

Table 3-24 1FT6105 natural cooling

| <b>1FT6105</b>                    |                 |                  |              |              |  |
|-----------------------------------|-----------------|------------------|--------------|--------------|--|
| <b>Technical data</b>             | <b>Code</b>     | <b>Units</b>     | <b>-8AB7</b> | <b>-8AC7</b> |  |
| <b>Engineering data</b>           |                 |                  |              |              |  |
| Rated speed                       | $n_N$           | rpm              | 1500         | 2000         |  |
| Number of poles                   | 2p              |                  | 8            | 8            |  |
| Rated torque (100 K)              | $M_{N(100\ K)}$ | Nm               | 41           | 38           |  |
| Rated current (100K)              | $I_N$           | A                | 14.5         | 17.6         |  |
| Stall torque (60K)                | $M_{0(60\ K)}$  | Nm               | 42           | 42           |  |
| Stall torque (100K)               | $M_{0(100\ K)}$ | Nm               | 50           | 50           |  |
| Stall current (60K)               | $I_{0(60\ K)}$  | A                | 13.1         | 17.6         |  |
| Stall current (100K)              | $I_{0(100\ K)}$ | A                | 16           | 21.4         |  |
| Moment of inertia (with brake)    | $J_{mot}$       | $10^{-4}\ kgm^2$ | 199          | 199          |  |
| Moment of inertia (without brake) | $J_{mot}$       | $10^{-4}\ kgm^2$ | 168          | 168          |  |
| <b>Optimum operating point</b>    |                 |                  |              |              |  |
| Optimum speed                     | $n_{opt}$       | rpm              | 1500         | 2000         |  |
| Optimum power                     | $P_{opt}$       | kW               | 6.44         | 7.96         |  |
| <b>Limiting data</b>              |                 |                  |              |              |  |
| Max. permissible speed (mech.)    | $n_{max}$       | rpm              | 5600         | 5600         |  |
| Maximum torque                    | $M_{max}$       | Nm               | 140          | 140          |  |
| Maximum current                   | $I_{max}$       | A                | 77           | 103          |  |
| <b>Physical constants</b>         |                 |                  |              |              |  |
| Torque constant                   | $k_T$           | Nm/A             | 3.13         | 2.34         |  |
| Voltage constant                  | $k_E$           | V/1000 rpm       | 199          | 149          |  |
| Winding resistance at 20 °C       | $R_{ph}$        | Ohm              | 0.39         | 0.22         |  |
| Rotating field inductance         | $L_D$           | mH               | 8.4          | 4.7          |  |
| Electrical time constant          | $T_{el}$        | ms               | 22           | 21           |  |
| Shaft torsional stiffness         | $c_t$           | Nm/rad           | 11300        | 11300        |  |
| Mechanical time constant          | $T_{mech}$      | ms               | 0 2.0        | 0 2.0        |  |
| Thermal time constant             | $T_{th}$        | min              | 45           | 45           |  |
| Weight with brake                 | $m$             | kg               | 44           | 44           |  |
| Weight without brake              | $m$             | kg               | 39.5         | 39.5         |  |

e-Servo

