

Motor Parameters ILM50x14



PERFORMANCE CHARACTERISTICS (INTERCONNECTION STAR-SERIAL)

Power P	[W]	219
Rated torque T_r	[Nm]	0.54
Peak torque T_{max} @ 20% linearity deviation	[Nm]	1.75
Rated voltage U_r	[V]	48
Rotation speed n_{max}^*	[rpm]	3849
Rated current I_r (phase current amplitude)	[A]	5.3
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	16.0
Torque constant k_T @ 20°C	[mNm/A]	103
Motor constant k_M @ 20°C	[Nm/√W]	0.136
Terminal resistance R_{TT} @ 20°C	[mΩ]	770
Terminal inductance L_{TT}	[μH]	850
Rotor inertia J	[kgcm ²]	0.090
Number of pole pairs	-	10
Max. efficiency η	%	87
Weight m	[g]	135

* 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]	3849	2887	1924	1155	962	722
delta-serial $n_{\max}^*$ [rpm]	6667	5000	3333	2000	1667	1250
star-parallel $n_{\max}^*$ [rpm]	7698	5774	3849	2309	1925	1443
delta-parallel $n_{\max}^*$ [rpm]	13333**	10000	6667	4000	3333	2500

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

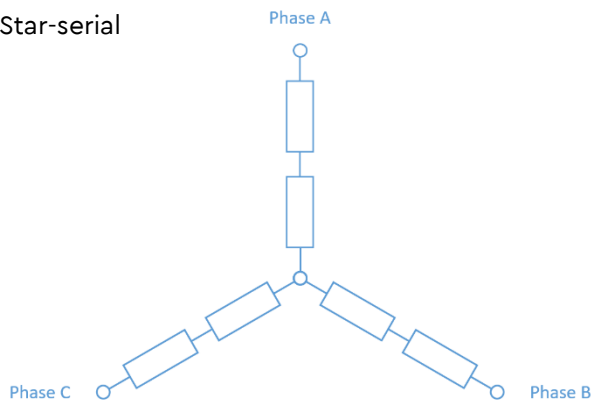
** $n_{\max, \text{mech}} = 12000$ rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

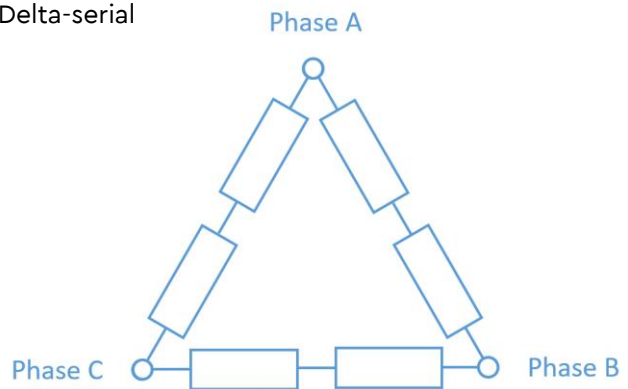
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [μH]
star-serial	48	5.3	103	770	850
delta-serial	28	9.2	59	257	283
star-parallel	24	10.6	52	193	213
delta-parallel	14	18.4	30	64	71

