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Data sheet for SIMOTICS S-1FK7 servo geared motor

Figure similar

Article No. : 1FK7042-2AF71-1BG0-Z
V42

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	2.0 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	3.390 kgcm²

Physical constants	
Torque constant	1.38 Nm/A
Voltage constant at 20° C	90.0 V/1000*min⁻¹
Winding resistance at 20° C	4.67 Ω
Rotating field inductance	35.0 mH
Electrical time constant	7.50 ms
Mechanical time constant	2.15 ms
Thermal time constant	30 min
Shaft torsional stiffness	15,500 Nm/rad
Net weight of the motor	8.4 kg

Recommended Motor Module	
Rated inverter current	3 A
Maximum inverter current	9 A
Maximum torque	10.50 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	without holding brake
Shaft end	Plain shaft
Encoder system	Encoder AS24DQI: absolute encoder single-turn 24 bits

Gearbox data	
Gearbox type	Planetary gearbox NP+
Designation	NP 025
Gearbox shaft end	With feather key
Gear ratio + steps	10 (1-step)
Temporary input speed	7,000 rpm
Motor speed S1	3,900 rpm
Output torque S1	45 Nm
Output moment maximum (short-time)	90 Nm
Moment of inertia of gearbox	0.490 kgcm²
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)	6,400 rpm
Maximum torque	10.5 Nm
Maximum current	7.6 A

Special design
V42 Mounting of NP+ planetary gearbox

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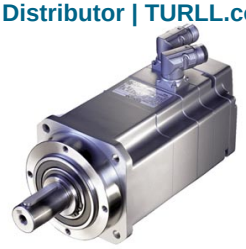

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V42

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