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Data sheet for SIMOTICS S-1FK7 servo geared motor

Figure similar

MLFB-Ordering data **1FK7032-5AK71-1HH3-Z**
V42

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

Item no. :
Consignment no. :
Project :

Engineering data

Rated speed (100 K)	6000 rpm
Number of poles	6
Rated torque (100 K)	0.8 Nm
Rated current	1.4 A
Static torque (60 K)	0.85 Nm
Static torque (100 K)	1.1 Nm
Stall current (60 K)	1.40 A
Stall current (100 K)	1.70 A
Moment of inertia	0.910 kgcm²

Physical constants

Torque constant	0.67 Nm/A
Voltage constant at 20° C	45.0 V/1000*min⁻¹
Winding resistance at 20° C	5.20 Ω
Rotating field inductance	18.5 mH
Electrical time constant	3.60 ms
Mechanical time constant	2.20 ms
Thermal time constant	25 min
Shaft torsional stiffness	6500 Nm/rad
Net weight of the motor	4.9 kg

Recommended Motor Module

Rated inverter current	3 A
Maximum inverter current	6 A
Maximum torque	3.90 Nm

Mechanical data

Motor type	Permanent-magnet synchronous motor
Motor type	Compact
Shaft height	36
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	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 extension	Plain shaft
Encoder system	Encoder AM512S/R: absolute encoder 512 S/R, 4096 revolutions multi-turn, with EnDat interface

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Gearbox data

Gearbox type	Planetary gearbox NP+
Designation	NP 015
Gearbox shaft end	With feather key
Gear ratio + steps	10 (1-step)
Temporary input speed	8000 rpm
Motor speed S1	4300 rpm
Output torque S1	19 Nm
Output moment maximum (short-time)	35 Nm

Limiting data

Max. permissible speed (mech.)	10000 rpm
Max. permissible speed (inverter)	12800 rpm
Maximum torque	4.5 Nm
Maximum current	7.0 A

Holding brake

Holding brake version	Permanent-magnet brake
Holding torque	1.9 Nm
Power supply voltage	DC 24 V ± 10 %
Coil current	0.3 A
Opening time	50 ms
Closing time	30 ms
Highest braking work	40 J

Moment of inertia of gearbox	0.220 kgcm²
Radial output shaft loading, max.	1700 N
Axial output shaft load, max.	0 N
Efficiency of gearbox	0.97
Torsional backlash	8 '
Gearbox weight	1.90 kg

Special design

V42 Mounting of NP+ planetary gearbox