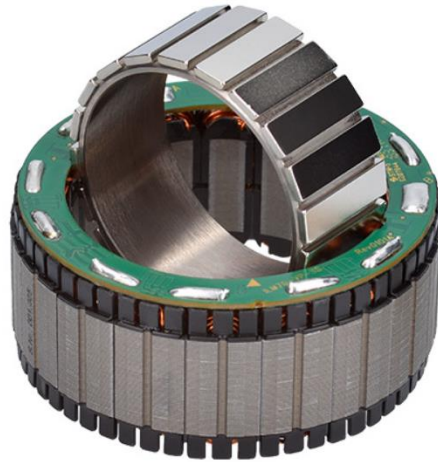




# Motor Parameters ILM-E70x18



## PERFORMANCE CHARACTERISTICS

(INTERCONNECTION STAR-SERIAL)

|   |                      |       |
|---|----------------------|-------|
| Power P   | [W]                  | 253   |
| Rated torque $T_r$                              | [Nm]                 | 1.21  |
| Peak torque $T_{max}$ @ 20% linearity deviation | [Nm]                 | 3.92  |
| Rated voltage $U_r$                             | [V]                  | 48    |
| Rotation speed $n_{max}$ *                      | [rpm]                | 2000  |
| Rated current $I_r$ (phase current amplitude)   | [A]                  | 6.18  |
| Copper losses $P_{L,r}$ @ $T_r$ and 20°C        | [W]                  | 20.4  |
| Torque constant $k_T$ @ 20°C                    | [mNm/A]              | 198   |
| Motor constant $k_M$ @ 20°C                     | [Nm/√W]              | 0.271 |
| Terminal resistance $R_{TT}$ @ 20°C             | [mΩ]                 | 713   |
| Terminal inductance $L_{TT}$                    | [μH]                 | 1454  |
| Rotor inertia J                                 | [kgcm <sup>2</sup> ] | 0.327 |
| Number of pole pairs                            | -                    | 10    |
| Max. efficiency $\eta$                          | %                    | 89    |
| Weight m  | [g]                  | 292   |
| 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]   | 2000 | 1500 | 1,000 | 600  | 500  | 375 |
| Delta-serial $n_{max}^*$ [rpm]  | 3464 | 2598 | 1732  | 1039 | 866  | 650 |
| Star-parallel $n_{max}^*$ [rpm] | 4000 | 3000 | 2000  | 1200 | 1000 | 750 |

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

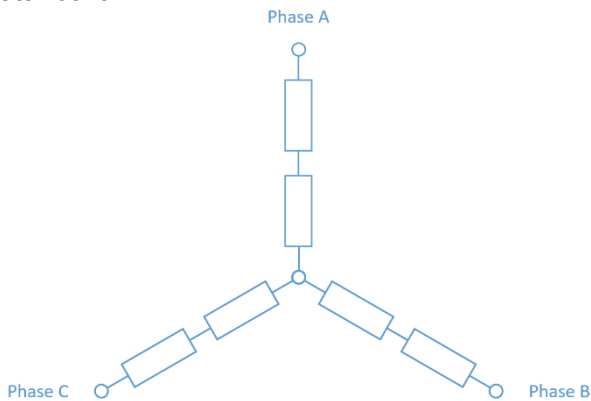
\*\*  $n_{max, mech} = 7,900$  rpm must not be exceeded.

## CHARACTERISTICS INTERCONNECTION VARIANTS

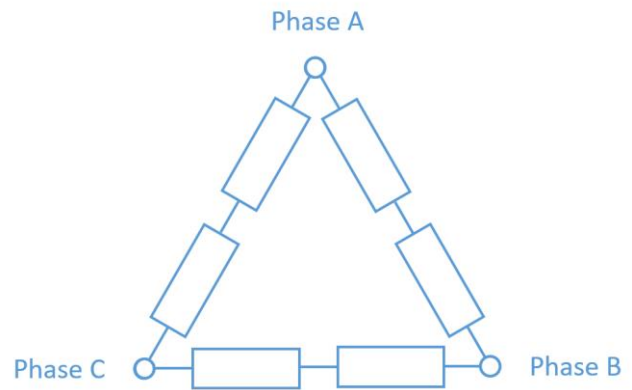
| Interconnection | $U_r$ [V] | $I_r$ [A] | $k_T$ [mNm/A] | $R_{TT}$ [mΩ] | $L_{TT}$ [μH] |
|-----------------|-----------|-----------|---------------|---------------|---------------|
| Star-serial     | 48        | 6.18      | 198           | 713           | 1454          |
| Delta-serial    | 28        | 10.7      | 115           | 238           | 485           |
| Star-parallel   | 24        | 12.4      | 99            | 178           | 364           |

