

Motor Parameters ILM85x23



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	465
Rated torque T_r	[Nm]	2.57
Peak torque T_{max} @ 20% linearity deviation	[Nm]	8.31
Rated voltage U_r	[V]	48
Rotation speed n_{max}^*	[rpm]	1728
Rated current I_r (phase current amplitude)	[A]	11.3
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	28.7
Torque constant k_T @ 20°C	[mNm/A]	229
Motor constant k_M @ 20°C	[Nm/√W]	0.48
Terminal resistance R_{TT} @ 20°C	[mΩ]	300
Terminal inductance L_{TT}	[μH]	930
Rotor inertia J	[kgcm ²]	0.98
Number of pole pairs	-	10
Max. efficiency η	%	92
Weight m	[g]	620

* Theoretical no-load rotation speeds at rated voltage U_r . Variations can arise from operation with different inverters.
Higher rotation speeds or change of the voltage level can be achieved by varying the interconnection scheme.

MAXIMAL ROTATION SPEEDS

DC link voltage [V]	48	36	24	14	12	9
star-serial $n_{\max}^*$ [rpm]	1728	1296	864	518	432	324
delta-serial $n_{\max}^*$ [rpm]	2993	2245	1496	898	748	561
star-parallel $n_{\max}^*$ [rpm]	3456	2592	1728	1037	864	648
delta-parallel $n_{\max}^*$ [rpm]	5986	4489	2993	1796	1496	1122

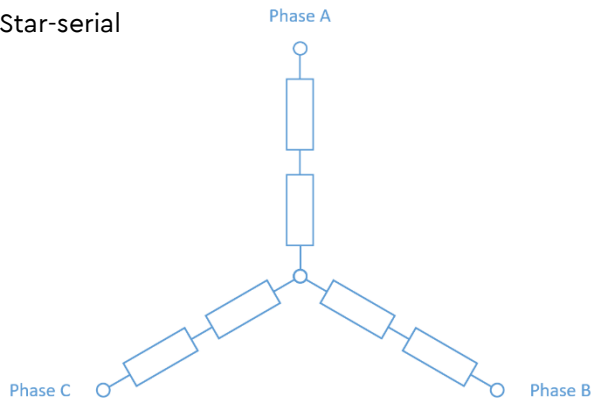
* Theoretical no-load rotation speeds at indicated voltage. Mechanical limits apply and must not be exceeded.
Variations can arise from operation with different inverters.

CHARACTERISTICS INTERCONNECTION VARIANTS

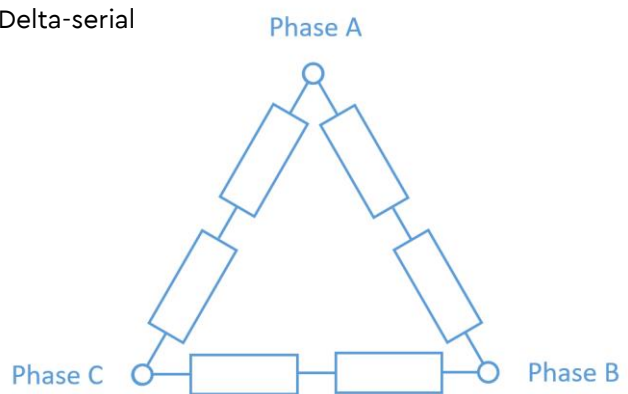
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [μH]
star-serial	48	11.3	229	300	930
delta-serial	28	19.6	132	100	310
star-parallel	24	22.6	115	75	233
delta-parallel	14	39.1	66	25	78

