

Type / Parameter		Q1-0225	Q1-0375	Q1-0515	Q1-0700	Q1-0850	Physical unit
Stack length	l_{fe}	30	60	90	120	150	mm
Stall Torque	M_0	2,25	3,75	5,15	7	8,5	Nm
Stall AC Current	I_0	2,6	2,1	3,9	3,2	3,1	A
Blocked Torque	M_L	2,3	3,8	5,0	6,8	8,3	Nm
Blocked AC Current	I_L	2,25	1,86	3,3	2,66	2,6	A
Rated Speed	n_n	2000	2000	2000	2000	2000	min ⁻¹
Rated Torque	M_n	2,1	3,4	4,6	6,1	7,4	Nm
Rated AC Current	I_n	2,56	2,07	3,6	2,98	2,89	A
Peak Torque	M_{max}	9	15	20,6	28	34	Nm
Peak Current	I_{max}	14	10	19,4	15	15	A
Max. Speed	n_{max}	5000	5000	5000	5000	4500	min ⁻¹
EMF Constant	K_e	53,2	106,4	80,0	133	166	V/(1000min ⁻¹)
Torque Constant	K_m	0,88	1,76	1,32	2,20	2,75	Nm/A
Terminal Resistance	R_{2ph}	6,2	10,15	3,5	7,05	8,6	Ω
Terminal Inductance	L_{2ph}	10,3	20,6	7,7	16,1	20,1	mH
Max.contin.power dissipation	ΔP_{max}	81	102	128	154	181	W
DC Bus Voltage	U_{dc}	320	320	320	560	560	V
Number of poles	$2p$	16	16	16	16	16	--

Insulation class	-	F	F	F	F	F	--
Weight	m	0,75 [3,29]	1,4 [4,26]	2,05 [5,23]	2,7 [6,2]	3,35 [7,17]	kg
Rotor Inertia	J	0,85 [2,38]	1,7 [3,93]	2,55 [5,48]	3,4 [7,03]	4,25 [8,58]	kg.cm ²
Thermal Time Constant	T_{th}	28	32	36	40	44	min
Max.detent torque	M_r	0,09	0,18	0,27	0,36	0,45	Nm

