

Motor Parameters ILM85x04



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	284
Rated torque T_r	[Nm]	0.30
Peak torque T_{max} @ 20% linearity deviation	[Nm]	0.99
Rated voltage U_r	[V]	48
Rotation speed n_{max}^*	[rpm]	9183
Rated current I_r (phase current amplitude)	[A]	7.2
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	5.4
Torque constant k_T @ 20°C	[mNm/A]	43
Motor constant k_M @ 20°C	[Nm/√W]	0.133
Terminal resistance R_{TT} @ 20°C	[mΩ]	140
Terminal inductance L_{TT}	[μH]	200
Rotor inertia J	[kgcm ²]	0.276
Number of pole pairs	-	10
Max. efficiency η	%	92
Weight m	[g]	210

* 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]	9183**	6887	4592	2755	2296	1722
delta-serial n_{max}^* [rpm]	15905**	11929**	7953**	4772	3976	2982
star-parallel n_{max}^* [rpm]	18366**	13775**	9183**	5510	4592	3444
delta-parallel n_{max}^* [rpm]	31811**	23858**	15905**	9543**	7953**	5965

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

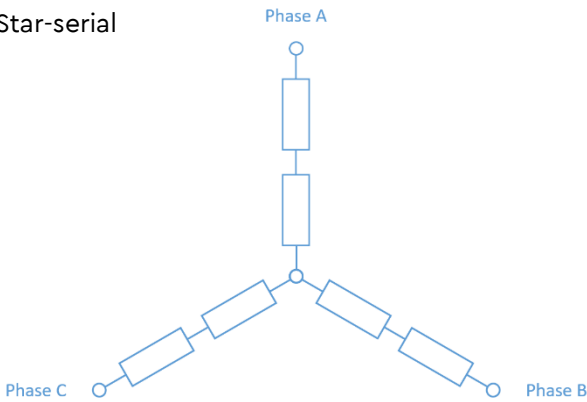
** $n_{max,mech}$ = 7900 rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

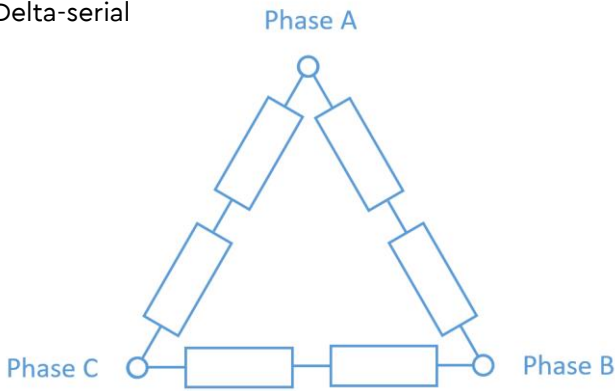
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [μH]
star-serial	48	7.2	43	140	200
delta-serial	28	12	25	47	67
star-parallel	24	14	22	35	50
delta-parallel	14	25	12	12	17

