



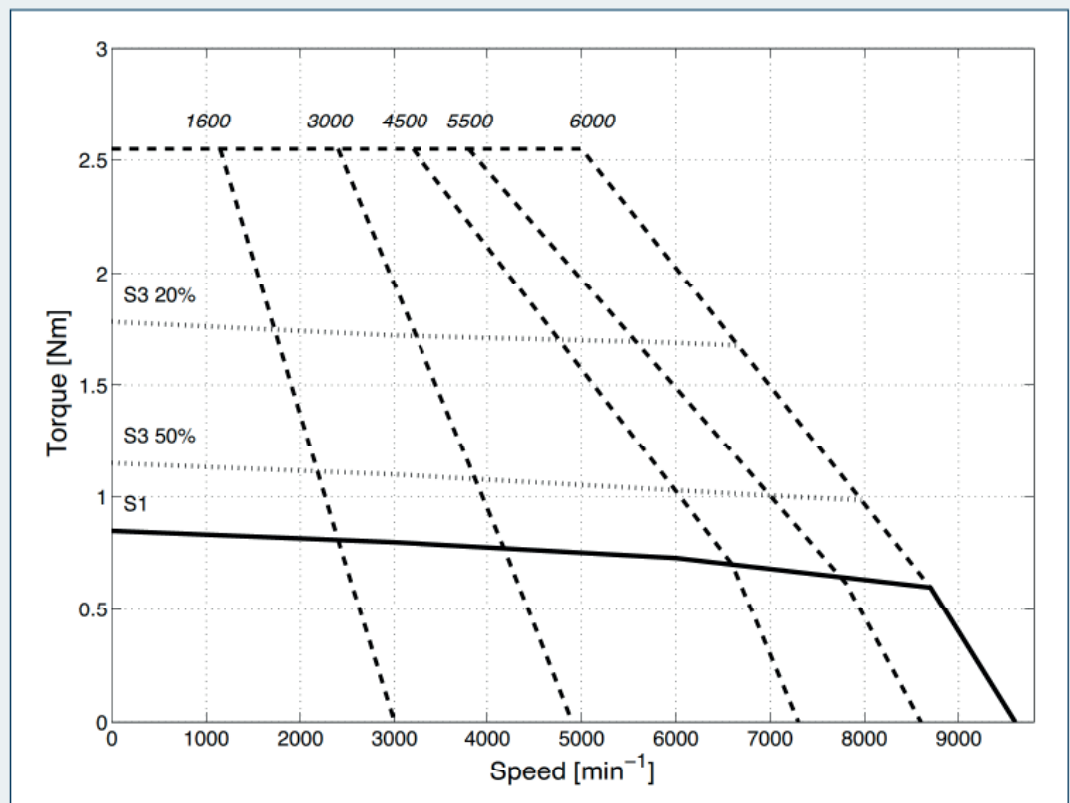
Solutions in ***motion***

MMD series

Intelligence Production Movement

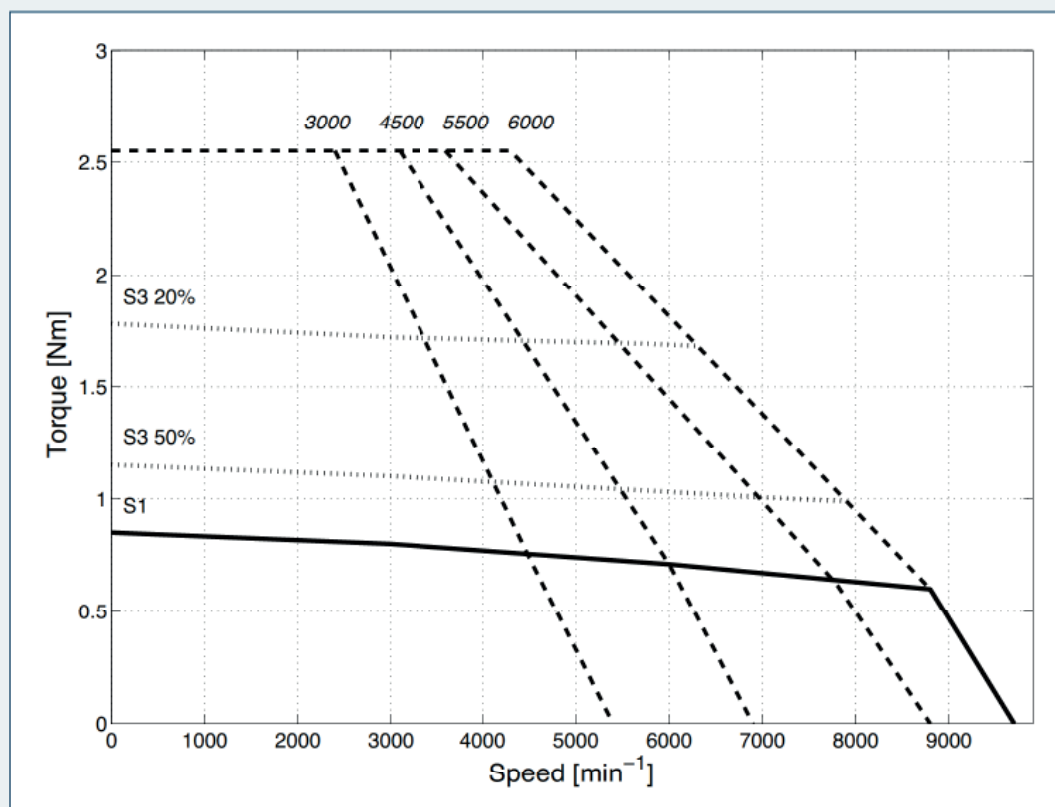
MMD 65 • 0.85 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	0.85				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	168	181	172	179	177
Rated Torque (dT=105K)	M_n	[Nm]	0.83	0.80	0.76	0.74	0.73
Current at rated speed	I_n	[A]	0.74	1.16	1.74	1.92	2.09
Standstill current	I_0	[A]	0.77	1.23	1.93	2.18	2.39
Max Torque	M_{max}	[Nm]	2.55	2.55	2.55	2.55	2.55
Max Current	I_{max}	[A]	2.5	3.9	6.2	7.0	7.7
Back EMF constant	K_e	[V/1000min ⁻¹]	75	47	30	27	24
Torque constant	K_T	[Nm/A]	1.10	0.69	0.44	0.39	0.36
Rated Power	P_n	[kW]	0.14	0.25	0.36	0.43	0.46
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	48.4	19.2	7.75	6.10	5.04
Stator phase-phase Inductance	L_{pp}	[mH]	145	57.5	23.2	18.3	15.1
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	0.2				
Electric time constant (at 20°C)	τ_{el}	[ms]	3.0				
Thermal time constant	τ_{therm}	[min]	14				
Motor mass without brake	m_M	[kg]	1.3				
Motor mass with brake	m_{MB}	[kg]	1.5				



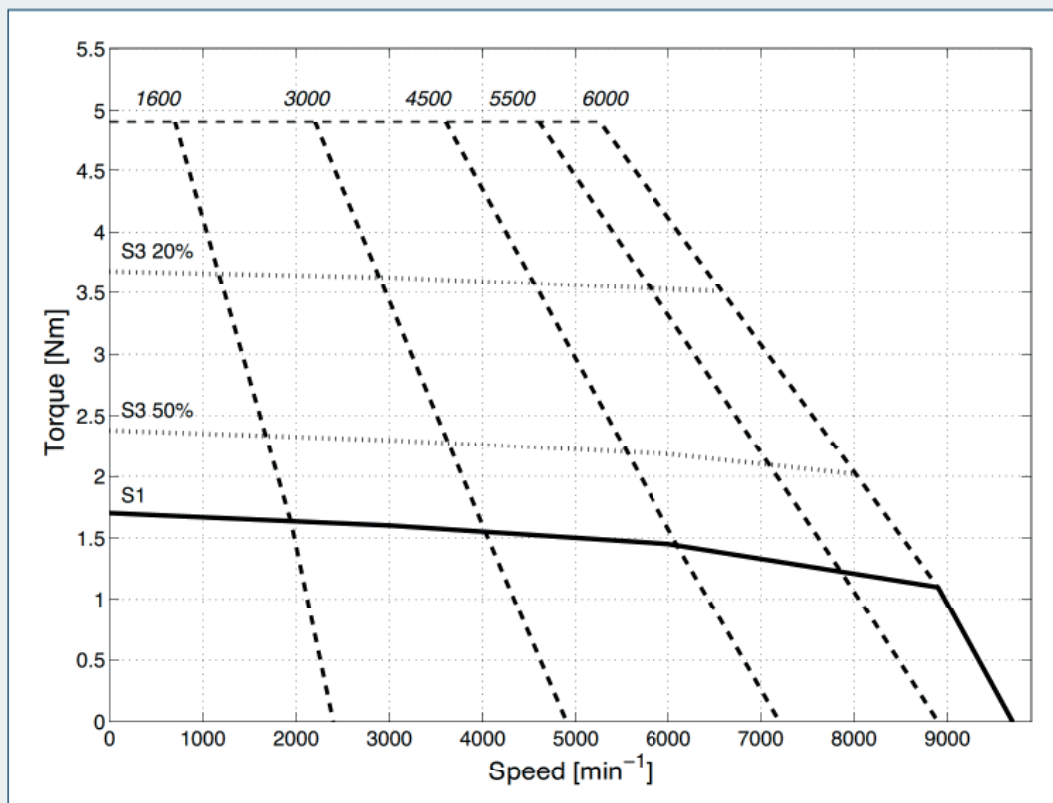
MMD 65 • 0.85 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]			
			3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	0.85			
Motor rated frequency	f_n	[Hz]	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	295	331	318	306
Rated Torque (dT=105K)	M_n	[Nm]	0.80	0.76	0.74	0.73
Current at rated speed	I_n	[A]	0.72	0.88	1.08	1.21
Standstill current	I_0	[A]	0.76	0.98	1.23	1.38
Max Torque	M_{max}	[Nm]	2.55	2.55	2.55	2.55
Max Current	I_{max}	[A]	2.43	3.1	3.9	4.4
Back EMF constant	K_e	[V/1000min ⁻¹]	76	59	47	42
Torque constant	K_T	[Nm/A]	1.12	0.87	0.69	0.62
Rated Power	P_n	[kW]	0.25	0.36	0.43	0.46
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	50.0	30.3	19.2	15.1
Stator phase-phase Inductance	L_{pp}	[mH]	150	90.7	57.5	45.2
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	0.2			
Electric time constant (at 20°C)	τ_{el}	[ms]	3.0			
Thermal time constant	τ_{therm}	[min]	14			
Motor mass without brake	m_M	[kg]	1.3			
Motor mass with brake	m_{MB}	[kg]	1.5			



