

Motor Parameters ILM70x18



PERFORMANCE CHARACTERISTICS (INTERCONNECTION STAR-SERIAL)

Power P	[W]	277
Rated torque T_r	[Nm]	1.25
Peak torque T_{max} @ 20% linearity deviation	[Nm]	4.05
Rated voltage U_r	[V]	48
Rotation speed n_{max}^*	[rpm]	2110
Rated current I_r (phase current amplitude)	[A]	6.7
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	22.2
Torque constant k_T @ 20°C	[mNm/A]	187
Motor constant k_M @ 20°C	[Nm/√W]	0.266
Terminal resistance R_{TT} @ 20°C	[mΩ]	660
Terminal inductance L_{TT}	[μH]	1460
Rotor inertia J	[kgcm ²]	0.321
Number of pole pairs	-	10
Max. efficiency η	%	90
Weight m	[g]	330

* 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]	2110	1582	1055	633	527	396
delta-serial $n_{\max}^*$ [rpm]	3655	2741	1827	1096	914	685
star-parallel $n_{\max}^*$ [rpm]	4220	3165	2110	1266	1055	791
delta-parallel $n_{\max}^*$ [rpm]	7309	5482	3655	2193	1827	1370

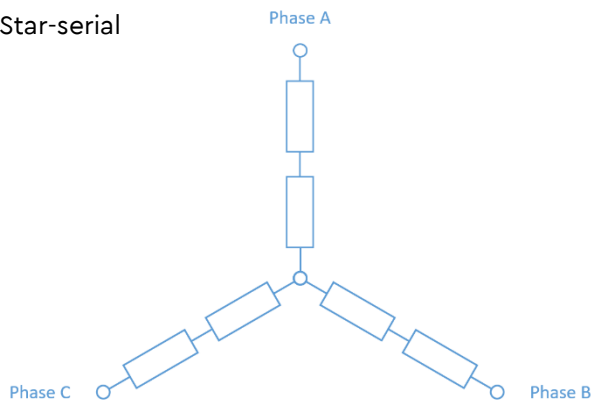
* Theoretical no-load rotation speeds at indicated voltage. Mechanical limits apply and must not be exceeded.
Variations can arise from operation with different inverters.

CHARACTERISTICS INTERCONNECTION VARIANTS

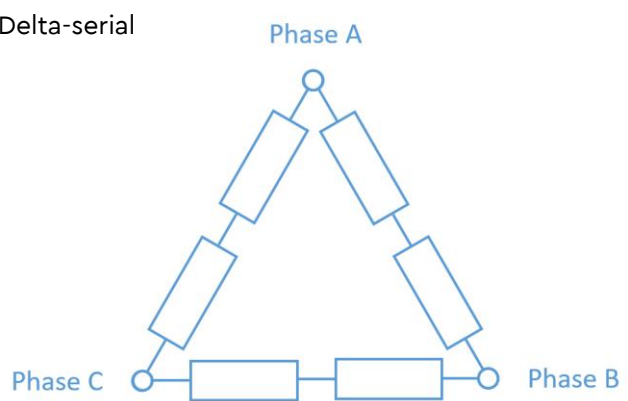
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [μH]
star-serial	48	6.7	187	660	1460
delta-serial	28	11.6	108	220	487
star-parallel	24	13.4	94	165	365
delta-parallel	14	23.2	54	55	122

