

Motor Parameters ILM50x08



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	209
Rated torque T_r	[Nm]	0.30
Peak torque T_{max} @ 20% linearity deviation	[Nm]	0.96
Rated voltage U_r	[V]	48
Rotation speed n_{max}^*	[rpm]	6710
Rated current I_r (phase current amplitude)	[A]	5.1
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	10.5
Torque constant k_T @ 20°C	[mNm/A]	58
Motor constant k_M @ 20°C	[Nm/√W]	0.091
Terminal resistance R_{TT} @ 20°C	[mΩ]	540
Terminal inductance L_{TT}	[μH]	490
Rotor inertia J	[kgcm ²]	0.054
Number of pole pairs	-	10
Max. efficiency η	%	88
Weight m	[g]	87

* 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]	6710	5033	3355	2013	1678	1258
delta-serial $n_{\max}^*$ [rpm]	11622	8717	5811	3487	2906	2179
star-parallel $n_{\max}^*$ [rpm]	13420**	10065	6710	4026	3355	2516
delta-parallel $n_{\max}^*$ [rpm]	23244**	17433**	11622	6973	5811	4358

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

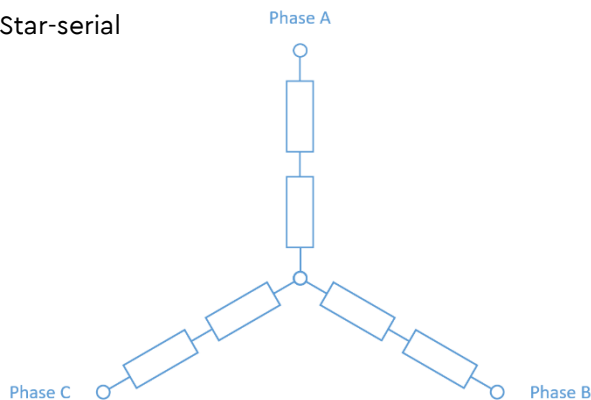
** $n_{\max, \text{mech}} = 12000$ rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

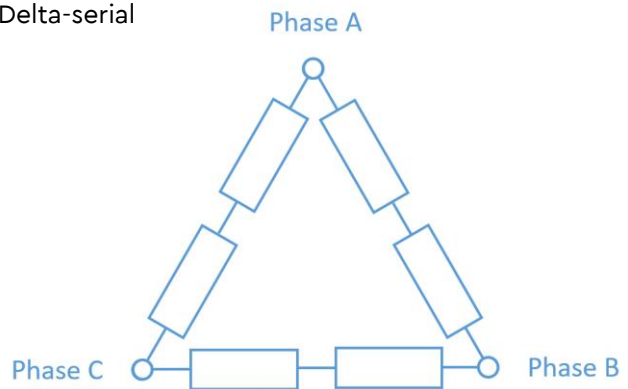
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [μH]
star-serial	48	5.1	58	540	490
delta-serial	28	8.8	33	180	163
star-parallel	24	10.2	29	135	123
delta-parallel	14	17.7	17	45	41

