

## Data sheet for SIMOTICS S-1FK7



Figure similar

Article No. : 1FK7032-2AK71-1CG2-Z  
Q31

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### Engineering data

|                       |                         |
|-----------------------|-------------------------|
| Rated speed (100 K)   | 6,000 rpm               |
| Number of poles       | 6                       |
| Rated torque (100 K)  | 0.8 Nm                  |
| Rated current         | 1.3 A                   |
| Static torque (60 K)  | 0.95 Nm                 |
| Static torque (100 K) | 1.10 Nm                 |
| Stall current (60 K)  | 1.40 A                  |
| Stall current (100 K) | 1.70 A                  |
| Moment of inertia     | 0.650 kgcm <sup>2</sup> |
| Efficiency            | 88.0 %                  |

### Physical constants

|                             |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 0.67 Nm/A                     |
| Voltage constant at 20° C   | 45.0 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 5.05 Ω                        |
| Rotating field inductance   | 17.3 mH                       |
| Electrical time constant    | 3.45 ms                       |
| Mechanical time constant    | 2.20 ms                       |
| Thermal time constant       | 25 min                        |
| Shaft torsional stiffness   | 6,000 Nm/rad                  |
| Net weight of the motor     | 2.7 kg                        |

### Mechanical data

|                          |   |
|--------------------------|---|
| Motor type               | Permanent-magnet synchronous motor  |
| Motor type               | Compact   |
| Shaft height             | 36  |
| Cooling                  | Natural cooling   |
| Radial runout tolerance  | 0.035 mm  |
| Concentricity tolerance  | 0.08 mm   |
| Axial runout tolerance   | 0.08 mm   |
| Vibration severity grade | Grade A   |
| Connector size           | 1   |
| Degree of protection     | IP65 and DE flange IP67   |
| Design acc. to Code I    | IM B5 (IM V1, IM V3)  |
| Temperature monitoring   | Pt1000 temperature sensor   |
| Electrical connectors    | Connectors for signals and power rotatable  |
| Color of the housing     | Standard (Anthracite RAL 7016)  |
| Holding brake            | without holding brake   |
| Shaft end                | 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) |

### Optimum operating point

|               |           |
|---------------|-----------|
| Optimum speed | 6,000 rpm |
| Optimum power | 0.5 kW    |

### Limiting data

|                                   |            |
|-----------------------------------|------------|
| Max. permissible speed (mech.)    | 10,000 rpm |
| Max. permissible speed (inverter) | 10,000 rpm |
| Maximum torque                    | 4.5 Nm     |
| Maximum current                   | 7.0 A      |

### Recommended Motor Module

|                          |         |
|--------------------------|---------|
| Rated inverter current   | 3 A     |
| Maximum inverter current | 9 A     |
| Maximum torque           | 4.50 Nm |

### Special design

Q31 Metal rating plate on the motor

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