



# Motor Parameters ILM-E85x23



## PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	433
Rated torque $T_r$	[Nm]	2.58
Peak torque $T_{max}$ @ 20% linearity deviation	[Nm]	8.31
Rated voltage $U_r$	[V]	48
Rotation speed $n_{max}$ *	[rpm]	1606
Rated current $I_r$ (phase current amplitude)	[A]	10.5
Copper losses $P_{L,r}$ @ $T_r$ and 20°C	[W]	26.7
Torque constant $k_T$ @ 20°C	[mNm/A]	247
Motor constant $k_M$ @ 20°C	[Nm/ $\sqrt{W}$ ]	0.503
Terminal resistance $R_{TT}$ @ 20°C	[m $\Omega$ ]	322
Terminal inductance $L_{TT}$	[ $\mu$ H]	938
Rotor inertia J	[kgcm <sup>2</sup> ]	1.08
Number of pole pairs	-	10
Max. efficiency $\eta$	%	94
Weight m	[g]	629.8
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]	1606	1204	803	482	401	301
Delta-serial $n_{max}^*$ [rpm]	2782	2086	1391	835	695	522
Star-parallel $n_{max}^*$ [rpm]	3212	2409	1606	964	803	602

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

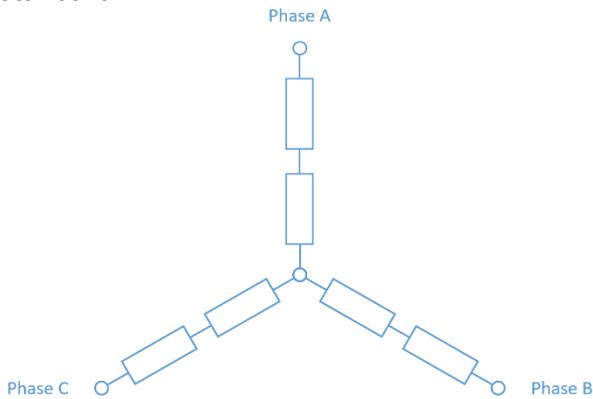
\*\*  $n_{max, mech} = 7,900$  rpm must not be exceeded.

## CHARACTERISTICS INTERCONNECTION VARIANTS

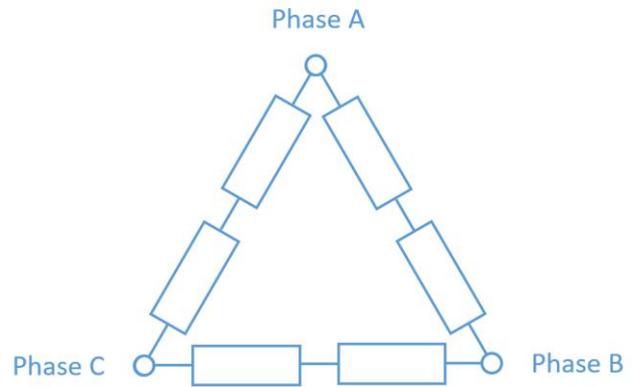
Interconnection	$U_r$ [V]	$I_r$ [A]	$k_T$ [mNm/A]	$R_{TT}$ [mΩ]	$L_{TT}$ [μH]
Star-serial	48	10.5	247	322	938
Delta-serial	28	18.2	143	107	313
Star-parallel	24	21.0	124	81	235