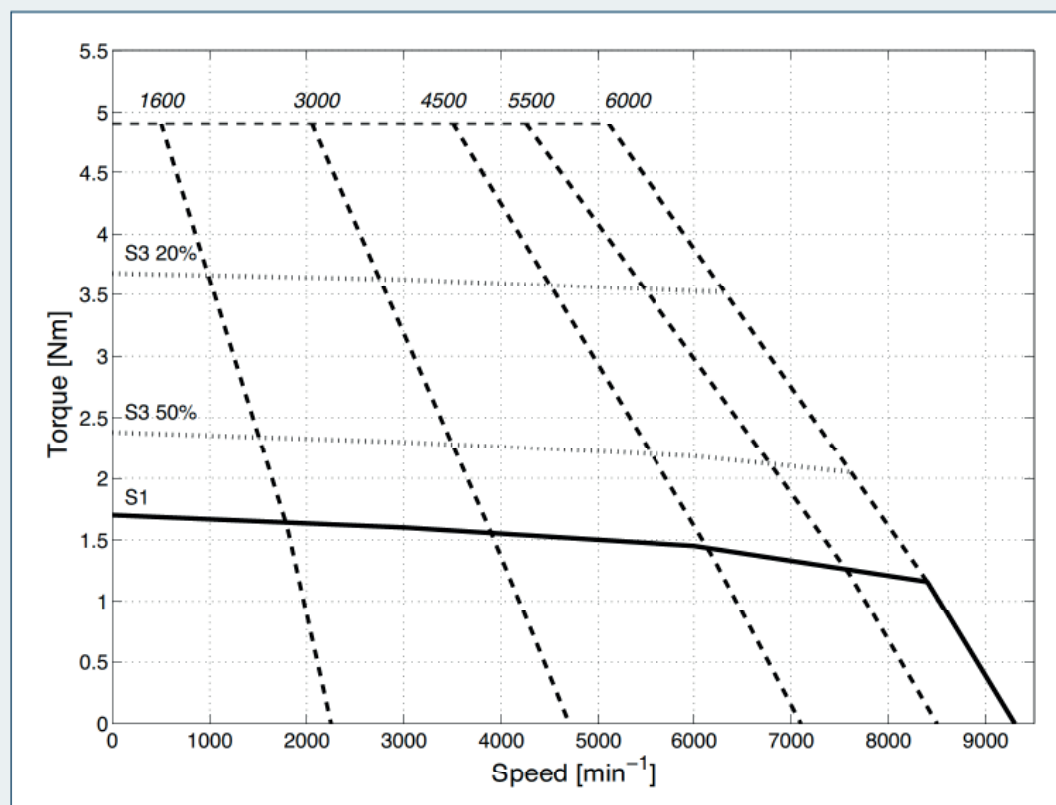
MMD 65 • 1.7 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	1.7				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	193	180	180	174	171
Rated Torque (dT=105K)	M_n	[Nm]	1.65	1.60	1.52	1.48	1.45
Current at rated speed	I_n	[A]	1.25	2.30	3.2	3.9	4.2
Standstill current	I_0	[A]	1.26	2.34	3.4	4.2	4.7
Max Torque	M_{max}	[Nm]	4.9	4.9	4.9	4.9	4.9
Max Current	I_{max}	[A]	4.3	8.0	11.5	14.5	15.9
Back EMF constant	K_e	[V/1000min ⁻¹]	89	48	33	26	24
Torque constant	K_T	[Nm/A]	1.35	0.73	0.50	0.40	0.36
Rated Power	P_n	[kW]	0.28	0.50	0.72	0.85	0.91
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	30.4	8.79	4.19	2.66	2.20
Stator phase-phase Inductance	L_{pp}	[mH]	91.9	26.6	12.6	8.0	6.6
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	0.4				
Electric time constant (at 20°C)	τ_{el}	[ms]	3.0				
Thermal time constant	τ_{therm}	[min]	20				
Motor mass without brake	m_M	[kg]	1.9				
Motor mass with brake	m_{MB}	[kg]	2.1				



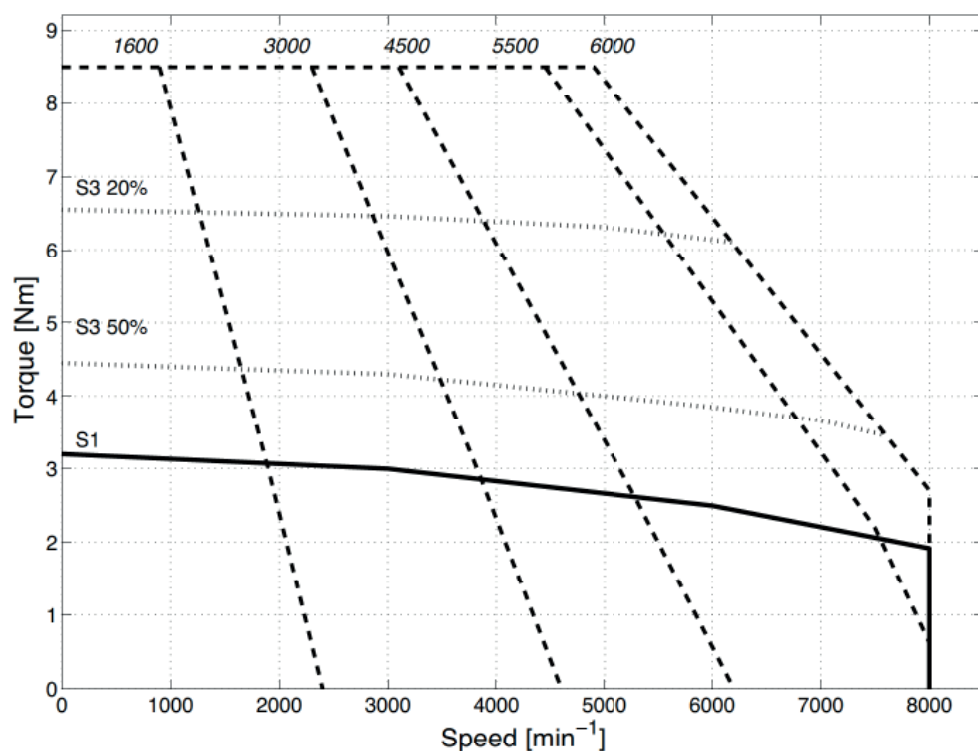
MMD 65 • 1.7 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	1.7				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	336	311	308	316	300
Rated Torque (dT=105K)	M_n	[Nm]	1.65	1.60	1.52	1.48	1.45
Current at rated speed	I_n	[A]	0.72	1.33	1.85	2.14	2.43
Standstill current	I_0	[A]	0.72	1.35	1.98	2.34	2.68
Max Torque	M_{max}	[Nm]	4.9	4.9	4.9	4.9	4.9
Max Current	I_{max}	[A]	2.46	4.6	6.7	8.0	9.1
Back EMF constant	K_e	[V/1000min ⁻¹]	155	83	57	48	42
Torque constant	K_T	[Nm/A]	2.36	1.26	0.86	0.73	0.63
Rated Power	P_n	[kW]	0.28	0.50	0.72	0.85	0.91
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	92.3	26.3	12.2	8.79	6.65
Stator phase-phase Inductance	L_{pp}	[mH]	279	79.5	37.0	26.6	20.1
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	0.4				
Electric time constant (at 20°C)	τ_{el}	[ms]	3.0				
Thermal time constant	τ_{therm}	[min]	20				
Motor mass without brake	m_M	[kg]	1.9				
Motor mass with brake	m_{MB}	[kg]	2.1				