AVAILABLE INTERCONNECTION VARIANTS

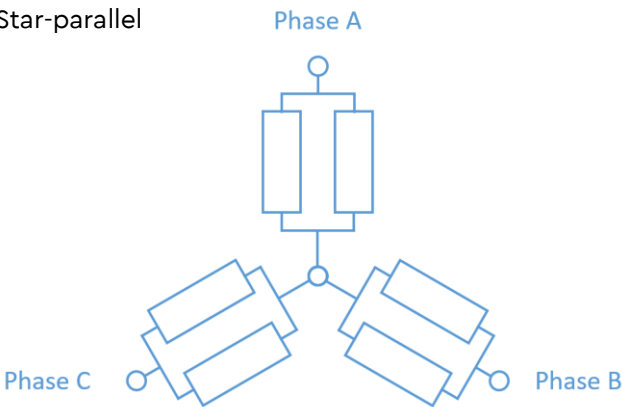
Star-serial



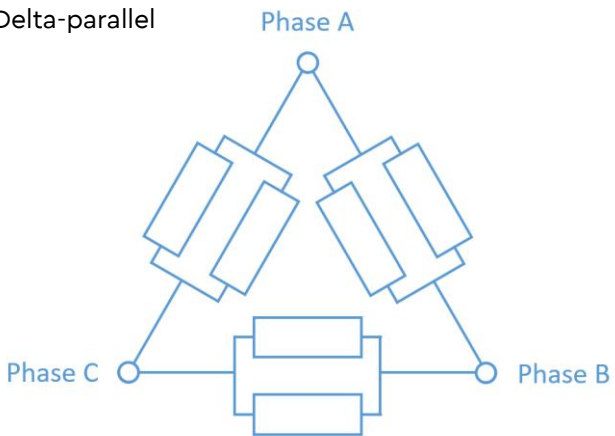
