

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7101-3BF71-1CH2

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)	27.0 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 kgcm <sup>2</sup>	Connector size	1.5																				
Efficiency	92.0 %	Degree of protection	IP65 and DE flange IP67																				
<table border="1"> <thead> <tr> <th colspan="2">Physical constants</th> </tr> </thead> <tbody> <tr> <td>Torque constant</td> <td>1.44 Nm/A</td> </tr> <tr> <td>Voltage constant at 20° C</td> <td>92.5 V/1000*min<sup>-1</sup></td> </tr> <tr> <td>Winding resistance at 20° C</td> <td>0.14 Ω</td> </tr> <tr> <td>Rotating field inductance</td> <td>3.5 mH</td> </tr> <tr> <td>Electrical time constant</td> <td>25.00 ms</td> </tr> <tr> <td>Mechanical time constant</td> <td>2.61 ms</td> </tr> <tr> <td>Thermal time constant</td> <td>60 min</td> </tr> <tr> <td>Shaft torsional stiffness</td> <td>116000 Nm/rad</td> </tr> <tr> <td>Net weight of the motor</td> <td>30.2 kg</td> </tr> </tbody> </table>		Physical constants		Torque constant	1.44 Nm/A	Voltage constant at 20° C	92.5 V/1000*min <sup>-1</sup>	Winding resistance at 20° C	0.14 Ω	Rotating field inductance	3.5 mH	Electrical time constant	25.00 ms	Mechanical time constant	2.61 ms	Thermal time constant	60 min	Shaft torsional stiffness	116000 Nm/rad	Net weight of the motor	30.2 kg	Design acc. to Code I	IM B5 (IM V1, IM V3)
		Physical constants																					
		Torque constant	1.44 Nm/A																				
		Voltage constant at 20° C	92.5 V/1000*min <sup>-1</sup>																				
		Winding resistance at 20° C	0.14 Ω																				
		Rotating field inductance	3.5 mH																				
		Electrical time constant	25.00 ms																				
		Mechanical time constant	2.61 ms																				
		Thermal time constant	60 min																				
		Shaft torsional stiffness	116000 Nm/rad																				
Net weight of the motor	30.2 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 extension	Plain shaft	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

MLFB-Ordering data

1FK7101-3BF71-1CH2

### Optimum operating point

Optimum speed	3000 rpm
Optimum power	4.8 kW

### Limiting data

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 $\pm$ 10 %
Coil current	1.0 A
Opening time	300 ms
Closing time	70 ms
Highest braking work	3380 J

### Recommended Motor Module

Rated inverter current	18 A
Maximum inverter current	54 A
Maximum torque	72.00 Nm