

# Motor Parameters ILM25x18



## PERFORMANCE CHARACTERISTICS (INTERCONNECTION STAR-SERIAL)

|                                                 |                      |         |
|-------------------------------------------------|----------------------|---------|
| Power P                                         | [W]                  | 95.7    |
| Rated torque $T_r$                              | [Nm]                 | 0.145   |
| Peak torque $T_{max}$ @ 20% linearity deviation | [Nm]                 | 0.474   |
| Rated voltage $U_r$                             | [V]                  | 24      |
| Rotation speed $n_{max}^*$                      | [rpm]                | 6288    |
| Rated current $I_r$ (phase current amplitude)   | [A]                  | 4.69    |
| Copper losses $P_{L,r}$ @ $T_r$ and 20°C        | [W]                  | 20.5    |
| Torque constant $k_T$ @ 20°C                    | [mNm/A]              | 31.6    |
| Motor constant $k_M$ @ 20°C                     | [Nm/ $\sqrt{W}$ ]    | 0.0327  |
| Terminal resistance $R_{TT}$ @ 20°C             | [m $\Omega$ ]        | 1240    |
| Terminal inductance $L_{TT}$                    | [ $\mu$ H]           | 636     |
| Rotor inertia J                                 | [kgcm <sup>2</sup> ] | 0.00498 |
| Number of pole pairs                            | -                    | 7       |
| Max. efficiency $\eta$                          | %                    | 86      |
| Weight m                                        | [g]                  | 54      |

\* 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]   | 12578** | 9433    | 6288  | 3773 | 3144 | 2358 |
| star-parallel $n_{max}^*$ [rpm] | 25156** | 18867** | 12578 | 7547 | 6289 | 4717 |

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

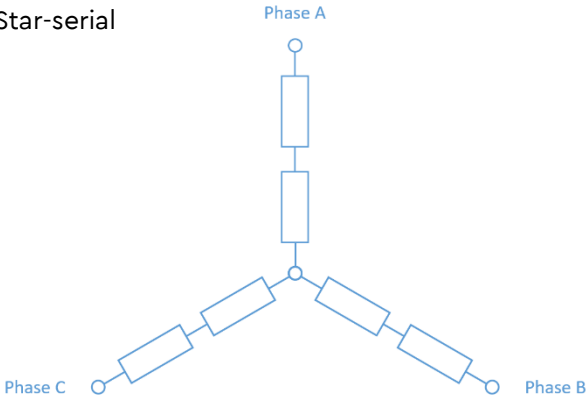
\*\*  $n_{max, mech} = 12000$  rpm must not be exceeded.

CHARACTERISTICS INTERCONNECTION VARIANTS

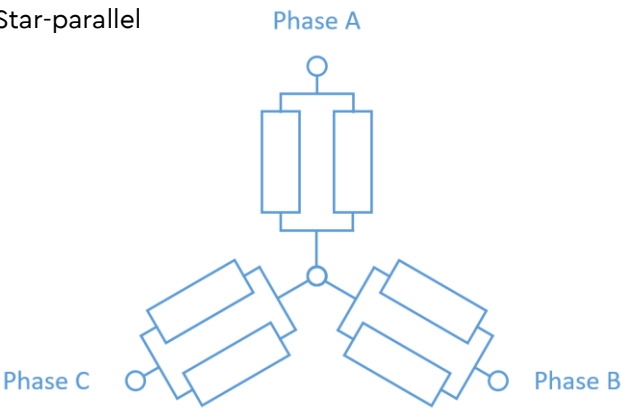
| Interconnection | $U_r$ [V] | $I_r$ [A] | $k_T$ [mNm/A] | $R_{TT}$ [mΩ] | $L_{TT}$ [μH] |
|-----------------|-----------|-----------|---------------|---------------|---------------|
| star-serial     | 24        | 4.7       | 31.6          | 1240          | 626           |
| star-parallel   | 12        | 9.4       | 15.8          | 310           | 159           |

