

Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data

1FK7101-5AF71-1FB3-Z
N05

Figure similar

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

| Engineering data | | Mechanical data | | | |
|---|--------------------------|-----------------------------|------------------------------------|------------------------|---|
| Rated speed (100 K) | 3000 rpm | Motor type | Permanent-magnet synchronous motor | | |
| Number of poles | 8 | Motor type | Compact | | |
| Rated torque (100 K) | 15.5 Nm | Shaft height | 100 | | |
| Rated current | 11.8 A | Cooling | Natural cooling | | |
| Static torque (60 K) | 22.40 Nm | Radial runout tolerance | 0.050 mm | | |
| Static torque (100 K) | 27.0 Nm | Concentricity tolerance | 0.10 mm | | |
| Stall current (60 K) | 15.70 A | Axial runout tolerance | 0.10 mm | | |
| Stall current (100 K) | 19.00 A | Vibration severity grade | Grade A | | |
| Moment of inertia | 92.300 kgcm ² | Connector size | 1.5 | | |
| Efficiency | 93.0 % | Degree of protection | IP64 | | |
| <th colspan="2">Physical constants</th> | | Physical constants | | Design acc. to Code I | IM B5 (IM V1, IM V3) |
| | | Torque constant | 1.41 Nm/A | Temperature monitoring | KTY84 temperature sensor in the stator winding |
| | | Voltage constant at 20° C | 90.0 V/1000*min ⁻¹ | Electrical connectors | Connectors for signals and power rotatable |
| | | Winding resistance at 20° C | 0.15 Ω | Color of the housing | Standard (Anthracite RAL 7016) |
| | | Rotating field inductance | 3.0 mH | Holding brake | with holding brake |
| | | Electrical time constant | 20.00 ms | Shaft extension | Feather key |
| | | Mechanical time constant | 1.80 ms | Encoder system | Encoder AM22DQ: absolute encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| | | Thermal time constant | 60 min | | |
| | | Shaft torsional stiffness | 165000 Nm/rad | | |
| | | Net weight of the motor | 24.0 kg | | |

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Optimum operating point

| | |
|---------------|----------|
| Optimum speed | 3000 rpm |
| Optimum power | 4.9 kW |

Limiting data

| | |
|-----------------------------------|----------|
| Max. permissible speed (mech.) | 5000 rpm |
| Max. permissible speed (inverter) | 6400 rpm |
| Maximum torque | 80.0 Nm |
| Maximum current | 63.0 A |

Holding brake

| | |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque | 43.0 Nm |
| Power supply voltage | DC 24 V \pm 10 % |
| Coil current | 1.0 A |
| Opening time | 300 ms |
| Closing time | 70 ms |
| Highest braking work | 3380 J |

Recommended Motor Module

| | |
|--------------------------|----------|
| Rated inverter current | 18 A |
| Maximum inverter current | 36 A |
| Maximum torque | 51.00 Nm |

Special design

N05 Non-standard shaft extension (dimensions as for 1FT5 motors)