

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7081-3BF71-1RH0

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 Inertia
Rated torque (100 K)	8.7 Nm	Shaft height	80
Rated current	6.8 A	Cooling	Natural cooling
Static torque (60 K)	10.00 Nm	Radial runout tolerance	0.050 mm
Static torque (100 K)	12.00 Nm	Concentricity tolerance	0.10 mm
Stall current (60 K)	7.10 A	Axial runout tolerance	0.10 mm
Stall current (100 K)	8.70 A	Vibration severity grade	Grade A
Moment of inertia	52.000 kgcm²	Connector size	1
Efficiency	93.0 %	Degree of protection	IP64
Physical constants		Design acc. to Code I	IM B5 (IM V1, IM V3)
Torque constant	1.38 Nm/A	Temperature monitoring	Pt1000 temperature sensor
Voltage constant at 20° C	88.5 V/1000*min ⁻¹	Electrical connectors	Connectors for signals and power rotatable
Winding resistance at 20° C	0.42 Ω	Color of the housing	Standard (Anthracite RAL 7016)
Rotating field inductance	7.7 mH	Holding brake	with holding brake
Electrical time constant	18.20 ms	Shaft end	Plain shaft
Mechanical time constant	3.30 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	45 min		
Shaft torsional stiffness	71000 Nm/rad		
Net weight of the motor	18.2 kg		



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Optimum operating point		Recommended Motor Module	
Optimum speed	3000 rpm	Rated inverter current	9 A
Optimum power	2.8 kW	Maximum inverter current	27 A
Limiting data		Maximum torque	34.10 Nm
Max. permissible speed (mech.)	6000 rpm		
Max. permissible speed (inverter)	6000 rpm		
Maximum torque	37.0 Nm		
Maximum current	30.0 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		