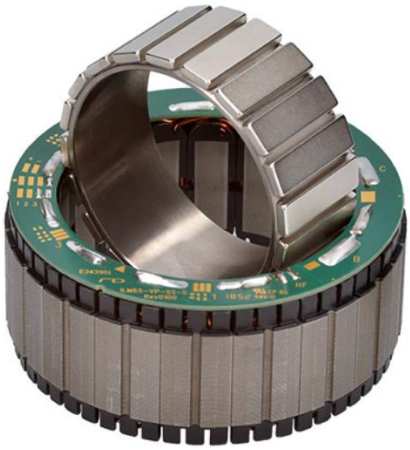
Motor Parameters ILM-E85x13



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	404
Rated torque T_r	[Nm]	1.37
Peak torque T_{max} @ 20% linearity deviation	[Nm]	4.43
Rated voltage U_r	[V]	48
Rotation speed n_{max}*	[rpm]	2810
Rated current I_r (phase current amplitude)	[A]	9.79
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	16.4
Torque constant k_T @ 20°C	[mNm/A]	141
Motor constant k_M @ 20°C	[Nm/√W]	0.342
Terminal resistance R_{TT} @ 20°C	[mΩ]	228
Terminal inductance L_{TT}	[µH]	566
Rotor inertia J	[kgcm²]	0.621
Number of pole pairs	-	10
Max. efficiency η	%	88
Weight m	[g]	356
Temperature class (DIN EN 60085)		F

* 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]	2810	2108	1405	843	703	527
Delta-serial n_{max}* [rpm]	4867	3650	2434	1460	1217	913
Star-parallel n_{max}* [rpm]	5620	4215	2810	1686	1405	1054

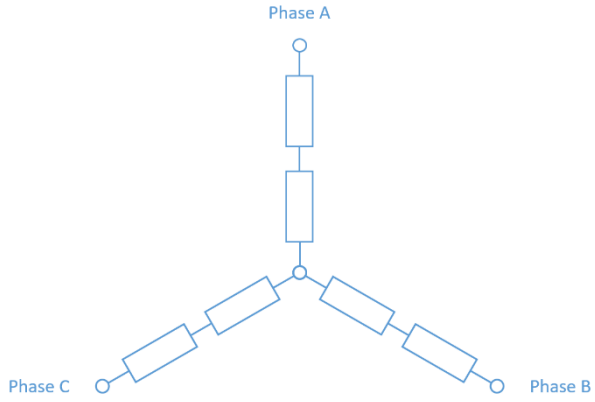
* Theoretical no-load rotation speeds at indicated voltage. Mechanical limits apply and must not be exceeded. Variations can arise from operation with different inverters.
** $n_{max, mech}$ = 7,900 rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

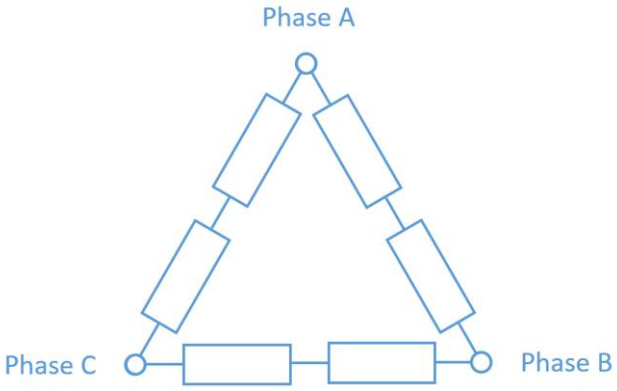
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [µH]
Star-serial	48	9.79	141	228	566
Delta-serial	28	17.0	81.5	76	189
Star-parallel	24	19.6	70.6	57	142

