

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7086-4SF71-1RH0

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 Dynamic
Rated torque (100 K)	24.0 Nm	Shaft height	80
Rated current	20.0 A	Cooling	Forced ventilation
Static torque (60 K)	31.50 Nm	Radial runout tolerance	0.050 mm
Static torque (100 K)	38.0 Nm	Concentricity tolerance	0.10 mm
Stall current (60 K)	23.00 A	Axial runout tolerance	0.10 mm
Stall current (100 K)	29.00 A	Vibration severity grade	Grade A
Moment of inertia	25.500 kgcm²	Connector size	1.5
Efficiency	93.0 %	Degree of protection	IP54/64
Physical constants		Design acc. to Code I	IM B5 (IM V1, IM V3)
Torque constant	1.33 Nm/A	Temperature monitoring	Pt1000 temperature sensor
Voltage constant at 20° C	84.5 V/1000*min ⁻¹	Electrical connectors	Connectors for signals and power rotatable
Winding resistance at 20° C	0.12 Ω	Color of the housing	Standard (Anthracite RAL 7016)
Rotating field inductance	3.1 mH	Holding brake	with holding brake
Electrical time constant	27.00 ms	Shaft extension	Plain shaft
Mechanical time constant	0.46 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	35 min		
Shaft torsional stiffness	63000 Nm/rad		
Net weight of the motor	30.0 kg		



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Optimum operating point		Recommended Motor Module	
Optimum speed	3000 rpm	Rated inverter current	30 A
Optimum power	7.5 kW	Maximum inverter current	90 A
Limiting data		Maximum torque	92.70 Nm
Max. permissible speed (mech.)	6000 rpm		
Max. permissible speed (inverter)	6000 rpm		
Maximum torque	105.0 Nm		
Maximum current	112.0 A		
Holding brake			
Holding brake version	Permanent-magnet brake		
Holding torque	22.0 Nm		
Power supply voltage	DC 24 V ± 10 %		
Coil current	0.9 A		
Opening time	200 ms		
Closing time	60 ms		
Highest braking work	1400 J		