

Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7080-2AF71-1RH2

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) | 6.8 Nm | Shaft height | 80 | | | | | | | | | | | | | | | | | | | | |
| Rated current | 4.4 A | Cooling | Natural cooling | | | | | | | | | | | | | | | | | | | | |
| Static torque (60 K) | 6.60 Nm | Radial runout tolerance | 0.050 mm | | | | | | | | | | | | | | | | | | | | |
| Static torque (100 K) | 8.0 Nm | Concentricity tolerance | 0.10 mm | | | | | | | | | | | | | | | | | | | | |
| Stall current (60 K) | 4.00 A | Axial runout tolerance | 0.10 mm | | | | | | | | | | | | | | | | | | | | |
| Stall current (100 K) | 4.90 A | Vibration severity grade | Grade A | | | | | | | | | | | | | | | | | | | | |
| Moment of inertia | 17.500 kgcm ² | Connector size | 1 | | | | | | | | | | | | | | | | | | | | |
| Efficiency | 92.0 % | Degree of protection | IP65 and DE flange IP67 | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2">Physical constants</th> </tr> </thead> <tbody> <tr> <td>Torque constant</td> <td>1.61 Nm/A</td> </tr> <tr> <td>Voltage constant at 20° C</td> <td>105.0 V/1000*min⁻¹</td> </tr> <tr> <td>Winding resistance at 20° C</td> <td>0.98 Ω</td> </tr> <tr> <td>Rotating field inductance</td> <td>17.2 mH</td> </tr> <tr> <td>Electrical time constant</td> <td>17.50 ms</td> </tr> <tr> <td>Mechanical time constant</td> <td>1.52 ms</td> </tr> <tr> <td>Thermal time constant</td> <td>40 min</td> </tr> <tr> <td>Shaft torsional stiffness</td> <td>81000 Nm/rad</td> </tr> <tr> <td>Net weight of the motor</td> <td>13.3 kg</td> </tr> </tbody> </table> | | Physical constants | | Torque constant | 1.61 Nm/A | Voltage constant at 20° C | 105.0 V/1000*min ⁻¹ | Winding resistance at 20° C | 0.98 Ω | Rotating field inductance | 17.2 mH | Electrical time constant | 17.50 ms | Mechanical time constant | 1.52 ms | Thermal time constant | 40 min | Shaft torsional stiffness | 81000 Nm/rad | Net weight of the motor | 13.3 kg | Design acc. to Code I | IM B5 (IM V1, IM V3) |
| | | Physical constants | | | | | | | | | | | | | | | | | | | | | |
| | | Torque constant | 1.61 Nm/A | | | | | | | | | | | | | | | | | | | | |
| | | Voltage constant at 20° C | 105.0 V/1000*min ⁻¹ | | | | | | | | | | | | | | | | | | | | |
| | | Winding resistance at 20° C | 0.98 Ω | | | | | | | | | | | | | | | | | | | | |
| | | Rotating field inductance | 17.2 mH | | | | | | | | | | | | | | | | | | | | |
| | | Electrical time constant | 17.50 ms | | | | | | | | | | | | | | | | | | | | |
| | | Mechanical time constant | 1.52 ms | | | | | | | | | | | | | | | | | | | | |
| | | Thermal time constant | 40 min | | | | | | | | | | | | | | | | | | | | |
| | | Shaft torsional stiffness | 81000 Nm/rad | | | | | | | | | | | | | | | | | | | | |
| Net weight of the motor | 13.3 kg | | | | | | | | | | | | | | | | | | | | | | |
| Temperature monitoring | Pt1000 temperature sensor | Electrical connectors | Connectors for signals and power rotatable | | | | | | | | | | | | | | | | | | | | |
| Color of the housing | Standard (Anthracite RAL 7016) | Holding brake | with holding brake | | | | | | | | | | | | | | | | | | | | |
| Shaft extension | Plain shaft | Encoder system | Encoder AM20DQI: absolute encoder 20 bits (resolution 1048576, encoder-internal 512 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) | | | | | | | | | | | | | | | | | | | | |



Figure similar

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Optimum operating point

| | |
|---------------|----------|
| Optimum speed | 3000 rpm |
| Optimum power | 2.1 kW |

Limiting data

| | |
|-----------------------------------|----------|
| Max. permissible speed (mech.) | 6000 rpm |
| Max. permissible speed (inverter) | 5500 rpm |
| Maximum torque | 25.0 Nm |
| Maximum current | 18.0 A |

Holding brake

| | |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque | 22.0 Nm |
| Power supply voltage | DC 24 V \pm 10 % |
| Coil current | 0.9 A |
| Opening time | 200 ms |
| Closing time | 60 ms |
| Highest braking work | 1400 J |

Recommended Motor Module

| | |
|--------------------------|----------|
| Rated inverter current | 5 A |
| Maximum inverter current | 15 A |
| Maximum torque | 22.10 Nm |