Delta-serial



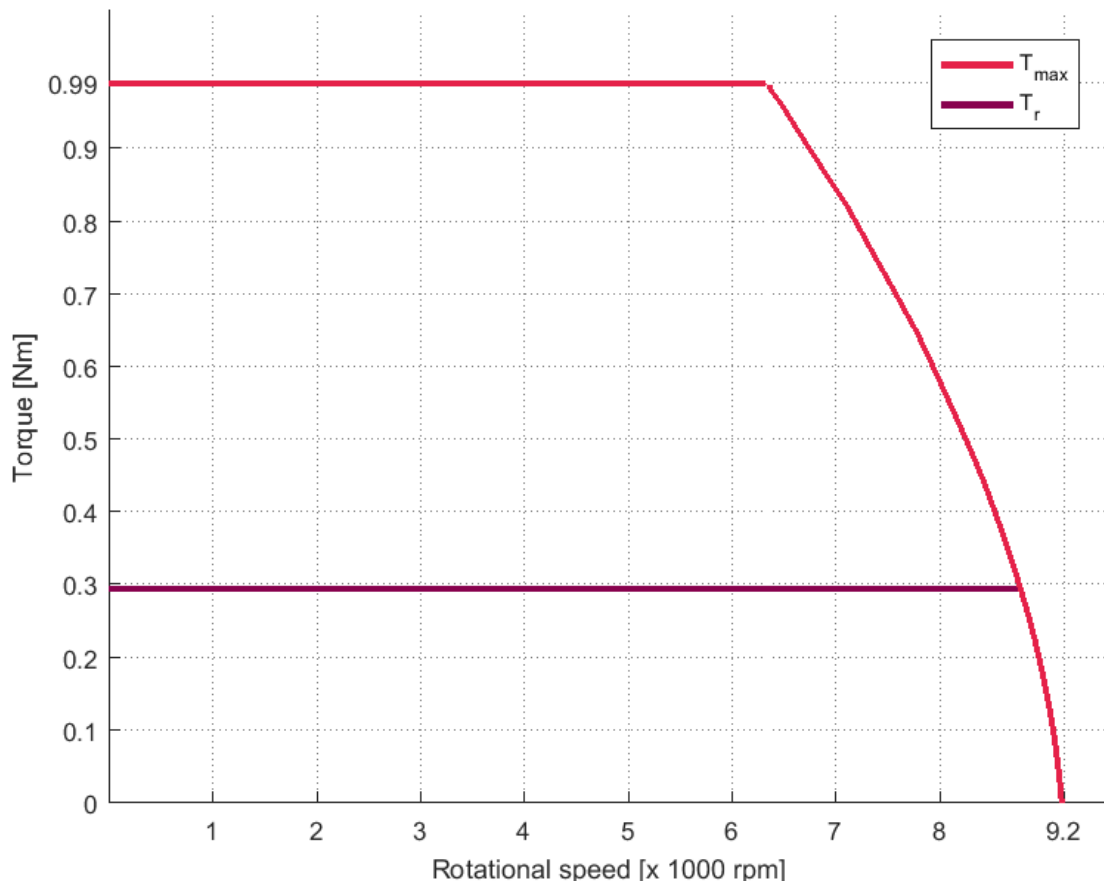
Star-parallel



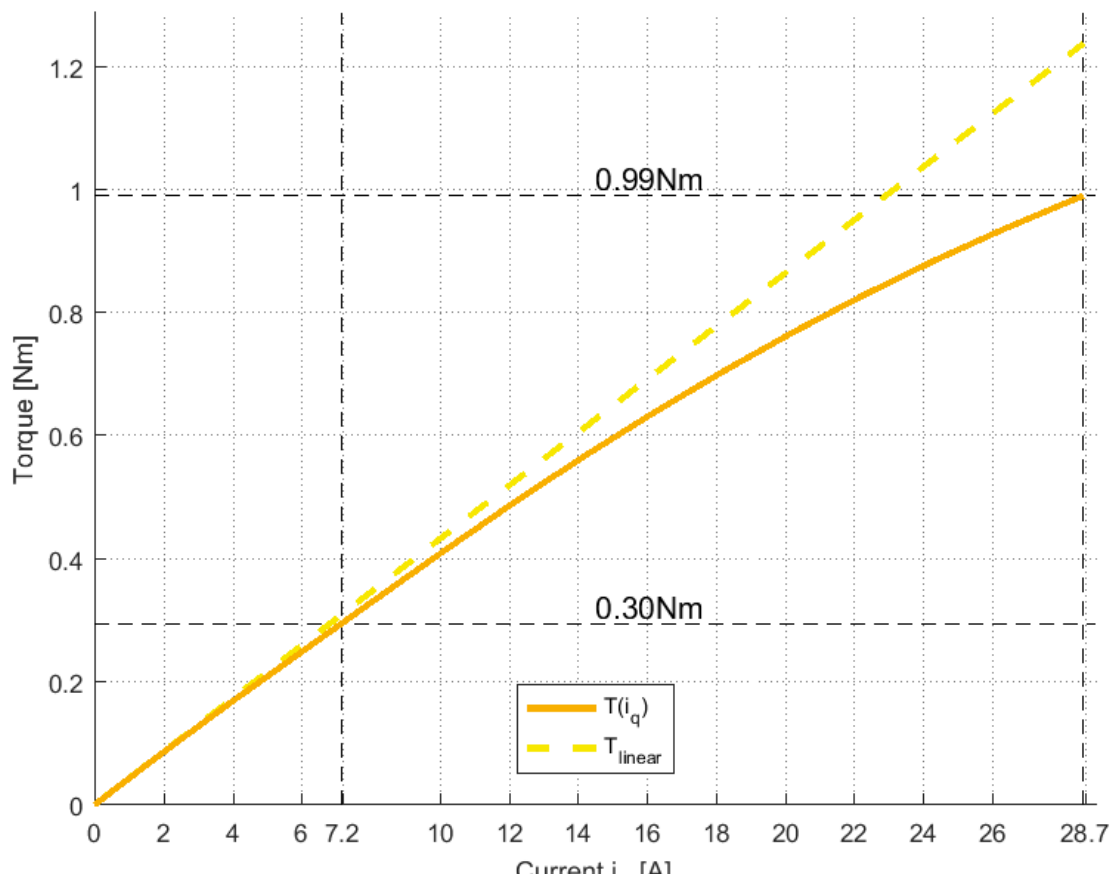
