

Data sheet for SIMOTICS S-1FK7 servo geared motor



Figure similar

Article No. : **1FK7042-2AC71-1RG1-Z**
J02

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

Item no. :
Consignment no. :
Project :

Engineering data

| | |
|-----------------------|-------------------------|
| Rated speed (100 K) | 2,000 rpm |
| Number of poles | 8 |
| Rated torque (100 K) | 2.8 Nm |
| Rated current | 1.6 A |
| Static torque (60 K) | 2.50 Nm |
| Static torque (100 K) | 3.00 Nm |
| Stall current (60 K) | 1.30 A |
| Stall current (100 K) | 1.61 A |
| Moment of inertia | 3.680 kgcm ² |

Physical constants

| | |
|-----------------------------|--------------------------------|
| Torque constant | 1.86 Nm/A |
| Voltage constant at 20° C | 122.0 V/1000*min ⁻¹ |
| Winding resistance at 20° C | 8.60 Ω |
| Rotating field inductance | 64.0 mH |
| Electrical time constant | 7.40 ms |
| Mechanical time constant | 2.15 ms |
| Thermal time constant | 30 min |
| Shaft torsional stiffness | 15,500 Nm/rad |
| Net weight of the motor | 8.5 kg |

Recommended Motor Module

| | |
|--------------------------|----------|
| Rated inverter current | 3 A |
| Maximum inverter current | 9 A |
| Maximum torque | 10.50 Nm |

Mechanical data

| | |
|--------------------------|---|
| Motor type | Permanent-magnet synchronous motor |
| Motor type | Compact |
| Shaft height | 48 |
| Cooling | Natural cooling |
| Radial runout tolerance | 0.040 mm |
| Concentricity tolerance | 0.08 mm |
| Axial runout tolerance | 0.08 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 | without holding brake |
| Shaft end | 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) |

Gearbox data

| | |
|--|-------------------------|
| Gearbox type | Planetary gearbox SP+ |
| Designation | SP 075S-MF1 |
| Gearbox shaft end | With feather key |
| Gear ratio + steps | 4 (1-step) |
| Motor speed S3-60 % | 7,500 rpm |
| Motor speed S1 | 2,900 rpm |
| Output torque S1 | 81 Nm |
| Rated output torque at duty type S3-60 % | 132 Nm |
| Moment of inertia of gearbox | 0.780 kgcm ² |
| Radial output shaft loading, max. | 4,200 N |
| Axial output shaft load, max. | 3,350 N |
| Efficiency of gearbox | 0.97 |
| Torsional backlash | 4' |
| Gearbox weight | 3.90 kg |

Limiting data

| | |
|-----------------------------------|-----------|
| Max. permissible speed (mech.) | 9,000 rpm |
| Max. permissible speed (inverter) | 4,750 rpm |
| Maximum torque | 10.5 Nm |
| Maximum current | 5.6 A |



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Figure similar

Special design

J02 Mounting of SP+ planetary gearbox

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