AVAILABLE INTERCONNECTION VARIANTS

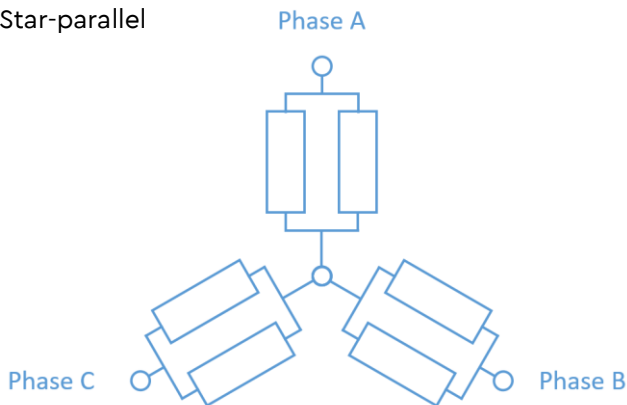
Star-serial



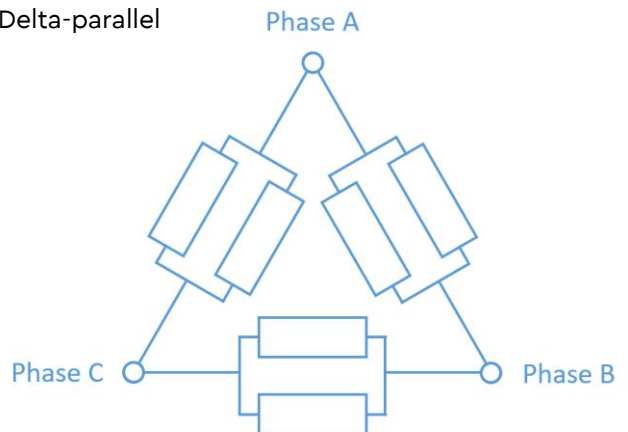
