

Data sheet for SIMOTICS S-1FK7 servo geared motor

Article No. : **1FK7040-2AK71-1CH1-Z
J29**



Figure similar

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

Item no. :
Consignment no. :
Project :

Engineering data

| | |
|-----------------------|-------------------------|
| Rated speed (100 K) | 6,000 rpm |
| Number of poles | 8 |
| Rated torque (100 K) | 1.1 Nm |
| Rated current | 1.9 A |
| Static torque (60 K) | 1.30 Nm |
| Static torque (100 K) | 1.60 Nm |
| Stall current (60 K) | 1.90 A |
| Stall current (100 K) | 2.35 A |
| Moment of inertia | 2.460 kgcm ² |

Physical constants

| | |
|-----------------------------|-------------------------------|
| Torque constant | 0.68 Nm/A |
| Voltage constant at 20° C | 43.4 V/1000*min ⁻¹ |
| Winding resistance at 20° C | 2.87 Ω |
| Rotating field inductance | 16.5 mH |
| Electrical time constant | 5.70 ms |
| Mechanical time constant | 3.00 ms |
| Thermal time constant | 25 min |
| Shaft torsional stiffness | 13,000 Nm/rad |
| Net weight of the motor | 7.8 kg |

Recommended Motor Module

| | |
|--------------------------|---------|
| Rated inverter current | 3 A |
| Maximum inverter current | 9 A |
| Maximum torque | 5.10 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 | 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 075S-MF1 |
| Gearbox shaft end | Without feather key |
| Gear ratio + steps | 10 (1-step) |
| Motor speed S3-60 % | 7,500 rpm |
| Motor speed S1 | 3,100 rpm |
| Output torque S1 | 81 Nm |
| Rated output torque at duty type S3-60 % | 114 Nm |
| Moment of inertia of gearbox | 0.540 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) | 9,000 rpm |
| Maximum torque | 5.1 Nm |
| Maximum current | 7.7 A |

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Figure similar

Holding brake

| | |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque | 4.0 Nm |
| Power supply voltage | DC 24 V \pm 10 % |
| Coil current | 0.5 A |
| Opening time | 70 ms |
| Closing time | 30 ms |
| Highest braking work | 150 J |

Special design

J29 Mounting of SP+ planetary gearbox

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