

Motor Parameters ILM70x10



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	250
Rated torque T_r	[Nm]	0.66
Peak torque T_{max} @ 20% linearity deviation	[Nm]	2.13
Rated voltage U_r	[V]	48
Rotation speed n_{max}^*	[rpm]	3650
Rated current I_r (phase current amplitude)	[A]	6.1
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	13.1
Torque constant k_T @ 20°C	[mNm/A]	109
Motor constant k_M @ 20°C	[Nm/√W]	0.184
Terminal resistance R_{TT} @ 20°C	[mΩ]	470
Terminal inductance L_{TT}	[μH]	910
Rotor inertia J	[kgcm ²]	0.196
Number of pole pairs	-	10
Max. efficiency η	%	90
Weight m	[g]	220

* 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]	3650	2740	1830	1100	910	680
delta-serial $n_{\max}^*$ [rpm]	6300	4730	3150	1890	1580	1180
star-parallel $n_{\max}^*$ [rpm]	7300	5480	3650	2190	1830	1370
delta-parallel $n_{\max}^*$ [rpm]	10000*	9450	6300	3780	3150	2360

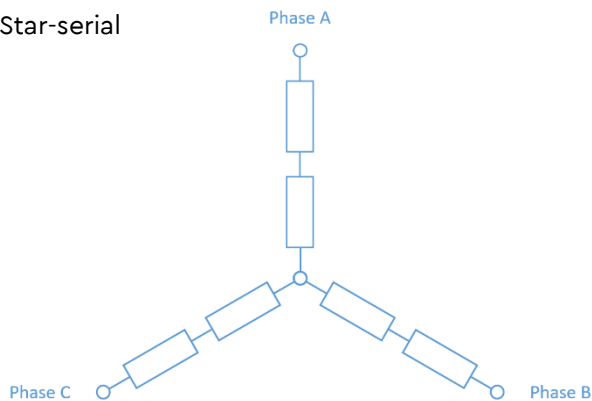
* Theoretical no-load rotation speeds at indicated voltage. Mechanical limits apply and must not be exceeded.
Variations can arise from operation with different inverters.

CHARACTERISTICS INTERCONNECTION VARIANTS

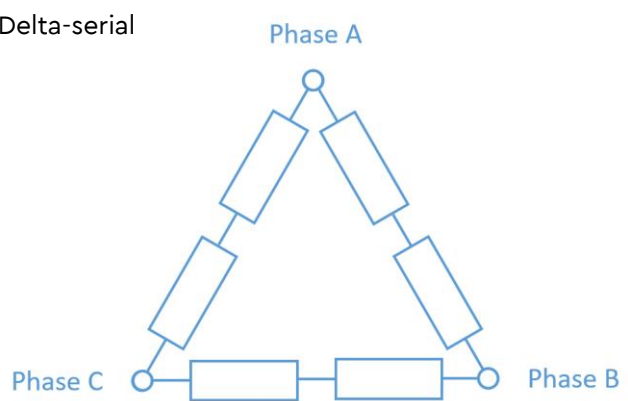
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [μH]
star-serial	48	6.1	109	470	910
delta-serial	28	10.6	63	157	303
star-parallel	24	12.2	55	118	228
delta-parallel	14	21.1	31	39	76

