

Motor Parameters ILM38x12



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	248
Rated torque T_r	[Nm]	0.23
Peak torque T_{max} @ 20% linearity deviation	[Nm]	0.76
Rated voltage U_r	[V]	48
Rotation speed n_{max}^*	[rpm]	10175
Rated current I_r (phase current amplitude)	[A]	6.1
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	13.7
Torque constant k_T @ 20°C	[mNm/A]	39.0
Motor constant k_M @ 20°C	[Nm/√W]	0.064
Terminal resistance R_{TT} @ 20°C	[mΩ]	490
Terminal inductance L_{TT}	[μH]	520
Rotor inertia J	[kgcm ²]	0.0203
Number of pole pairs	-	7
Max. efficiency η	%	87
Weight m	[g]	89

* 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]	10190	7640	5100	3060	2550	1910
star-parallel n_{max}^* [rpm]	20380**	15290**	10190	6110	5100	3820

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

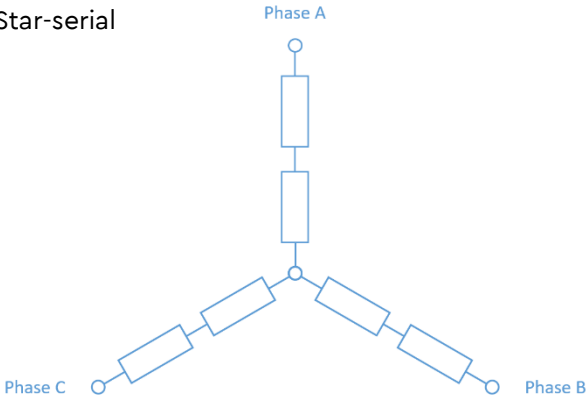
** $n_{max,mech}$ = 15000 rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

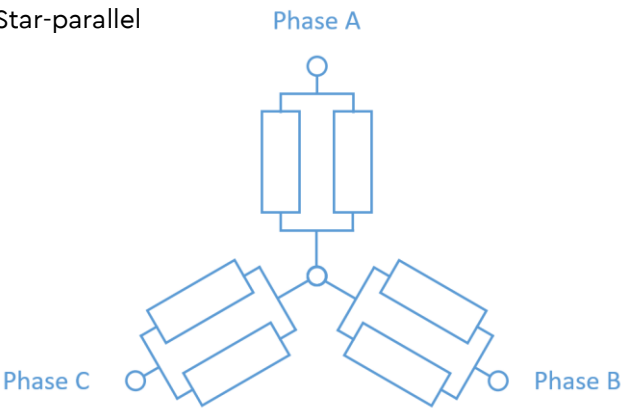
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [μH]
star-serial	48	6.1	39	490	520
star-parallel	24	12.2	20	123	130

