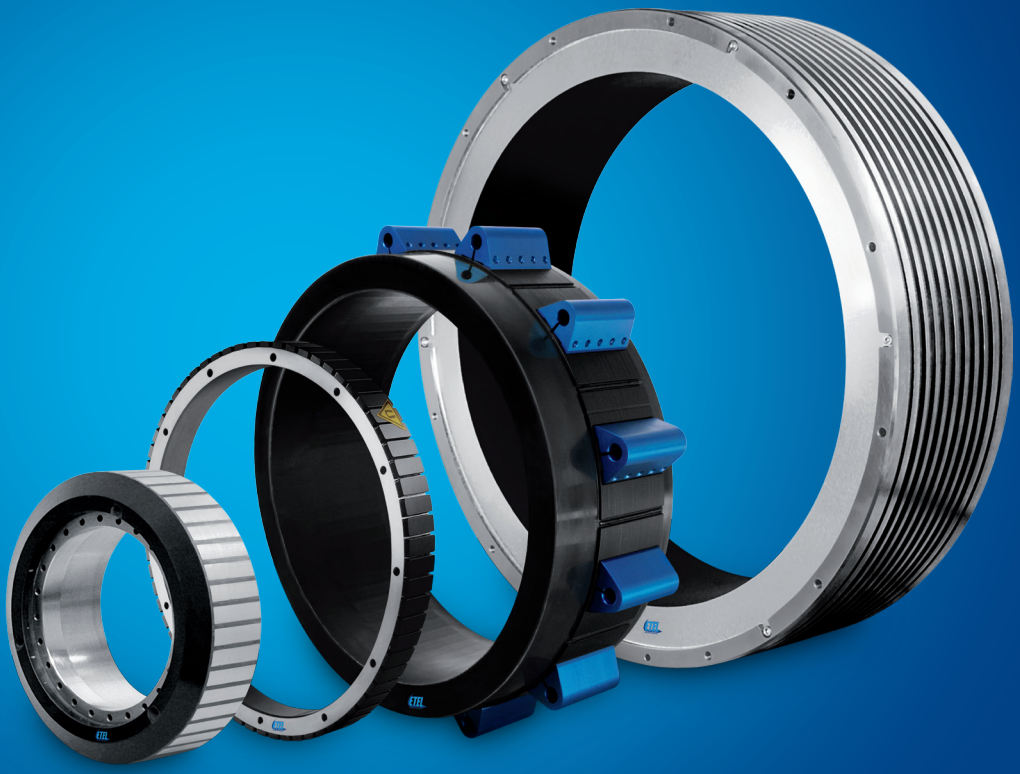
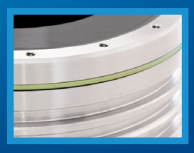
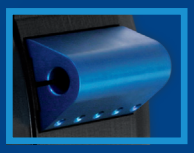






Torque **Motors**

TMM DATA SHEETS

ETEL
MOTION TECHNOLOGY

Standard

TORQUE MOTOR TMM0140-030

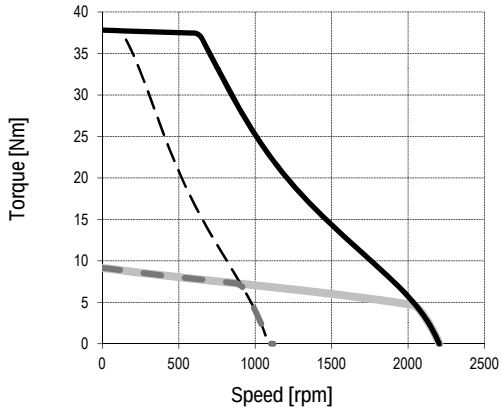
PERFORMANCE		Winding codes	3RAS	3RBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	38.2	38.2
Tc	Continuous torque	Nm	8.99	8.99
Ts	Stall torque	Nm	6.87	6.87
Kt	Torque constant	Nm/Arms	3.10	1.55
Ku	Back EMF constant (*)	Vrms/(rad/s)	1.79	0.895
Km	Motor constant	Nm/√W	0.950	0.950
R20	Electrical resistance at 20°C (*)	Ohm	7.08	1.77
L1	Electrical inductance (*)	mH	33.8	8.44
Ip	Peak current	Arms	19.8	39.5
Ic	Continuous current	Arms	2.96	5.91
Is	Stall current	Arms	2.24	4.48
Pc	Max. continuous power dissipation	W	131	131

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1740	1740
Rth	Thermal resistance	K/W	0.796	0.796
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.000998	0.000998
Mr	Rotor mass	kg	0.713	0.713
Ms	Stator mass	kg	2.48	2.48
Td	Max. detent torque (average to peak)	Nm	0.20	0.20
ns	Stall speed	rpm	0.031	0.031

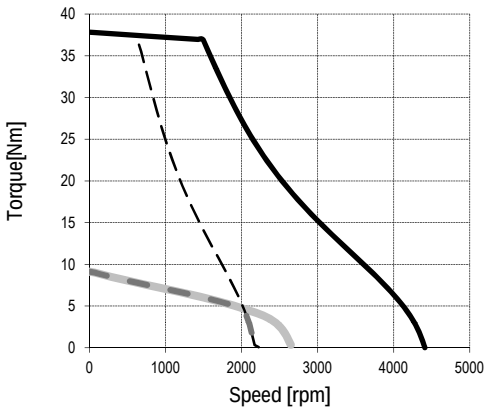
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.04 m² and rotor to a total surface of 0.018 m²

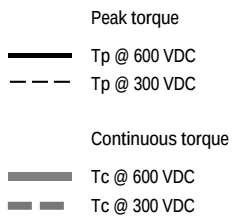
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3RAS



Force = f(speed) for 3RBS





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Standard

TORQUE MOTOR TMM0140-050

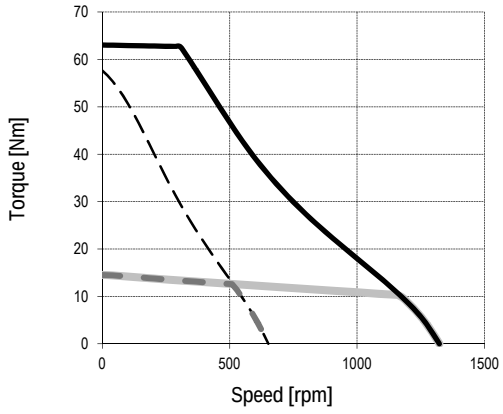
		Winding codes	3RAS	3RBS
PERFORMANCE		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	63.6	63.6
Tc	Continuous torque	Nm	14.3	14.3
Ts	Stall torque	Nm	10.9	10.9
Kt	Torque constant	Nm/Arms	5.16	2.58
Ku	Back EMF constant (*)	Vrms/(rad/s)	2.98	1.49
Km	Motor constant	Nm/√W	1.33	1.33
R20	Electrical resistance at 20°C (*)	Ohm	10.0	2.50
L1	Electrical inductance (*)	mH	56.3	14.1
Ip	Peak current	Arms	19.8	39.5
Ic	Continuous current	Arms	2.82	5.64
Is	Stall current	Arms	2.14	4.27
Pc	Max. continuous power dissipation	W	168	168

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1710	1710
Rth	Thermal resistance	K/W	0.619	0.619
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00166	0.00166
Mr	Rotor mass	kg	1.19	1.19
Ms	Stator mass	kg	3.58	3.58
Td	Max. detent torque (average to peak)	Nm	0.33	0.33
ns	Stall speed	rpm	0.032	0.032

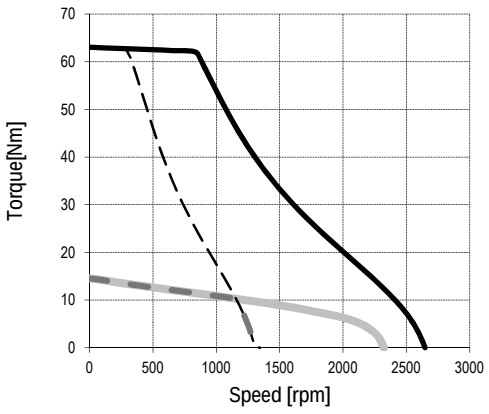
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.07 m² and rotor to a total surface of 0.025 m²

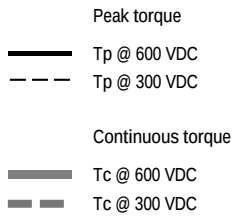
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3RAS



Force = f(speed) for 3RBS





Standard

TORQUE MOTOR TMM0140-070

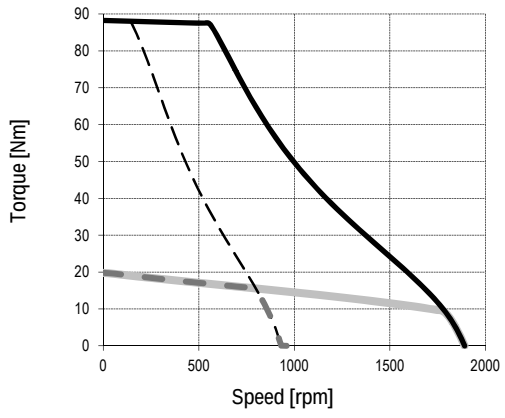
PERFORMANCE		Winding codes	3RBS	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	89.1	89.1
Tc	Continuous torque	Nm	19.5	19.7
Ts	Stall torque	Nm	14.9	15.0
Kt	Torque constant	Nm/Arms	3.61	1.83
Ku	Back EMF constant (*)	Vrms/(rad/s)	2.09	1.06
Km	Motor constant	Nm/√W	1.64	1.66
R20	Electrical resistance at 20°C (*)	Ohm	3.23	0.810
L1	Electrical inductance (*)	mH	19.7	5.05
Ip	Peak current	Arms	39.5	78.1
Ic	Continuous current	Arms	5.48	10.9
Is	Stall current	Arms	4.15	8.29
Pc	Max. continuous power dissipation	W	205	205

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1690	1690
Rth	Thermal resistance	K/W	0.507	0.507
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00233	0.00233
Mr	Rotor mass	kg	1.66	1.66
Ms	Stator mass	kg	4.69	4.72
Td	Max. detent torque (average to peak)	Nm	0.46	0.46
ns	Stall speed	rpm	0.032	0.032

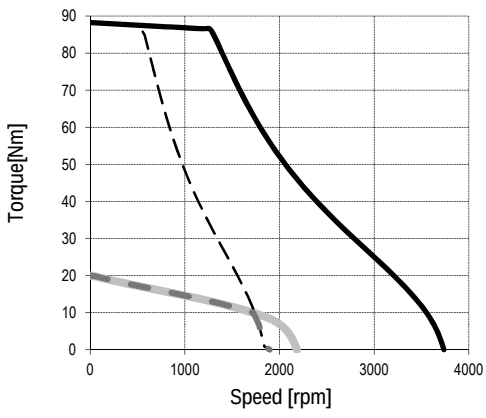
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.09 m² and rotor to a total surface of 0.033 m²

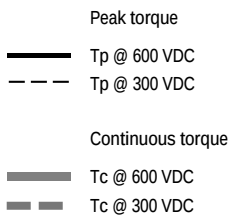
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3RBS



Force = f(speed) for 3UBS





Standard

TORQUE MOTOR TMM0140-100

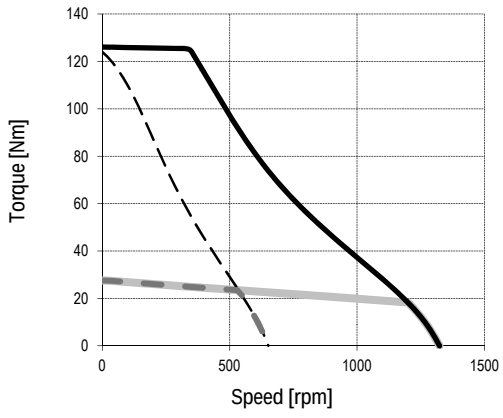
PERFORMANCE		Winding codes	3RBS	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	127	127
Tc	Continuous torque	Nm	27.2	27.5
Ts	Stall torque	Nm	20.7	21.0
Kt	Torque constant	Nm/Arms	5.16	2.61
Ku	Back EMF constant (*)	Vrms/(rad/s)	2.98	1.51
Km	Motor constant	Nm/√W	2.03	2.06
R20	Electrical resistance at 20°C (*)	Ohm	4.33	1.08
L1	Electrical inductance (*)	mH	28.1	7.21
Ip	Peak current	Arms	39.5	78.1
Ic	Continuous current	Arms	5.34	10.7
Is	Stall current	Arms	4.04	8.10
Pc	Max. continuous power dissipation	W	260	260