AVAILABLE INTERCONNECTION VARIANTS

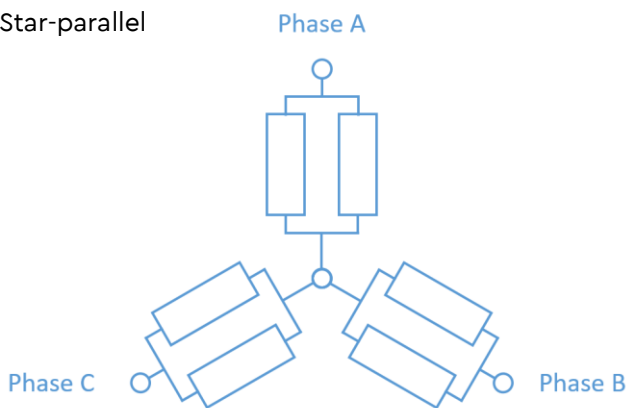
Star-serial



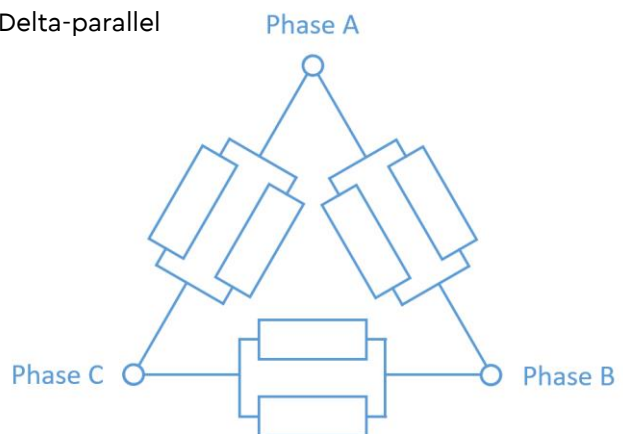