Delta-parallel



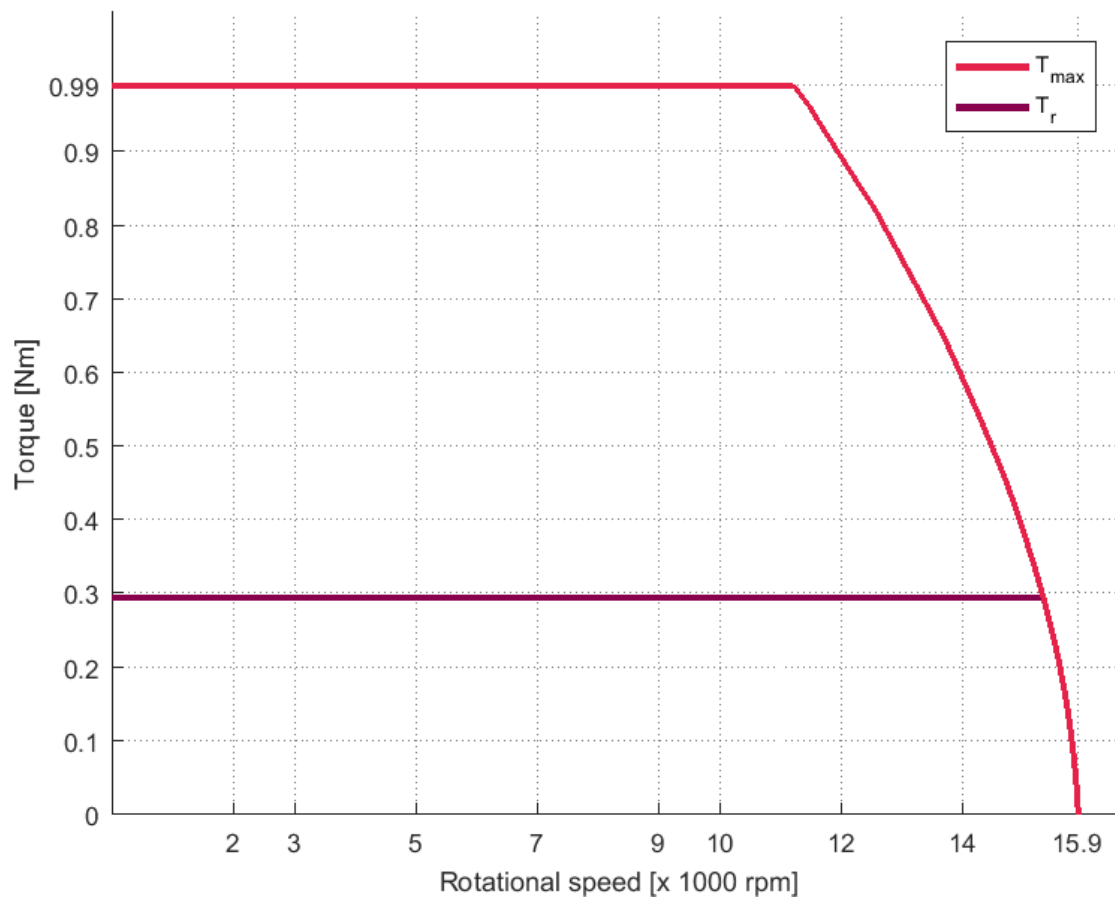
T/N-DIAGRAM ILM85X04 STAR-SERIAL @ 22 °C



