

## Data sheet for SIMOTICS S-1FK7



Figure similar

Article No. : 1FK7042-2AK71-1PG1

Client order no. :  
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### Engineering data

|                       |                         |
|-----------------------|-------------------------|
| Rated speed (100 K)   | 6,000 rpm               |
| Number of poles       | 8                       |
| Rated torque (100 K)  | 1.5 Nm                  |
| Rated current         | 2.5 A                   |
| Static torque (60 K)  | 2.50 Nm                 |
| Static torque (100 K) | 3.00 Nm                 |
| Stall current (60 K)  | 3.55 A                  |
| Stall current (100 K) | 4.40 A                  |
| Moment of inertia     | 2.900 kgcm <sup>2</sup> |
| Efficiency            | 89.0 %                  |

### Physical constants

|                             |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 0.68 Nm/A                     |
| Voltage constant at 20° C   | 44.5 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 1.15 Ω                        |
| Rotating field inductance   | 8.6 mH                        |
| Electrical time constant    | 7.50 ms                       |
| Mechanical time constant    | 2.15 ms                       |
| Thermal time constant       | 30 min                        |
| Shaft torsional stiffness   | 15,500 Nm/rad                 |
| Net weight of the motor     | 4.6 kg                        |

### Mechanical data

|                          |  |
|--------------------------|--|
| Motor type               | Permanent-magnet synchronous motor                                   |
| Motor type               | Compact  |
| Shaft height             | 48   |
| Cooling                  | Natural cooling  |
| Radial runout tolerance  | 0.040 mm   |
| Concentricity tolerance  | 0.08 mm  |
| Axial runout tolerance   | 0.08 mm  |
| Vibration severity grade | Grade A  |
| Connector size           | 1  |
| Degree of protection     | IP65   |
| 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           | Resolver R14DQ: resolver 14 bits (resolution 16384, internal 2-pole) |

### Optimum operating point

|               |           |
|---------------|-----------|
| Optimum speed | 5,000 rpm |
| Optimum power | 1.0 kW    |

### Limiting data

|                                   |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 9,000 rpm |
| Max. permissible speed (inverter) | 9,000 rpm |
| Maximum torque                    | 10.5 Nm   |
| Maximum current                   | 15.3 A    |

### Recommended Motor Module

|                          |          |
|--------------------------|----------|
| Rated inverter current   | 5 A      |
| Maximum inverter current | 15 A     |
| Maximum torque           | 10.30 Nm |

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