Delta-serial



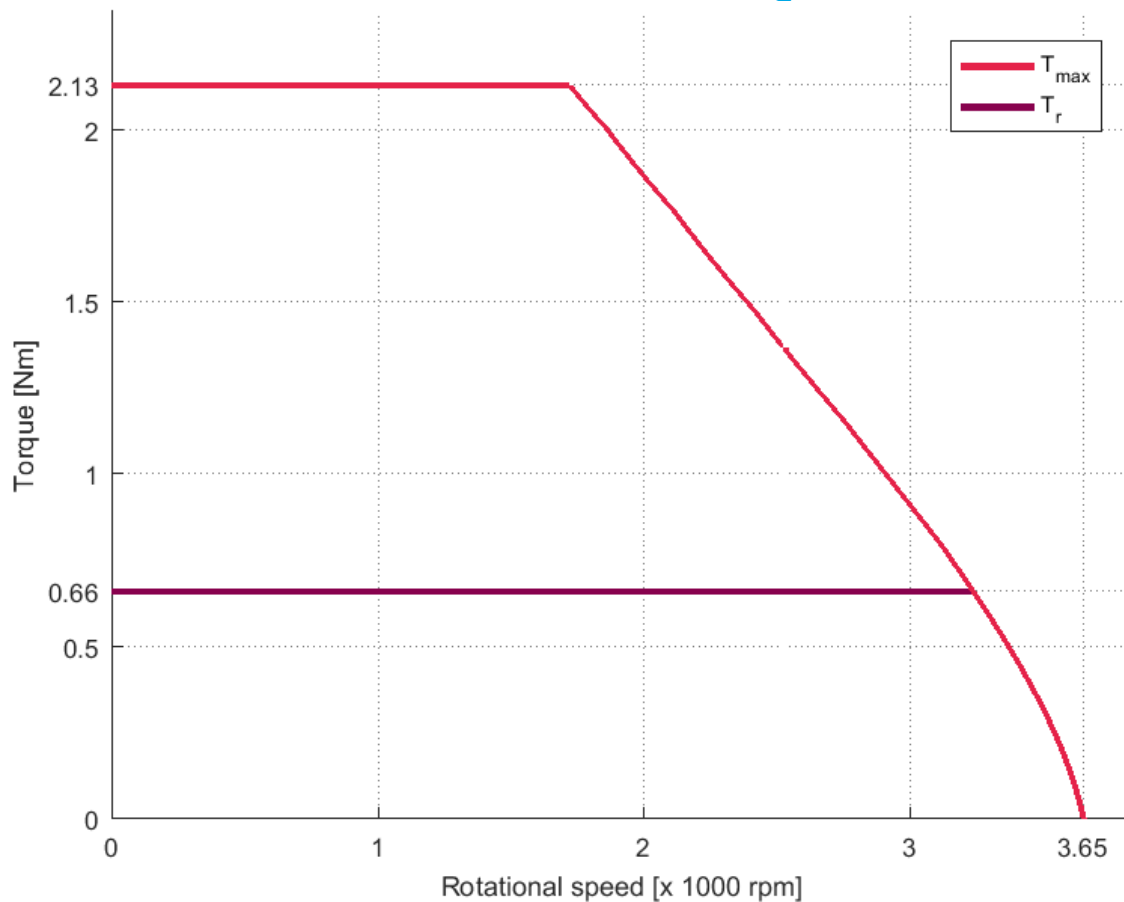
Star-parallel



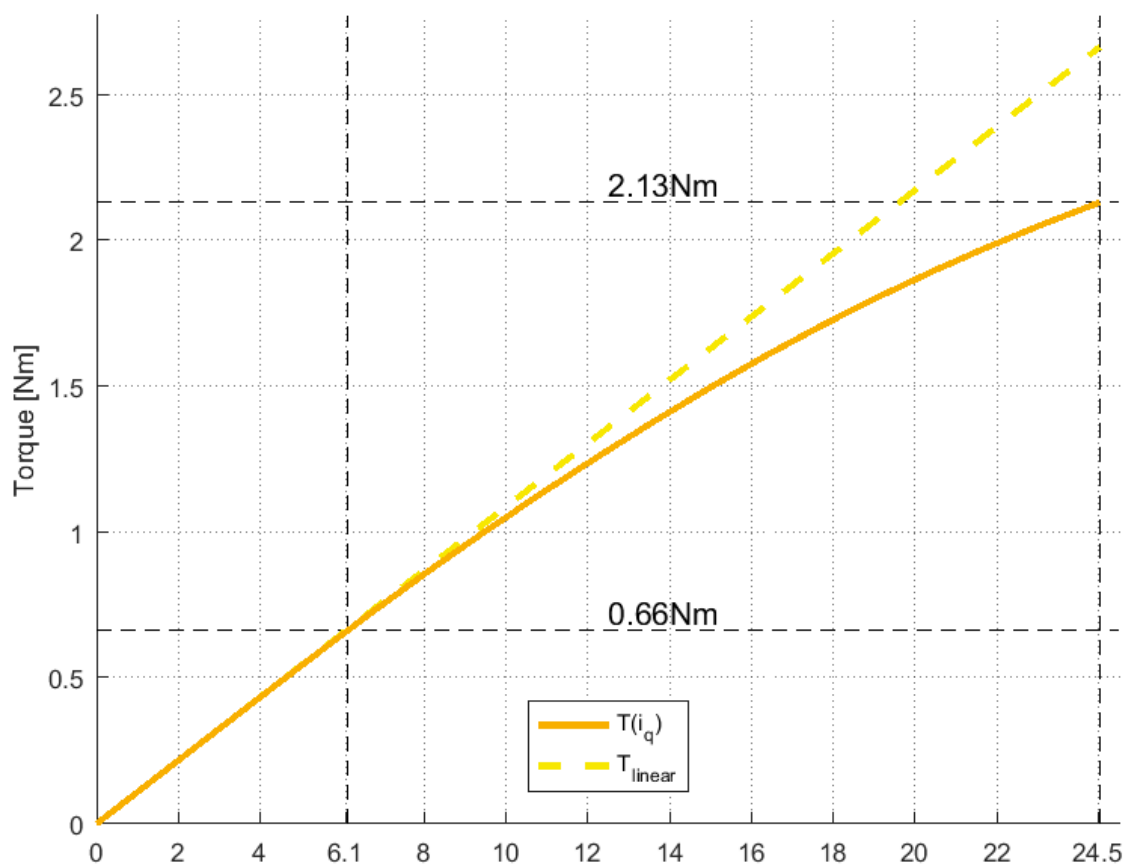
