

## Data sheet for SIMOTICS S-1FK7 servo geared motor

Article No. : 1FK7034-2AK71-1BH1-Z  
J02

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

Item no. :  
Consignment no. :  
Project :



Figure similar

### Engineering data

|                       |                         |
|-----------------------|-------------------------|
| Rated speed (100 K)   | 6,000 rpm               |
| Number of poles       | 6                       |
| Rated torque (100 K)  | 1.0 Nm                  |
| Rated current         | 1.3 A                   |
| Static torque (60 K)  | 1.35 Nm                 |
| Static torque (100 K) | 1.60 Nm                 |
| Stall current (60 K)  | 1.55 A                  |
| Stall current (100 K) | 1.90 A                  |
| Moment of inertia     | 1.220 kgcm <sup>2</sup> |

### Physical constants

|                             |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 0.84 Nm/A                     |
| Voltage constant at 20° C   | 55.0 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 4.46 Ω                        |
| Rotating field inductance   | 17.2 mH                       |
| Electrical time constant    | 3.85 ms                       |
| Mechanical time constant    | 1.71 ms                       |
| Thermal time constant       | 30 min                        |
| Shaft torsional stiffness   | 3,750 Nm/rad                  |
| Net weight of the motor     | 5.8 kg                        |

### Recommended Motor Module

|                          |         |
|--------------------------|---------|
| Rated inverter current   | 3 A     |
| Maximum inverter current | 9 A     |
| Maximum torque           | 6.50 Nm |

### Mechanical data

|                          |                                                       |
|--------------------------|-------------------------------------------------------|
| Motor type               | Permanent-magnet synchronous motor                    |
| Motor type               | Compact                                               |
| Shaft height             | 36                                                    |
| Cooling                  | Natural cooling                                       |
| Radial runout tolerance  | 0.035 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 AS24DQI: absolute encoder single-turn 24 bits |

### Gearbox data

|                                          |                         |
|------------------------------------------|-------------------------|
| Gearbox type                             | Planetary gearbox SP+   |
| Designation                              | SP 060S-MF1             |
| Gearbox shaft end                        | With feather key        |
| Gear ratio + steps                       | 4 (1-step)              |
| Motor speed S3-60 %                      | 7,500 rpm               |
| Motor speed S1                           | 3,300 rpm               |
| Output torque S1                         | 27 Nm                   |
| Rated output torque at duty type S3-60 % | 50 Nm                   |
| Moment of inertia of gearbox             | 0.220 kgcm <sup>2</sup> |
| Radial output shaft loading, max.        | 2,800 N                 |
| Axial output shaft load, max.            | 2,400 N                 |
| Efficiency of gearbox                    | 0.97                    |
| Torsional backlash                       | 4 ' "                   |
| Gearbox weight                           | 1.90 kg                 |

### Limiting data

|                                   |            |
|-----------------------------------|------------|
| Max. permissible speed (mech.)    | 10,000 rpm |
| Max. permissible speed (inverter) | 10,000 rpm |
| Maximum torque                    | 6.5 Nm     |
| Maximum current                   | 8.0 A      |



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

| Special design |  |
|----------------|--|
|----------------|--|

J02 Mounting of SP+ planetary gearbox

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