Table 1: Data Sheets Q1

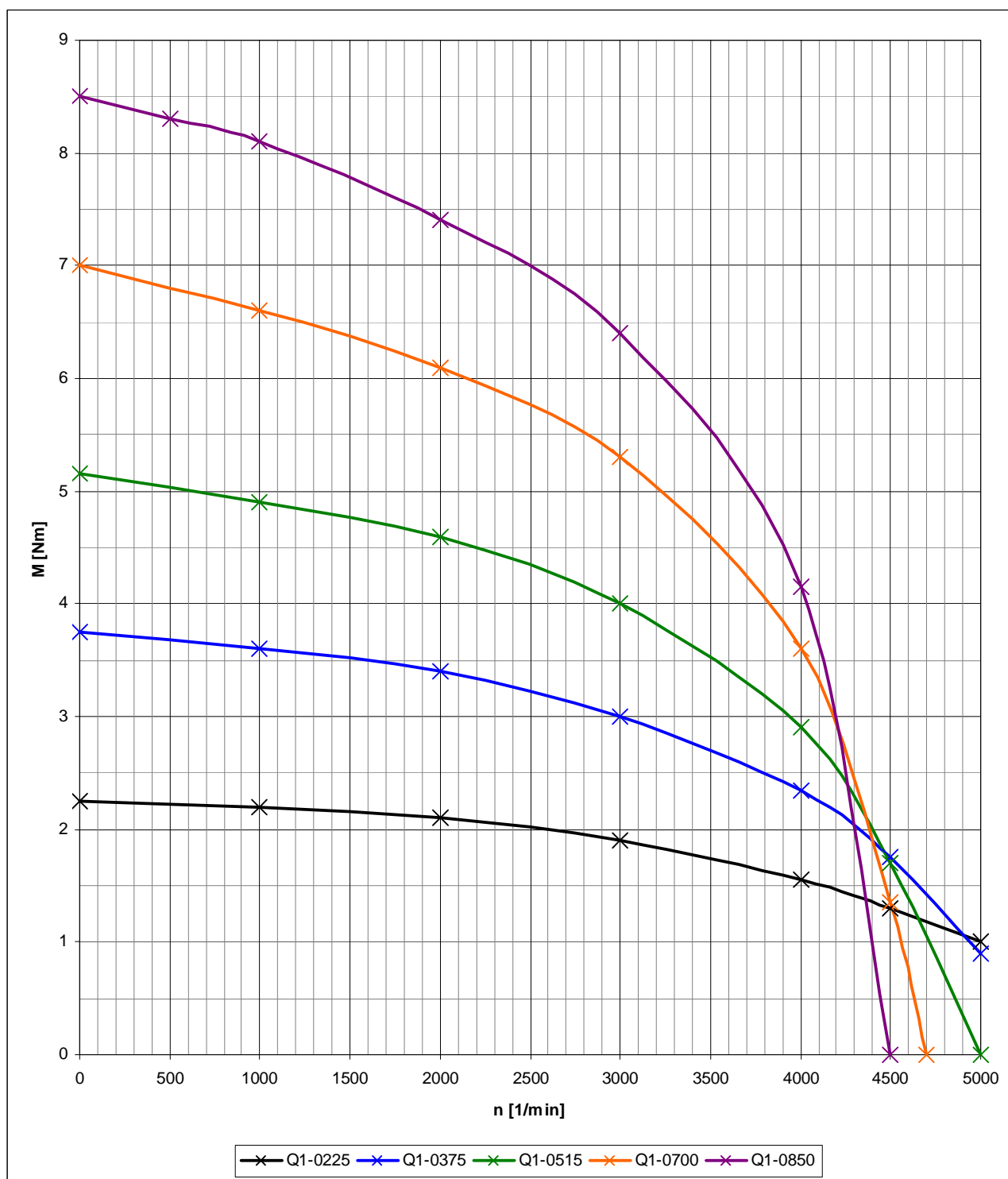


Figure 1: Stall torque characteristics of motors Q1

Type / Parameter		Q2-0650	Q2-1200	Q2-1700	Q2-2000	Q2-2550	Physical unit
Stack length	l_{fe}	30	60	90	120	150	mm
Stall Torque	M_0	6,5	12	17	20	25,5	Nm
Stall AC Current	I_0	4,5	5,2	5,6	11,4	11,6	A
Blocked Torque	M_L	5,9	10,5	14,7	17,1	21,1	Nm
Blocked AC Current	I_L	4,1	4,9	5,2	10,3	10,5	A
Rated Speed	n_n	1500	2000	1500	1500	2000	min^{-1}
Rated Torque	M_n	5,8	8	12,5	13,5	16	Nm
Rated AC Current	I_n	4,7	4,3	4,3	8,8	8,7	A
Peak Torque	M_{max}	26	48	68	80	102	Nm
Peak Current	I_{max}	23	26	26	49	50	A
Max. Speed	n_{max}	3500	3000	3000	3000	3000	min^{-1}
EMF Constant	K_e	87	136	182	106	135	$\text{V}/(1000\text{min}^{-1})$
Torque Constant	K_m	1,44	2,3	3,01	1,75	2,2	Nm/A
Terminal Resistance	R_{2ph}	2,5	2,4	2,6	0,64	0,78	Ω
Terminal Inductance	L_{2ph}	5,5	6,8	8,2	2,1	2,7	mH
Max.contin.power dissipation	ΔP_{max}	125	165	210	254	300	W
DC Bus Voltage	U_{dc}	320	560	560	320	560	V
Number of poles	$2p$	22	22	22	22	22	--

Insulation class	-	F	F	F	F	F	--
Weight	m	1,95 [5]	3,65 [6,7]	5,35 [8,45]	7,05 [10,2]	8,75 [11,9]	kg
Rotor Inertia	J	6,1 [9,6]	12,2 [15,7]	18,3 [21,8]	24,4 [27,8]	30,5 [33,9]	$\text{kg}\cdot\text{cm}^2$
Thermal Time Constant	T_{th}	31	36	41	46	51	min
Max.detent torque	M_r	0,3	0,48	0,655	0,83	1,01	Nm