Delta-parallel



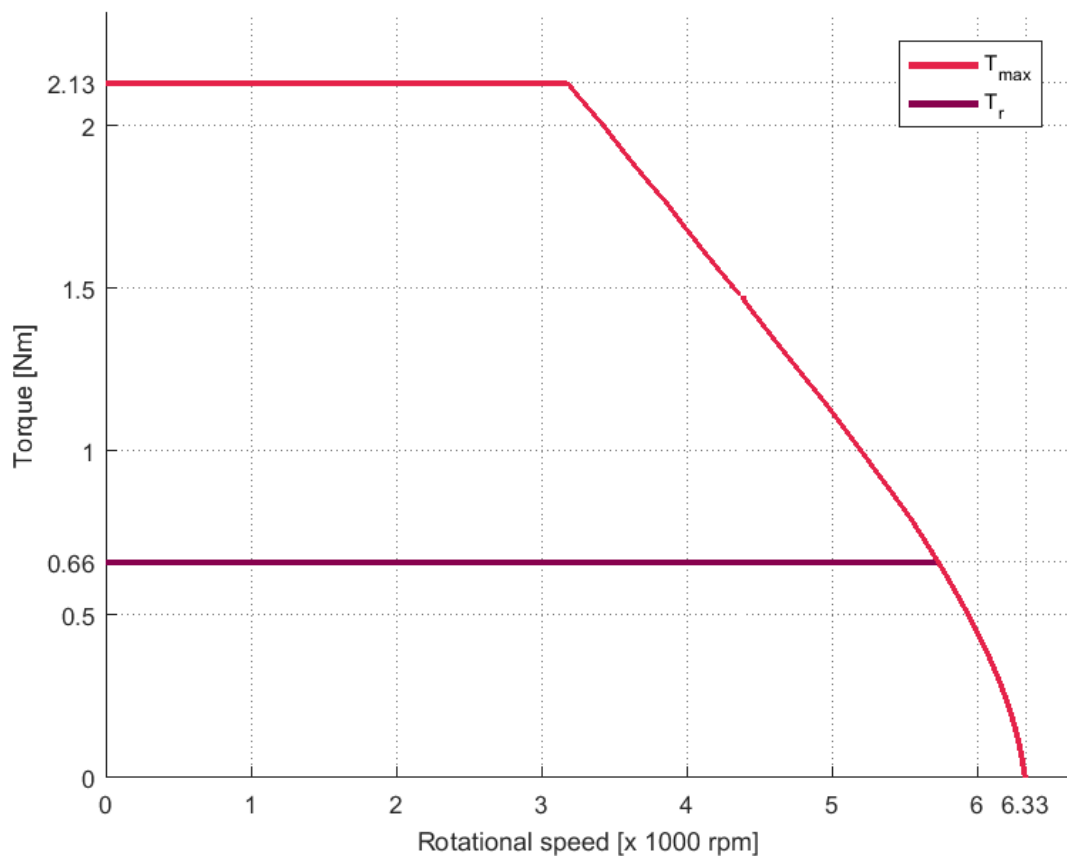
T/N-DIAGRAM ILM70X10 STAR-SERIAL @ 22 °C



