

Data sheet for SIMOTICS S-1FT7

Article No. : 1FT7042-5AK71-1FE5



Figure similar

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

Item no. :
Consignment no. :
Project :

Engineering data

| | |
|-------------------------|------------------------|
| Rated speed | 6,000 rpm |
| Number of poles | 6 |
| Rated torque (100 K) | 2.0 Nm |
| Rated current | 3.00 A |
| Static torque (60 K) | 2.4 Nm |
| Static torque (100 K) | 3.0 Nm |
| Stall current (60 K) | 3.10 A |
| Stall current (100 K) | 3.90 A |
| Rotor moment of inertia | 3.68 kgcm ² |
| Efficiency | 91.0 % |

Physical constants

| | |
|-----------------------------|-------------------------------|
| Torque constant | 0.77 Nm/A |
| Voltage constant at 20° C | 48.6 V/1000*min ⁻¹ |
| Winding resistance at 20° C | 1.11 Ω |
| Rotary field inductance | 6.5 mH |
| Electrical time constant | 6.00 ms |
| Mechanical time constant | 1.60 ms |
| Thermal time constant | 20 min |
| Shaft torsional stiffness | 11,700 Nm/rad |
| Net weight of the motor | 5.5 kg |

Mechanical data

| | |
|--------------------------|---|
| Motor type | Permanent-magnet synchronous motor |
| Motor type | Compact |
| Shaft height | 48 |
| Cooling | Natural cooling |
| Radial runout tolerance | 0.021 mm |
| Concentricity tolerance | 0.040 mm |
| Axial runout tolerance | 0.040 mm |
| Vibration severity grade | Grade R |
| Degree of protection | IP67 |
| Design acc. to Code I | IM B5 (compatible with 1FT6) |
| Temperature monitoring | Pt1000 temperature sensor |
| Color of the housing | Standard (pearl dark gray similar to RAL 9023) |
| Shaft end type | Fitted key and keyway |
| Sensor design | Encoder AM22DQ: absolute encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| Electrical connection | Connector turnable |
| Connector size | 1 |

Optimum operating point

| | |
|---------------|-----------|
| Optimum speed | 6,000 rpm |
| Optimum power | 1.3 kW |

Limiting data

| | |
|-----------------------------------|-----------|
| Max. permissible speed (mech.) | 9,000 rpm |
| Max. permissible speed (inverter) | 9,000 rpm |
| Maximum torque | 13.0 Nm |
| Maximum current | 21.00 A |

Recommended Motor Module

| | |
|--------------------------|---------|
| Rated inverter current | 5.00 A |
| Maximum inverter current | 15.00 A |
| Maximum torque | 10.4 Nm |

Holding brake

| | |
|------------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque | 8.0 Nm |
| Braking torque | 5.0 Nm |
| Power supply voltage | DC 24 V |
| Coil current | 0.60 A |
| Permissible brake work | 270 J |
| Opening time | 90 ms |
| Closing time | 30 ms |