AVAILABLE INTERCONNECTION VARIANTS

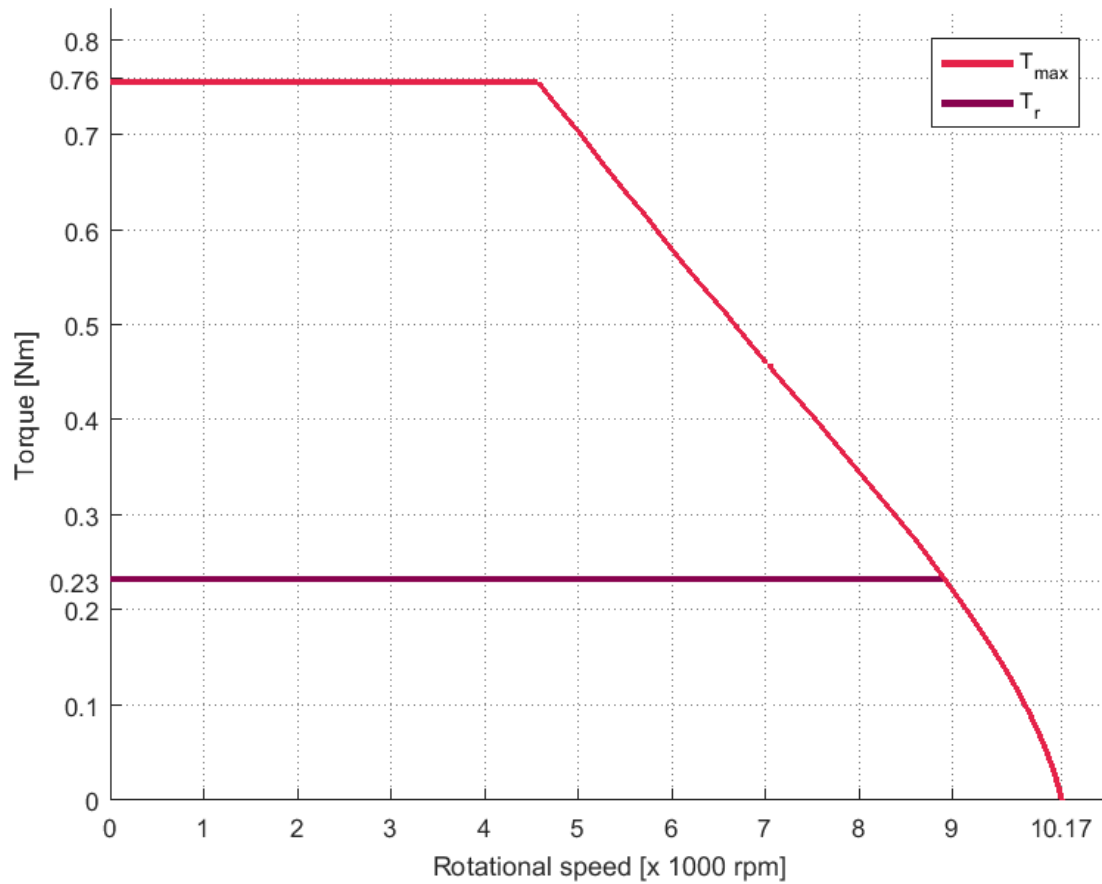
Star-serial



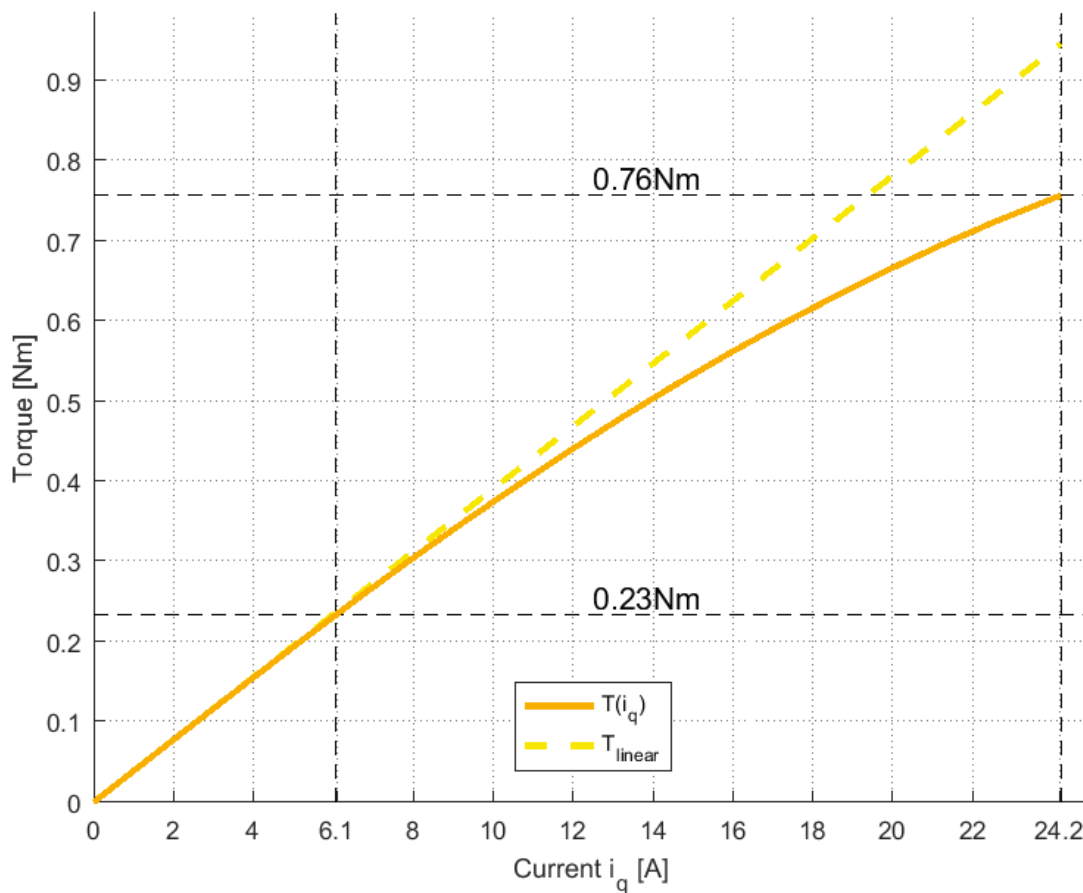
