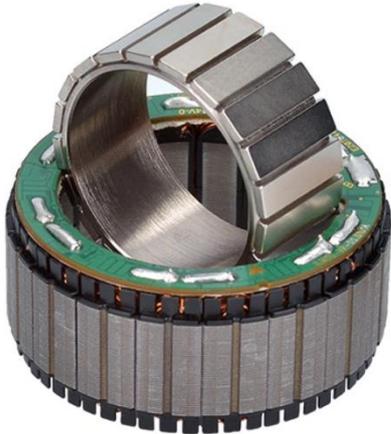




# Motor Parameters ILM-E50x14



## PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

Power P	[W]	209
Rated torque $T_r$	[Nm]	0.53
Peak torque $T_{max}$ @ 20% linearity deviation	[Nm]	1.72
Rated voltage $U_r$	[V]	48
Rotation speed $n_{max}$ *	[rpm]	3768
Rated current $I_r$ (phase current amplitude)	[A]	5.1
Copper losses $P_{L,r}$ @ $T_r$ and 20°C	[W]	16.4
Torque constant $k_T$ @ 20°C	[mNm/A]	105
Motor constant $k_M$ @ 20°C	[Nm/ $\sqrt{W}$ ]	0.13
Terminal resistance $R_{TT}$ @ 20°C	[m $\Omega$ ]	841
Terminal inductance $L_{TT}$	[ $\mu$ H]	802
Rotor inertia J	[kgcm <sup>2</sup> ]	0.093
Number of pole pairs	-	10
Max. efficiency $\eta$	%	-
Weight m	[g]	134.75
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]	3768	2826	1884	1130	942	707
Delta-serial $n_{max}^*$ [rpm]	6526	4895	3263	1958	1632	1224
Star-parallel $n_{max}^*$ [rpm]	7536	5652	3768	2261	1884	1413

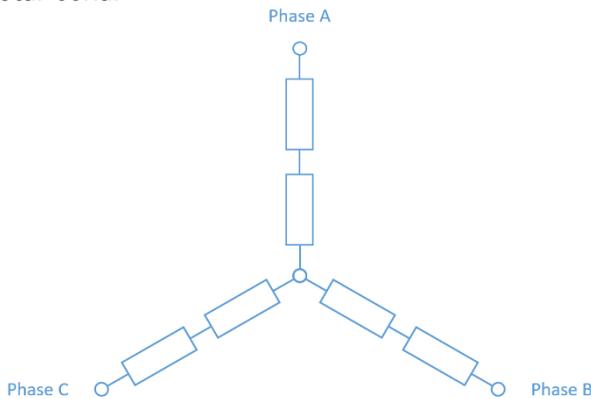
\* Theoretical no-load rotation speeds at indicated voltage. Mechanical limits apply and must not be exceeded. Variations can arise from operation with different inverters.

## CHARACTERISTICS INTERCONNECTION VARIANTS

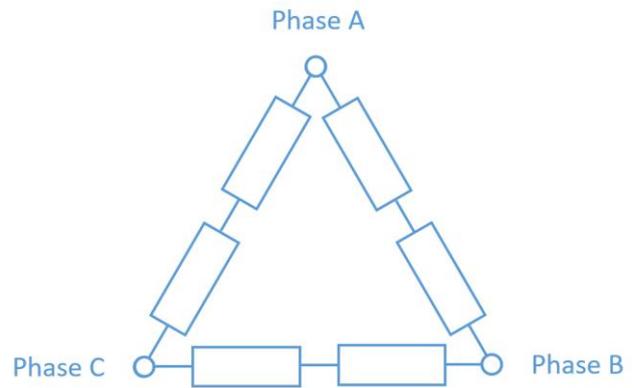
Interconnection	$U_r$ [V]	$I_r$ [A]	$k_T$ [mNm/A]	$R_{TT}$ [mΩ]	$L_{TT}$ [μH]
Star-serial	48	5.10	105	841	802
Delta-serial	28	8.84	61	280	267
Star-parallel	24	10.2	53	210	201