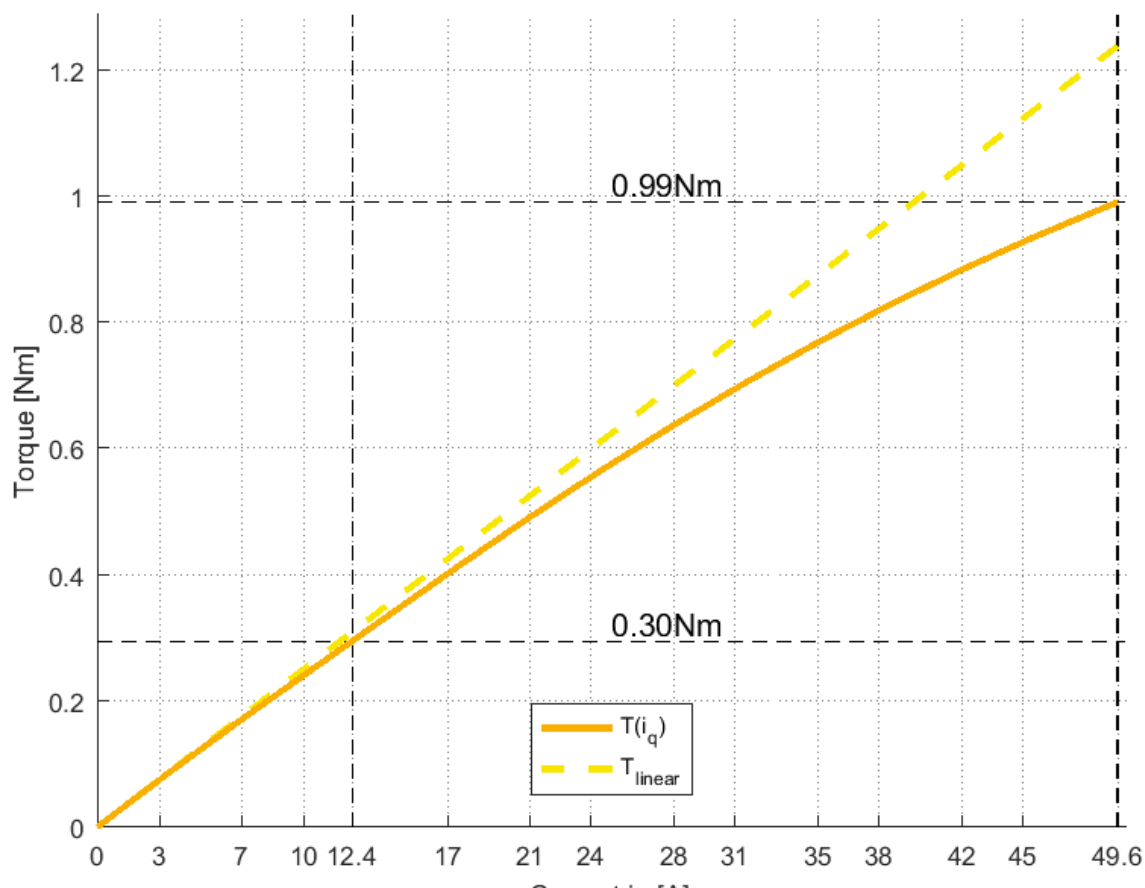
T/I-DIAGRAM ILM85X04 STAR-SERIAL @ 22 °C



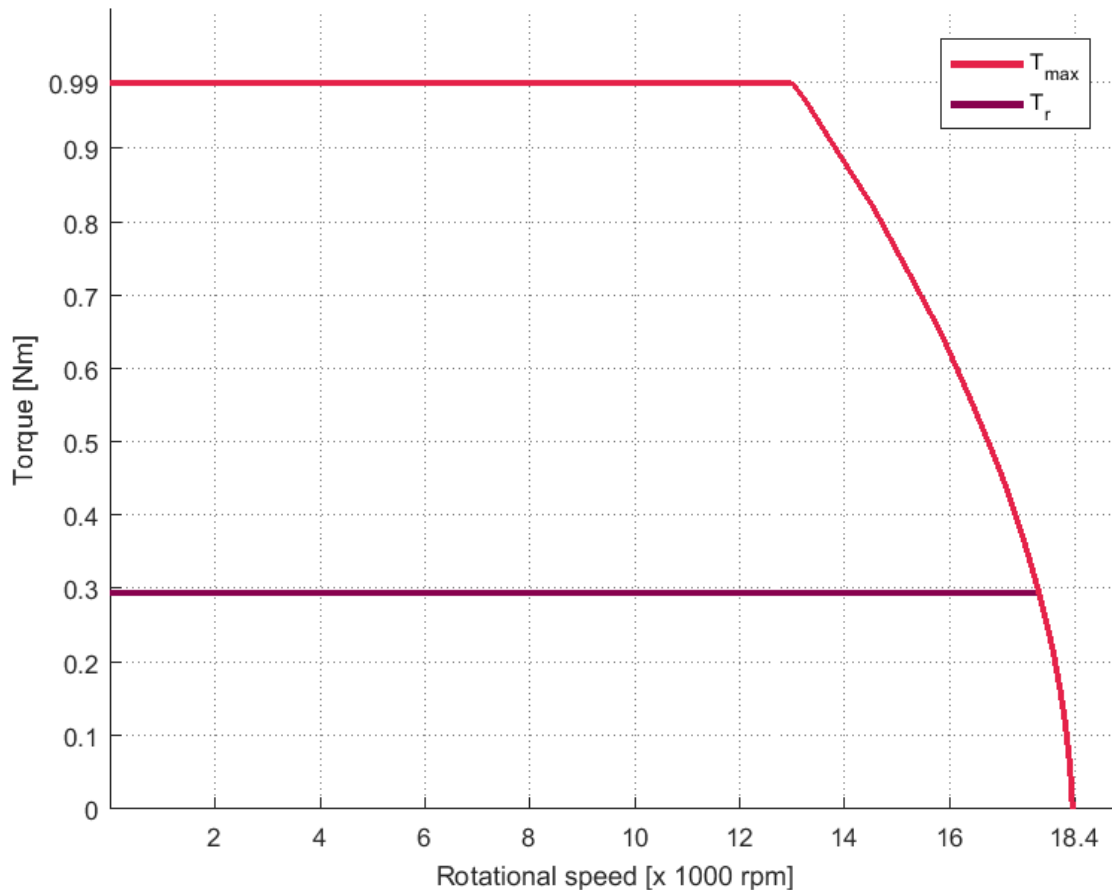
T/N-DIAGRAM ILM85X04 DELTA-SERIAL @ 22 °C