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1680	1680
Rth	Thermal resistance	K/W	0.399	0.399
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00333	0.00333
Mr	Rotor mass	kg	2.38	2.38
Ms	Stator mass	kg	6.34	6.38
Td	Max. detent torque (average to peak)	Nm	0.65	0.65
ns	Stall speed	rpm	0.033	0.033

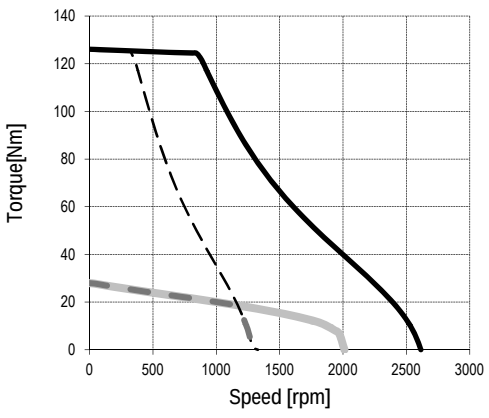
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.13 m² and rotor to a total surface of 0.044 m²

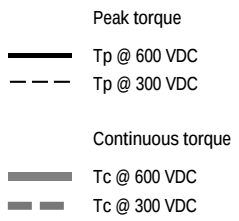
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3RBS



Force = f(speed) for 3UBS





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Standard

TORQUE MOTOR TMM0140-150

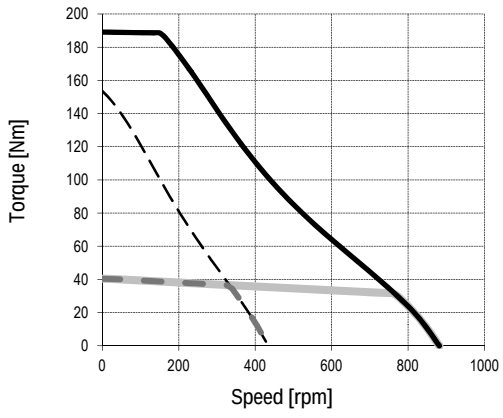
PERFORMANCE		Winding codes	3RBS	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	191	191
Tc	Continuous torque	Nm	39.8	40.4
Ts	Stall torque	Nm	30.3	30.8
Kt	Torque constant	Nm/Arms	7.74	3.92
Ku	Back EMF constant (*)	Vrms/(rad/s)	4.48	2.27
Km	Motor constant	Nm/√W	2.55	2.59
R20	Electrical resistance at 20°C (*)	Ohm	6.15	1.53
L1	Electrical inductance (*)	mH	42.2	10.8
Ip	Peak current	Arms	39.5	78.1
Ic	Continuous current	Arms	5.21	10.5
Is	Stall current	Arms	3.95	7.93
Pc	Max. continuous power dissipation	W	352	352

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1660	1660
Rth	Thermal resistance	K/W	0.294	0.294
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00499	0.00499
Mr	Rotor mass	kg	3.57	3.57
Ms	Stator mass	kg	9.10	9.15
Td	Max. detent torque (average to peak)	Nm	0.98	0.98
ns	Stall speed	rpm	0.033	0.033

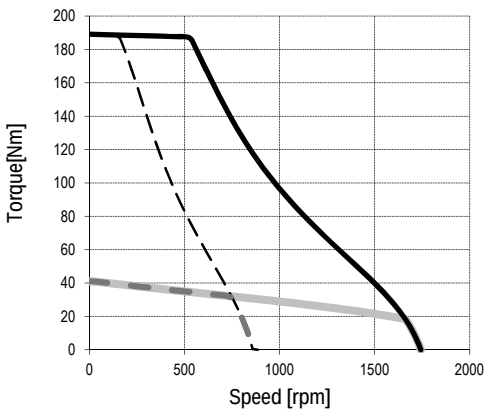
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.20 m² and rotor to a total surface of 0.063 m²

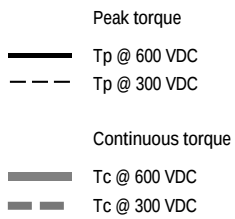
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3RBS



Force = f(speed) for 3UBS





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Standard

TORQUE MOTOR TMM0175-030

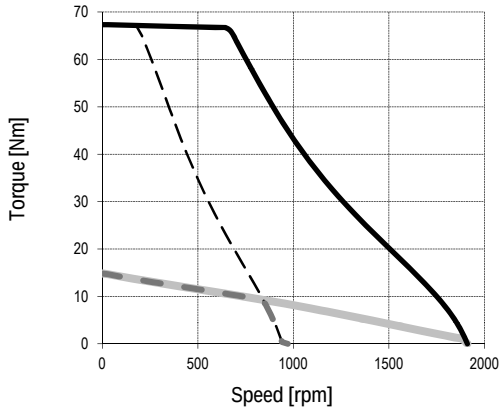
PERFORMANCE		Winding codes	3TAS	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	67.9	67.9
Tc	Continuous torque	Nm	14.7	14.8
Ts	Stall torque	Nm	11.1	11.2
Kt	Torque constant	Nm/Arms	3.58	1.45
Ku	Back EMF constant (*)	Vrms/(rad/s)	2.07	0.836
Km	Motor constant	Nm/√W	1.39	1.40
R20	Electrical resistance at 20°C (*)	Ohm	4.44	0.710
L1	Electrical inductance (*)	mH	22.2	3.63
Ip	Peak current	Arms	27.1	66.9
Ic	Continuous current	Arms	4.36	10.9
Is	Stall current	Arms	3.30	8.25
Pc	Max. continuous power dissipation	W	178	178

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1880	1880
Rth	Thermal resistance	K/W	0.590	0.590
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00273	0.00273
Mr	Rotor mass	kg	0.999	0.999
Ms	Stator mass	kg	3.82	3.83
Td	Max. detent torque (average to peak)	Nm	0.57	0.57
ns	Stall speed	rpm	0.029	0.029

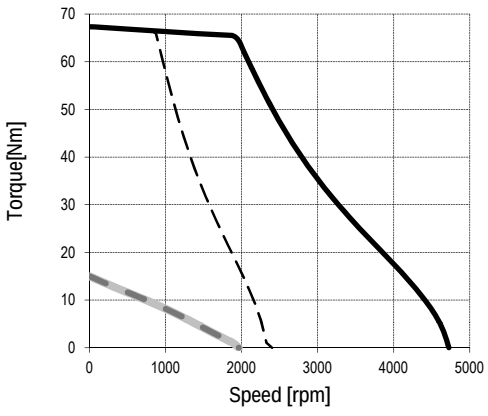
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.05 m² and rotor to a total surface of 0.026 m²

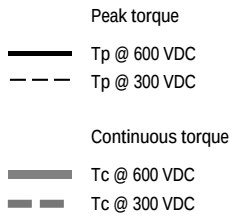
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAS



Force = f(speed) for 3UBS





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Standard

TORQUE MOTOR TMM0175-050

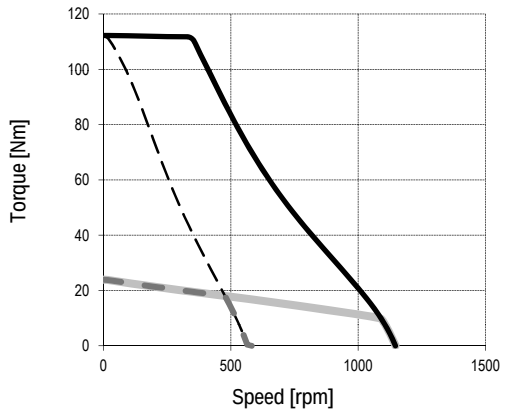
PERFORMANCE		Winding codes	3TAS	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	113	113
Tc	Continuous torque	Nm	23.6	23.9
Ts	Stall torque	Nm	17.9	18.1
Kt	Torque constant	Nm/Arms	5.96	2.41
Ku	Back EMF constant (*)	Vrms/(rad/s)	3.45	1.39
Km	Motor constant	Nm/√W	1.99	2.01
R20	Electrical resistance at 20°C (*)	Ohm	6.00	0.961
L1	Electrical inductance (*)	mH	37.0	6.05
Ip	Peak current	Arms	27.1	66.9
Ic	Continuous current	Arms	4.22	10.5
Is	Stall current	Arms	3.19	7.98
Pc	Max. continuous power dissipation	W	226	226

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1860	1860
Rth	Thermal resistance	K/W	0.466	0.466
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00454	0.00454
Mr	Rotor mass	kg	1.66	1.66
Ms	Stator mass	kg	5.46	5.48
Td	Max. detent torque (average to peak)	Nm	0.95	0.95
ns	Stall speed	rpm	0.029	0.029

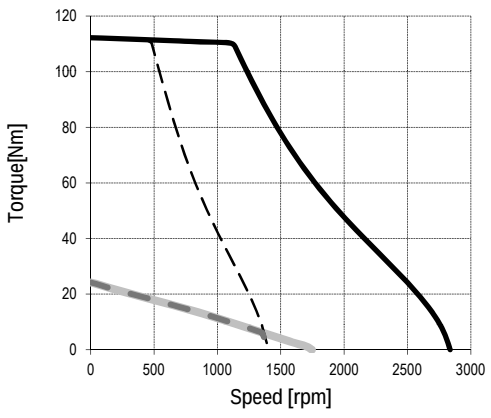
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.08 m² and rotor to a total surface of 0.037 m²

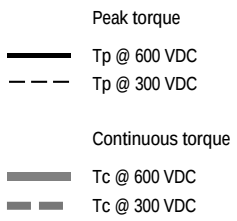
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAS



Force = f(speed) for 3UBS





Standard

TORQUE MOTOR TMM0175-070

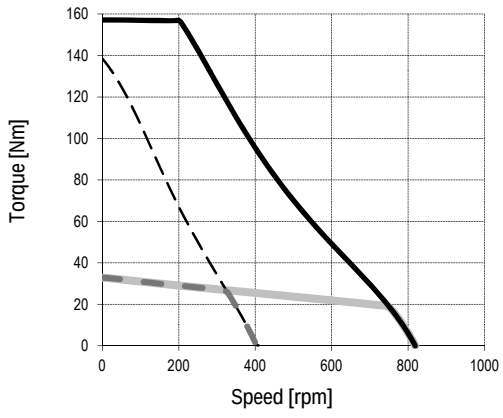
PERFORMANCE		Winding codes	3TAN	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	158	158
Tc	Continuous torque	Nm	32.4	32.8
Ts	Stall torque	Nm	24.5	24.8
Kt	Torque constant	Nm/Arms	8.35	3.38
Ku	Back EMF constant (*)	Vrms/(rad/s)	4.83	1.95
Km	Motor constant	Nm/√W	2.48	2.51
R20	Electrical resistance at 20°C (*)	Ohm	7.56	1.21
L1	Electrical inductance (*)	mH	51.8	8.47
Ip	Peak current	Arms	27.1	66.9
Ic	Continuous current	Arms	4.13	10.3
Is	Stall current	Arms	3.13	7.83
Pc	Max. continuous power dissipation	W	274	274

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1850	1840
Rth	Thermal resistance	K/W	0.385	0.385
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00636	0.00636
Mr	Rotor mass	kg	2.33	2.33
Ms	Stator mass	kg	7.10	7.13
Td	Max. detent torque (average to peak)	Nm	1.3	1.3
ns	Stall speed	rpm	0.030	0.030

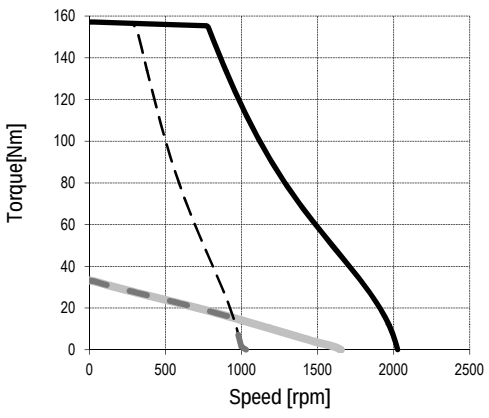
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.12 m² and rotor to a total surface of 0.049 m²

