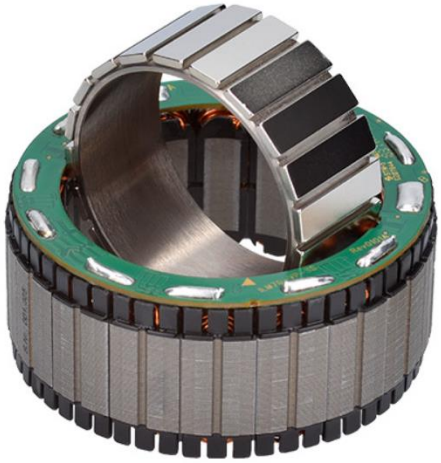
Motor Parameters ILM-E70x18



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	251
Rated torque T_r	[Nm]	1.20
Peak torque T_{max} @ 20% linearity deviation	[Nm]	3.92
Rated voltage U_r	[V]	48
Rotation speed n_{max}*	[rpm]	1992
Rated current I_r (phase current amplitude)	[A]	6.14
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	20.2
Torque constant k_T @ 20°C	[mNm/A]	198
Motor constant k_M @ 20°C	[Nm/√W]	0.271
Terminal resistance R_{TT} @ 20°C	[mΩ]	713
Terminal inductance L_{TT}	[µH]	1454
Rotor inertia J	[kgcm²]	0.327
Number of pole pairs	-	10
Max. efficiency η	%	89
Weight m	[g]	292
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]	1992	1494	996	598	498	374
Delta-serial n_{max}* [rpm]	3450	2598	1725	1035	863	647
Star-parallel n_{max}* [rpm]	3984	2988	1992	1195	996	747

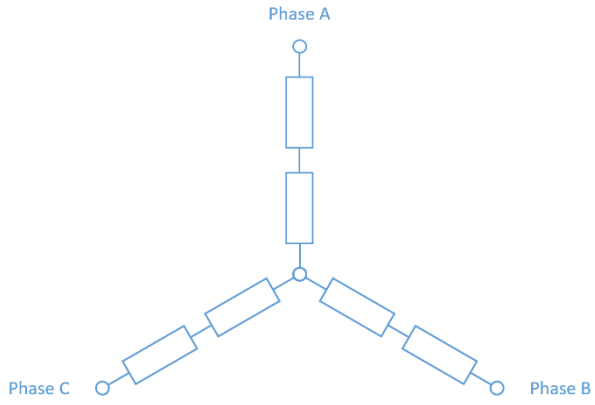
* Theoretical no-load rotation speeds at indicated voltage. Mechanical limits apply and must not be exceeded. Variations can arise from operation with different inverters.
** $n_{max, mech}$ = 7,900 rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

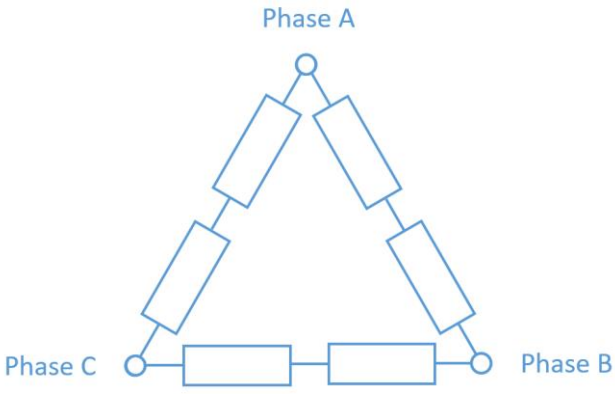
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [µH]
Star-serial	48	6.14	198	713	1454
Delta-serial	28	10.6	115	238	485
Star-parallel	24	12.3	99	178	364