AVAILABLE INTERCONNECTION VARIANTS

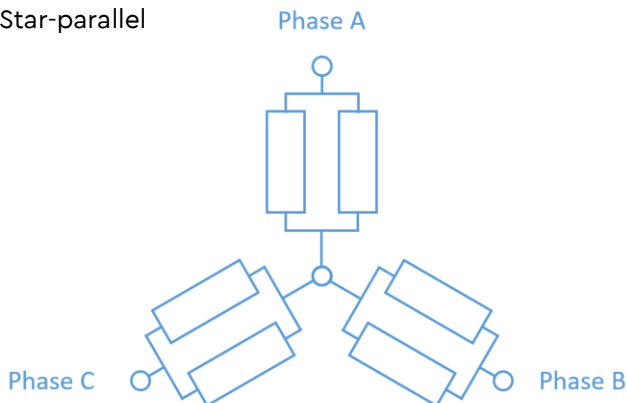
Star-serial



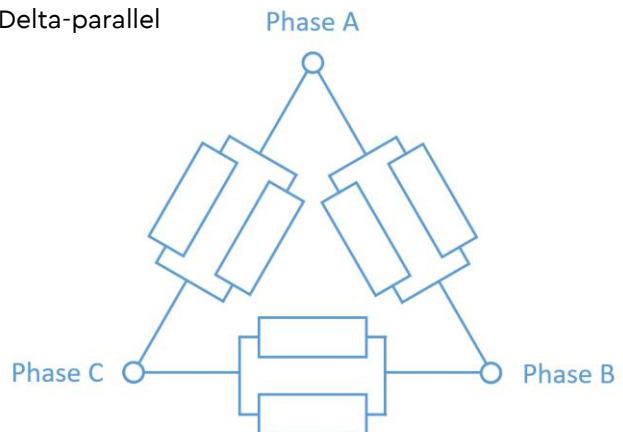