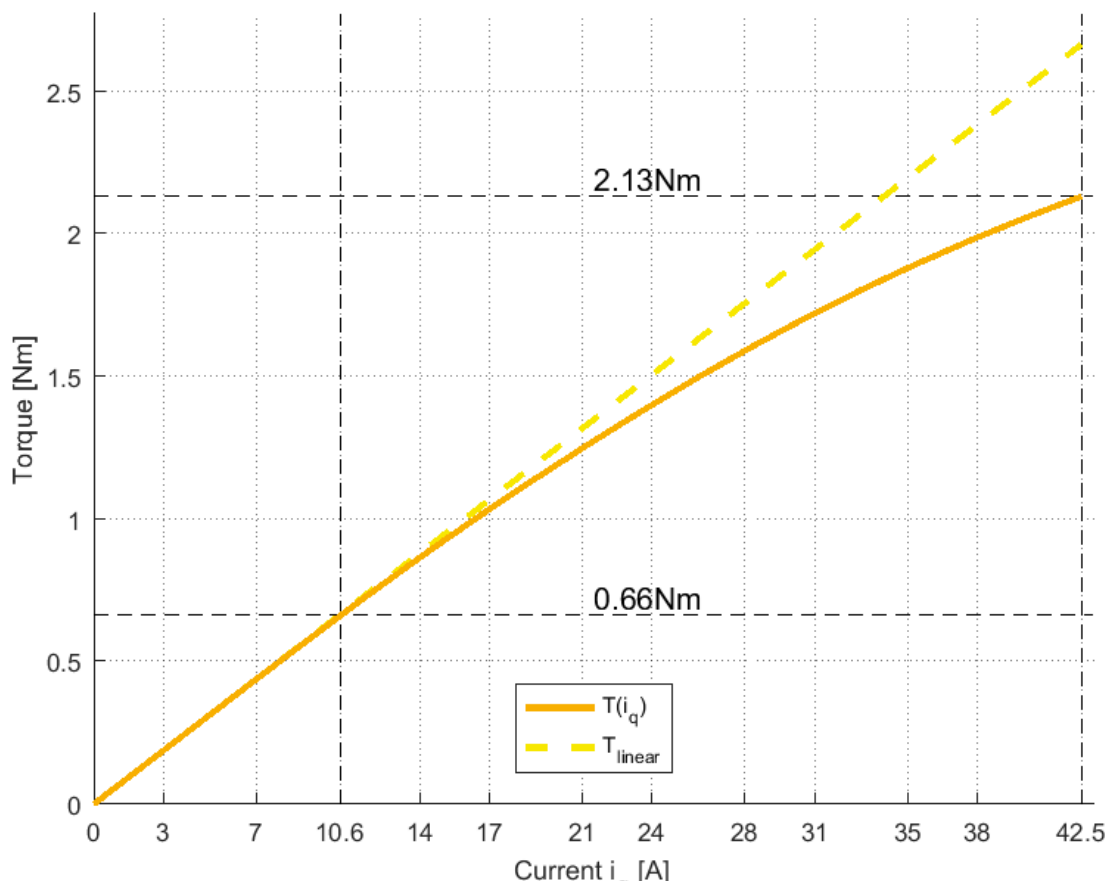
T/I-DIAGRAM ILM70X10 STAR-SERIAL @ 22 °C