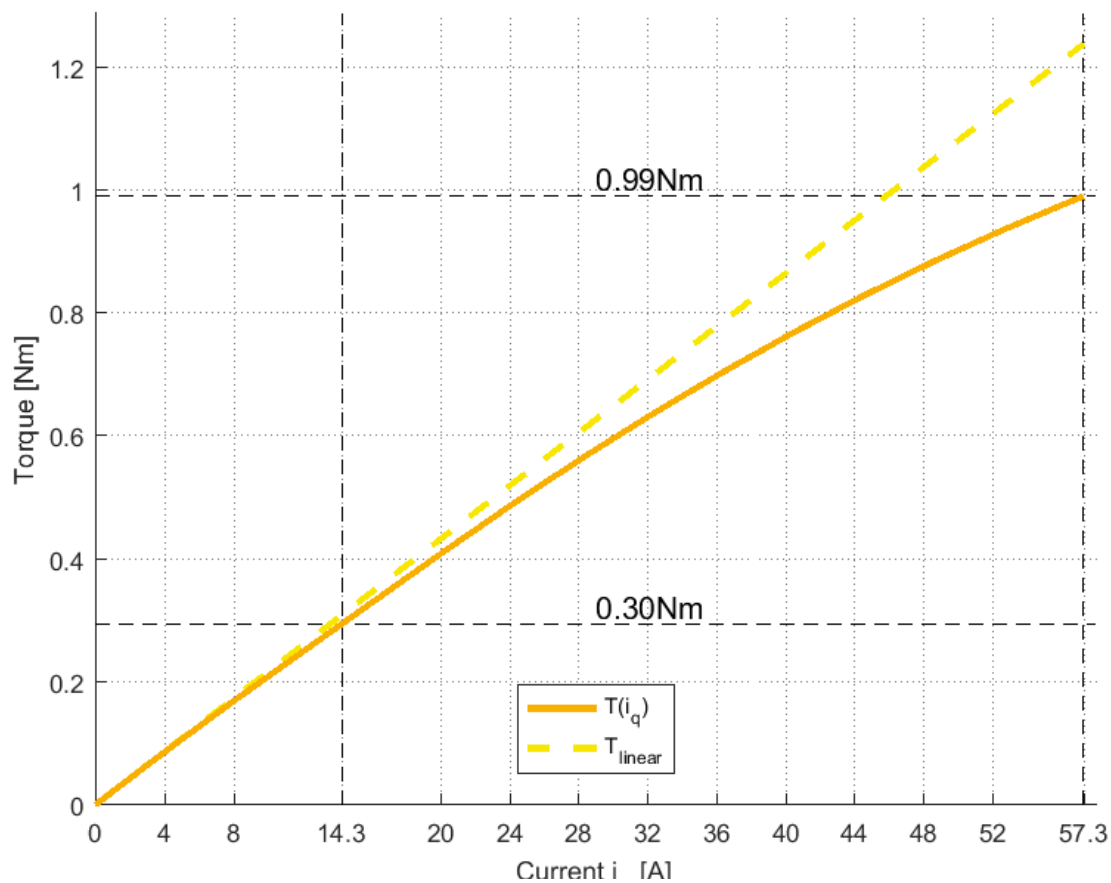
T/I-DIAGRAM ILM85X04 DELTA-SERIAL @ 22 °C