Delta-serial



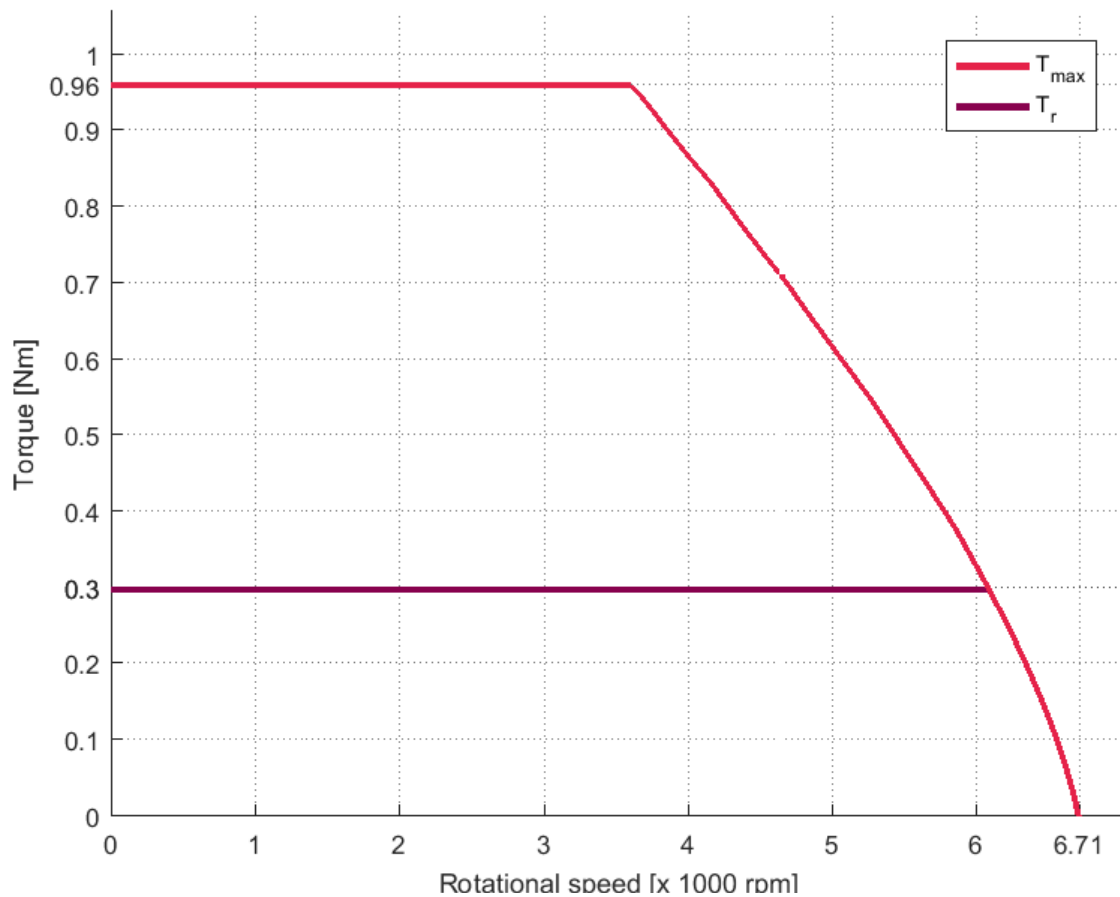
Star-parallel



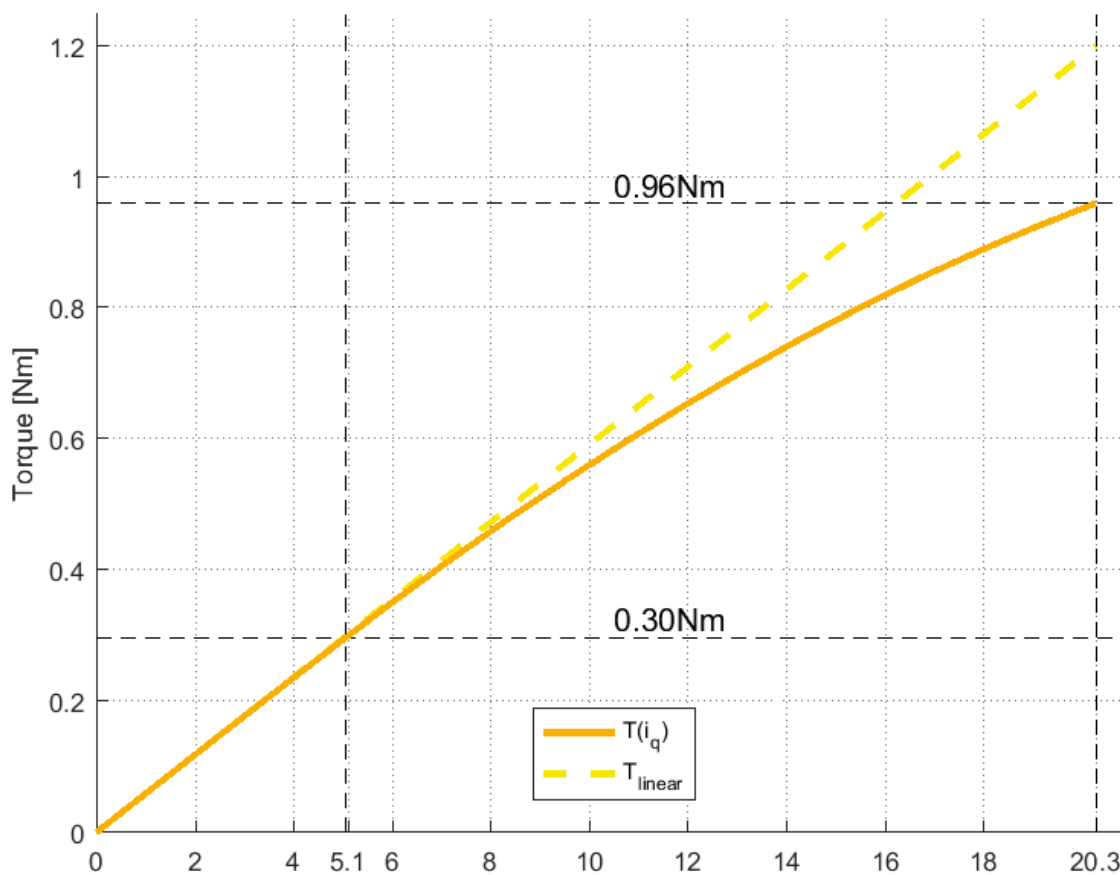
