

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



Figure similar

Article No. : **1FK7084-2AF71-1CH1-Z**  
J25

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)	10.0 Nm
Rated current	6.5 A
Static torque (60 K)	16.60 Nm
Static torque (100 K)	20.00 Nm
Stall current (60 K)	9.80 A
Stall current (100 K)	12.10 A
Moment of inertia	44.500 kgcm <sup>2</sup>

### Physical constants

Torque constant	1.66 Nm/A
Voltage constant at 20° C	106.5 V/1000*min <sup>-1</sup>
Winding resistance at 20° C	0.28 Ω
Rotating field inductance	5.9 mH
Electrical time constant	21.00 ms
Mechanical time constant	1.01 ms
Thermal time constant	55 min
Shaft torsional stiffness	68,000 Nm/rad
Net weight of the motor	38.7 kg

### Recommended Motor Module

Rated inverter current	18 A
Maximum inverter current	54 A
Maximum torque	61.00 Nm

### Mechanical data

Motor type	Permanent-magnet synchronous motor
Motor type	Compact
Shaft height	80
Cooling	Natural cooling
Radial runout tolerance	0.050 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 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 140S-MF1
Gearbox shaft end	Without feather key
Gear ratio + steps	7 (1-step)
Motor speed S3-60 %	5,000 rpm
Motor speed S1	2,600 rpm
Output torque S1	319 Nm
Rated output torque at duty type S3-60 %	792 Nm
Moment of inertia of gearbox	9.000 kgcm <sup>2</sup>
Radial output shaft loading, max.	9,900 N
Axial output shaft load, max.	9,870 N
Efficiency of gearbox	0.97
Torsional backlash	3'
Gearbox weight	17.20 kg

### Limiting data

Max. permissible speed (mech.)	6,000 rpm
Max. permissible speed (inverter)	5,400 rpm
Maximum torque	61.0 Nm
Maximum current	41.0 A

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### Holding brake

Holding brake version	Permanent-magnet brake
Holding torque	22.0 Nm
Power supply voltage	DC 24 V $\pm$ 10 %
Coil current	0.9 A
Opening time	200 ms
Closing time	60 ms
Highest braking work	1,400 J

### Special design

J25 Mounting of SP+ planetary gearbox