

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7086-4CF71-1FB2-Z  
Q31

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)	6.5 Nm	Shaft height	80		
Rated current	5.7 A	Cooling	Natural cooling		
Static torque (60 K)	23.00 Nm	Radial runout tolerance	0.050 mm		
Static torque (100 K)	28.00 Nm	Concentricity tolerance	0.10 mm		
Stall current (60 K)	17.40 A	Axial runout tolerance	0.10 mm		
Stall current (100 K)	21.50 A	Vibration severity grade	Grade A		
Moment of inertia	25.000 kgcm <sup>2</sup>	Connector size	1.5		
Efficiency	93.0 %	Degree of protection	IP65 and DE flange IP67		
<th colspan="2">Physical constants</th>		Physical constants		Design acc. to Code I	IM B5 (IM V1, IM V3)
		Torque constant	1.30 Nm/A	Temperature monitoring	Pt1000 temperature sensor
		Voltage constant at 20° C	84.5 V/1000*min <sup>-1</sup>	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	26.50 ms	Shaft end	Feather key
		Mechanical time constant	0.46 ms	Encoder system	Encoder AM22DQ: absolute encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)
		Thermal time constant	65 min		
		Shaft torsional stiffness	63000 Nm/rad		
		Net weight of the motor	26.0 kg		



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### Optimum operating point

Optimum speed	2000 rpm
Optimum power	3.8 kW

### Limiting data

Max. permissible speed (mech.)	6000 rpm
Max. permissible speed (inverter)	6000 rpm
Maximum torque	105.0 Nm
Maximum current	115.0 A

### Holding brake

Holding brake version	Permanent-magnet brake
Holding torque	22.0 Nm
Power supply voltage	DC 24 V $\pm$ 10 %
Coil current	0.9 A
Opening time	200 ms
Closing time	60 ms
Highest braking work	1400 J

### Recommended Motor Module

Rated inverter current	30 A
Maximum inverter current	72 A
Maximum torque	79.30 Nm

### Special design

Q31 Metal rating plate on the motor