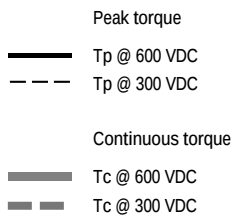
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAN



Force = f(speed) for 3UBS





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Standard

TORQUE MOTOR TMM0175-100

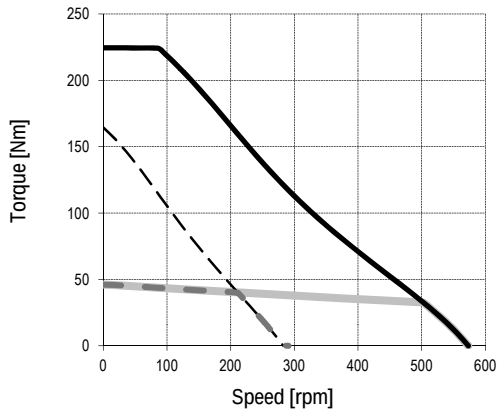
PERFORMANCE		Winding codes	3TAN	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	226	226
Tc	Continuous torque	Nm	45.5	46.0
Ts	Stall torque	Nm	34.4	34.8
Kt	Torque constant	Nm/Arms	11.9	4.82
Ku	Back EMF constant (*)	Vrms/(rad/s)	6.89	2.79
Km	Motor constant	Nm/√W	3.10	3.13
R20	Electrical resistance at 20°C (*)	Ohm	9.88	1.58
L1	Electrical inductance (*)	mH	74.0	12.1
Ip	Peak current	Arms	27.1	66.9
Ic	Continuous current	Arms	4.06	10.2
Is	Stall current	Arms	3.07	7.69
Pc	Max. continuous power dissipation	W	345	345

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1830	1830
Rth	Thermal resistance	K/W	0.305	0.305
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.00909	0.00909
Mr	Rotor mass	kg	3.33	3.33
Ms	Stator mass	kg	9.56	9.60
Td	Max. detent torque (average to peak)	Nm	1.9	1.9
ns	Stall speed	rpm	0.030	0.030

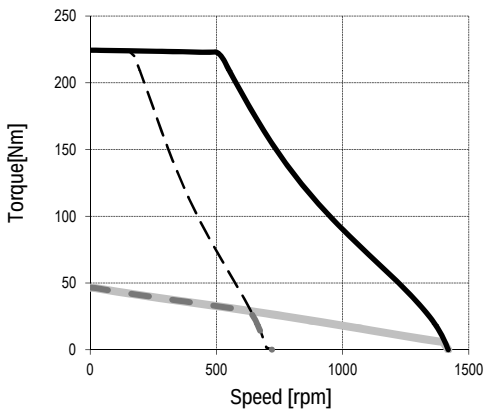
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.17 m² and rotor to a total surface of 0.066 m²

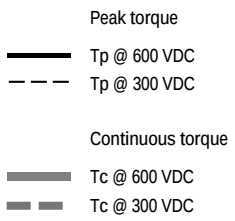
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAN



Force = f(speed) for 3UBS





Standard

TORQUE MOTOR TMM0175-150

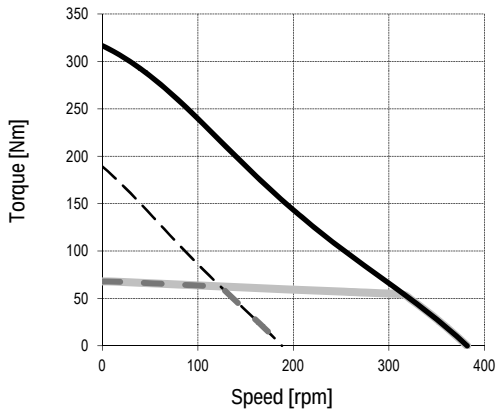
PERFORMANCE		Winding codes	3TAN	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	339	339
Tc	Continuous torque	Nm	67.1	67.9
Ts	Stall torque	Nm	50.7	51.3
Kt	Torque constant	Nm/Arms	17.9	7.23
Ku	Back EMF constant (*)	Vrms/(rad/s)	10.3	4.18
Km	Motor constant	Nm/√W	3.94	3.98
R20	Electrical resistance at 20°C (*)	Ohm	13.8	2.20
L1	Electrical inductance (*)	mH	111	18.1
Ip	Peak current	Arms	27.1	66.9
Ic	Continuous current	Arms	3.99	9.97
Is	Stall current	Arms	3.02	7.56
Pc	Max. continuous power dissipation	W	463	463

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1810	1810
Rth	Thermal resistance	K/W	0.227	0.227
2p	Number of poles	-	22	22
J	Rotor inertia	$kg.m^2$	0.0136	0.0136
Mr	Rotor mass	kg	4.99	4.99
Ms	Stator mass	kg	13.7	13.7
Td	Max. detent torque (average to peak)	Nm	2.9	2.9
ns	Stall speed	rpm	0.030	0.030

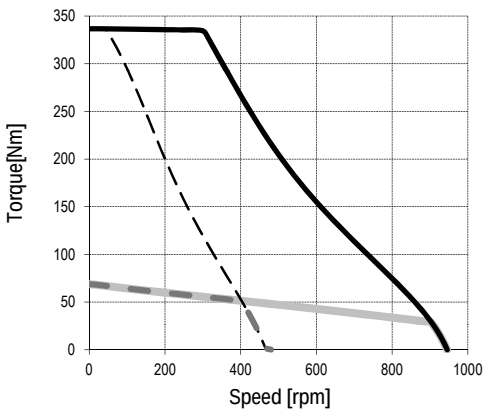
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.25 m² and rotor to a total surface of 0.094 m²

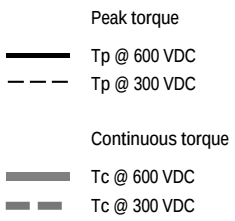
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAN



Force = f(speed) for 3UBS





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Standard

TORQUE MOTOR TMM0210-030

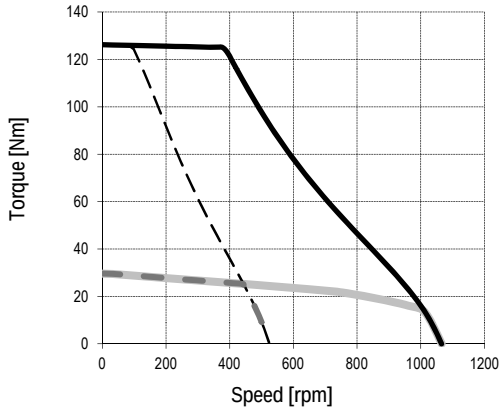
		Winding codes	3TAS	3TBS
PERFORMANCE		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	127	127
Tc	Continuous torque	Nm	29.2	29.2
Ts	Stall torque	Nm	22.2	22.2
Kt	Torque constant	Nm/Arms	6.41	3.21
Ku	Back EMF constant (*)	Vrms/(rad/s)	3.71	1.85
Km	Motor constant	Nm/√W	2.46	2.46
R20	Electrical resistance at 20°C (*)	Ohm	4.52	1.13
L1	Electrical inductance (*)	mH	17.3	4.31
Ip	Peak current	Arms	28.1	56.2
Ic	Continuous current	Arms	4.64	9.28
Is	Stall current	Arms	3.52	7.03
Pc	Max. continuous power dissipation	W	202	202

	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1480	1480
Rth	Thermal resistance	K/W	0.485	0.485
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.00854	0.00854
Mr	Rotor mass	kg	1.43	1.43
Ms	Stator mass	kg	3.41	3.41
Td	Max. detent torque (average to peak)	Nm	0.60	0.60
ns	Stall speed	rpm	0.018	0.018

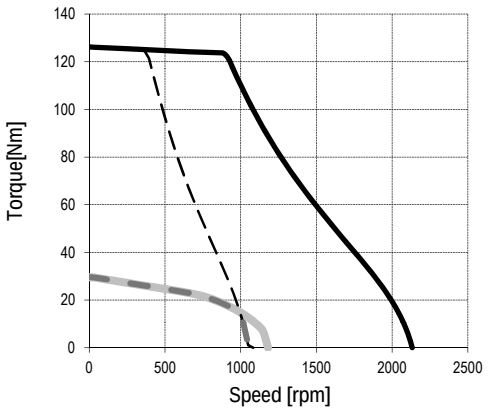
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.06 m² and rotor to a total surface of 0.038 m²

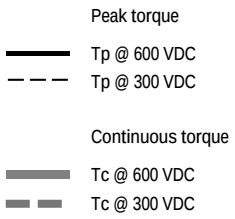
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAS



Force = f(speed) for 3TBS





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Standard

TORQUE MOTOR TMM0210-050

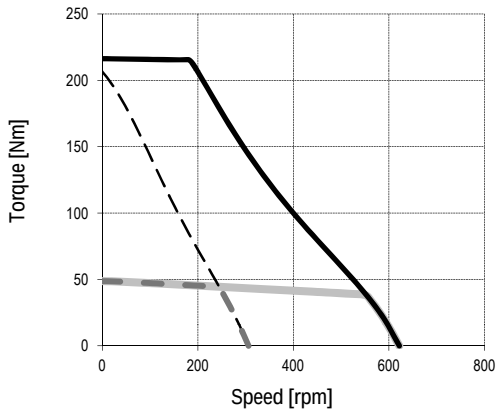
PERFORMANCE		Winding codes	3TAS	3TBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	218	218
Tc	Continuous torque	Nm	48.0	48.0
Ts	Stall torque	Nm	36.5	36.5
Kt	Torque constant	Nm/Arms	11.0	5.49
Ku	Back EMF constant (*)	Vrms/(rad/s)	6.35	3.18
Km	Motor constant	Nm/√W	3.56	3.56
R20	Electrical resistance at 20°C (*)	Ohm	6.36	1.59
L1	Electrical inductance (*)	mH	29.6	7.40
Ip	Peak current	Arms	28.1	56.2
Ic	Continuous current	Arms	4.45	8.89
Is	Stall current	Arms	3.37	6.73
Pc	Max. continuous power dissipation	W	261	261

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1460	1460
Rth	Thermal resistance	K/W	0.376	0.376
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0146	0.0146
Mr	Rotor mass	kg	2.45	2.45
Ms	Stator mass	kg	4.95	4.95
Td	Max. detent torque (average to peak)	Nm	1.0	1.0
ns	Stall speed	rpm	0.019	0.019

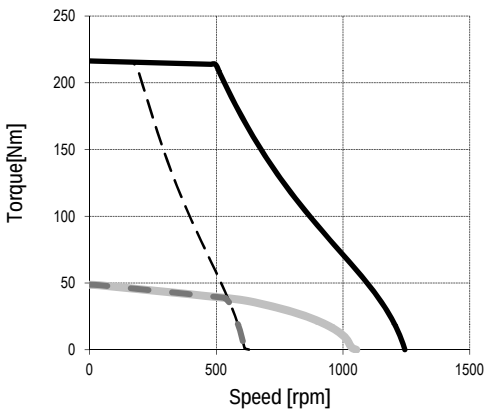
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.10 m² and rotor to a total surface of 0.056 m²

Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAS



Force = f(speed) for 3TBS



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Standard

TORQUE MOTOR TMM0210-070

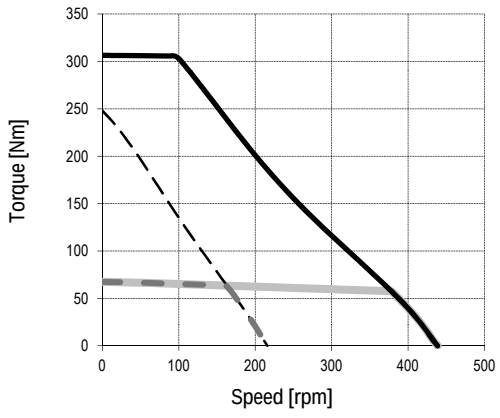
PERFORMANCE		Winding codes	3TAN	3TBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	309	309
Tc	Continuous torque	Nm	66.4	66.4
Ts	Stall torque	Nm	50.4	50.4
Kt	Torque constant	Nm/Arms	15.6	7.78
Ku	Back EMF constant (*)	Vrms/(rad/s)	9.00	4.50
Km	Motor constant	Nm/√W	4.44	4.44
R20	Electrical resistance at 20°C (*)	Ohm	8.19	2.05
L1	Electrical inductance (*)	mH	41.9	10.5
Ip	Peak current	Arms	28.1	56.2
Ic	Continuous current	Arms	4.33	8.67
Is	Stall current	Arms	3.28	6.57
Pc	Max. continuous power dissipation	W	320	320