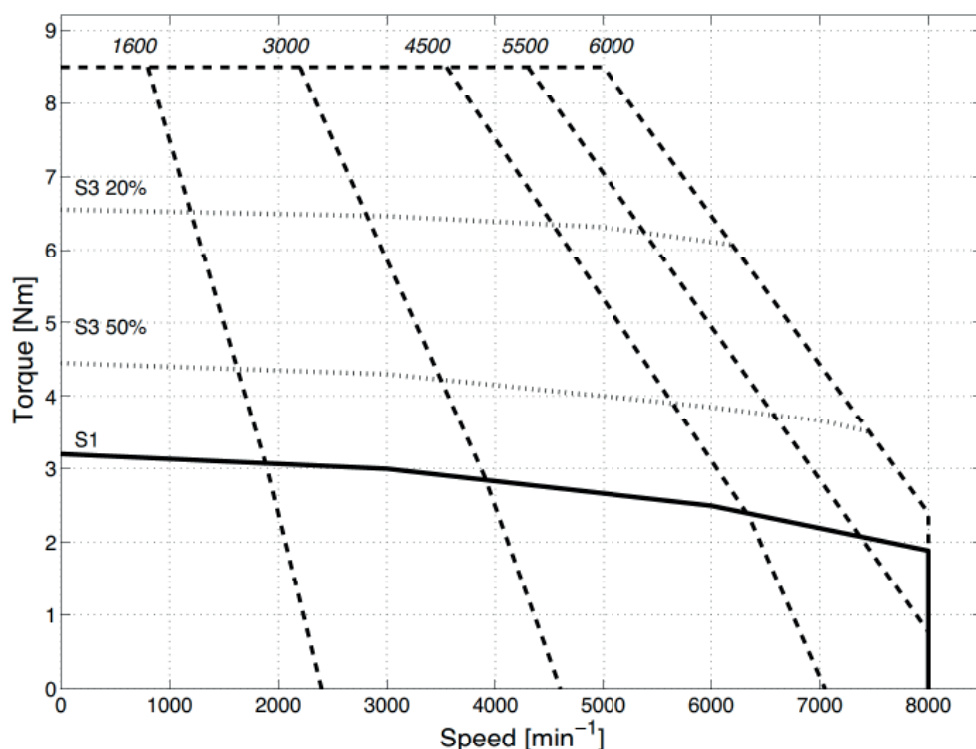
MMD 82 • 3.2 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	3.2				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	191	207	200	176	176
Rated Torque (dT=105K)	M_n	[Nm]	3.15	3	2.8	2.6	2.5
Current at rated speed	I_n	[A]	2.37	3.8	5.3	7.0	7.6
Standstill current	I_0	[A]	2.41	3.9	6.0	8.3	9.0
Max Torque	M_{max}	[Nm]	8.5	8.5	8.5	8.5	8.5
Max Current	I_{max}	[A]	8.3	13.4	20.6	28.4	31
Back EMF constant	K_e	[V/1000min ⁻¹]	92	57	37	27	24
Torque constant	K_T	[Nm/A]	1.33	0.82	0.53	0.39	0.35
Rated Power	P_n	[kW]	0.53	0.94	1.32	1.50	1.57
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	11.3	4.33	1.81	0.96	0.81
Stator phase-phase Inductance	L_{pp}	[mH]	64.2	24.5	10.3	5.4	4.6
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	1.4				
Electric time constant (at 20°C)	τ_{el}	[ms]	5.7				
Thermal time constant	τ_{therm}	[min]	26				
Motor mass without brake	m_M	[kg]	3.5				
Motor mass with brake	m_{MB}	[kg]	4.1				



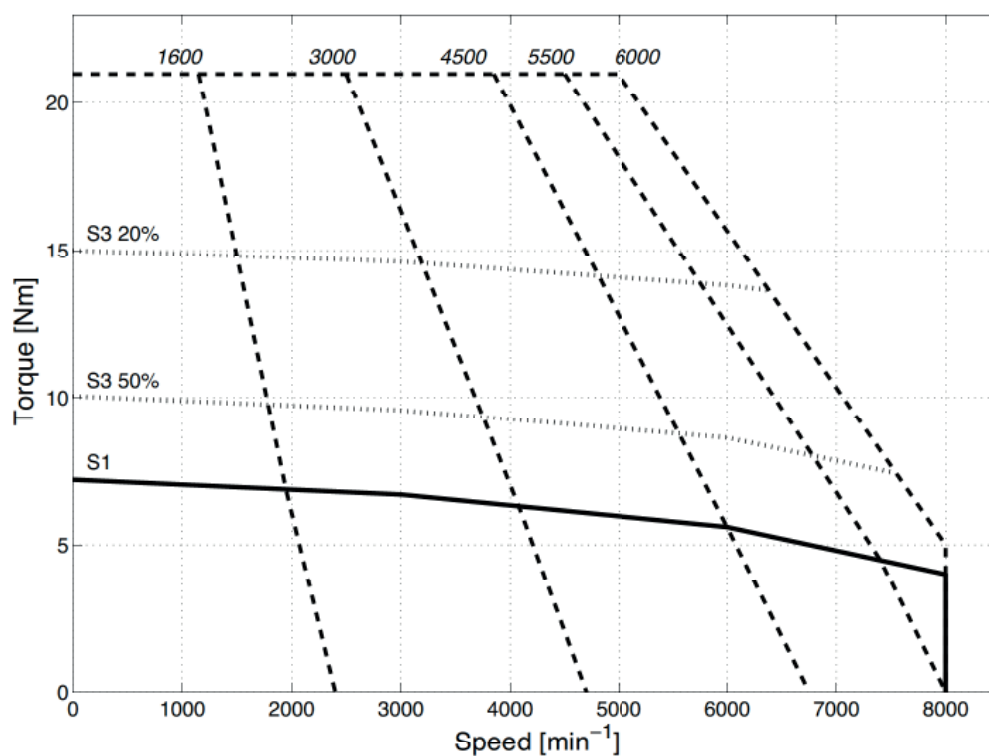
MMD82 • 3.2 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	3.2				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	332	358	312	323	308
Rated Torque (dT=105K)	M_n	[Nm]	3.15	3	2.8	2.6	2.5
Current at rated speed	I_n	[A]	1.36	2.16	3.4	3.8	4.3
Standstill current	I_0	[A]	1.39	2.25	3.9	4.5	5.2
Max Torque	M_{max}	[Nm]	8.5	8.5	8.5	8.5	8.5
Max Current	I_{max}	[A]	4.7	7.69	13.2	15.5	17.7
Back EMF constant	K_e	[V/1000min ⁻¹]	159	98	57	49	43
Torque constant	K_T	[Nm/A]	2.31	1.42	0.83	0.71	0.62
Rated Power	P_n	[kW]	0.53	0.94	1.32	1.50	1.57
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	34.3	13.05	4.42	3.23	2.47
Stator phase-phase Inductance	L_{pp}	[mH]	194	73.9	25.0	18.3	14.0
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	1.4				
Electric time constant (at 20°C)	τ_{el}	[ms]	5.7				
Thermal time constant	τ_{therm}	[min]	26				
Motor mass without brake	m_M	[kg]	3.5				
Motor mass with brake	m_{MB}	[kg]	4.1				



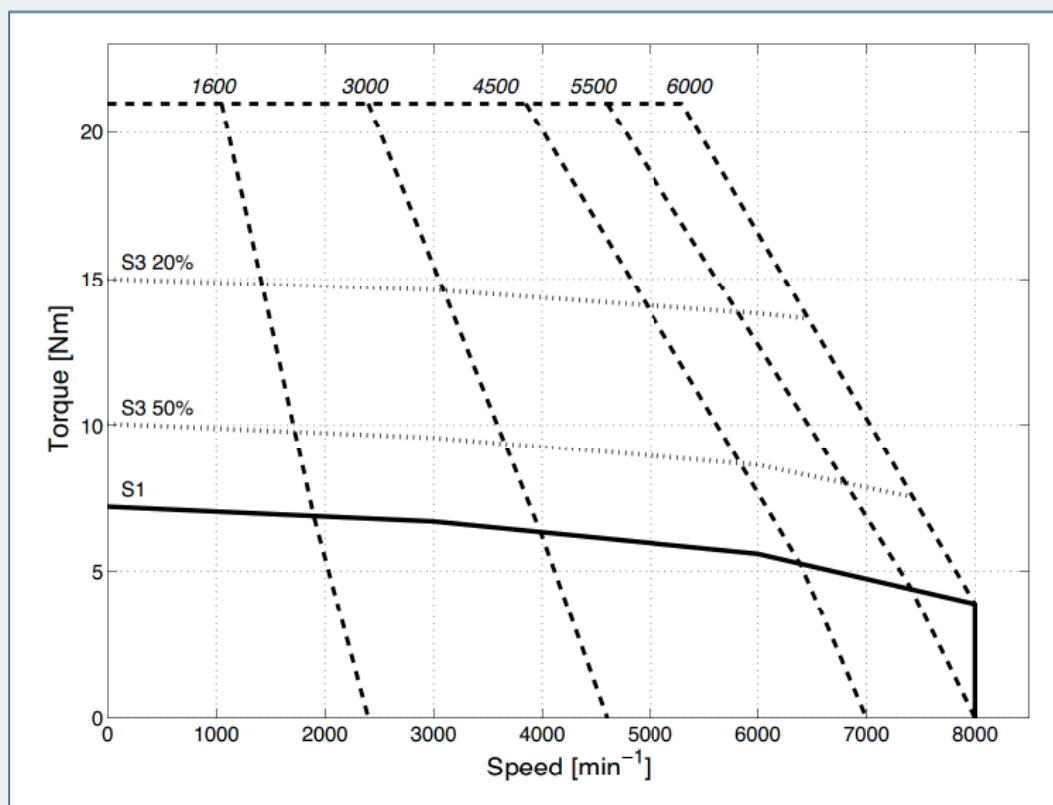
MMD 102 • 7.2 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	7.2				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	187	208	182	183	185
Rated Torque (dT=105K)	M_n	[Nm]	7	6.7	6	5.8	5.6
Current at rated speed	I_n	[A]	5.0	8.0	12.6	14.4	15.4
Standstill current	I_0	[A]	5.0	8.2	13.9	16.9	18.2
Max Torque	M_{max}	[Nm]	21	21	21	21	21
Max Current	I_{max}	[A]	18.3	29.7	51	61	66
Back EMF constant	K_e	[V/1000min ⁻¹]	94	58	34	28	26
Torque constant	K_T	[Nm/A]	1.43	0.88	0.52	0.43	0.40
Rated Power	P_n	[kW]	1.17	2.10	2.83	3.3	3.5
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	3.02	1.15	0.40	0.27	0.23
Stator phase-phase Inductance	L_{pp}	[mH]	25.4	9.7	3.3	2.3	1.9
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	3.4				
Electric time constant (at 20°C)	τ_{el}	[ms]	8.4				
Thermal time constant	τ_{therm}	[min]	31				
Motor mass without brake	m_M	[kg]	5.8				
Motor mass with brake	m_{MB}	[kg]	7				



