



Data sheet for SIMOTICS S-1FK7 servo geared motor

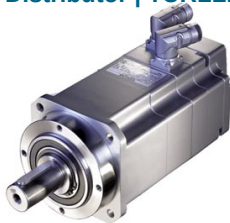


Figure similar

Article No. : 1FK7060-2AF71-1RH1-Z  
J22

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     | 11.740 kgcm² |

| Physical constants          |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 1.33 Nm/A                     |
| Voltage constant at 20° C   | 85.5 V/1000*min <sup>-1</sup> |
| 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     | 16.2 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 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 100S-MF1           |
| Gearbox shaft end                        | Without feather key   |
| Gear ratio + steps                       | 4 (1-step)            |
| Motor speed S3-60 %                      | 5,500 rpm             |
| Motor speed S1                           | 2,500 rpm             |
| Output torque S1                         | 171 Nm                |
| Rated output torque at duty type S3-60 % | 378 Nm                |
| Moment of inertia of gearbox             | 3.040 kgcm²           |
| Radial output shaft loading, max.        | 6,600 N               |
| Axial output shaft load, max.            | 5,650 N               |
| Efficiency of gearbox                    | 0.97                  |
| Torsional backlash                       | 3 ´                   |
| Gearbox weight                           | 7.70 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    |



Figure similar

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

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

J22 Mounting of SP+ planetary gearbox

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