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1450	1450
Rth	Thermal resistance	K/W	0.307	0.307
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0207	0.0207
Mr	Rotor mass	kg	3.48	3.48
Ms	Stator mass	kg	6.49	6.49
Td	Max. detent torque (average to peak)	Nm	1.5	1.5
ns	Stall speed	rpm	0.019	0.019

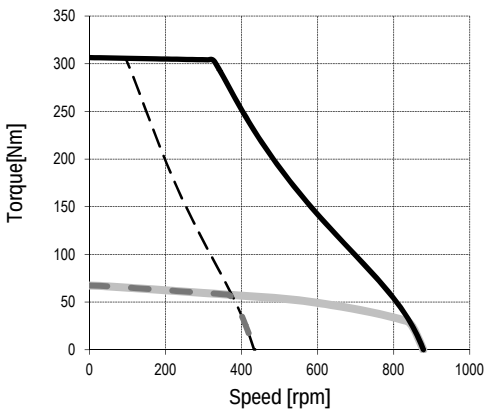
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.14 m² and rotor to a total surface of 0.074 m²

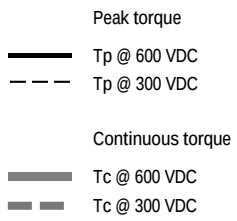
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TAN



Force = f(speed) for 3TBS





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Standard

TORQUE MOTOR TMM0210-100

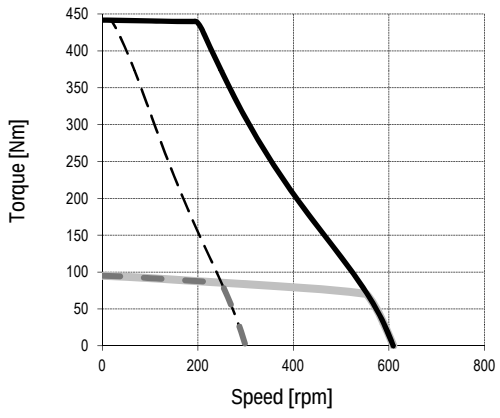
PERFORMANCE		Winding codes	3TBN	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	445	445
Tc	Continuous torque	Nm	93.5	89.1
Ts	Stall torque	Nm	71.0	67.6
Kt	Torque constant	Nm/Arms	11.2	8.41
Ku	Back EMF constant (*)	Vrms/(rad/s)	6.49	4.86
Km	Motor constant	Nm/√W	5.54	5.27
R20	Electrical resistance at 20°C (*)	Ohm	2.73	1.70
L1	Electrical inductance (*)	mH	15.1	8.50
Ip	Peak current	Arms	56.2	74.9
Ic	Continuous current	Arms	8.47	10.8
Is	Stall current	Arms	6.42	8.15
Pc	Max. continuous power dissipation	W	408	408

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1440	1440
Rth	Thermal resistance	K/W	0.241	0.241
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0299	0.0299
Mr	Rotor mass	kg	5.01	5.01
Ms	Stator mass	kg	8.79	8.78
Td	Max. detent torque (average to peak)	Nm	2.1	2.1
ns	Stall speed	rpm	0.019	0.019

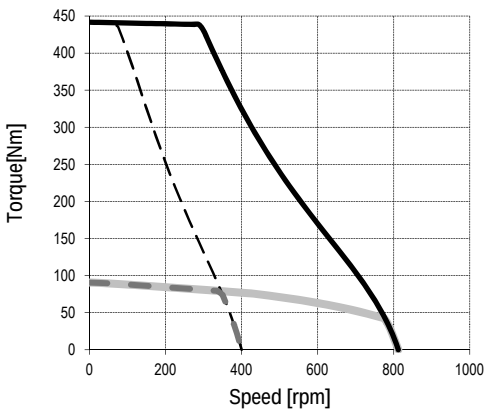
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.20 m² and rotor to a total surface of 0.100 m²

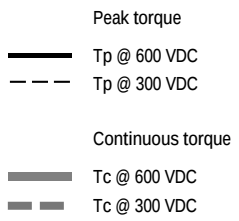
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TBN



Force = f(speed) for 3UBS





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Standard

TORQUE MOTOR TMM0210-150

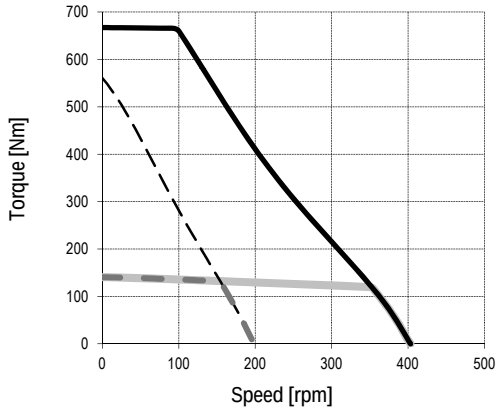
PERFORMANCE		Winding codes	3TBN	3UBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	672	672
Tc	Continuous torque	Nm	138	132
Ts	Stall torque	Nm	105	99.9
Kt	Torque constant	Nm/Arms	16.9	12.7
Ku	Back EMF constant (*)	Vrms/(rad/s)	9.79	7.35
Km	Motor constant	Nm/√W	7.03	6.69
R20	Electrical resistance at 20°C (*)	Ohm	3.88	2.40
L1	Electrical inductance (*)	mH	22.8	12.9
Ip	Peak current	Arms	56.2	74.9
Ic	Continuous current	Arms	8.30	10.5
Is	Stall current	Arms	6.29	7.98
Pc	Max. continuous power dissipation	W	554	554

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	1430	1430
Rth	Thermal resistance	K/W	0.177	0.177
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0451	0.0451
Mr	Rotor mass	kg	7.57	7.57
Ms	Stator mass	kg	12.6	12.6
Td	Max. detent torque (average to peak)	Nm	3.2	3.2
ns	Stall speed	rpm	0.019	0.019

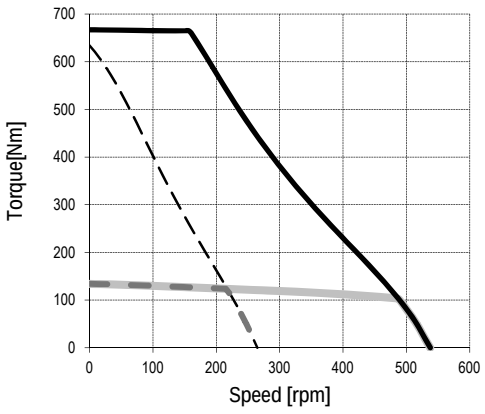
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.30 m² and rotor to a total surface of 0.140 m²

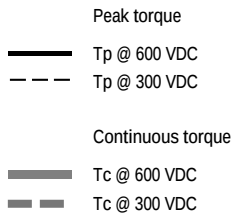
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TBN



Force = f(speed) for 3UBS





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Standard

TORQUE MOTOR TMM0291-030

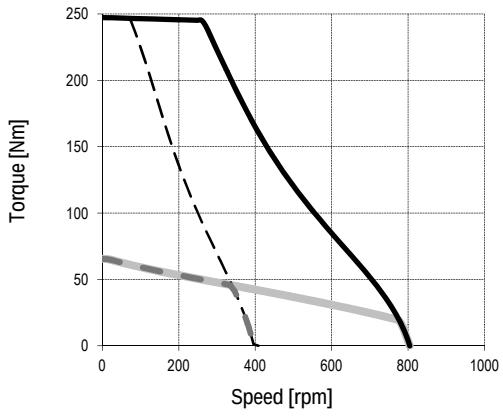
PERFORMANCE		Winding codes	3TBS	3TDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	249	249
Tc	Continuous torque	Nm	64.7	64.7
Ts	Stall torque	Nm	49.4	49.4
Kt	Torque constant	Nm/Arms	8.50	4.25
Ku	Back EMF constant (*)	Vrms/(rad/s)	4.92	2.46
Km	Motor constant	Nm/√W	4.27	4.27
R20	Electrical resistance at 20°C (*)	Ohm	2.64	0.661
L1	Electrical inductance (*)	mH	17.5	4.37
Ip	Peak current	Arms	46.0	91.9
Ic	Continuous current	Arms	8.00	16.0
Is	Stall current	Arms	6.06	12.1
Pc	Max. continuous power dissipation	W	363	363

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2160	2160
Rth	Thermal resistance	K/W	0.303	0.303
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0237	0.0237
Mr	Rotor mass	kg	2.07	2.07
Ms	Stator mass	kg	8.01	8.01
Td	Max. detent torque (average to peak)	Nm	1.1	1.1
ns	Stall speed	rpm	0.013	0.013

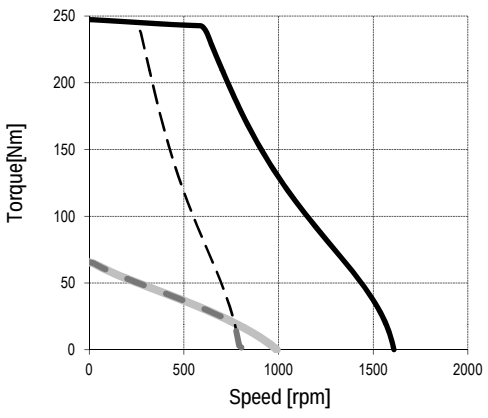
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.08 m² and rotor to a total surface of 0.056 m²

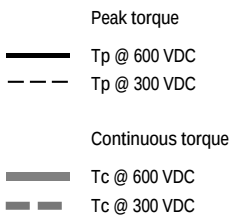
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TBS



Force = f(speed) for 3TDS





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Standard

TORQUE MOTOR TMM0291-050

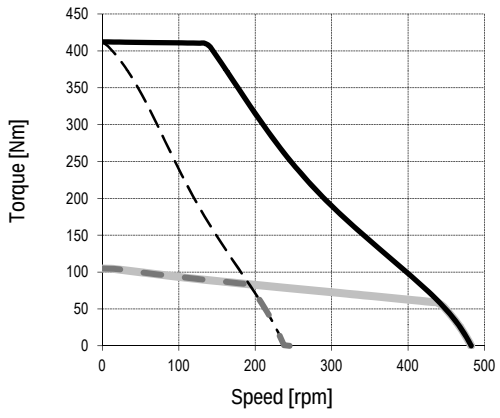
PERFORMANCE		Winding codes	3TBN	3TDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	416	416
Tc	Continuous torque	Nm	104	104
Ts	Stall torque	Nm	79.0	79.0
Kt	Torque constant	Nm/Arms	14.2	7.08
Ku	Back EMF constant (*)	Vrms/(rad/s)	8.20	4.10
Km	Motor constant	Nm/√W	6.11	6.11
R20	Electrical resistance at 20°C (*)	Ohm	3.58	0.895
L1	Electrical inductance (*)	mH	29.1	7.28
Ip	Peak current	Arms	46.0	91.9
Ic	Continuous current	Arms	7.66	15.3
Is	Stall current	Arms	5.80	11.6
Pc	Max. continuous power dissipation	W	451	451

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2130	2130
Rth	Thermal resistance	K/W	0.244	0.244
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0395	0.0395
Mr	Rotor mass	kg	3.46	3.46
Ms	Stator mass	kg	11.3	11.3
Td	Max. detent torque (average to peak)	Nm	1.9	1.9
ns	Stall speed	rpm	0.013	0.013

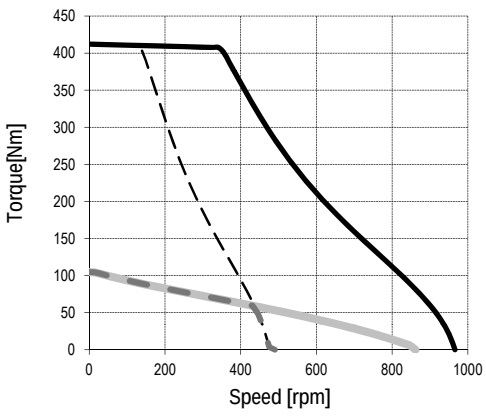
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.14 m² and rotor to a total surface of 0.082 m²

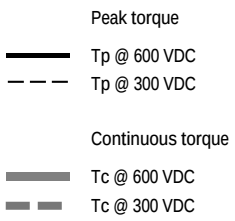
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TBN