AVAILABLE INTERCONNECTION VARIANTSS

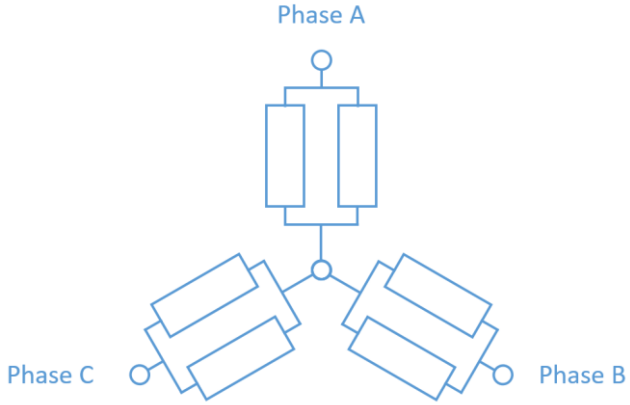
Star-serial



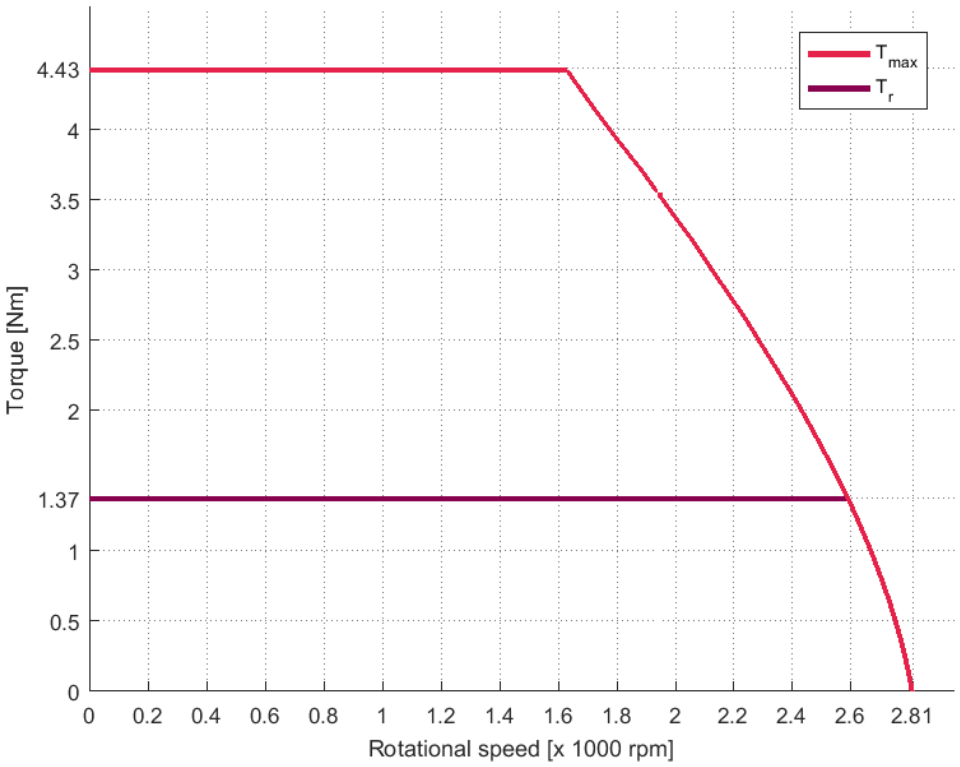
Delta-serial