AVAILABLE INTERCONNECTION VARIANTS

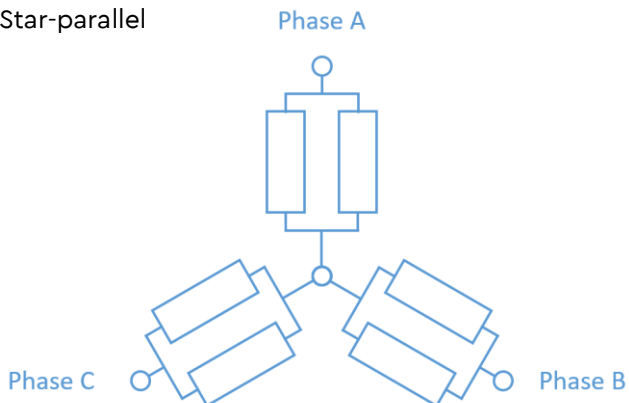
Star-serial



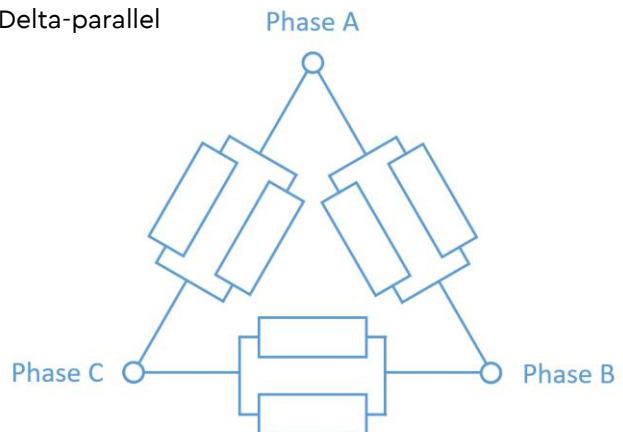