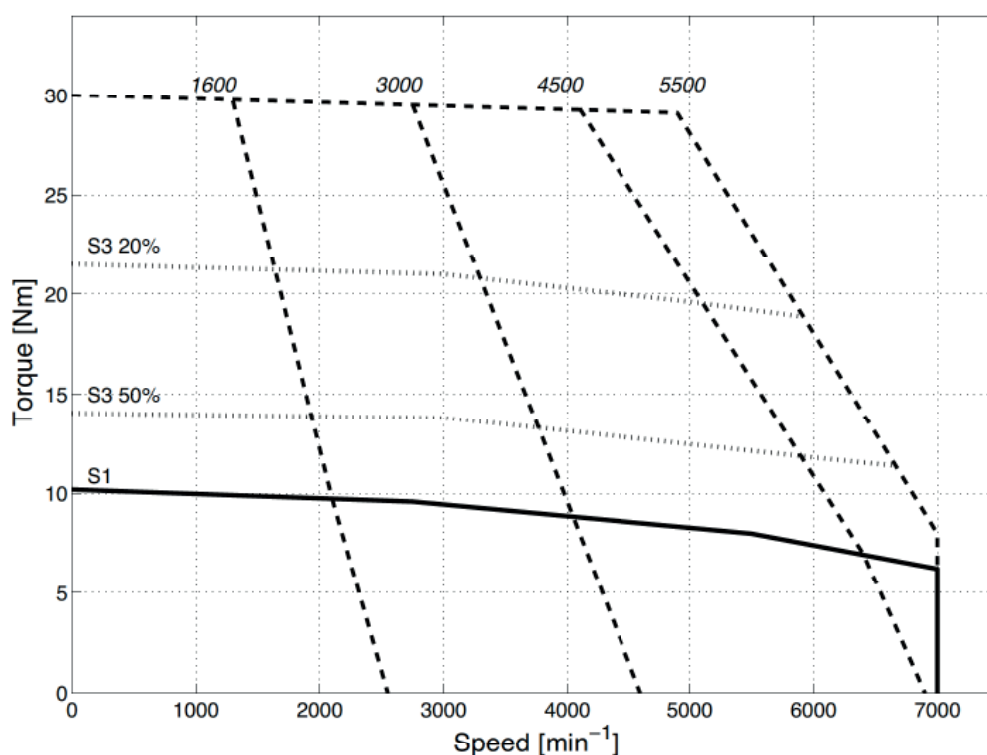
MMD 102 • 7.2 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	7.2				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	320	355	305	320	305
Rated Torque (dT=105K)	M_n	[Nm]	7	6.7	6	5.8	5.6
Current at rated speed	I_n	[A]	2.92	4.7	7.5	8.2	9.3
Standstill current	I_0	[A]	2.94	4.8	8.3	9.7	11.0
Max Torque	M_{max}	[Nm]	21	21	21	21	21
Max Current	I_{max}	[A]	10.7	17.4	30	35	40
Back EMF constant	K_e	[V/1000min ⁻¹]	161	99	57	49	43
Torque constant	K_T	[Nm/A]	2.45	1.51	0.87	0.75	0.65
Rated Power	P_n	[kW]	1.17	2.10	2.83	3.3	3.5
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	8.87	3.35	1.11	0.82	0.63
Stator phase-phase Inductance	L_{pp}	[mH]	74.7	28.2	9.4	6.9	5.3
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	3.7				
Electric time constant (at 20°C)	τ_{el}	[ms]	8.4				
Thermal time constant	τ_{therm}	[min]	31				
Motor mass without brake	m_M	[kg]	5.8				
Motor mass with brake	m_{MB}	[kg]	7				



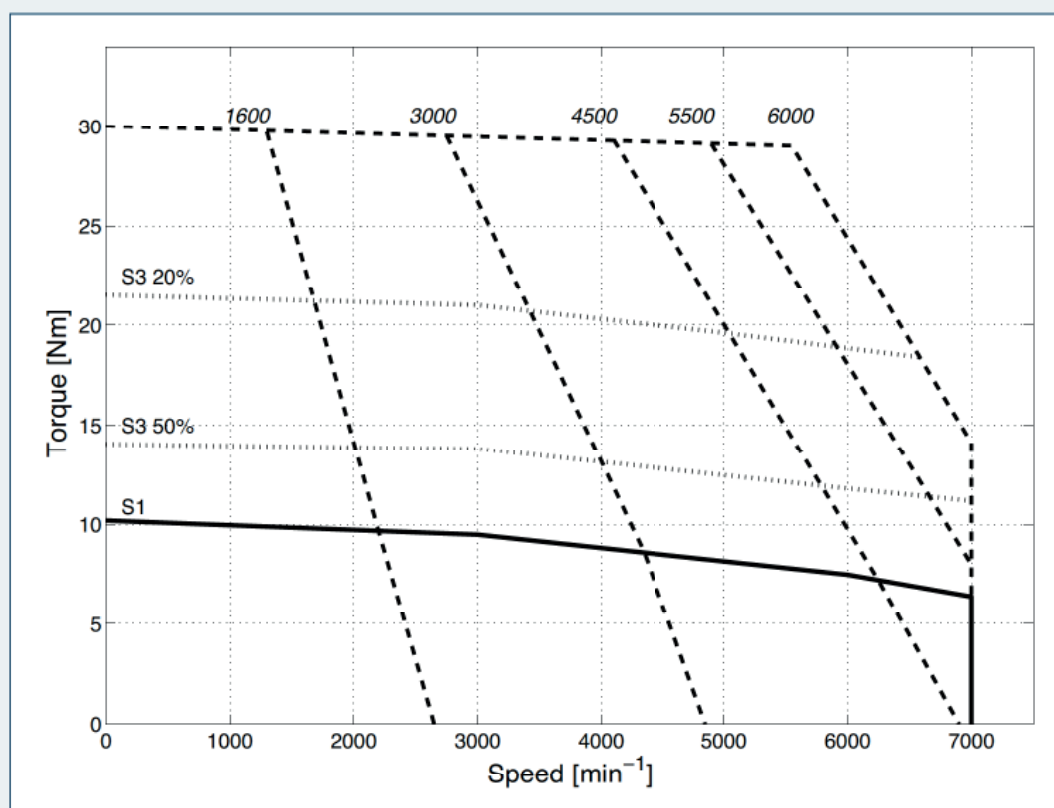
MMD 118 • 10.2 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]			
			1600	3000	4500	5500
Standstill torque (dT=105K)	M_0	[Nm]	10.2			
Motor rated frequency	f_n	[Hz]	107	200	300	367
Motor rated voltage	V_n	[V _{AC}]	184	178	174	196
Rated Torque (dT=105K)	M_n	[Nm]	10	9.5	8.5	8
Current at rated speed	I_n	[A]	7.2	13.5	18.3	17.4
Standstill current	I_0	[A]	7.2	13.7	20.8	22.6
Max Torque	M_{max}	[Nm]	30	30	30	30
Max Current	I_{max}	[A]	25.3	48	73	79
Back EMF constant	K_e	[V/1000min ⁻¹]	95	50	33.1	30.4
Torque constant	K_T	[Nm/A]	1.41	0.75	0.49	0.45
Rated Power	P_n	[kW]	1.7	3.0	4.0	4.6
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	1.56	0.43	0.19	0.16
Stator phase-phase Inductance	L_{pp}	[mH]	20.5	5.7	2.5	2.1
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	7.8			
Electric time constant (at 20°C)	τ_{el}	[ms]	13			
Thermal time constant	τ_{therm}	[min]	34			
Motor mass without brake	m_M	[kg]	9.7			
Motor mass with brake	m_{MB}	[kg]	11.9			