Delta-serial



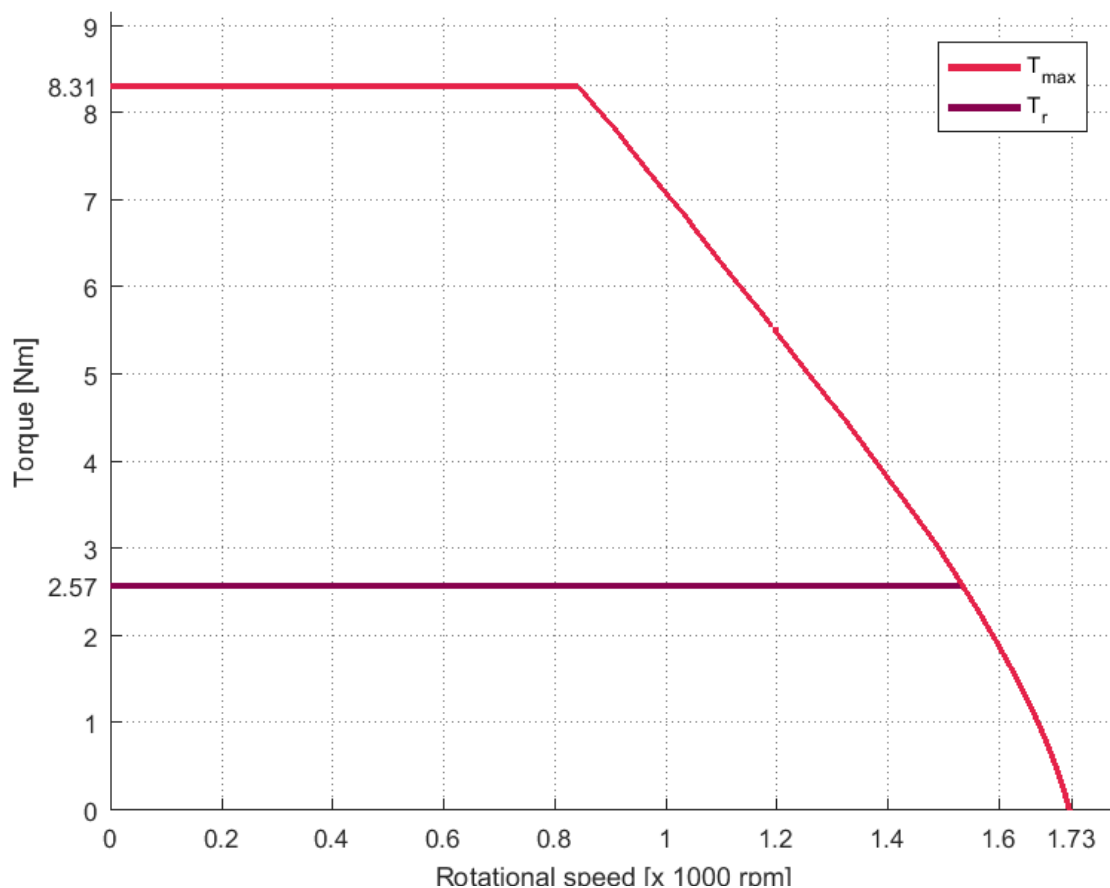
Star-parallel



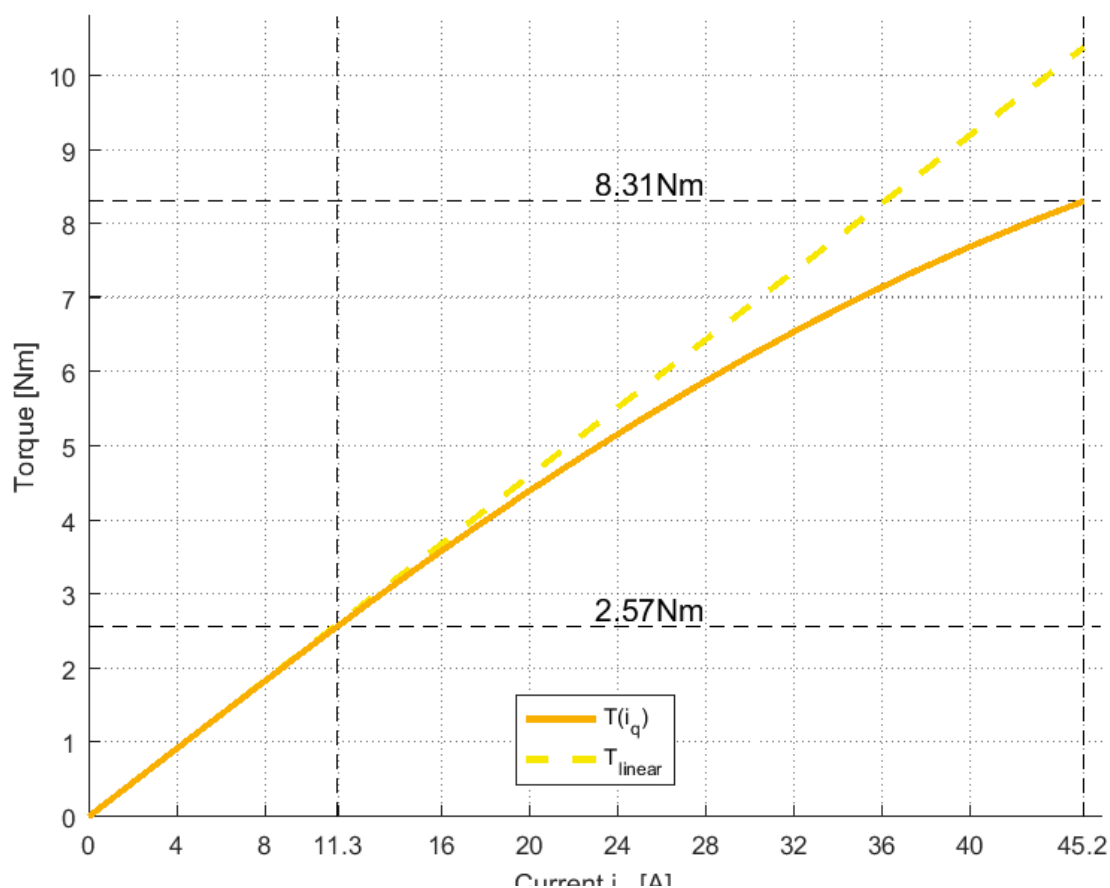
