Table 7-26 1FK7044 HD

| Technical data | Code | Unit | –7AH71 | |
|---|---|---|---|---|
| Configuration data | | | | |
| Rated speed | $n_N$ | RPM | 4500 | |
| No. of poles | 2p | | 6 | |
| Rated torque (100 K) | $M_{N\ (100\ K)}$ | Nm | 3,0 | |
| Rated current (100 K) | $I_N$ | A | 4,9 | |
| Static torque (60 K) | $M_{0\ (60\ K)}$ | Nm | 3,0 | |
| Static torque (100 K) | $M_{0\ (100\ K)}$ | Nm | 4,0 | |
| Stall current (60 K) | $I_{0\ (60\ K)}$ | A | 4,6 | |
| Stall current (100 K) | $I_{0\ (100\ K)}$ | A | 6,3 | |
| Moment of inertia (with brake) | $J_{MotBr}$ | $10^{-4}$ kgm$^2$ | 1,41 | |
| Moment of inertia (without brake) | $J_{Mot}$ | $10^{-4}$ kgm$^2$ | 1,28 | |
| Optimum operating point | $n_{opt}$ | RPM | 4500 | |
| | $P_{opt}$ | kW | 1,41 | |
| Optimum speed | $n_{max\ mech}$ | RPM | 8000 | |
| Optimum power | $n_{max\ Inv}$ | RPM | 8000 | |
| Limiting data | $M_{max}$ | Nm | 12 | |
| Max. permissible speed (mech.) | $I_{max}$ | A | 20 | |
| Max. permissible speed (converter) | | | | |
| Max. torque | $k_T$ | Nm/A | 0,63 | |
| Max. current | $k_E$ | V/1000 RPM | 42 | |
| Physical constants | $R_{Str}$ | Ohm | 0,81 | |
| Torque constant | $L_D$ | mH | 11 | |
| Voltage constant | $T_{el}$ | ms | 13,5 | |
| Winding resistance at 20°C | $T_{mech}$ | ms | 0,78 | |
| Cyclic inductance | $T_{th}$ | min | 45 | |
| Electrical time constant | $c_t$ | Nm/rad | 9500 8,3 | |
| Mechanical time constant | $m_{MotBr}$ | kg | 7,7 | |
| Thermal time constant | $m_{Mot}$ | kg | | |
| Shaft torsional stiffness | | | 9 | |
| Weight with brake | | A | 18 | |
| Weight without brake | | A | 11 | |
| | | Nm | | |
| Recommended motor module 6SL312_-_TE21-0AA_ | | | | |
| Rated current converter | $I_{N\ Inv}$ | | | |
| Max. current converter | $I_{max\ Inv}$ | | | |
| Max. torque at $I_{max\ Inv}$ | $M_{max\ Inv}$ | | | |

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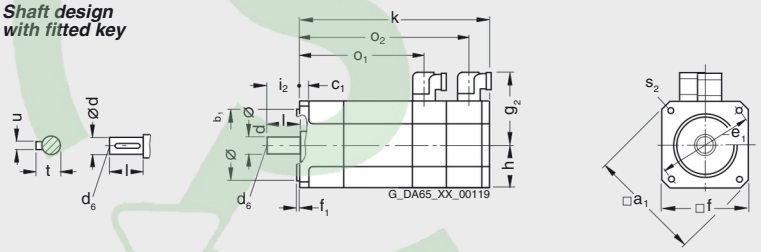
## 8.1.2 1FK7 High Dynamic motors

