

Motors

Feed motors for SINAMICS S120 Combi

1FK7 Compact/1FK7 High Inertia synchronous motors – Natural cooling

Selection and ordering data

| Static torque M_0 at $\Delta T = 100\text{ K}$ Nm | Rated speed n_{rated} | Shaft height SH | Rated power P_{rated} at $\Delta T = 100\text{ K}$ kW | 1FK7 synchronous motors Order No. | Moment of inertia of rotor | | Weight | |
|---|-----------------------------------|--------------------|--|--------------------------------------|--|---|----------------------------|-------------------------|
| | | | | | without brake J 10^{-4} kgm^2 | with brake J 10^{-4} kgm^2 | without brake m kg | with brake m kg |
| 1FK7 Compact | | | | | | | | |
| 6 | 3000 | 63 | 1.5 | 1FK7060-2AF71-1 ■■■ 1 | 7.7 | 8.7 | 7.1 | 8.5 |
| 8 | 3000 | 80 | 2.1 | 1FK7080-2AF71-1 ■■■ 1 | 14.2 | 17.5 | 10.3 | 13.3 |
| 11 | 2000 | 63 | 1.9 | 1FK7063-2AC71-1 ■■■ 1 | 14.7 | 15.7 | 11.1 | 12.5 |
| | 3000 | 63 | 2.3 | 1FK7063-2AF71-1 ■■■ 1 | 14.7 | 15.7 | 11.1 | 12.5 |
| 16 | 2000 | 80 | 2.6 | 1FK7083-2AC71-1 ■■■ 1 | 26 | 29.5 | 15.6 | 18.6 |
| | 3000 | 80 | 3.3 | 1FK7083-2AF71-1 ■■■ 1 | 26 | 29.5 | 15.6 | 18.6 |
| 18 | 2000 | 100 | 3.1 | 1FK7100-2AC71-1 ■■■ 1 | 54 | 62 | 17.6 | 21 |
| | 3000 | 100 | 3.8 | 1FK7100-2AF71-1 ■■■ 1 | 54 | 62 | 17.6 | 21.3 |
| 20 | 2000 | 80 | 3.1 | 1FK7084-2AC71-1 ■■■ 1 | 32.5 | 35.5 | 18.3 | 21.3 |
| | 3000 | 80 | 3.1 | 1FK7084-2AF71-1 ■■■ 1 | 32.5 | 35.5 | 18.3 | 21.3 |
| 27 | 2000 | 100 | 4.3 | 1FK7101-2AC71-1 ■■■ 1 | 79 | 87 | 23.0 | 27.5 |
| 36 | 2000 | 100 | 5.2 | 1FK7103-2AC71-1 ■■■ 1 | 104 | 112 | 28.5 | 33.0 |
| 48 | 2000 | 100 | 7.7 | 1FK7105-2AC71-1 ■■■ 1 | 154 | 161 | 39.0 | 43.5 |
| 1FK7 High Inertia | | | | | | | | |
| 3 | 6000 | 48 | 0.9 | 1FK7042-3BK71-1 ■■■ 1 | 5.1 | 5.4 | 5.1 | 5.8 |
| 6 | 3000 | 63 | 1.5 | 1FK7060-3BF71-1 ■■■ 1 | 12.5 | 13.5 | 7.9 | 9.3 |
| 8.5 | 3000 | 63 | 1.9 | 1FK7062-3BF71-1 ■■■ 1 | 23.5 | 24.5 | 10.7 | 12.1 |
| 12 | 3000 | 80 | 2.7 | 1FK7081-3BF71-1 ■■■ 1 | 49 | 52 | 15.2 | 18.2 |
| 20 | 2000 | 80 | 3.1 | 1FK7084-3BC71-1 ■■■ 1 | 99 | 102 | 23.0 | 26.0 |
| | 3000 | 80 | 3.1 | 1FK7084-3BF71-1 ■■■ 1 | 99 | 102 | 23.0 | 26.0 |

Encoder systems for motors with DRIVE-CLiQ interface

20 bit absolute encoder single-turn (encoder AS20DQI)
20 bit absolute encoder single-turn + 12 bit multi-turn (encoder AM20DQI)

| Shaft extension | Shaft and flange accuracy | Holding brake | |
|-----------------------|---------------------------|---------------|--------|
| Fitted key and keyway | Tolerance N | Without | A B |
| Fitted key and keyway | Tolerance N | With | |
| Plain shaft | Tolerance N | Without | G H |
| Plain shaft | Tolerance N | With | |

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synchronous motors – Natural cooling

| Motor type (repeated) | Efficiency ¹⁾ | Static current | SINAMICS S120 Combi Power Module | SINAMICS S120 Motor Module Booksize compact format | Power cable with complete shield | |
|--------------------------|--------------------------|--|---|---|---|---------------------------------------|
| | η | I_0 at M_0 at $\Delta T = 100$ K | Rated output current I_{rated} | Rated output current I_{rated} | Motor connection and brake connection via power connector | Cable cross- section ²⁾ |
| | % | A | A | A | Power connector Size | mm ² |
| 1FK7060-2AF71-... | 90 | 4.45 | 5 | 5 | 1 | 4 × 1.5 |
| 1FK7080-2AF71-... | 92 | 4.9 | 5 | 5 | 1 | 4 × 1.5 |
| 1FK7063-2AC71-... | 91 | 5.3 | 5 | 5 | 1 | 4 × 1.5 |
| 1FK7063-2AF71-... | 91 | 8.0 | 9 | 9 | 1 | 4 × 1.5 |
| 1FK7083-2AC71-... | 93 | 7.5 | 9 | 9 | 1 | 4 × 1.5 |
| 1FK7083-2AF71-... | 93 | 10.1 | 12 | 18 | 1 | 4 × 1.5 |
| 1FK7100-2AC71-... | 92 | 8.4 | 9 | 9 | 1 | 4 × 1.5 |
| 1FK7100-2AF71-... | 92 | 11.1 | 12 | 18 | 1 | 4 × 1.5 |
| 1FK7084-2AC71-... | 93 | 8.5 | 9 | 9 | 1 | 4 × 1.5 |
| 1FK7084-2AF71-... | 93 | 12.1 | 12 | 18 | 1 | 4 × 1.5 |
| 1FK7101-2AC71-... | 93 | 12.3 | 12 | 18 | 1.5 | 4 × 1.5 |
| 1FK7103-2AC71-... | 93 | 14.4 | – | 18 | 1.5 | 4 × 1.5 |
| 1FK7105-2AC71-... | 93 | 20.0 | – | 18 | 1.5 | 4 × 2.5 |
| 1FK7042-3BK71-... | 89 | 4.4 | 5 | 5 | 1 | 4 × 1.5 |
| 1FK7060-3BF71-... | 90 | 4.45 | 5 | 5 | 1 | 4 × 1.5 |
| 1FK7062-3BF71-... | 91 | 5.3 | 5 | 5 | 1 | 4 × 1.5 |
| 1FK7081-3BF71-... | 93 | 8.7 | 9 | 9 | 1 | 4 × 1.5 |
| 1FK7084-3BC71-... | 93 | 8.5 | 9 | 9 | 1 | 4 × 1.5 |
| 1FK7084-3BF71-... | 93 | 12.1 | 12 | 18 | 1 | 4 × 1.5 |

Further information about the cables can be found in chapter Connection system MOTION-CONNECT.

¹⁾ Optimum efficiency in continuous duty.

²⁾ The current carrying capacity of the power cables complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C.