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Data sheet for SIMOTICS S-1FK7 servo geared motor

Figure similar

MLFB-Ordering data **1FK7060-2AF71-1RH1-Z**
J17

Client order no. :
Order no. :
Offer no. :
Remarks :

Item no. :
Consignment no. :
Project :

Engineering data

Rated speed (100 K)	3000 rpm
Number of poles	8
Rated torque (100 K)	4.7 Nm
Rated current	3.7 A
Static torque (60 K)	5.00 Nm
Static torque (100 K)	6.0 Nm
Stall current (60 K)	3.60 A
Stall current (100 K)	4.45 A
Moment of inertia	10.780 kgcm²

Physical constants

Torque constant	1.33 Nm/A
Voltage constant at 20° C	85.5 V/1000*min⁻¹
Winding resistance at 20° C	1.35 Ω
Rotating field inductance	15.2 mH
Electrical time constant	11.30 ms
Mechanical time constant	1.71 ms
Thermal time constant	30 min
Shaft torsional stiffness	28500 Nm/rad
Net weight of the motor	25.5 kg

Recommended Motor Module

Rated inverter current	5 A
Maximum inverter current	15 A
Maximum torque	18.00 Nm

Mechanical data

Motor type	Permanent-magnet synchronous motor
Motor type	Compact
Shaft height	63
Cooling	Natural cooling
Radial runout tolerance	0.040 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 extension	Plain shaft
Encoder system	Encoder AM20DQI: absolute encoder 20 bits (resolution 1048576, encoder-internal 512 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)

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Gearbox data

Gearbox type	Planetary gearbox SP+
Designation	SP 140S-MF2
Gearbox shaft end	With feather key
Gear ratio + steps	50 (2-step)
Motor speed S3-60 %	6000 rpm
Motor speed S1	3200 rpm
Output torque S1	536 Nm
Rated output torque at duty type S3-60 %	670 Nm

Limiting data

Max. permissible speed (mech.)	7200 rpm
Max. permissible speed (inverter)	6700 rpm
Maximum torque	18.0 Nm
Maximum current	15.0 A

Holding brake

Holding brake version	Permanent-magnet brake
Holding torque	13.0 Nm
Power supply voltage	DC 24 V ± 10 %
Coil current	0.8 A
Opening time	100 ms
Closing time	50 ms
Highest braking work	380 J

Moment of inertia of gearbox	2.080 kgcm²
Radial output shaft loading, max.	9900 N
Axial output shaft load, max.	9870 N
Efficiency of gearbox	0.94
Torsional backlash	5 '
Gearbox weight	17.00 kg

Special design

J17 Mounting of SP+ planetary gearbox