AVAILABLE INTERCONNECTION VARIANTS

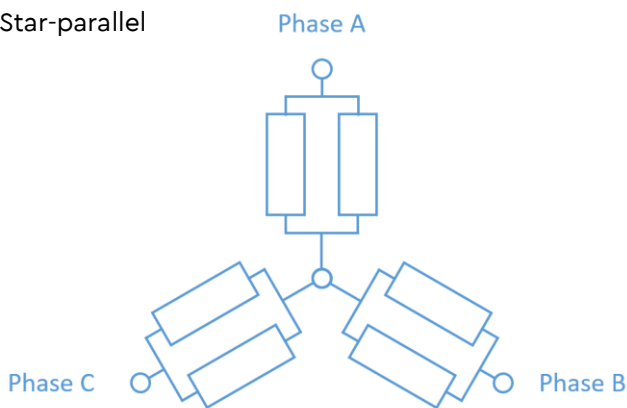
Star-serial



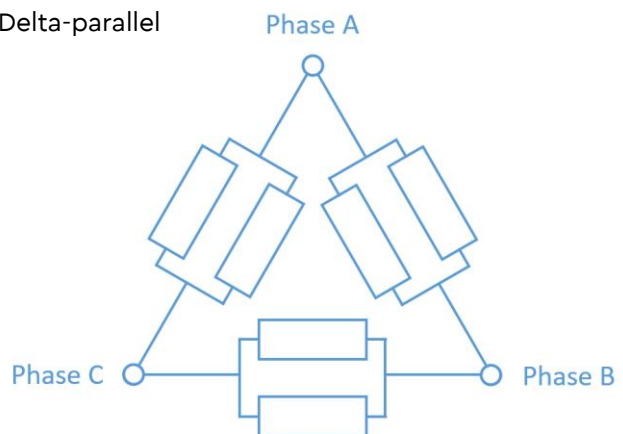