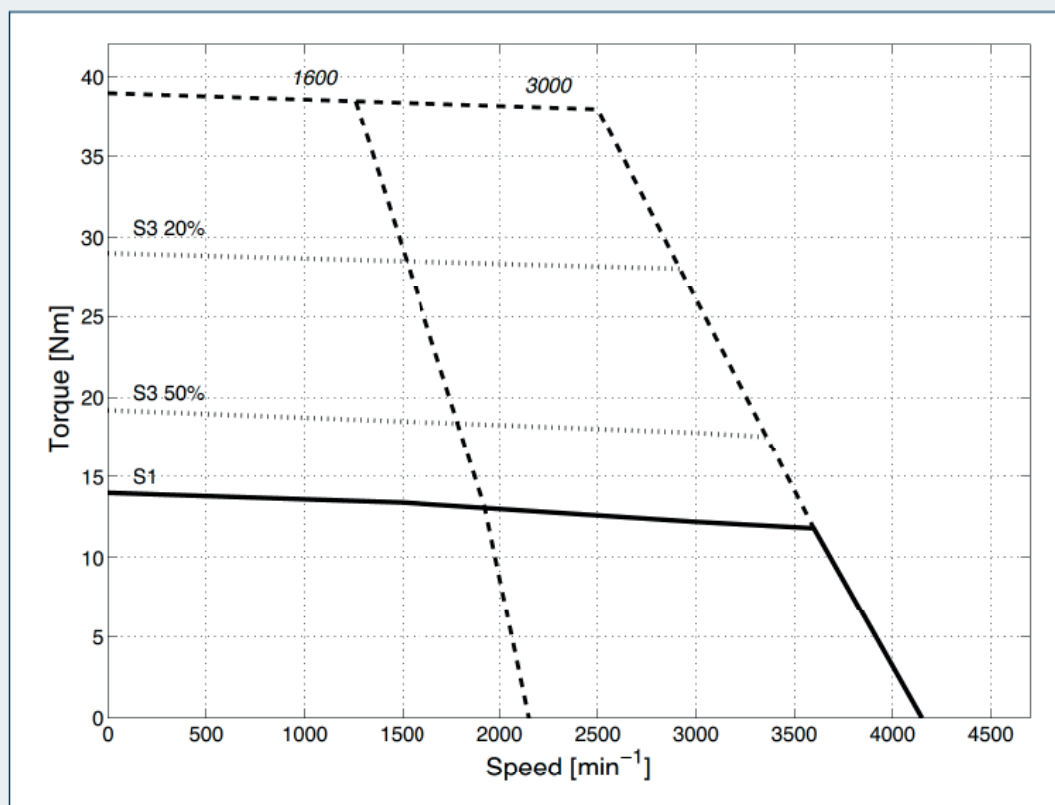
MMD 118 • 10.2 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	10.2				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	312	342	314	323	306
Rated Torque (dT=105K)	M_n	[Nm]	10	9.5	8.5	8	7.5
Current at rated speed	I_n	[A]	4.2	6.7	10.2	10.5	11.4
Standstill current	I_0	[A]	4.3	6.8	11.6	13.7	15.8
Max Torque	M_{max}	[Nm]	30	30	30	30	30
Max Current	I_{max}	[A]	14.9	23.6	40	48	55
Back EMF constant	K_e	[V/1000min ⁻¹]	161	102	60	50	44
Torque constant	K_T	[Nm/A]	2.39	1.51	0.88	0.75	0.65
Rated Power	P_n	[kW]	1.68	3.0	4.0	4.6	4.7
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	4.47	1.78	0.61	0.43	0.33
Stator phase-phase Inductance	L_{pp}	[mH]	58.8	23.4	8.0	5.7	4.3
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	7.8				
Electric time constant (at 20°C)	τ_{el}	[ms]	13				
Thermal time constant	τ_{therm}	[min]	34				
Motor mass without brake	m_M	[kg]	9.7				
Motor mass with brake	m_{MB}	[kg]	11.9				



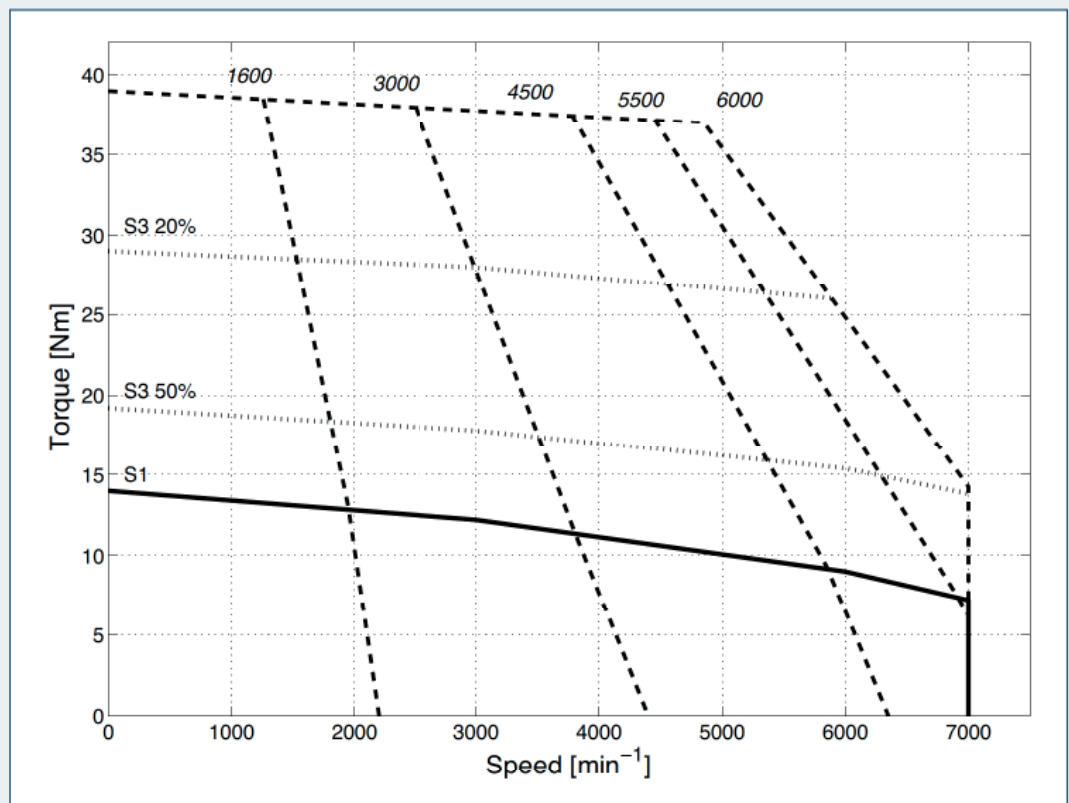
MMD 118 • 14 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]	
			1600	3000
Standstill torque (dT=105K)	M_0	[Nm]	14.0	
Motor rated frequency	f_n	[Hz]	107	200
Motor rated voltage	V_n	[V _{AC}]	184	192
Rated Torque (dT=105K)	M_n	[Nm]	13.3	12.2
Current at rated speed	I_n	[A]	8.6	14.0
Standstill current	I_0	[A]	9.2	16.3
Max Torque	M_{max}	[Nm]	39	39
Max Current	I_{max}	[A]	30	53
Back EMF constant	K_e	[V/1000min ⁻¹]	104	59
Torque constant	K_T	[Nm/A]	1.51	0.86
Rated Power	P_n	[kW]	2.2	3.8
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	1.17	0.37
Stator phase-phase Inductance	L_{pp}	[mH]	15.4	4.9
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	9.9	
Electric time constant (at 20°C)	τ_{el}	[ms]	13	
Thermal time constant	τ_{therm}	[min]	42	
Motor mass without brake	m_M	[kg]	11.7	
Motor mass with brake	m_{MB}	[kg]	12.9	



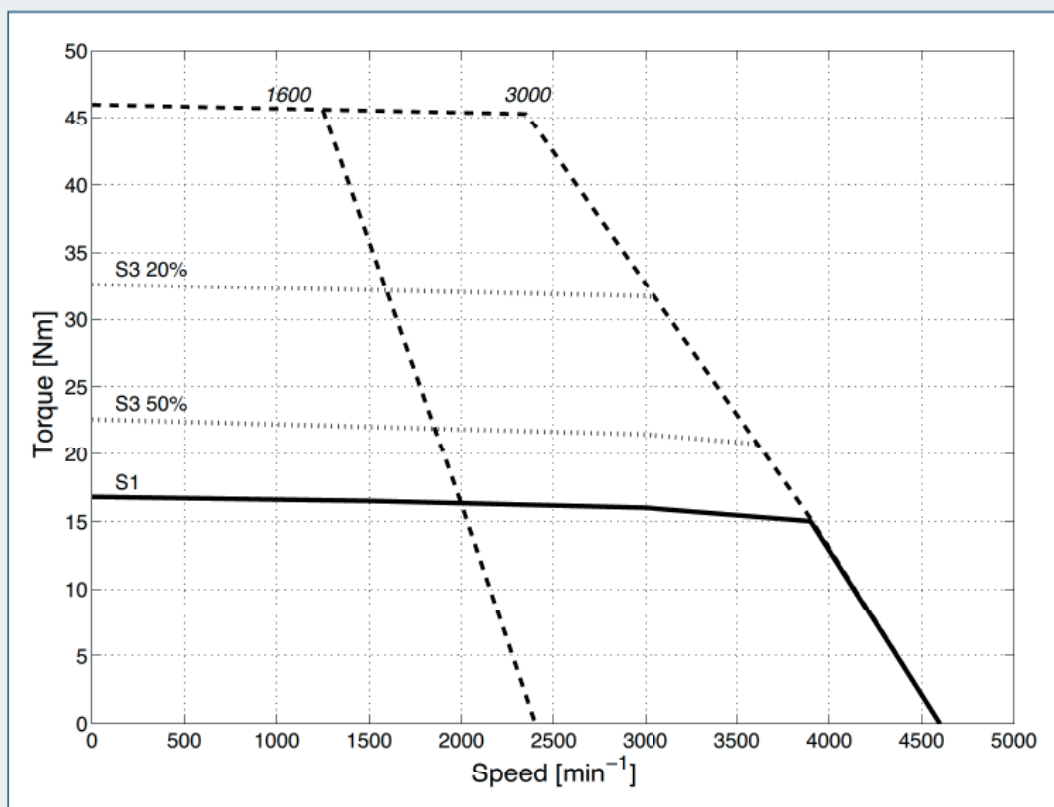
MMD 118 • 14 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	14.0				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	323	320	325	335	329
Rated Torque (dT=105K)	M_n	[Nm]	13.3	12.2	10.9	9.7	9.0
Current at rated speed	I_n	[A]	4.9	8.4	10.9	11.4	11.8
Standstill current	I_0	[A]	5.3	9.8	14.4	16.9	18.9
Max Torque	M_{max}	[Nm]	39	39	39	39	39
Max Current	I_{max}	[A]	17.2	32	47	55	62
Back EMF constant	K_e	[V/1000min ⁻¹]	182	98	67	57	51
Torque constant	K_T	[Nm/A]	2.66	1.43	0.97	0.83	0.74
Rated Power	P_n	[kW]	2.2	3.8	5.0	5.3	5.3
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	3.60	1.04	0.48	0.35	0.28
Stator phase-phase Inductance	L_{pp}	[mH]	47.4	13.7	6.3	4.6	3.7
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	9.9				
Electric time constant (at 20°C)	τ_{el}	[ms]	13				
Thermal time constant	τ_{therm}	[min]	42				
Motor mass without brake	m_M	[kg]	11.7				
Motor mass with brake	m_{MB}	[kg]	12.9				