Table 1: Data Sheets Q2

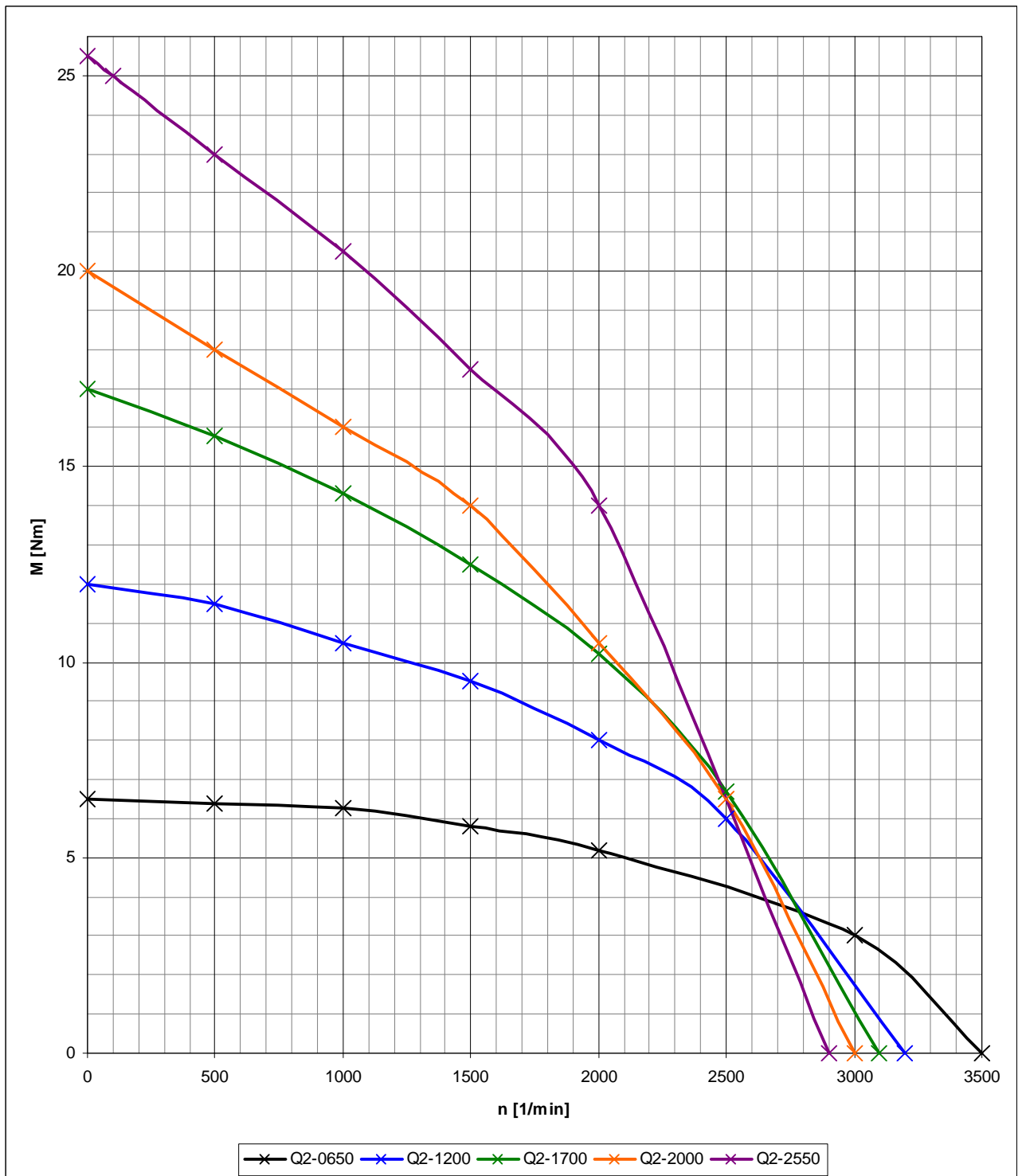


Figure 1: Stall torque characteristics of motors Q2

Type / Parameter		Q3-0950	Q3-1800	Q3-2600	Q3-3450	Q3-4200	Physical unit
Stack length	l_{fe}	30	60	90	120	150	mm
Stall Torque	M_0	9,5	18	26	34,5	42	Nm
Stall AC Current	I_0	6,4	6,1	9,5	11,7	11,4	A
Blocked Torque	M_L	9	17	24	32	39	Nm
Blocked AC Current	I_L	5,2	4,95	7,6	9,32	9,1	A
Rated Speed	n_n	1000	1000	1000	1000	1000	min^{-1}
Rated Torque	M_n	8,6	15	21	27	33	Nm
Rated AC Current	I_n	6,3	5,6	8	10,2	9,9	A
Peak Torque	M_{max}	38	72	104	138	168	Nm
Peak Current	I_{max}	32	29	46	54	52	A
Max. Speed	n_{max}	3500	3500	3000	2500	2500	min^{-1}
EMF Constant	K_e	89,5	179	165	179	223,7	$\text{V}/(1000\text{min}^{-1})$
Torque Constant	K_m	1,48	2,96	2,73	2,96	3,70	Nm/A
Terminal Resistance	R_{2ph}	1,39	2,09	1,07	0,88	1,05	Ω
Terminal Inductance	L_{2ph}	4,25	8,5	4,8	4,25	5,31	mH
Max.contin.power dissipation	ΔP_{max}	145	204	264	324	384	W
DC Bus Voltage	U_{dc}	320	320	320	320	560	V
Number of poles	$2p$	22	22	22	22	22	--

Insulation class	-	F	F	F	F	F	--
Weight	m	2,73 [7,4]	5,1 [9,8]	7,45 [12,2]	9,8 [14,5]	12,2 [16,9]	kg
Rotor Inertia	J	12 [19,7]	24 [31,7]	36 [43,7]	48 [55,7]	60 [67,7]	$\text{kg}\cdot\text{cm}^2$
Thermal Time Constant	T_{th}	37	43	48	54	59	min
Max.detent torque	M_r	0,5	1	1,5	2	2,5	Nm