## AVAILABLE INTERCONNECTION VARIANTSS

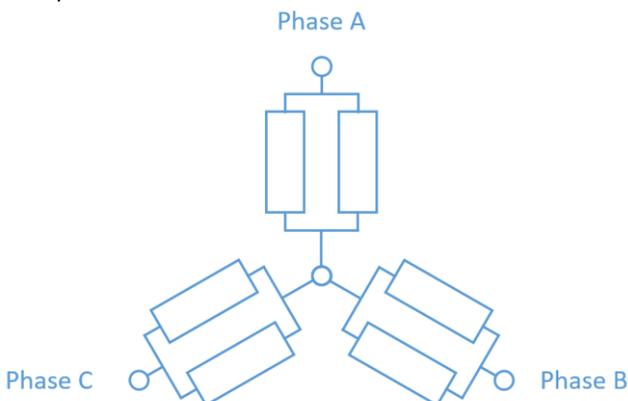
Star-serial



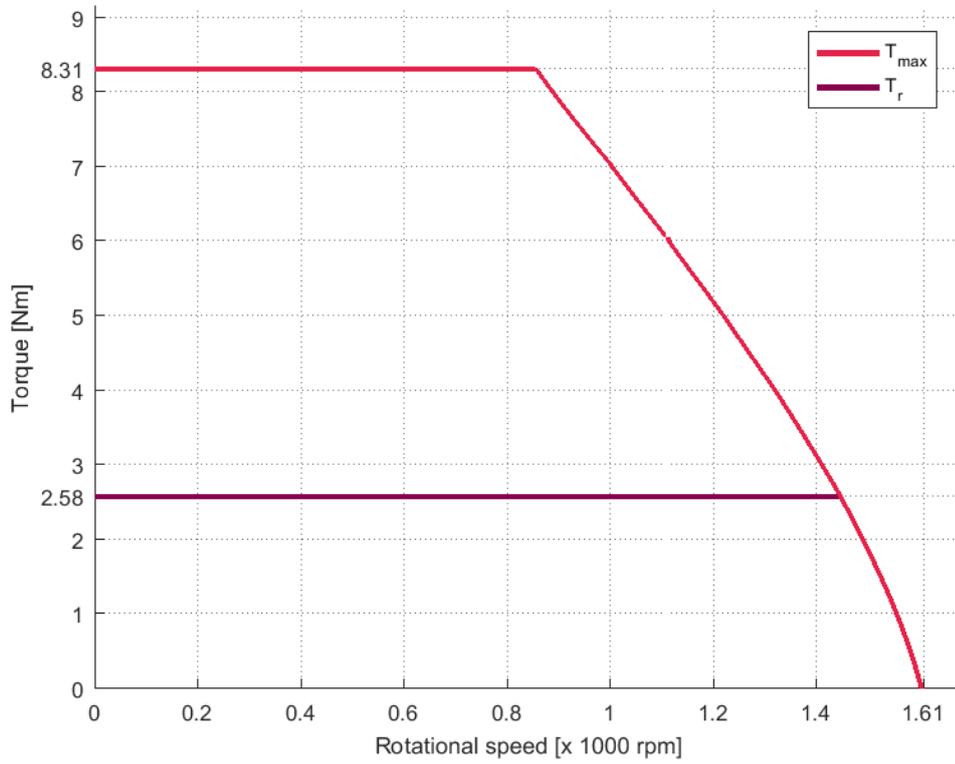
Delta-serial