Delta-serial



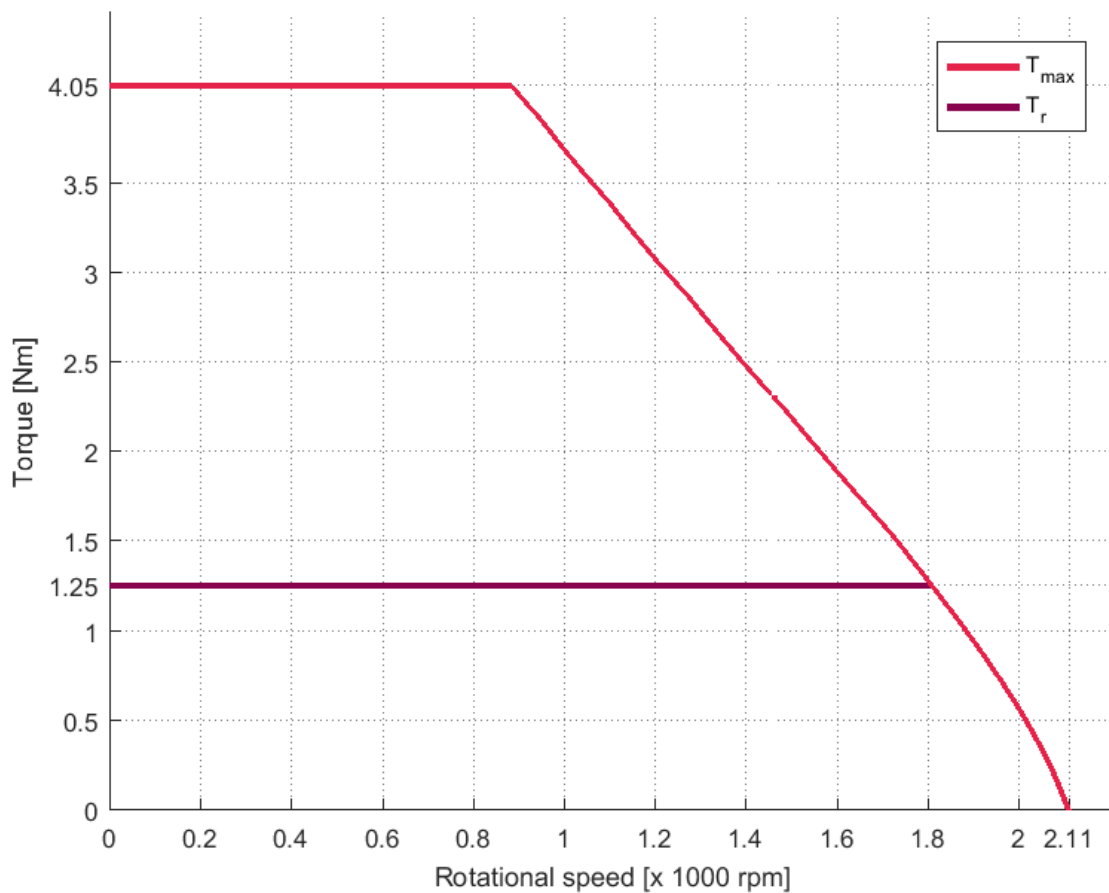
Star-parallel



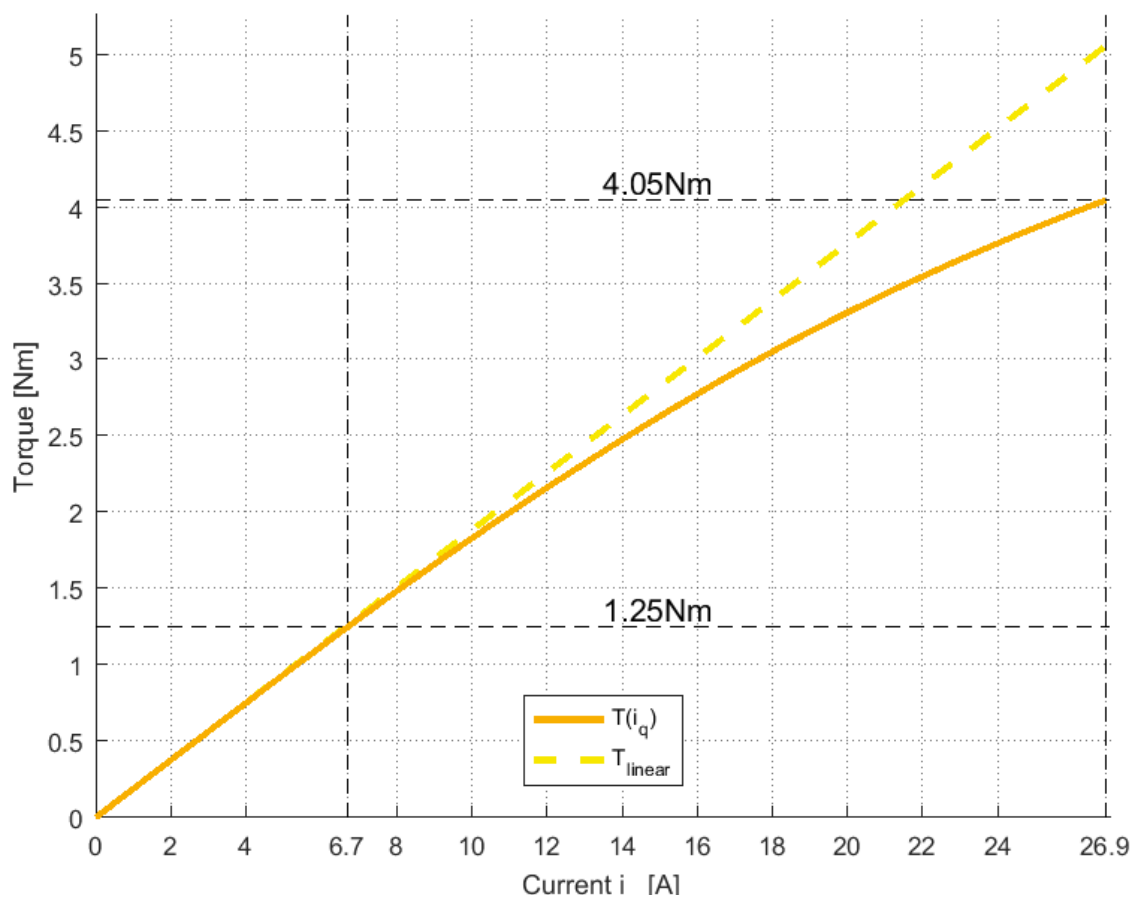
