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## Data sheet for SIMOTICS S-1FK7

**MLFB-Ordering data** **1FK7101-5AF71-1DG3**

Figure similar

Client order no. :
Order no. :
Offer no. :
Remarks :

Item no. :
Consignment no. :
Project :

### Engineering data

| | |
|---|---|
| Rated speed (100 K) | 3000 rpm |
| Number of poles | 8 |
| Rated torque (100 K) | 15.5 Nm |
| Rated current | 11.8 A |
| Static torque (60 K) | 22.40 Nm |
| Static torque (100 K) | 27.0 Nm |
| Stall current (60 K) | 15.70 A |
| Stall current (100 K) | 19.00 A |
| Moment of inertia | 79.900 kgcm² |
| Efficiency | 93.0 % |

### Physical constants

| | |
|---|---|
| Torque constant | 1.41 Nm/A |
| Voltage constant at 20° C | 90.0 V/1000*min⁻¹ |
| Winding resistance at 20° C | 0.15 Ω |
| Rotating field inductance | 3.0 mH |
| Electrical time constant | 20.00 ms |
| Mechanical time constant | 1.80 ms |
| Thermal time constant | 60 min |
| Shaft torsional stiffness | 165000 Nm/rad |
| Net weight of the motor | 21.0 kg |

### Mechanical data

| | |
|---|---|
| Motor type | Permanent-magnet synchronous motor |
| Motor type | Compact |
| Shaft height | 100 |
| Cooling | Natural cooling |
| Radial runout tolerance | 0.050 mm |
| Concentricity tolerance | 0.10 mm |
| Axial runout tolerance | 0.10 mm |
| Vibration severity grade | Grade A |
| Connector size | 1.5 |
| Degree of protection | IP64 |
| Design acc. to Code I | IM B5 (IM V1, IM V3) |
| Temperature monitoring | KTY84 temperature sensor in the stator winding |
| Electrical connectors | Connectors for signals and power rotatable |
| Color of the housing | Standard (Anthracite RAL 7016) |
| Holding brake | without holding brake |
| Shaft end | Plain shaft |
| Encoder system | Encoder IC22DQ: incremental encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + commutation position 11 bits |

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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 |

## Recommended Motor Module

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