Star-parallel



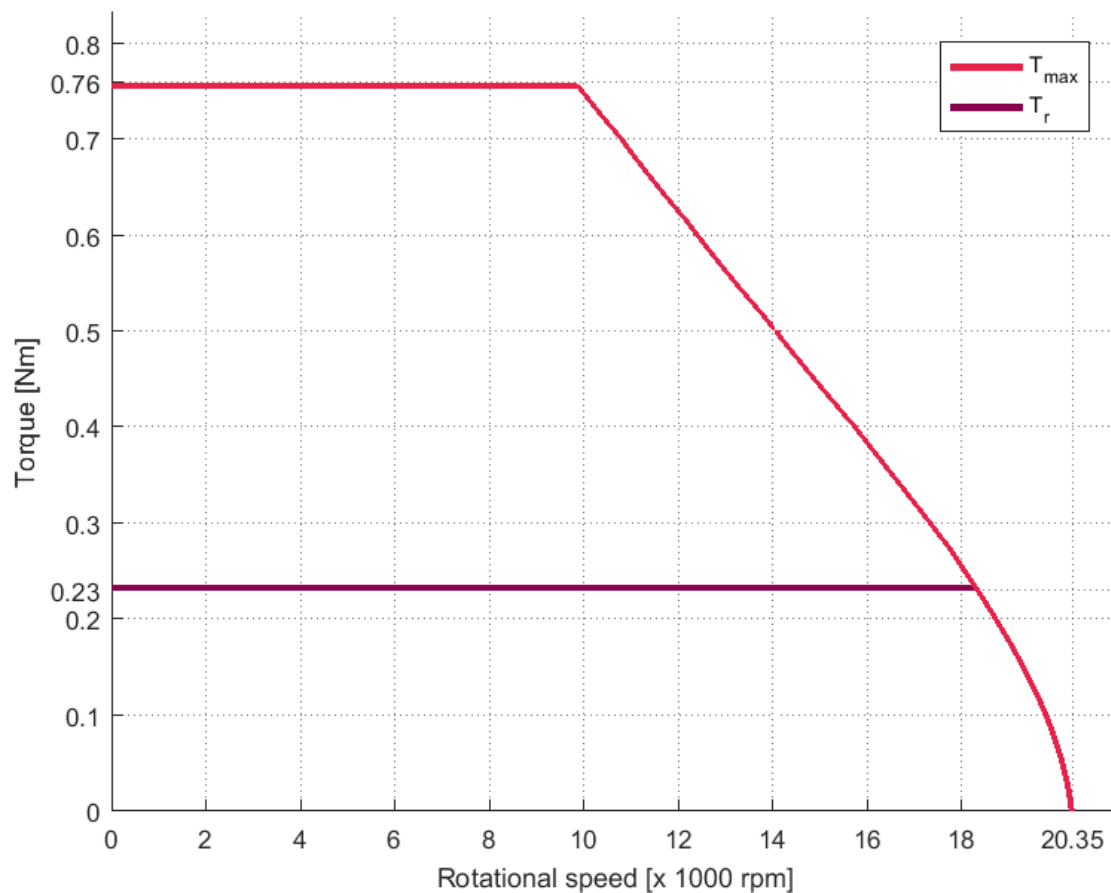
T/N-DIAGRAM ILM38X12 STAR-SERIAL @ 22 °C



