

Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7032-2AK71-1QB0-Z
M39

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

| Engineering data | | Mechanical data | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------------------|-----------------------------|---|-----------------|-----------|---------------------------|-------------------------------|-----------------------------|--------|---------------------------|---------|--------------------------|---------|--------------------------|---------|-----------------------|--------|---------------------------|-------------|-------------------------|--------|-----------------------|----------------------|
| Rated speed (100 K) | 6000 rpm | Motor type | Permanent-magnet synchronous motor | | | | | | | | | | | | | | | | | | | | |
| Number of poles | 6 | Motor type | Compact | | | | | | | | | | | | | | | | | | | | |
| Rated torque (100 K) | 0.8 Nm | Shaft height | 36 | | | | | | | | | | | | | | | | | | | | |
| Rated current | 1.3 A | Cooling | Natural cooling | | | | | | | | | | | | | | | | | | | | |
| Static torque (60 K) | 0.95 Nm | Radial runout tolerance | 0.035 mm | | | | | | | | | | | | | | | | | | | | |
| Static torque (100 K) | 1.1 Nm | Concentricity tolerance | 0.08 mm | | | | | | | | | | | | | | | | | | | | |
| Stall current (60 K) | 1.40 A | Axial runout tolerance | 0.08 mm | | | | | | | | | | | | | | | | | | | | |
| Stall current (100 K) | 1.70 A | Vibration severity grade | Grade A | | | | | | | | | | | | | | | | | | | | |
| Moment of inertia | 0.750 kgcm ² | Connector size | 1 | | | | | | | | | | | | | | | | | | | | |
| Efficiency | 88.0 % | Degree of protection | IP64 | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2">Physical constants</th> </tr> </thead> <tbody> <tr> <td>Torque constant</td> <td>0.67 Nm/A</td> </tr> <tr> <td>Voltage constant at 20° C</td> <td>45.0 V/1000*min⁻¹</td> </tr> <tr> <td>Winding resistance at 20° C</td> <td>5.05 Ω</td> </tr> <tr> <td>Rotating field inductance</td> <td>17.3 mH</td> </tr> <tr> <td>Electrical time constant</td> <td>3.45 ms</td> </tr> <tr> <td>Mechanical time constant</td> <td>2.20 ms</td> </tr> <tr> <td>Thermal time constant</td> <td>25 min</td> </tr> <tr> <td>Shaft torsional stiffness</td> <td>4100 Nm/rad</td> </tr> <tr> <td>Net weight of the motor</td> <td>3.1 kg</td> </tr> </tbody> </table> | | Physical constants | | Torque constant | 0.67 Nm/A | Voltage constant at 20° C | 45.0 V/1000*min ⁻¹ | Winding resistance at 20° C | 5.05 Ω | Rotating field inductance | 17.3 mH | Electrical time constant | 3.45 ms | Mechanical time constant | 2.20 ms | Thermal time constant | 25 min | Shaft torsional stiffness | 4100 Nm/rad | Net weight of the motor | 3.1 kg | Design acc. to Code I | IM B5 (IM V1, IM V3) |
| | | Physical constants | | | | | | | | | | | | | | | | | | | | | |
| | | Torque constant | 0.67 Nm/A | | | | | | | | | | | | | | | | | | | | |
| | | Voltage constant at 20° C | 45.0 V/1000*min ⁻¹ | | | | | | | | | | | | | | | | | | | | |
| | | Winding resistance at 20° C | 5.05 Ω | | | | | | | | | | | | | | | | | | | | |
| | | Rotating field inductance | 17.3 mH | | | | | | | | | | | | | | | | | | | | |
| | | Electrical time constant | 3.45 ms | | | | | | | | | | | | | | | | | | | | |
| | | Mechanical time constant | 2.20 ms | | | | | | | | | | | | | | | | | | | | |
| | | Thermal time constant | 25 min | | | | | | | | | | | | | | | | | | | | |
| | | Shaft torsional stiffness | 4100 Nm/rad | | | | | | | | | | | | | | | | | | | | |
| Net weight of the motor | 3.1 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 | Feather key | Encoder system | Encoder AS20DQI: absolute encoder single-turn 20 bits | | | | | | | | | | | | | | | | | | | | |



Figure similar

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Optimum operating point

| | |
|---------------|----------|
| Optimum speed | 6000 rpm |
| Optimum power | 0.5 kW |

Limiting data

| | |
|-----------------------------------|-----------|
| Max. permissible speed (mech.) | 6000 rpm |
| Max. permissible speed (inverter) | 10000 rpm |
| Maximum torque | 4.5 Nm |
| Maximum current | 7.0 A |

Holding brake

| | |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque | 1.9 Nm |
| Power supply voltage | DC 24 V \pm 10 % |
| Coil current | 0.3 A |
| Opening time | 50 ms |
| Closing time | 30 ms |
| Highest braking work | 40 J |

Recommended Motor Module

| | |
|--------------------------|---------|
| Rated inverter current | 3 A |
| Maximum inverter current | 9 A |
| Maximum torque | 4.50 Nm |

Special design

M39 Version for Zone 22 hazardous areas according to EN 50281/IEC 61241