AVAILABLE INTERCONNECTION VARIANTS

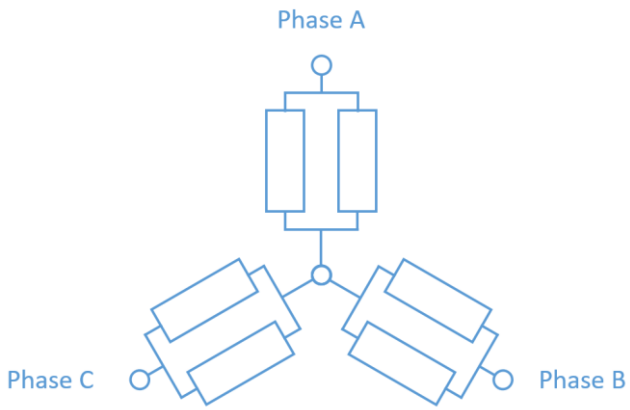
Star-serial



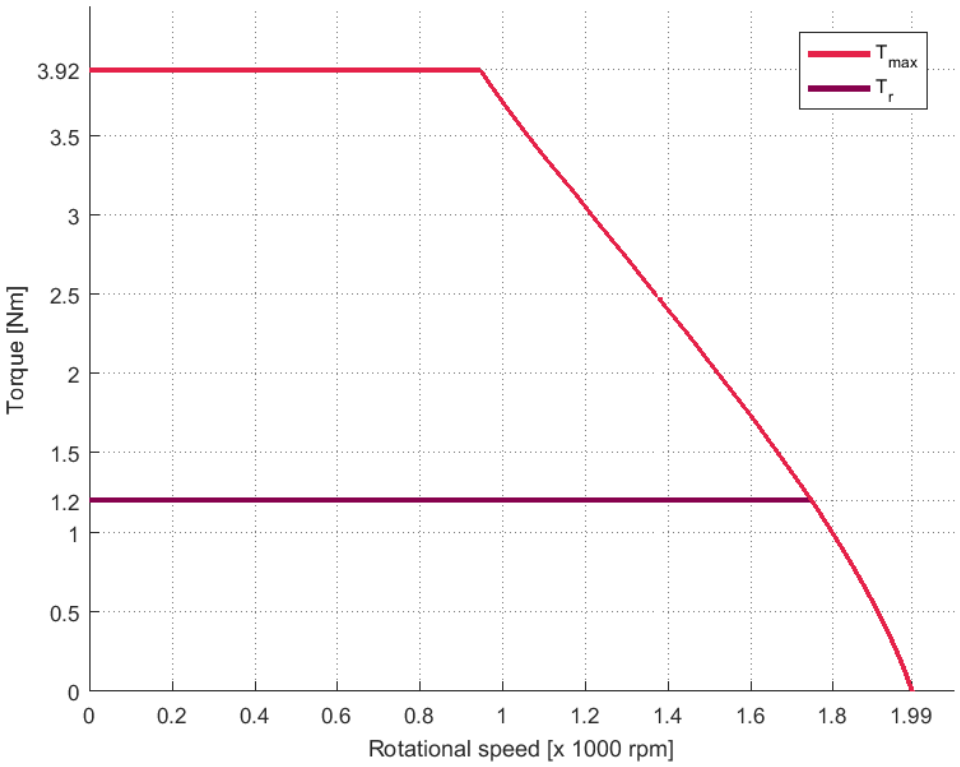
Delta-serial



