

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7084-3BF71-1CB1

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)	10.0 Nm	Shaft height	80																				
Rated current	6.5 A	Cooling	Natural cooling																				
Static torque (60 K)	16.60 Nm	Radial runout tolerance	0.050 mm																				
Static torque (100 K)	20.00 Nm	Concentricity tolerance	0.10 mm																				
Stall current (60 K)	9.80 A	Axial runout tolerance	0.10 mm																				
Stall current (100 K)	12.10 A	Vibration severity grade	Grade A																				
Moment of inertia	102.000 kgcm <sup>2</sup>	Connector size	1																				
Efficiency	93.0 %	Degree of protection	IP65																				
<table border="1"> <thead> <tr> <th colspan="2">Physical constants</th> </tr> </thead> <tbody> <tr> <td>Torque constant</td> <td>1.66 Nm/A</td> </tr> <tr> <td>Voltage constant at 20° C</td> <td>106.5 V/1000*min<sup>-1</sup></td> </tr> <tr> <td>Winding resistance at 20° C</td> <td>0.28 Ω</td> </tr> <tr> <td>Rotating field inductance</td> <td>5.9 mH</td> </tr> <tr> <td>Electrical time constant</td> <td>21.00 ms</td> </tr> <tr> <td>Mechanical time constant</td> <td>3.10 ms</td> </tr> <tr> <td>Thermal time constant</td> <td>55 min</td> </tr> <tr> <td>Shaft torsional stiffness</td> <td>62000 Nm/rad</td> </tr> <tr> <td>Net weight of the motor</td> <td>26.0 kg</td> </tr> </tbody> </table>		Physical constants		Torque constant	1.66 Nm/A	Voltage constant at 20° C	106.5 V/1000*min <sup>-1</sup>	Winding resistance at 20° C	0.28 Ω	Rotating field inductance	5.9 mH	Electrical time constant	21.00 ms	Mechanical time constant	3.10 ms	Thermal time constant	55 min	Shaft torsional stiffness	62000 Nm/rad	Net weight of the motor	26.0 kg	Design acc. to Code I	IM B5 (IM V1, IM V3)
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Net weight of the motor	26.0 kg																						
Temperature monitoring	Pt1000 temperature sensor	Electrical connectors	Connectors for signals and power rotatable																				
Color of the housing	Standard (Anthracite RAL 7016)	Holding brake	with holding brake																				
Shaft end	Feather key	Encoder system	Encoder AM24DQI: absolute encoder 24 bits (resolution 16777216, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)																				



Figure similar

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### Optimum operating point

Optimum speed	2500 rpm
Optimum power	3.2 kW

### Limiting data

Max. permissible speed (mech.)	6000 rpm
Max. permissible speed (inverter)	5400 rpm
Maximum torque	61.0 Nm
Maximum current	41.0 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	18 A
Maximum inverter current	54 A
Maximum torque	61.00 Nm