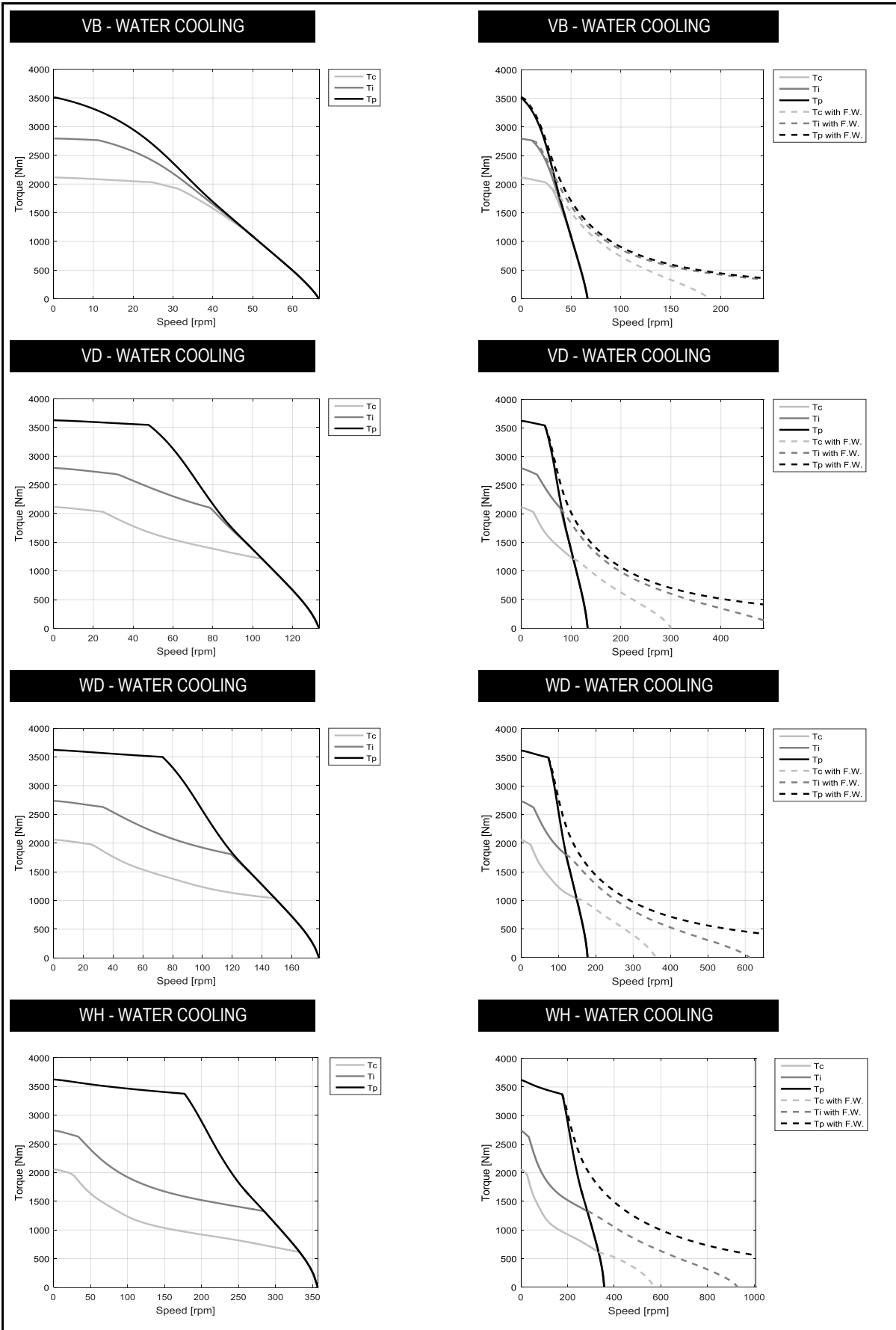
MOTOR PERFORMANCE		Winding codes	VB	VD	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	3510	3630	3620	3620
<b>Ti</b>	Intermittent torque	Nm	2790	2790	2730	2730
<b>Tc</b>	Continuous torque	Nm	2110	2110	2060	2060
<b>Ts</b>	Standstill torque	Nm	1730	1730	1680	1680
<b>lp</b>	Peak current	Arms	63.1	137	183	365
<b>li</b>	Intermittent current	Arms	41.8	83.5	107	215
<b>lc</b>	Continuous current	Arms	26.4	52.8	67.9	136
<b>ls</b>	Standstill current	Arms	20.0	40.0	51.4	103
<b>ns</b>	Rated low speed	rpm	0.12	0.12	0.12	0.12
<b>nm</b>	Maximum speed without flux weakening	rpm	66.6	133	178	357
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	189	301	362	570
<b>ton,p</b>	Maximum ON time for peak cycle	s	8.8	6.8	5.7	5.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	45400	54000	58000	58000
<b>Pi</b>	Power dissipation @ li	W	25300	25300	24900	24900
<b>Pc</b>	Power dissipation @ lc	W	10100	10100	9970	9970
<b>Td</b>	Max. detent torque (average to peak)	Nm	23	23	23	23

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	104	51.9	38.8	19.4
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	59.5	29.8	22.3	11.1
<b>Km</b>	Motor constant	Nm/√W	32.2	32.2	31.2	31.2
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	6.93	1.73	1.03	0.258
<b>Ld/Lq</b>	Electrical inductance (*)	mH	82.7 / 66.8	20.7 / 16.7	11.6 / 9.50	2.89 / 2.37
<b>lsc</b>	Maximum short-circuit current	Arms	18.9	37.8	50.5	101
<b>nb</b>	Base speed	rpm	31.1	105	149	332
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	11.2	78.6	119	285
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	47.8	73.2	177
<b>nn</b>	Rated speed	rpm	22.5	91.2	134	308
<b>Tn</b>	Rated torque	Nm	2040	1300	1080	675
<b>In</b>	Rated current	Arms	26.2	29.3	31.8	40.5
<b>rth</b>	Thermal time constant	s	114	114	113	113
<b>Rth</b>	Thermal resistance	K/W	0.00977	0.00977	0.00989	0.00989
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.805	0.805	0.805	0.805
<b>mr</b>	Rotor mass	kg	24.3	24.3	24.3	24.3
<b>ms</b>	Stator mass	kg	88.1	88.1	87.4	87.4

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.370	0.370	0.370	0.370
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	31	31	31	31
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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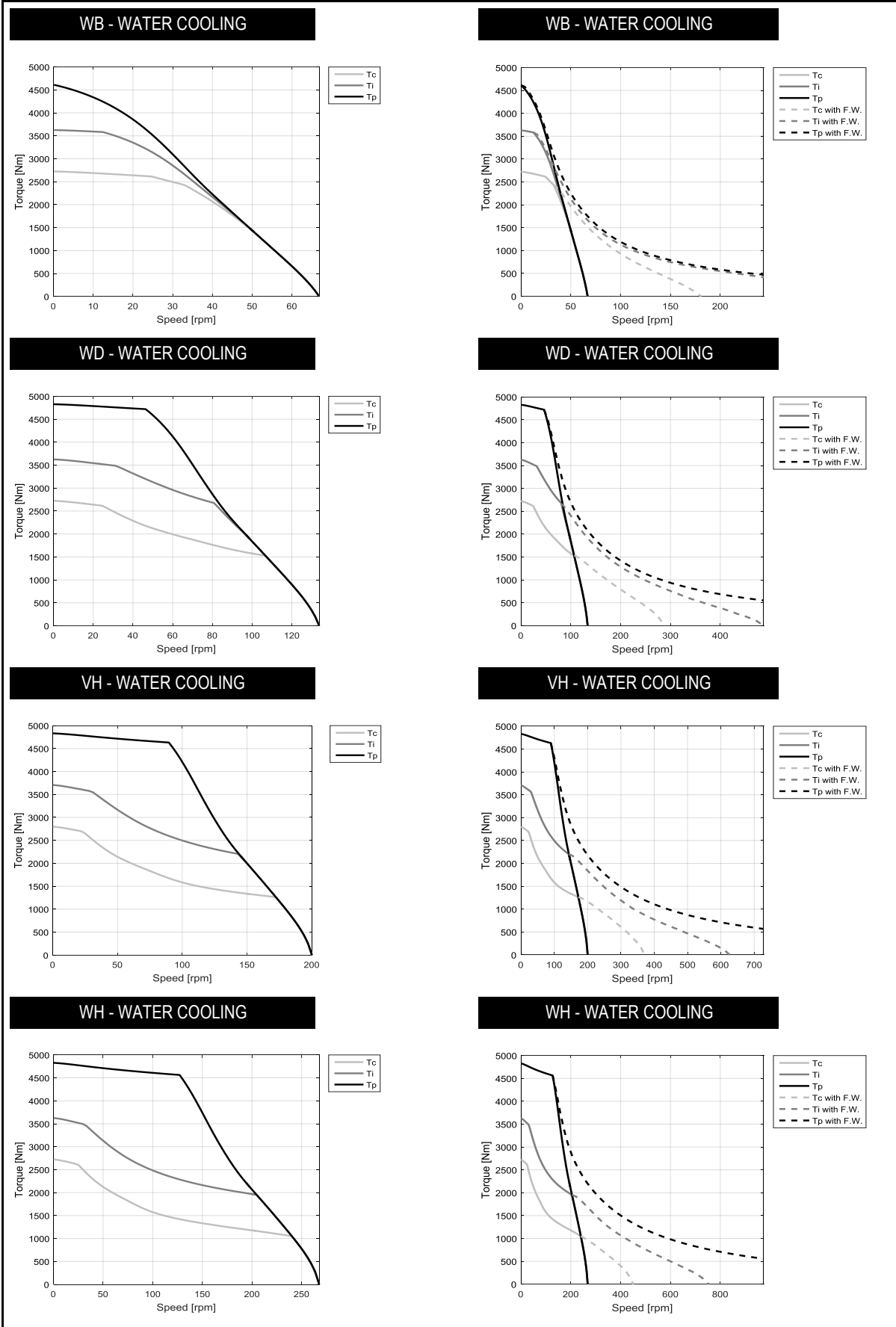
MOTOR PERFORMANCE		Winding codes	WB	WD	VH	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	4610	4830	4830	4830
<b>Ti</b>	Intermittent torque	Nm	3630	3630	3710	3630
<b>Tc</b>	Continuous torque	Nm	2720	2720	2800	2720
<b>Ts</b>	Standstill torque	Nm	2220	2220	2280	2220
<b>lp</b>	Peak current	Arms	80.7	181	270	362
<b>li</b>	Intermittent current	Arms	52.8	106	164	211
<b>lc</b>	Continuous current	Arms	33.4	66.8	104	134
<b>ls</b>	Standstill current	Arms	25.3	50.6	78.8	101
<b>ns</b>	Rated low speed	rpm	0.12	0.12	0.12	0.12
<b>nm</b>	Maximum speed without flux weakening	rpm	66.8	134	200	268
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	181	288	370	450
<b>ton,p</b>	Maximum ON time for peak cycle	s	6.9	4.7	5.6	4.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.7	2.7	2.7	2.7
<b>Pp</b>	Power dissipation @ lp	W	58000	74500	69200	74500
<b>Pi</b>	Power dissipation @ li	W	31200	31200	31800	31200
<b>Pc</b>	Power dissipation @ lc	W	12500	12500	12700	12500
<b>Td</b>	Max. detent torque (average to peak)	Nm	30	30	30	30

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	103	51.7	34.6	25.9
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	59.4	29.7	19.8	14.8
<b>Km</b>	Motor constant	Nm/√W	36.3	36.3	37.5	36.3
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	5.43	1.36	0.569	0.339
<b>Ld/Lq</b>	Electrical inductance (*)	mH	61.5 / 50.9	15.4 / 12.7	6.88 / 5.59	3.84 / 3.18
<b>lsc</b>	Maximum short-circuit current	Arms	25.3	50.7	75.8	101
<b>nb</b>	Base speed	rpm	32.5	107	172	240
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	12.5	80.8	143	205
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	46.4	89.6	127
<b>nn</b>	Rated speed	rpm	23.4	93.9	157	221
<b>Tn</b>	Rated torque	Nm	2620	1620	1310	1110
<b>In</b>	Rated current	Arms	33.1	36.1	43.0	49.1
<b>rth</b>	Thermal time constant	s	113	113	114	113
<b>Rth</b>	Thermal resistance	K/W	0.00749	0.00749	0.00741	0.00749
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	1.08	1.08	1.08	1.08
<b>mr</b>	Rotor mass	kg	32.6	32.6	32.6	32.6
<b>ms</b>	Stator mass	kg	111	111	112	111

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.480	0.480	0.480	0.480
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	38	38	39	38
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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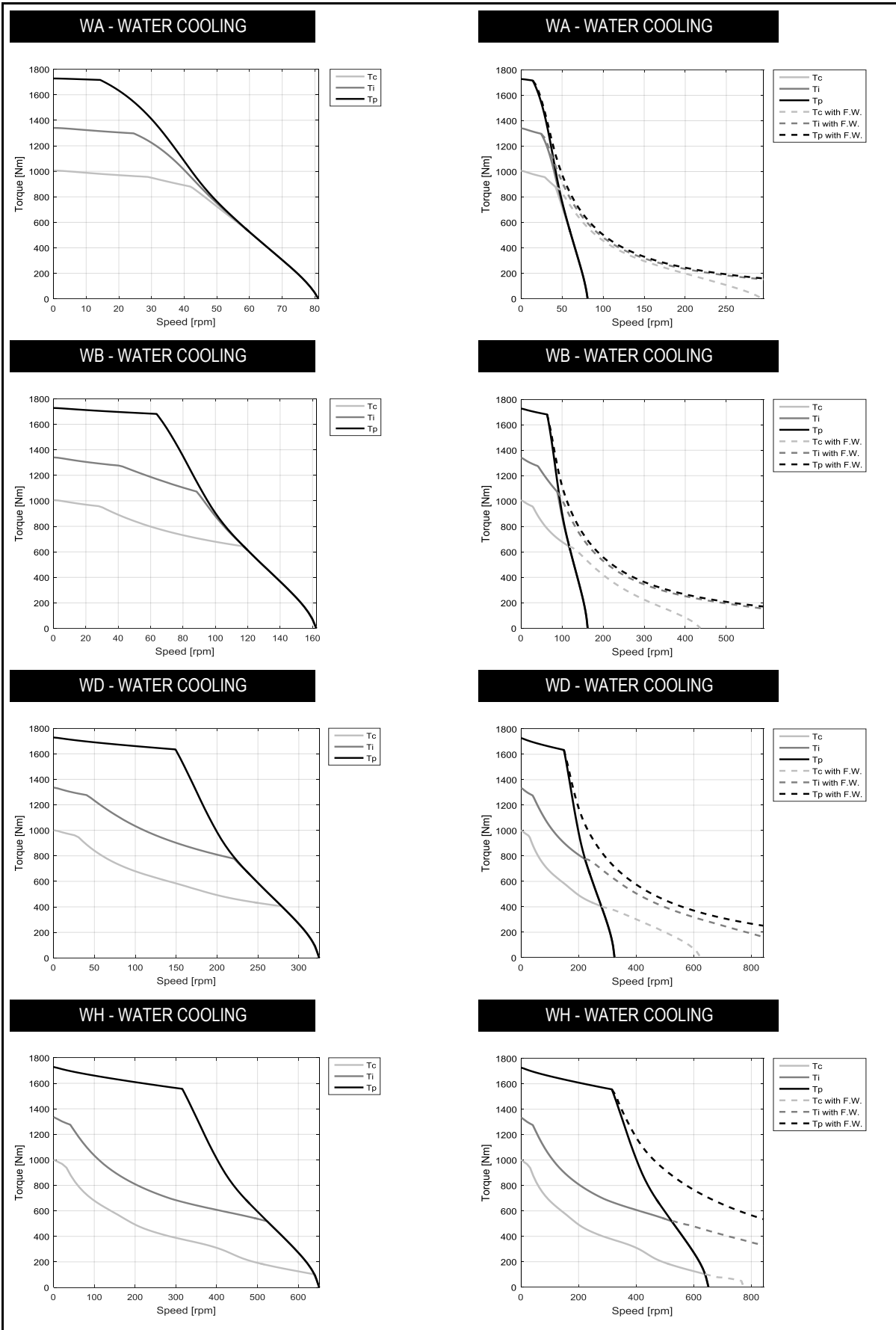
MOTOR PERFORMANCE		Winding codes	WA	WB	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	1730	1730	1730	1730
<b>Ti</b>	Intermittent torque	Nm	1340	1340	1340	1340
<b>Tc</b>	Continuous torque	Nm	1010	1010	1000	1000
<b>Ts</b>	Standstill torque	Nm	817	817	818	818
<b>lp</b>	Peak current	Arms	38.1	76.3	153	305
<b>li</b>	Intermittent current	Arms	23.8	47.6	94.6	189
<b>lc</b>	Continuous current	Arms	15.1	30.1	59.8	120
<b>ls</b>	Standstill current	Arms	11.4	22.8	45.7	91.3
<b>ns</b>	Rated low speed	rpm	0.10	0.10	0.10	0.10
<b>nm</b>	Maximum speed without flux weakening	rpm	81.1	162	325	651
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	293	437	625	774
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	11	11	11
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	4.2	4.2
<b>Pp</b>	Power dissipation @ lp	W	22500	22500	22500	22500
<b>Pi</b>	Power dissipation @ li	W	11200	11200	11000	11000
<b>Pc</b>	Power dissipation @ lc	W	4480	4480	4390	4390
<b>Td</b>	Max. detent torque (average to peak)	Nm	14	14	14	14