Delta-parallel



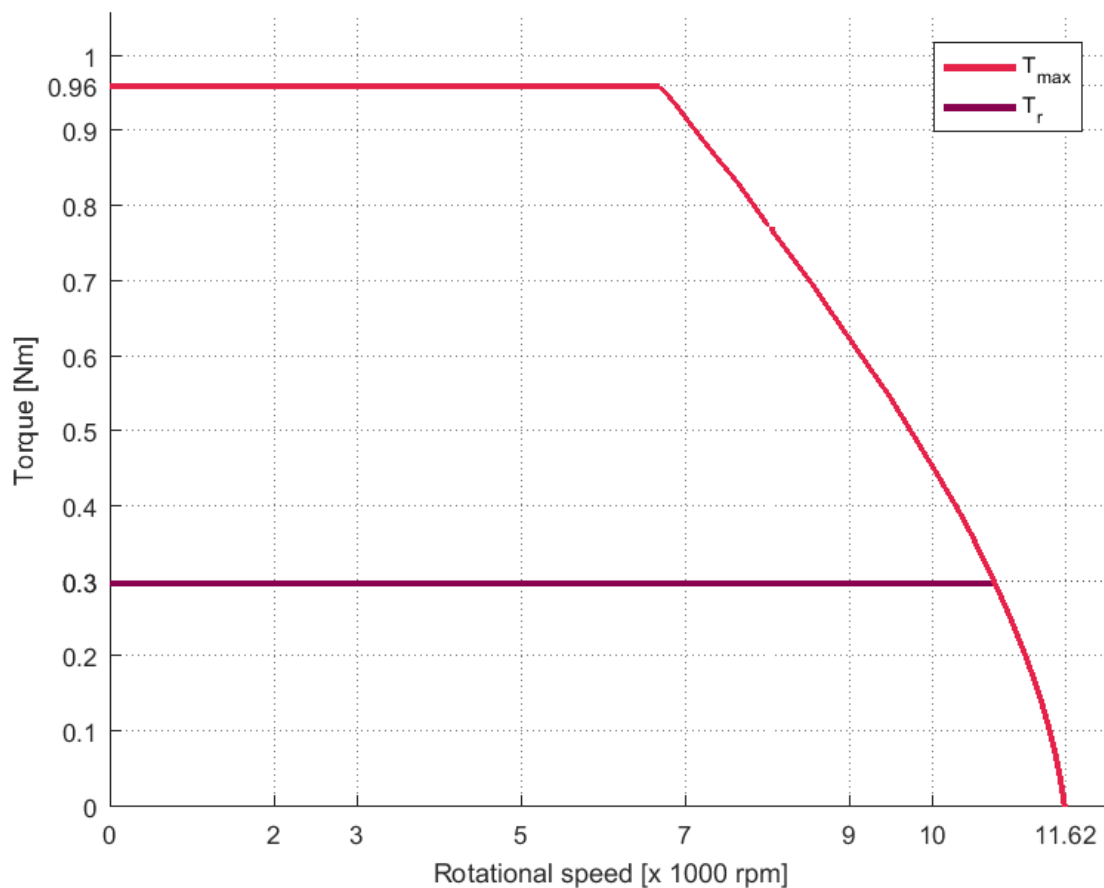
T/N-DIAGRAM ILM50X08 STAR-SERIAL @ 22 °C