## AVAILABLE INTERCONNECTION VARIANTS

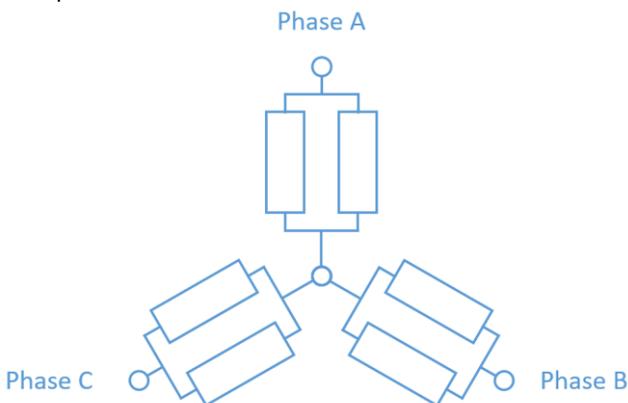
Star-serial



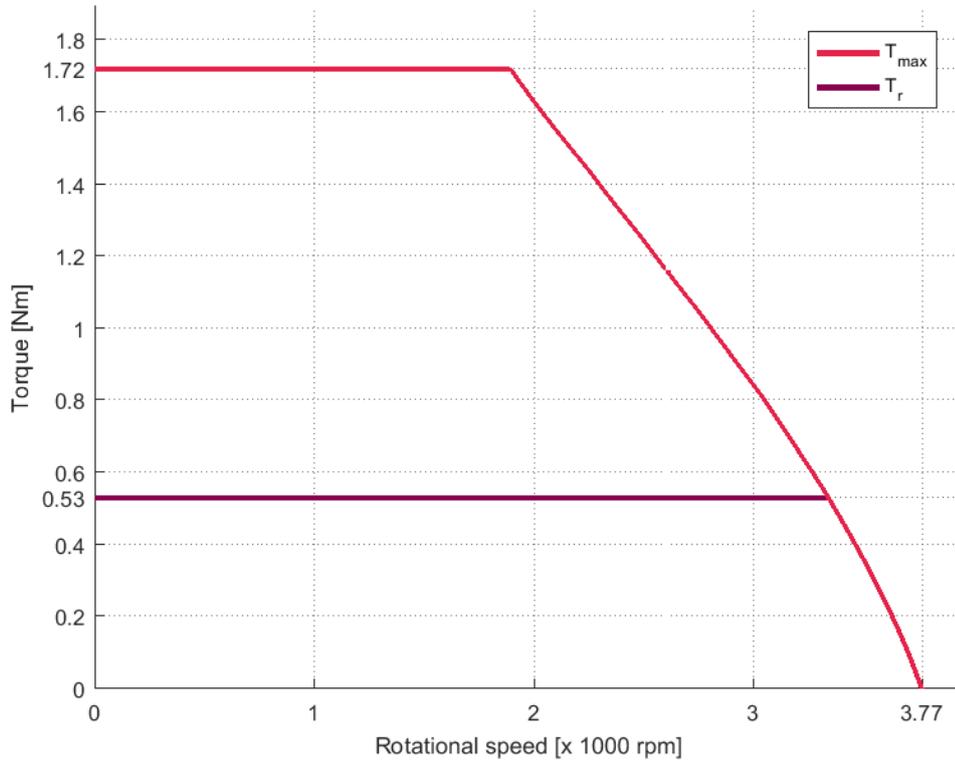
Delta-serial