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	84.9	42.5	21.2	10.6
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	48.9	24.5	12.2	6.12
<b>Km</b>	Motor constant	Nm/√W	22.8	22.8	22.8	22.8
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	9.26	2.31	0.579	0.145
<b>Ld/Lq</b>	Electrical inductance (*)	mH	135 / 109	33.8 / 27.3	8.45 / 6.84	2.11 / 1.71
<b>lsc</b>	Maximum short-circuit current	Arms	9.49	19.0	38.0	75.9
<b>nb</b>	Base speed	rpm	41.9	117	279	638
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	24.5	88.4	221	524
<b>nb,p</b>	Base speed at peak duty cycle	rpm	14.3	63.7	149	316
<b>nn</b>	Rated speed	rpm	34.0	102	254	605
<b>Tn</b>	Rated torque	Nm	925	675	428	122
<b>In</b>	Rated current	Arms	14.2	19.0	23.5	16.2
<b>rth</b>	Thermal time constant	s	136	136	136	136
<b>Rth</b>	Thermal resistance	K/W	0.0235	0.0235	0.0235	0.0235
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.470	0.470	0.470	0.470
<b>mr</b>	Rotor mass	kg	9.77	9.77	9.77	9.77
<b>ms</b>	Stator mass	kg	49.8	49.8	49.8	49.8

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.180	0.180	0.180	0.180
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	14	14	14	14
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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MOTOR PERFORMANCE		Winding codes	WA	WB	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	2420	2420	2420	2420
<b>Ti</b>	Intermittent torque	Nm	1930	1930	1900	1900
<b>Tc</b>	Continuous torque	Nm	1450	1450	1420	1420
<b>Ts</b>	Standstill torque	Nm	1180	1180	1180	1180
<b>Ip</b>	Peak current	Arms	36.8	73.6	147	294
<b>Ii</b>	Intermittent current	Arms	24.4	48.8	94.6	189
<b>Ic</b>	Continuous current	Arms	15.4	30.8	59.8	120
<b>Is</b>	Standstill current	Arms	11.7	23.4	46.7	93.4
<b>ns</b>	Rated low speed	rpm	0.10	0.10	0.10	0.10
<b>nm</b>	Maximum speed without flux weakening	rpm	57.9	116	232	465
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	200	296	450	596
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	12	12	12
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	7.8	7.8
<b>Pp</b>	Power dissipation @ Ip	W	26500	26500	26500	26500
<b>Pi</b>	Power dissipation @ Ii	W	15000	15000	13700	13700
<b>Pc</b>	Power dissipation @ Ic	W	5990	5990	5500	5500
<b>Td</b>	Max. detent torque (average to peak)	Nm	20	20	20	20

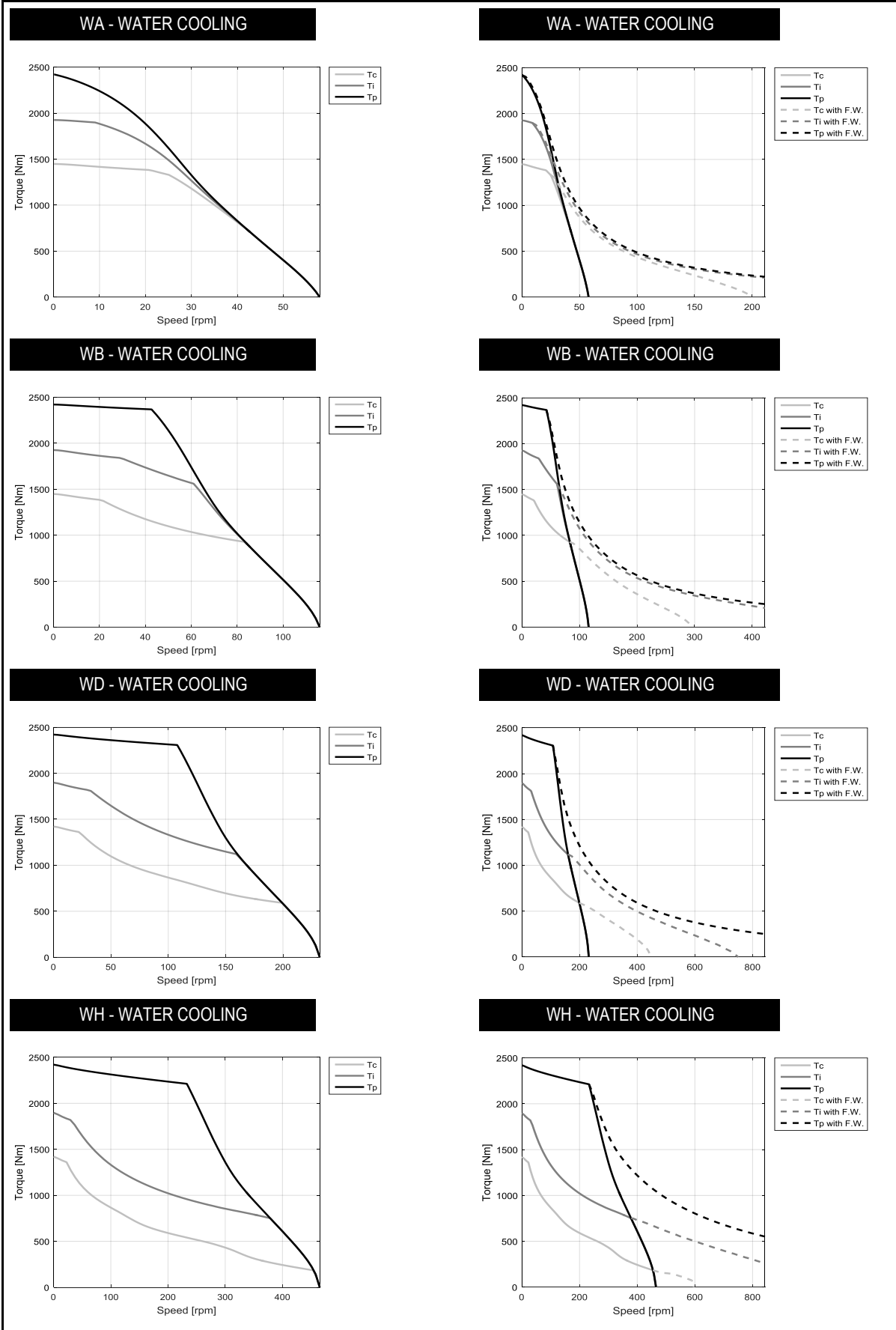
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	119	59.6	29.8	14.9
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	68.5	34.2	17.1	8.56
<b>Km</b>	Motor constant	Nm/√W	28.3	28.3	28.3	28.3
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	11.8	2.96	0.740	0.185
<b>Ld/Lq</b>	Electrical inductance (*)	mH	180 / 144	44.9 / 36.1	11.2 / 9.15	2.80 / 2.29
<b>Isc</b>	Maximum short-circuit current	Arms	10.0	20.0	40.1	80.1
<b>nb</b>	Base speed	rpm	24.7	82.9	199	454
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	9.05	61.0	159	379
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.164	42.7	108	233
<b>nn</b>	Rated speed	rpm	18.7	71.7	181	430
<b>Tn</b>	Rated torque	Nm	1390	975	623	210
<b>In</b>	Rated current	Arms	15.3	19.4	24.0	18.3
<b>rth</b>	Thermal time constant	s	134	134	134	134
<b>Rth</b>	Thermal resistance	K/W	0.0175	0.0175	0.0175	0.0175
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.659	0.659	0.659	0.659
<b>mr</b>	Rotor mass	kg	13.7	13.7	13.7	13.7
<b>ms</b>	Stator mass	kg	62.1	62.1	62.1	62.1

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.240	0.240	0.240	0.240
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	18	18	17	17
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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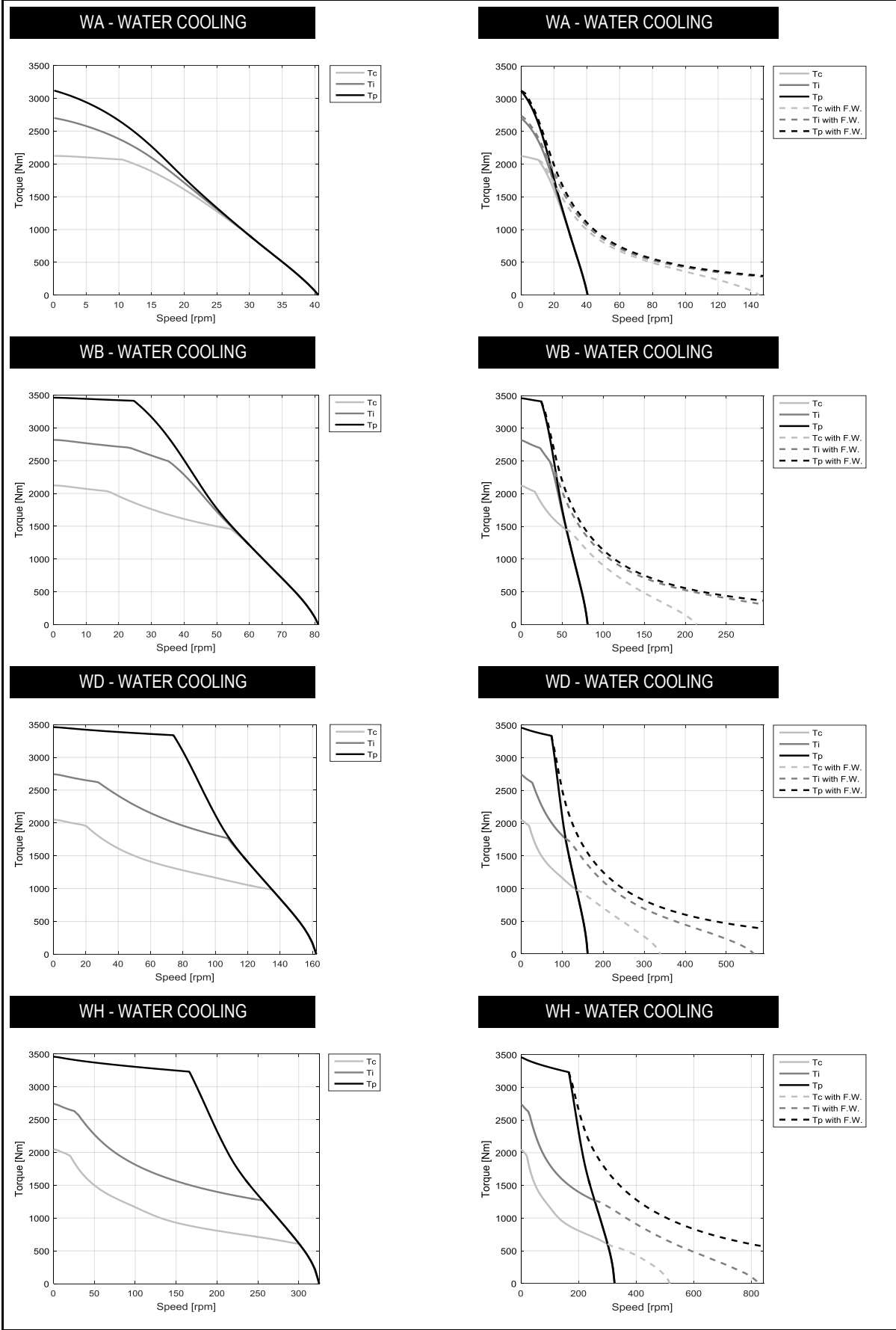
MOTOR PERFORMANCE		Winding codes	WA	WB	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	3120	3460	3460	3460
<b>Ti</b>	Intermittent torque	Nm	2700	2820	2740	2740
<b>Tc</b>	Continuous torque	Nm	2120	2120	2050	2050
<b>Ts</b>	Standstill torque	Nm	1730	1730	1740	1740
<b>lp</b>	Peak current	Arms	28.7	71.7	143	287
<b>li</b>	Intermittent current	Arms	22.9	50.0	94.6	189
<b>lc</b>	Continuous current	Arms	15.8	31.6	59.8	120
<b>ls</b>	Standstill current	Arms	12.0	24.0	47.9	95.8
<b>ns</b>	Rated low speed	rpm	0.11	0.11	0.11	0.11
<b>nm</b>	Maximum speed without flux weakening	rpm	40.5	81.1	162	325
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	145	214	339	518
<b>ton,p</b>	Maximum ON time for peak cycle	s	5.7	12	13	13
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	18	2.9	11	11
<b>Pp</b>	Power dissipation @ lp	W	20600	33100	33100	33100
<b>Pi</b>	Power dissipation @ li	W	16500	20900	17900	17900
<b>Pc</b>	Power dissipation @ lc	W	8350	8350	7160	7160
<b>Td</b>	Max. detent torque (average to peak)	Nm	28	28	28	28

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	170	85.2	42.6	21.3
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	97.9	48.9	24.5	12.2
<b>Km</b>	Motor constant	Nm/√W	35.0	35.0	35.0	35.0
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	15.8	3.94	0.985	0.246
<b>Ld/Lq</b>	Electrical inductance (*)	mH	244 / 195	61.0 / 48.7	15.2 / 12.5	3.81 / 3.13
<b>lsc</b>	Maximum short-circuit current	Arms	10.5	21.1	42.1	84.3
<b>nb</b>	Base speed	rpm	10.5	54.3	135	301
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	0.00	35.2	108	256
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	24.6	74.1	166
<b>nn</b>	Rated speed	rpm	6.88	46.0	121	279
<b>Tn</b>	Rated torque	Nm	2090	1540	1050	654
<b>In</b>	Rated current	Arms	15.8	21.7	28.0	36.0
<b>rth</b>	Thermal time constant	s	126	126	126	126
<b>Rth</b>	Thermal resistance	K/W	0.0123	0.0123	0.0123	0.0123
<b>2p</b>	Number of poles	-	88	88	88	88
<b>J</b>	Rotor inertia	kg·m²	0.933	0.933	0.933	0.933
<b>mr</b>	Rotor mass	kg	19.4	19.4	19.4	19.4
<b>ms</b>	Stator mass	kg	78.8	78.8	78.8	78.8

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.320	0.320	0.320	0.320
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	26	26	22	22
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	3.0

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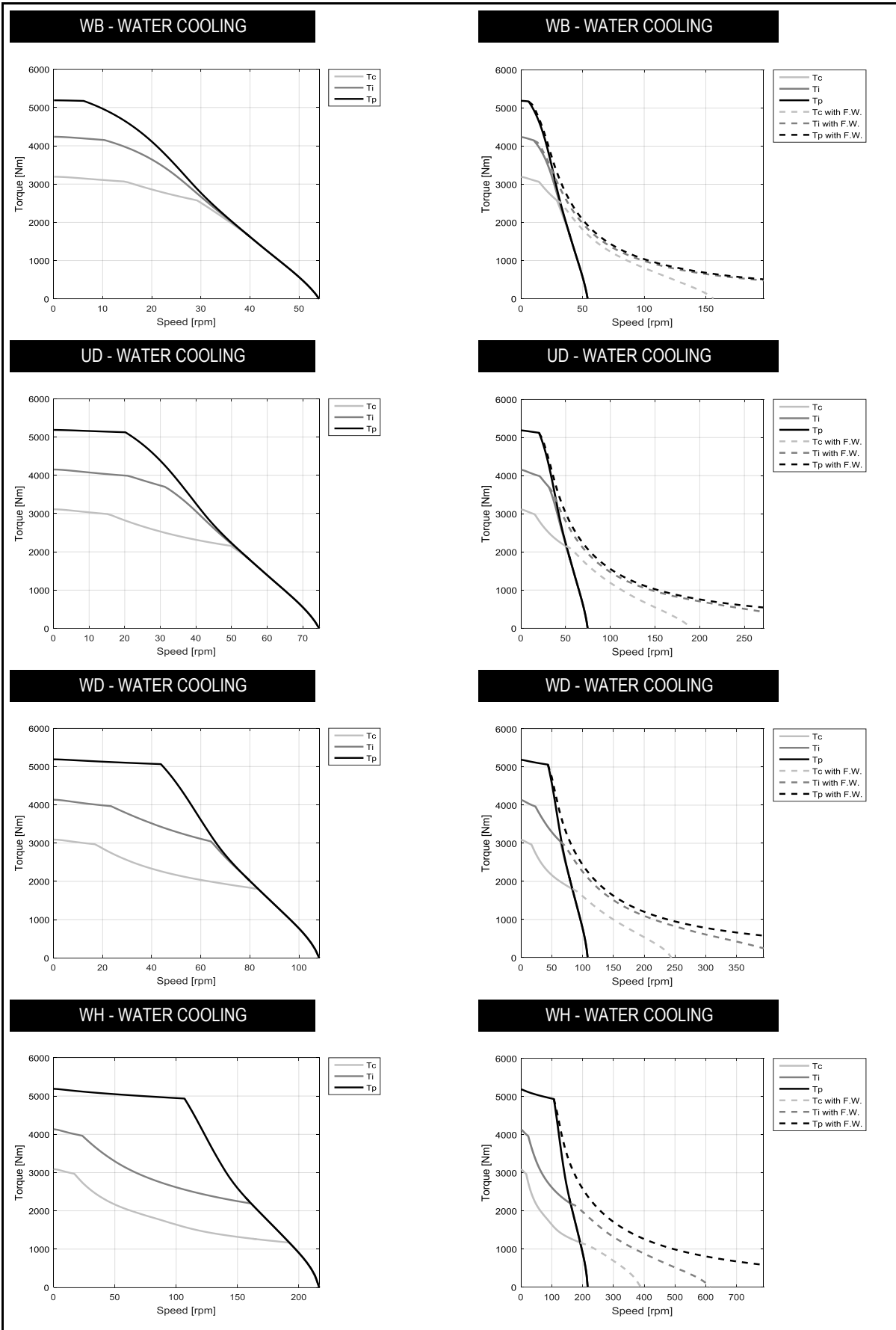
MOTOR PERFORMANCE		Winding codes	WB	UD	WD	WH
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	5190	5190	5190	5190
<b>Ti</b>	Intermittent torque	Nm	4240	4150	4130	4130
<b>Tc</b>	Continuous torque	Nm	3190	3110	3090	3090
<b>Ts</b>	Standstill torque	Nm	2600	2530	2610	2610
<b>lp</b>	Peak current	Arms	70.7	97.5	141	283
<b>li</b>	Intermittent current	Arms	49.8	66.2	94.6	189
<b>lc</b>	Continuous current	Arms	31.5	41.9	59.8	120
<b>ls</b>	Standstill current	Arms	23.9	31.7	47.8	95.5
<b>ns</b>	Rated low speed	rpm	0.11	0.11	0.11	0.11
<b>nm</b>	Maximum speed without flux weakening	rpm	54.1	74.6	108	217
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	156	190	244	391
<b>ton,p</b>	Maximum ON time for peak cycle	s	12	10	12	12
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	9.4	9.4
<b>Pp</b>	Power dissipation @ lp	W	45700	48800	45700	45700
<b>Pi</b>	Power dissipation @ li	W	29300	28800	25400	25400
<b>Pc</b>	Power dissipation @ lc	W	11700	11500	10100	10100
<b>Td</b>	Max. detent torque (average to peak)	Nm	43	43	43	43