Delta-serial



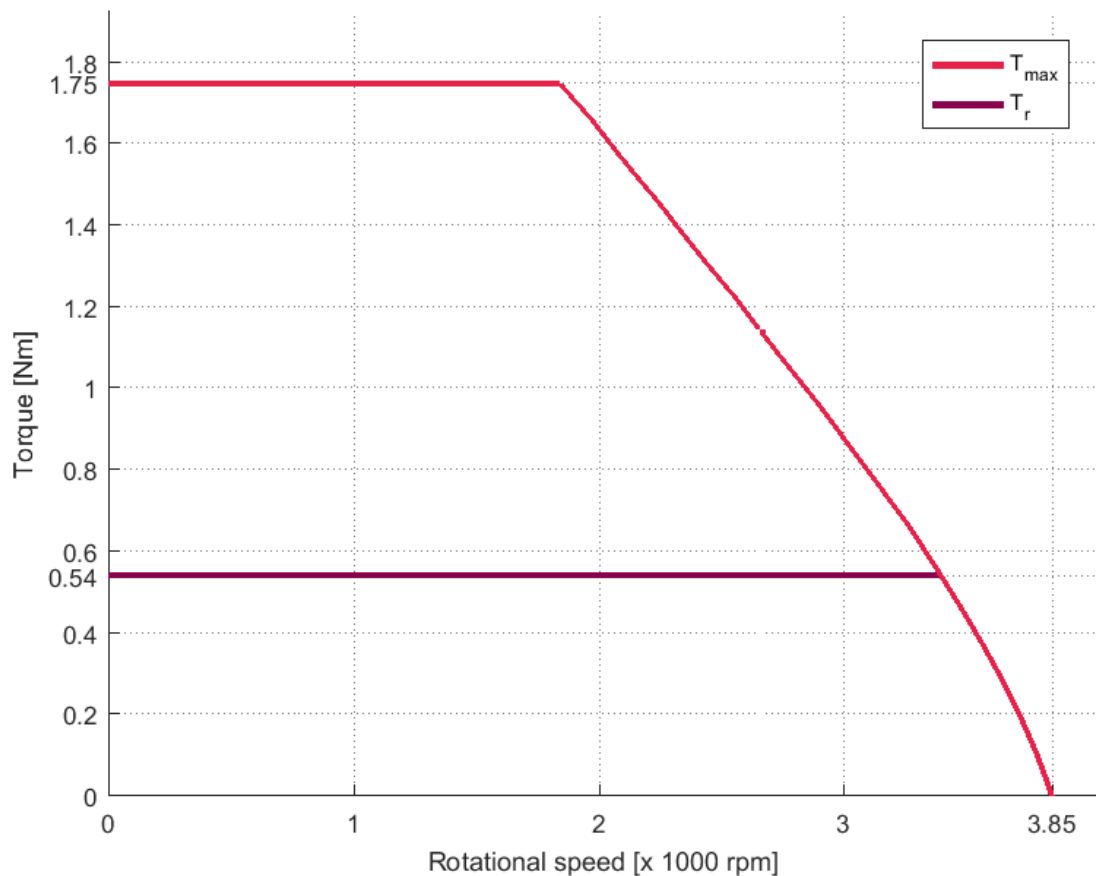
Star-parallel



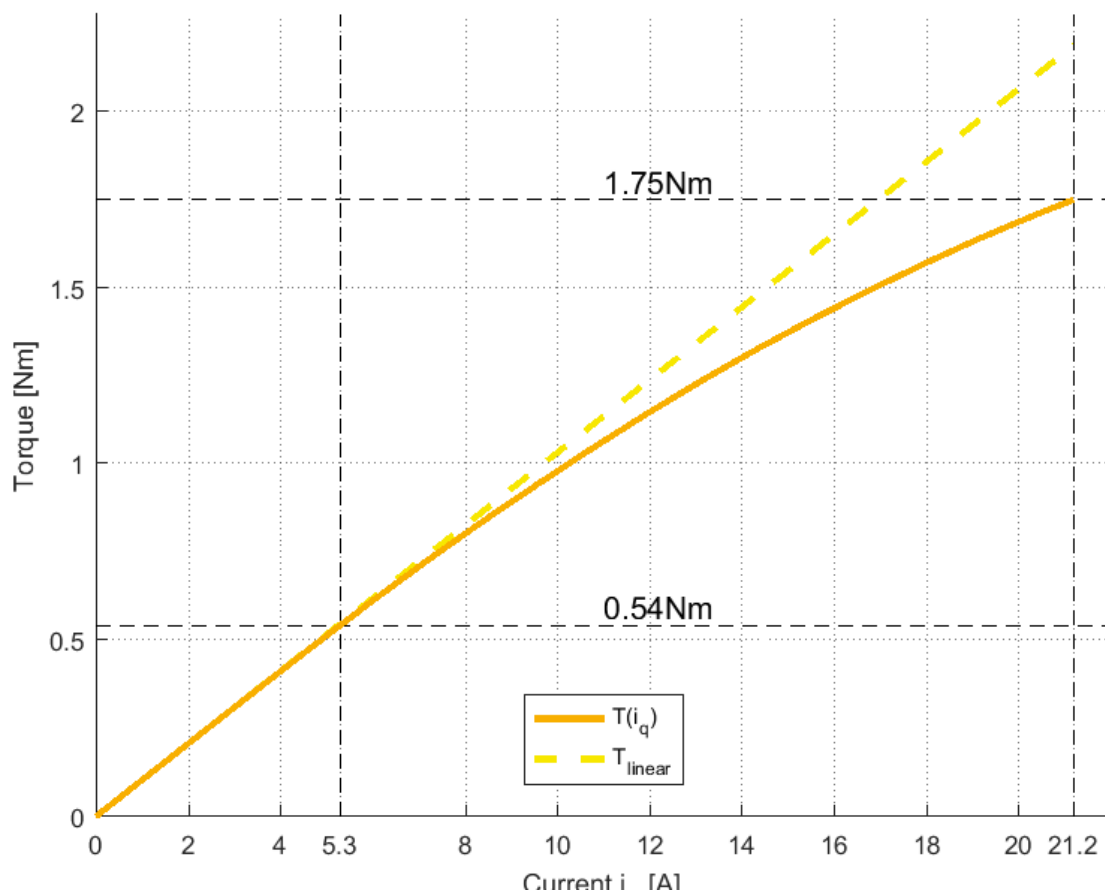
