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Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data **1FK7103-3BF71-1CB0**

Figure similar

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)	14.0 Nm
Rated current	11.5 A
Static torque (60 K)	30.00 Nm
Static torque (100 K)	30.00 Nm
Stall current (60 K)	21.00 A
Stall current (100 K)	26.00 A
Moment of inertia	176.000 kgcm²
Efficiency	93.0 %

Physical constants

Torque constant	1.39 Nm/A
Voltage constant at 20° C	89.5 V/1000*min⁻¹
Winding resistance at 20° C	0.09 Ω
Rotating field inductance	2.4 mH
Electrical time constant	27.00 ms
Mechanical time constant	2.35 ms
Thermal time constant	65 min
Shaft torsional stiffness	108000 Nm/rad
Net weight of the motor	36.6 kg

Mechanical data

Motor type	Permanent-magnet synchronous motor
Motor type	High Inertia
Shaft height	100
Cooling	Natural cooling
Radial runout tolerance	0.050 mm
Concentricity tolerance	0.10 mm
Axial runout tolerance	0.10 mm
Vibration severity grade	Grade A
Connector size	1.5
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	Feather key
Encoder system	Encoder AM24DQI: absolute encoder 24 bits (resolution 16777216, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)

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Optimum operating point

Optimum speed	2500 rpm
Optimum power	5.4 kW

Limiting data

Max. permissible speed (mech.)	5000 rpm
Max. permissible speed (inverter)	5000 rpm
Maximum torque	108.0 Nm
Maximum current	84.0 A

Holding brake

Holding brake version	Permanent-magnet brake
Holding torque	43.0 Nm
Power supply voltage	DC 24 V ± 10 %
Coil current	1.0 A
Opening time	300 ms
Closing time	70 ms
Highest braking work	3380 J

Recommended Motor Module

Rated inverter current	30 A
Maximum inverter current	90 A
Maximum torque	108.00 Nm