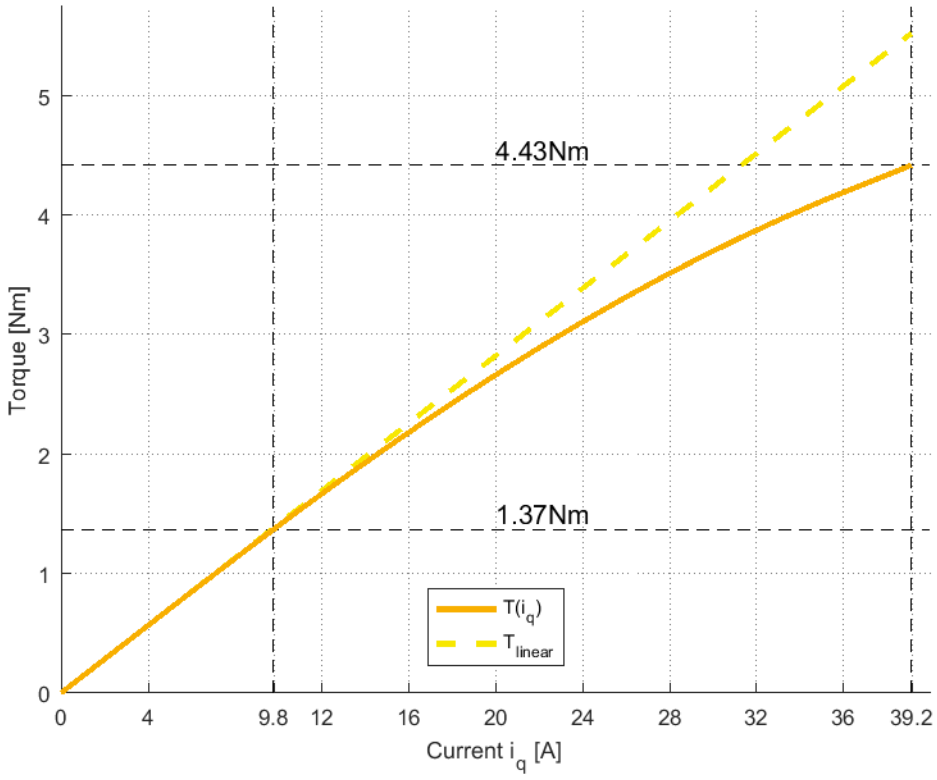
Star-parallel



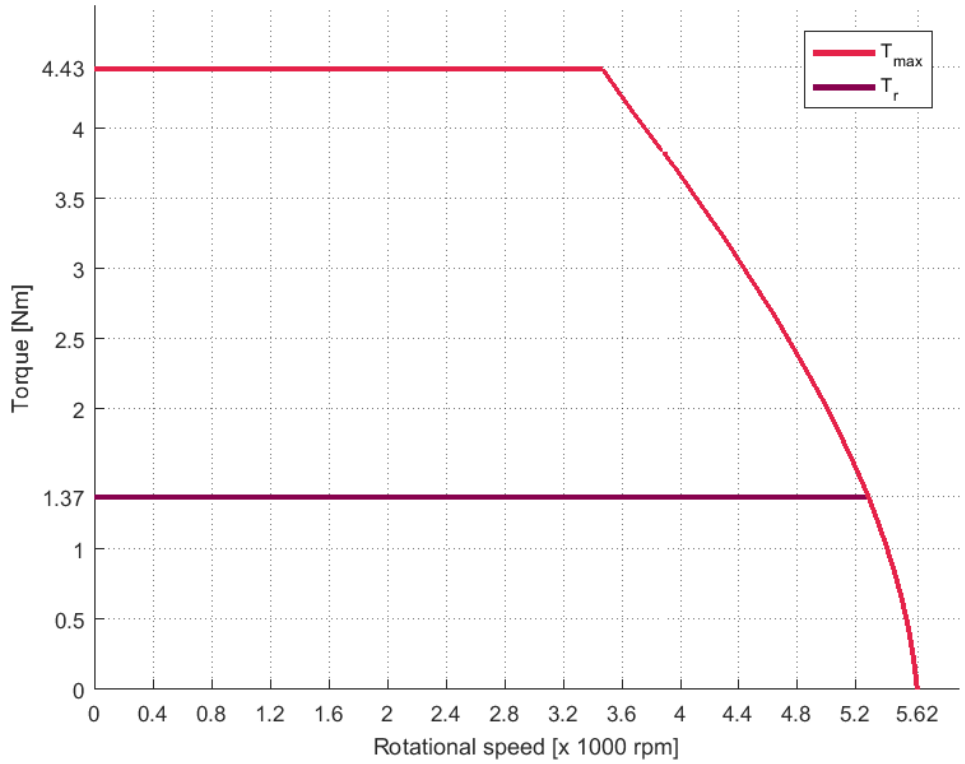
T/N-DIAGRAM ILM-E85X13 STAR-SERIAL @ 22 °C