Delta-parallel



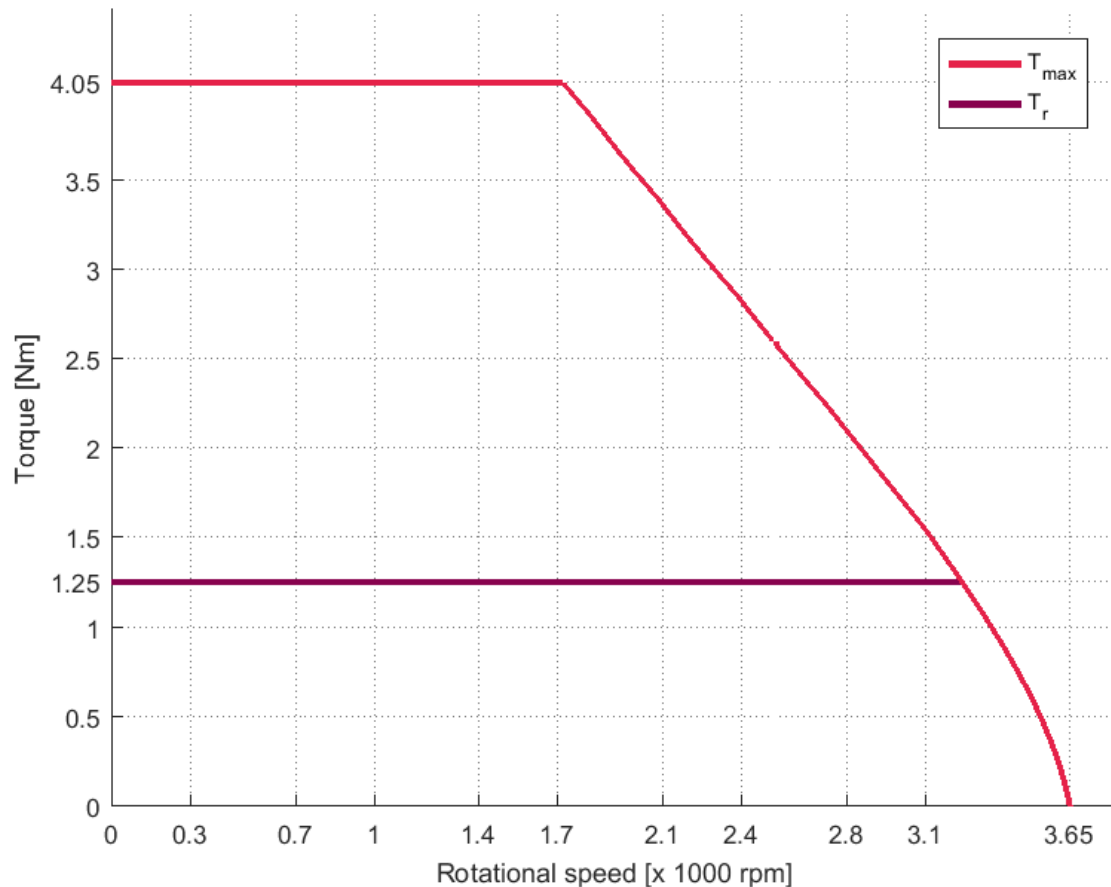
T/N-DIAGRAM ILM70X18 STAR-SERIAL @ 22 °C