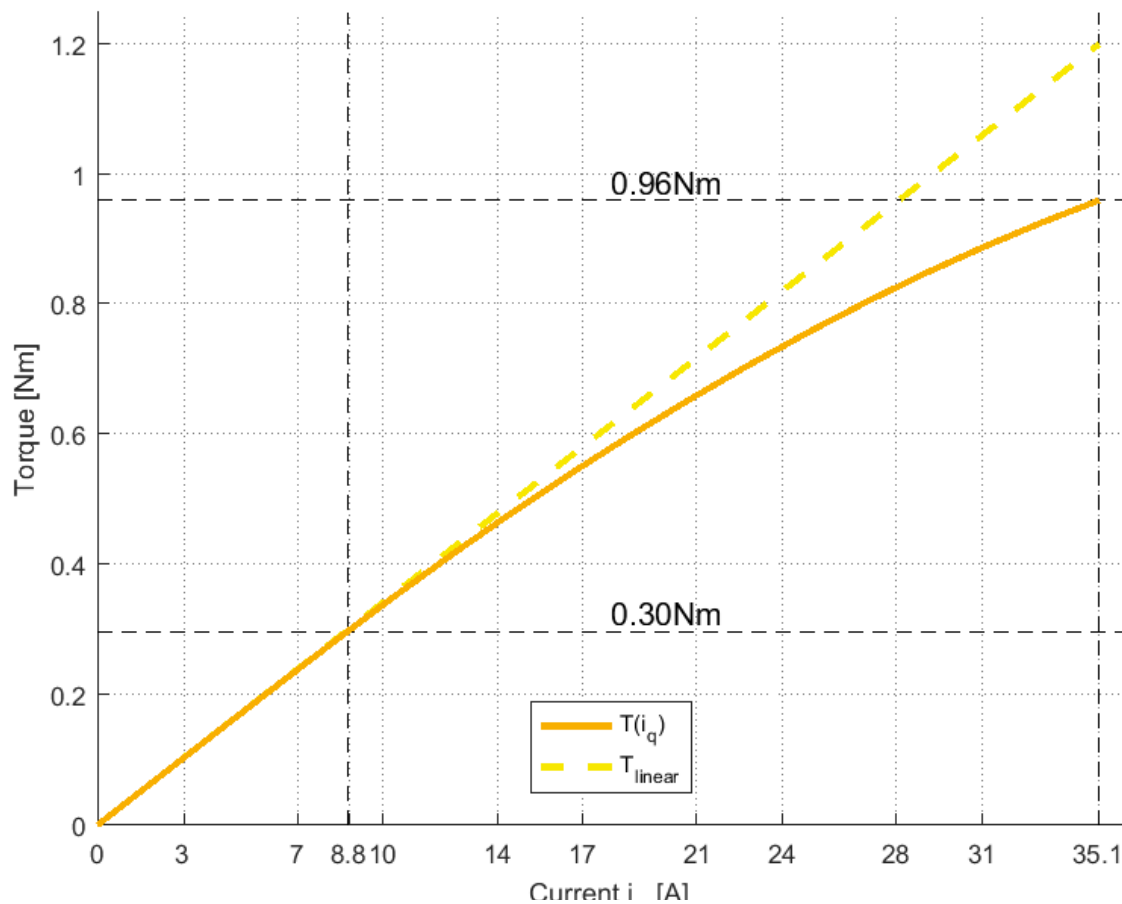
T/I-DIAGRAM ILM50X08 STAR-SERIAL @ 22 °C