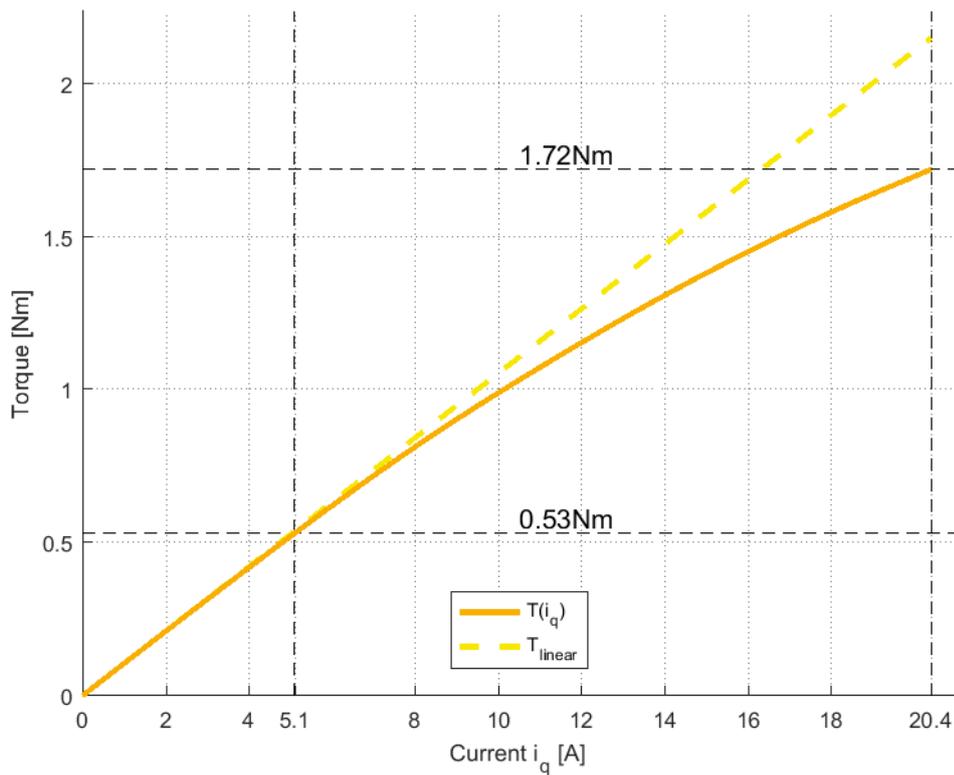
Star-parallel



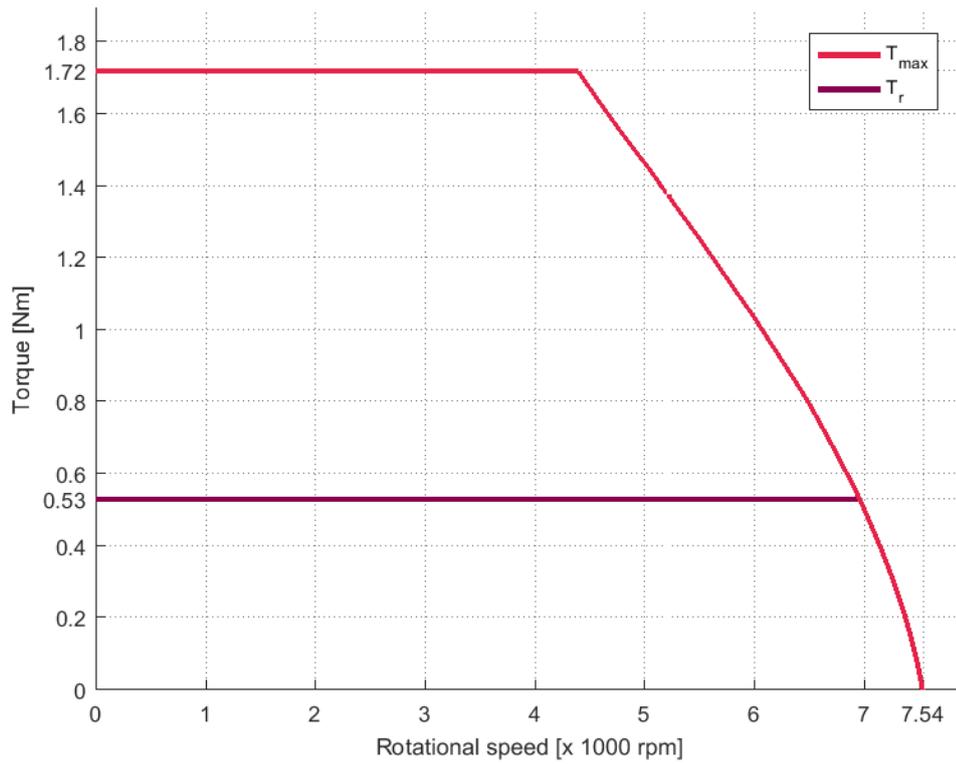
## T/N-DIAGRAM ILM-E50X14 STAR-SERIAL @ 22 °C



