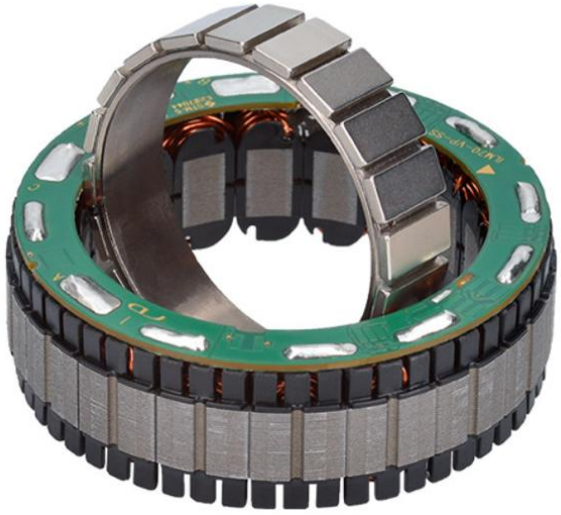
Motor Parameters ILM-E70x10



PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	231
Rated torque T_r	[Nm]	0.62
Peak torque T_{max} @ 20% linearity deviation	[Nm]	2.01
Rated voltage U_r	[V]	48
Rotation speed n_{max}*	[rpm]	3560
Rated current I_r (phase current amplitude)	[A]	5.62
Copper losses $P_{L,r}$ @ T_r and 20°C	[W]	11.8
Torque constant k_T @ 20°C	[mNm/A]	112
Motor constant k_M @ 20°C	[Nm/√W]	0.182
Terminal resistance R_{TT} @ 20°C	[mΩ]	498
Terminal inductance L_{TT}	[µH]	886
Rotor inertia J	[kgcm²]	0.232
Number of pole pairs	-	10
Max. efficiency η	%	86
Weight m	[g]	162.2
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]	3560	2670	1780	1068	890	667
Delta-serial n_{max}* [rpm]	6166	4625	3083	1850	1542	1156
Star-parallel n_{max}* [rpm]	7120	5340	3560	2136	1780	1335

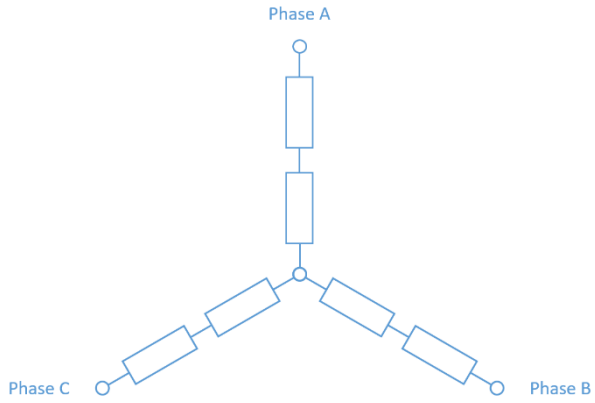
* Theoretical no-load rotation speeds at indicated voltage. Mechanical limits apply and must not be exceeded. Variations can arise from operation with different inverters.
** $n_{max, mech}$ = 7,900 rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

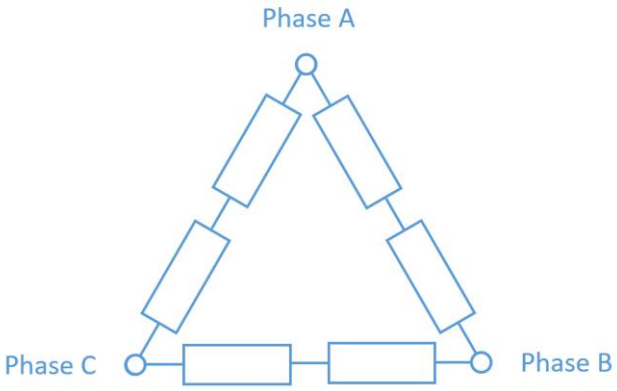
Interconnection	U_r [V]	I_r [A]	k_T [mNm/A]	R_{TT} [mΩ]	L_{TT} [µH]
Star-serial	48	5.62	112	498	886
Delta-serial	28	9.73	64	166	295
Star-parallel	24	11.2	56	125	222