Delta-parallel



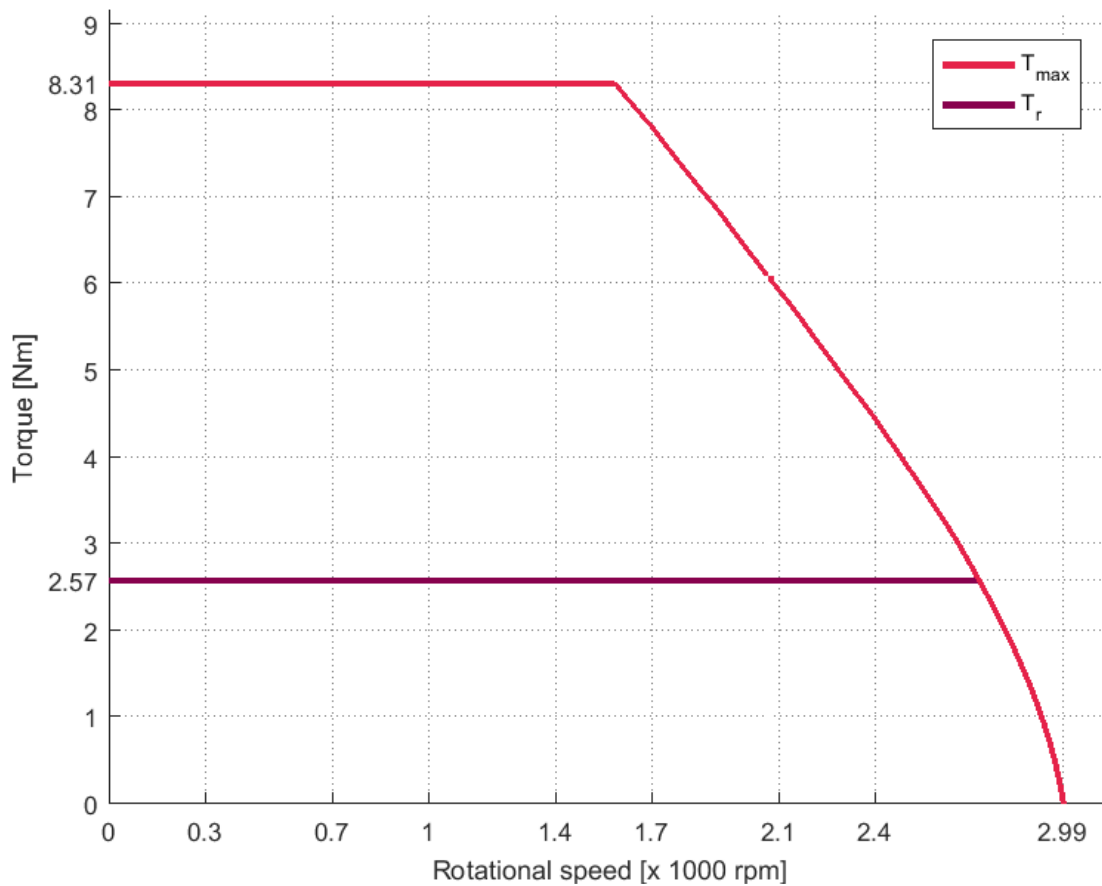
T/N-DIAGRAM ILM85X23 STAR-SERIAL @ 22 °C