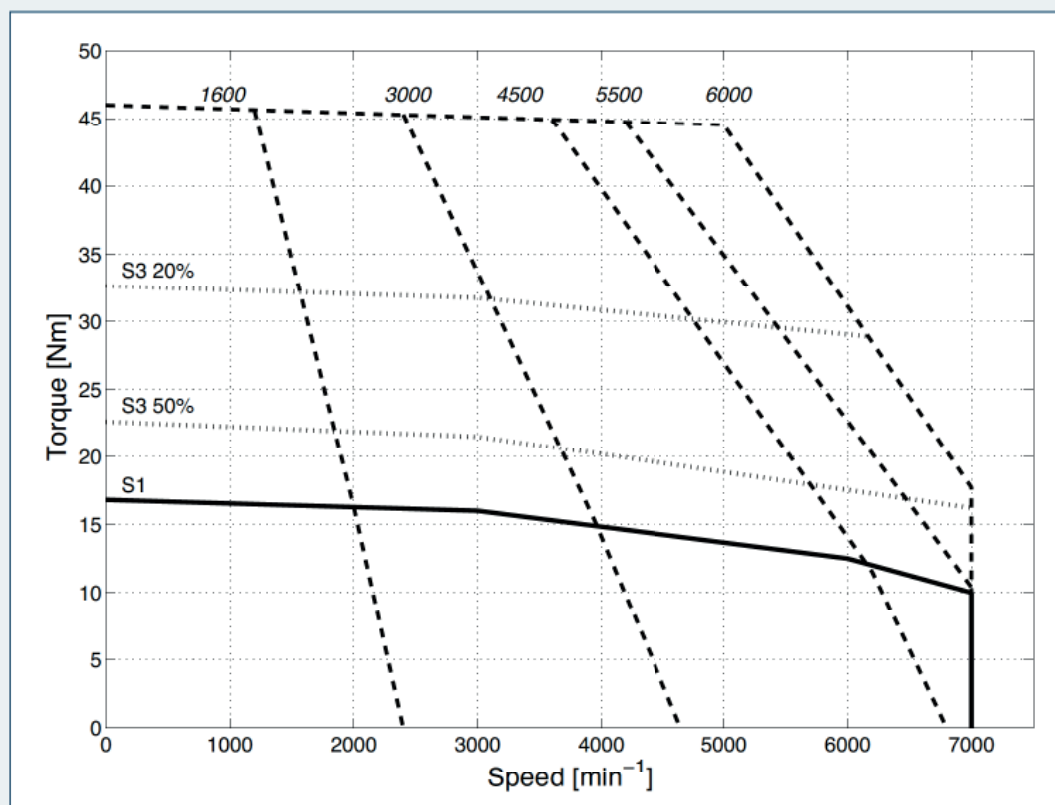
MMD 145 • 16.8 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]	
			1600	3000
Standstill torque (dT=105K)	M_0	[Nm]	16.8	
Motor rated frequency	f_n	[Hz]	107	200
Motor rated voltage	V_n	[V _{AC}]	180	176
Rated Torque (dT=105K)	M_n	[Nm]	16.5	16
Current at rated speed	I_n	[A]	11.9	21.9
Standstill current	I_0	[A]	12.1	22.8
Max Torque	M_{max}	[Nm]	46	46
Max Current	I_{max}	[A]	46	88
Back EMF constant	K_e	[V/1000min ⁻¹]	89	47
Torque constant	K_T	[Nm/A]	1.39	0.74
Rated Power	P_n	[kW]	2.76	5.0
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	0.84	0.24
Stator phase-phase Inductance	L_{pp}	[mH]	13.3	3.8
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	12.8	
Electric time constant (at 20°C)	τ_{el}	[ms]	16	
Thermal time constant	τ_{therm}	[min]	36	
Motor mass without brake	m_M	[kg]	15.2	
Motor mass with brake	m_{MB}	[kg]	17.8	



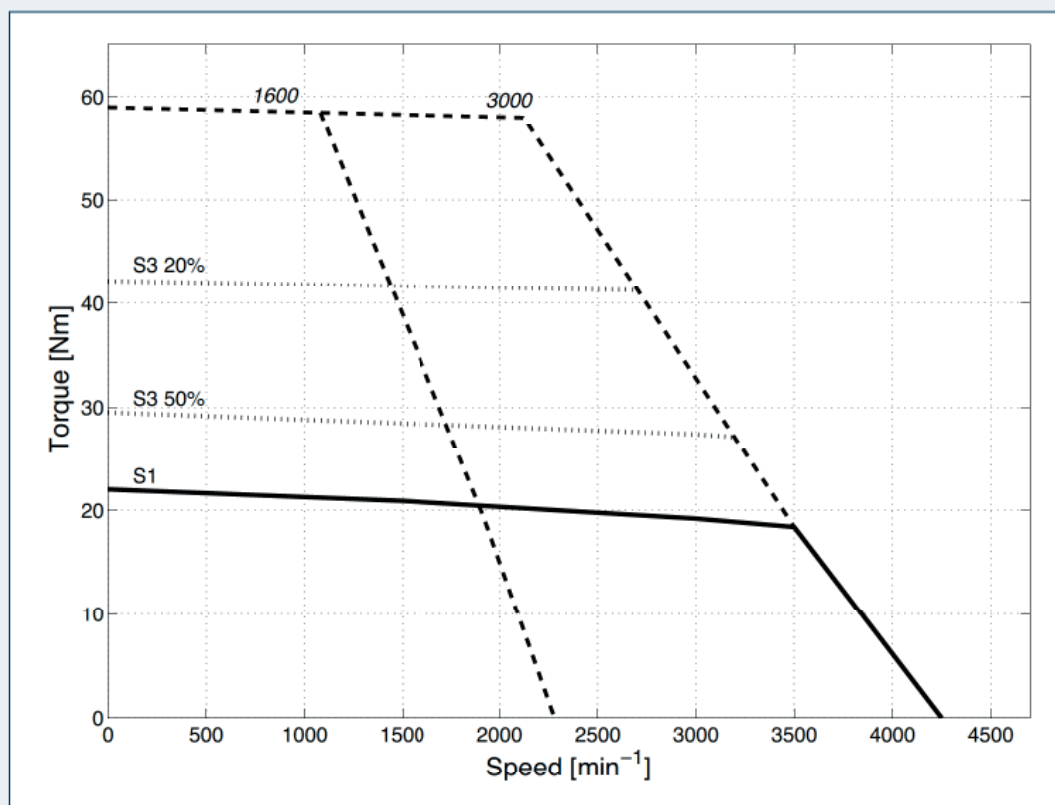
MMD 145 • 16.8 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]				
			1600	3000	4500	5500	6000
Standstill torque (dT=105K)	M_0	[Nm]	16.8				
Motor rated frequency	f_n	[Hz]	107	200	300	367	400
Motor rated voltage	V_n	[V _{AC}]	314	358	314	319	305
Rated Torque (dT=105K)	M_n	[Nm]	16.5	16	14	13	12.5
Current at rated speed	I_n	[A]	6.8	10.5	16.4	17.5	19
Standstill current	I_0	[A]	6.9	10.9	19.0	22.8	26
Max Torque	M_{max}	[Nm]	46	46	46	46	46
Max Current	I_{max}	[A]	26.7	42.0	73	88	100
Back EMF constant	K_e	[V/1000min ⁻¹]	156	99	57	47	42
Torque constant	K_T	[Nm/A]	2.42	1.54	0.88	0.74	0.65
Rated Power	P_n	[kW]	2.76	5.0	6.6	7.5	7.9
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	2.53	1.02	0.34	0.24	0.18
Stator phase-phase Inductance	L_{pp}	[mH]	40.4	16.3	5.4	3.8	2.9
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	12.8				
Electric time constant (at 20°C)	τ_{el}	[ms]	16				
Thermal time constant	τ_{therm}	[min]	36				
Motor mass without brake	m_M	[kg]	15.2				
Motor mass with brake	m_{MB}	[kg]	17.8				