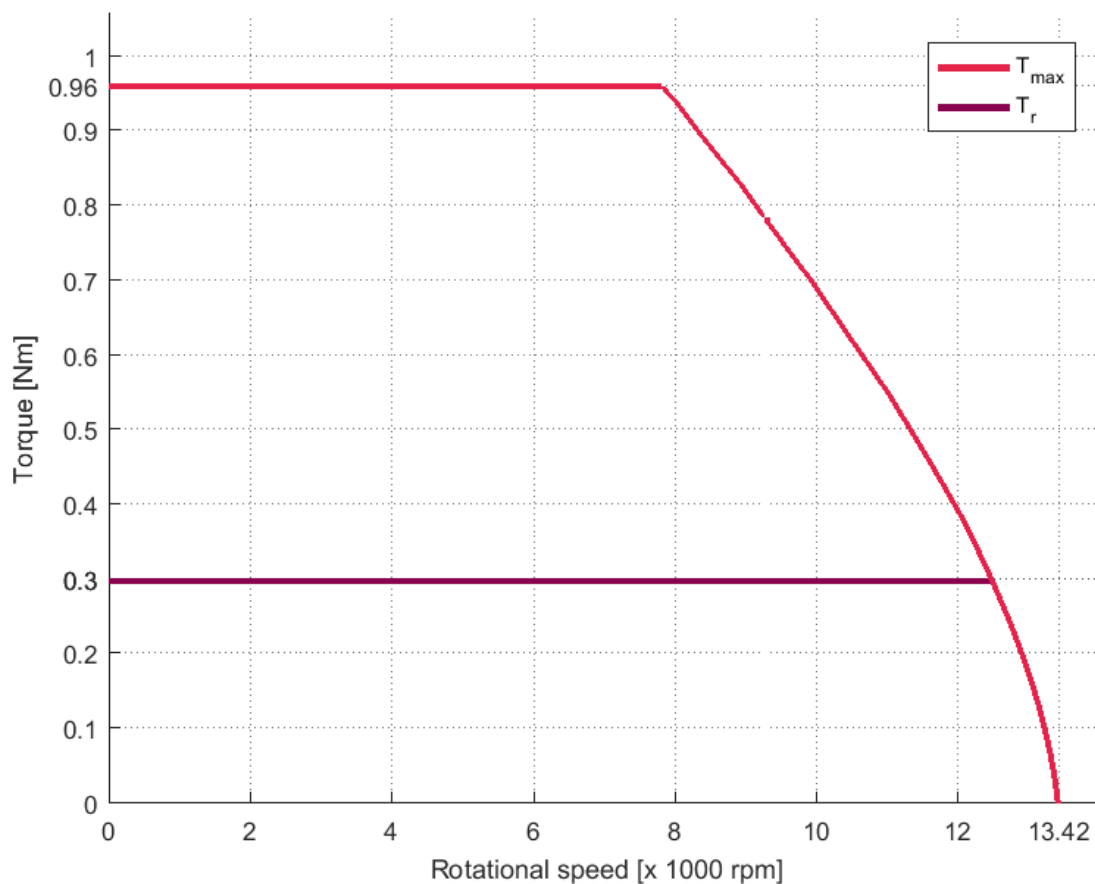
T/N-DIAGRAM ILM50X08 DELTA-SERIAL @ 22 °C



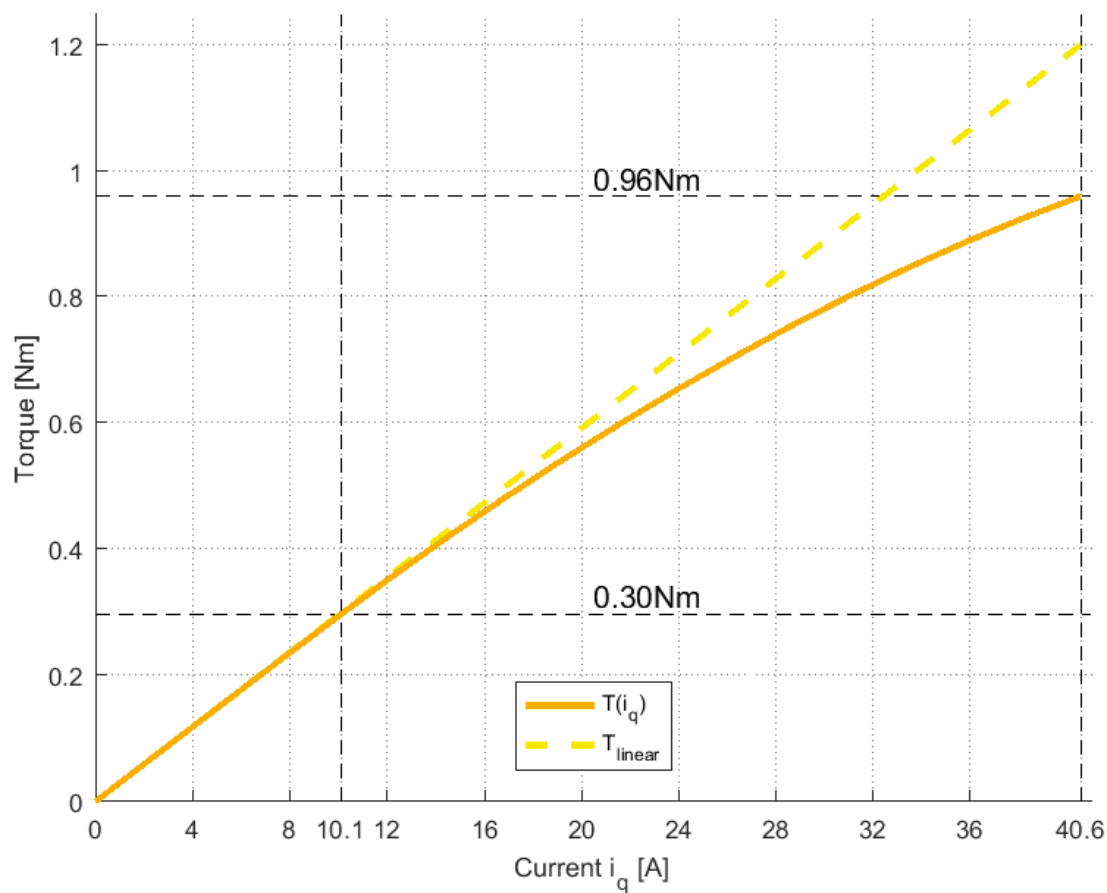
T/I-DIAGRAM ILM50X08 DELTA-SERIAL @ 22 °C