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

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.450	0.450	0.450	0.450
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	36	36	31	31
<b>Δpw</b>	Max. pressure drop at qw	bar	4.0	4.0	4.0	4.0

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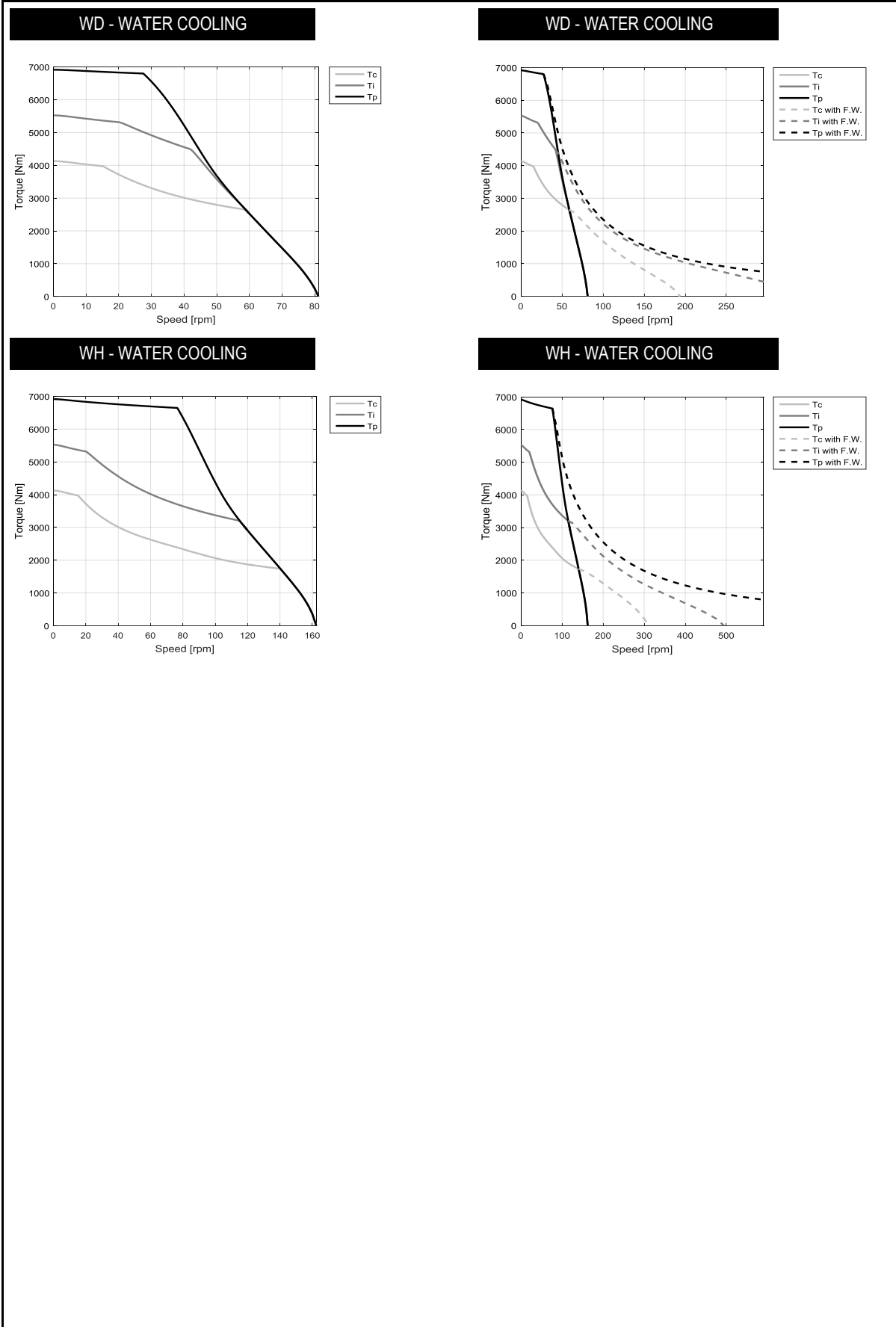
MOTOR PERFORMANCE		Winding codes	WD	WH		
		UNIT	WATER COOLING	WATER COOLING		
<b>Tp</b>	Peak torque	Nm	6920	6920		
<b>Ti</b>	Intermittent torque	Nm	5520	5520		
<b>Tc</b>	Continuous torque	Nm	4130	4130		
<b>Ts</b>	Standstill torque	Nm	3450	3450		
<b>lp</b>	Peak current	Arms	140	280		
<b>li</b>	Intermittent current	Arms	94.6	189		
<b>lc</b>	Continuous current	Arms	59.8	120		
<b>ls</b>	Standstill current	Arms	47.1	94.3		
<b>ns</b>	Rated low speed	rpm	0.11	0.11		
<b>nm</b>	Maximum speed without flux weakening	rpm	81.2	162		
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	194	310		
<b>ton,p</b>	Maximum ON time for peak cycle	s	10	10		
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	6.7	6.7		
<b>Pp</b>	Power dissipation @ lp	W	58500	58500		
<b>Pi</b>	Power dissipation @ li	W	33100	33100		
<b>Pc</b>	Power dissipation @ lc	W	13200	13200		
<b>Td</b>	Max. detent torque (average to peak)	Nm	57	57		

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	85.3	42.7		
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	48.9	24.5		
<b>Km</b>	Motor constant	Nm/√W	51.4	51.4		
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	1.84	0.459		
<b>Ld/Lq</b>	Electrical inductance (*)	mH	30.1 / 24.8	7.53 / 6.20		
<b>lsc</b>	Maximum short-circuit current	Arms	42.6	85.3		
<b>nb</b>	Base speed	rpm	58.5	140		
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	41.9	115		
<b>nb,p</b>	Base speed at peak duty cycle	rpm	27.5	76.5		
<b>nn</b>	Rated speed	rpm	50.5	128		
<b>Tn</b>	Rated torque	Nm	2790	1810		
<b>In</b>	Rated current	Arms	37.8	48.0		
<b>rth</b>	Thermal time constant	s	127	127		
<b>Rth</b>	Thermal resistance	K/W	0.00642	0.00642		
<b>2p</b>	Number of poles	-	88	88		
<b>J</b>	Rotor inertia	kg·m²	1.89	1.89		
<b>mr</b>	Rotor mass	kg	39.2	39.2		
<b>ms</b>	Stator mass	kg	140	140		

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600		
<b>Di</b>	Intermittent duty cycle	%	40	40		
<b>Dp</b>	Peak duty cycle	%	5.0	5.0		
<b>Sr</b>	Rotor exchange surface	m²	0.580	0.580		
<b>θamb</b>	Ambient temperature	°C	20	20		
<b>θmax</b>	Maximum coil temperature	°C	130	130		
<b>θw</b>	Inlet water temperature	°C	20	20		
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0		
<b>qw</b>	Minimum water flow for Δθw	l/min	41	41		
<b>Δpw</b>	Max. pressure drop at qw	bar	4.0	4.0		

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MOTOR PERFORMANCE		Winding codes	UB	WB	WC	WL
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	3830	3880	3880	3880
<b>Ti</b>	Intermittent torque	Nm	2790	2840	2840	2840
<b>Tc</b>	Continuous torque	Nm	2070	2110	2110	2110
<b>Ts</b>	Standstill torque	Nm	1670	1710	1710	1710
<b>lp</b>	Peak current	Arms	54.4	81.7	122	490
<b>li</b>	Intermittent current	Arms	30.0	44.7	67.1	268
<b>lc</b>	Continuous current	Arms	19.0	28.3	42.4	170
<b>ls</b>	Standstill current	Arms	14.4	21.4	32.1	129
<b>ns</b>	Rated low speed	rpm	0.067	0.065	0.065	0.065
<b>nm</b>	Maximum speed without flux weakening	rpm	51.1	74.1	111	446
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	186	246	308	534
<b>ton,p</b>	Maximum ON time for peak cycle	s	8.1	8.3	8.3	8.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	3.0	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	39200	39900	39900	39900
<b>Pi</b>	Power dissipation @ li	W	14800	14800	14800	14800
<b>Pc</b>	Power dissipation @ lc	W	5900	5930	5930	5930
<b>Td</b>	Max. detent torque (average to peak)	Nm	25	25	25	25

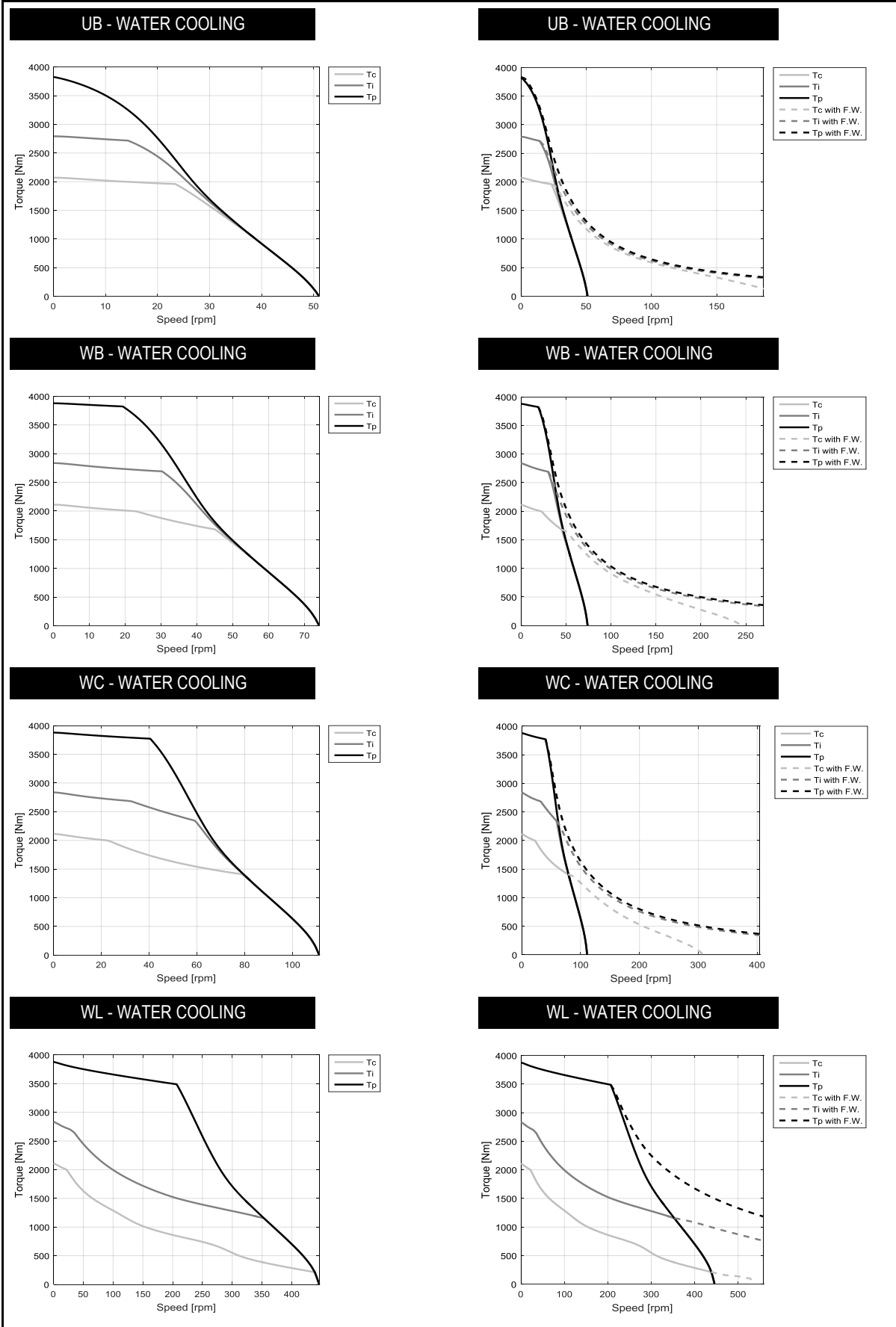
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	135	93.0	62.0	15.5
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	77.7	53.6	35.7	8.93
<b>Km</b>	Motor constant	Nm/√W	39.7	40.7	40.7	40.7
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	7.68	3.47	1.54	0.0964
<b>Ld/Lq</b>	Electrical inductance (*)	mH	107 / 90.2	50.8 / 42.3	22.6 / 18.8	1.41 / 1.18
<b>lsc</b>	Maximum short-circuit current	Arms	12.7	18.4	27.7	111
<b>nb</b>	Base speed	rpm	23.4	45.1	78.7	438
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	14.3	30.3	59.1	353
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	19.3	40.5	207
<b>nn</b>	Rated speed	rpm	19.7	38.3	68.6	415
<b>Tn</b>	Rated torque	Nm	1970	1760	1480	255
<b>In</b>	Rated current	Arms	18.8	23.6	28.4	23.2
<b>rth</b>	Thermal time constant	s	136	140	140	140
<b>Rth</b>	Thermal resistance	K/W	0.0179	0.0179	0.0179	0.0179
<b>2p</b>	Number of poles	-	132	132	132	132
<b>J</b>	Rotor inertia	kg·m²	1.66	1.66	1.66	1.66
<b>mr</b>	Rotor mass	kg	14.8	14.8	14.8	14.8
<b>ms</b>	Stator mass	kg	80.9	81.6	81.6	81.6