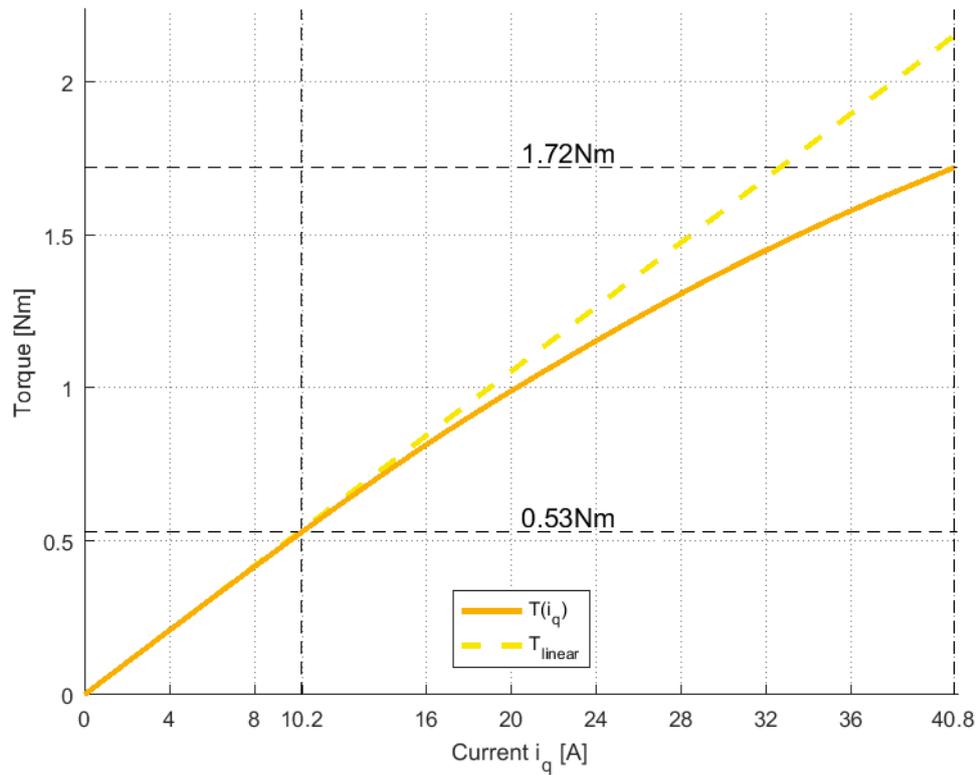
## T/I-DIAGRAM ILM-E50X14 STAR-SERIAL @ 22 °C