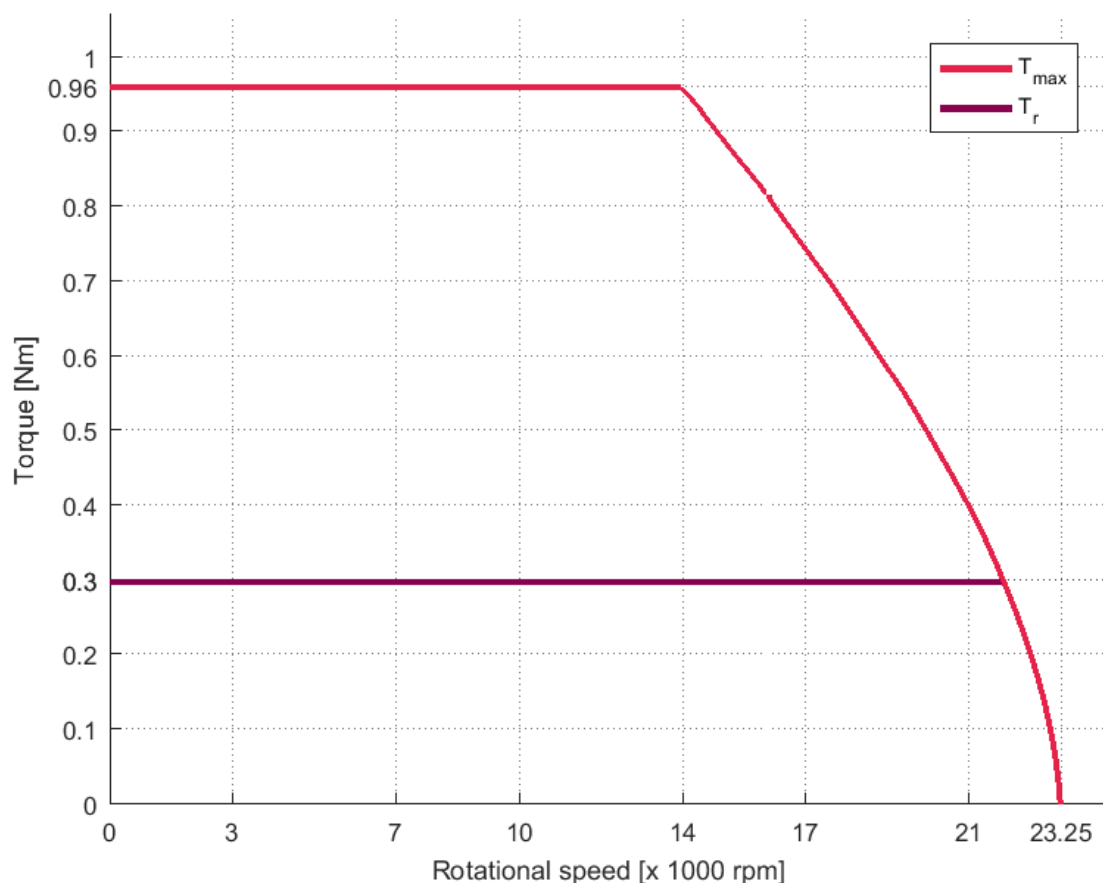
T/N-DIAGRAM ILM50X08 STAR-PARALLEL @ 22 °C