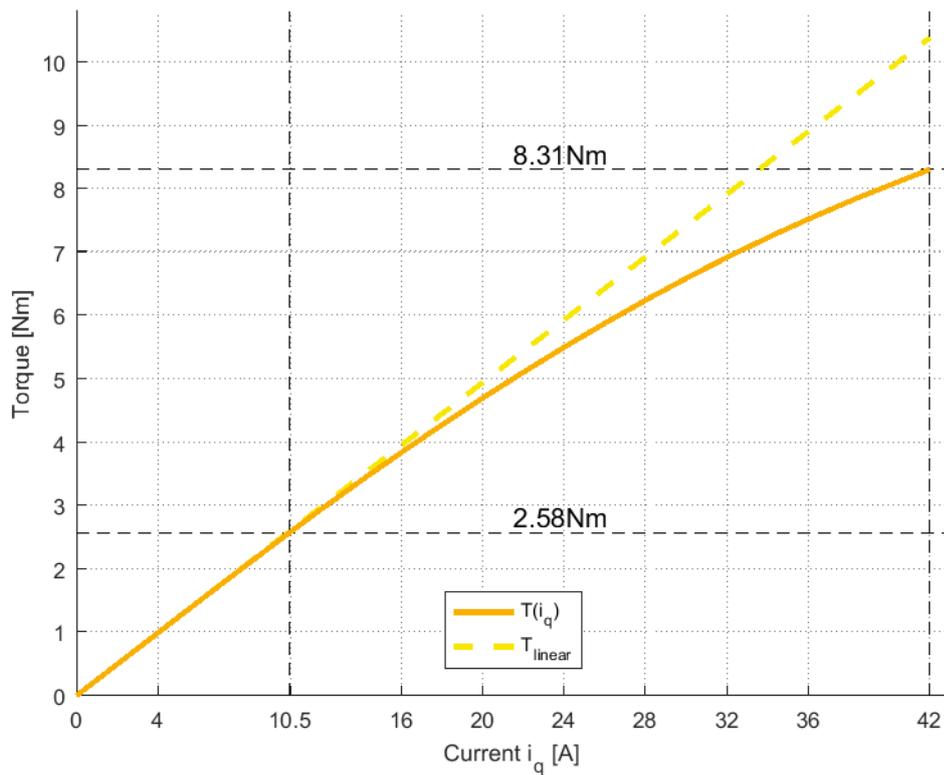
Star-parallel



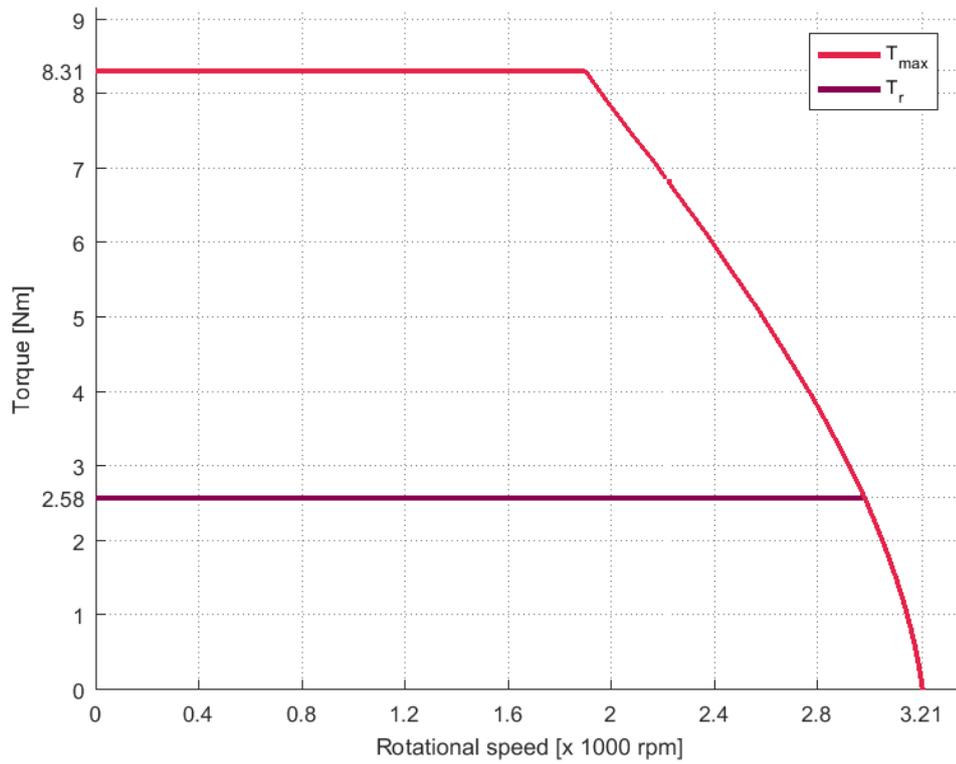
## T/N-DIAGRAM ILM-E85X23 STAR-SERIAL @ 22 °C