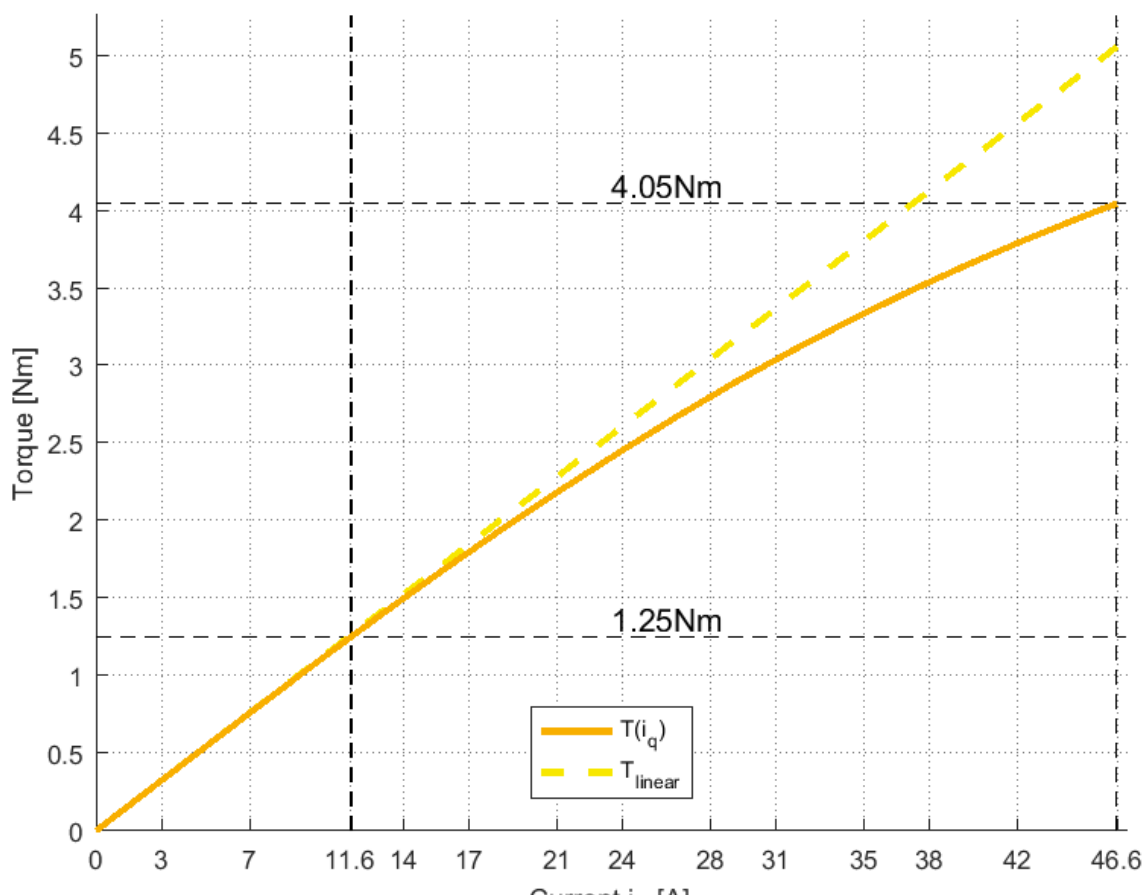
T/I-DIAGRAM ILM70X18 STAR-SERIAL @ 22 °C