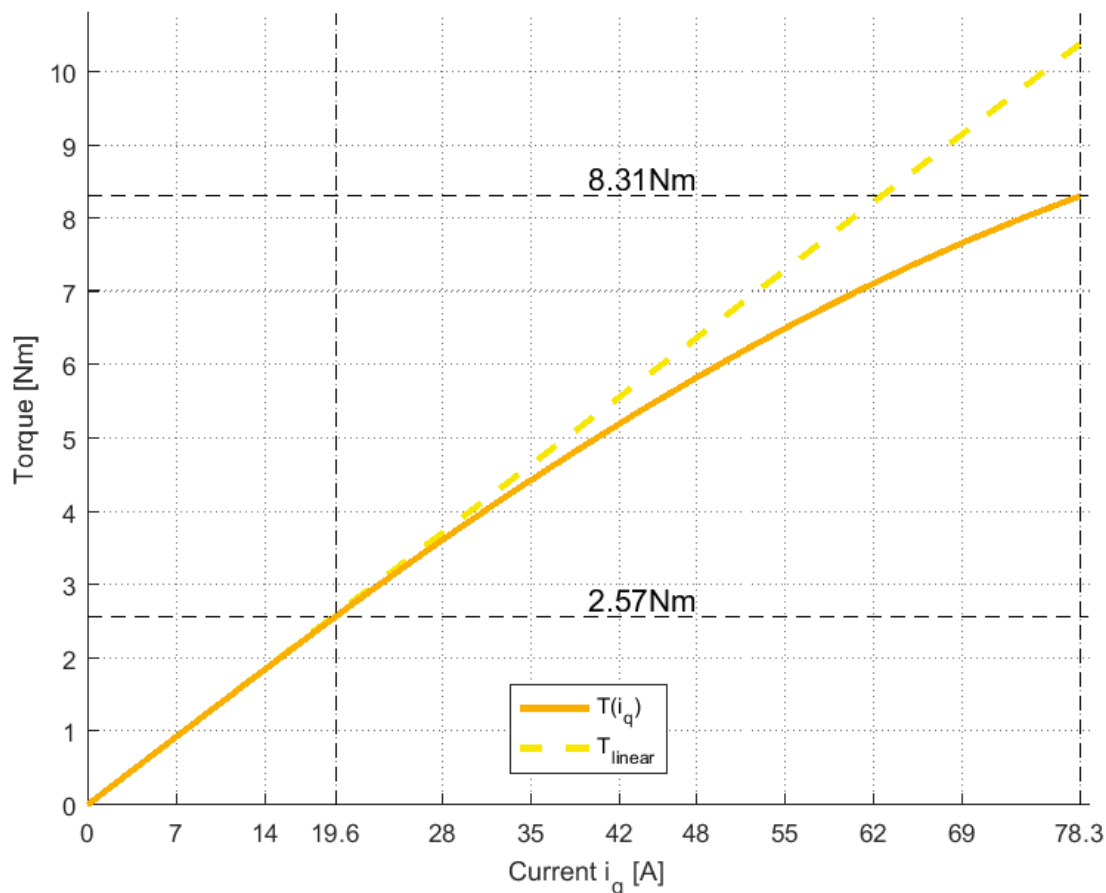
T/I-DIAGRAM ILM85X23 STAR-SERIAL @ 22 °C