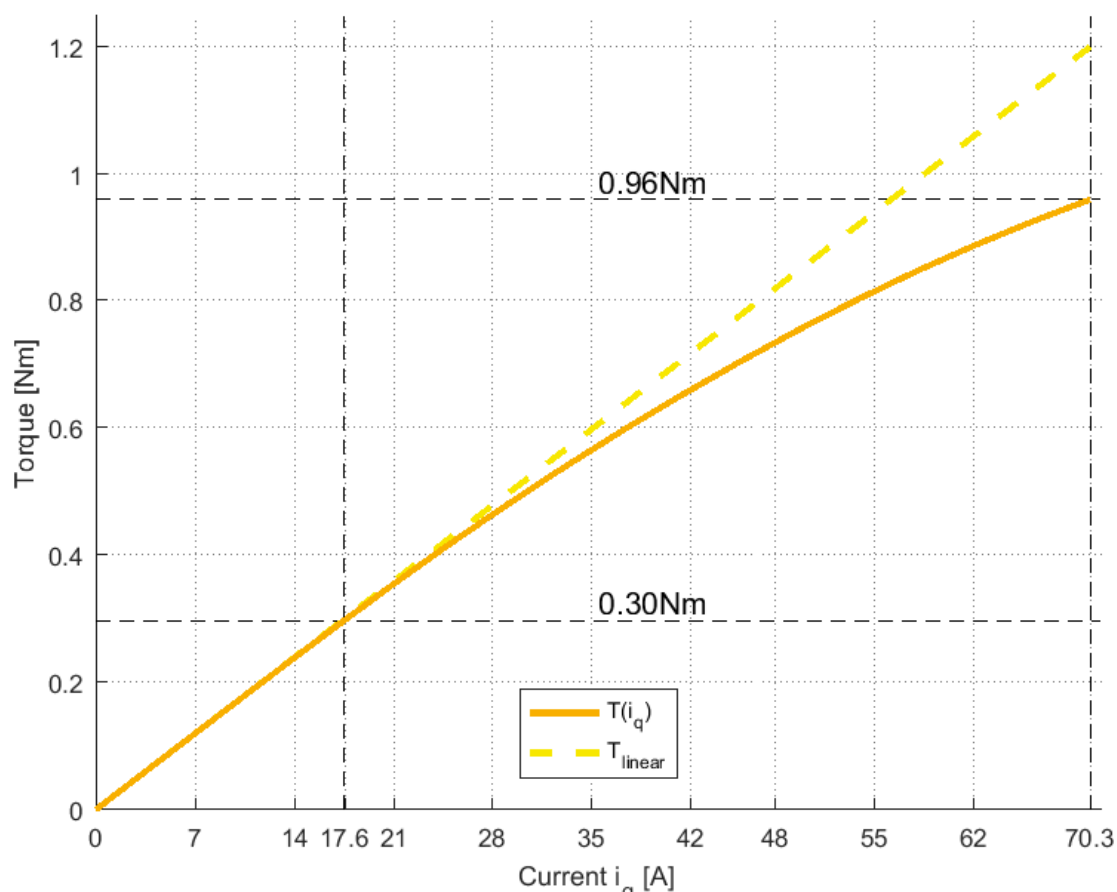
T/I-DIAGRAM ILM50X08 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM50X08 DELTA-PARALLEL @ 22 °C



T/I-DIAGRAM ILM50X08 DELTA-PARALLEL @ 22 °C



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