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# Data sheet for SIMOTICS S-1FK7

**MLFB-Ordering data** **1FK7083-5AF71-1DG5**



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) | 10.5 Nm |
| Rated current | 7.4 A |
| Static torque (60 K) | 13.30 Nm |
| Static torque (100 K) | 16.00 Nm |
| Stall current (60 K) | 8.60 A |
| Stall current (100 K) | 10.40 A |
| Moment of inertia | 27.300 kgcm² |
| Efficiency | 93.0 % |

## Physical constants

| | |
|---|---|
| Torque constant | 1.52 Nm/A |
| Voltage constant at 20° C | 97.0 V/1000*min⁻¹ |
| Winding resistance at 20° C | 0.40 Ω |
| Rotating field inductance | 6.0 mH |
| Electrical time constant | 15.50 ms |
| Mechanical time constant | 1.41 ms |
| Thermal time constant | 50 min |
| Shaft torsional stiffness | 105000 Nm/rad |
| Net weight of the motor | 14.0 kg |

## Mechanical data

| | |
|---|---|
| Motor type | Permanent-magnet synchronous motor |
| Motor type | Compact |
| Shaft height | 80 |
| 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 |
| Degree of protection | IP65 and DE flange IP67 |
| 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 | 3.3 kW |

## Limiting data

| | |
|---|---|
| Max. permissible speed (mech.) | 6000 rpm |
| Max. permissible speed (inverter) | 5900 rpm |
| Maximum torque | 50.0 Nm |
| Maximum current | 37.0 A |

## Recommended Motor Module

| | |
|---|---|
| Rated inverter current | 9 A |
| Maximum inverter current | 18 A |
| Maximum torque | 27.80 Nm |