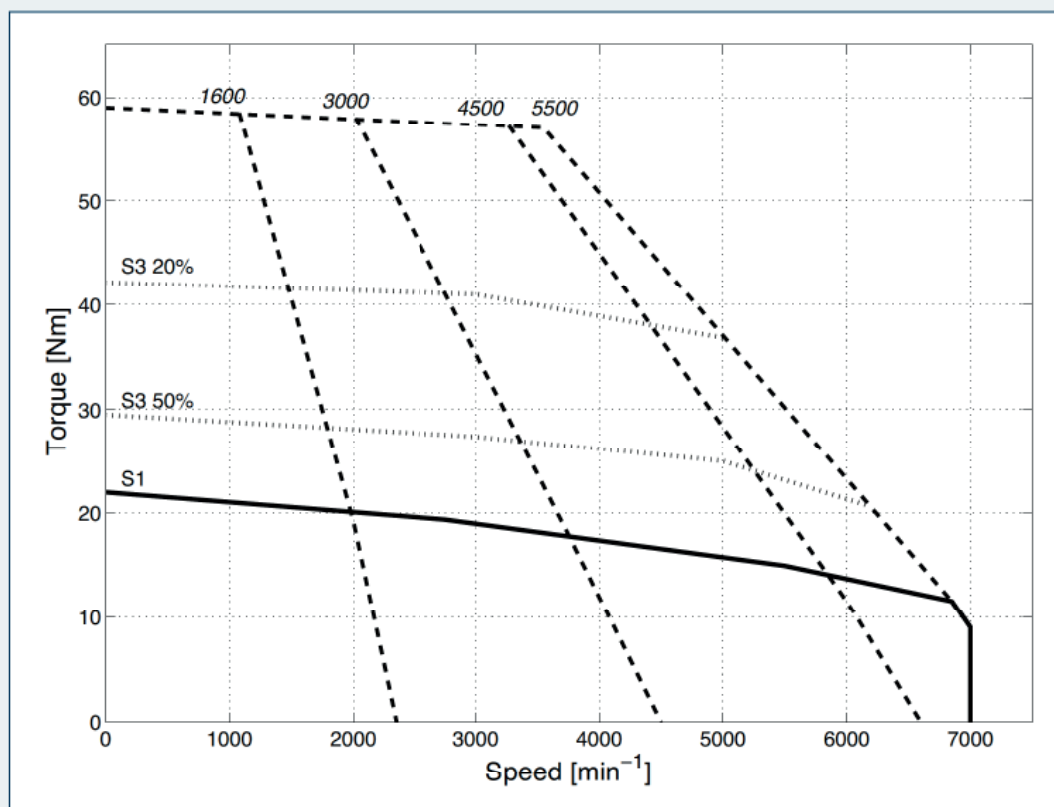
MMD 145 • 22 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]	
			1600	3000
Standstill torque (dT=105K)	M_0	[Nm]	22.0	
Motor rated frequency	f_n	[Hz]	107	200
Motor rated voltage	V_n	[V _{AC}]	185	202
Rated Torque (dT=105K)	M_n	[Nm]	20.7	19.2
Current at rated speed	I_n	[A]	14.5	22.9
Standstill current	I_0	[A]	15.4	26.5
Max Torque	M_{max}	[Nm]	59	59
Max Current	I_{max}	[A]	51	87
Back EMF constant	K_e	[V/1000min ⁻¹]	102	60
Torque constant	K_T	[Nm/A]	1.42	0.83
Rated Power	P_n	[kW]	3.5	6.0
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	0.67	0.23
Stator phase-phase Inductance	L_{pp}	[mH]	10.6	3.6
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	17.6	
Electric time constant (at 20°C)	τ_{el}	[ms]	16	
Thermal time constant	τ_{therm}	[min]	47	
Motor mass without brake	m_M	[kg]	18.2	
Motor mass with brake	m_{MB}	[kg]	20.8	



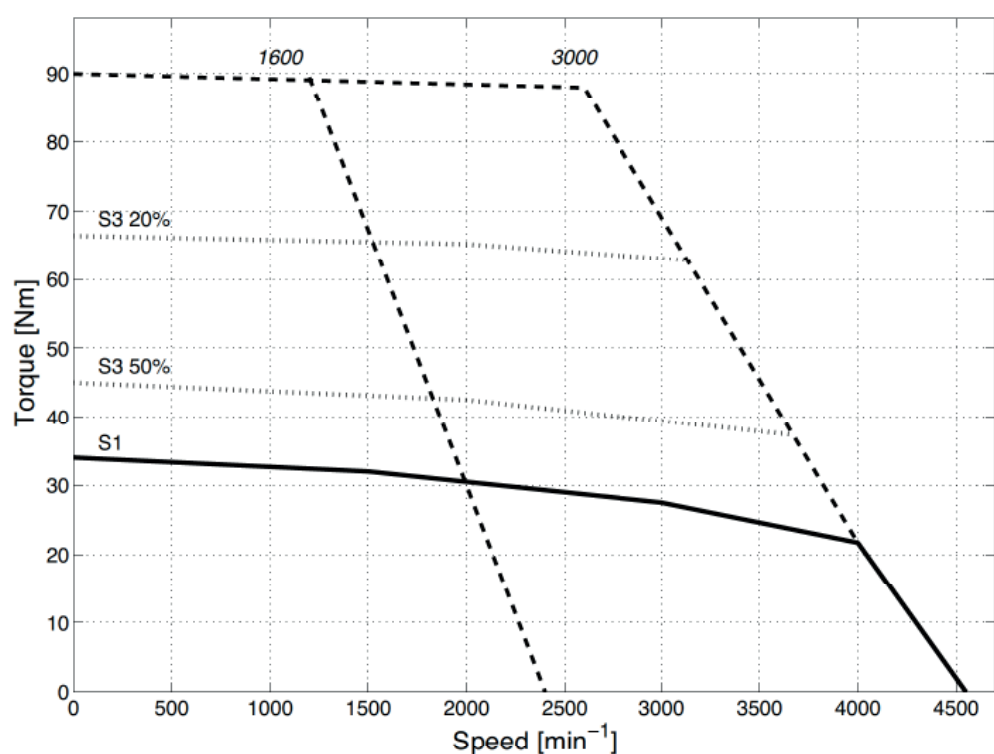
MMD 145 • 22 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]			
			1600	3000	4500	5500
Standstill torque (dT=105K)	M_0	[Nm]	22.0			
Motor rated frequency	f_n	[Hz]	107	200	300	367
Motor rated voltage	V_n	[V _{AC}]	319	321	323	357
Rated Torque (dT=105K)	M_n	[Nm]	20.7	19.2	17	15
Current at rated speed	I_n	[A]	8.4	14.2	18.3	17.6
Standstill current	I_0	[A]	9.0	16.4	24.3	26.5
Max Torque	M_{max}	[Nm]	59	59	59	59
Max Current	I_{max}	[A]	29.5	54	80	87
Back EMF constant	K_e	[V/1000min ⁻¹]	176	96	65	59
Torque constant	K_T	[Nm/A]	2.45	1.34	0.90	0.83
Rated Power	P_n	[kW]	3.5	6.0	8.0	8.6
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	1.97	0.59	0.27	0.23
Stator phase-phase Inductance	L_{pp}	[mH]	31.5	9.4	4.3	3.6
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	17.6			
Electric time constant (at 20°C)	τ_{el}	[ms]	16			
Thermal time constant	τ_{therm}	[min]	47			
Motor mass without brake	m_M	[kg]	18.2			
Motor mass with brake	m_{MB}	[kg]	20.8			



