

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



Figure similar

Article No. : **1FK7101-2AF71-1DG0-Z**  
V40

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)	15.5 Nm
Rated current	11.6 A
Static torque (60 K)	22.50 Nm
Static torque (100 K)	27.00 Nm
Stall current (60 K)	15.20 A
Stall current (100 K)	18.80 A
Moment of inertia	87.800 kgcm <sup>2</sup>

### Physical constants

Torque constant	1.44 Nm/A
Voltage constant at 20° C	92.5 V/1000*min <sup>-1</sup>
Winding resistance at 20° C	0.14 Ω
Rotating field inductance	3.5 mH
Electrical time constant	25.00 ms
Mechanical time constant	1.62 ms
Thermal time constant	60 min
Shaft torsional stiffness	164,000 Nm/rad
Net weight of the motor	42.0 kg

### Recommended Motor Module

Rated inverter current	18 A
Maximum inverter current	54 A
Maximum torque	72.00 Nm

### Mechanical data

Motor type	Permanent-magnet synchronous motor
Motor type	Compact
Shaft height	100
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	1.5
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	Standard (Anthracite RAL 7016)
Holding brake	without holding brake
Shaft end	Plain shaft
Encoder system	Encoder IC22DQ: incremental encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + commutation position 11 bits

### Gearbox data

Gearbox type	Planetary gearbox NP+
Designation	NP 045
Gearbox shaft end	With feather key
Gear ratio + steps	5 (1-step)
Temporary input speed	4,000 rpm
Motor speed S1	2,000 rpm
Output torque S1	350 Nm
Output moment maximum (short-time)	500 Nm
Moment of inertia of gearbox	8.800 kgcm <sup>2</sup>
Radial output shaft loading, max.	8,000 N
Axial output shaft load, max.	0 N
Efficiency of gearbox	0.97
Torsional backlash	8'
Gearbox weight	19.00 kg

### Limiting data

Max. permissible speed (mech.)	5,000 rpm
Max. permissible speed (inverter)	5,000 rpm
Maximum torque	80.0 Nm
Maximum current	63.0 A

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Special design

V40 Mounting of NP+ planetary gearbox