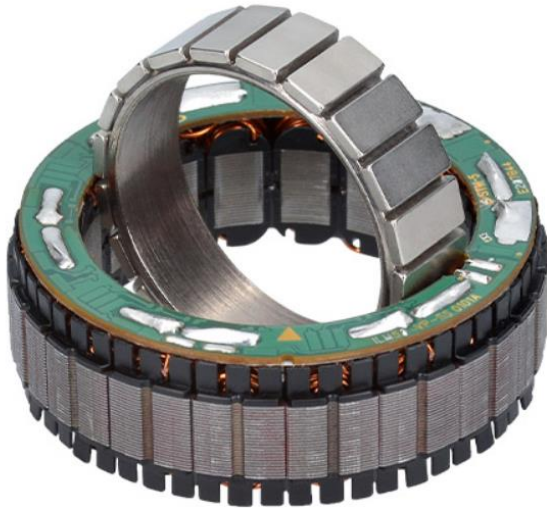




# Motor Parameters ILM-E50x08



## PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

<b>Power P</b>	[W]	203
<b>Rated torque <math>T_r</math></b>	[Nm]	0.3
<b>Peak torque <math>T_{max}</math> @ 20% linearity deviation</b>	[Nm]	0.98
<b>Rated voltage <math>U_r</math></b>	[V]	48
<b>Rotation speed <math>n_{max}^*</math></b>	[rpm]	6,458
<b>Rated current <math>I_r</math> (phase current amplitude)</b>	[A]	5
<b>Copper losses <math>P_{L,r}</math> @ <math>T_r</math> and 20°C</b>	[W]	11.3
<b>Torque constant <math>k_T</math> @ 20°C</b>	[mNm/A]	60
<b>Motor constant <math>k_M</math> @ 20°C</b>	[Nm/ $\sqrt{W}$ ]	0.089
<b>Terminal resistance <math>R_{TT}</math> @ 20°C</b>	[m $\Omega$ ]	602
<b>Terminal inductance <math>L_{TT}</math></b>	[ $\mu$ H]	484
<b>Rotor inertia J</b>	[kgcm <sup>2</sup> ]	0.056
<b>Number of pole pairs</b>	-	10
<b>Max. efficiency <math>\eta</math></b>	%	-
<b>Weight m</b>	[g]	76

\* 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]	6,458	4,844	3,229	1,884	1,615	1,211
Delta-serial $n_{max}^*$ [rpm]	11,186	8,389	5,593	3,262	2,796	2,097
Star-parallel $n_{max}^*$ [rpm]	12,916	9,687	6,458	3,767	3,229	2,422

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

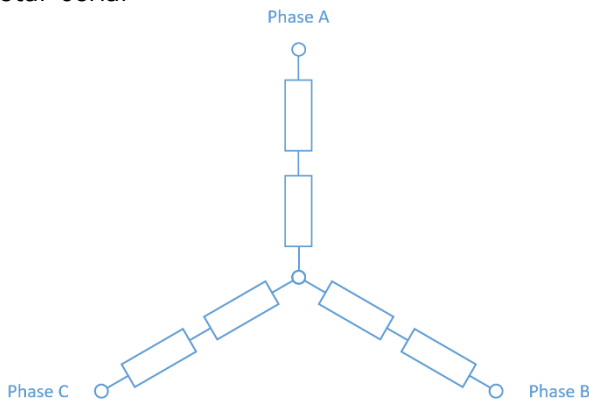
\*\*  $n_{max, mech} = 7,900$  rpm must not be exceeded.

## CHARACTERISTICS INTERCONNECTION VARIANTS

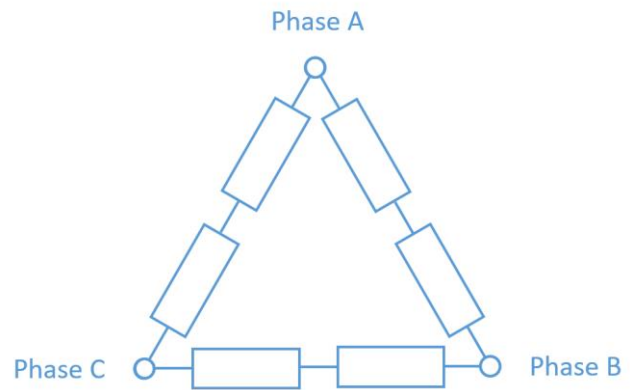
Interconnection	$U_r$ [V]	$I_r$ [A]	$k_T$ [mNm/A]	$R_{TT}$ [mΩ]	$L_{TT}$ [μH]
Star-serial	48	5	60	602	484
Delta-serial	28	8.7	34.6	201	161
Star-parallel	24	10	30	151	121

