

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

Article No. : 1FK7032-2AK71-1RH1-Z  
J09



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	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	5.0 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	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 060S-MF1
Gearbox shaft end	With feather key
Gear ratio + steps	10 (1-step)
Motor speed S3-60 %	7,500 rpm
Motor speed S1	4,000 rpm
Output torque S1	27 Nm
Rated output torque at duty type S3-60 %	38 Nm
Moment of inertia of gearbox	0.160 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	4.5 Nm
Maximum current	7.0 A

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### Holding brake

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

### Special design

J09 Mounting of SP+ planetary gearbox

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