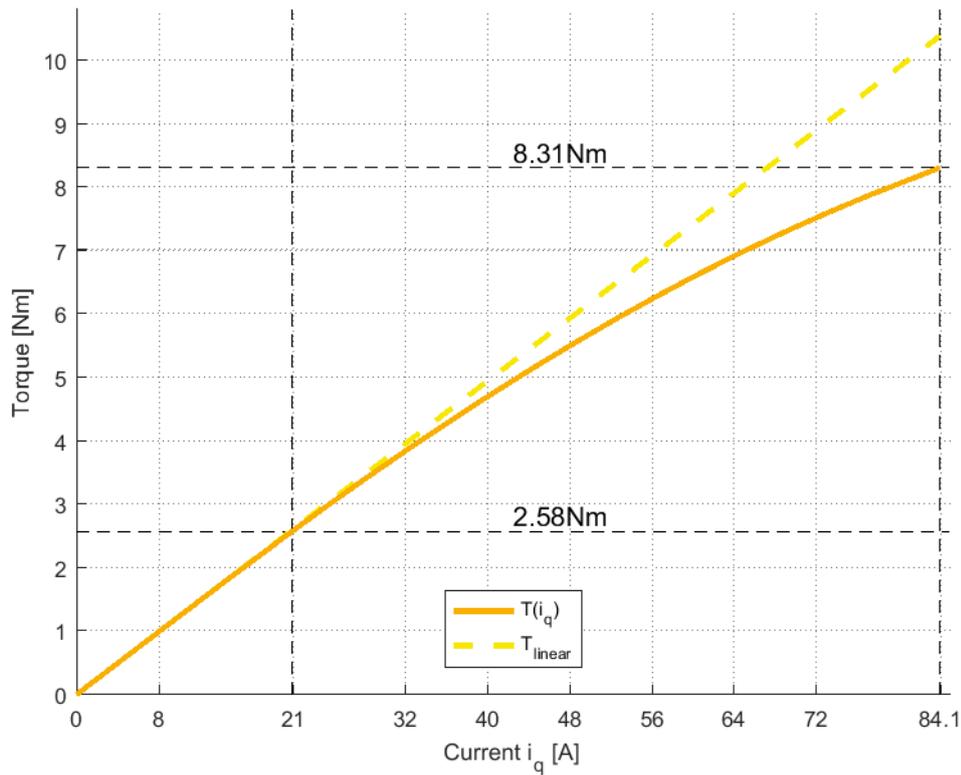
## T/I-DIAGRAM ILM-E85X23 STAR-SERIAL @ 22 °C



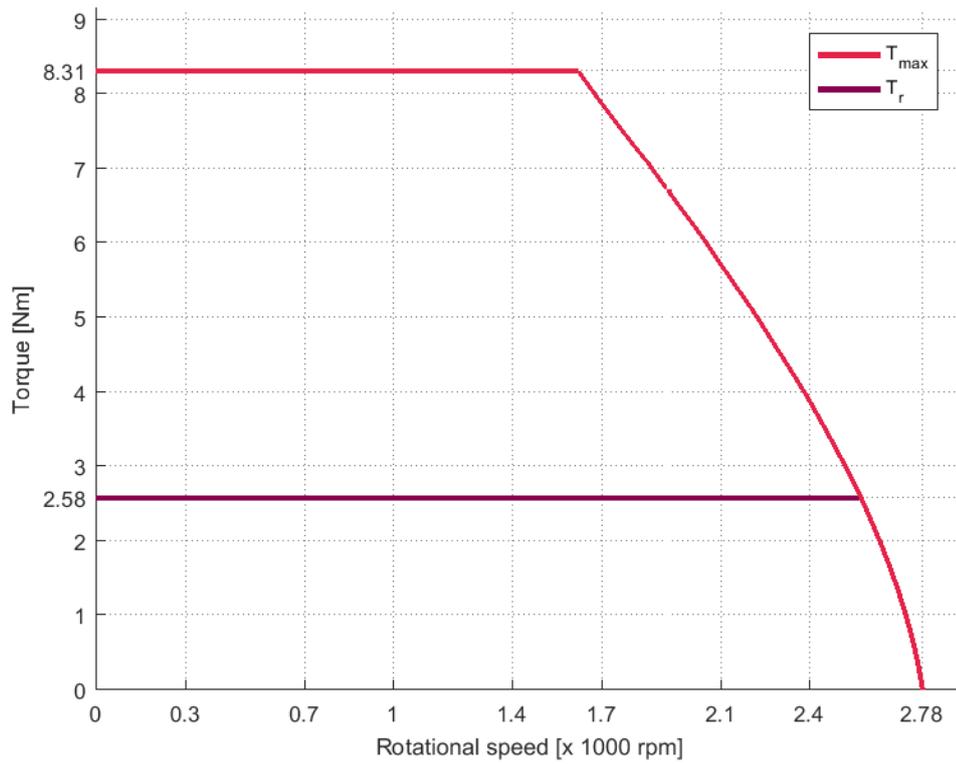
## T/N-DIAGRAM ILM-E85x23 STAR-PARALLEL @ 22 °C



