

Data sheet for SIMOTICS S-1FK7 servo geared motor

Article No. : 1FK7022-5AK74-1SG3-Z
V40+X01



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)	0.6 Nm
Rated current	1.4 A
Static torque (60 K)	0.70 Nm
Static torque (100 K)	0.85 Nm
Stall current (60 K)	1.50 A
Stall current (100 K)	1.80 A
Moment of inertia	0.310 kgcm²

Physical constants	
Torque constant	0.46 Nm/A
Voltage constant at 20° C	29.0 V/1000*min ⁻¹
Winding resistance at 20° C	4.20 Ω
Rotating field inductance	9.1 mH
Electrical time constant	2.20 ms
Mechanical time constant	1.70 ms
Thermal time constant	18 min
Shaft torsional stiffness	3,000 Nm/rad
Net weight of the motor	2.5 kg

Recommended Motor Module	
Rated inverter current	3 A
Maximum inverter current	6 A
Maximum torque	2.65 Nm

Mechanical data	
Motor type	Permanent-magnet synchronous motor
Motor type	Compact
Shaft height	28
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	IP64
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	without holding brake
Shaft end	Plain shaft
Encoder system	Multi-pole resolver (number of pole pairs corresponds to number of pole pairs of the motor)

Gearbox data	
Gearbox type	Planetary gearbox NP+
Designation	NP 005
Gearbox shaft end	With feather key
Gear ratio + steps	5 (1-step)
Temporary input speed	10,000 rpm
Motor speed S1	4,000 rpm
Output torque S1	6 Nm
Output moment maximum (short-time)	14 Nm
Moment of inertia of gearbox	0.030 kgcm²
Radial output shaft loading, max.	800 N
Axial output shaft load, max.	0 N
Efficiency of gearbox	0.97
Torsional backlash	10 ´
Gearbox weight	0.70 kg

Limiting data	
Max. permissible speed (mech.)	10,000 rpm
Max. permissible speed (inverter)	10,000 rpm
Maximum torque	3.4 Nm
Maximum current	8.0 A

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Special design	
V40	Mounting of NP+ planetary gearbox
X01	Paint finish: Jet black, matt RAL 9005