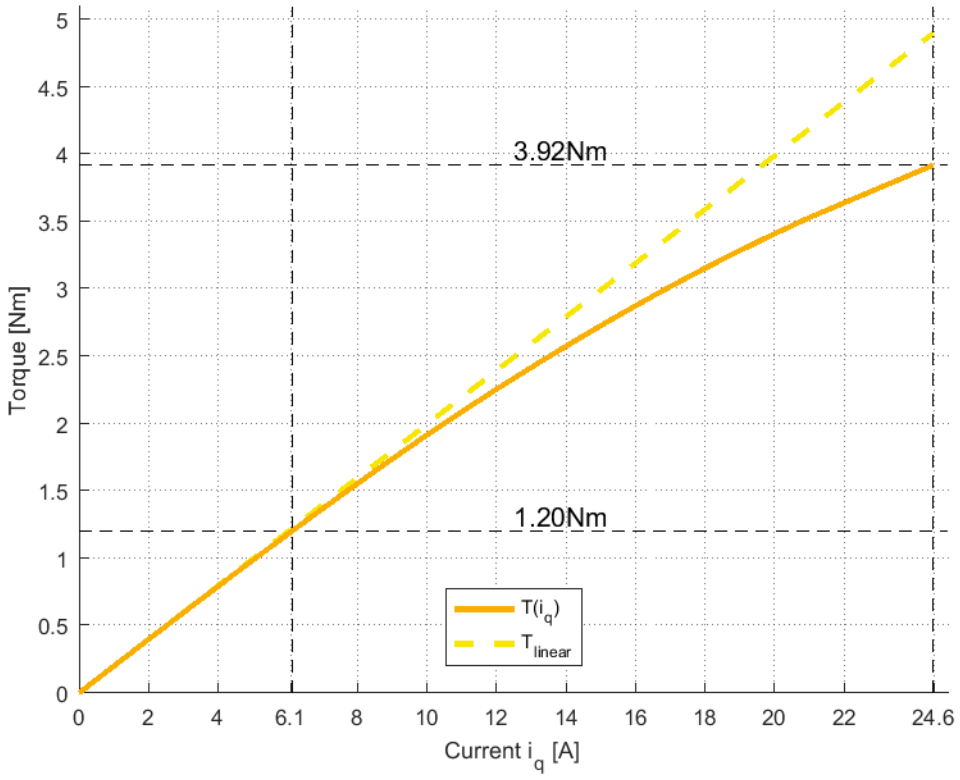
Star-parallel



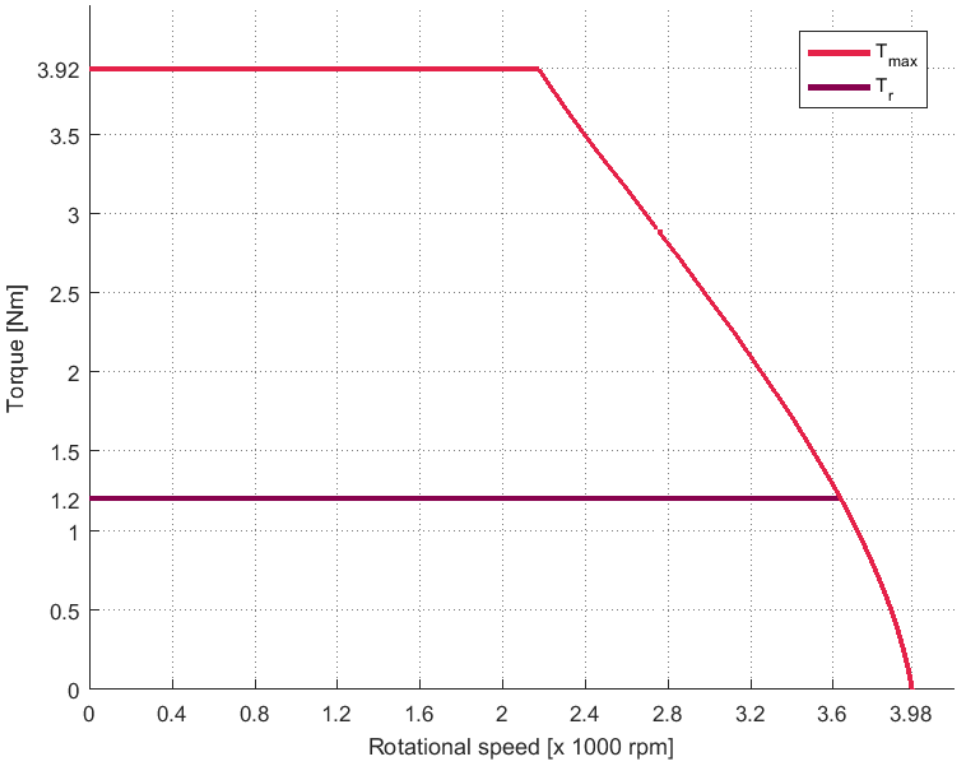
T/N-DIAGRAM ILM-E70X18 STAR-SERIAL @ 22 °C