Table 1: Data Sheets Q3

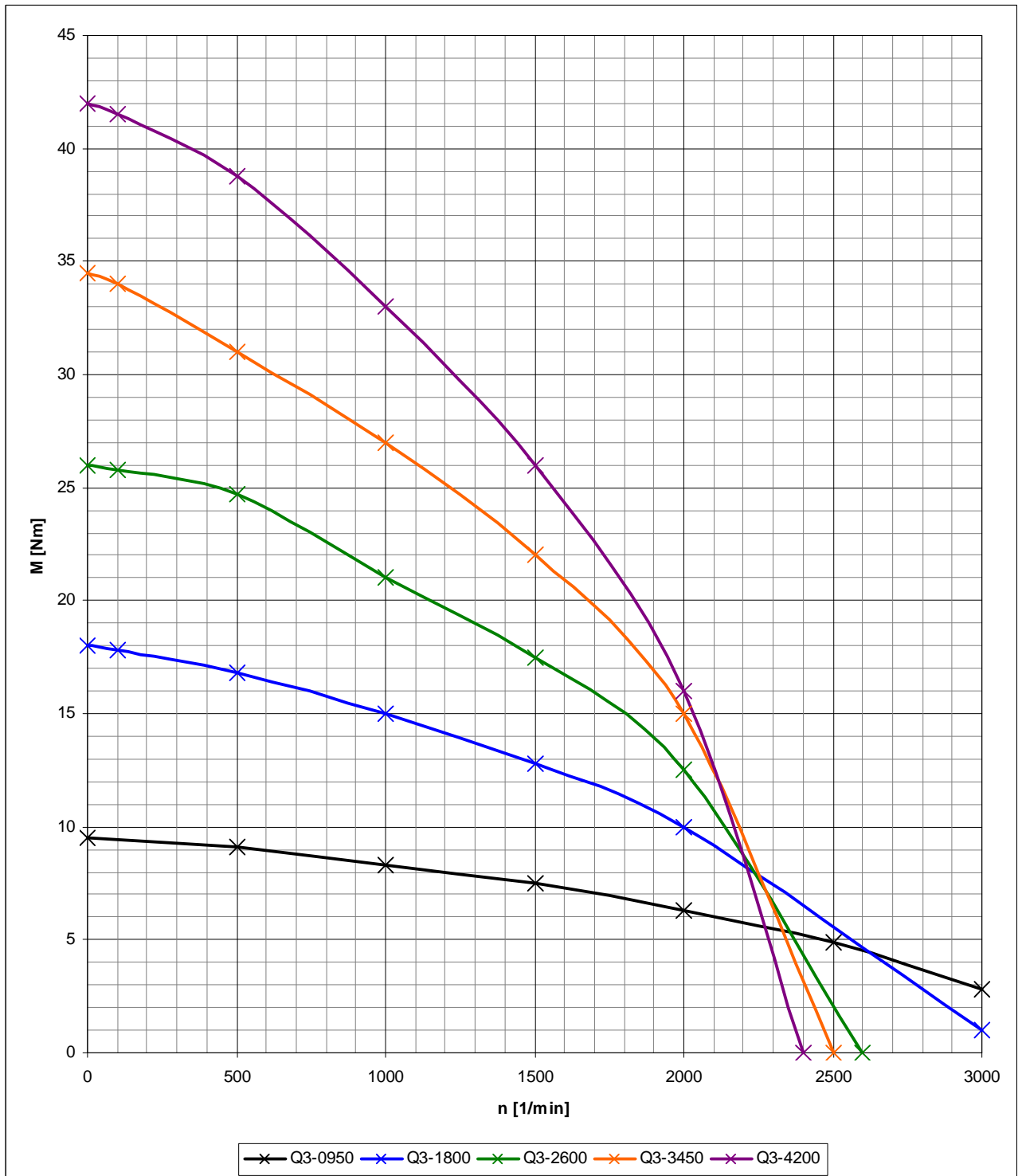


Figure 1: Stall torque characteristics of motors Q3

Type / Parameter		Q4-1450	Q4-2900	Q4-4200	Q4-5500	Q4-6800	Physical unit
Stack length	l_{fe}	30	60	90	120	150	mm
Stall Torque	M_0	14,5	29	42	55	68	Nm
Stall AC Current	I_0	6,8	9,8	10,2	18,6	18,4	A
Blocked Torque	M_L	12	24	34	45	56	Nm
Blocked AC Current	I_L	5,33	7,6	7,9	14,24	14,2	A
Rated Speed	n_n	1500	1000	1000	1000	1000	min ⁻¹
Rated Torque	M_n	11,2	22,6	31,6	39,8	47,3	Nm
Rated AC Current	I_n	6,1	8,8	8,1	15,4	14,6	A
Peak Torque	M_{max}	43,5	87	126	165	204	Nm
Peak Current	I_{max}	28	39	42	73	70	A
Max. Speed	n_{max}	3000	3000	2500	2500	2500	min ⁻¹
EMF Constant	K_e	129	179	248	179	223,7	V/(1000min ⁻¹)
Torque Constant	K_m	2,13	2,96	4,10	2,96	3,70	Nm/A
Terminal Resistance	R_{2ph}	1,43	2,09	1,11	0,88	1,05	Ω
Terminal Inductance	L_{2ph}	8,68	8,35	10,7	4,17	5,22	mH
Max.contin.power dissipation	ΔP_{max}	200	270	350	420	490	W
DC Bus Voltage	U_{dc}	560	320	560	320	560	V
Number of poles	$2p$	22	22	22	22	22	--

Insulation class	-	F	F	F	F	F	--
Weight	m	3,73 [7,31]	7 [10,6]	10,3 [13,9]	13,5 [17,2]	16,8 [20,4]	kg
Rotor Inertia	J	24,9 [31,6]	49,8 [56,4]	74,7 [81,2]	99,6 [106]	124,5 [131]	kg.cm ²
Thermal Time Constant	T_{th}	42	55	68	80	93	min
Max.detent torque	M_r	0,3	0,6	1,5	1,2	1,5	Nm