Force = f(speed) for 3TDS





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TORQUE MOTOR TMM0291-070

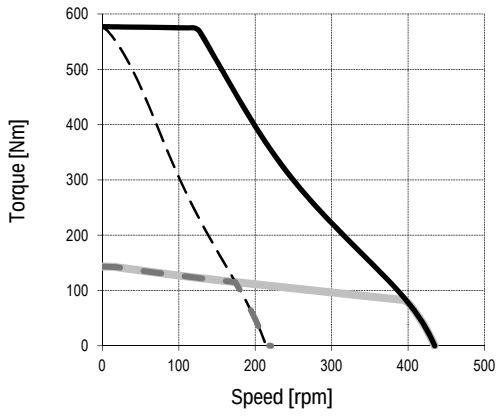
PERFORMANCE		Winding codes	3UBN	3TDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	582	582
Tc	Continuous torque	Nm	142	141
Ts	Stall torque	Nm	108	108
Kt	Torque constant	Nm/Arms	15.7	9.92
Ku	Back EMF constant (*)	Vrms/(rad/s)	9.09	5.74
Km	Motor constant	Nm/√W	7.64	7.62
R20	Electrical resistance at 20°C (*)	Ohm	2.82	1.13
L1	Electrical inductance (*)	mH	25.6	10.2
Ip	Peak current	Arms	58.0	91.9
Ic	Continuous current	Arms	9.43	14.9
Is	Stall current	Arms	7.14	11.3
Pc	Max. continuous power dissipation	W	539	539

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2100	2100
Rth	Thermal resistance	K/W	0.204	0.204
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0553	0.0553
Mr	Rotor mass	kg	4.84	4.84
Ms	Stator mass	kg	14.5	14.5
Td	Max. detent torque (average to peak)	Nm	2.6	2.6
ns	Stall speed	rpm	0.013	0.013

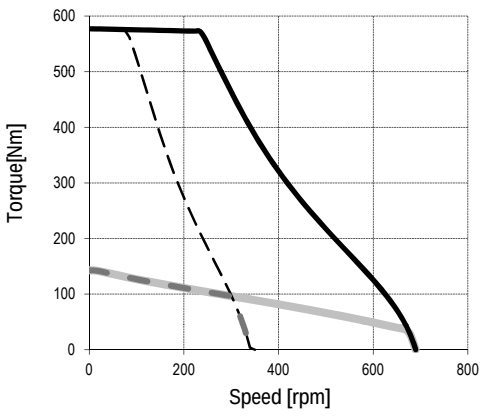
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.19 m² and rotor to a total surface of 0.110 m²

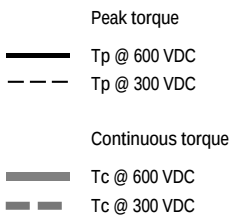
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3UBN



Force = f(speed) for 3TDS





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Standard

TORQUE MOTOR TMM0291-100

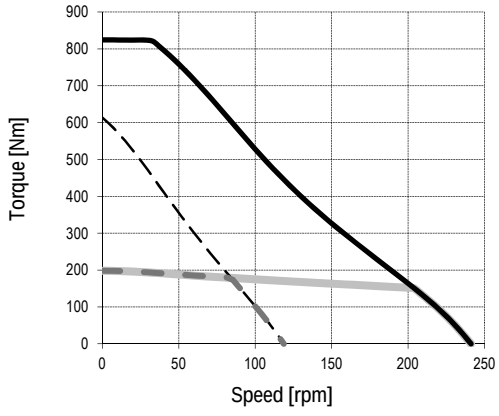
PERFORMANCE		Winding codes	3TBN	3TDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	831	831
Tc	Continuous torque	Nm	196	196
Ts	Stall torque	Nm	149	149
Kt	Torque constant	Nm/Arms	28.3	14.2
Ku	Back EMF constant (*)	Vrms/(rad/s)	16.4	8.20
Km	Motor constant	Nm/√W	9.46	9.46
R20	Electrical resistance at 20°C (*)	Ohm	5.98	1.50
L1	Electrical inductance (*)	mH	58.2	14.6
Ip	Peak current	Arms	46.0	91.9
Ic	Continuous current	Arms	7.23	14.5
Is	Stall current	Arms	5.48	11.0
Pc	Max. continuous power dissipation	W	671	671

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2080	2080
Rth	Thermal resistance	K/W	0.164	0.164
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.0791	0.0791
Mr	Rotor mass	kg	6.91	6.91
Ms	Stator mass	kg	19.4	19.4
Td	Max. detent torque (average to peak)	Nm	3.8	3.8
ns	Stall speed	rpm	0.013	0.013

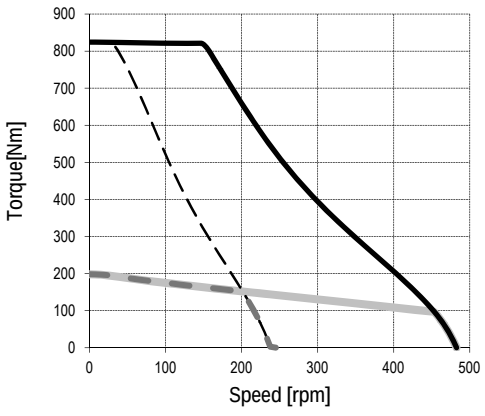
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.28 m² and rotor to a total surface of 0.140 m²

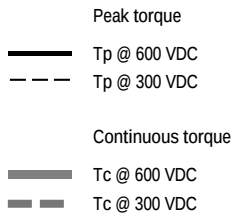
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TBN



Force = f(speed) for 3TDS





Standard

TORQUE MOTOR TMM0291-150

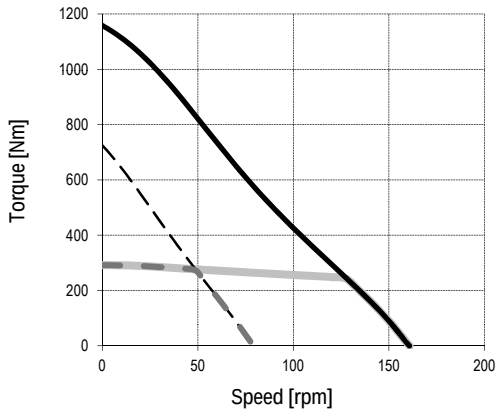
PERFORMANCE		Winding codes	3TBN	3TDN
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	1250	1250
Tc	Continuous torque	Nm	288	288
Ts	Stall torque	Nm	219	219
Kt	Torque constant	Nm/Arms	42.5	21.3
Ku	Back EMF constant (*)	Vrms/(rad/s)	24.6	12.3
Km	Motor constant	Nm/√W	12.1	12.1
R20	Electrical resistance at 20°C (*)	Ohm	8.26	2.07
L1	Electrical inductance (*)	mH	87.3	21.8
Ip	Peak current	Arms	46.0	91.9
Ic	Continuous current	Arms	7.08	14.2
Is	Stall current	Arms	5.37	10.7
Pc	Max. continuous power dissipation	W	890	890

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2050	2050
Rth	Thermal resistance	K/W	0.124	0.124
2p	Number of poles	-	44	44
J	Rotor inertia	$kg.m^2$	0.119	0.119
Mr	Rotor mass	kg	10.4	10.4
Ms	Stator mass	kg	27.5	27.5
Td	Max. detent torque (average to peak)	Nm	5.6	5.6
ns	Stall speed	rpm	0.013	0.013

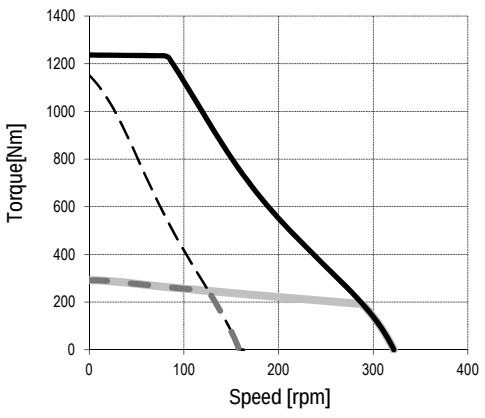
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.41 m² and rotor to a total surface of 0.210 m²

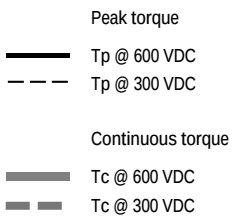
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3TBN



Force = f(speed) for 3TDN





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Standard

TORQUE MOTOR TMM0360-030

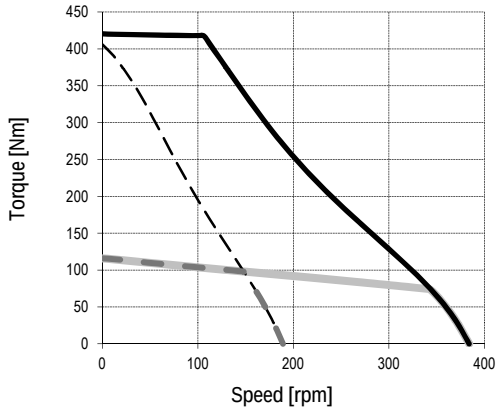
		Winding codes	3VAS	3VBS
PERFORMANCE		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	424	424
Tc	Continuous torque	Nm	114	114
Ts	Stall torque	Nm	87.8	87.8
Kt	Torque constant	Nm/Arms	17.8	8.90
Ku	Back EMF constant (*)	Vrms/(rad/s)	10.3	5.14
Km	Motor constant	Nm/√W	6.72	6.72
R20	Electrical resistance at 20°C (*)	Ohm	4.68	1.17
L1	Electrical inductance (*)	mH	27.4	6.86
Ip	Peak current	Arms	37.9	75.7
Ic	Continuous current	Arms	6.60	13.2
Is	Stall current	Arms	5.00	10.0
Pc	Max. continuous power dissipation	W	428	428

	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2190	2190
Rth	Thermal resistance	K/W	0.237	0.237
2p	Number of poles	-	66	66
J	Rotor inertia	$kg.m^2$	0.0655	0.0655
Mr	Rotor mass	kg	3.30	3.30
Ms	Stator mass	kg	10.0	10.0
Td	Max. detent torque (average to peak)	Nm	2.6	2.6
ns	Stall speed	rpm	0.0083	0.0083

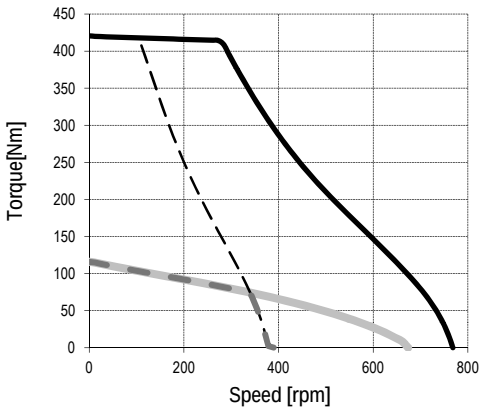
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.10 m² and rotor to a total surface of 0.079 m²

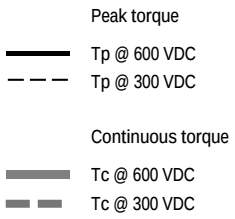
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VAS



Force = f(speed) for 3VBS





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Standard

TORQUE MOTOR TMM0360-050

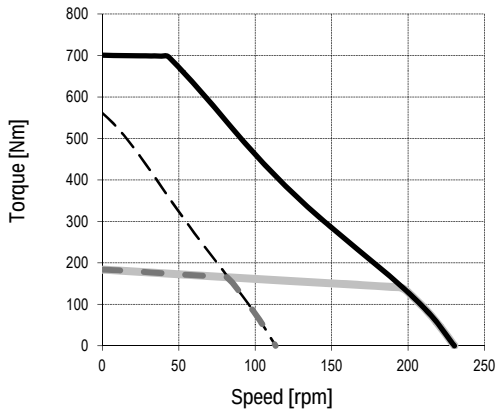
PERFORMANCE		Winding codes	3VAN	3XBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	707	707
Tc	Continuous torque	Nm	181	184
Ts	Stall torque	Nm	139	141
Kt	Torque constant	Nm/Arms	29.7	9.64
Ku	Back EMF constant (*)	Vrms/(rad/s)	17.1	5.57
Km	Motor constant	Nm/√W	9.51	9.68
R20	Electrical resistance at 20°C (*)	Ohm	6.48	0.660
L1	Electrical inductance (*)	mH	45.7	4.83
Ip	Peak current	Arms	37.9	117
Ic	Continuous current	Arms	6.25	19.6
Is	Stall current	Arms	4.74	14.8
Pc	Max. continuous power dissipation	W	530	530