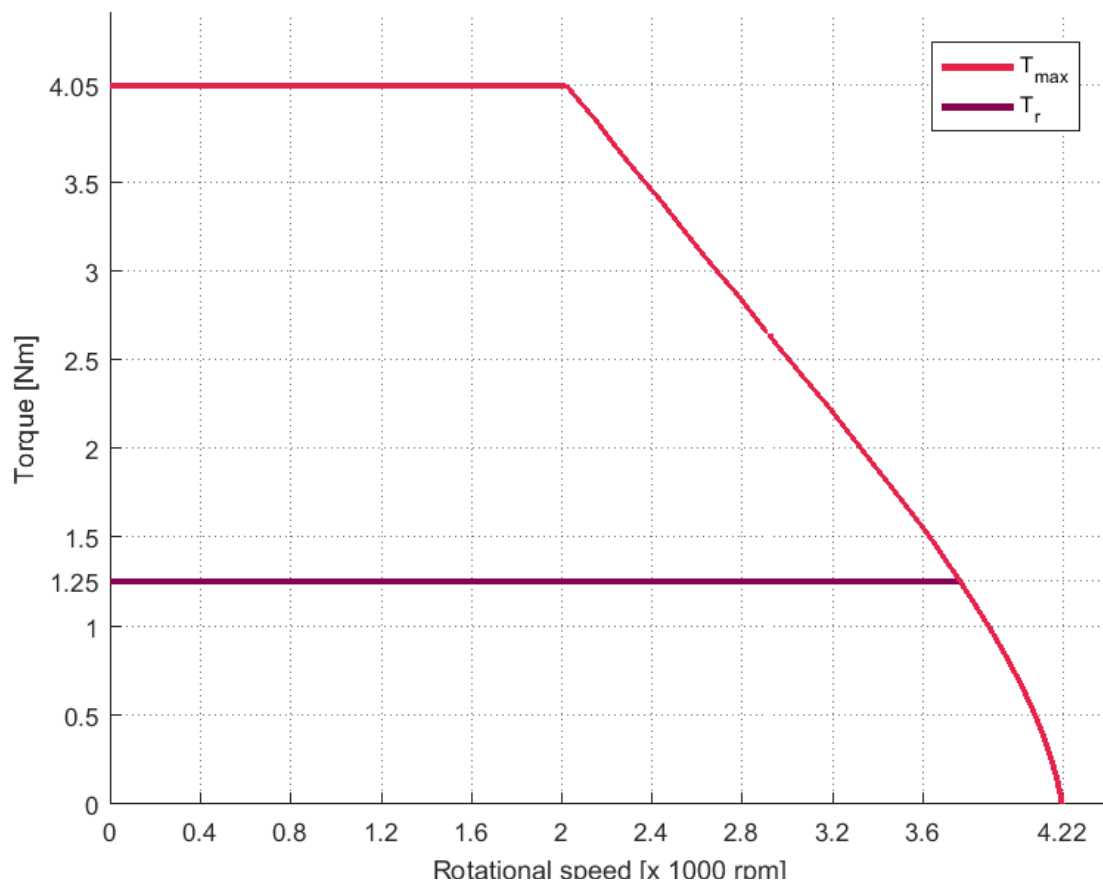
T/N-DIAGRAM ILM70X18 DELTA-SERIAL @ 22 °C



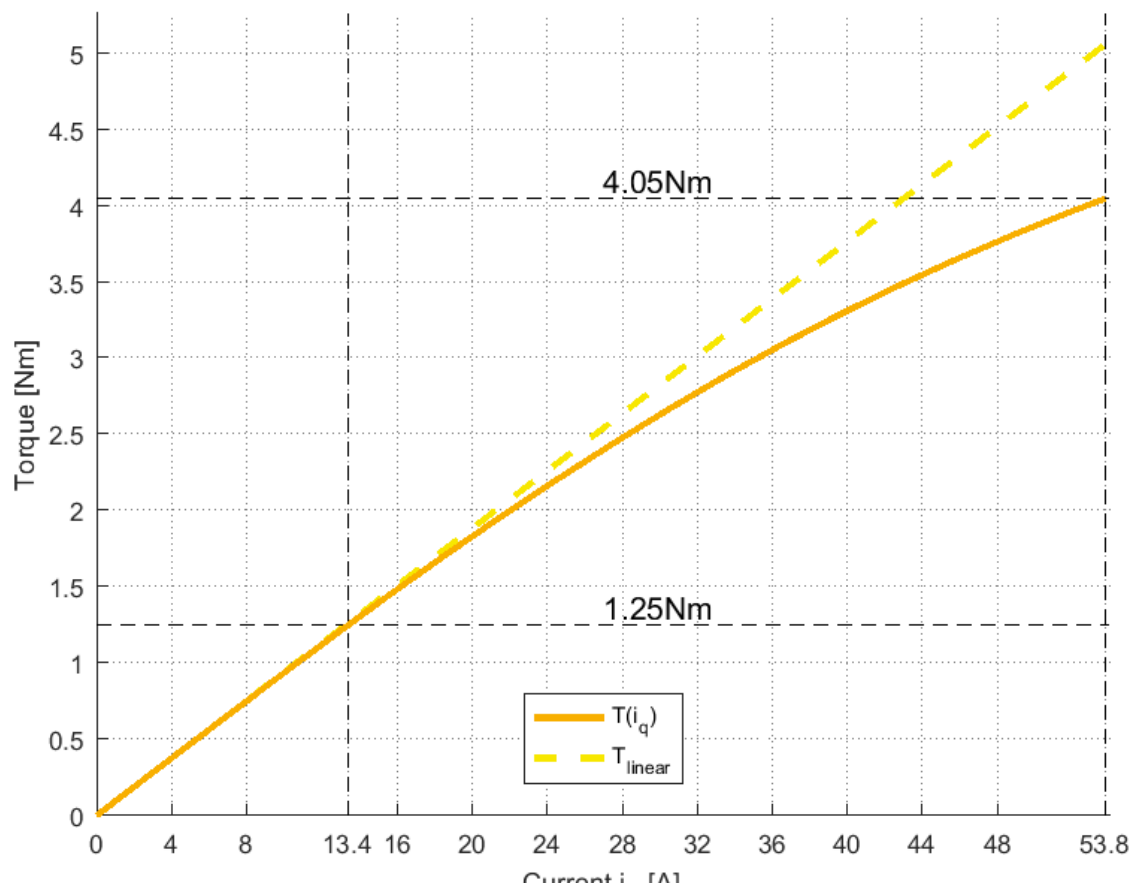
T/I-DIAGRAM ILM70X18 DELTA-SERIAL @ 22 °C



