

Data sheet for SIMOTICS S-1FK7 servo geared motor



Figure similar

Article No. : **1FK7060-2AF71-1CH1-Z
J12**

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

Item no. :
Consignment no. :
Project :

Engineering data

| | |
|-----------------------|--------------------------|
| Rated speed (100 K) | 3,000 rpm |
| Number of poles | 8 |
| Rated torque (100 K) | 4.7 Nm |
| Rated current | 3.7 A |
| Static torque (60 K) | 5.00 Nm |
| Static torque (100 K) | 6.00 Nm |
| Stall current (60 K) | 3.60 A |
| Stall current (100 K) | 4.45 A |
| Moment of inertia | 10.880 kgcm ² |

Physical constants

| | |
|-----------------------------|-------------------------------|
| Torque constant | 1.33 Nm/A |
| Voltage constant at 20° C | 85.5 V/1000*min ⁻¹ |
| Winding resistance at 20° C | 1.35 Ω |
| Rotating field inductance | 15.2 mH |
| Electrical time constant | 11.30 ms |
| Mechanical time constant | 1.71 ms |
| Thermal time constant | 30 min |
| Shaft torsional stiffness | 28,500 Nm/rad |
| Net weight of the motor | 16.4 kg |

Recommended Motor Module

| | |
|--------------------------|----------|
| Rated inverter current | 5 A |
| Maximum inverter current | 15 A |
| Maximum torque | 18.00 Nm |

Mechanical data

| | |
|--------------------------|---|
| Motor type | Permanent-magnet synchronous motor |
| Motor type | Compact |
| Shaft height | 63 |
| Cooling | Natural cooling |
| Radial runout tolerance | 0.040 mm |
| Concentricity tolerance | 0.10 mm |
| Axial runout tolerance | 0.10 mm |
| Vibration severity grade | Grade A |
| Connector size | 1 |
| Degree of protection | IP65 |
| Design acc. to Code I | IM B5 (IM V1, IM V3) |
| 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 end | Plain shaft |
| Encoder system | Encoder AM24DQI: absolute encoder 24 bits (resolution 16777216, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |

Gearbox data

| | |
|--|-------------------------|
| Gearbox type | Planetary gearbox SP+ |
| Designation | SP 100S-MF2 |
| Gearbox shaft end | With feather key |
| Gear ratio + steps | 16 (2-step) |
| Motor speed S3-60 % | 6,500 rpm |
| Motor speed S1 | 3,100 rpm |
| Output torque S1 | 243 Nm |
| Rated output torque at duty type S3-60 % | 347 Nm |
| Moment of inertia of gearbox | 2.180 kgcm ² |
| Radial output shaft loading, max. | 6,600 N |
| Axial output shaft load, max. | 5,650 N |
| Efficiency of gearbox | 0.94 |
| Torsional backlash | 5' |
| Gearbox weight | 7.90 kg |

Limiting data

| | |
|-----------------------------------|-----------|
| Max. permissible speed (mech.) | 7,200 rpm |
| Max. permissible speed (inverter) | 6,700 rpm |
| Maximum torque | 18.0 Nm |
| Maximum current | 15.0 A |

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Figure similar

Holding brake

| | |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque | 13.0 Nm |
| Power supply voltage | DC 24 V \pm 10 % |
| Coil current | 0.8 A |
| Opening time | 100 ms |
| Closing time | 50 ms |
| Highest braking work | 380 J |

Special design

J12 Mounting of SP+ planetary gearbox

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