Table 1: Data Sheets Q4

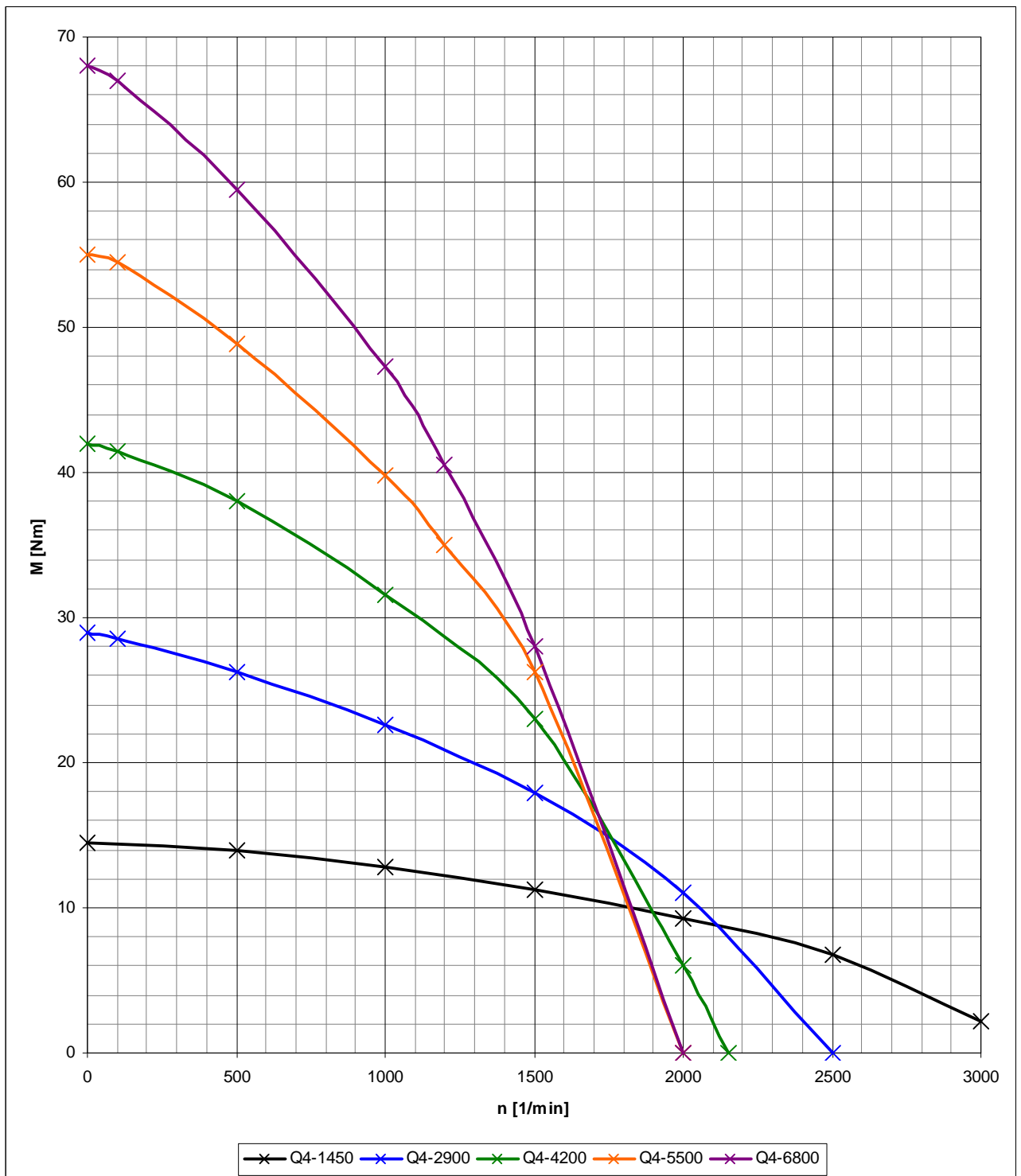


Figure 1: Stall torque characteristics of motors Q4

Type / Parameter		Q5-0280	Q5-0545	Q5-0810	Q5-1070	Q5-1340	Physical unit
Stack length	l_{fe}	30	60	90	120	150	mm
Stall Torque	M_0	28	54,5	81	107	134	Nm
Stall AC Current	I_0	6,0	9,3	12,2	15,9	19,7	A
Blocked Torque	M_L	23	44	66	87	109	Nm
Blocked AC Current	I_L	4,9	7,5	10,0	12,9	16,0	A
Rated Speed	n_n	1000	800	700	700	700	min^{-1}
Rated Torque	M_n	17,3	34,1	52,2	65,4	78,1	Nm
Rated AC Current	I_n	4	6,2	8,4	10,3	12,3	A
Peak Torque	M_{max}	84	164	243	321	402	Nm
Peak Current	I_{max}	22	34	44	57	71	A
Max. Speed	n_{max}	4000	4000	4000	4000	4000	min^{-1}
EMF Constant	K_e	282	353	400	408	412	$\text{V}/(1000\text{min}^{-1})$
Torque Constant	K_m	4,66	5,84	6,62	6,75	6,81	Nm/A
Terminal Resistance	R_{2ph}	2,7	1,55	1,18	0,84	0,67	Ω
Terminal Inductance	L_{2ph}	6,5	5,1	4,3	3,4	2,8	mH
Max.contin.power dissipation	ΔP_{max}	250	350	450	550	650	W
DC Bus Voltage	U_{dc}	560	560	560	560	560	V
Number of poles	$2p$	38	38	38	38	38	--

Insulation class	-	F	F	F	F	F	--
Weight	m	5 [15,8]	8,6 [19,4]	12,2 [23]	15,8 [26,6]	19,4 [30,2]	kg
Rotor Inertia	J	91,2 [114]	161 [205]	230 [296]	300 [388]	369 [479]	$\text{kg}\cdot\text{cm}^2$
Thermal Time Constant	T_{th}	51	61	71	81	91	min
Max.detent torque	M_r	0,4	0,9	1,4	1,8	2,2	Nm

Table 5: Data Sheets Q5

Change log:

Rev 1, 6/11/2014 – Revision of the n_{max}

Rev 1.2, 4/3/2015 – Revision of torques and parametrs Q5

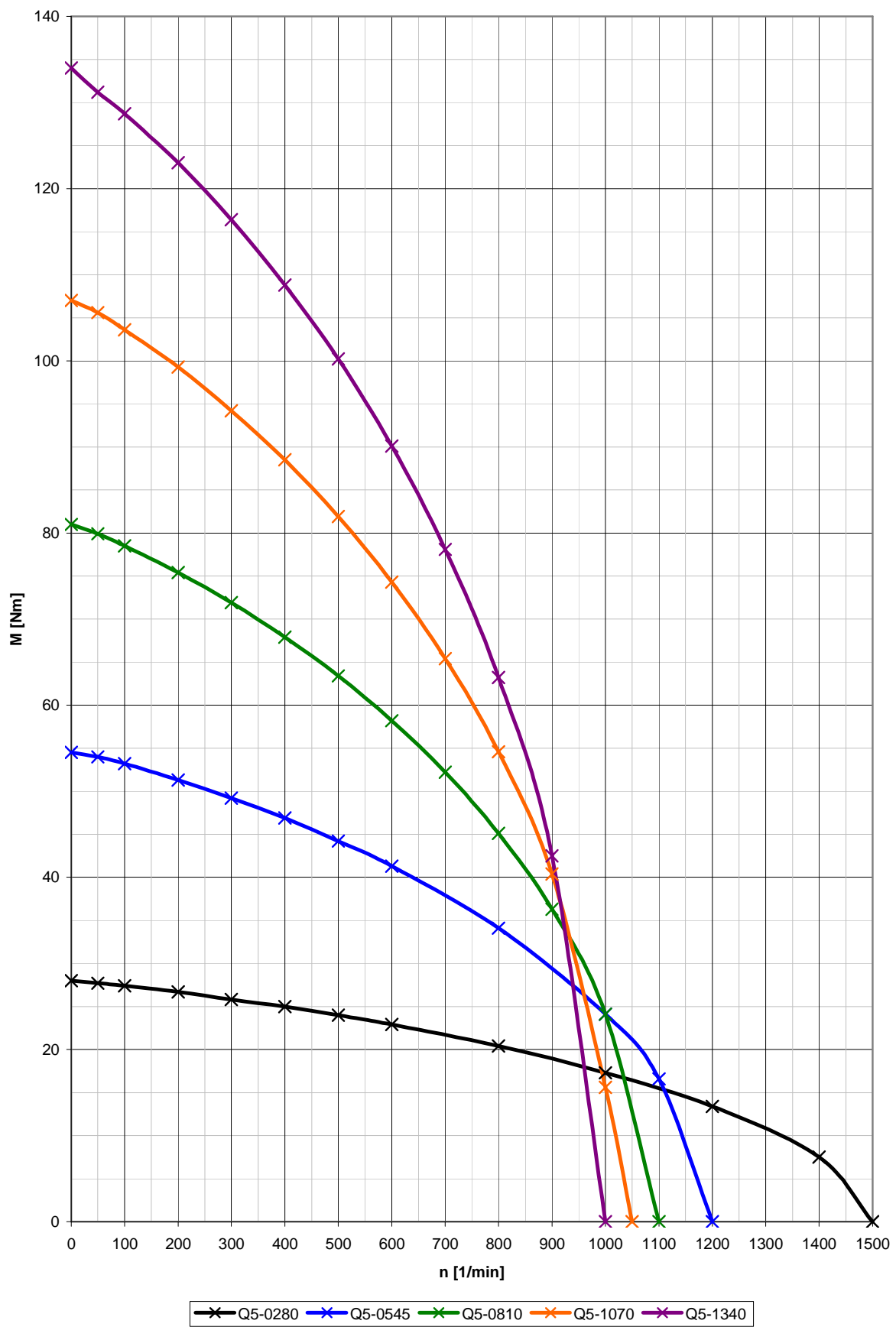


Figure 5: Continuous torque characteristics of motors Q5

Type / Parameter		Q6-0600	Q6-1150	Q6-1650	Q6-2120	Q6-2580	Physical unit
Stack length	l_{fe}	30	60	90	120	150	mm
Stall Torque	M_0	60	115	165	212	258	Nm
Stall AC Current	I_0	14,0	38,3	55,0	70,7	86,0	A
Blocked Torque	M_L	51,5	98	140	180	220	Nm
Blocked AC Current	I_L	13,15	36,5	53,3	69,9	87,3	A
Rated Speed	n_n	400	400	400	200	200	min^{-1}
Rated Torque	M_n	49,5	86	117	185	224	Nm
Rated AC Current	I_n	13,48	34,2	47,5	74,2	91,8	A
Peak Torque	M_{max}	240	460	660	848	1032	Nm
Peak Current	I_{max}	73	181	259	332	397	A
Max. Speed	n_{max}	1300	1200	1000	800	800	min^{-1}
EMF Constant	K_e	259,5	181,4	181,4	181,4	181,4	$\text{V}/(1000\text{min}^{-1})$
Torque Constant	K_m	4,29	3,00	3,00	3,00	3,00	Nm/A
Terminal Resistance	R_{2ph}	0,555	0,103	0,06	0,042	0,032	Ω
Terminal Inductance	L_{2ph}	3,48	0,85	0,57	0,43	0,34	mH
Max.contin.power dissipation	ΔP_{max}	320	455	585	715	850	W
DC Bus Voltage	U_{dc}	320	320	320	320	320	V
Number of poles	$2p$	40	40	40	40	40	--