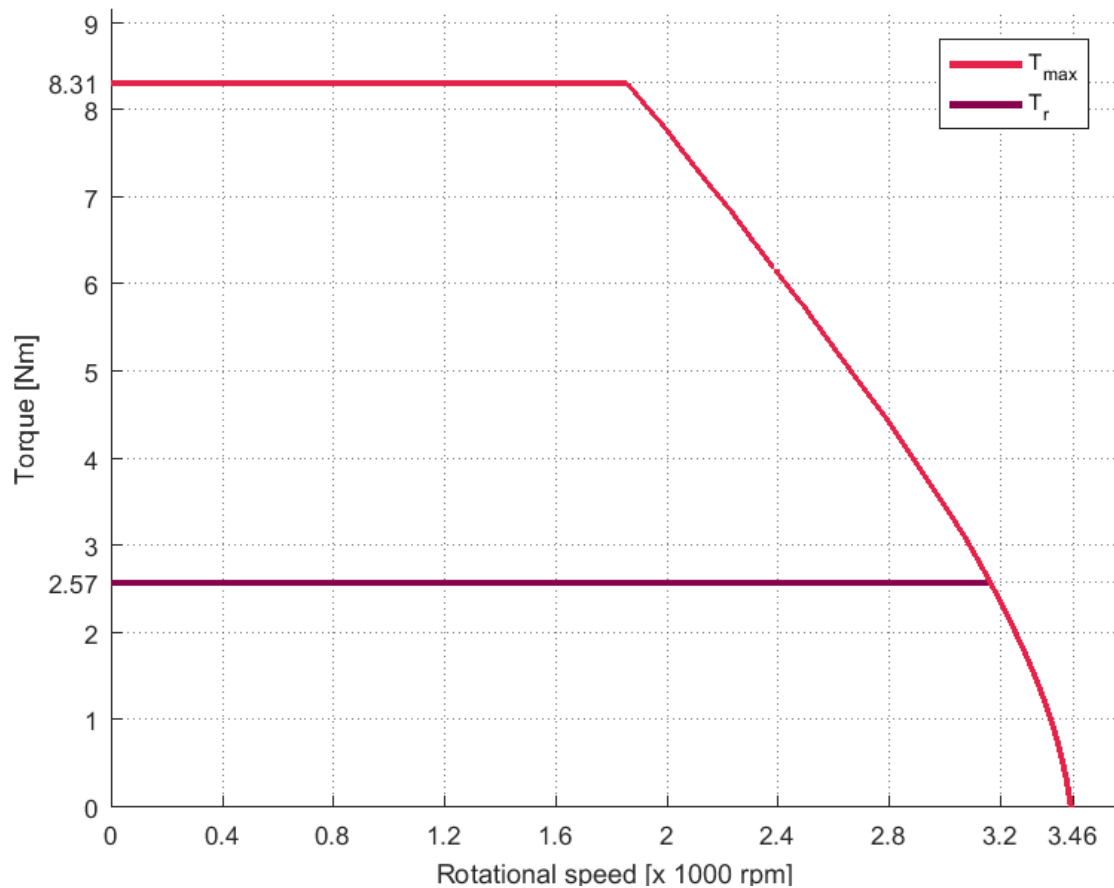
T/N-DIAGRAM ILM85X23 DELTA-SERIAL @ 22 °C



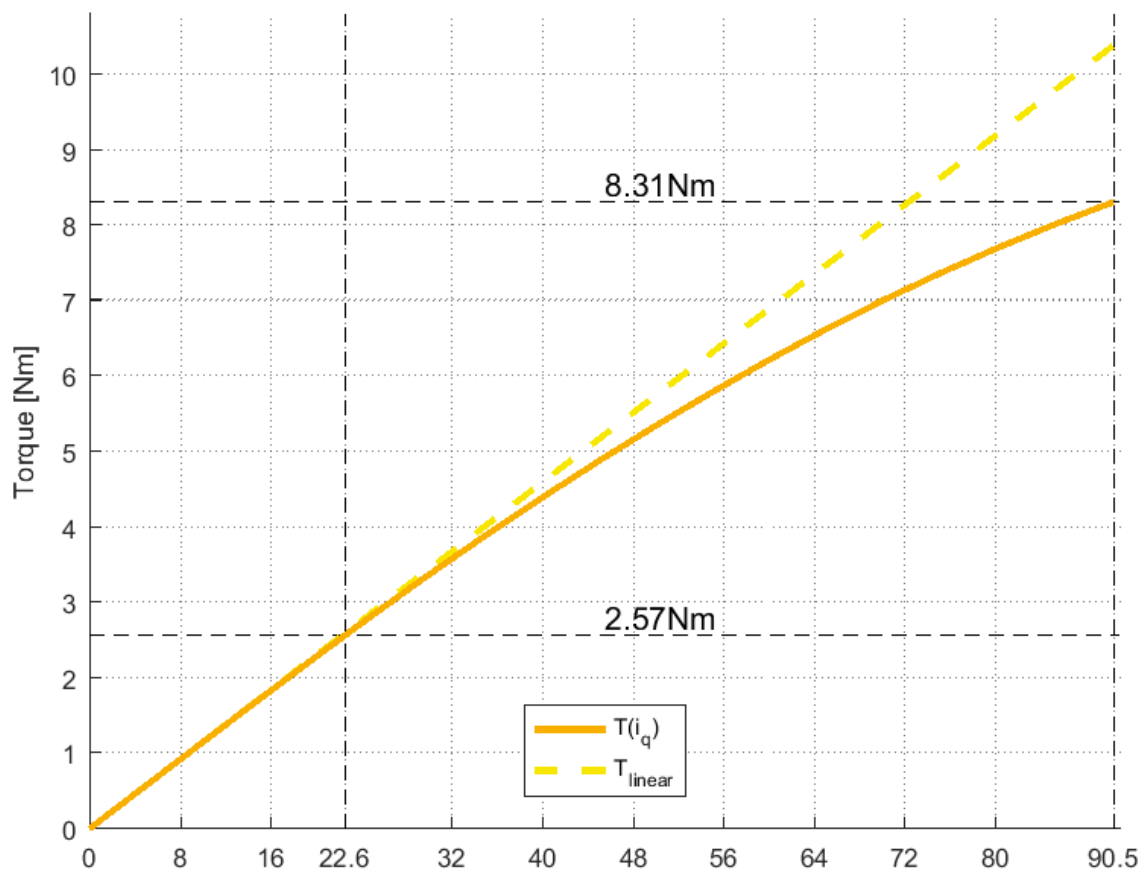
T/I-DIAGRAM ILM85X23 DELTA-SERIAL @ 22 °C