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2160	2170
Rth	Thermal resistance	K/W	0.190	0.190
2p	Number of poles	-	66	66
J	Rotor inertia	$kg.m^2$	0.109	0.109
Mr	Rotor mass	kg	5.50	5.50
Ms	Stator mass	kg	14.2	14.2
Td	Max. detent torque (average to peak)	Nm	4.4	4.4
ns	Stall speed	rpm	0.0084	0.0084

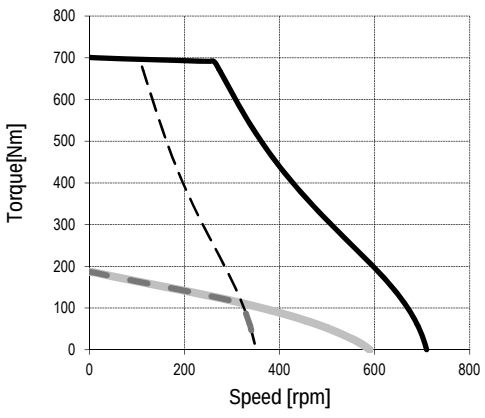
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.17 m² and rotor to a total surface of 0.110 m²

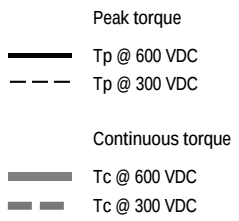
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VAN



Force = f(speed) for 3XBS





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Standard

TORQUE MOTOR TMM0360-070

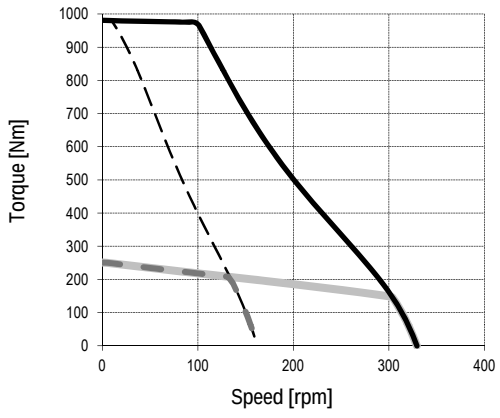
PERFORMANCE		Winding codes	3VBN	3XBS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	990	990
Tc	Continuous torque	Nm	247	246
Ts	Stall torque	Nm	190	189
Kt	Torque constant	Nm/Arms	20.8	13.5
Ku	Back EMF constant (*)	Vrms/(rad/s)	12.0	7.80
Km	Motor constant	Nm/√W	11.9	11.8
R20	Electrical resistance at 20°C (*)	Ohm	2.04	0.870
L1	Electrical inductance (*)	mH	16.0	6.75
Ip	Peak current	Arms	75.7	117
Ic	Continuous current	Arms	12.2	18.7
Is	Stall current	Arms	9.23	14.1
Pc	Max. continuous power dissipation	W	633	633

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2150	2150
Rth	Thermal resistance	K/W	0.159	0.159
2p	Number of poles	-	66	66
J	Rotor inertia	$kg.m^2$	0.153	0.153
Mr	Rotor mass	kg	7.71	7.71
Ms	Stator mass	kg	18.3	18.4
Td	Max. detent torque (average to peak)	Nm	6.1	6.1
ns	Stall speed	rpm	0.0085	0.0085

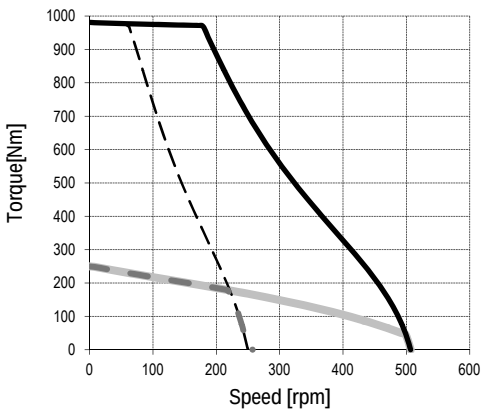
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.24 m² and rotor to a total surface of 0.150 m²

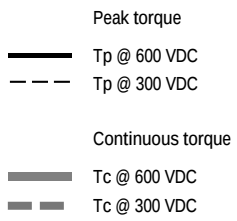
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBN



Force = f(speed) for 3XBS





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Standard

TORQUE MOTOR TMM0360-100

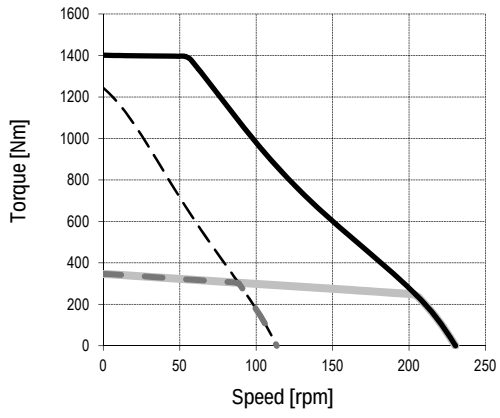
PERFORMANCE		Winding codes	3VBN	3TFS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	1410	1410
Tc	Continuous torque	Nm	341	353
Ts	Stall torque	Nm	261	270
Kt	Torque constant	Nm/Arms	29.7	16.1
Ku	Back EMF constant (*)	Vrms/(rad/s)	17.1	9.29
Km	Motor constant	Nm/√W	14.7	15.2
R20	Electrical resistance at 20°C (*)	Ohm	2.73	0.747
L1	Electrical inductance (*)	mH	22.8	6.70
Ip	Peak current	Arms	75.7	140
Ic	Continuous current	Arms	11.8	22.5
Is	Stall current	Arms	8.90	17.0
Pc	Max. continuous power dissipation	W	788	788

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2130	2130
Rth	Thermal resistance	K/W	0.128	0.128
2p	Number of poles	-	66	66
J	Rotor inertia	$kg.m^2$	0.218	0.218
Mr	Rotor mass	kg	11.0	11.0
Ms	Stator mass	kg	24.6	24.6
Td	Max. detent torque (average to peak)	Nm	8.7	8.7
ns	Stall speed	rpm	0.0085	0.0085

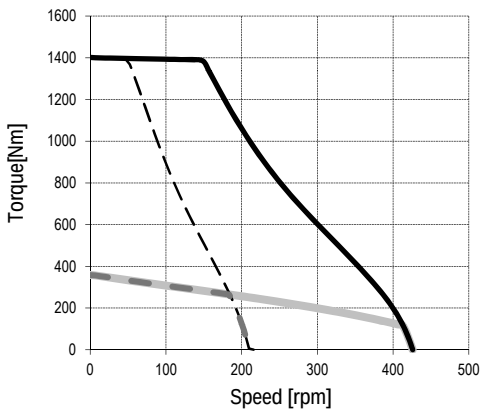
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.34 m² and rotor to a total surface of 0.200 m²

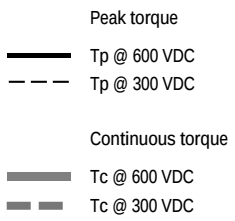
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBN



Force = f(speed) for 3TFS





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Standard

TORQUE MOTOR — TMM0360-150

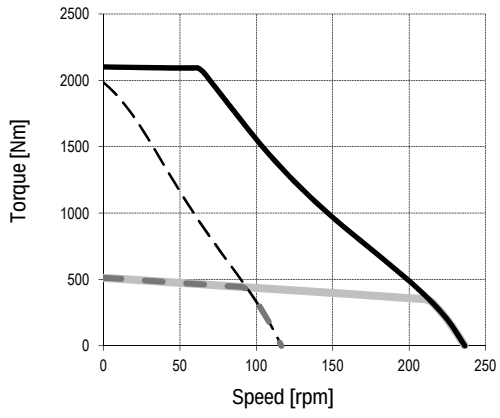
PERFORMANCE		Winding codes	3XBN	3UFN
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	2120	2120
Tc	Continuous torque	Nm	503	519
Ts	Stall torque	Nm	385	398
Kt	Torque constant	Nm/Arms	28.9	19.3
Ku	Back EMF constant (*)	Vrms/(rad/s)	16.7	11.1
Km	Motor constant	Nm/√W	18.7	19.4
R20	Electrical resistance at 20°C (*)	Ohm	1.59	0.661
L1	Electrical inductance (*)	mH	14.5	6.43
Ip	Peak current	Arms	117	175
Ic	Continuous current	Arms	17.8	27.5
Is	Stall current	Arms	13.5	20.9
Pc	Max. continuous power dissipation	W	1050	1050

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2120	2120
Rth	Thermal resistance	K/W	0.0959	0.0959
2p	Number of poles	-	66	66
J	Rotor inertia	$kg.m^2$	0.327	0.327
Mr	Rotor mass	kg	16.5	16.5
Ms	Stator mass	kg	35.1	35.1
Td	Max. detent torque (average to peak)	Nm	13	13
ns	Stall speed	rpm	0.0086	0.0086

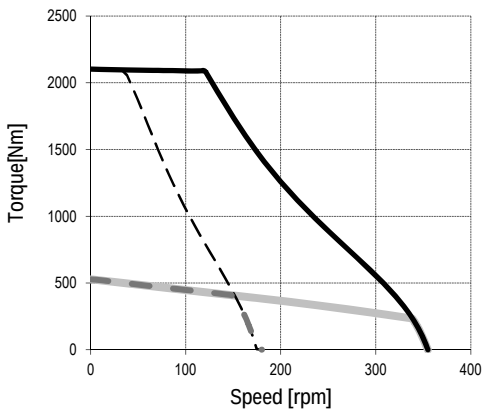
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.51 m² and rotor to a total surface of 0.280 m²

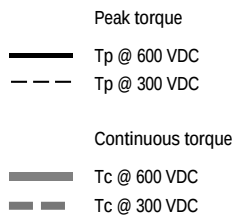
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3XBN



Force = f(speed) for 3UFN





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Standard

TORQUE MOTOR TMM0450-030

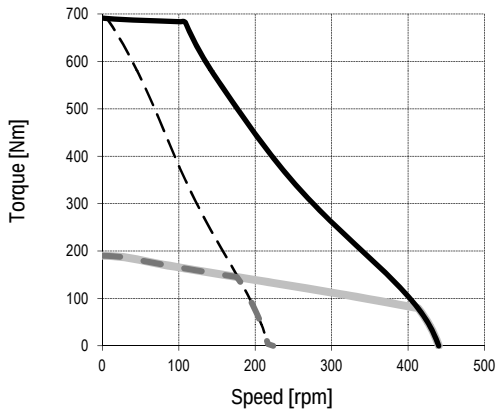
PERFORMANCE		Winding codes	3VBS	3VDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	699	699
Tc	Continuous torque	Nm	187	187
Ts	Stall torque	Nm	144	144
Kt	Torque constant	Nm/Arms	15.5	7.76
Ku	Back EMF constant (*)	Vrms/(rad/s)	8.98	4.49
Km	Motor constant	Nm/√W	9.61	9.61
R20	Electrical resistance at 20°C (*)	Ohm	1.74	0.435
L1	Electrical inductance (*)	mH	11.5	2.87
Ip	Peak current	Arms	92.2	184
Ic	Continuous current	Arms	12.7	25.3
Is	Stall current	Arms	9.58	19.2
Pc	Max. continuous power dissipation	W	598	598

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2360	2360
Rth	Thermal resistance	K/W	0.184	0.184
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.162	0.162
Mr	Rotor mass	kg	4.89	4.89
Ms	Stator mass	kg	13.7	13.7
Td	Max. detent torque (average to peak)	Nm	4.5	4.5
ns	Stall speed	rpm	0.0058	0.0058

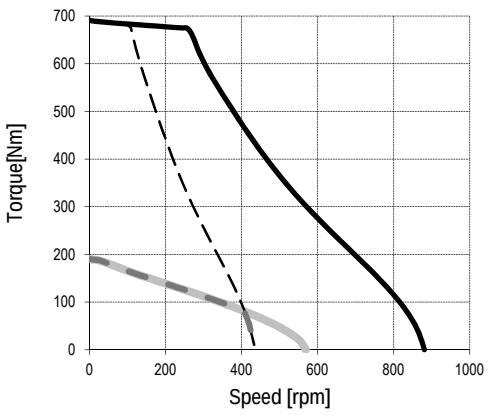
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.13 m² and rotor to a total surface of 0.110 m²