## AVAILABLE INTERCONNECTION VARIANTS

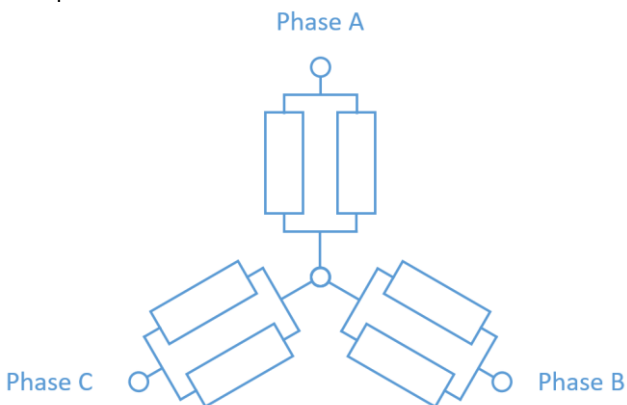
Star-serial



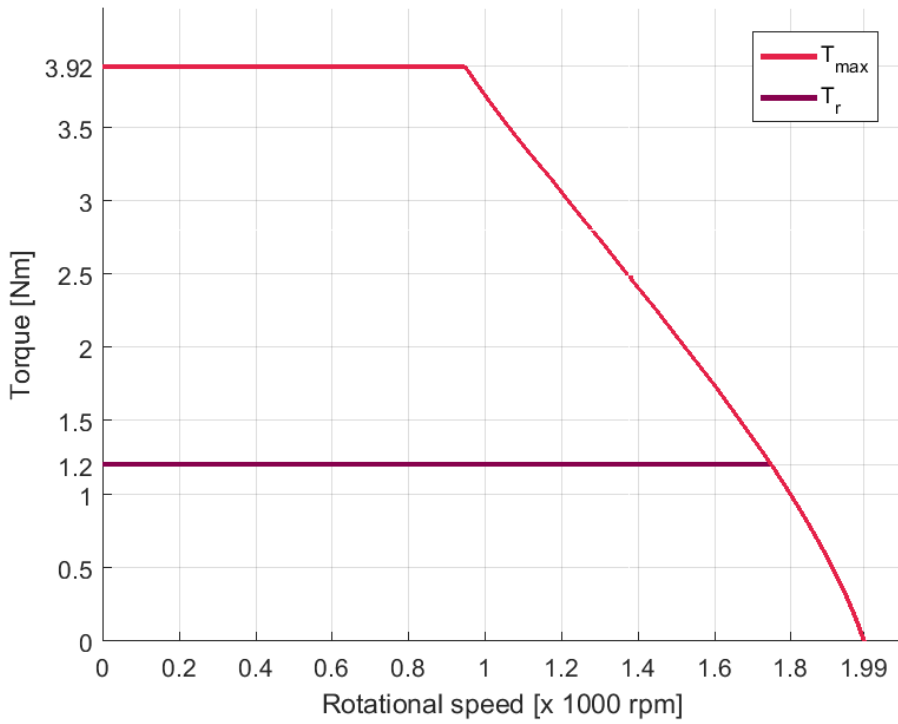
Delta-serial



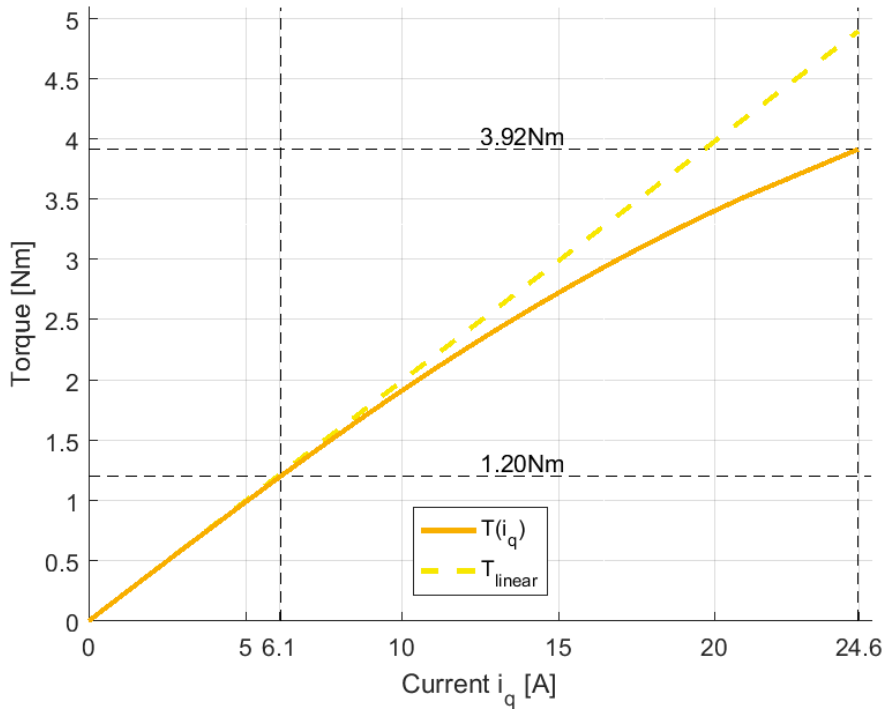