## AVAILABLE INTERCONNECTION VARIANTS

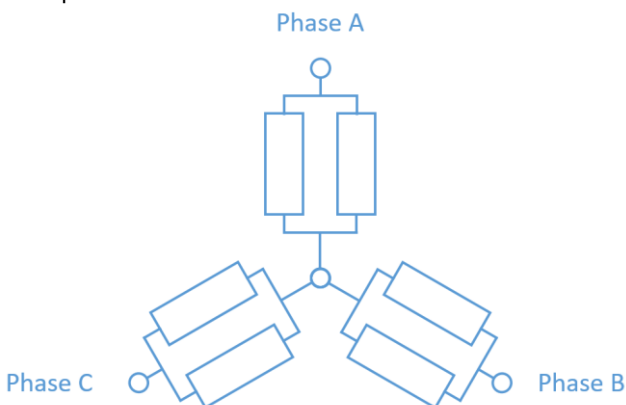
Star-serial



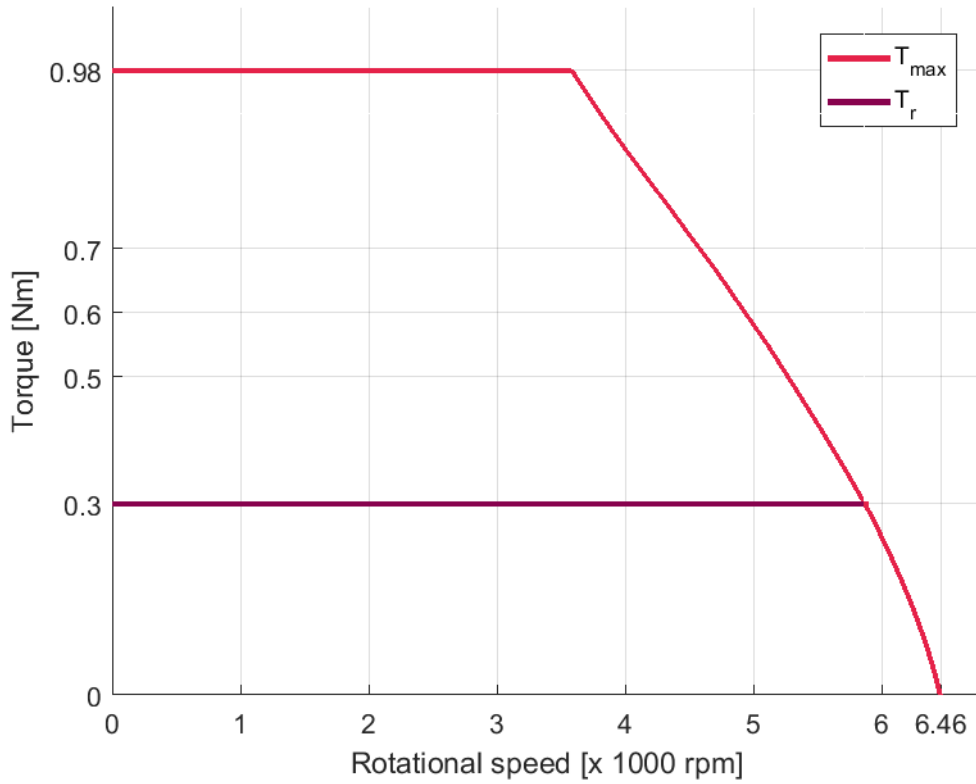
Delta-serial



