

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7103-3BF71-1RA2

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

Item no. :
Consignment no. :
Project :

Engineering data		Mechanical data	
Rated speed (100 K)	3000 rpm	Motor type	Permanent-magnet synchronous motor
Number of poles	8	Motor type	High Inertia
Rated torque (100 K)	14.0 Nm	Shaft height	100
Rated current	11.5 A	Cooling	Natural cooling
Static torque (60 K)	30.00 Nm	Radial runout tolerance	0.050 mm
Static torque (100 K)	36.00 Nm	Concentricity tolerance	0.10 mm
Stall current (60 K)	21.00 A	Axial runout tolerance	0.10 mm
Stall current (100 K)	26.00 A	Vibration severity grade	Grade A
Moment of inertia	168.000 kgcm²	Connector size	1.5
Efficiency	93.0 %	Degree of protection	IP65 and DE flange IP67
Physical constants		Design acc. to Code I	IM B5 (IM V1, IM V3)
Torque constant	1.39 Nm/A	Temperature monitoring	Pt1000 temperature sensor
Voltage constant at 20° C	89.5 V/1000*min ⁻¹	Electrical connectors	Connectors for signals and power rotatable
Winding resistance at 20° C	0.09 Ω	Color of the housing	Standard (Anthracite RAL 7016)
Rotating field inductance	2.4 mH	Holding brake	without holding brake
Electrical time constant	27.00 ms	Shaft end	Feather key
Mechanical time constant	2.35 ms	Encoder system	Encoder AM20DQI: absolute encoder 20 bits (resolution 1048576, encoder-internal 512 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)
Thermal time constant	65 min		
Shaft torsional stiffness	148000 Nm/rad		
Net weight of the motor	32.1 kg		



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Optimum operating point		Recommended Motor Module	
Optimum speed	2500 rpm	Rated inverter current	30 A
Optimum power	5.4 kW	Maximum inverter current	90 A
Limiting data		Maximum torque	108.00 Nm
Max. permissible speed (mech.)	5000 rpm		
Max. permissible speed (inverter)	5000 rpm		
Maximum torque	108.0 Nm		
Maximum current	84.0 A		