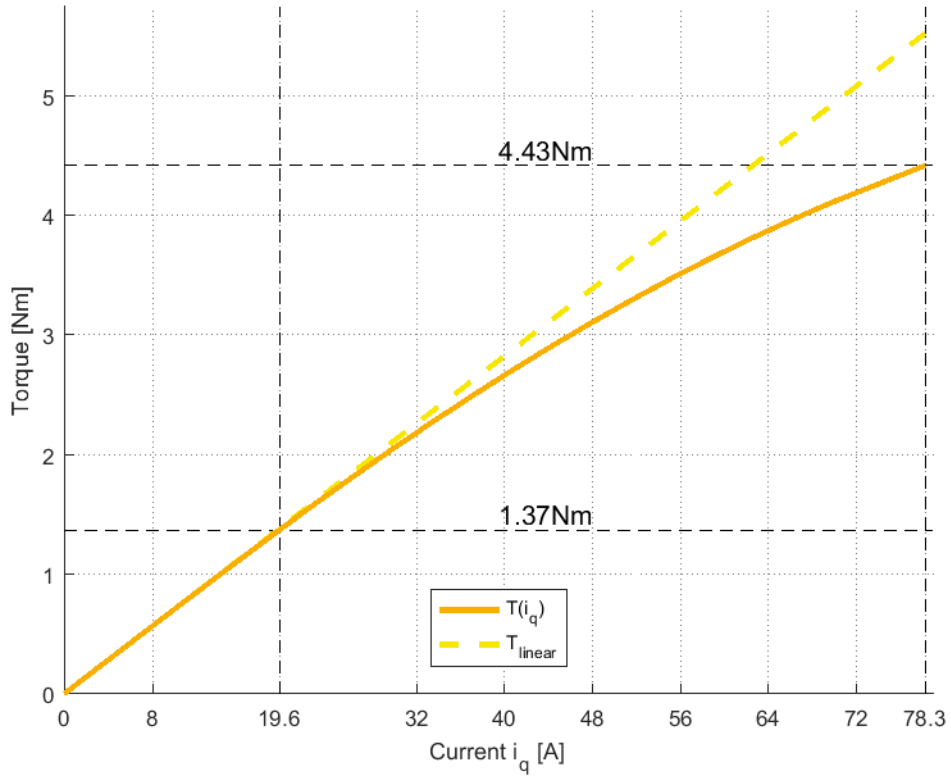
T/I-DIAGRAM ILM-E85X13 STAR-SERIAL @ 22 °C