| For motor | | Dimensions in mm (in) | | | | | | | | | | Resolver | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | without/with brake | | |
| Shaft height | Type | DIN IEC | $a_1$ P | $b_1$ N | $c_1$ LA | $e_1$ M | f AB | $f_1$ T | $g_2$ – | h H | $i_2$ – | $s_2$ S | k LB | $o_1$ – | $o_2$ – |
| **1FK7 High Dynamic, type IM B5, natural cooling, with connector, with/without brake** | | | | | | | | | | | | | | |
| 36 | 1FK7033-7 | | 92 (3.62) | 60 (2.36) | 8 (0.31) | 75 (2.95) | 72 (2.83) | 3 (0.12) | 78 (3.07) | 36 (1.42) | 30 (1.18) | 6.5 (0.26) | 170/195 (6.69/7.68) | 108/108 (4.25/4.25) | 145/170 (5.71/6.69) |
| 48 | 1FK7043-7 | | 120 (4.72) | 80 (3.15) | 10 (0.39) | 100 (3.94) | 96 (3.78) | 3 (0.12) | 90 (3.54) | 48 (1.89) | 40 (1.57) | 7 (0.28) | 191/220 (7.52/8.66) | 130/130 (5.12/5.12) | 163/192 (6.42/7.56) |
| | 1FK7044-7 | | | | | | | | | | | 7 (0.28) | 216/245 (8.51/9.65) | 155/155 (6.10/6.10) | 188/217 (7.40/8.54) |
| 63 | 1FK7061-7 | | 155 (6.10) | 110 (4.33) | 10 (0.39) | 130 (5.12) | 126 (4.96) | 3.5 (0.14) | 105 (4.13) | 63 (2.48) | 50 (1.97) | 9 (0.35) | 185/228 (7.28/8.98) | 121/121 (4.76/4.76) | 153/196 (6.02/7.72) |
| | 1FK7064-7 | | | | | | | | | | | | 249/292 (9.80/11.5) | 185/185 (7.28/7.28) | 217/260 (8.54/10.24) |
| 80 | 1FK7085-7 | | 186 (7.32) | 130 (5.12) | 13 (0.51) | 165 (6.50) | 155 (6.10) | 3.5 (0.14) | 141.5 (5.57) | 77.5 (3.05) | 60 (2.36) | 11 (0.43) | 261/304 (10.28/11.97) | 190/191 (7.48/7.52) | 229/272 (9.02/10.71) |
| | 1FK7086-7 | | | | | | | | 140.5 (5.53) | | | | 261/303 (10.28/11.93) | 192/192 (7.56/7.56) | 229/272 (9.02/10.71) |

| | | | Basic absolute encoder (EnDat) (shaft height 48 and larger), Incremental encoder sin/cos1 $V_{pp}$ | | | Absolute encoder (EnDat) | | | DE shaft extension | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | without/with brake | | | without/with brake | | | | | | | |
| Shaft height | Type | DIN IEC | k LB | $o_1$ – | $o_2$ – | k LB | $o_1$ – | $o_2$ – | d D | $d_6$ – | l E | t GA | u F |
| 36 | 1FK7033-7 | | 194/219 (7.64/8.62) | 109/109 (4.29/4.29) | 144/168 (5.67/6.61) | 194/219 (7.64/8.62) | 109/109 (4.29/4.29) | 144/168 (5.67/6.61) | 14 (0.55) | M5 | 30 (1.18) | 16 (0.63) | 5 (0.20) |
| 48 | 1FK7043-7 | | 212/241 (8.35/9.49) | 130/130 (5.12/5.12) | 163/192 (6.42/7.56) | 220/249 (8.66/9.80) | 130/130 (5.12/5.12) | 163/192 (6.42/7.56) | 19 (0.75) | M6 | 40 (1.57) | 21.5 (0.85) | 6 (0.24) |
| | 1FK7044-7 | | 237/266 (9.33/10.47) | 155/155 (6.10/6.10) | 188/217 (7.40/8.54) | 245/274 (9.65/10.79) | 155/155 (6.10/6.10) | 188/217 (7.40/8.54) | | | | | |
| 63 | 1FK7061-7 | | 208/251 (8.19/9.88) | 121/121 (4.76/4.76) | 154/197 (6.06/7.76) | 217/260 (8.54/10.24) | 121/121 (4.76/4.76) | 154/197 (6.06/7.76) | 24 (0.94) | M6 | 50 (1.97) | 27 (1.06) | 8 (0.31) |
| | 1FK7064-7 | | 272/315 (10.71/12.40) | 185/185 (7.28/7.28) | 218/261 (8.58/10.28) | 281/324 (11.06/12.76) | 185/185 (7.28/7.28) | 218/261 (8.58/10.28) | | | | | |
| 80 | 1FK7085-7 | | 283/326 (11.14/12.83) | 192/192 (7.56/7.56) | 229/272 (9.02/10.71) | 292/334 (11.50/13.15) | 192/192 (7.56/7.56) | 229/272 (9.02/10.71) | 32 (1.26) | M12 | 58 (2.28) | 35 (1.38) | 10 (0.39) |
| | 1FK7086-7 | | | | | | | | | | | | |

*Shaft design with fitted key*

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