Delta-parallel



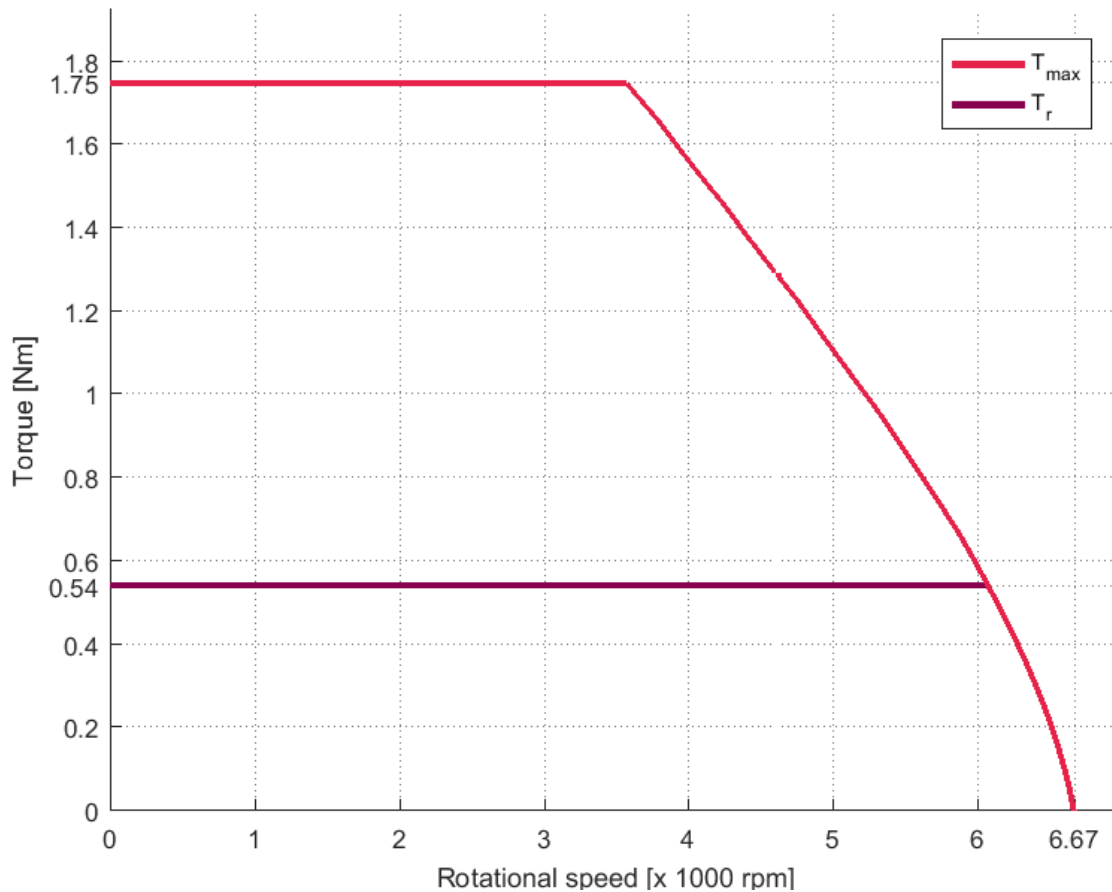
T/N-DIAGRAM ILM50X14 STAR-SERIAL @ 22 °C