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.280	0.280	0.280	0.280
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	18	18	18	18
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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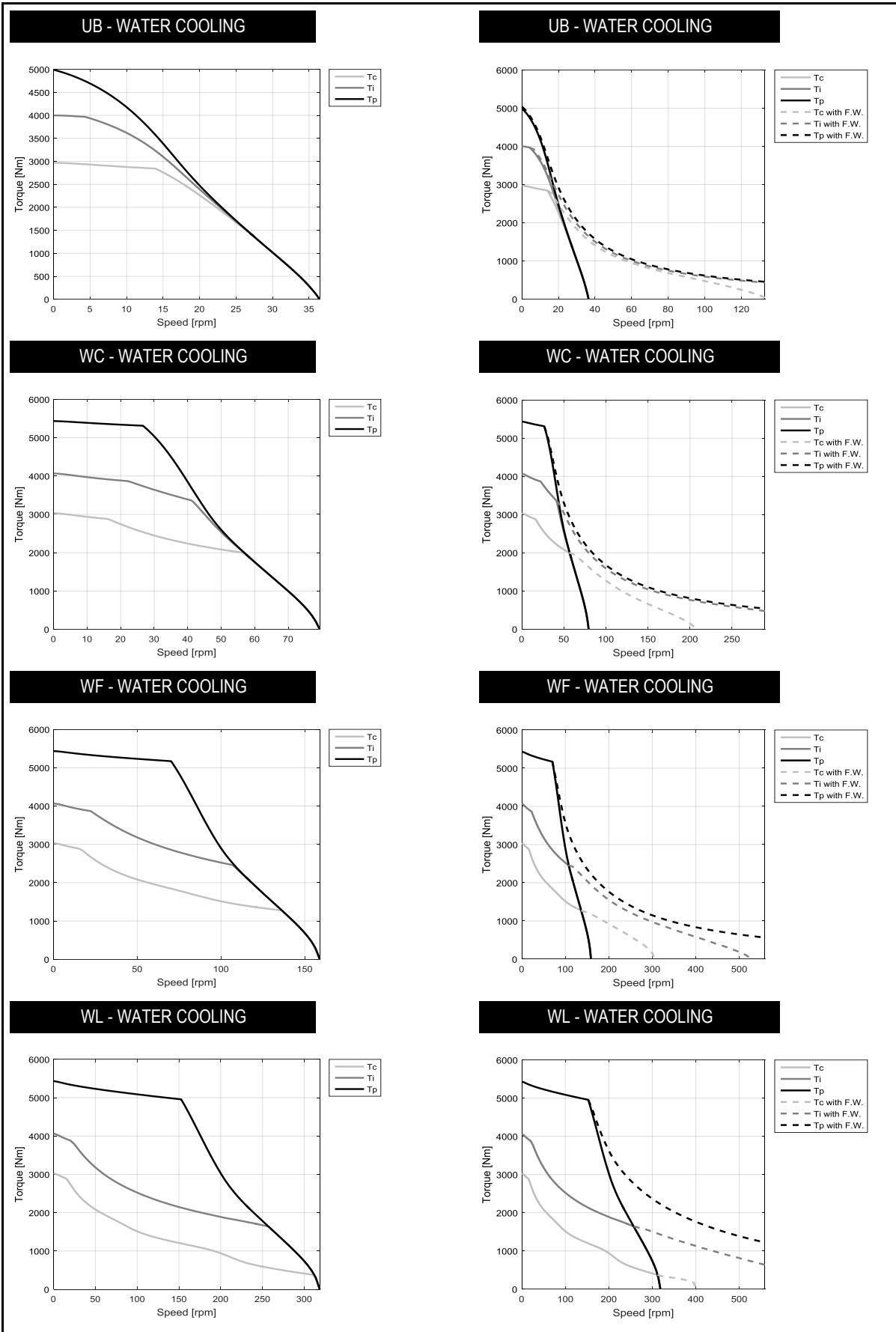
MOTOR PERFORMANCE		Winding codes	UB	WC	WF	WL
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	4990	5430	5430	5430
<b>Ti</b>	Intermittent torque	Nm	4000	4070	4070	4070
<b>Tc</b>	Continuous torque	Nm	2970	3030	3030	3030
<b>Ts</b>	Standstill torque	Nm	2390	2450	2450	2450
<b>lp</b>	Peak current	Arms	44.5	118	236	472
<b>li</b>	Intermittent current	Arms	30.5	68.4	137	273
<b>lc</b>	Continuous current	Arms	19.3	43.2	86.5	173
<b>ls</b>	Standstill current	Arms	14.6	32.8	65.5	131
<b>ns</b>	Rated low speed	rpm	0.068	0.066	0.066	0.066
<b>nm</b>	Maximum speed without flux weakening	rpm	36.5	79.4	159	319
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	133	207	305	400
<b>ton,p</b>	Maximum ON time for peak cycle	s	8.5	9.3	9.3	9.3
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	32000	46600	46600	46600
<b>Pi</b>	Power dissipation @ li	W	19600	19600	19600	19600
<b>Pc</b>	Power dissipation @ lc	W	7830	7860	7860	7860
<b>Td</b>	Max. detent torque (average to peak)	Nm	35	35	35	35

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	189	86.9	43.5	21.7
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	109	50.0	25.0	12.5
<b>Km</b>	Motor constant	Nm/√W	49.2	50.5	50.5	50.5
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	9.85	1.97	0.493	0.123
<b>Ld/Lq</b>	Electrical inductance (*)	mH	142 / 120	30.0 / 24.9	7.49 / 6.24	1.87 / 1.56
<b>lsc</b>	Maximum short-circuit current	Arms	13.4	29.2	58.4	117
<b>nb</b>	Base speed	rpm	13.9	56.2	136	312
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	4.34	41.1	107	257
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	26.7	70.2	153
<b>nn</b>	Rated speed	rpm	11.0	48.7	124	296
<b>Tn</b>	Rated torque	Nm	2870	2100	1340	426
<b>In</b>	Rated current	Arms	19.2	28.5	35.5	25.6
<b>rth</b>	Thermal time constant	s	134	138	138	138
<b>Rth</b>	Thermal resistance	K/W	0.0134	0.0134	0.0134	0.0134
<b>2p</b>	Number of poles	-	132	132	132	132
<b>J</b>	Rotor inertia	kg·m²	2.32	2.32	2.32	2.32
<b>mr</b>	Rotor mass	kg	20.8	20.8	20.8	20.8
<b>ms</b>	Stator mass	kg	98.7	99.5	99.5	99.5

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.360	0.360	0.360	0.360
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	24	24	24	24
<b>Δpw</b>	Max. pressure drop at qw	bar	2.0	2.0	2.0	2.0

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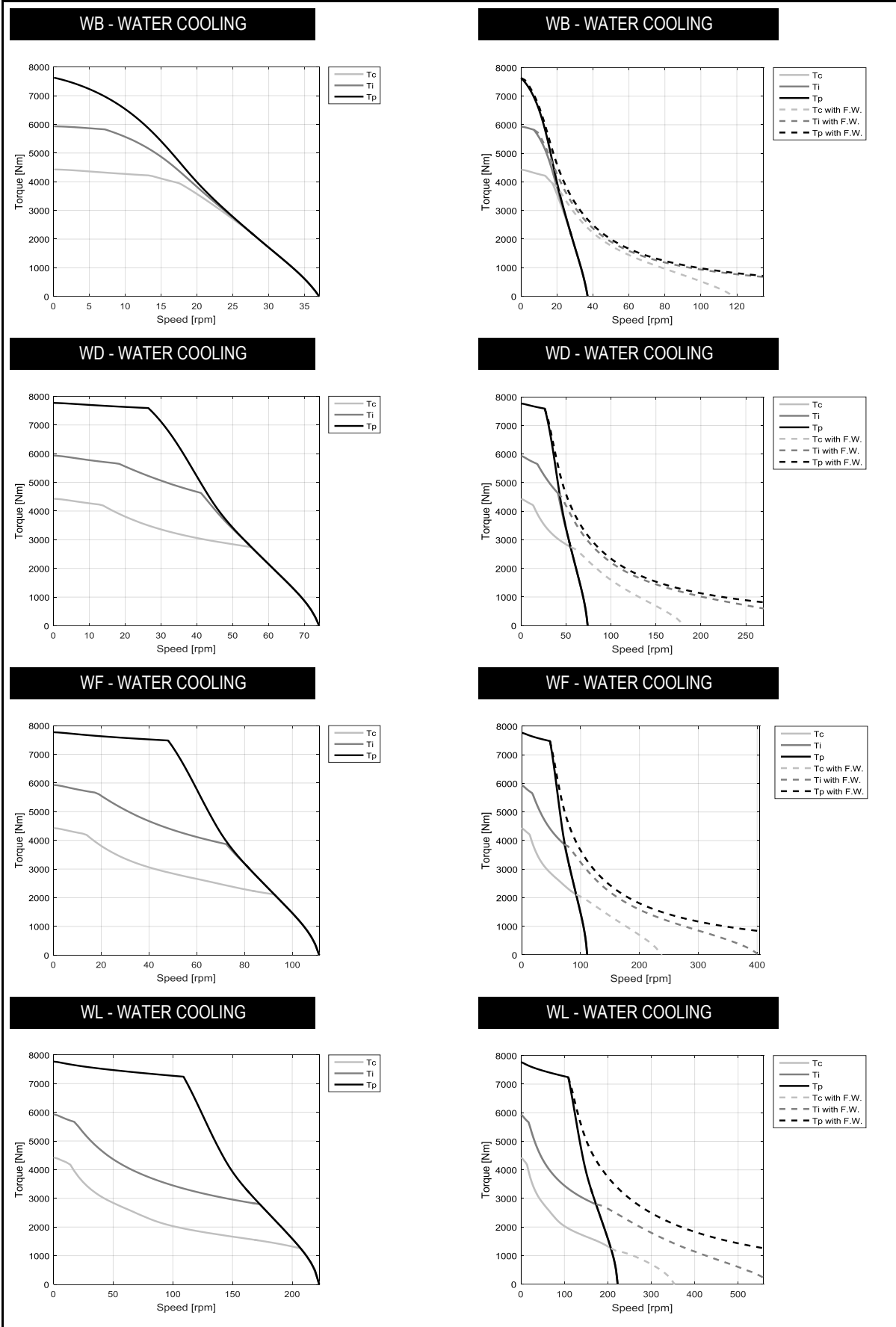
MOTOR PERFORMANCE		Winding codes	WB	WD	WF	WL
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	7630	7770	7770	7770
<b>Ti</b>	Intermittent torque	Nm	5930	5930	5930	5930
<b>Tc</b>	Continuous torque	Nm	4430	4430	4430	4430
<b>Ts</b>	Standstill torque	Nm	3580	3580	3580	3580
<b>lp</b>	Peak current	Arms	73.2	153	230	459
<b>li</b>	Intermittent current	Arms	46.5	92.9	139	279
<b>lc</b>	Continuous current	Arms	29.4	58.8	88.2	176
<b>ls</b>	Standstill current	Arms	22.3	44.5	66.8	134
<b>ns</b>	Rated low speed	rpm	0.069	0.069	0.069	0.069
<b>nm</b>	Maximum speed without flux weakening	rpm	37.0	74.1	111	223
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	118	180	238	354
<b>ton,p</b>	Maximum ON time for peak cycle	s	11	9.8	9.8	9.8
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	52700	58000	58000	58000
<b>Pi</b>	Power dissipation @ li	W	27100	27100	27100	27100
<b>Pc</b>	Power dissipation @ lc	W	10800	10800	10800	10800
<b>Td</b>	Max. detent torque (average to peak)	Nm	50	50	50	50

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	186	93.2	62.2	31.1
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	107	53.6	35.7	17.9
<b>Km</b>	Motor constant	Nm/√W	62.6	62.6	62.6	62.6
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	5.91	1.48	0.657	0.164
<b>Ld/Lq</b>	Electrical inductance (*)	mH	91.6 / 76.0	22.9 / 19.0	10.2 / 8.44	2.54 / 2.11
<b>lsc</b>	Maximum short-circuit current	Arms	20.5	40.9	61.4	123
<b>nb</b>	Base speed	rpm	17.4	55.2	92.4	207
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	7.17	40.9	72.3	173
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	26.5	48.0	109
<b>nn</b>	Rated speed	rpm	12.8	47.7	82.8	191
<b>Tn</b>	Rated torque	Nm	4230	2890	2250	1400
<b>In</b>	Rated current	Arms	29.1	35.9	41.0	52.7
<b>rth</b>	Thermal time constant	s	132	132	132	132
<b>Rth</b>	Thermal resistance	K/W	0.00955	0.00955	0.00955	0.00955
<b>2p</b>	Number of poles	-	132	132	132	132
<b>J</b>	Rotor inertia	kg·m²	3.29	3.29	3.29	3.29
<b>mr</b>	Rotor mass	kg	29.4	29.4	29.4	29.4
<b>ms</b>	Stator mass	kg	124	124	124	124

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.490	0.490	0.490	0.490
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	33	33	33	33
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	3.0

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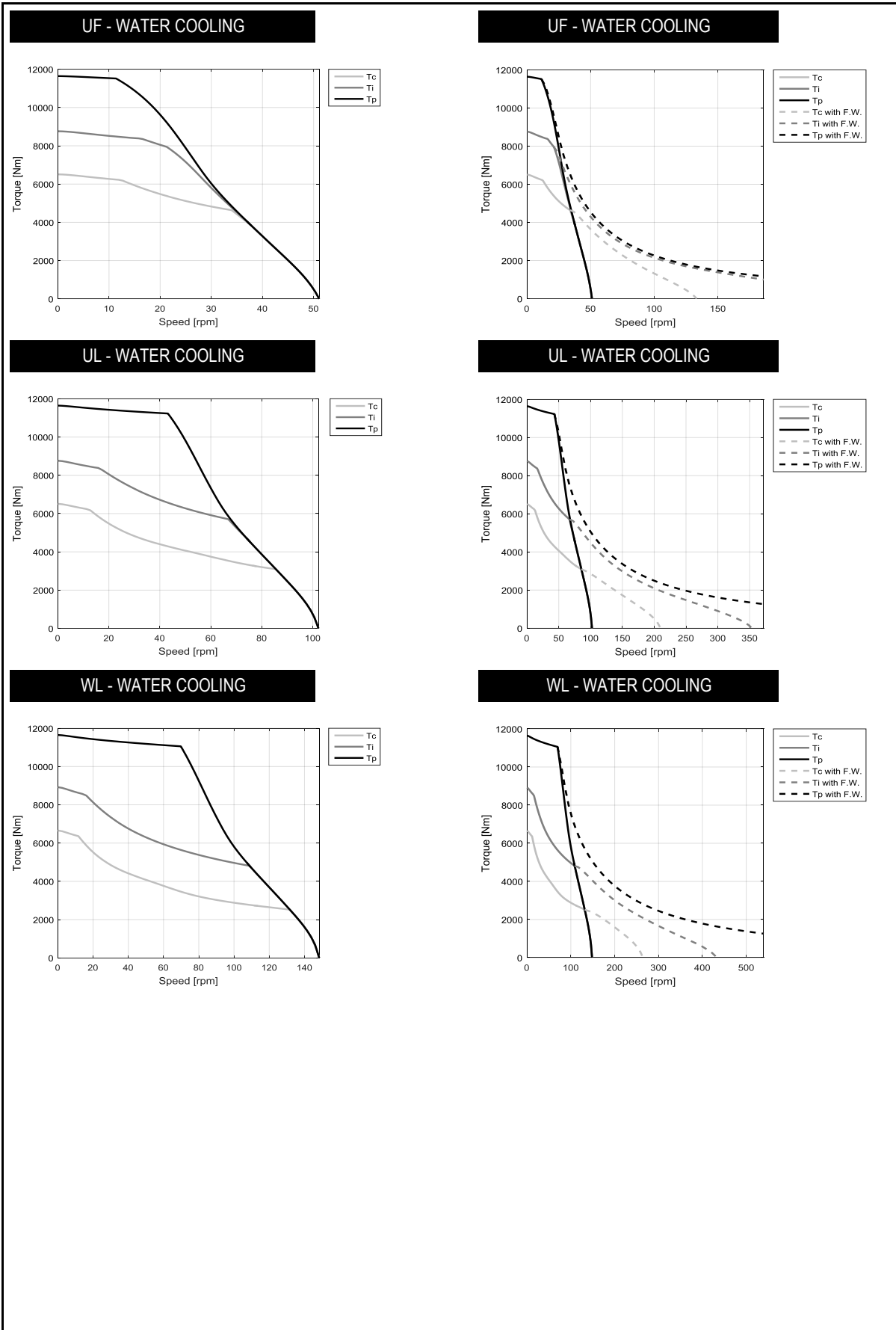
MOTOR PERFORMANCE		Winding codes	UF	UL	WL	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
<b>Tp</b>	Peak torque	Nm	11600	11600	11600	
<b>Ti</b>	Intermittent torque	Nm	8760	8760	8920	
<b>Tc</b>	Continuous torque	Nm	6510	6510	6660	
<b>Ts</b>	Standstill torque	Nm	5250	5250	5380	
<b>lp</b>	Peak current	Arms	156	312	452	
<b>li</b>	Intermittent current	Arms	92.7	185	278	
<b>lc</b>	Continuous current	Arms	58.6	117	176	
<b>ls</b>	Standstill current	Arms	44.4	88.9	133	
<b>ns</b>	Rated low speed	rpm	0.070	0.070	0.068	
<b>nm</b>	Maximum speed without flux weakening	rpm	51.1	102	148	
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	133	211	264	
<b>ton,p</b>	Maximum ON time for peak cycle	s	7.9	7.9	9.0	
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	
<b>Pp</b>	Power dissipation @ lp	W	85500	85500	80000	
<b>Pi</b>	Power dissipation @ li	W	37800	37800	38000	
<b>Pc</b>	Power dissipation @ lc	W	15100	15100	15200	
<b>Td</b>	Max. detent torque (average to peak)	Nm	75	75	75	

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	135	67.7	46.7	
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	77.7	38.9	26.8	
<b>Km</b>	Motor constant	Nm/√W	76.4	76.4	78.7	
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	2.09	0.523	0.234	
<b>Ld/Lq</b>	Electrical inductance (*)	mH	31.8 / 26.9	7.96 / 6.73	3.78 / 3.16	
<b>lsc</b>	Maximum short-circuit current	Arms	42.7	85.4	124	
<b>nb</b>	Base speed	rpm	33.8	85.5	132	
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	21.0	66.8	109	
<b>nb,p</b>	Base speed at peak duty cycle	rpm	11.4	43.2	69.8	
<b>nn</b>	Rated speed	rpm	28.7	76.9	121	
<b>Tn</b>	Rated torque	Nm	4890	3270	2630	
<b>In</b>	Rated current	Arms	42.6	54.4	64.4	
<b>rth</b>	Thermal time constant	s	130	130	133	
<b>Rth</b>	Thermal resistance	K/W	0.00663	0.00663	0.00661	
<b>2p</b>	Number of poles	-	132	132	132	
<b>J</b>	Rotor inertia	kg·m²	4.95	4.95	4.95	
<b>mr</b>	Rotor mass	kg	44.3	44.3	44.3	
<b>ms</b>	Stator mass	kg	167	167	169	

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	0.690	0.690	0.690	
<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	47	47	47	
<b>Δpw</b>	Max. pressure drop at qw	bar	5.0	5.0	5.0	