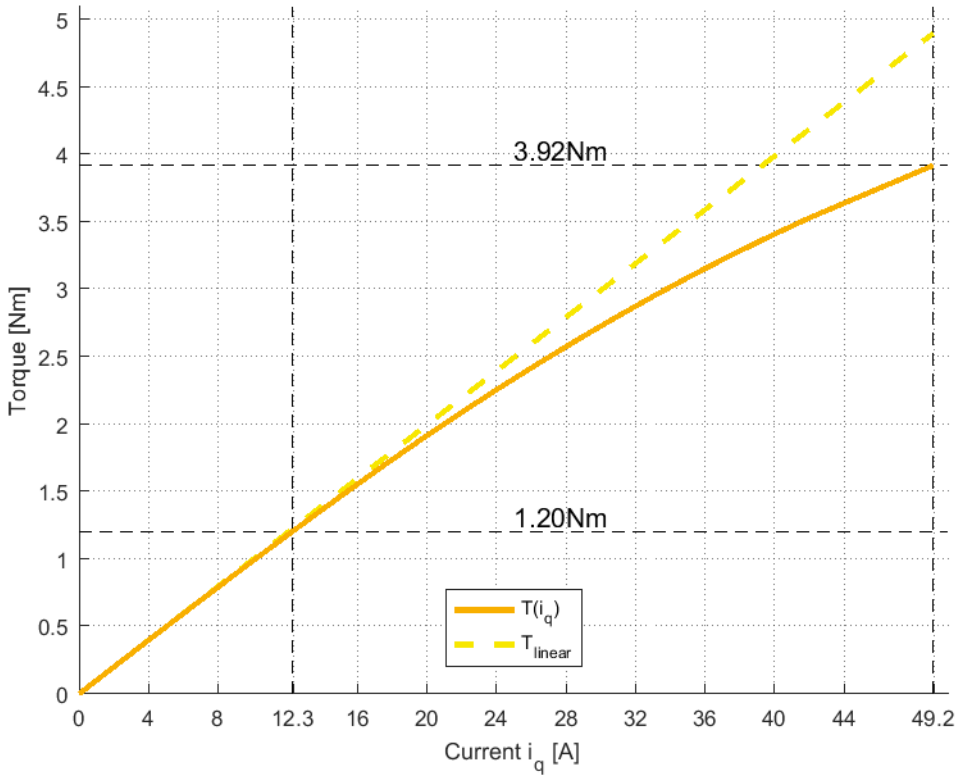
T/I-DIAGRAM ILM-E70X18 STAR-SERIAL @ 22 °C