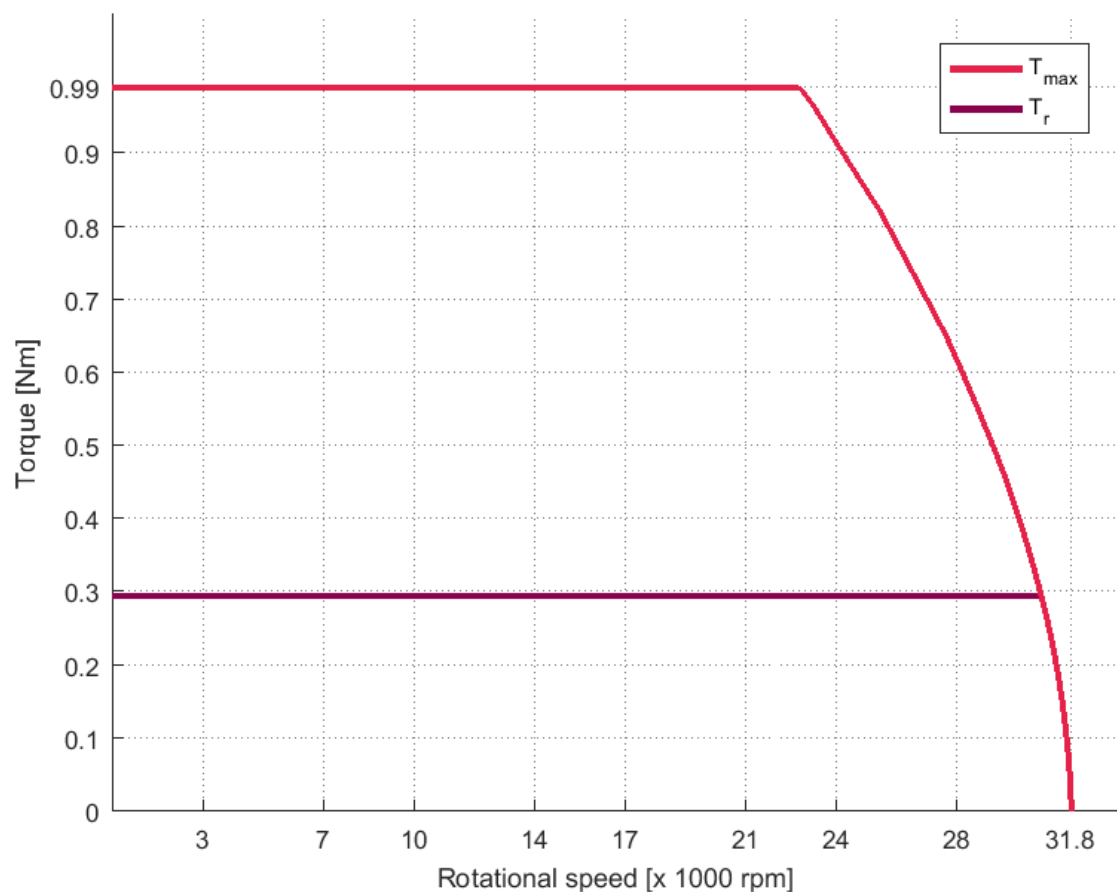
T/N-DIAGRAM ILM85X04 STAR-PARALLEL @ 22 °C