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MOTOR PERFORMANCE		Winding codes	WF	WL		
		UNIT	WATER COOLING	WATER COOLING		
<b>Tp</b>	Peak torque	Nm	15500	15500		
<b>Ti</b>	Intermittent torque	Nm	11900	11900		
<b>Tc</b>	Continuous torque	Nm	8840	8840		
<b>Ts</b>	Standstill torque	Nm	7140	7140		
<b>lp</b>	Peak current	Arms	224	448		
<b>li</b>	Intermittent current	Arms	138	275		
<b>lc</b>	Continuous current	Arms	87.0	174		
<b>ls</b>	Standstill current	Arms	65.9	132		
<b>ns</b>	Rated low speed	rpm	0.069	0.069		
<b>nm</b>	Maximum speed without flux weakening	rpm	55.6	111		
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	135	212		
<b>ton,p</b>	Maximum ON time for peak cycle	s	7.8	7.8		
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8		
<b>Pp</b>	Power dissipation @ lp	W	102000	102000		
<b>Pi</b>	Power dissipation @ li	W	48200	48200		
<b>Pc</b>	Power dissipation @ lc	W	19300	19300		
<b>Td</b>	Max. detent torque (average to peak)	Nm	100	100		

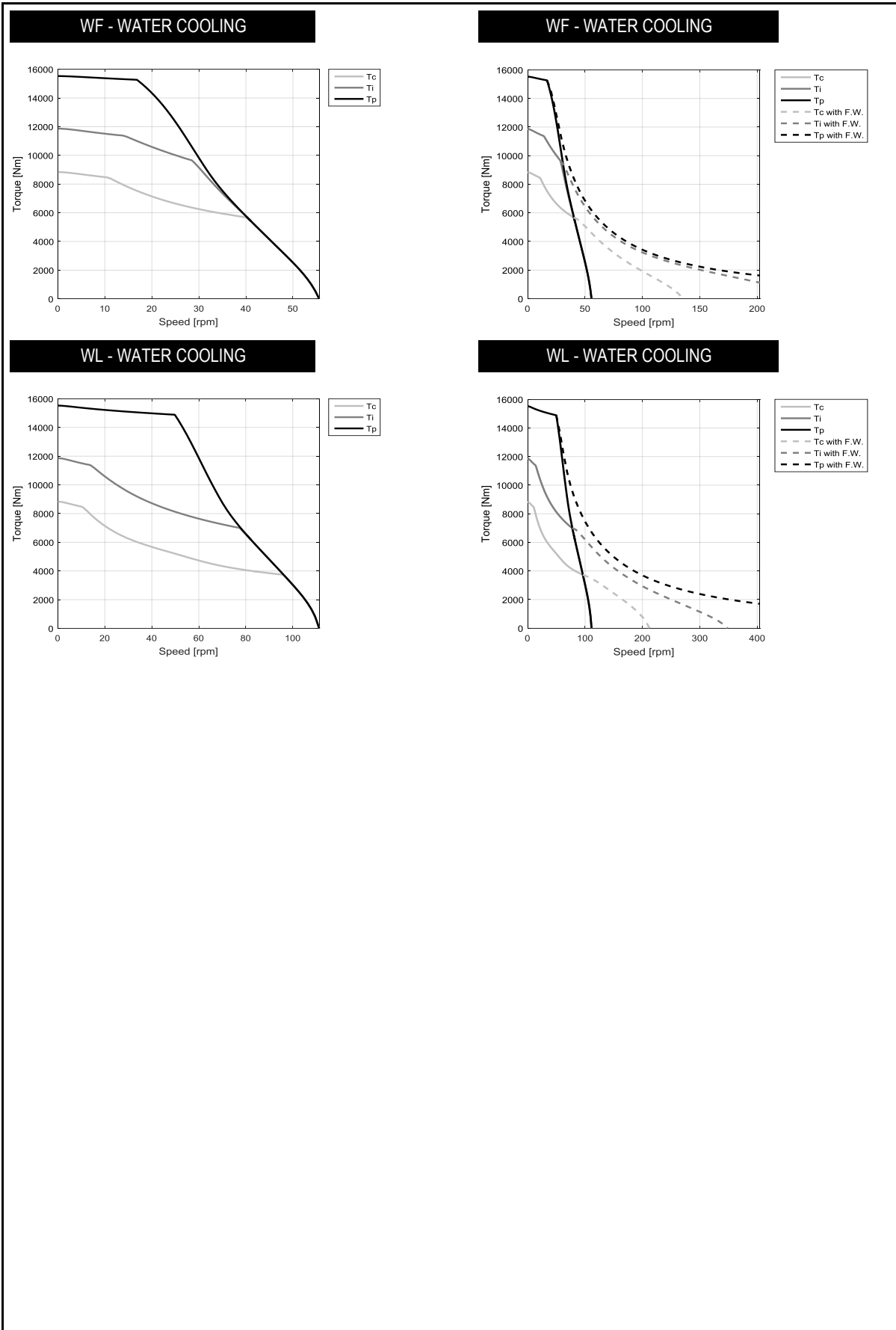
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	125	62.3		
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	71.4	35.7		
<b>Km</b>	Motor constant	Nm/√W	91.8	91.8		
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	1.23	0.306		
<b>Ld/Lq</b>	Electrical inductance (*)	mH	20.1 / 16.9	5.03 / 4.22		
<b>lsc</b>	Maximum short-circuit current	Arms	62.2	124		
<b>nb</b>	Base speed	rpm	40.0	96.1		
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	28.5	77.3		
<b>nb,p</b>	Base speed at peak duty cycle	rpm	16.8	49.8		
<b>nn</b>	Rated speed	rpm	34.5	87.6		
<b>Tn</b>	Rated torque	Nm	5970	3890		
<b>In</b>	Rated current	Arms	55.3	70.5		
<b>rth</b>	Thermal time constant	s	131	131		
<b>Rth</b>	Thermal resistance	K/W	0.00500	0.00500		
<b>2p</b>	Number of poles	-	132	132		
<b>J</b>	Rotor inertia	kg·m²	6.64	6.64		
<b>mr</b>	Rotor mass	kg	59.5	59.5		
<b>ms</b>	Stator mass	kg	211	211		

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600		
<b>Di</b>	Intermittent duty cycle	%	40	40		
<b>Dp</b>	Peak duty cycle	%	5.0	5.0		
<b>Sr</b>	Rotor exchange surface	m²	0.880	0.880		
<b>θamb</b>	Ambient temperature	°C	20	20		
<b>θmax</b>	Maximum coil temperature	°C	130	130		
<b>θw</b>	Inlet water temperature	°C	20	20		
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0		
<b>qw</b>	Minimum water flow for Δθw	l/min	59	59		
<b>Δpw</b>	Max. pressure drop at qw	bar	5.0	5.0		

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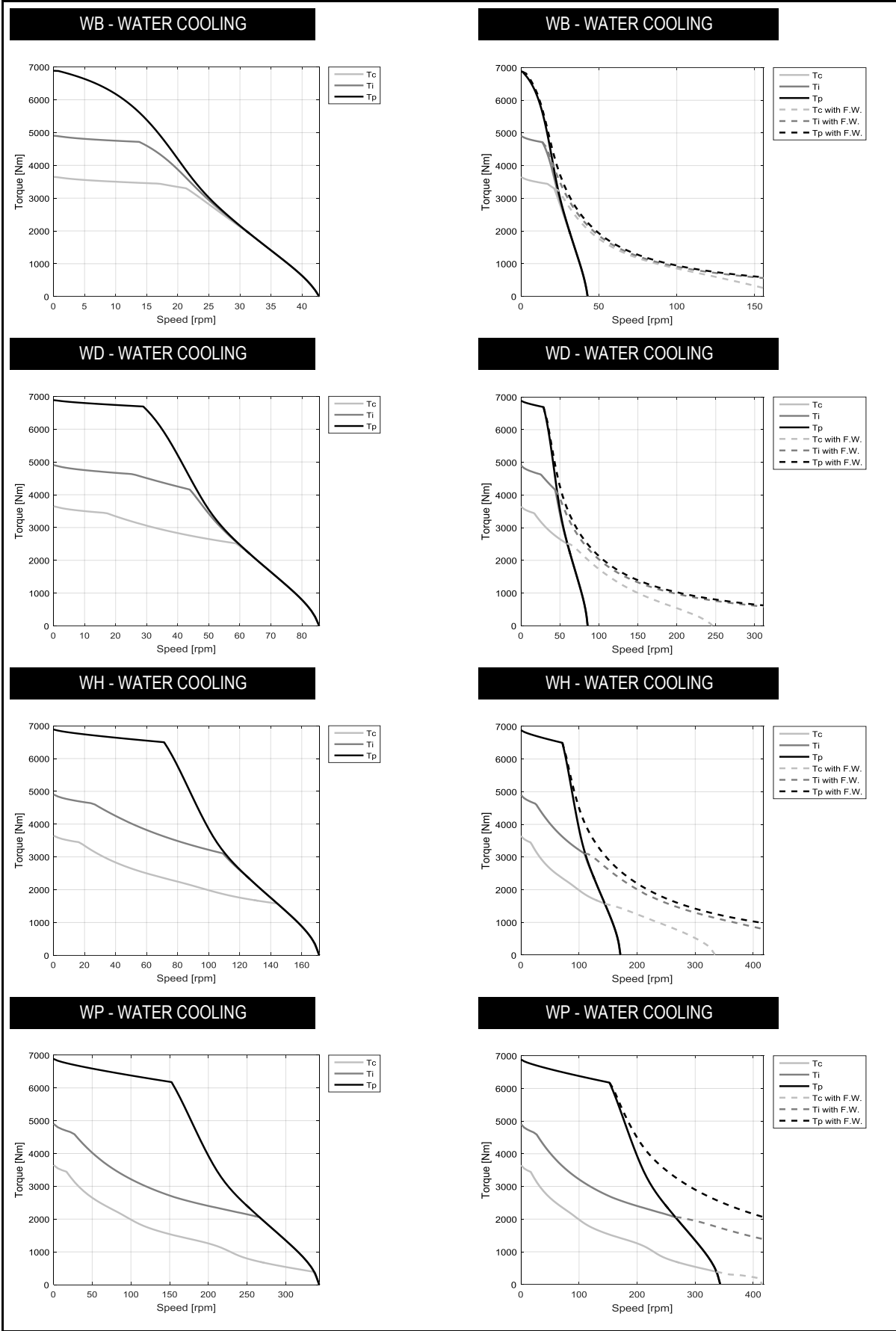
MOTOR PERFORMANCE		Winding codes	WB	WD	WH	WP
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	6890	6890	6890	6890
<b>Ti</b>	Intermittent torque	Nm	4900	4900	4900	4900
<b>Tc</b>	Continuous torque	Nm	3650	3650	3650	3650
<b>Ts</b>	Standstill torque	Nm	2950	2950	2950	2950
<b>lp</b>	Peak current	Arms	87.1	174	348	697
<b>li</b>	Intermittent current	Arms	44.4	88.8	178	355
<b>lc</b>	Continuous current	Arms	28.1	56.1	112	225
<b>ls</b>	Standstill current	Arms	21.3	42.5	85.1	170
<b>ns</b>	Rated low speed	rpm	0.047	0.047	0.047	0.047
<b>nm</b>	Maximum speed without flux weakening	rpm	42.8	85.6	171	343
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	156	246	335	415
<b>ton,p</b>	Maximum ON time for peak cycle	s	6.6	6.6	6.6	6.6
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	61800	61800	61800	61800
<b>Pi</b>	Power dissipation @ li	W	19500	19500	19500	19500
<b>Pc</b>	Power dissipation @ lc	W	7790	7790	7790	7790
<b>Td</b>	Max. detent torque (average to peak)	Nm	56	56	56	56

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	161	80.6	40.3	20.1
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	92.8	46.4	23.2	11.6
<b>Km</b>	Motor constant	Nm/√W	61.1	61.1	61.1	61.1
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	4.63	1.16	0.289	0.0723
<b>Ld/Lq</b>	Electrical inductance (*)	mH	67.9 / 56.8	17.0 / 14.2	4.24 / 3.55	1.06 / 0.888
<b>lsc</b>	Maximum short-circuit current	Arms	17.9	35.9	71.7	143
<b>nb</b>	Base speed	rpm	21.3	58.7	144	336
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	13.8	43.9	109	266
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.809	28.9	71.3	152
<b>nn</b>	Rated speed	rpm	17.5	51.0	130	319
<b>Tn</b>	Rated torque	Nm	3430	2630	1680	461
<b>In</b>	Rated current	Arms	27.5	39.3	48.5	31.9
<b>rth</b>	Thermal time constant	s	146	146	146	146
<b>Rth</b>	Thermal resistance	K/W	0.0136	0.0136	0.0136	0.0136
<b>2p</b>	Number of poles	-	176	176	176	176
<b>J</b>	Rotor inertia	kg·m²	4.94	4.94	4.94	4.94
<b>mr</b>	Rotor mass	kg	24.8	24.8	24.8	24.8
<b>ms</b>	Stator mass	kg	115	115	115	115

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.410	0.410	0.410	0.410
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	24	24	24	24
<b>Δpw</b>	Max. pressure drop at qw	bar	1.0	1.0	1.0	1.0

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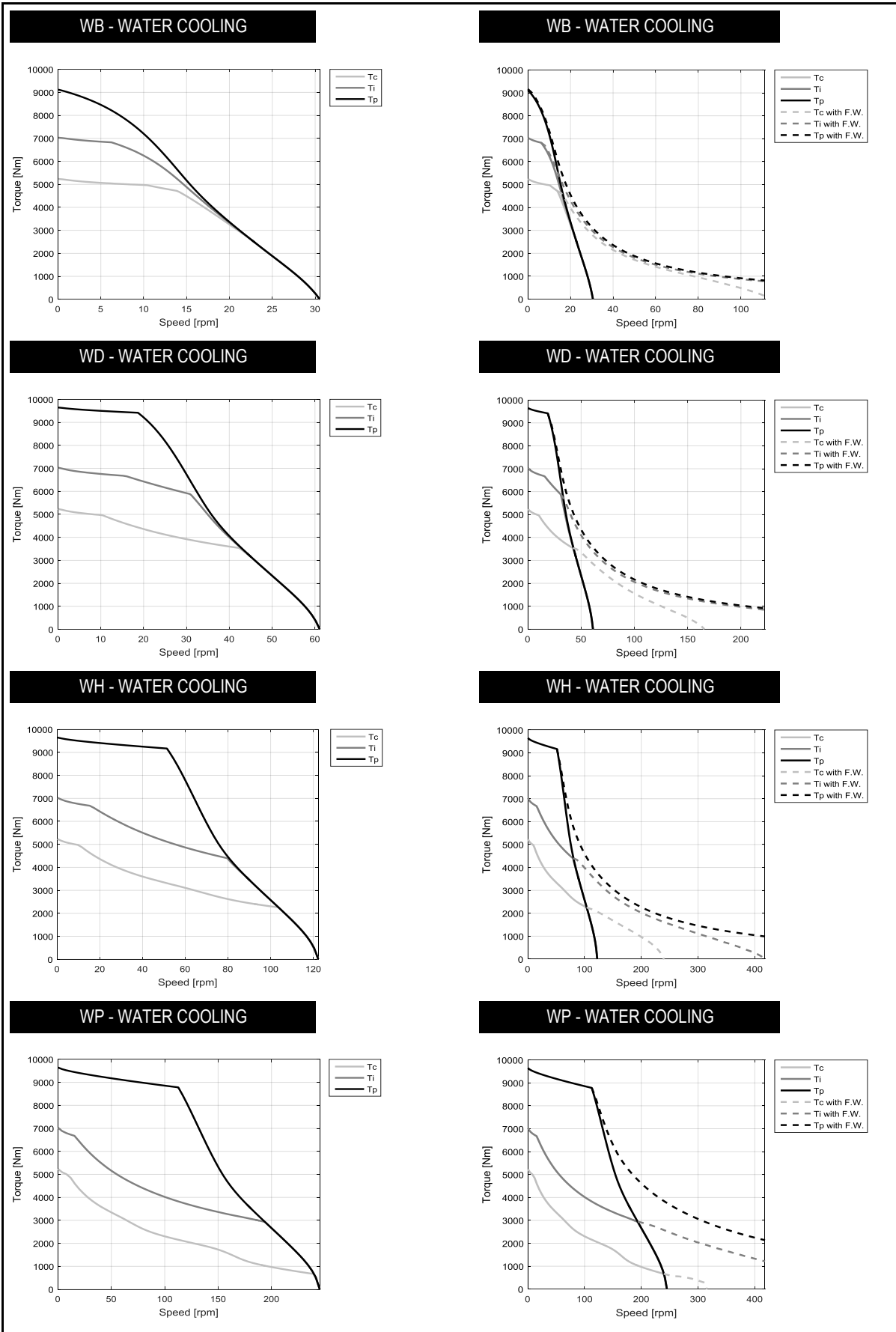
MOTOR PERFORMANCE		Winding codes	WB	WD	WH	WP
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	9120	9650	9650	9650
<b>Ti</b>	Intermittent torque	Nm	7030	7030	7030	7030
<b>Tc</b>	Continuous torque	Nm	5230	5230	5230	5230
<b>Ts</b>	Standstill torque	Nm	4230	4230	4230	4230
<b>lp</b>	Peak current	Arms	72.8	167	335	670
<b>li</b>	Intermittent current	Arms	45.2	90.5	181	362
<b>lc</b>	Continuous current	Arms	28.6	57.2	114	229
<b>ls</b>	Standstill current	Arms	21.7	43.3	86.7	173
<b>ns</b>	Rated low speed	rpm	0.047	0.047	0.047	0.047
<b>nm</b>	Maximum speed without flux weakening	rpm	30.5	61.1	122	245
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	111	166	240	315
<b>ton,p</b>	Maximum ON time for peak cycle	s	12	7.5	7.5	7.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	52300	71700	71700	71700
<b>Pi</b>	Power dissipation @ li	W	25800	25800	25800	25800
<b>Pc</b>	Power dissipation @ lc	W	10300	10300	10300	10300
<b>Td</b>	Max. detent torque (average to peak)	Nm	78	78	78	78