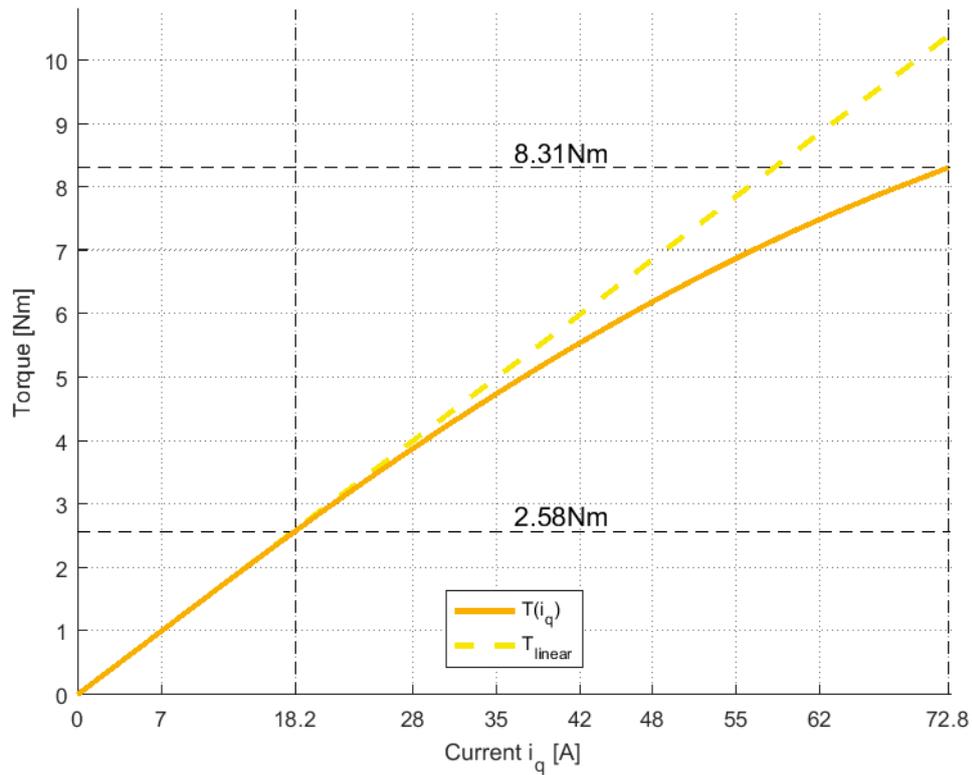
## T/I-DIAGRAM ILM-E85X23 STAR-PARALLEL @ 22 °C



## T/N-DIAGRAM ILM-E85x23 DELTA-SERIAL @ 22 °C



## T/I-DIAGRAM ILM-E85X23 DELTA-SERIAL @ 22 °C



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