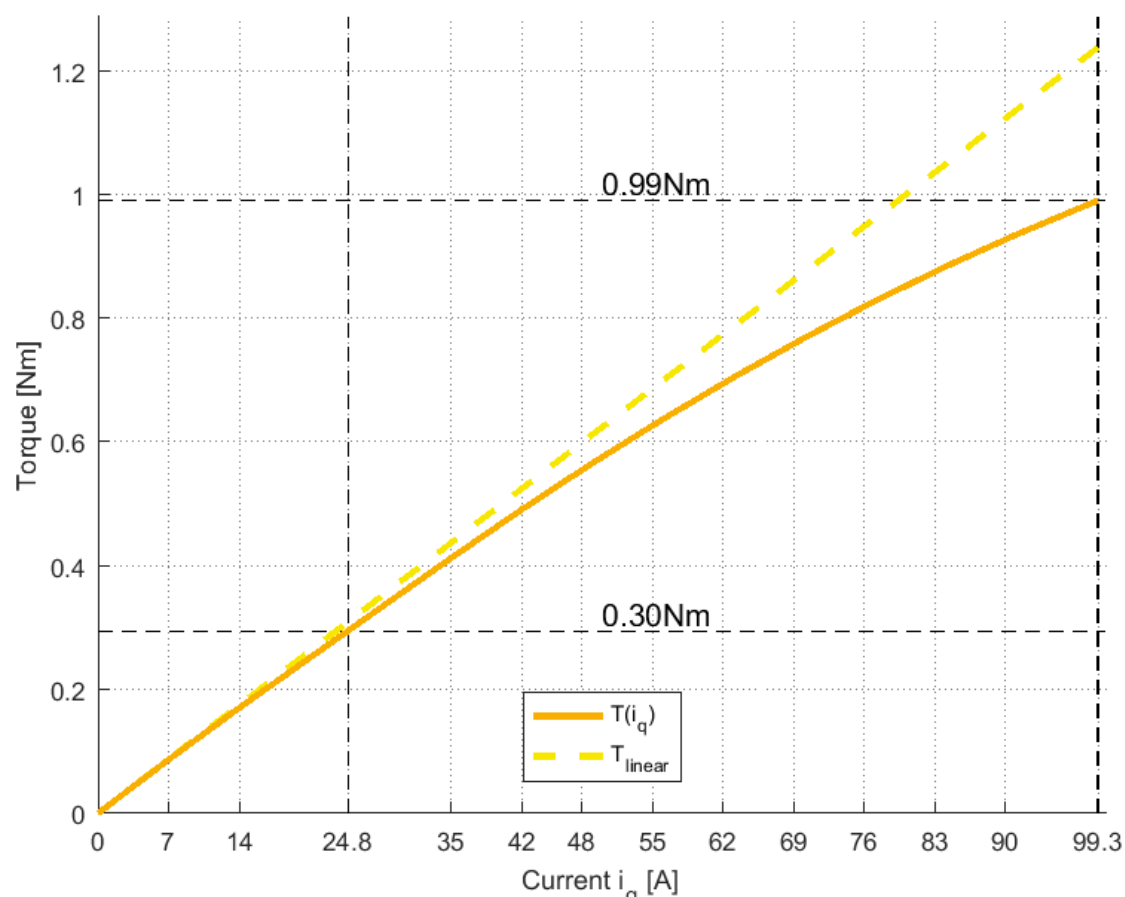
T/I-DIAGRAM ILM85X04 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM85X04 DELTA-PARALLEL @ 22 °C



T/I-DIAGRAM ILM85X04 DELTA-PARALLEL @ 22 °C



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