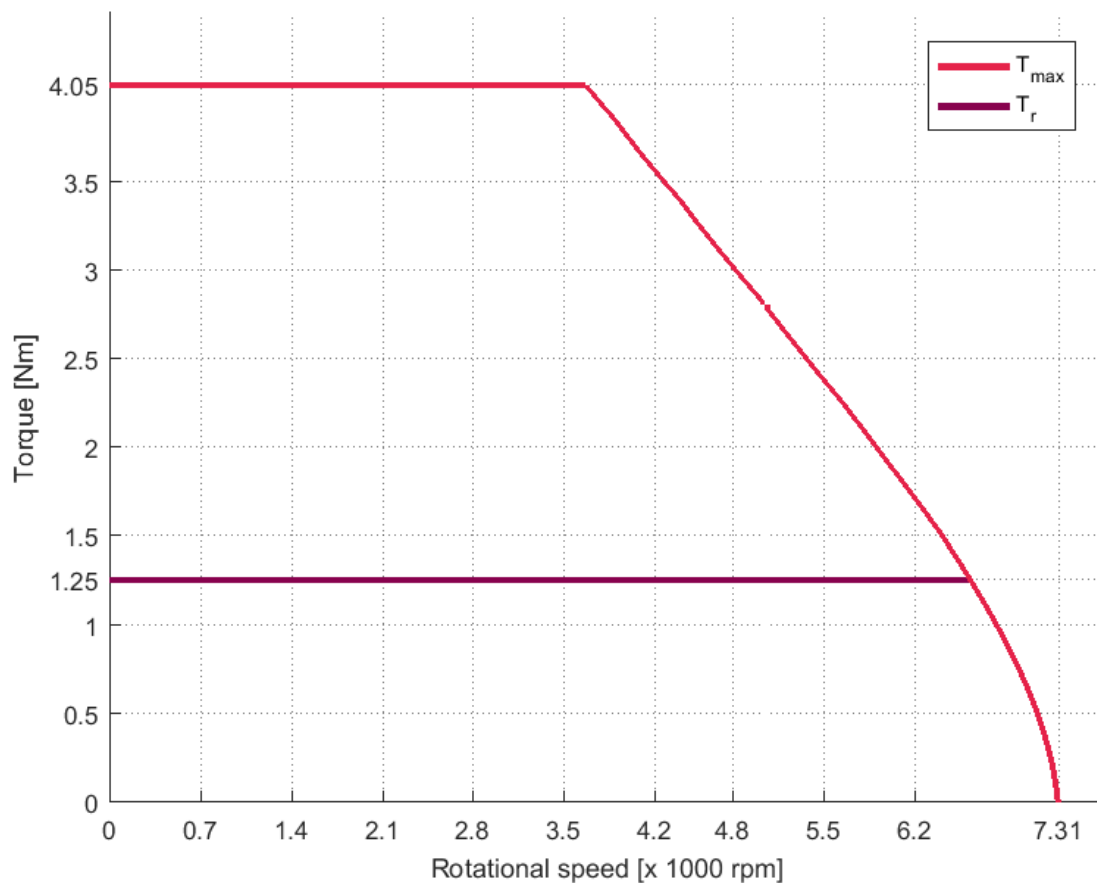
T/N-DIAGRAM ILM70X18 STAR-PARALLEL @ 22 °C