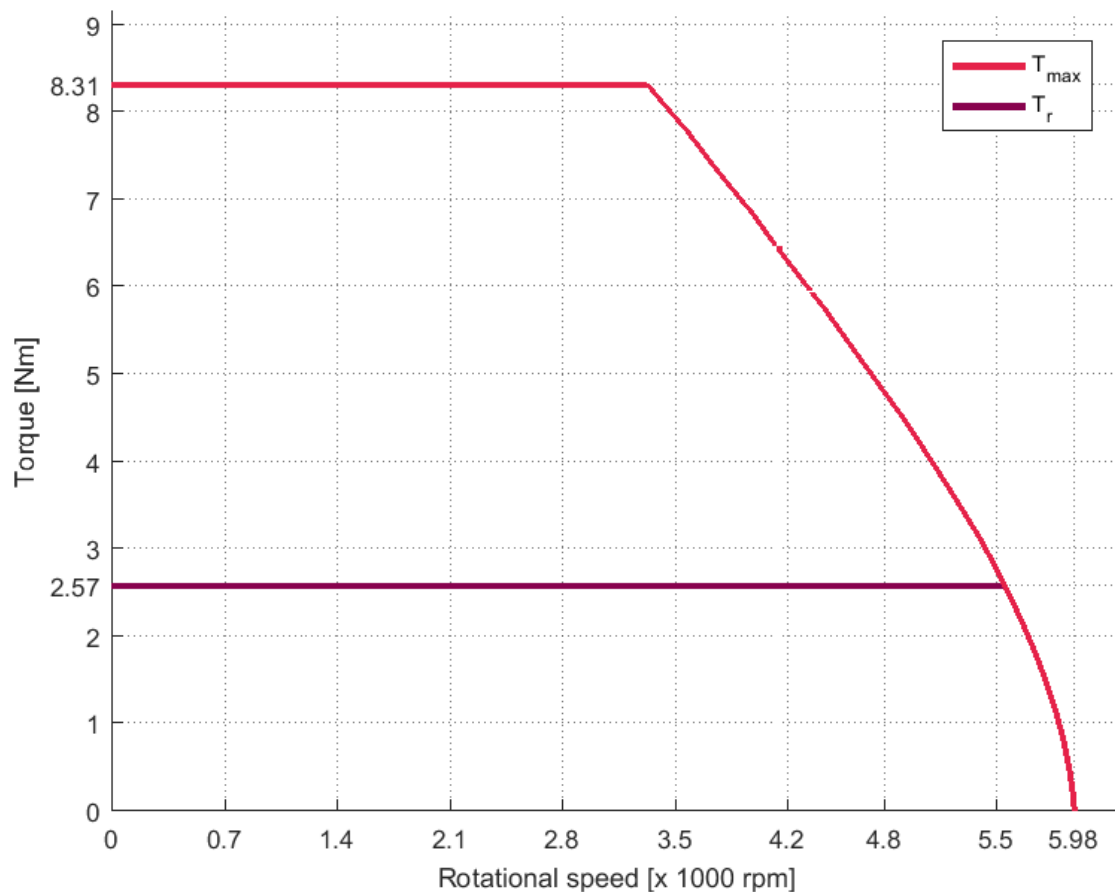
T/N-DIAGRAM ILM85X23 STAR-PARALLEL @ 22 °C