Star-parallel



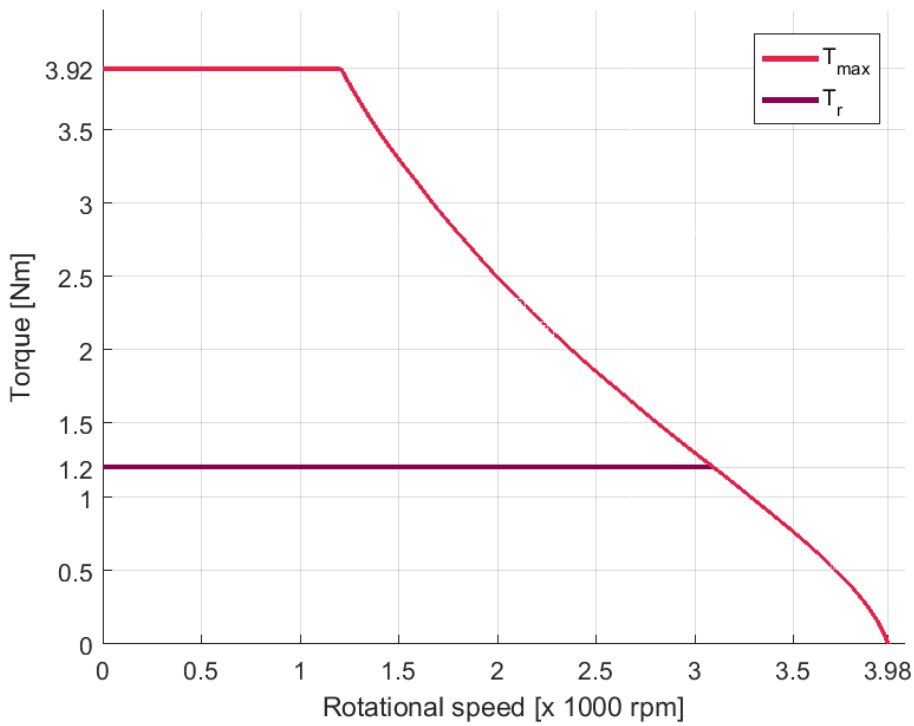
### T/N-DIAGRAM ILM-E70X18 STAR-SERIAL @ 22 °C



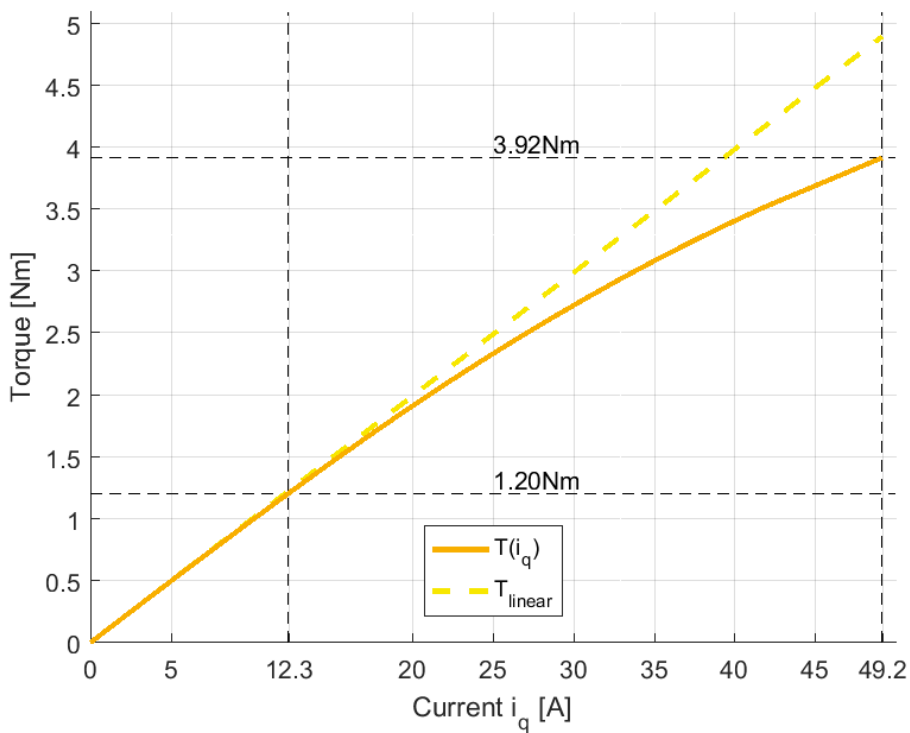
### T/I-DIAGRAM ILM-E70X18 STAR-SERIAL @ 22 °C



