

Data sheet for SIMOTICS S-1FK7 servo geared motor



Figure similar

Article No. : **1FK7080-2AF71-1UH1-Z
J16**

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)	6.8 Nm
Rated current	4.4 A
Static torque (60 K)	6.60 Nm
Static torque (100 K)	8.00 Nm
Stall current (60 K)	4.00 A
Stall current (100 K)	4.90 A
Moment of inertia	26.660 kgcm ²

Physical constants

Torque constant	1.61 Nm/A
Voltage constant at 20° C	105.0 V/1000*min ⁻¹
Winding resistance at 20° C	0.98 Ω
Rotating field inductance	17.2 mH
Electrical time constant	17.50 ms
Mechanical time constant	1.52 ms
Thermal time constant	40 min
Shaft torsional stiffness	81,000 Nm/rad
Net weight of the motor	30.3 kg

Recommended Motor Module

Rated inverter current	5 A
Maximum inverter current	15 A
Maximum torque	22.10 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	Resolver R15DQ: resolver 15 bits (resolution 32768, internal multi-pole)

Gearbox data

Gearbox type	Planetary gearbox SP+
Designation	SP 140S-MF2
Gearbox shaft end	With feather key
Gear ratio + steps	40 (2-step)
Motor speed S3-60 %	6,000 rpm
Motor speed S1	2,900 rpm
Output torque S1	581 Nm
Rated output torque at duty type S3-60 %	726 Nm
Moment of inertia of gearbox	9.160 kgcm ²
Radial output shaft loading, max.	9,900 N
Axial output shaft load, max.	9,870 N
Efficiency of gearbox	0.94
Torsional backlash	5 '
Gearbox weight	17.00 kg

Limiting data

Max. permissible speed (mech.)	6,000 rpm
Max. permissible speed (inverter)	5,500 rpm
Maximum torque	25.0 Nm
Maximum current	18.0 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

J16 Mounting of SP+ planetary gearbox