

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



Figure similar

Article No. : **1FK7042-2AF71-1RH1-Z**  
J22+X01

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)	2.6 Nm
Rated current	2.0 A
Static torque (60 K)	2.50 Nm
Static torque (100 K)	3.00 Nm
Stall current (60 K)	1.80 A
Stall current (100 K)	2.20 A
Moment of inertia	3.980 kgcm <sup>2</sup>

### Physical constants

Torque constant	1.38 Nm/A
Voltage constant at 20° C	90.0 V/1000*min <sup>-1</sup>
Winding resistance at 20° C	4.67 Ω
Rotating field inductance	35.0 mH
Electrical time constant	7.50 ms
Mechanical time constant	2.15 ms
Thermal time constant	30 min
Shaft torsional stiffness	11,400 Nm/rad
Net weight of the motor	9.2 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	Jet black, matt RAL 9005
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 075S-MF1
Gearbox shaft end	Without 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 <sup>2</sup>
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)	6,400 rpm
Maximum torque	10.5 Nm
Maximum current	7.6 A

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### 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

J22	Mounting of SP+ planetary gearbox
X01	Paint finish: Jet black, matt RAL 9005

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