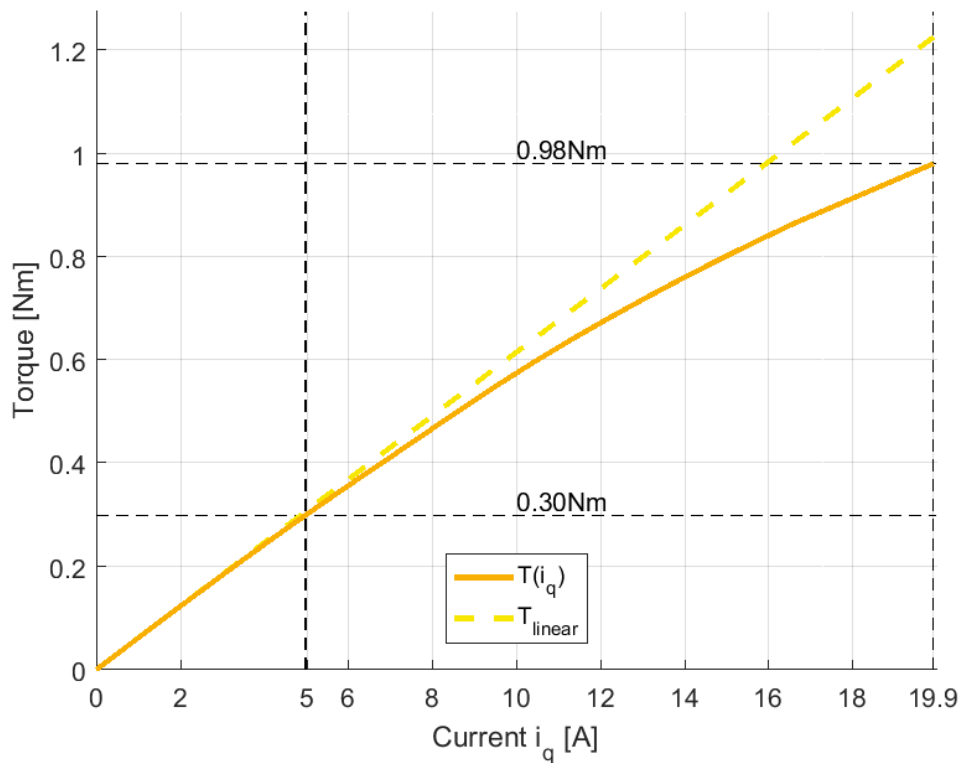
Star-parallel



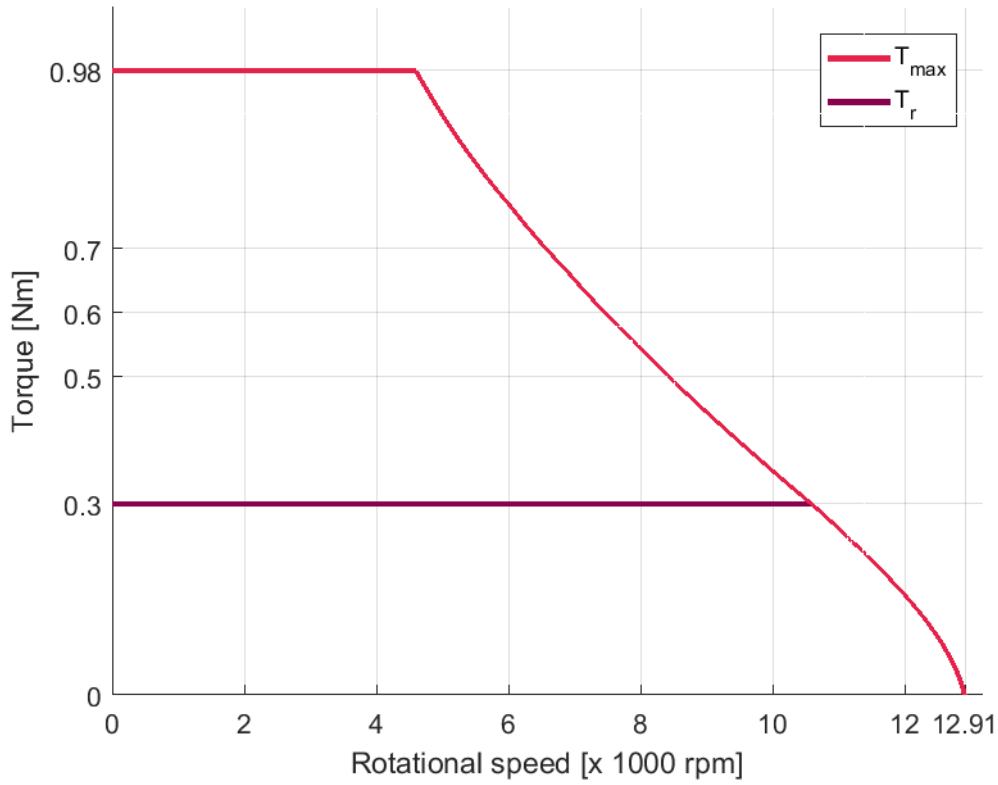
## T/N-DIAGRAM ILM-E50X08 STAR-SERIAL @ 22 °C