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	226	113	56.5	28.2
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	130	65.0	32.5	16.2
<b>Km</b>	Motor constant	Nm/√W	75.8	75.8	75.8	75.8
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	5.92	1.48	0.370	0.0924
<b>Ld/Lq</b>	Electrical inductance (*)	mH	90.0 / 75.4	22.5 / 18.8	5.63 / 4.71	1.41 / 1.18
<b>lsc</b>	Maximum short-circuit current	Arms	18.9	37.9	75.8	152
<b>nb</b>	Base speed	rpm	13.9	42.2	104	240
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	6.24	30.8	79.6	194
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	18.7	51.4	113
<b>nn</b>	Rated speed	rpm	10.5	36.6	93.7	227
<b>Tn</b>	Rated torque	Nm	4950	3700	2390	757
<b>In</b>	Rated current	Arms	28.2	38.8	48.5	34.8
<b>rth</b>	Thermal time constant	s	144	144	144	144
<b>Rth</b>	Thermal resistance	K/W	0.0102	0.0102	0.0102	0.0102
<b>2p</b>	Number of poles	-	176	176	176	176
<b>J</b>	Rotor inertia	kg·m²	6.96	6.96	6.96	6.96
<b>mr</b>	Rotor mass	kg	34.9	34.9	34.9	34.9
<b>ms</b>	Stator mass	kg	139	139	139	139

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.520	0.520	0.520	0.520
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	32	32	32	32
<b>Δpw</b>	Max. pressure drop at qw	bar	2.0	2.0	2.0	2.0

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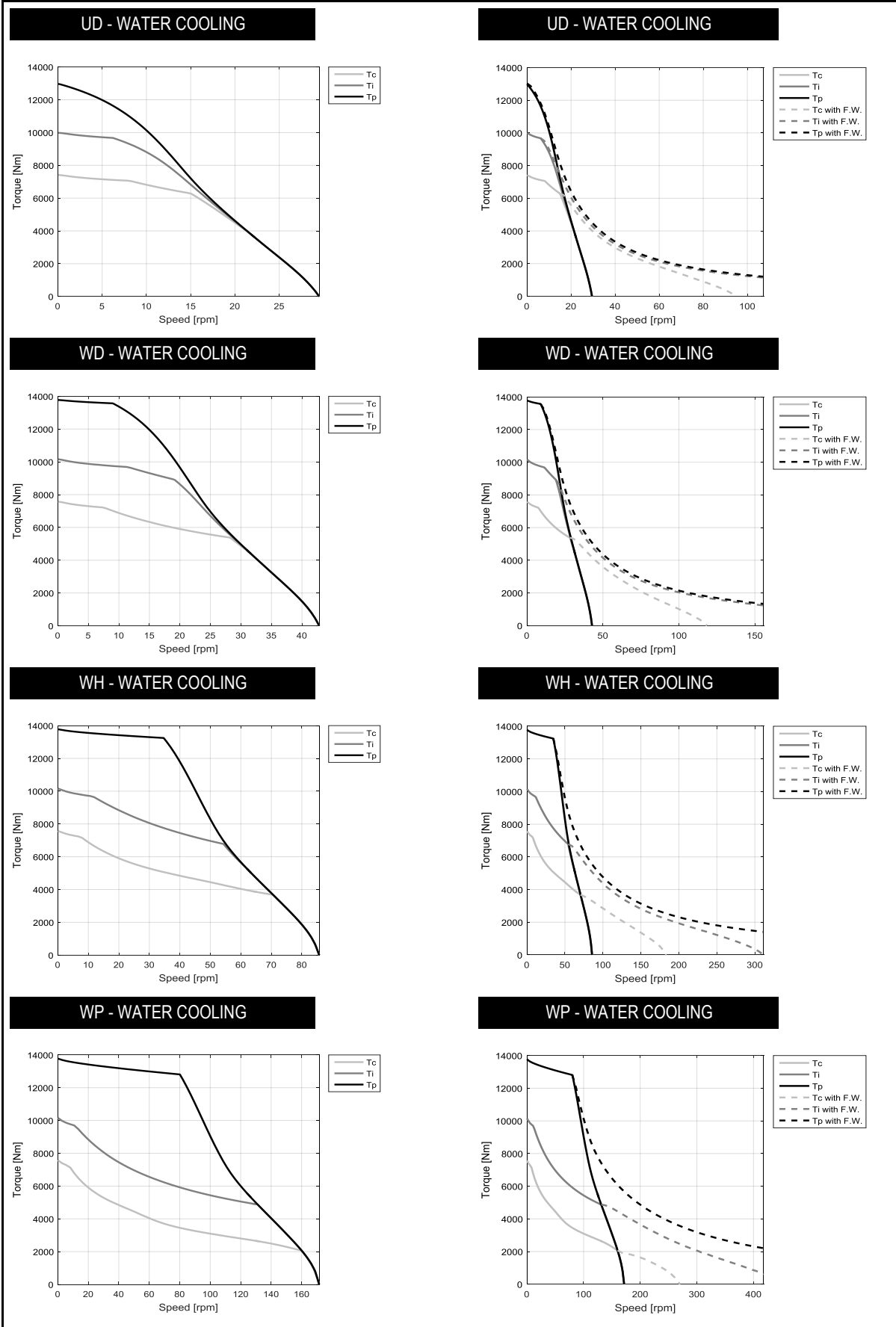
MOTOR PERFORMANCE		Winding codes	UD	WD	WH	WP
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	13000	13800	13800	13800
<b>Ti</b>	Intermittent torque	Nm	9980	10200	10200	10200
<b>Tc</b>	Continuous torque	Nm	7410	7570	7570	7570
<b>Ts</b>	Standstill torque	Nm	5970	6120	6120	6120
<b>lp</b>	Peak current	Arms	97.7	164	328	656
<b>li</b>	Intermittent current	Arms	61.0	91.2	182	365
<b>lc</b>	Continuous current	Arms	38.6	57.7	115	231
<b>ls</b>	Standstill current	Arms	29.2	43.7	87.4	175
<b>ns</b>	Rated low speed	rpm	0.046	0.046	0.046	0.046
<b>nm</b>	Maximum speed without flux weakening	rpm	29.5	42.8	85.7	172
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	94.9	119	183	270
<b>ton,p</b>	Maximum ON time for peak cycle	s	10	7.5	7.5	7.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	70200	91300	91300	91300
<b>Pi</b>	Power dissipation @ li	W	34600	34800	34800	34800
<b>Pc</b>	Power dissipation @ lc	W	13800	13900	13900	13900
<b>Td</b>	Max. detent torque (average to peak)	Nm	110	110	110	110

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	234	162	80.8	40.4
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	135	92.8	46.4	23.2
<b>Km</b>	Motor constant	Nm/√W	91.4	94.0	94.0	94.0
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	4.39	1.97	0.492	0.123
<b>Ld/Lq</b>	Electrical inductance (*)	mH	64.3 / 54.7	30.6 / 25.6	7.64 / 6.41	1.91 / 1.60
<b>lsc</b>	Maximum short-circuit current	Arms	27.5	39.8	79.7	159
<b>nb</b>	Base speed	rpm	14.9	28.2	70.5	160
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	6.21	18.9	54.2	131
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	9.01	34.7	80.1
<b>nn</b>	Rated speed	rpm	11.7	24.1	62.9	147
<b>Tn</b>	Rated torque	Nm	6620	5620	3930	2350
<b>In</b>	Rated current	Arms	35.0	41.2	55.1	68.2
<b>rth</b>	Thermal time constant	s	147	150	150	150
<b>Rth</b>	Thermal resistance	K/W	0.00731	0.00728	0.00728	0.00728
<b>2p</b>	Number of poles	-	176	176	176	176
<b>J</b>	Rotor inertia	kg·m²	9.99	9.99	9.99	9.99
<b>mr</b>	Rotor mass	kg	50.1	50.1	50.1	50.1
<b>ms</b>	Stator mass	kg	172	174	174	174

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.680	0.680	0.680	0.680
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	10	10	10	10
<b>qw</b>	Minimum water flow for Δθw	l/min	21	21	21	21
<b>Δpw</b>	Max. pressure drop at qw	bar	2.0	2.0	2.0	2.0

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MOTOR PERFORMANCE		Winding codes	WD	WH	UP	WP
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	20200	20700	20600	20700
<b>Ti</b>	Intermittent torque	Nm	15300	15300	15000	15300
<b>Tc</b>	Continuous torque	Nm	11400	11400	11100	11400
<b>Ts</b>	Standstill torque	Nm	9200	9200	8970	9200
<b>lp</b>	Peak current	Arms	152	321	442	641
<b>li</b>	Intermittent current	Arms	90.8	182	243	363
<b>lc</b>	Continuous current	Arms	57.4	115	153	230
<b>ls</b>	Standstill current	Arms	43.5	87.0	116	174
<b>ns</b>	Rated low speed	rpm	0.045	0.045	0.046	0.045
<b>nm</b>	Maximum speed without flux weakening	rpm	28.5	57.1	78.8	114
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	87.0	133	164	202
<b>ton,p</b>	Maximum ON time for peak cycle	s	8.4	7.0	6.1	7.0
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	109000	124000	132000	124000
<b>Pi</b>	Power dissipation @ li	W	48800	48800	48500	48800
<b>Pc</b>	Power dissipation @ lc	W	19500	19500	19400	19500
<b>Td</b>	Max. detent torque (average to peak)	Nm	170	170	170	170

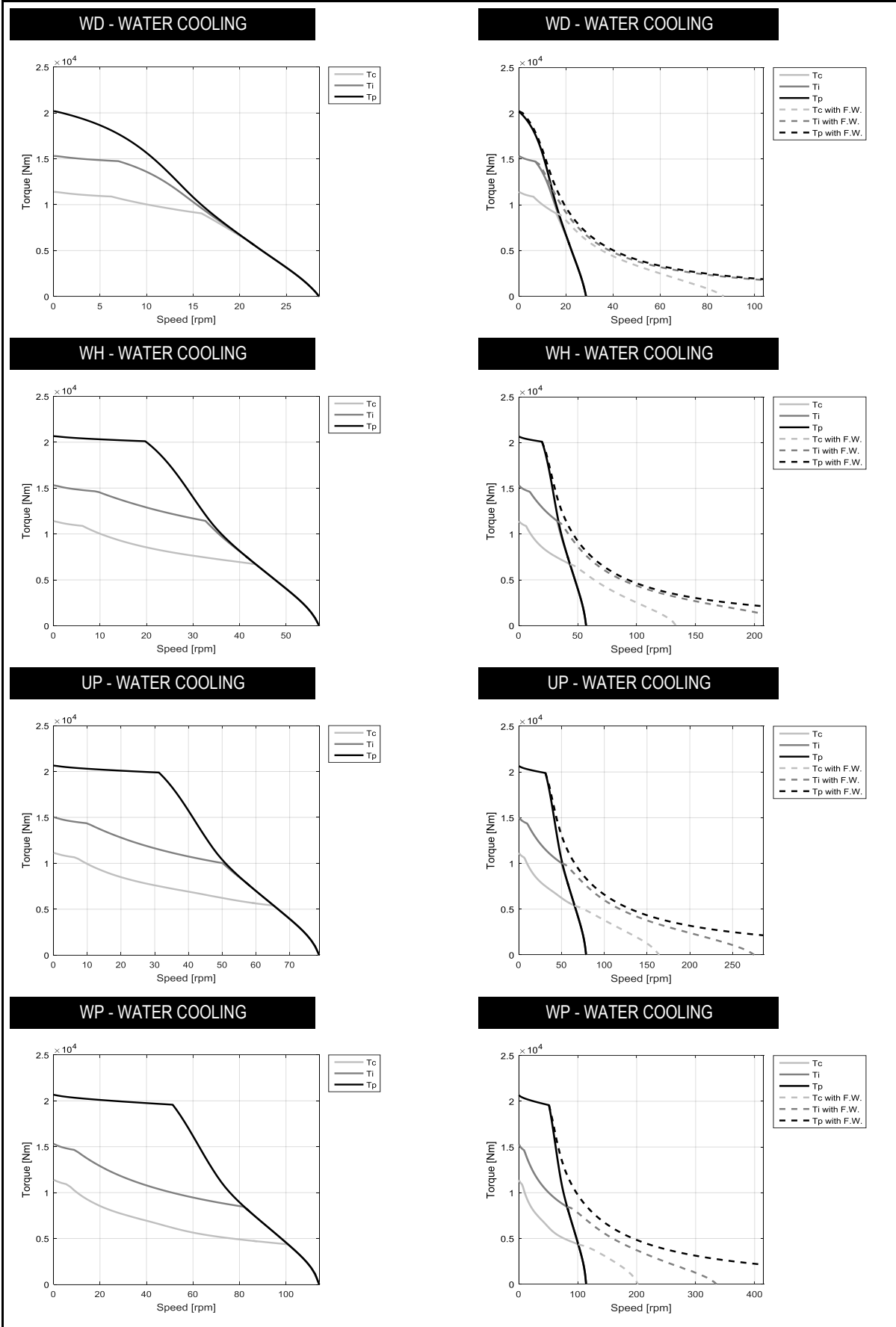
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	243	121	88.0	60.6
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	139	69.6	50.5	34.8
<b>Km</b>	Motor constant	Nm/√W	118	118	115	118
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	2.81	0.702	0.392	0.176
<b>Ld/Lq</b>	Electrical inductance (*)	mH	45.4 / 38.3	11.4 / 9.58	5.97 / 5.11	2.84 / 2.40
<b>lsc</b>	Maximum short-circuit current	Arms	40.2	80.4	111	161
<b>nb</b>	Base speed	rpm	15.9	43.4	65.3	101
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	6.96	32.7	50.1	81.8
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	19.7	31.2	51.3
<b>nn</b>	Rated speed	rpm	13.0	37.8	58.4	92.5
<b>Tn</b>	Rated torque	Nm	9500	7090	5710	4570
<b>In</b>	Rated current	Arms	47.5	66.7	73.1	85.9
<b>rth</b>	Thermal time constant	s	152	152	149	152
<b>Rth</b>	Thermal resistance	K/W	0.00504	0.00504	0.00506	0.00504
<b>2p</b>	Number of poles	-	176	176	176	176
<b>J</b>	Rotor inertia	kg·m²	14.9	14.9	14.9	14.9
<b>mr</b>	Rotor mass	kg	74.4	74.4	74.4	74.4
<b>ms</b>	Stator mass	kg	235	235	233	235

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.950	0.950	0.950	0.950
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	10	10	10	10
<b>qw</b>	Minimum water flow for Δθw	l/min	30	30	30	30
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	3.0

