

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

Article No. : **1FK7042-5AF71-1FV5-Z**  
D03+G11+H11



Figure similar

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)	2.6 Nm
Rated current	1.9 A
Static torque (60 K)	2.50 Nm
Static torque (100 K)	3.00 Nm
Stall current (60 K)	1.80 A
Stall current (100 K)	2.20 A
Moment of inertia	3.450 kgcm <sup>2</sup>

### Physical constants

Torque constant	1.40 Nm/A
Voltage constant at 20° C	89.0 V/1000*min <sup>-1</sup>
Winding resistance at 20° C	5.15 Ω
Rotating field inductance	29.0 mH
Electrical time constant	5.60 ms
Mechanical time constant	2.37 ms
Thermal time constant	30 min
Shaft torsional stiffness	16,000 Nm/rad
Net weight of the motor	16.1 kg

### Recommended Motor Module

Rated inverter current	3 A
Maximum inverter current	6 A
Maximum torque	8.40 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	IP65 and DE flange IP67
Design acc. to Code I	IM B5 (IM V1, IM V3)
Temperature monitoring	KTY84 temperature sensor in the stator winding
Electrical connectors	Connectors for signals and power rotatable
Color of the housing	Standard (Anthracite RAL 7016)
Holding brake	with holding brake
Shaft end	Fitted key and keyway
Encoder system	Encoder AM22DQ: absolute encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)

### Gearbox data

Gearbox type	Helical geared
Designation	C002
Gearbox ratio	10
Output speed at the gearbox shaft	291 rpm
Rated output torque at duty type S3-60 %	26 Nm
Acceleration torque max.	72 Nm
Power at duty type S3-60%	0.79 kW
Radial output shaft loading, max.	778 N
Precise ratio	1421/138
Overload factor	2.40
Type of construction	IM B3 / IM B5 / IM B14 / IM B34 / IM B35
Mounting position	no value
Connector position	Connector position on gearbox side 2, top
Type	Foot-mounted
Gearbox shaft end	Solid shaft with fitted key
Gearbox output arrangement	no value
Arrangement of shrink disk	no value

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### Limiting data

Max. permissible speed (mech.)	9,000 rpm
Max. permissible speed (inverter)	6,500 rpm
Maximum torque	10.5 Nm
Maximum current	7.4 A

### Holding brake

Holding brake version	Permanent-magnet brake
Holding torque	3.2 Nm
Power supply voltage	DC 24 V $\pm$ 10 %
Coil current	0.6 A
Opening time	70 ms
Closing time	30 ms
Highest braking work	74 J

### Special design

D03	Helical geared motors
G11	Foot-mounted, Solid shaft with fitted key (Gearbox side 4)
H11	Connector position on gearbox side 2, top