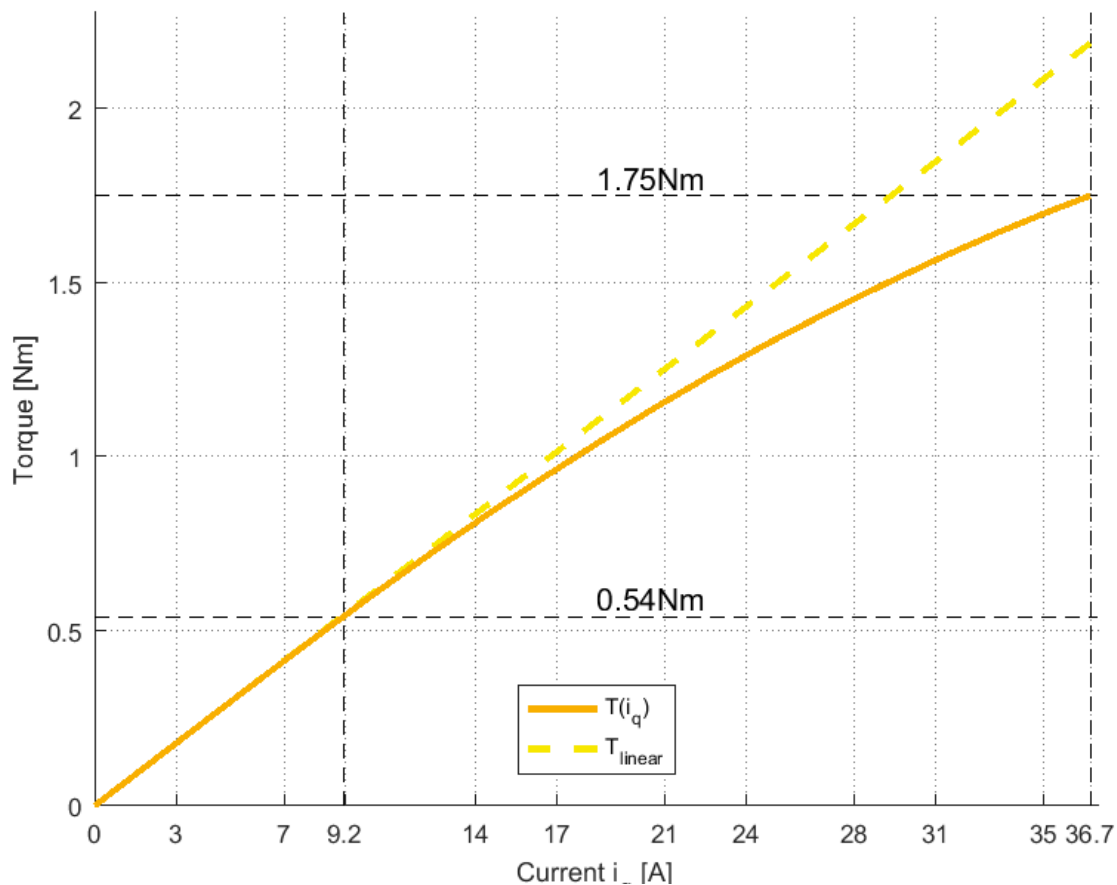
T/I-DIAGRAM ILM50X14 STAR-SERIAL @ 22 °C



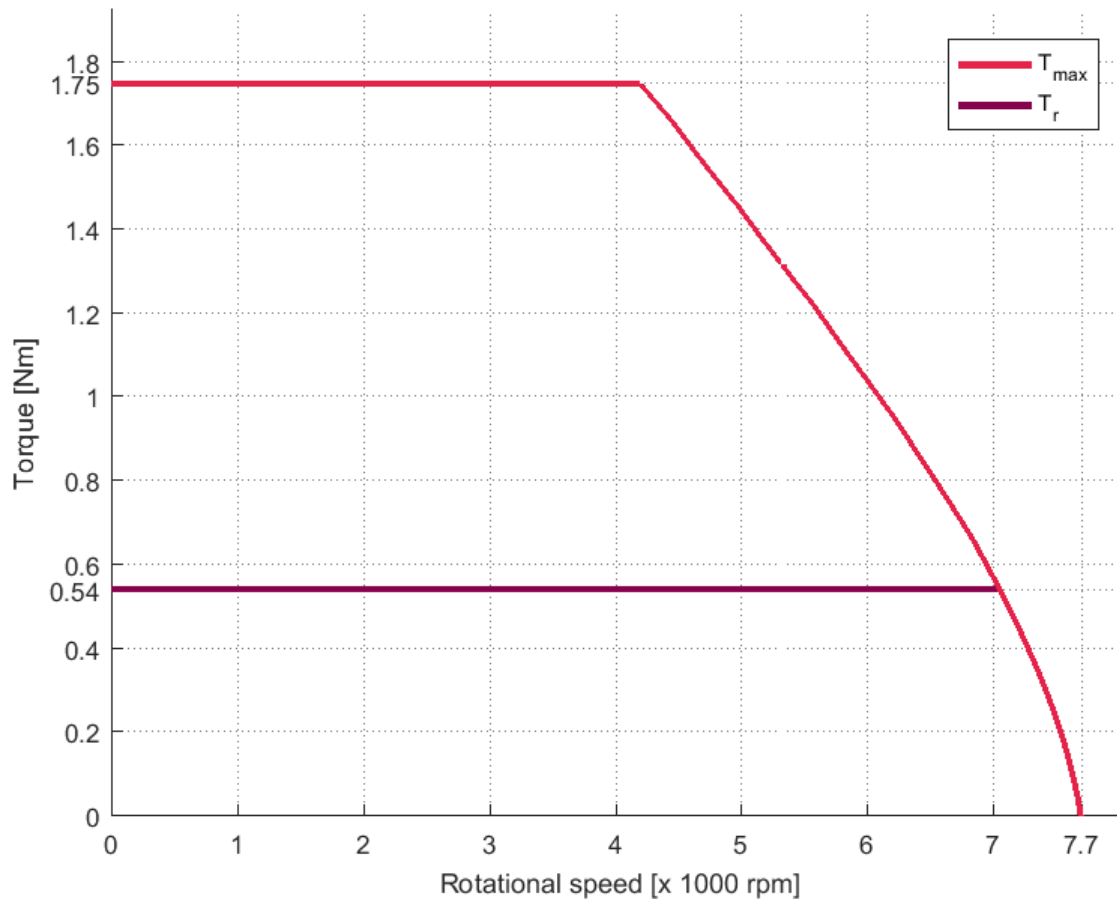
T/N-DIAGRAM ILM50X14 DELTA-SERIAL @ 22 °C