Insulation class	-	F	F	F	F	F	--
Weight	m	7,83 [14,5]	13,9 [20,6]	20 [26,7]	26 [32,7]	32,1 [38,8]	kg
Rotor Inertia	J	243 [300]	486 [543]	729 [786]	972 [1029]	1215 [1272]	$\text{kg}\cdot\text{cm}^2$
Thermal Time Constant	T_{th}	50	57	64	71	78	min
Max.detent torque	M_r	1,40	3,00	4,40	5,80	7,20	Nm

Table 1: Data Sheets Q6

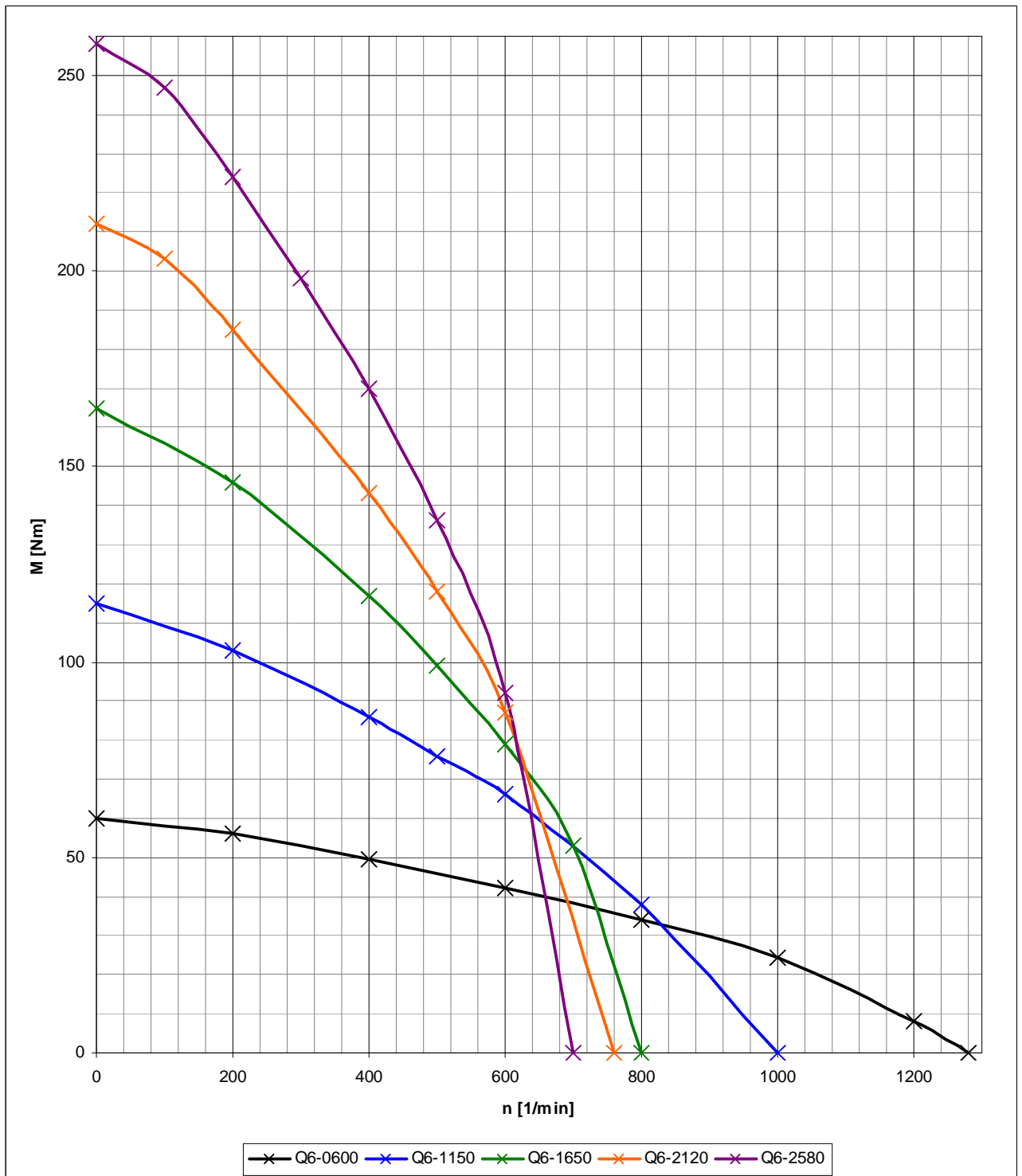


Figure 1: Stall torque characteristics of motors Q6

Type / Parameter		Q7-1050	Q7-2000	Q7-2900	Q7-3800	Q7-4690	Physical unit
Stack length	l_{fe}	30	60	90	120	150	mm
Stall Torque	M_0	105	200	290	380	469	Nm
Stall AC Current	I_0	12,0	14,1	20,7	14,5	17,8	A
Blocked Torque	M_L	85,5	162	235	308	380	Nm
Blocked AC Current	I_L	11,4	12,9	18,9	13,2	16,2	A
Rated Speed	n_n	400	400	400	200	200	min ⁻¹
Rated Torque	M_n	85,5	139	180	313	378	Nm
Rated AC Current	I_n	11,3	11,3	14,9	13,6	16,3	A
Peak Torque	M_{max}	315	600	870	1140	1407	Nm