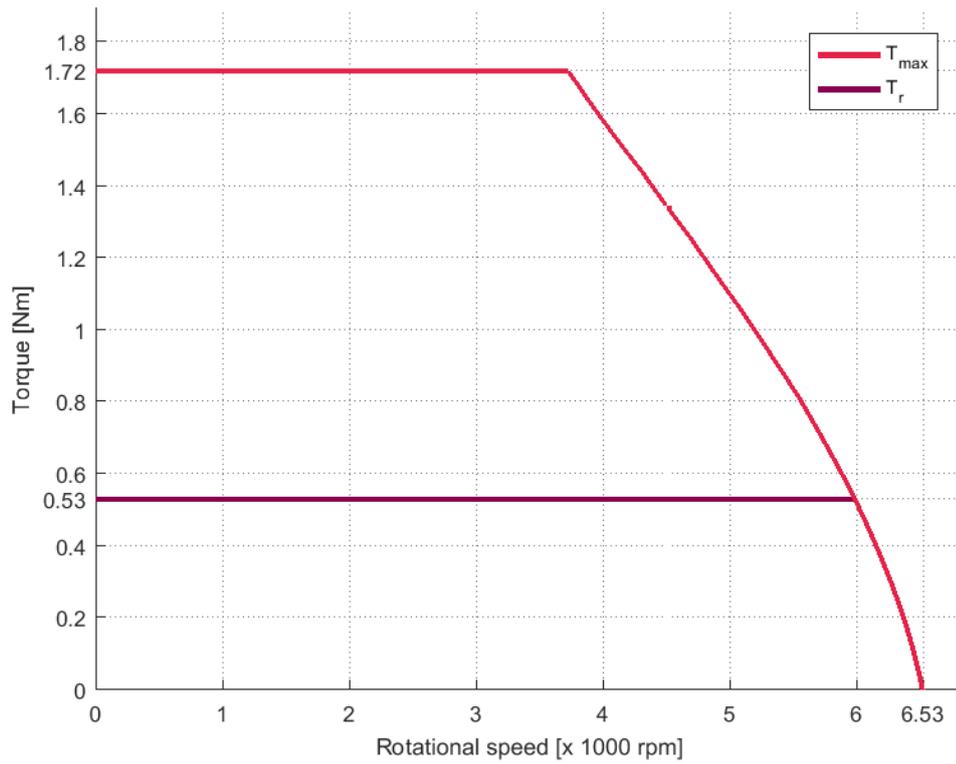
## T/N-DIAGRAM ILM-E50X14 STAR-PARALLEL @ 22 °C



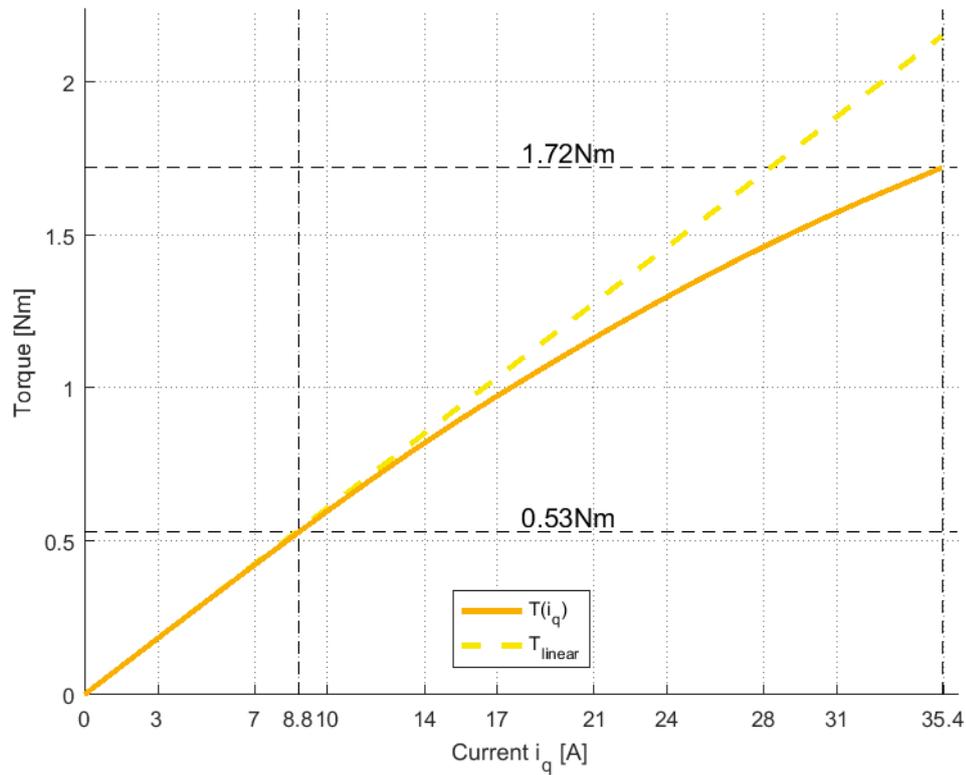
## T/I-DIAGRAM ILM-E50X14 STAR-PARALLEL @ 22 °C



## T/N-DIAGRAM ILM-E50X14 DELTA-SERIAL @ 22 °C



## T/I-DIAGRAM ILM-E50X14 DELTA-SERIAL @ 22 °C



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