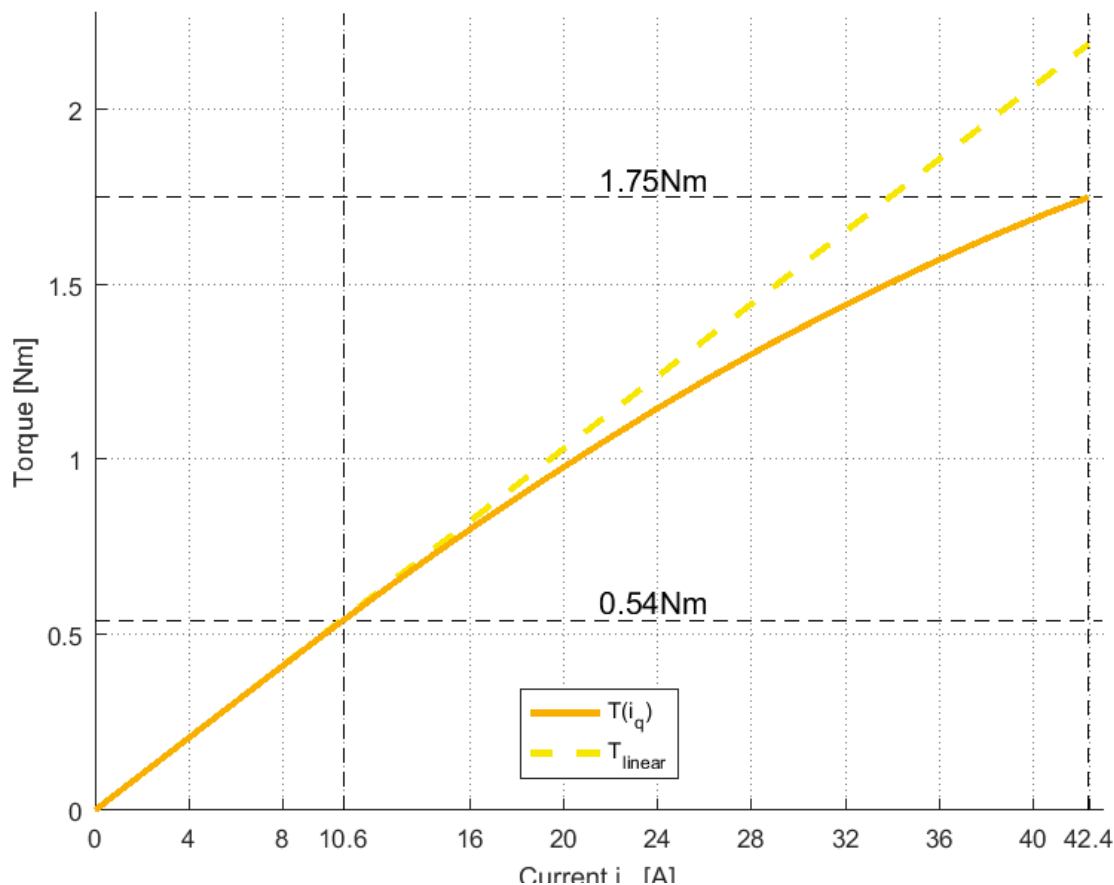
T/I-DIAGRAM ILM50X14 DELTA-SERIAL @ 22 °C