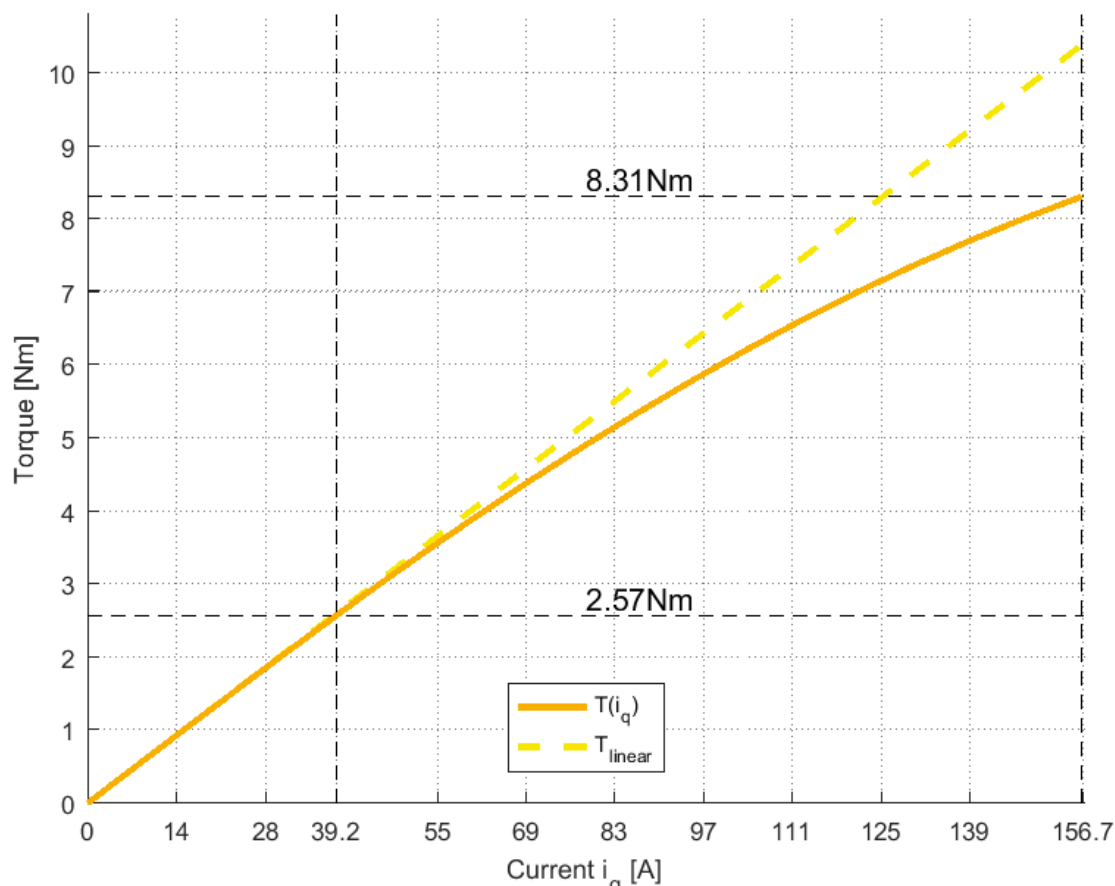
T/I-DIAGRAM ILM85X23 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM85X23 DELTA-PARALLEL @ 22 °C



T/I-DIAGRAM ILM85X23 DELTA-PARALLEL @ 22 °C



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