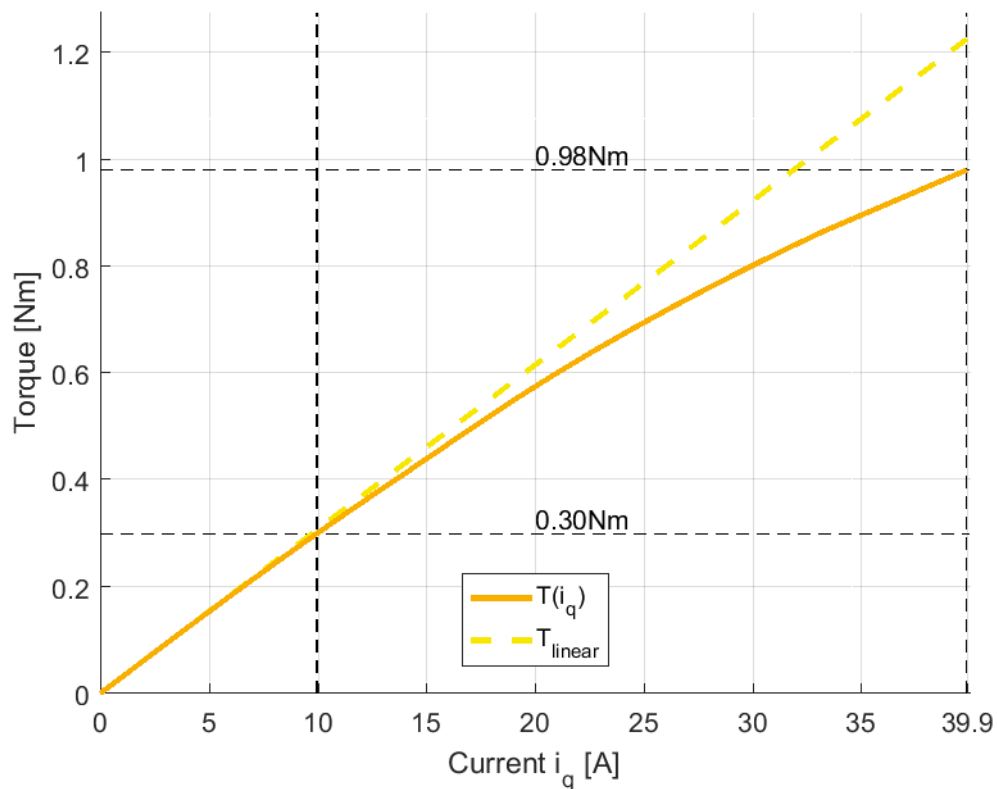
## T/I-DIAGRAM ILM-E50X08 STAR-SERIAL @ 22 °C