AVAILABLE INTERCONNECTION VARIANTS

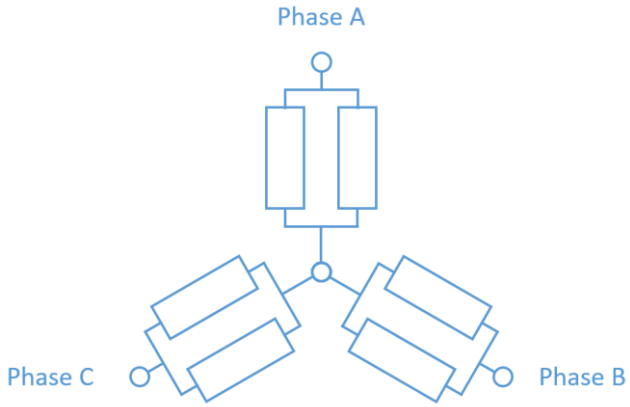
Star-serial



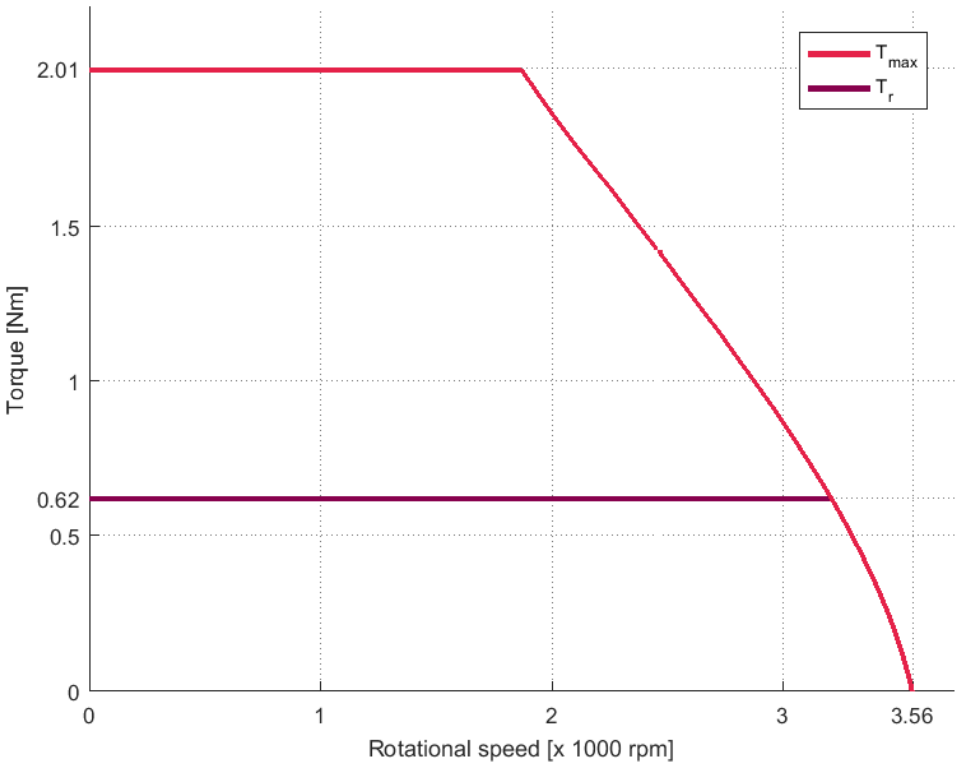
Delta-serial