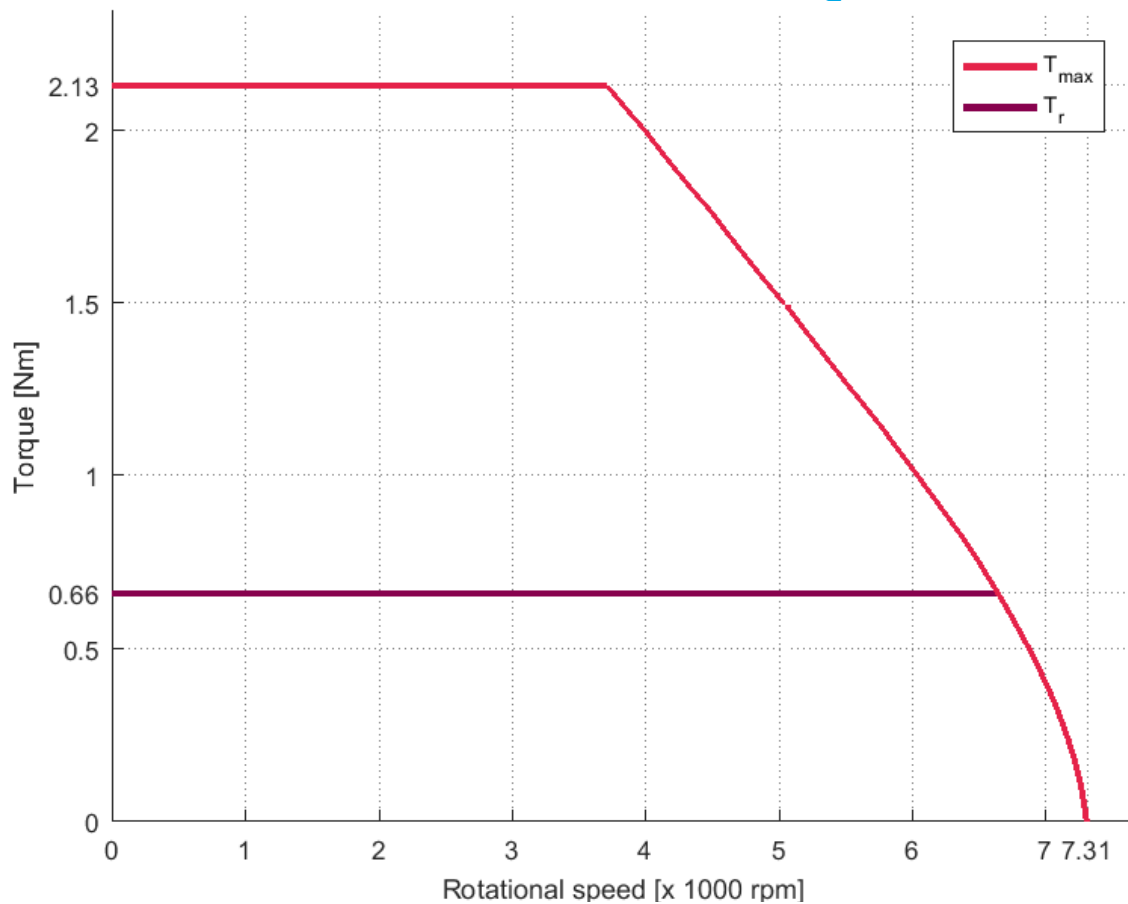
T/N-DIAGRAM ILM70X10 DELTA-SERIAL @ 22 °C



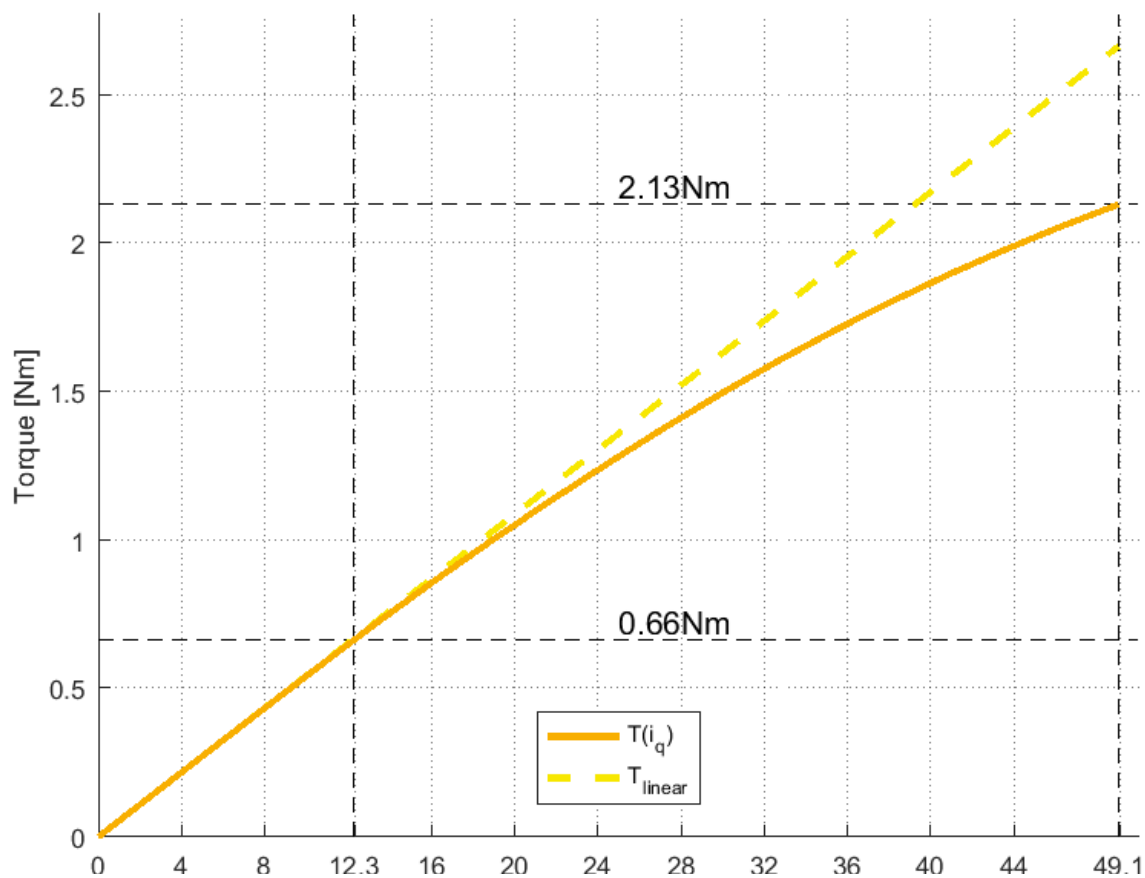
T/I-DIAGRAM ILM70X10 DELTA-SERIAL @ 22 °C