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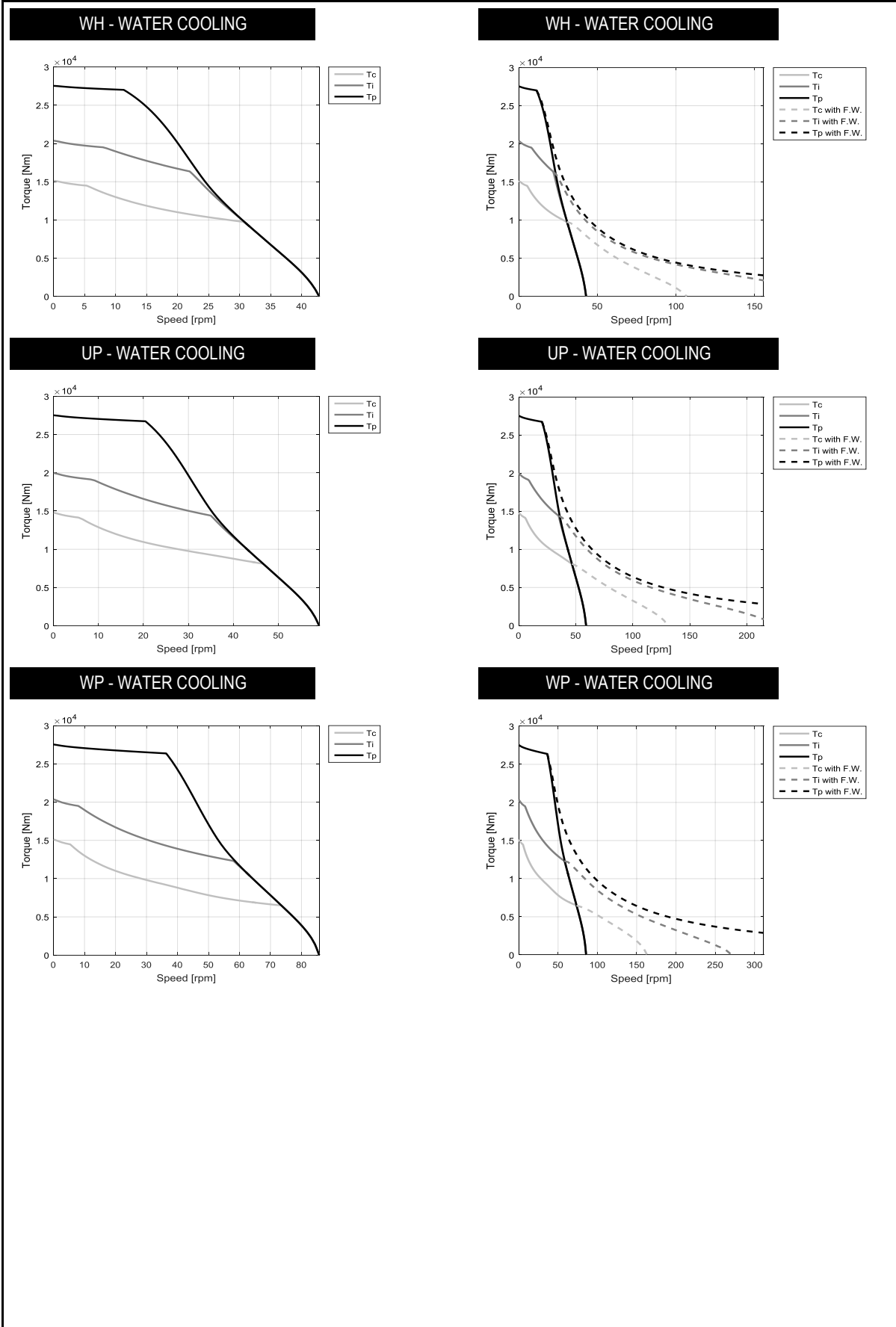
MOTOR PERFORMANCE		Winding codes	WH	UP	WP	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
<b>Tp</b>	Peak torque	Nm	27500	27500	27500	
<b>Ti</b>	Intermittent torque	Nm	20400	20000	20400	
<b>Tc</b>	Continuous torque	Nm	15100	14800	15100	
<b>Ts</b>	Standstill torque	Nm	12200	11900	12200	
<b>lp</b>	Peak current	Arms	317	437	634	
<b>li</b>	Intermittent current	Arms	180	240	360	
<b>lc</b>	Continuous current	Arms	114	152	227	
<b>ls</b>	Standstill current	Arms	86.2	115	172	
<b>ns</b>	Rated low speed	rpm	0.045	0.046	0.045	
<b>nm</b>	Maximum speed without flux weakening	rpm	42.8	59.1	85.7	
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	107	130	163	
<b>ton,p</b>	Maximum ON time for peak cycle	s	6.0	5.2	6.0	
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	
<b>Pp</b>	Power dissipation @ lp	W	157000	169000	157000	
<b>Pi</b>	Power dissipation @ li	W	61900	61500	61900	
<b>Pc</b>	Power dissipation @ lc	W	24800	24600	24800	
<b>Td</b>	Max. detent torque (average to peak)	Nm	220	220	220	

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	162	117	80.9	
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	92.8	67.3	46.4	
<b>Km</b>	Motor constant	Nm/√W	138	134	138	
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	0.919	0.514	0.230	
<b>Ld/Lq</b>	Electrical inductance (*)	mH	15.1 / 12.8	7.93 / 6.83	3.77 / 3.20	
<b>lsc</b>	Maximum short-circuit current	Arms	80.8	111	162	
<b>nb</b>	Base speed	rpm	30.6	46.6	73.5	
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	22.0	35.0	57.9	
<b>nb,p</b>	Base speed at peak duty cycle	rpm	11.3	20.4	36.3	
<b>nn</b>	Rated speed	rpm	26.3	40.8	66.9	
<b>Tn</b>	Rated torque	Nm	10200	8690	6770	
<b>In</b>	Rated current	Arms	72.5	83.5	94.3	
<b>rth</b>	Thermal time constant	s	151	148	151	
<b>Rth</b>	Thermal resistance	K/W	0.00382	0.00383	0.00382	
<b>2p</b>	Number of poles	-	176	176	176	
<b>J</b>	Rotor inertia	kg·m²	20.0	20.0	20.0	
<b>mr</b>	Rotor mass	kg	100	100	100	
<b>ms</b>	Stator mass	kg	294	291	294	

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	1.200	1.200	1.200	
<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	10	10	10	
<b>qw</b>	Minimum water flow for Δθw	l/min	38	38	38	
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	

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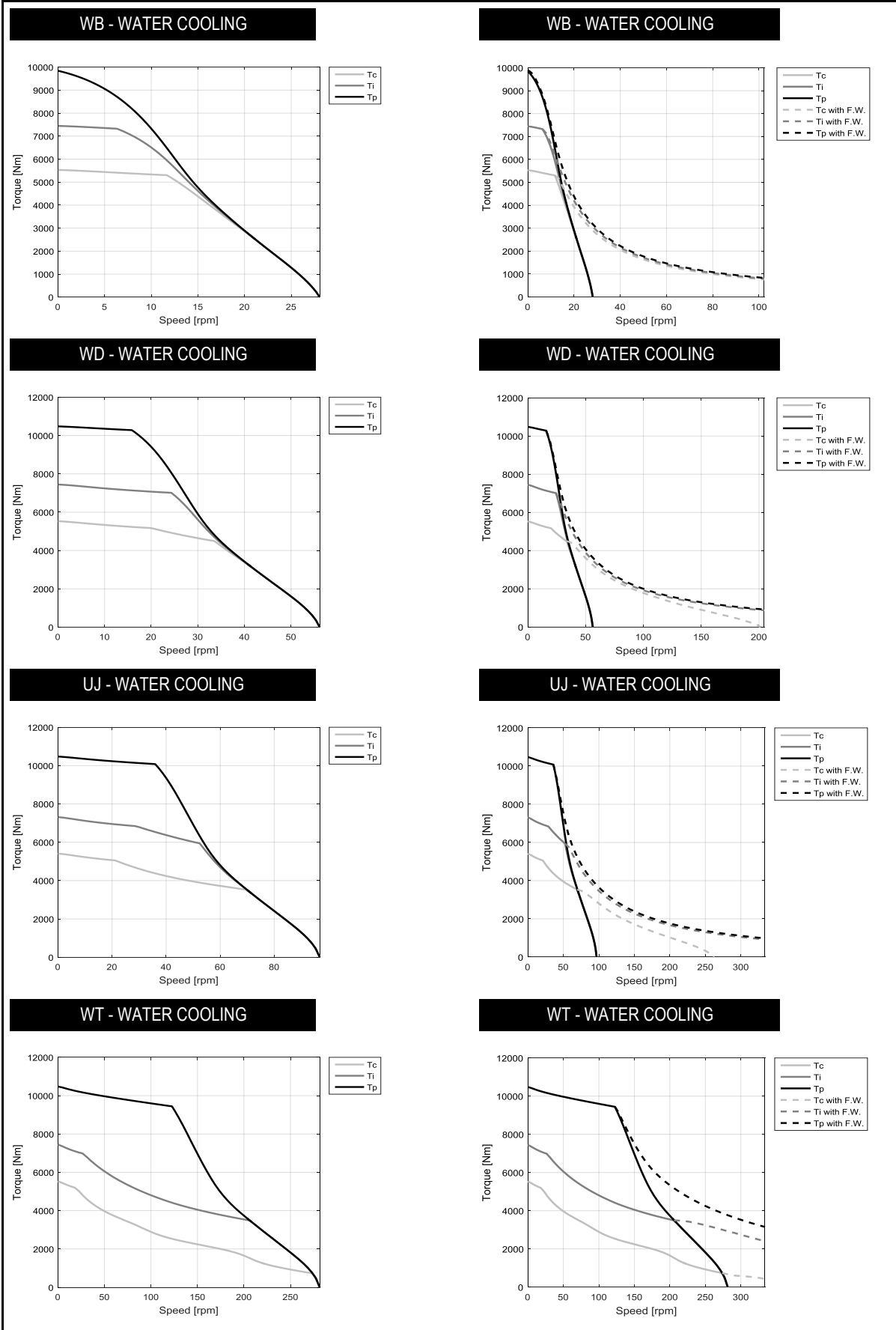
MOTOR PERFORMANCE		Winding codes	WB	WD	UJ	WT
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	9840	10500	10500	10500
<b>Ti</b>	Intermittent torque	Nm	7440	7440	7310	7440
<b>Tc</b>	Continuous torque	Nm	5530	5530	5410	5530
<b>Ts</b>	Standstill torque	Nm	4460	4460	4350	4460
<b>Ip</b>	Peak current	Arms	73.7	173	298	865
<b>Ii</b>	Intermittent current	Arms	43.8	87.6	146	438
<b>Ic</b>	Continuous current	Arms	27.7	55.4	92.6	277
<b>Is</b>	Standstill current	Arms	21.0	42.0	70.2	210
<b>ns</b>	Rated low speed	rpm	0.032	0.032	0.032	0.032
<b>nm</b>	Maximum speed without flux weakening	rpm	28.1	56.2	96.8	282
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	102	201	262	334
<b>ton,p</b>	Maximum ON time for peak cycle	s	11	6.5	5.7	6.5
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ Ip	W	53000	76400	81200	76400
<b>Pi</b>	Power dissipation @ Ii	W	23700	23700	23500	23700
<b>Pc</b>	Power dissipation @ Ic	W	9490	9490	9380	9490
<b>Td</b>	Max. detent torque (average to peak)	Nm	76	76	76	76

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	245	123	71.2	24.5
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	141	70.7	41.0	14.1
<b>Km</b>	Motor constant	Nm/√W	83.3	83.3	81.2	83.3
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	5.79	1.45	0.512	0.0579
<b>Ld/Lq</b>	Electrical inductance (*)	mH	85.1 / 71.7	21.3 / 17.9	7.16 / 6.12	0.851 / 0.717
<b>Isc</b>	Maximum short-circuit current	Arms	17.4	34.9	60.1	174
<b>nb</b>	Base speed	rpm	11.7	33.5	69.5	274
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	6.32	24.3	52.4	206
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	15.9	36.0	123
<b>nn</b>	Rated speed	rpm	9.68	28.8	60.5	258
<b>Tn</b>	Rated torque	Nm	5340	4700	3710	862
<b>In</b>	Rated current	Arms	27.5	47.9	61.9	47.2
<b>rth</b>	Thermal time constant	s	172	172	169	172
<b>Rth</b>	Thermal resistance	K/W	0.0112	0.0112	0.0113	0.0112
<b>2p</b>	Number of poles	-	220	220	220	220
<b>J</b>	Rotor inertia	kg·m²	17.0	17.0	17.0	17.0
<b>mr</b>	Rotor mass	kg	55.5	55.5	55.5	55.5
<b>ms</b>	Stator mass	kg	203	203	202	203

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.600	0.600	0.600	0.600
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	29	29	29	29
<b>Δpw</b>	Max. pressure drop at qw	bar	2.0	2.0	2.0	2.0

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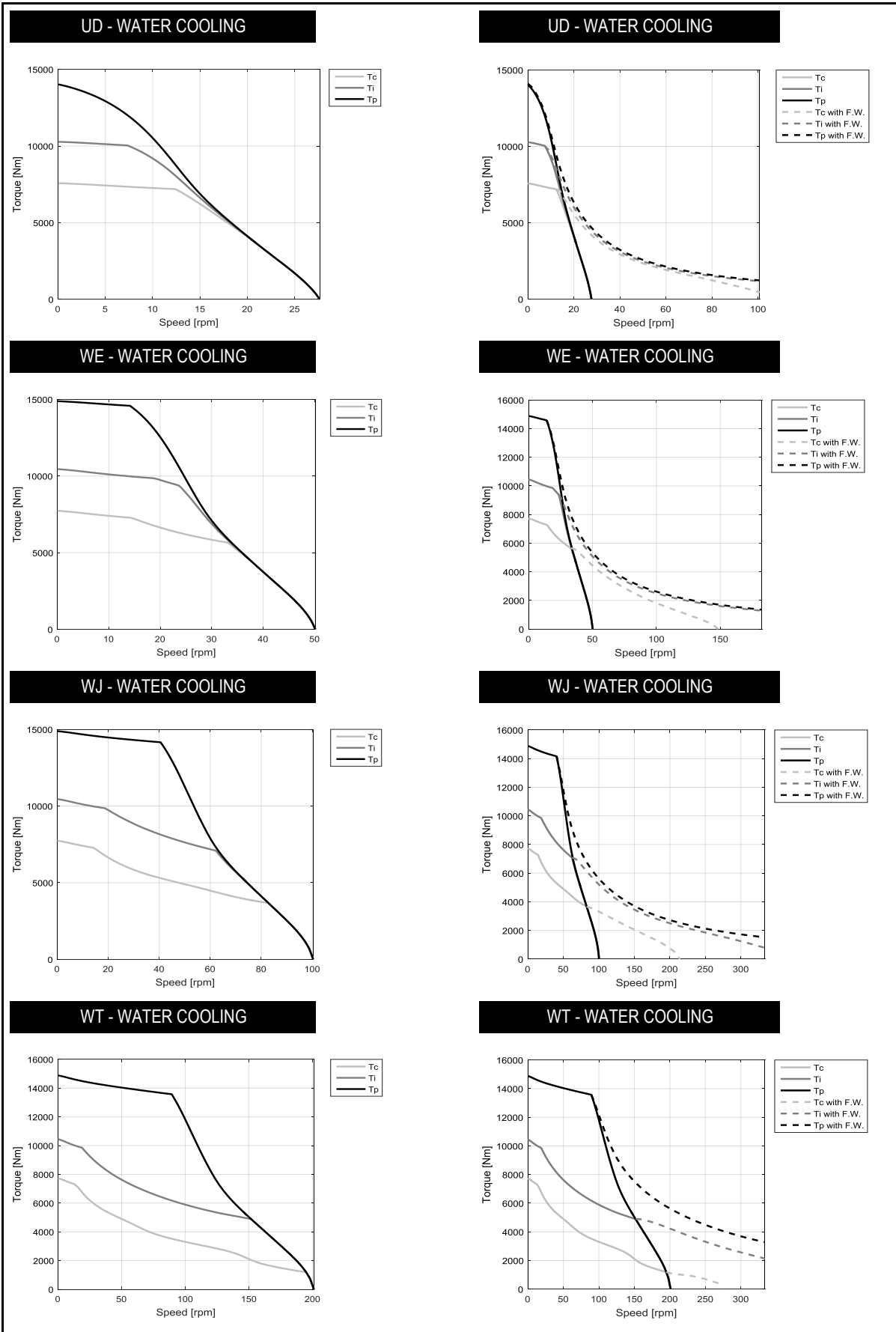
MOTOR PERFORMANCE		Winding codes	UD	WE	WJ	WT
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	14000	14900	14900	14900
<b>Ti</b>	Intermittent torque	Nm	10300	10500	10500	10500
<b>Tc</b>	Continuous torque	Nm	7580	7730	7730	7730
<b>Ts</b>	Standstill torque	Nm	6080	6220	6220	6220
<b>lp</b>	Peak current	Arms	103	216	432	865
<b>li</b>	Intermittent current	Arms	57.7	108	216	431
<b>lc</b>	Continuous current	Arms	36.5	68.2	136	273
<b>ls</b>	Standstill current	Arms	27.7	51.6	103	207
<b>ns</b>	Rated low speed	rpm	0.031	0.031	0.031	0.031
<b>nm</b>	Maximum speed without flux weakening	rpm	27.6	50.1	100	201
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	101	148	214	270
<b>ton,p</b>	Maximum ON time for peak cycle	s	9.2	6.2	6.2	6.2
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	73800	98100	98100	98100
<b>Pi</b>	Power dissipation @ li	W	29200	29300	29300	29300
<b>Pc</b>	Power dissipation @ lc	W	11700	11700	11700	11700
<b>Td</b>	Max. detent torque (average to peak)	Nm	110	110	110	110

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	250	138	68.8	34.4
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	144	79.2	39.6	19.8
<b>Km</b>	Motor constant	Nm/√W	101	103	103	103
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	4.11	1.18	0.296	0.0740
<b>Ld/Lq</b>	Electrical inductance (*)	mH	59.3 / 51.4	18.0 / 15.5	4.51 / 3.86	1.13 / 0.966
<b>lsc</b>	Maximum short-circuit current	Arms	25.4	46.1	92.2	184
<b>nb</b>	Base speed	rpm	12.4	33.1	82.8	195
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	7.33	23.6	62.2	152
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	14.1	40.5	89.4
<b>nn</b>	Rated speed	rpm	10.4	28.4	74.0	184
<b>Tn</b>	Rated torque	Nm	7250	5940	3920	1350
<b>In</b>	Rated current	Arms	36.1	51.6	65.2	49.8
<b>rth</b>	Thermal time constant	s	174	178	178	178
<b>Rth</b>	Thermal resistance	K/W	0.00901	0.00898	0.00898	0.00898
<b>2p</b>	Number of poles	-	220	220	220	220
<b>J</b>	Rotor inertia	kg·m²	23.4	23.4	23.4	23.4
<b>mr</b>	Rotor mass	kg	76.2	76.2	76.2	76.2
<b>ms</b>	Stator mass	kg	242	243	243	243

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.740	0.740	0.740	0.740
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	5.0	5.0	5.0	5.0
<b>qw</b>	Minimum water flow for Δθw	l/min	36	36	36	36
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	3.0