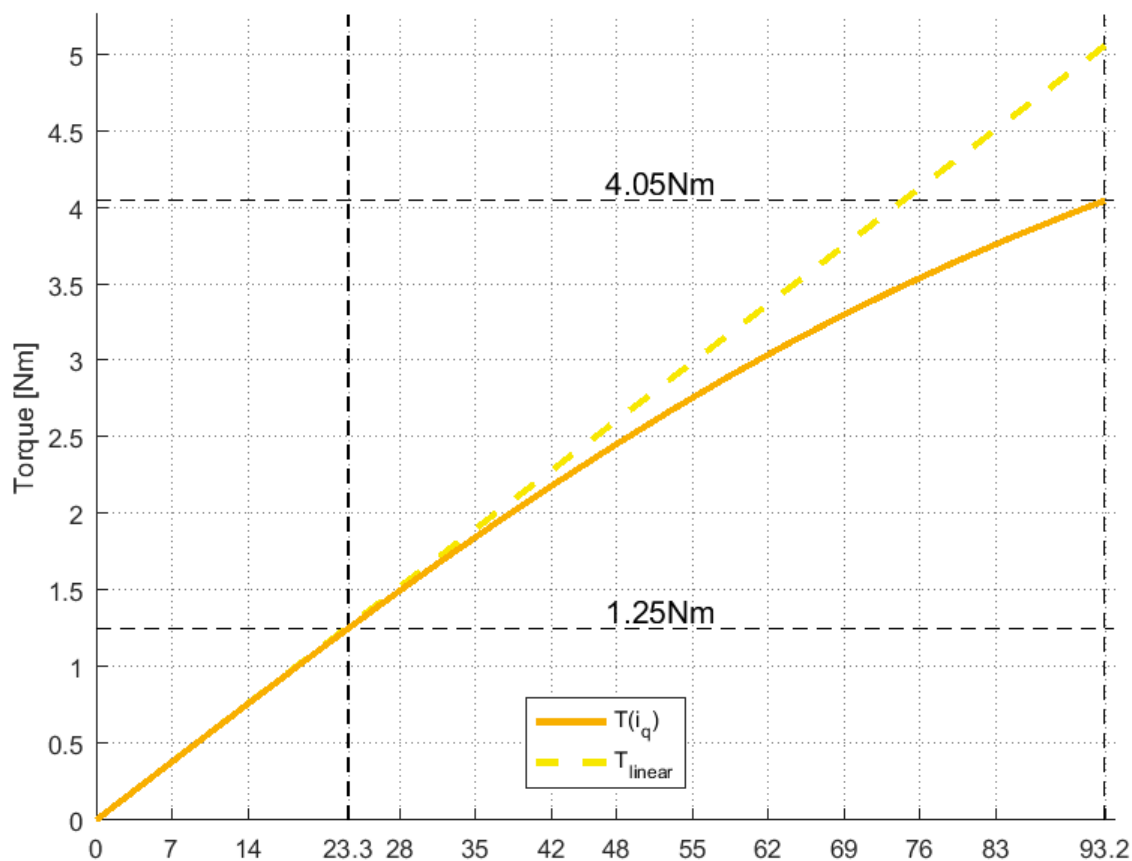
T/I-DIAGRAM ILM70X18 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM70X18 DELTA-PARALLEL @ 22 °C



T/I-DIAGRAM ILM70X18 DELTA-PARALLEL @ 22 °C



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