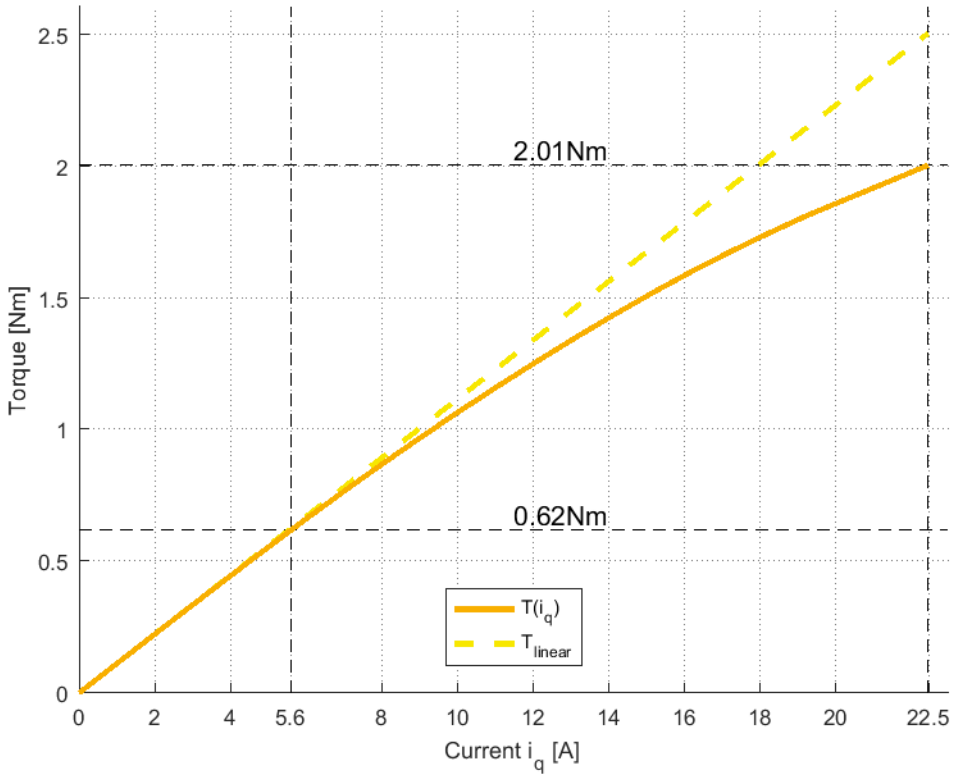
Star-parallel



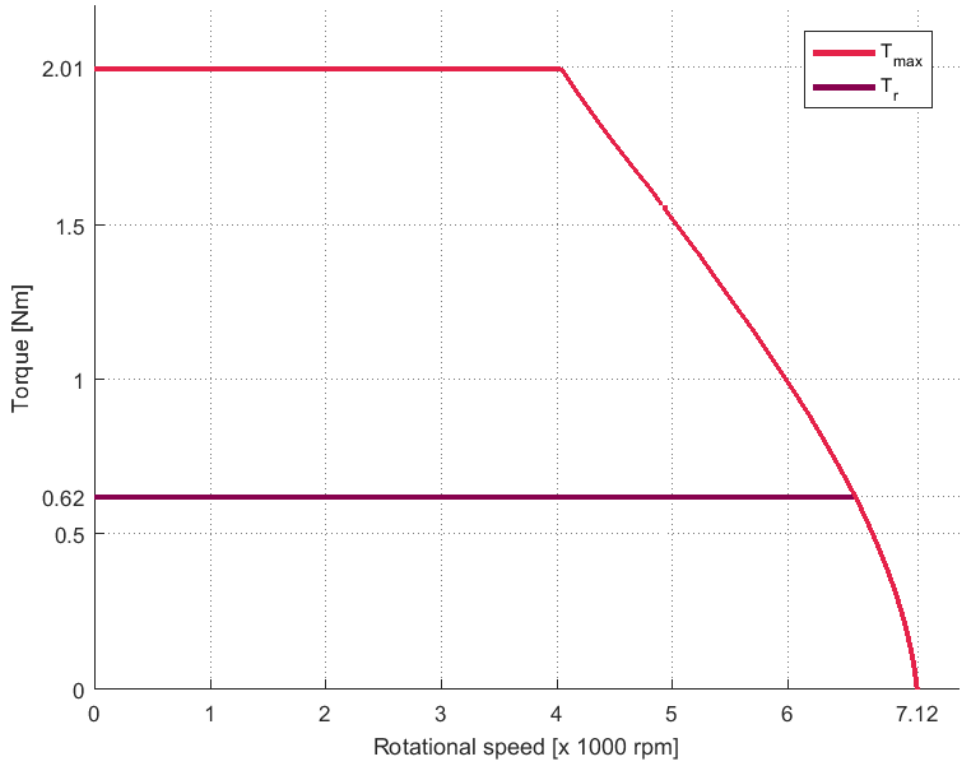
T/N-DIAGRAM ILM-E70X10 STAR-SERIAL @ 22 °C