AVAILABLE INTERCONNECTION VARIANTS

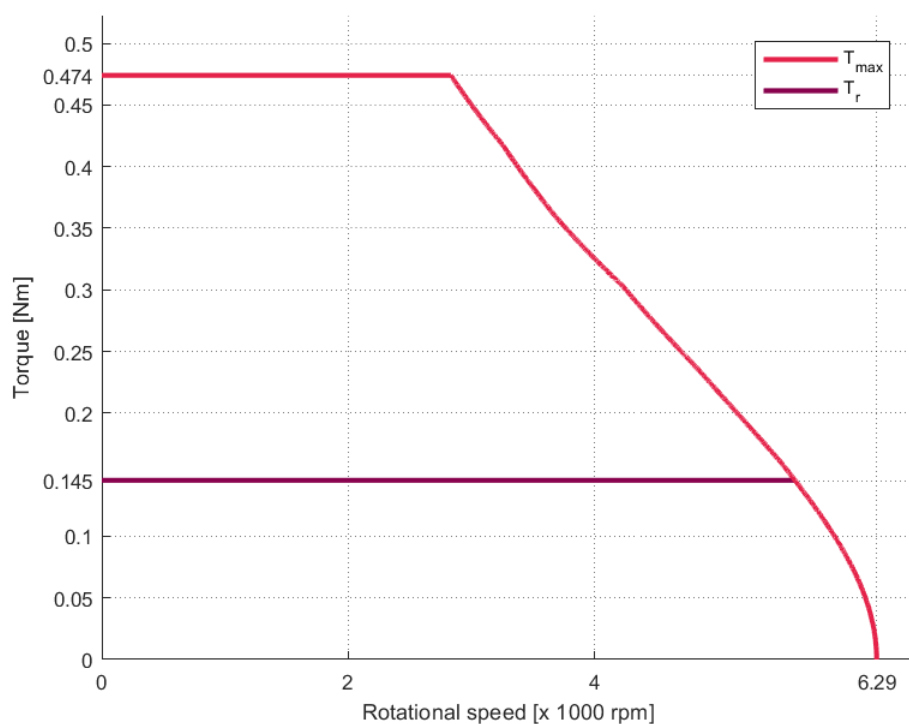
Star-serial



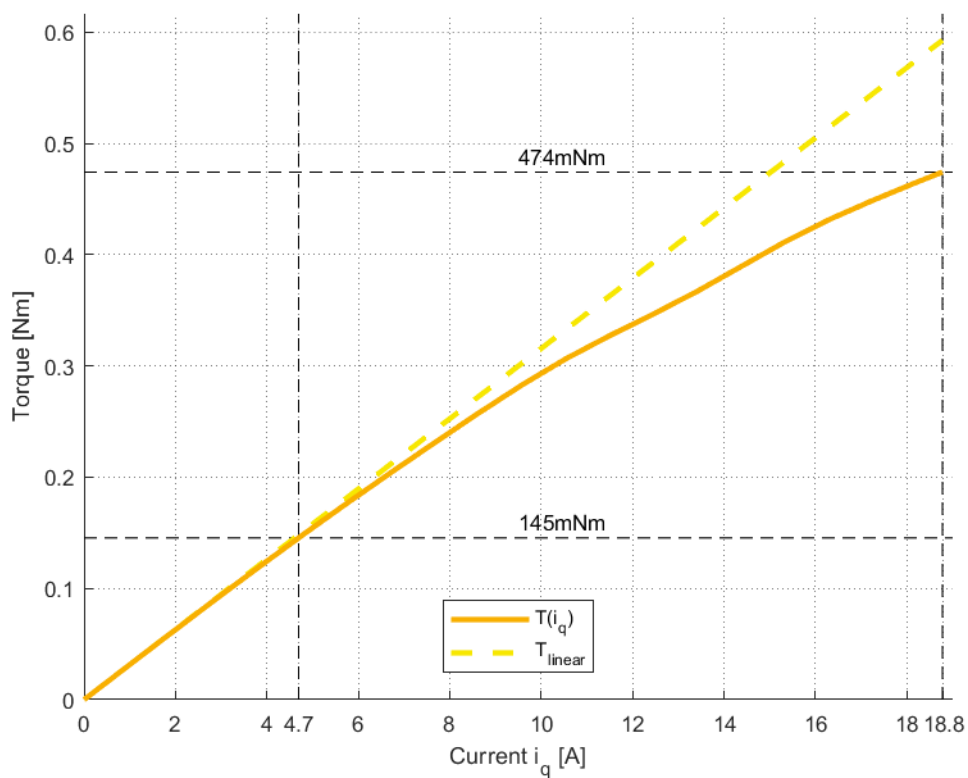
Star-parallel



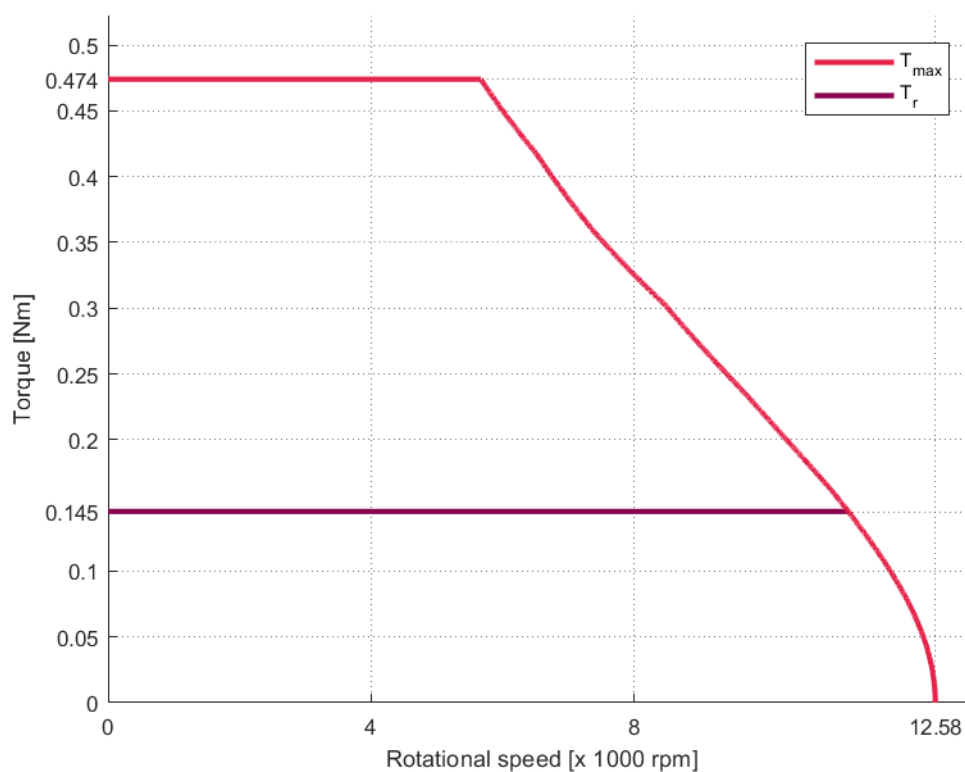
## T/N-DIAGRAM ILM25X18 STAR-SERIAL @ 22 °C



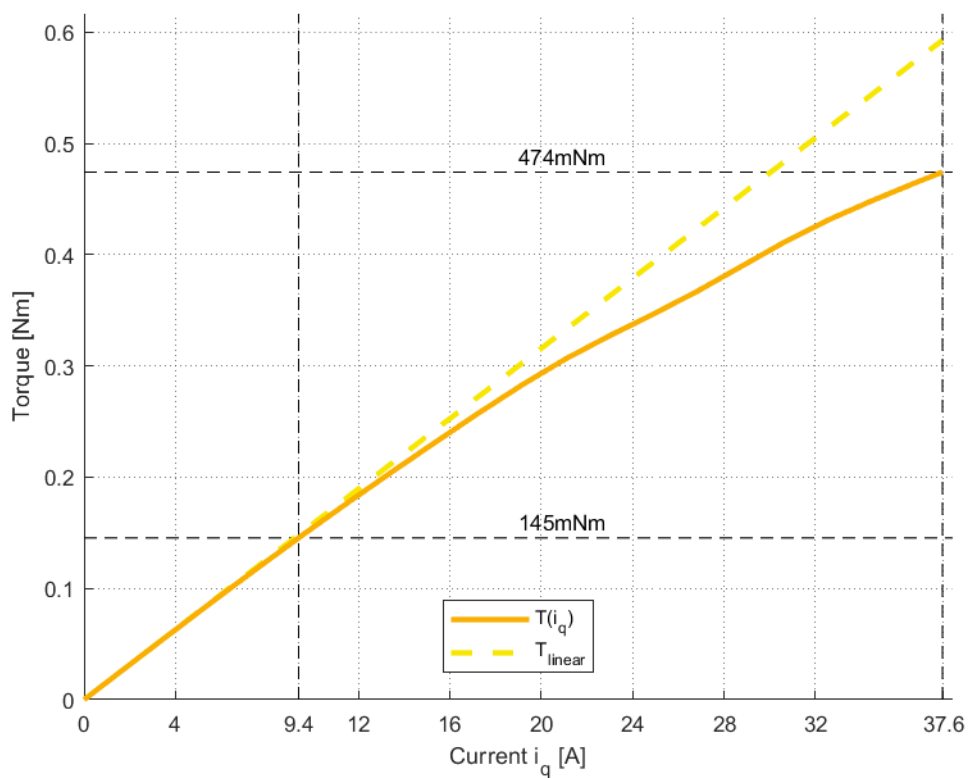
## T/I-DIAGRAM ILM25X18 STAR-SERIAL @ 22 °C



## T/N-DIAGRAM ILM25X18 STAR-PARALLEL @ 22 °C



## T/I-DIAGRAM ILM25X18 STAR-PARALLEL @ 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](mailto:INFO@TQ-ROBODRIVE.COM)

INTERNET [WWW.TQ-GROUP.COM](http://WWW.TQ-GROUP.COM)