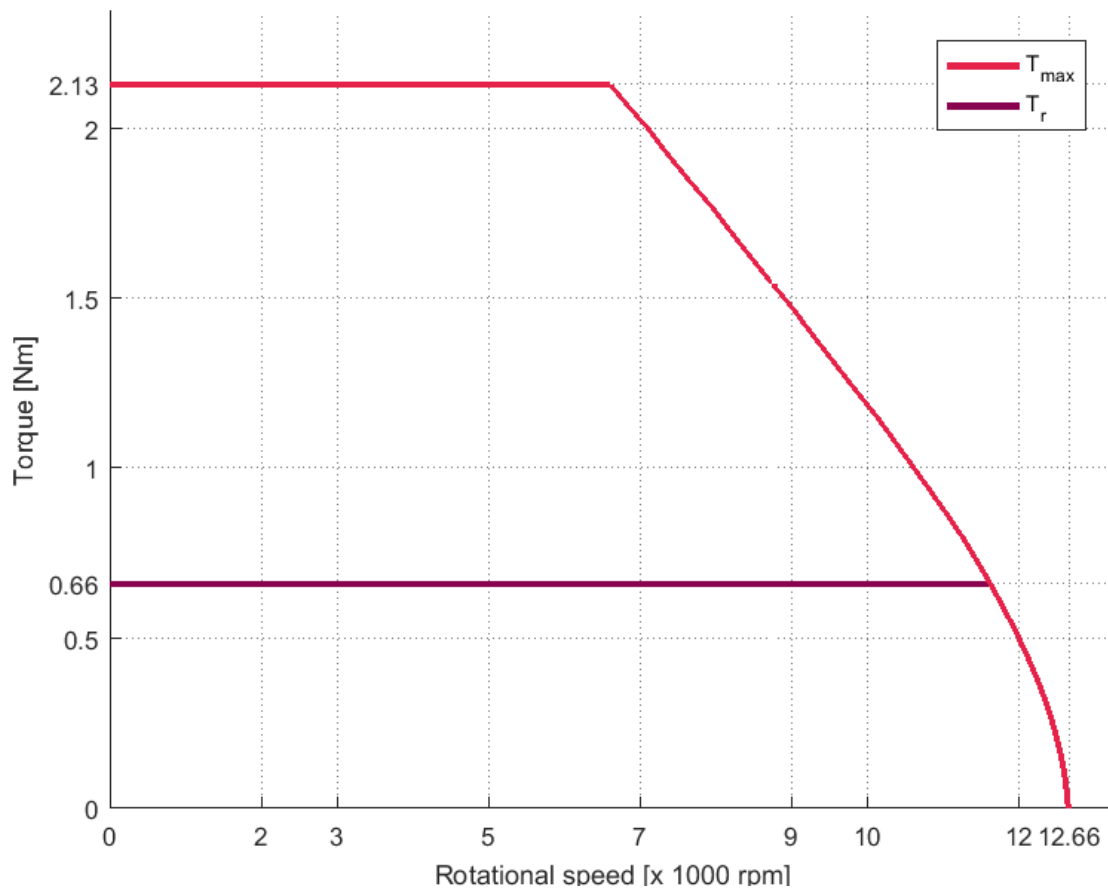
T/N-DIAGRAM ILM70X10 STAR-PARALLEL @ 22 °C