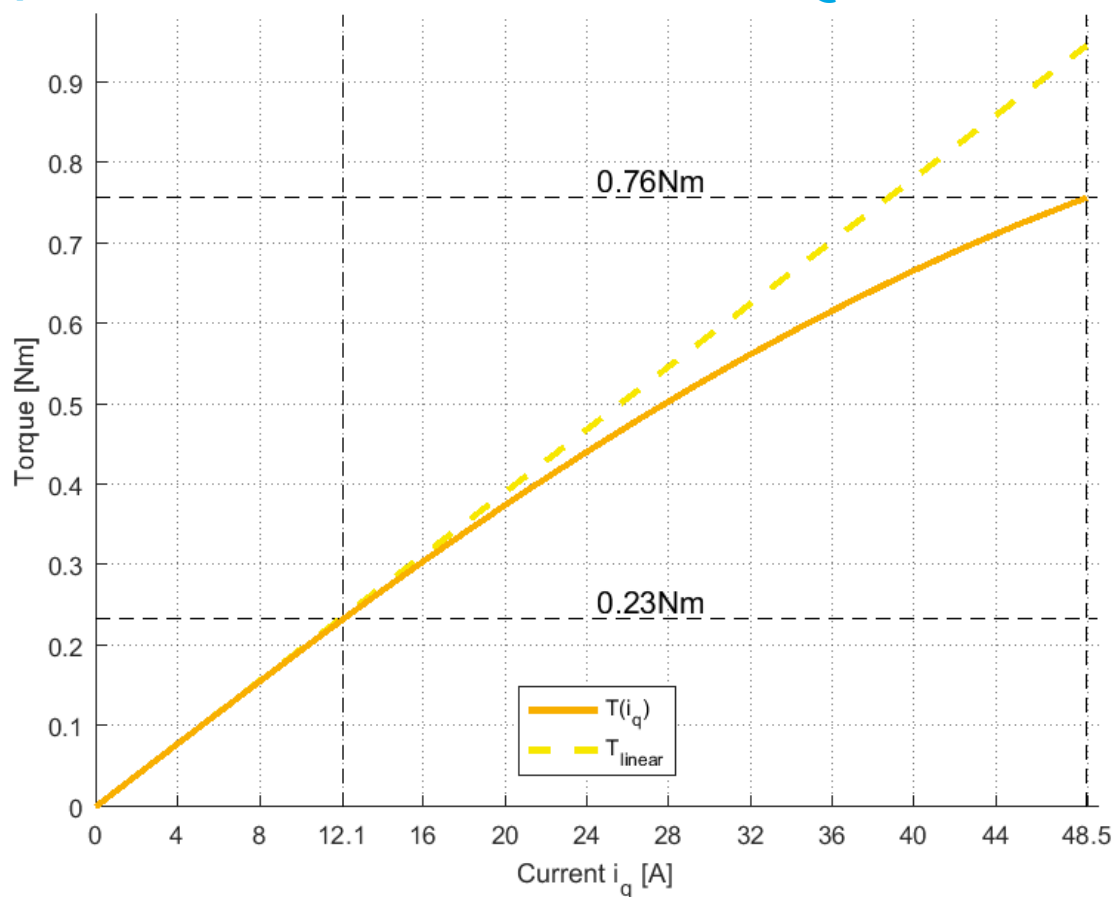
T/I-DIAGRAM ILM38X12 STAR-SERIAL @ 22 °C



T/N-DIAGRAM ILM38X12 STAR-PARALLEL @ 22 °C



T/I-DIAGRAM ILM38X12 STAR-PARALLEL @ 22 °C



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