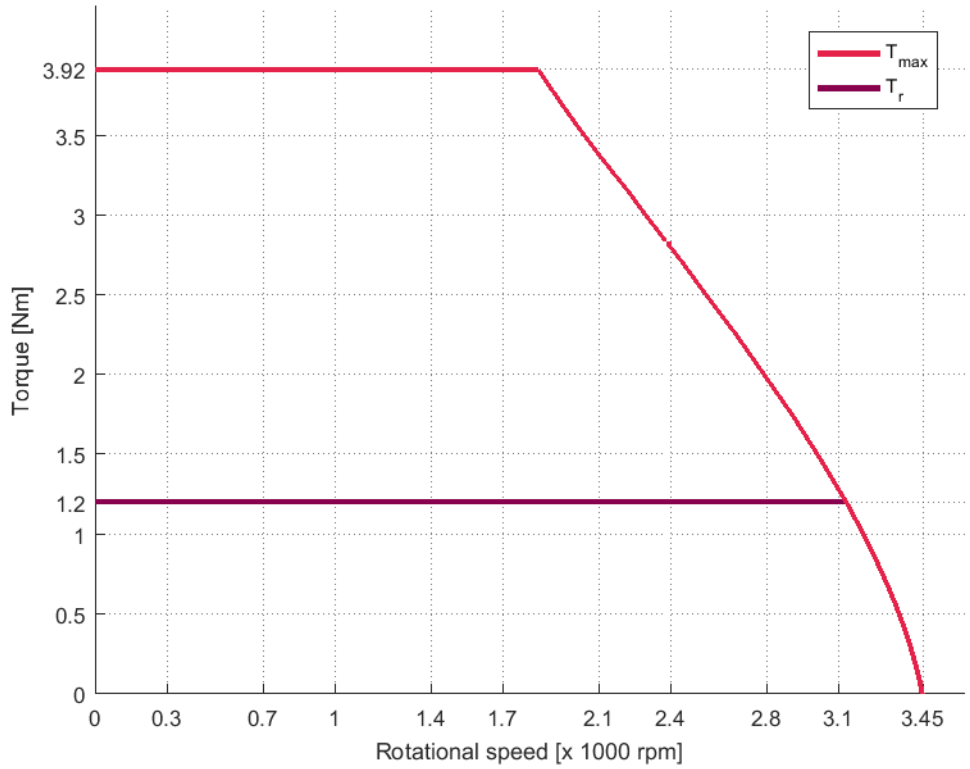
T/N-DIAGRAM ILM-E70X18 STAR-PARALLEL @ 22 °C



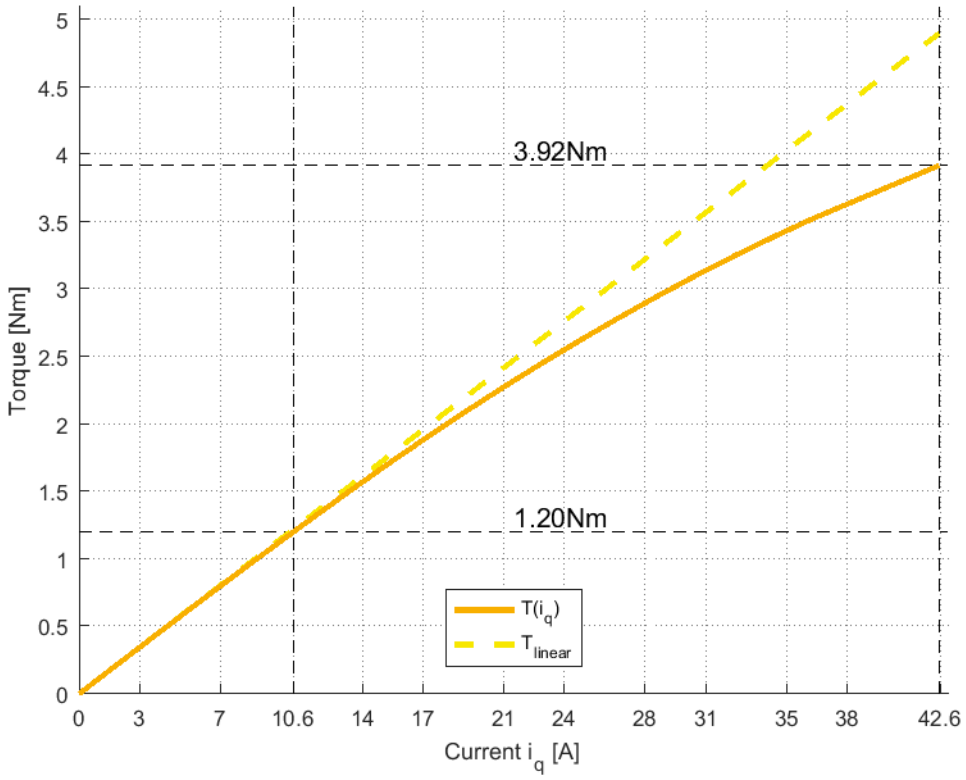
T/I-DIAGRAM ILM-E70X18 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM-E70X18 DELTA-SERIAL @ 22 °C



T/I-DIAGRAM ILM-E70X18 DELTA-SERIAL @ 22 °C



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