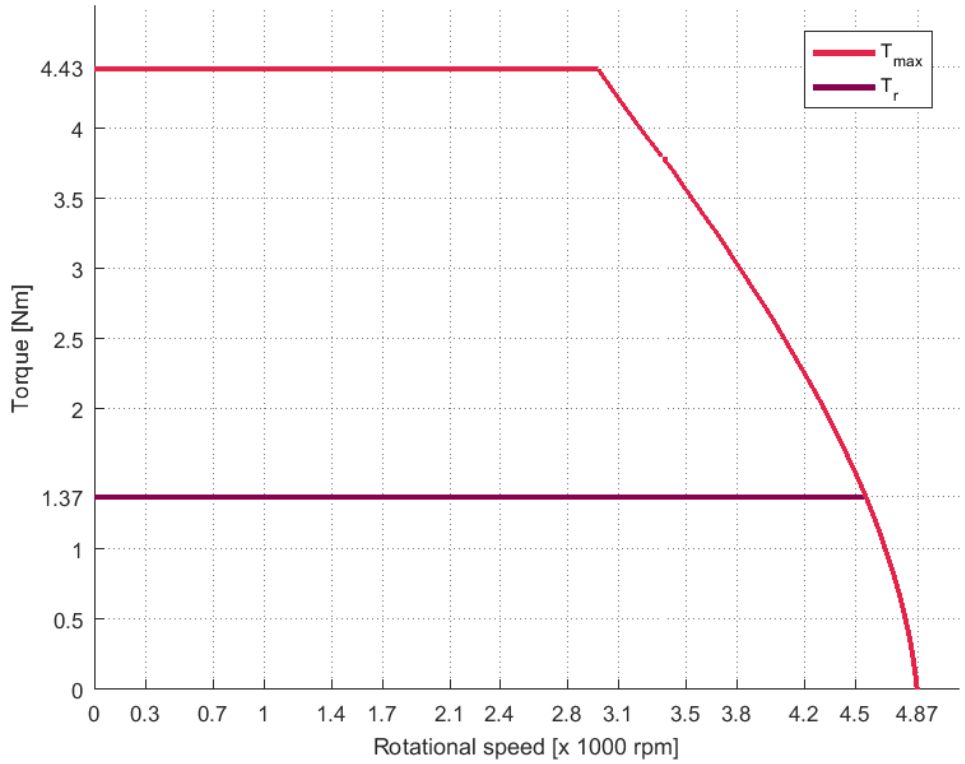
T/N-DIAGRAM ILM-E85x13 STAR-PARALLEL @ 22 °C



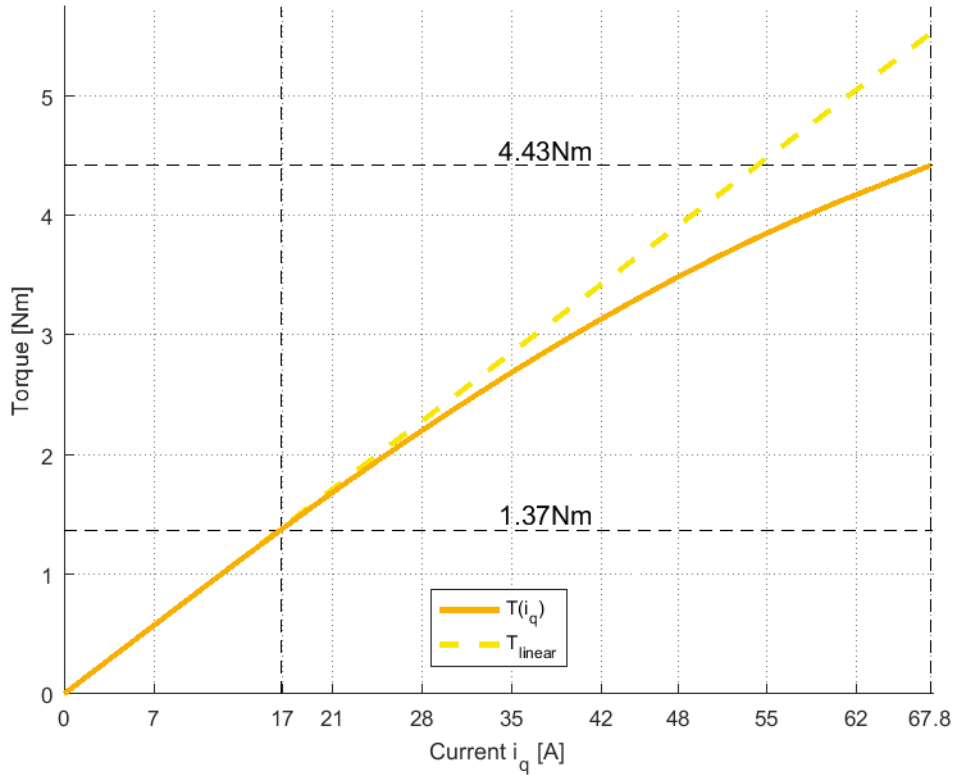
T/I-DIAGRAM ILM-E85X13 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM-E85x13 DELTA-SERIAL @ 22 °C



T/I-DIAGRAM ILM-E85X13 DELTA-SERIAL @ 22 °C



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