

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

Article No. : **1FK7042-2AK71-1PH0-Z  
V40**



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	8
Rated torque (100 K)	1.5 Nm
Rated current	2.5 A
Static torque (60 K)	2.50 Nm
Static torque (100 K)	3.00 Nm
Stall current (60 K)	3.55 A
Stall current (100 K)	4.40 A
Moment of inertia	3.810 kgcm <sup>2</sup>

### Physical constants

Torque constant	0.68 Nm/A
Voltage constant at 20° C	44.5 V/1000*min <sup>-1</sup>
Winding resistance at 20° C	1.15 Ω
Rotating field inductance	8.6 mH
Electrical time constant	7.50 ms
Mechanical time constant	2.15 ms
Thermal time constant	30 min
Shaft torsional stiffness	11,400 Nm/rad
Net weight of the motor	9.1 kg

### Recommended Motor Module

Rated inverter current	5 A
Maximum inverter current	15 A
Maximum torque	10.30 Nm

### Mechanical data

Motor type	Permanent-magnet synchronous motor
Motor type	Compact
Shaft height	48
Cooling	Natural cooling
Radial runout tolerance	0.040 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	Standard (Anthracite RAL 7016)
Holding brake	with holding brake
Shaft end	Plain shaft
Encoder system	Resolver R14DQ: resolver 14 bits (resolution 16384, internal 2-pole)

### Gearbox data

Gearbox type	Planetary gearbox NP+
Designation	NP 025
Gearbox shaft end	With feather key
Gear ratio + steps	5 (1-step)
Temporary input speed	7,000 rpm
Motor speed S1	3,400 rpm
Output torque S1	50 Nm
Output moment maximum (short-time)	100 Nm
Moment of inertia of gearbox	0.610 kgcm <sup>2</sup>
Radial output shaft loading, max.	2,800 N
Axial output shaft load, max.	0 N
Efficiency of gearbox	0.97
Torsional backlash	8´
Gearbox weight	3.80 kg

### Limiting data

Max. permissible speed (mech.)	9,000 rpm
Max. permissible speed (inverter)	9,000 rpm
Maximum torque	10.5 Nm
Maximum current	15.3 A

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### Holding brake

Holding brake version	Permanent-magnet brake
Holding torque	4.0 Nm
Power supply voltage	DC 24 V $\pm$ 10 %
Coil current	0.5 A
Opening time	70 ms
Closing time	30 ms
Highest braking work	150 J

### Special design

V40 Mounting of NP+ planetary gearbox

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