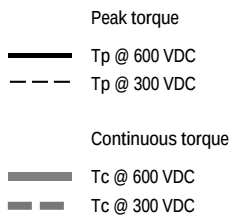
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBS



Force = f(speed) for 3VDS





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Standard

TORQUE MOTOR TMM0450-050

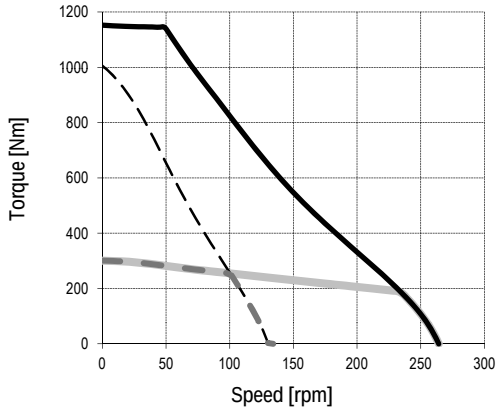
PERFORMANCE		Winding codes	3VBN	3VDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	1160	1160
Tc	Continuous torque	Nm	296	296
Ts	Stall torque	Nm	228	228
Kt	Torque constant	Nm/Arms	25.9	12.9
Ku	Back EMF constant (*)	Vrms/(rad/s)	15.0	7.48
Km	Motor constant	Nm/√W	13.6	13.6
R20	Electrical resistance at 20°C (*)	Ohm	2.40	0.601
L1	Electrical inductance (*)	mH	19.1	4.78
Ip	Peak current	Arms	92.2	184
Ic	Continuous current	Arms	12.0	23.9
Is	Stall current	Arms	9.07	18.1
Pc	Max. continuous power dissipation	W	739	739

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2340	2340
Rth	Thermal resistance	K/W	0.149	0.149
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.270	0.270
Mr	Rotor mass	kg	8.15	8.15
Ms	Stator mass	kg	19.3	19.3
Td	Max. detent torque (average to peak)	Nm	7.5	7.5
ns	Stall speed	rpm	0.0058	0.0058

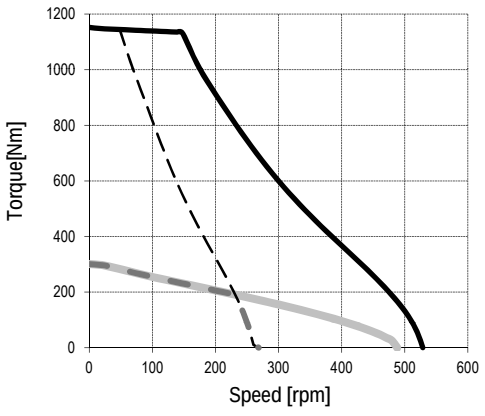
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.21 m² and rotor to a total surface of 0.150 m²

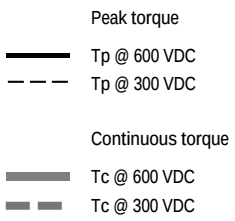
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBN



Force = f(speed) for 3VDS





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Standard

TORQUE MOTOR TMM0450-070

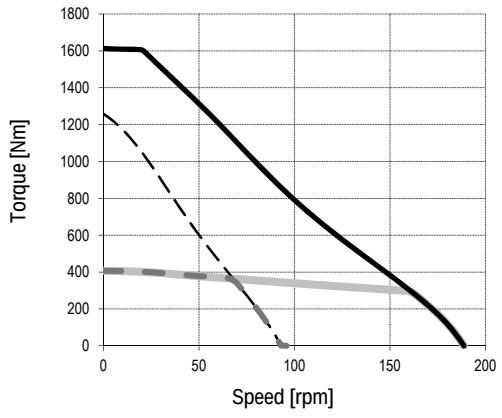
PERFORMANCE		Winding codes	3VBN	3VDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	1630	1630
Tc	Continuous torque	Nm	401	401
Ts	Stall torque	Nm	308	308
Kt	Torque constant	Nm/Arms	36.2	18.1
Ku	Back EMF constant (*)	Vrms/(rad/s)	21.0	10.5
Km	Motor constant	Nm/√W	16.9	16.9
R20	Electrical resistance at 20°C (*)	Ohm	3.08	0.769
L1	Electrical inductance (*)	mH	26.7	6.69
Ip	Peak current	Arms	92.2	184
Ic	Continuous current	Arms	11.5	23.1
Is	Stall current	Arms	8.74	17.5
Pc	Max. continuous power dissipation	W	880	880

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2330	2330
Rth	Thermal resistance	K/W	0.125	0.125
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.378	0.378
Mr	Rotor mass	kg	11.4	11.4
Ms	Stator mass	kg	24.9	24.9
Td	Max. detent torque (average to peak)	Nm	11	11
ns	Stall speed	rpm	0.0059	0.0059

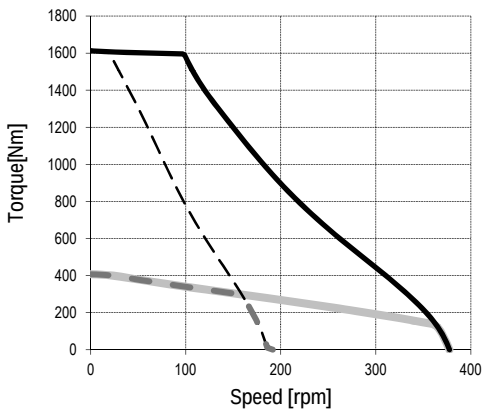
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.30 m² and rotor to a total surface of 0.200 m²

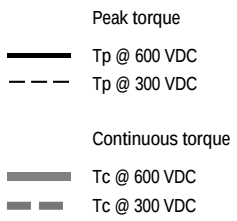
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBN



Force = f(speed) for 3VDS





Standard

TORQUE MOTOR — TMM0450-100

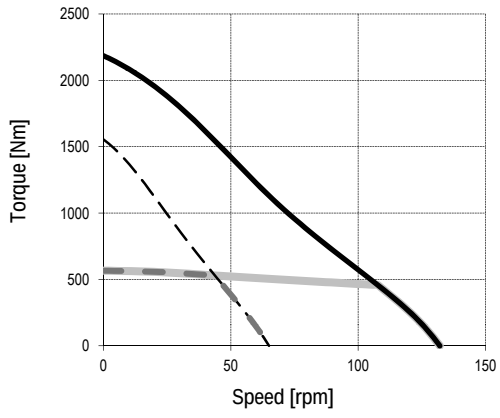
PERFORMANCE		Winding codes	3VBN	3VDN
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	2330	2330
Tc	Continuous torque	Nm	557	557
Ts	Stall torque	Nm	427	427
Kt	Torque constant	Nm/Arms	51.7	25.9
Ku	Back EMF constant (*)	Vrms/(rad/s)	29.9	15.0
Km	Motor constant	Nm/√W	21.0	21.0
R20	Electrical resistance at 20°C (*)	Ohm	4.04	1.01
L1	Electrical inductance (*)	mH	38.2	9.55
Ip	Peak current	Arms	92.2	184
Ic	Continuous current	Arms	11.2	22.4
Is	Stall current	Arms	8.50	17.0
Pc	Max. continuous power dissipation	W	1090	1090

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2310	2310
Rth	Thermal resistance	K/W	0.101	0.101
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.540	0.540
Mr	Rotor mass	kg	16.3	16.3
Ms	Stator mass	kg	33.2	33.2
Td	Max. detent torque (average to peak)	Nm	15	15
ns	Stall speed	rpm	0.0059	0.0059

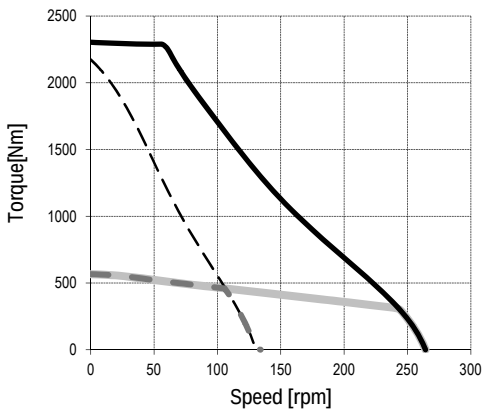
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.43 m² and rotor to a total surface of 0.260 m²

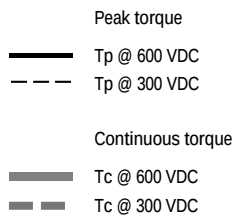
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBN



Force = f(speed) for 3VDN





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Standard

TORQUE MOTOR TMM0450-150

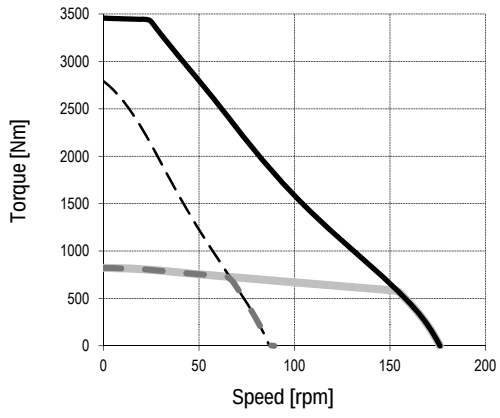
PERFORMANCE		Winding codes	3VDN	3VHS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	3490	3490
Tc	Continuous torque	Nm	809	809
Ts	Stall torque	Nm	620	620
Kt	Torque constant	Nm/Arms	38.8	19.4
Ku	Back EMF constant (*)	Vrms/(rad/s)	22.4	11.2
Km	Motor constant	Nm/√W	26.5	26.5
R20	Electrical resistance at 20°C (*)	Ohm	1.43	0.358
L1	Electrical inductance (*)	mH	14.3	3.58
Ip	Peak current	Arms	184	369
Ic	Continuous current	Arms	21.7	43.4
Is	Stall current	Arms	16.4	32.9
Pc	Max. continuous power dissipation	W	1440	1440

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2300	2300
Rth	Thermal resistance	K/W	0.0762	0.0762
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.810	0.810
Mr	Rotor mass	kg	24.5	24.5
Ms	Stator mass	kg	47.2	47.2
Td	Max. detent torque (average to peak)	Nm	23	23
ns	Stall speed	rpm	0.0059	0.0059

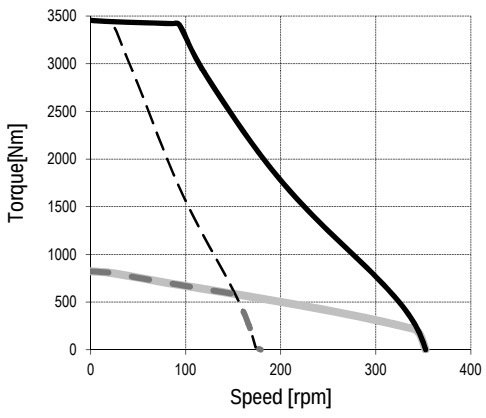
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.64 m² and rotor to a total surface of 0.370 m²

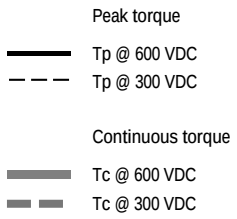
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VDN



Force = f(speed) for 3VHS





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Standard

TORQUE MOTOR TMM0530-030

PERFORMANCE		Winding codes	3VBN	3VDS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	997	997
Tc	Continuous torque	Nm	269	269
Ts	Stall torque	Nm	207	207
Kt	Torque constant	Nm/Arms	24.2	12.1
Ku	Back EMF constant (*)	Vrms/(rad/s)	14.0	6.99
Km	Motor constant	Nm/√W	12.5	12.5
R20	Electrical resistance at 20°C (*)	Ohm	2.50	0.624
L1	Electrical inductance (*)	mH	23.2	5.80
Ip	Peak current	Arms	79.6	159
Ic	Continuous current	Arms	11.4	22.9
Is	Stall current	Arms	8.67	17.3
Pc	Max. continuous power dissipation	W	701	701

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2520	2520
Rth	Thermal resistance	K/W	0.157	0.157
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.276	0.276
Mr	Rotor mass	kg	5.75	5.75
Ms	Stator mass	kg	18.0	18.0
Td	Max. detent torque (average to peak)	Nm	8.5	8.5
ns	Stall speed	rpm	0.0054	0.0054

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.15 m² and rotor to a total surface of 0.130 m²

