

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7101-3BF71-1RH2

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)	15.5 Nm	Shaft height	100
Rated current	11.6 A	Cooling	Natural cooling
Static torque (60 K)	22.50 Nm	Radial runout tolerance	0.050 mm
Static torque (100 K)	27.00 Nm	Concentricity tolerance	0.10 mm
Stall current (60 K)	15.20 A	Axial runout tolerance	0.10 mm
Stall current (100 K)	18.80 A	Vibration severity grade	Grade A
Moment of inertia	136.000 kgcm²	Connector size	1.5
Efficiency	92.0 %	Degree of protection	IP65 and DE flange IP67
Physical constants		Design acc. to Code I	IM B5 (IM V1, IM V3)
Torque constant	1.44 Nm/A	Temperature monitoring	Pt1000 temperature sensor
Voltage constant at 20° C	92.5 V/1000*min ⁻¹	Electrical connectors	Connectors for signals and power rotatable
Winding resistance at 20° C	0.14 Ω	Color of the housing	Standard (Anthracite RAL 7016)
Rotating field inductance	3.5 mH	Holding brake	with holding brake
Electrical time constant	25.00 ms	Shaft end	Plain shaft
Mechanical time constant	2.61 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	60 min		
Shaft torsional stiffness	116000 Nm/rad		
Net weight of the motor	30.2 kg		



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Optimum operating point		Recommended Motor Module	
Optimum speed	3000 rpm	Rated inverter current	18 A
Optimum power	4.8 kW	Maximum inverter current	54 A
Limiting data		Maximum torque	72.00 Nm
Max. permissible speed (mech.)	5000 rpm		
Max. permissible speed (inverter)	5000 rpm		
Maximum torque	80.0 Nm		
Maximum current	63.0 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		