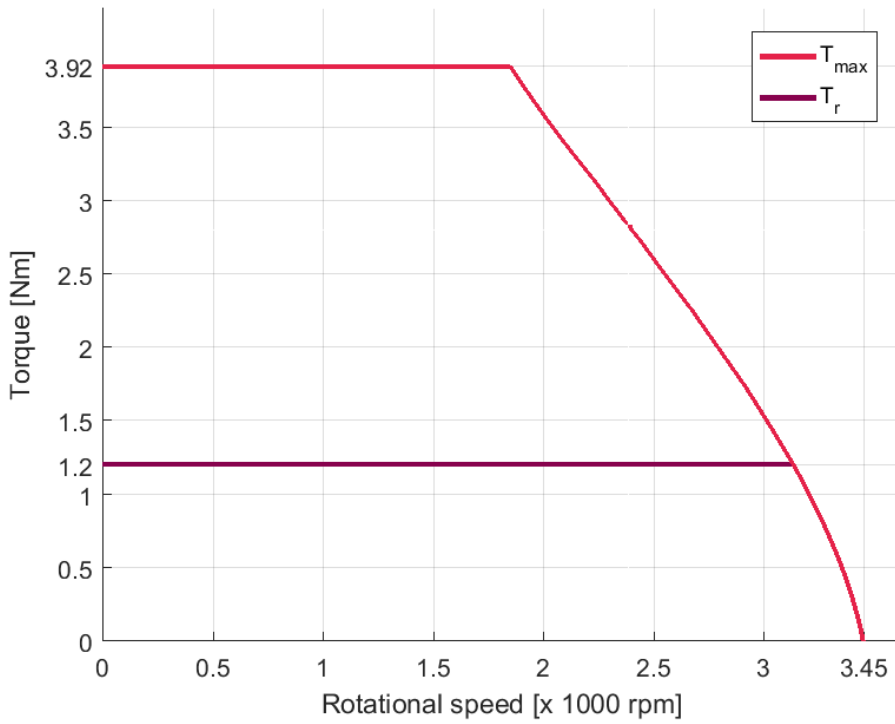
### T/N-DIAGRAM ILM-E70X18 STAR-PARALLEL @ 22 °C



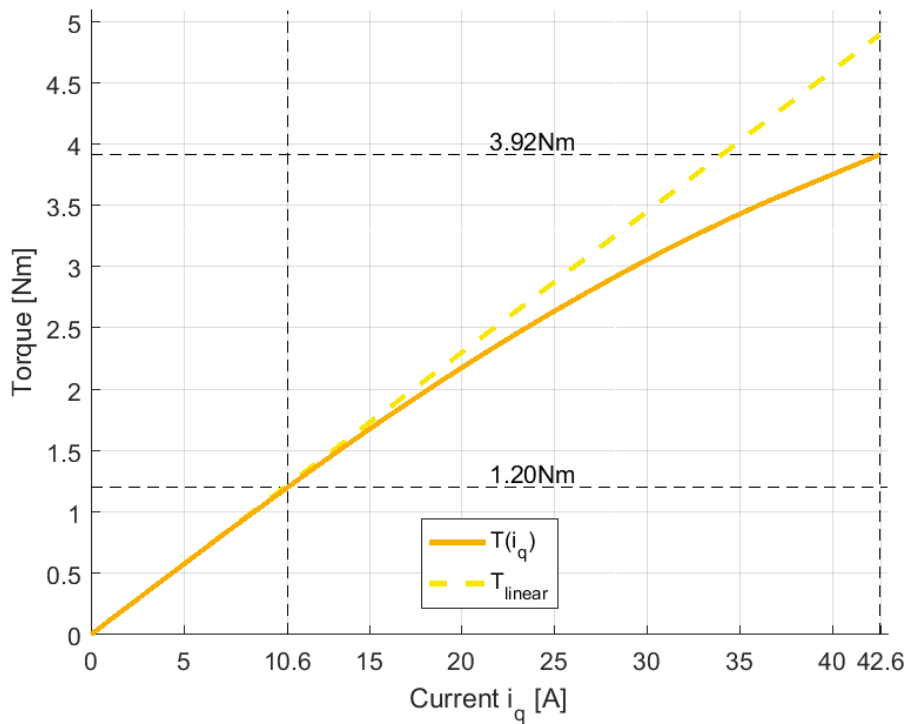
### T/I-DIAGRAM ILM-E70X18 STAR- PARALLEL @ 22 °C



## T/N-DIAGRAM ILM-E70X18 DELTA-SERIAL @ 22 °C



## T/I-DIAGRAM ILM-E70X18 DELTA-SERIAL @ 22 °C



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