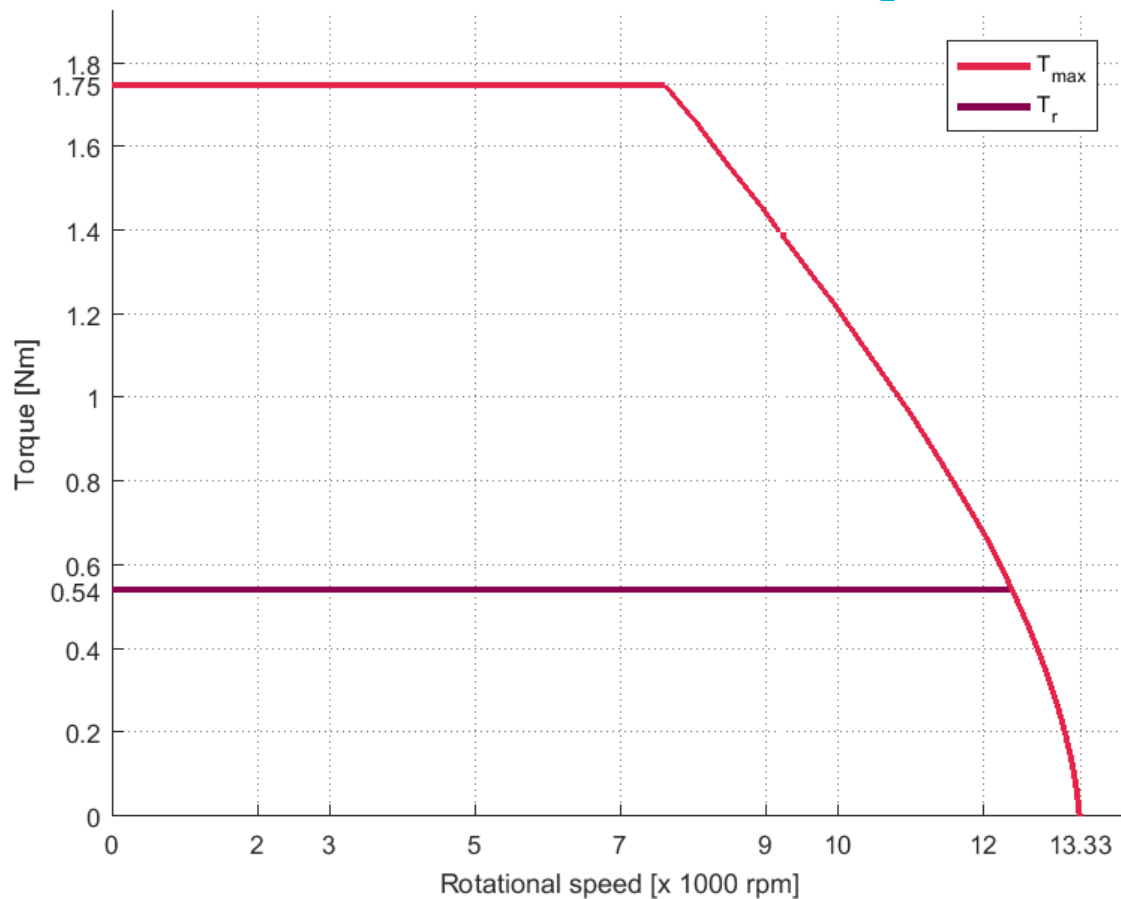
T/N-DIAGRAM ILM50X14 STAR-PARALLEL @ 22 °C