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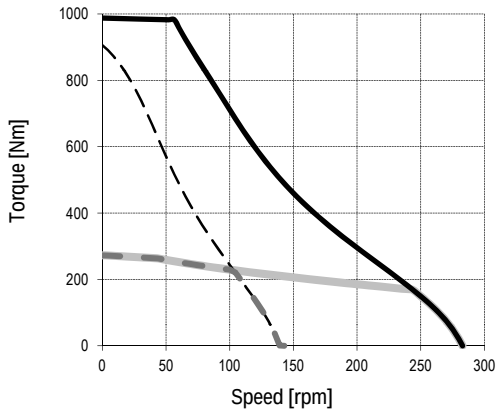
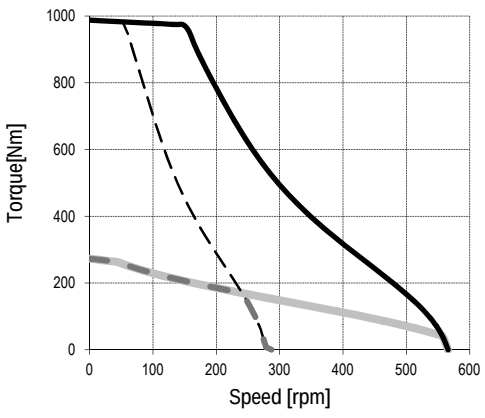
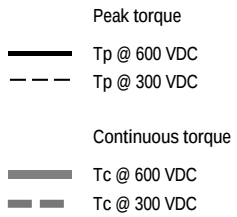
Force = f(speed) for 3VBN



Force = f(speed) for 3VDS





Standard

TORQUE MOTOR TMM0530-050

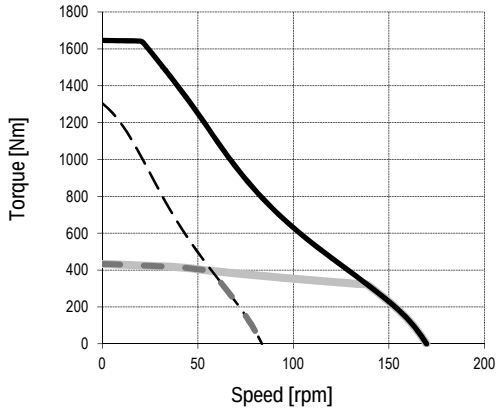
		Winding codes	3VBN	3VDN
PERFORMANCE		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	1660	1660
Tc	Continuous torque	Nm	427	427
Ts	Stall torque	Nm	328	328
Kt	Torque constant	Nm/Arms	40.3	20.1
Ku	Back EMF constant (*)	Vrms/(rad/s)	23.3	11.7
Km	Motor constant	Nm/√W	17.8	17.8
R20	Electrical resistance at 20°C (*)	Ohm	3.40	0.850
L1	Electrical inductance (*)	mH	38.6	9.66
Ip	Peak current	Arms	79.6	159
Ic	Continuous current	Arms	10.9	21.7
Is	Stall current	Arms	8.23	16.5
Pc	Max. continuous power dissipation	W	861	861

	SPECIFICATIONS	UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2510	2510
Rth	Thermal resistance	K/W	0.128	0.128
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.461	0.461
Mr	Rotor mass	kg	9.59	9.59
Ms	Stator mass	kg	25.4	25.4
Td	Max. detent torque (average to peak)	Nm	14	14
ns	Stall speed	rpm	0.0054	0.0054

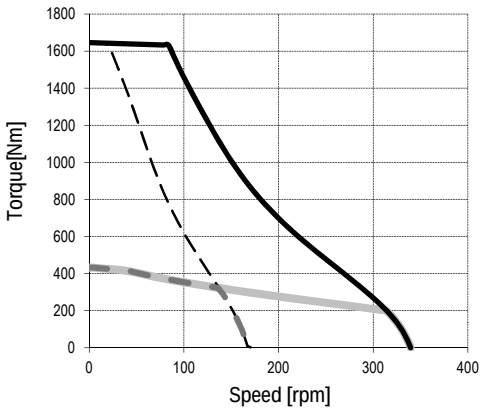
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.25 m² and rotor to a total surface of 0.180 m²

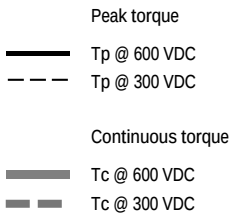
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBN



Force = f(speed) for 3VDN





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Standard

TORQUE MOTOR TMM0530-070

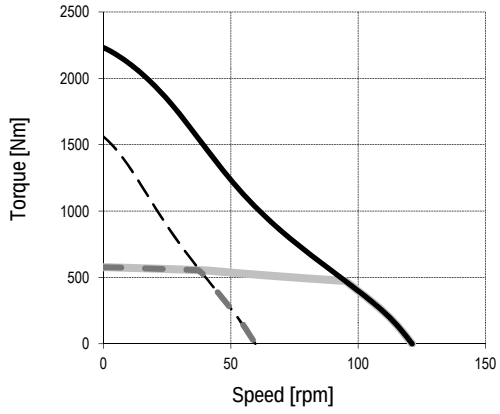
PERFORMANCE		Winding codes	3VBN	3VDN
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	2330	2330
Tc	Continuous torque	Nm	569	569
Ts	Stall torque	Nm	437	437
Kt	Torque constant	Nm/Arms	56.4	28.2
Ku	Back EMF constant (*)	Vrms/(rad/s)	32.6	16.3
Km	Motor constant	Nm/√W	21.8	21.8
R20	Electrical resistance at 20°C (*)	Ohm	4.48	1.12
L1	Electrical inductance (*)	mH	54.0	13.5
Ip	Peak current	Arms	79.6	159
Ic	Continuous current	Arms	10.3	20.6
Is	Stall current	Arms	7.81	15.6
Pc	Max. continuous power dissipation	W	1020	1020

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2490	2490
Rth	Thermal resistance	K/W	0.108	0.108
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.645	0.645
Mr	Rotor mass	kg	13.4	13.4
Ms	Stator mass	kg	33.0	33.0
Td	Max. detent torque (average to peak)	Nm	20	20
ns	Stall speed	rpm	0.0055	0.0055

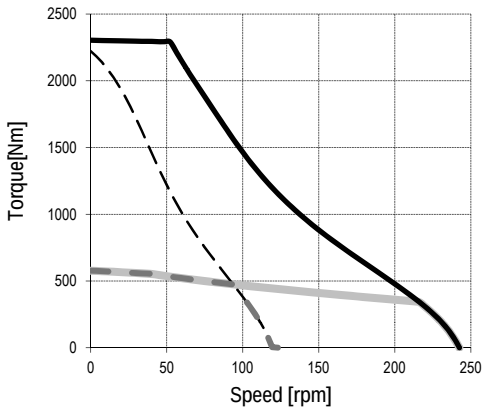
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.35 m² and rotor to a total surface of 0.240 m²

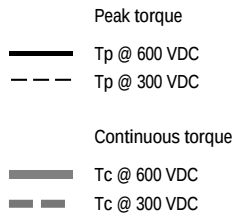
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VBN



Force = f(speed) for 3VDN





Standard

TORQUE MOTOR TMM0530-100

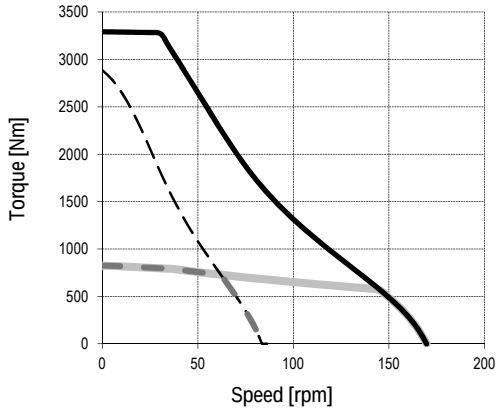
PERFORMANCE		Winding codes	3VDN	3VHS
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	3320	3320
Tc	Continuous torque	Nm	814	814
Ts	Stall torque	Nm	625	625
Kt	Torque constant	Nm/Arms	40.3	20.1
Ku	Back EMF constant (*)	Vrms/(rad/s)	23.3	11.7
Km	Motor constant	Nm/√W	28.0	28.0
R20	Electrical resistance at 20°C (*)	Ohm	1.38	0.345
L1	Electrical inductance (*)	mH	19.3	4.83
Ip	Peak current	Arms	159	318
Ic	Continuous current	Arms	20.7	41.3
Is	Stall current	Arms	15.6	31.3
Pc	Max. continuous power dissipation	W	1260	1260

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2480	2480
Rth	Thermal resistance	K/W	0.0872	0.0872
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	0.921	0.921
Mr	Rotor mass	kg	19.2	19.2
Ms	Stator mass	kg	43.6	43.6
Td	Max. detent torque (average to peak)	Nm	28	28
ns	Stall speed	rpm	0.0055	0.0055

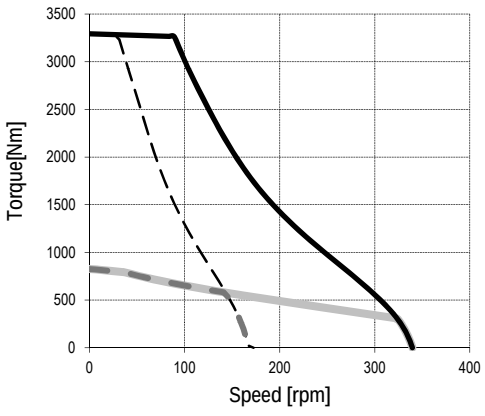
Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.50 m² and rotor to a total surface of 0.320 m²

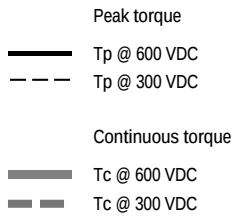
Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VDN



Force = f(speed) for 3VHS





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Standard

TORQUE MOTOR TMM0530-150

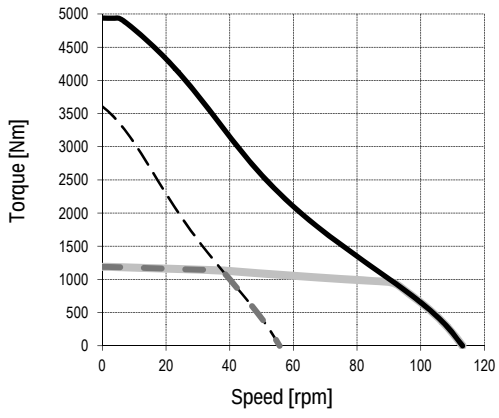
PERFORMANCE		Winding codes	3VDN	3VHN
		UNIT	FREE AIR CONVECTION (with glued stator)	FREE AIR CONVECTION (with glued stator)
Tp	Peak torque	Nm	4990	4990
Tc	Continuous torque	Nm	1170	1170
Ts	Stall torque	Nm	899	899
Kt	Torque constant	Nm/Arms	60.4	30.2
Ku	Back EMF constant (*)	Vrms/(rad/s)	35.0	17.5
Km	Motor constant	Nm/√W	35.1	35.1
R20	Electrical resistance at 20°C (*)	Ohm	1.98	0.494
L1	Electrical inductance (*)	mH	28.9	7.23
Ip	Peak current	Arms	159	318
Ic	Continuous current	Arms	19.8	39.6
Is	Stall current	Arms	15.0	30.0
Pc	Max. continuous power dissipation	W	1660	1660

SPECIFICATIONS		UNIT		
Udc	Nominal input voltage	VDC	600	600
τth	Thermal time constant	s	2470	2470
Rth	Thermal resistance	K/W	0.0662	0.0662
2p	Number of poles	-	88	88
J	Rotor inertia	$kg.m^2$	1.38	1.38
Mr	Rotor mass	kg	28.8	28.8
Ms	Stator mass	kg	62.1	62.1
Td	Max. detent torque (average to peak)	Nm	43	43
ns	Stall speed	rpm	0.0055	0.0055

Notes: (*) terminal to terminal. Ambient temperature = 20 °C. Max. coil temperature = 130 °C.
Hypothesis and tolerances are in ETEL's Handbook. Stator connected to a total surface of 0.75 m² and rotor to a total surface of 0.450 m²

Caution: Any use of the motor beyond speed/force limit could lead to hazardous voltage and serious injuries. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the motor is used in an improper way.

Force = f(speed) for 3VDN



Force = f(speed) for 3VHN