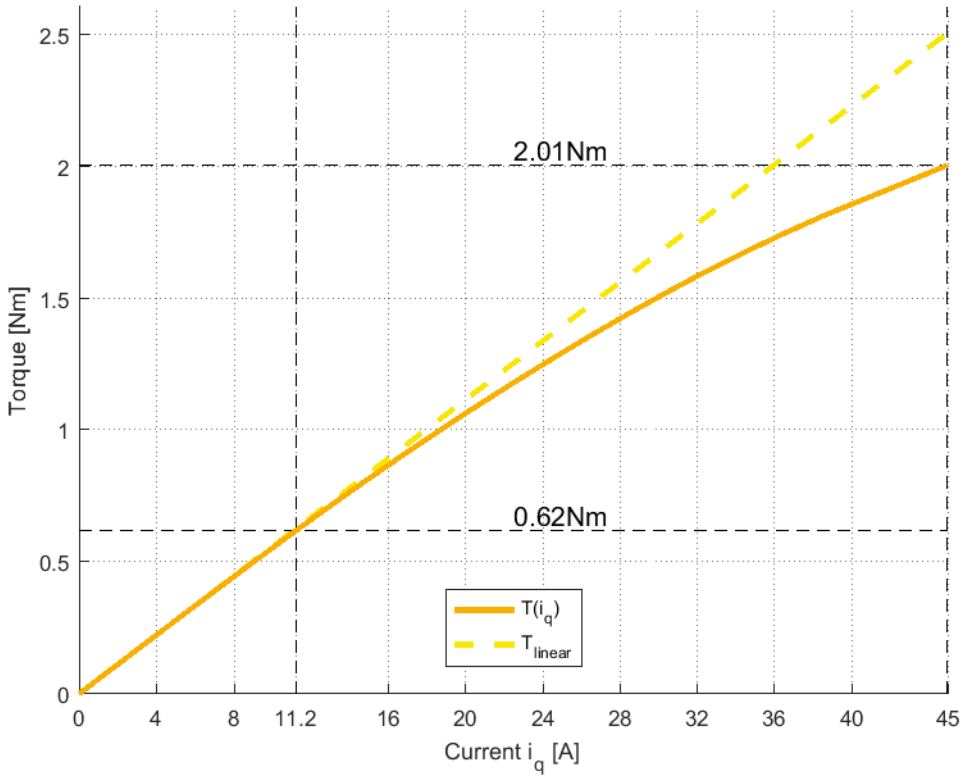
T/I-DIAGRAM ILM-E70X10 STAR-SERIAL @ 22 °C



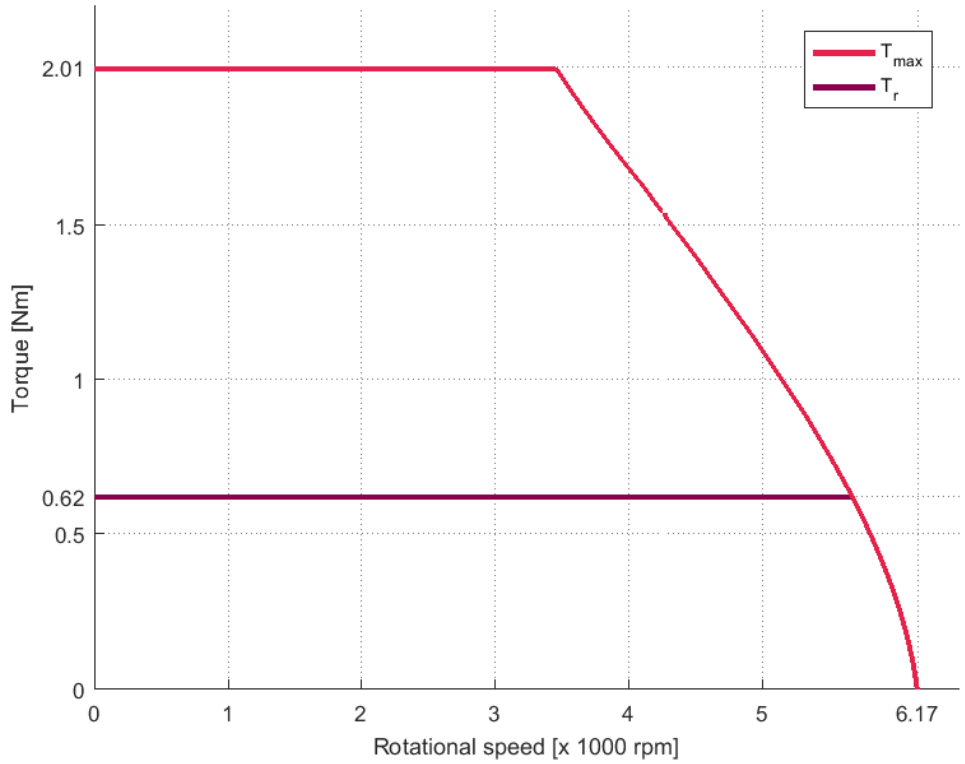
T/N-DIAGRAM ILM-E70X10 STAR-PARALLEL @ 22 °C