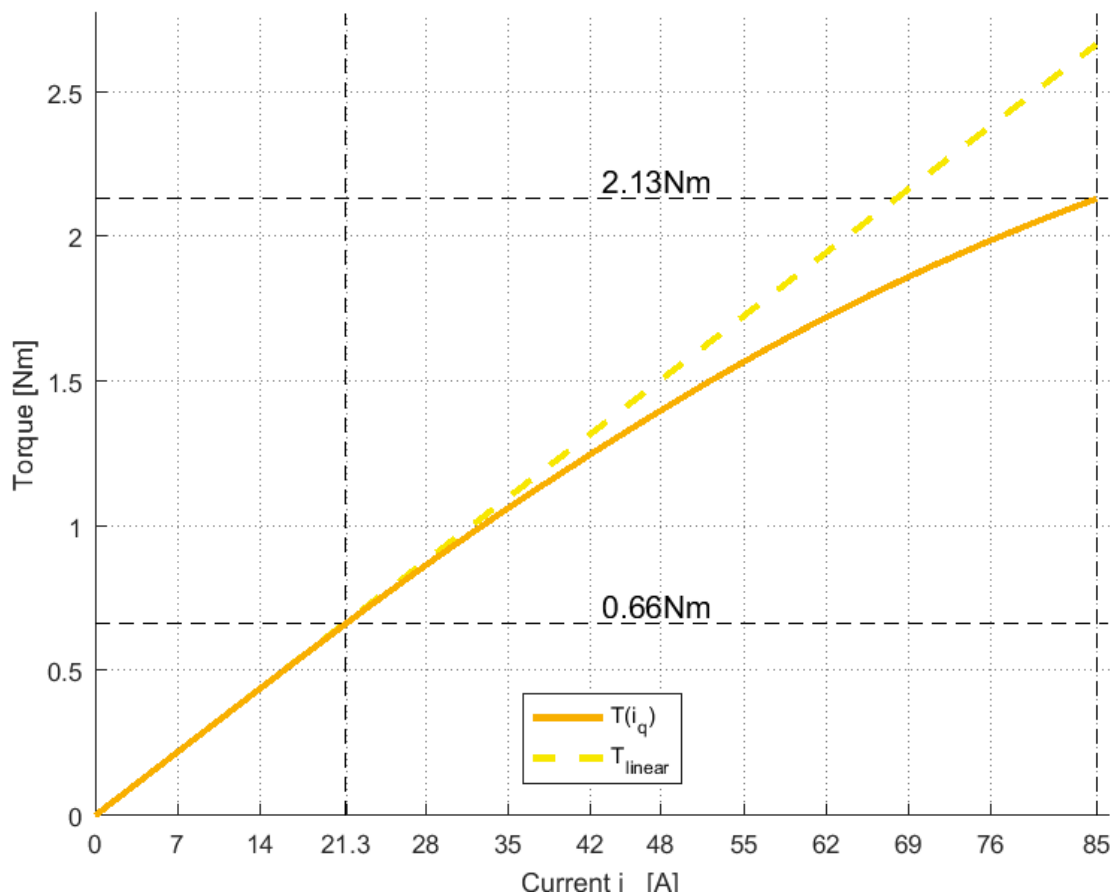
T/I-DIAGRAM ILM70X10 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM70X10 DELTA-PARALLEL @ 22 °C



T/I-DIAGRAM ILM70X10 DELTA-PARALLEL @ 22 °C



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