

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

Article No. : 1FK7032-2AK71-1CH1-Z  
J37+X01

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)  | 0.8 Nm                  |
| Rated current         | 1.3 A                   |
| Static torque (60 K)  | 0.95 Nm                 |
| Static torque (100 K) | 1.10 Nm                 |
| Stall current (60 K)  | 1.40 A                  |
| Stall current (100 K) | 1.70 A                  |
| Moment of inertia     | 0.910 kgcm <sup>2</sup> |

| Physical constants          |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 0.67 Nm/A                     |
| Voltage constant at 20° C   | 45.0 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 5.05 Ω                        |
| Rotating field inductance   | 17.3 mH                       |
| Electrical time constant    | 3.45 ms                       |
| Mechanical time constant    | 2.20 ms                       |
| Thermal time constant       | 25 min                        |
| Shaft torsional stiffness   | 4,100 Nm/rad                  |
| Net weight of the motor     | 6.7 kg                        |

| Recommended Motor Module |         |
|--------------------------|---------|
| Rated inverter current   | 3 A     |
| Maximum inverter current | 9 A     |
| Maximum torque           | 4.50 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     | Jet black, matt RAL 9005                                                                                                                            |
| 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-MF2             |
| Gearbox shaft end                        | Without feather key     |
| Gear ratio + steps                       | 50 (2-step)             |
| Motor speed S3-60 %                      | 8,500 rpm               |
| Motor speed S1                           | 3,800 rpm               |
| Output torque S1                         | 106 Nm                  |
| Rated output torque at duty type S3-60 % | 132 Nm                  |
| Moment of inertia of gearbox             | 0.160 kgcm <sup>2</sup> |
| Radial output shaft loading, max.        | 4,200 N                 |
| Axial output shaft load, max.            | 3,350 N                 |
| Efficiency of gearbox                    | 0.94                    |
| Torsional backlash                       | 6 '                     |
| Gearbox weight                           | 3.60 kg                 |

| Limiting data                     |            |
|-----------------------------------|------------|
| Max. permissible speed (mech.)    | 10,000 rpm |
| Max. permissible speed (inverter) | 10,000 rpm |
| Maximum torque                    | 4.5 Nm     |
| Maximum current                   | 7.0 A      |



Figure similar

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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 |                                        |
|----------------|----------------------------------------|
| J37            | Mounting of SP+ planetary gearbox      |
| X01            | Paint finish: Jet black, matt RAL 9005 |

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## 1FK7032-2AK71-1CH1-ZJ37X01

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