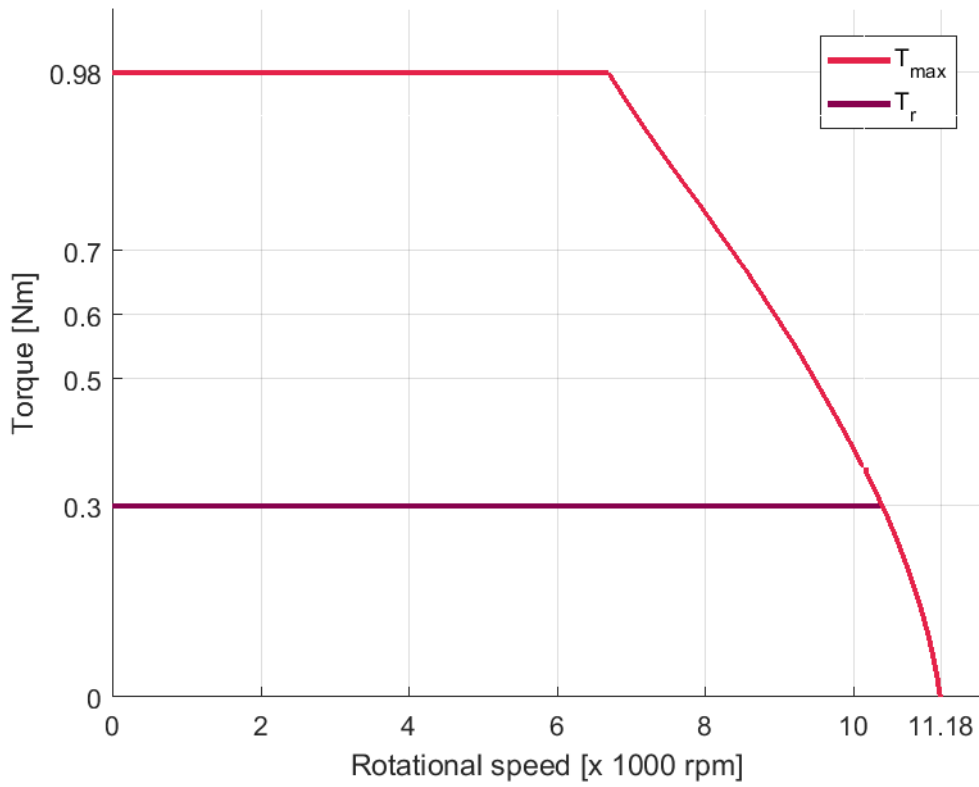
## T/N-DIAGRAM ILM-E50X08 STAR-PARALLEL @ 22 °C



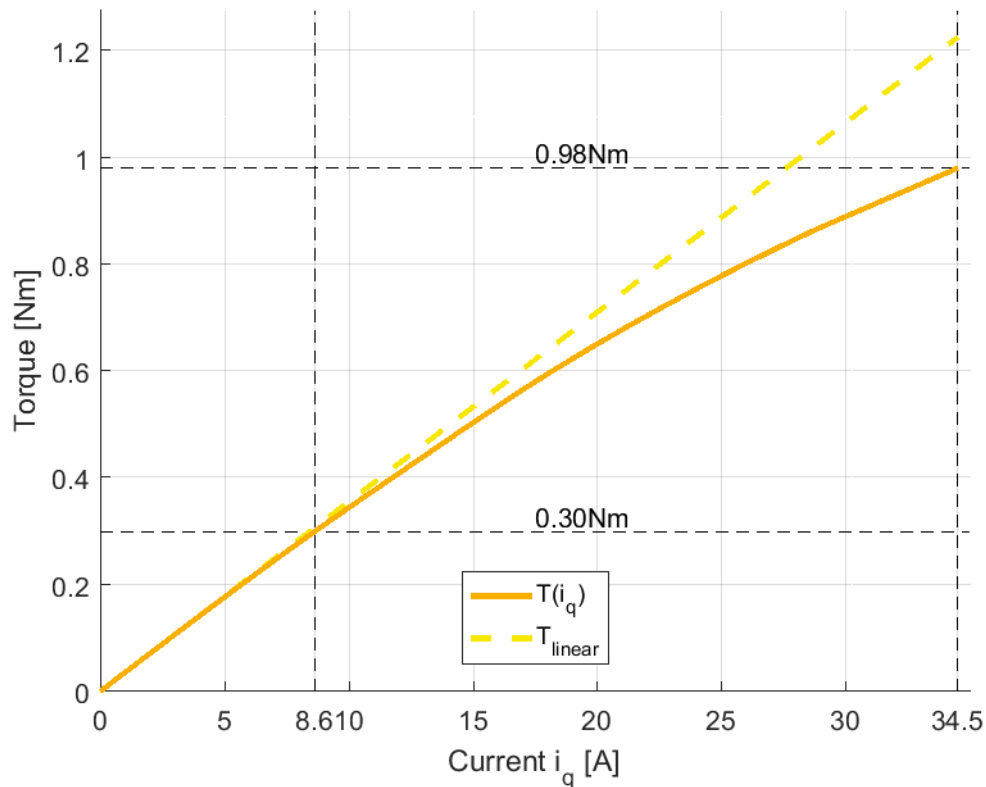
## T/I-DIAGRAM ILM-E50X08 STAR-PARALLEL @ 22 °C



## T/N-DIAGRAM ILM-E50X08 DELTA-SERIAL @ 22 °C



## T/I-DIAGRAM ILM-E50X08 DELTA-SERIAL @ 22 °C



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