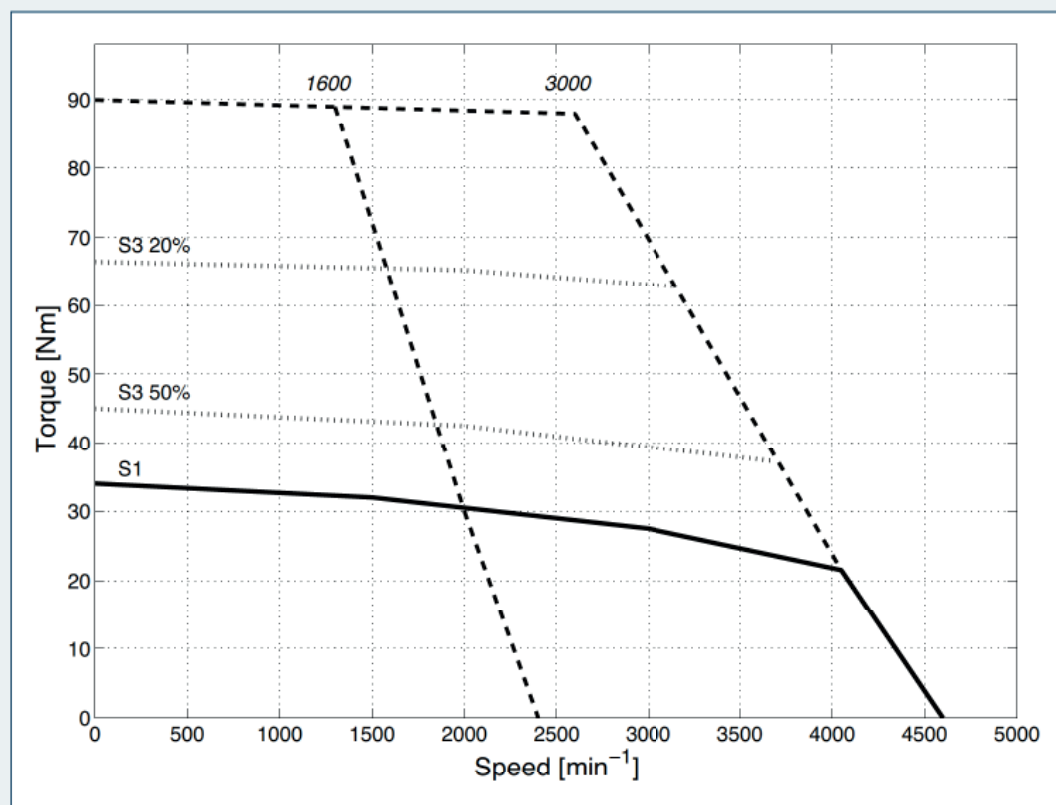
MMD 170 • 34 Nm - 230V

Parameter	Symbol	Unit	Speed [min ⁻¹]	
			1600	3000
Standstill torque (dT=105K)	M_0	[Nm]	34.0	
Motor rated frequency	f_n	[Hz]	107	200
Motor rated voltage	V_n	[V _{AC}]	181	182
Rated Torque (dT=105K)	M_n	[Nm]	31	27.5
Current at rated speed	I_n	[A]	19.7	32.2
Standstill current	I_0	[A]	21.8	40.4
Max Torque	M_{max}	[Nm]	90	90
Max Current	I_{max}	[A]	66	121
Back EMF constant	K_e	[V/1000min ⁻¹]	99	54
Torque constant	K_T	[Nm/A]	1.56	0.84
Rated Power	P_n	[kW]	5.2	8.6
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	0.30	0.09
Stator phase-phase Inductance	L_{pp}	[mH]	5.8	1.7
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	28.2	
Electric time constant (at 20°C)	τ_{el}	[ms]	20	
Thermal time constant	τ_{therm}	[min]	50	
Motor mass without brake	m_M	[kg]	25	
Motor mass with brake	m_{MB}	[kg]	29.5	

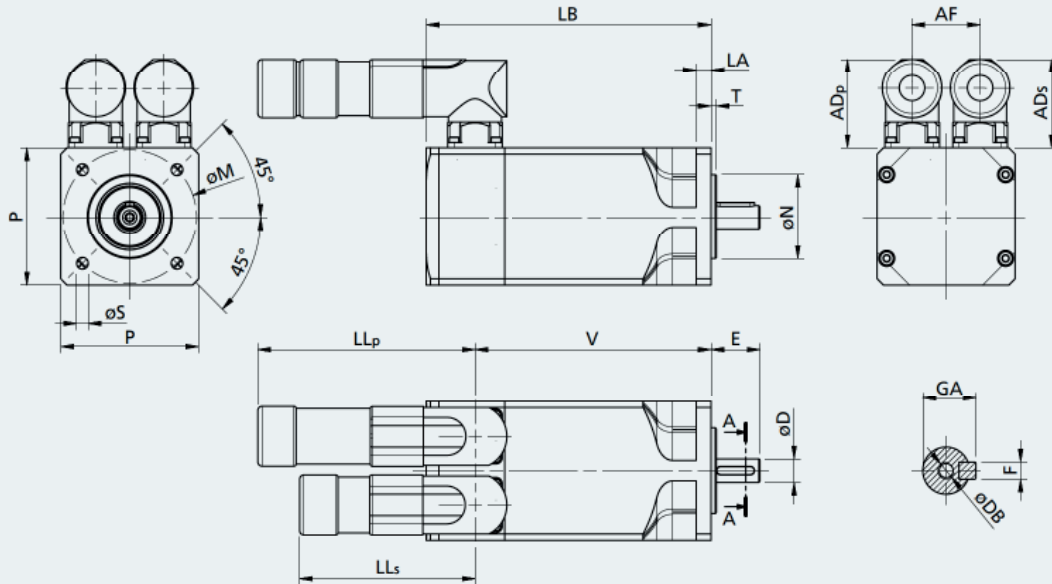


MMD 170 • 34 Nm - 400V

Parameter	Symbol	Unit	Speed [min ⁻¹]	
			1600	3000
Standstill torque (dT=105K)	M_0	[Nm]	34.0	
Motor rated frequency	f_n	[Hz]	107	200
Motor rated voltage	V_n	[V _{AC}]	319	315
Rated Torque (dT=105K)	M_n	[Nm]	31	27.5
Current at rated speed	I_n	[A]	11.2	18.6
Standstill current	I_0	[A]	12.4	23.3
Max Torque	M_{max}	[Nm]	90	90
Max Current	I_{max}	[A]	37	70
Back EMF constant	K_e	[V/1000min ⁻¹]	174	93
Torque constant	K_T	[Nm/A]	2.74	1.46
Rated Power	P_n	[kW]	5.2	8.6
Stator phase-phase Resistance (at 20°C)	R_{pp}	[Ω]	0.91	0.26
Stator phase-phase Inductance	L_{pp}	[mH]	17.9	5.1
Rotor inertia	J_m	[kgm ² x 10 ⁻⁴]	28.2	
Electric time constant (at 20°C)	τ_{el}	[ms]	20	
Thermal time constant	τ_{therm}	[min]	50	
Motor mass without brake	m_M	[kg]	25	
Motor mass with brake	m_{MB}	[kg]	29.5	



Dimensions (from MMD 65 to MMD 102)



Type	Shaft				
	D	E	DB	GA ⁽¹⁾	F ⁽¹⁾
65	9	20	M3	10.2	3
	11	23	M4	12.5	4
82	11	23	M4	12.5	4
	14	30	M5	16	5
	19	40	M6	21.5	6
102	19	40	M6	21.5	6
	24	50	M8	27	8

Type	Flange					
	M	N	P	S	T	LA
65	63	40	65	5.5	2.5	7
	75	60	65	6	2.5	7
82	100	80	82	6.5	3	10
	115	95	100	9	3	10
102	100	80	102	7	3	10
	115	95	102	9	3	10

Type		Motor															
	T ₀	AC	LB ₂	LB ₃	LB ₄	LB ₅	LB ₆	LB ₇	ADp	ADs	AF	LLp	LLs	V ₈	V ₉	V ₁₀	V ₁₁
65	0.85	65	112	143	130	130	179	179	41.5	41.5	32	96	96	89	89	138	138
	1.7		135	166	153	153	202	202						112	112	161	161
	2.2		161	192	179	179	228	228						138	138	187	187
82	3.2	82	160	200	183	160	223	223	41.5	41.5	36	96	96	132	132	195	195
	4.4		180	220	203	180	243	243						152	152	215	215
102	7.2	102	180	220	203	180	243	220	41.5	41.5	39	96	96	150	150	190	190
	9.6		207	247	230	207	297	247						177	177	217	217

Notes:

(1) Motor shaft extension without key available.

LB₂ Motor length with resolver, or in sensorless version.

LB₃ Motor length with resolver, or in sensorless version, and with brake or flywheel.

LB₄ Motor length with encoder EnDat (ENB1, ENB2).

LB₅ Motor length with encoder Hiperface (ENB3, ENB4).

LB₆ Motor length with encoder EnDat (ENB1, ENB2) and with brake or flywheel

LB₇ Motor length with encoder Hiperface (ENB3, ENB4) and with brake or flywheel

V₈ Motor with resolver, encoder (ENB1, ENB2, ENB3, ENB4) or in sensorless version.

V₉ Motor with resolver, or in sensorless version and with brake or flywheel.

V₁₀ Motor with encoder EnDat (ENB1, ENB2) and with brake or flywheel

V₁₁ Motor with encoder Hiperface (ENB3, ENB4) and with brake or flywheel

Additional inertia feature

MMD Permanent Magnet AC Synchronous Motor series is provided optionally with additional inertia. The MMD motors with additional inertia have higher rotor moment of inertia in comparison with basic version.

Additional inertia is designed to be used in application with high load inertia. The increased rotor moment of inertia provides a comfortable control response due to "higher" inertial matching of the machine.

Motor	Motor stall torque	Additional inertia	Additional weight
	Nm	Kgm ² x10 ⁻⁴	kg
65	0.85	0.5	0.3
	1.7		
	2.2		
82	3.2	3	0.7
	4.4		
102	7.2	7.5	1.3
	9.6		
118	10.2	16	2.4
	14		
145	16.8	36	3.6
	22		
170	34	70	5.5
	45		

**FACTORY AND
HEADQUARTERS**

CMZ Sistemi Elettronici S.r.l

Via dell' Artigianato, 21
31050 Vascon (TV) - Italy
Phone +39 (0) 422 447411
Fax +39 (0) 422 447444

e-mail: sales@cmz.it
web site: www.cmz.it



RESEARCH LABORATORY SINCE 1992