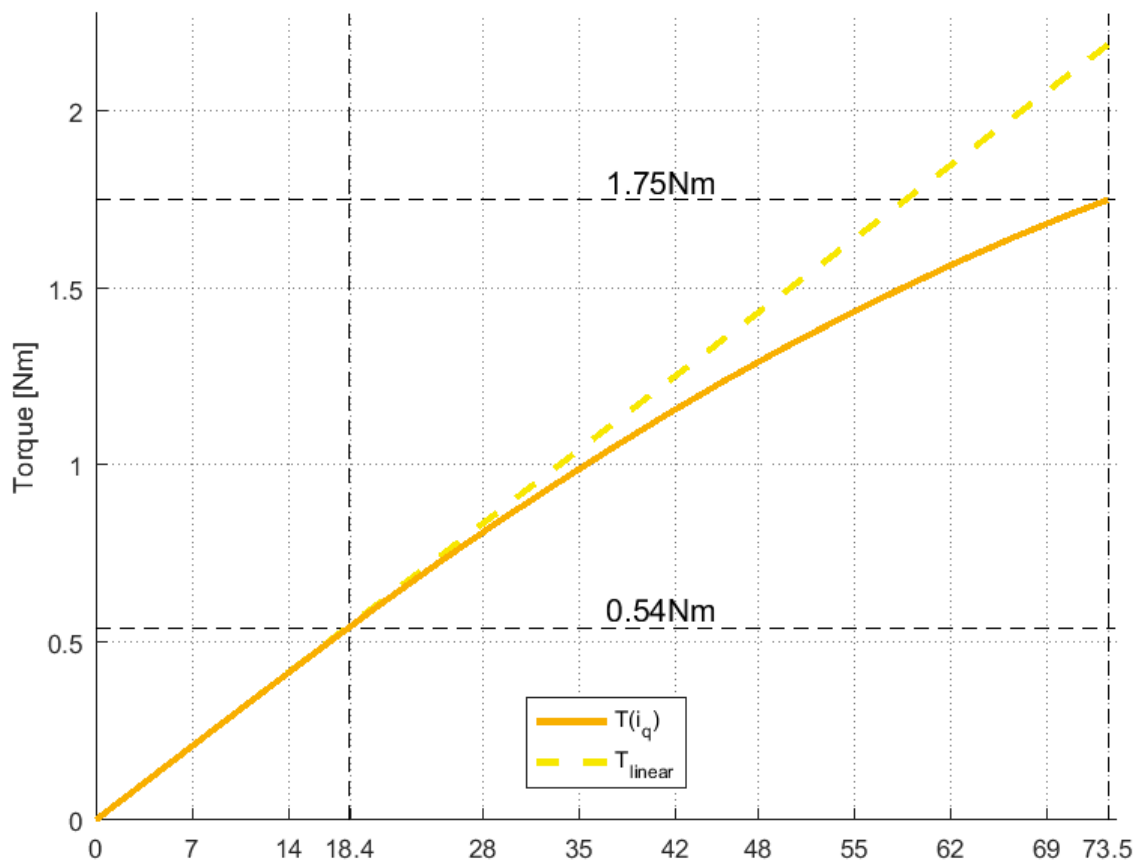
T/I-DIAGRAM ILM50X14 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM50X14 DELTA-PARALLEL @ 22 °C



T/I-DIAGRAM ILM50X14 DELTA-PARALLEL @ 22 °C



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