Peak Current	I_{max}	51	60	83	56	68	A
Max. Speed	n_{max}	1000	900	700	700	600	min ⁻¹
EMF Constant	K_e	527,5	855	846	1583	1592	V/(1000min ⁻¹)
Torque Constant	K_m	8,72	14,14	14,0	26,18	26,33	Nm/A
Terminal Resistance	R_{2ph}	0,91	0,876	0,502	1,225	0,946	Ω
Terminal Inductance	L_{2ph}	8,8	11,57	7,55	19,8	16,03	mH
Max.contin.power dissipation	ΔP_{max}	385	515	650	780	910	W
DC Bus Voltage	U_{dc}	560	560	560	560	560	V
Number of poles	$2p$	52	52	52	52	52	--

Insulation class	-	F	F	F	F	F	--
Weight	m	12,4 [27,3]	21,3 [36,2]	30,1 [45]	39 [53,9]	47,8 [62,7]	kg
Rotor Inertia	J	545 [645]	1090 [1190]	1635 [1735]	2180 [2280]	2725 [2825]	kg.cm ²
Thermal Time Constant	T_{th}	58	69	80	91	102	min
Max.detent torque	M_r	1,5	3	4,5	6	7,5	Nm

Table 1: Data Sheets Q7

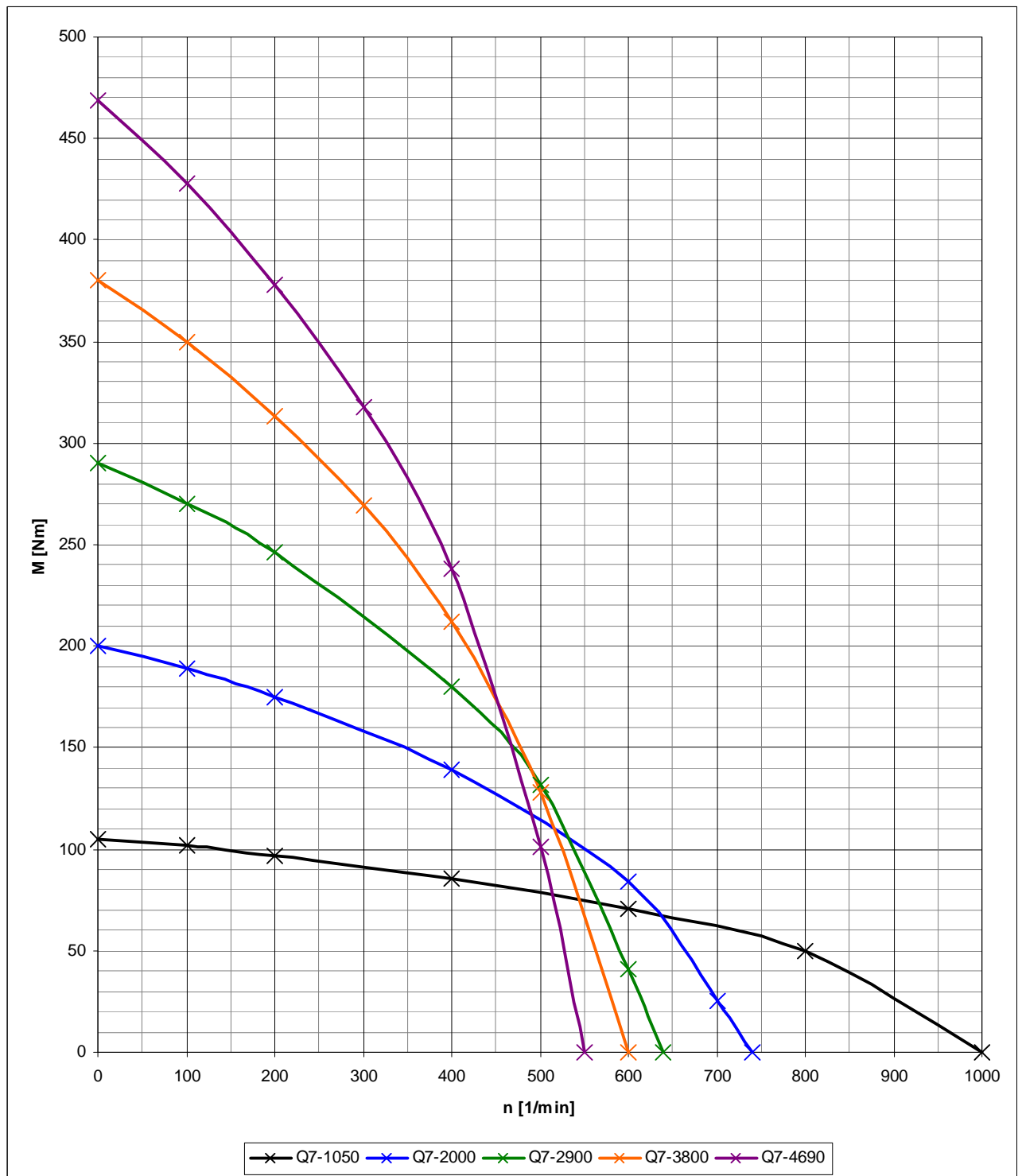


Figure 1: Stall torque characteristics of motors Q7