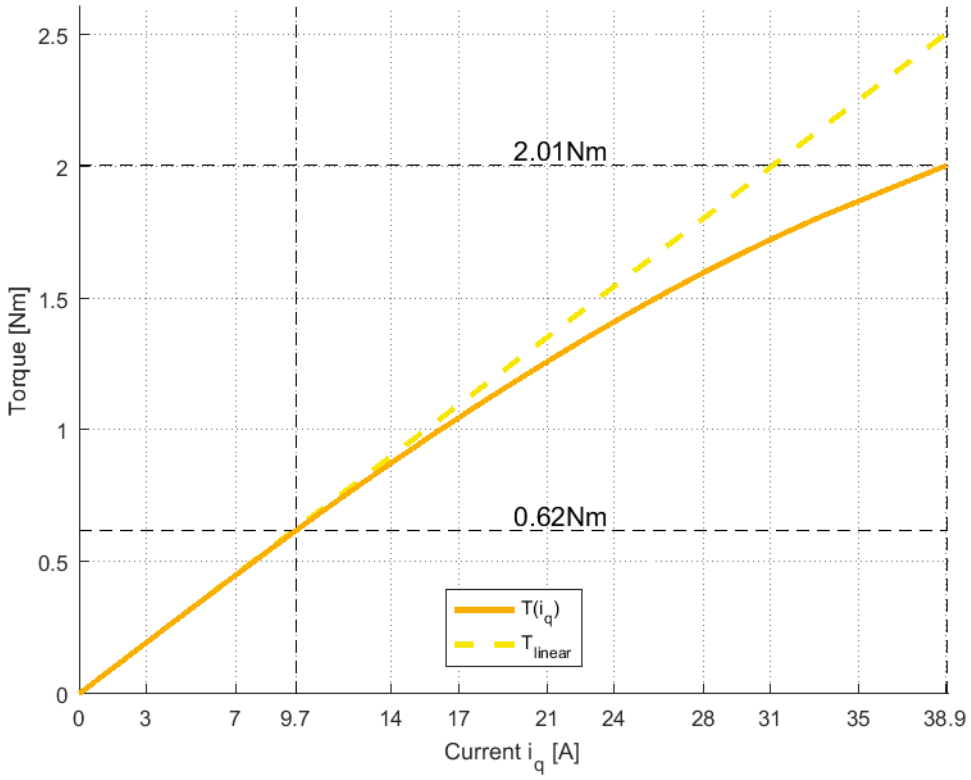
T/I-DIAGRAM ILM-E70X10 STAR-PARALLEL @ 22 °C



T/N-DIAGRAM ILM-E70X10 DELTA-SERIAL @ 22 °C



T/I-DIAGRAM ILM-E70X10 DELTA-SERIAL @ 22 °C



FOR FURTHER INQUIRIES, PLEASE CONTACT:

TQ-Systems GmbH
Gut Delling, Mühlstraße 2
82229 Seefeld
Deutschland

Tel.: +49 8153 9308-0
Fax: +49 8153 4223

E-Mail: info@tq-robodrive.com
Internet: www.tq-group.com

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