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MOTOR PERFORMANCE		Winding codes	UE	UJ	WJ	WT
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	19700	21400	21400	21400
<b>Ti</b>	Intermittent torque	Nm	14800	14800	15100	15100
<b>Tc</b>	Continuous torque	Nm	10900	10900	11200	11200
<b>Ts</b>	Standstill torque	Nm	8760	8760	8980	8980
<b>lp</b>	Peak current	Arms	121	298	432	865
<b>li</b>	Intermittent current	Arms	72.5	145	217	433
<b>lc</b>	Continuous current	Arms	45.8	91.7	137	274
<b>ls</b>	Standstill current	Arms	34.7	69.4	104	208
<b>ns</b>	Rated low speed	rpm	0.030	0.030	0.029	0.029
<b>nm</b>	Maximum speed without flux weakening	rpm	24.2	48.4	70.3	141
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	84.0	126	160	229
<b>ton,p</b>	Maximum ON time for peak cycle	s	10	5.0	5.7	5.7
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.9	2.9	2.9	2.9
<b>Pp</b>	Power dissipation @ lp	W	87100	140000	131000	131000
<b>Pi</b>	Power dissipation @ li	W	39200	39200	39300	39300
<b>Pc</b>	Power dissipation @ lc	W	15700	15700	15700	15700
<b>Td</b>	Max. detent torque (average to peak)	Nm	150	150	150	150

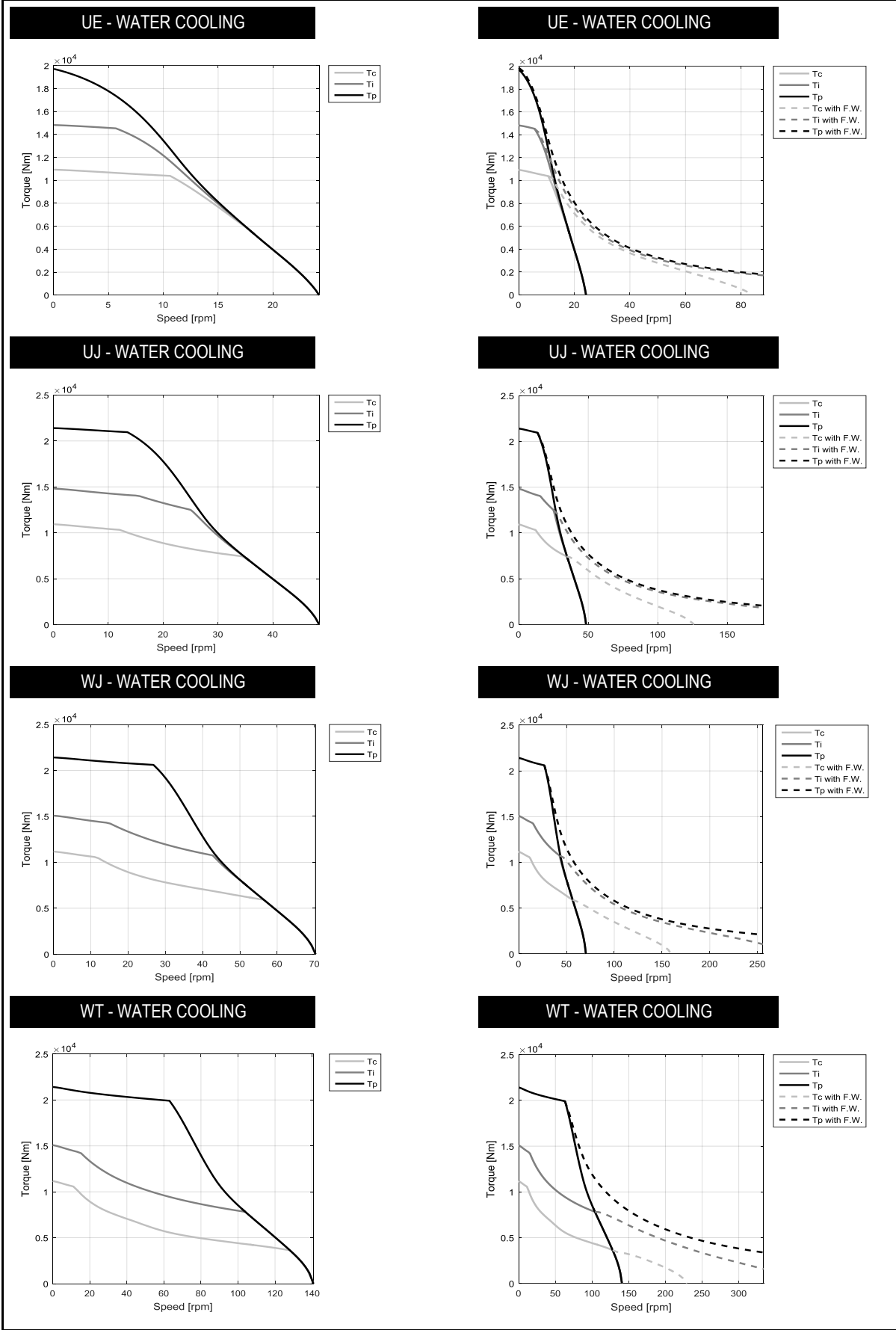
MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	286	143	98.5	49.2
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	164	82.0	56.6	28.3
<b>Km</b>	Motor constant	Nm/√W	125	125	128	128
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	3.51	0.877	0.394	0.0985
<b>Ld/Lq</b>	Electrical inductance (*)	mH	51.5 / 44.8	12.9 / 11.2	6.12 / 5.26	1.53 / 1.32
<b>lsc</b>	Maximum short-circuit current	Arms	33.5	66.9	97.1	194
<b>nb</b>	Base speed	rpm	10.6	34.3	56.4	128
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	5.68	25.0	42.7	104
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	13.5	26.8	63.0
<b>nn</b>	Rated speed	rpm	8.77	29.7	49.6	117
<b>Tn</b>	Rated torque	Nm	10500	7810	6380	3960
<b>In</b>	Rated current	Arms	45.4	63.5	73.6	93.8
<b>rth</b>	Thermal time constant	s	184	184	188	188
<b>Rth</b>	Thermal resistance	K/W	0.00648	0.00648	0.00646	0.00646
<b>2p</b>	Number of poles	-	220	220	220	220
<b>J</b>	Rotor inertia	kg·m²	32.9	32.9	32.9	32.9
<b>mr</b>	Rotor mass	kg	107	107	107	107
<b>ms</b>	Stator mass	kg	298	298	300	300

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	0.940	0.940	0.940	0.940
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	10	10	10	10
<b>qw</b>	Minimum water flow for Δθw	l/min	24	24	24	24
<b>Δpw</b>	Max. pressure drop at qw	bar	3.0	3.0	3.0	3.0

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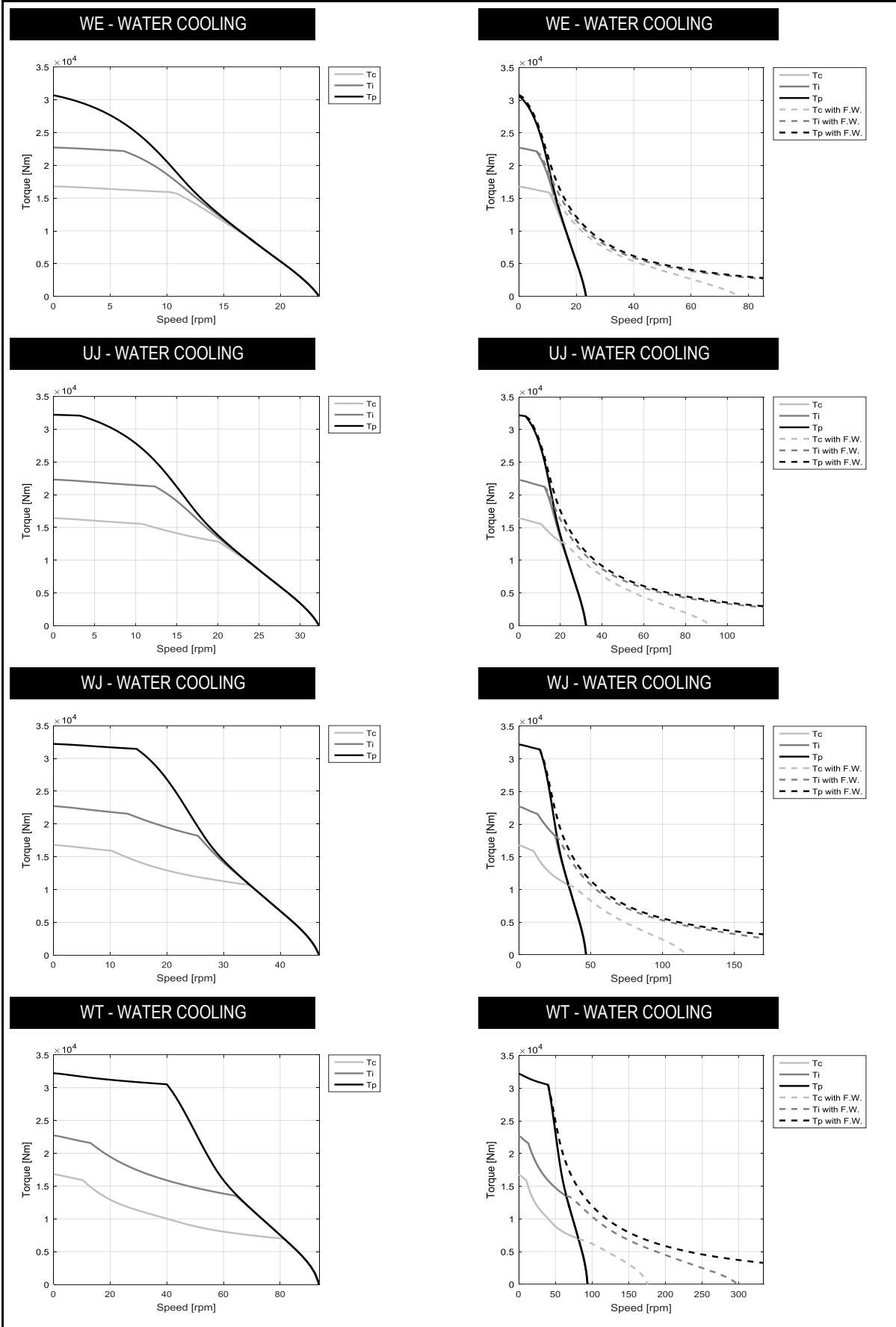
MOTOR PERFORMANCE		Winding codes	WE	UJ	WJ	WT
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	WATER COOLING
<b>Tp</b>	Peak torque	Nm	30700	32200	32200	32200
<b>Ti</b>	Intermittent torque	Nm	22700	22300	22700	22700
<b>Tc</b>	Continuous torque	Nm	16800	16400	16800	16800
<b>Ts</b>	Standstill torque	Nm	13500	13100	13500	13500
<b>lp</b>	Peak current	Arms	188	293	426	851
<b>li</b>	Intermittent current	Arms	108	144	216	432
<b>lc</b>	Continuous current	Arms	68.2	91.1	136	273
<b>ls</b>	Standstill current	Arms	51.7	69.0	103	207
<b>ns</b>	Rated low speed	rpm	0.028	0.029	0.028	0.028
<b>nm</b>	Maximum speed without flux weakening	rpm	23.4	32.3	46.9	93.8
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	76.6	91.7	116	176
<b>ton,p</b>	Maximum ON time for peak cycle	s	8.2	4.5	5.2	5.2
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	2.8
<b>Pp</b>	Power dissipation @ lp	W	135000	193000	180000	180000
<b>Pi</b>	Power dissipation @ li	W	55200	54900	55200	55200
<b>Pc</b>	Power dissipation @ lc	W	22100	22000	22100	22100
<b>Td</b>	Max. detent torque (average to peak)	Nm	230	230	230	230

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	296	214	148	73.9
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	170	123	84.8	42.4
<b>Km</b>	Motor constant	Nm/√W	161	156	161	161
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	2.25	1.25	0.562	0.140
<b>Ld/Lq</b>	Electrical inductance (*)	mH	36.3 / 31.4	19.1 / 16.7	9.09 / 7.86	2.27 / 1.96
<b>lsc</b>	Maximum short-circuit current	Arms	49.0	67.6	98.0	196
<b>nb</b>	Base speed	rpm	10.9	20.0	34.5	81.4
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	6.18	12.3	25.4	64.4
<b>nb,p</b>	Base speed at peak duty cycle	rpm	0.00	3.22	14.6	40.0
<b>nn</b>	Rated speed	rpm	8.87	16.7	29.9	74.2
<b>Tn</b>	Rated torque	Nm	16000	13600	11300	7270
<b>In</b>	Rated current	Arms	67.5	75.7	87.4	112
<b>rth</b>	Thermal time constant	s	192	188	192	192
<b>Rth</b>	Thermal resistance	K/W	0.00449	0.00450	0.00449	0.00449
<b>2p</b>	Number of poles	-	220	220	220	220
<b>J</b>	Rotor inertia	kg·m²	48.5	48.5	48.5	48.5
<b>mr</b>	Rotor mass	kg	158	158	158	158
<b>ms</b>	Stator mass	kg	399	397	399	399

MOTOR ENVIRONMENT		UNIT				
<b>Udc</b>	Nominal DC bus voltage	VDC	600	600	600	600
<b>Di</b>	Intermittent duty cycle	%	40	40	40	40
<b>Dp</b>	Peak duty cycle	%	5.0	5.0	5.0	5.0
<b>Sr</b>	Rotor exchange surface	m²	1.300	1.300	1.300	1.300
<b>θamb</b>	Ambient temperature	°C	20	20	20	20
<b>θmax</b>	Maximum coil temperature	°C	130	130	130	130
<b>θw</b>	Inlet water temperature	°C	20	20	20	20
<b>Δθw</b>	Water temperature difference for Pc	K	10	10	10	10
<b>qw</b>	Minimum water flow for Δθw	l/min	34	34	34	34
<b>Δpw</b>	Max. pressure drop at qw	bar	4.0	4.0	4.0	4.0

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MOTOR PERFORMANCE		Winding codes	WJ	UT	WT	
		UNIT	WATER COOLING	WATER COOLING	WATER COOLING	
<b>Tp</b>	Peak torque	Nm	42900	42900	42900	
<b>Ti</b>	Intermittent torque	Nm	30200	29600	30200	
<b>Tc</b>	Continuous torque	Nm	22300	21800	22300	
<b>Ts</b>	Standstill torque	Nm	17900	17400	17900	
<b>lp</b>	Peak current	Arms	421	580	841	
<b>li</b>	Intermittent current	Arms	214	285	427	
<b>lc</b>	Continuous current	Arms	135	180	270	
<b>ls</b>	Standstill current	Arms	102	137	205	
<b>ns</b>	Rated low speed	rpm	0.029	0.029	0.029	
<b>nm</b>	Maximum speed without flux weakening	rpm	35.1	48.5	70.3	
<b>nm,FW</b>	Maximum speed with flux weakening	rpm	92.4	113	143	
<b>ton,p</b>	Maximum ON time for peak cycle	s	4.5	3.8	4.5	
<b>ton,i</b>	Maximum ON time for intermittent cycle	s	2.8	2.8	2.8	
<b>Pp</b>	Power dissipation @ lp	W	228000	245000	228000	
<b>Pi</b>	Power dissipation @ li	W	70100	69700	70100	
<b>Pc</b>	Power dissipation @ lc	W	28000	27900	28000	
<b>Td</b>	Max. detent torque (average to peak)	Nm	300	300	300	

MOTOR SETTING		UNIT				
<b>Kt</b>	Torque constant	Nm/Arms	197	143	98.6	
<b>Ku</b>	Back EMF constant (*)	Vrms/(rad/s)	113	82.0	56.6	
<b>Km</b>	Motor constant	Nm/√W	188	182	188	
<b>R20</b>	Electrical resistance at 20°C (*)	Ohm	0.735	0.411	0.184	
<b>Ld/Lq</b>	Electrical inductance (*)	mH	12.1 / 10.5	6.34 / 5.59	3.01 / 2.62	
<b>lsc</b>	Maximum short-circuit current	Arms	98.5	136	197	
<b>nb</b>	Base speed	rpm	24.0	37.2	59.3	
<b>nb,i</b>	Base speed at intermittent duty cycle	rpm	16.4	27.3	45.8	
<b>nb,p</b>	Base speed at peak duty cycle	rpm	7.72	15.2	28.1	
<b>nn</b>	Rated speed	rpm	20.5	32.2	53.7	
<b>Tn</b>	Rated torque	Nm	16500	13900	10700	
<b>In</b>	Rated current	Arms	97.0	110	122	
<b>rth</b>	Thermal time constant	s	191	188	191	
<b>Rth</b>	Thermal resistance	K/W	0.00340	0.00342	0.00340	
<b>2p</b>	Number of poles	-	220	220	220	
<b>J</b>	Rotor inertia	kg·m²	64.7	64.7	64.7	
<b>mr</b>	Rotor mass	kg	211	211	211	
<b>ms</b>	Stator mass	kg	495	492	495	

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	1.600	1.600	1.600	
<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	10	10	10	
<b>qw</b>	Minimum water flow for Δθw	l/min	43	43	43	
<b>Δpw</b>	Max. pressure drop at qw	bar	4.0	4.0	4.0	

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