

## Data sheet for SIMOTICS S-1FK7

Article No. : 1FK7042-2AC71-1BB2



Figure similar

Client order no. :  
Order no. :  
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Remarks :

Item no. :  
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### Engineering data

|                       |                         |
|-----------------------|-------------------------|
| Rated speed (100 K)   | 2,000 rpm               |
| Number of poles       | 8                       |
| Rated torque (100 K)  | 2.8 Nm                  |
| Rated current         | 1.6 A                   |
| Static torque (60 K)  | 2.50 Nm                 |
| Static torque (100 K) | 3.00 Nm                 |
| Stall current (60 K)  | 1.30 A                  |
| Stall current (100 K) | 1.61 A                  |
| Moment of inertia     | 3.200 kgcm <sup>2</sup> |
| Efficiency            | 88.0 %                  |

### Physical constants

|                             |                                |
|-----------------------------|--------------------------------|
| Torque constant             | 1.86 Nm/A                      |
| Voltage constant at 20° C   | 122.0 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 8.60 Ω                         |
| Rotating field inductance   | 64.0 mH                        |
| Electrical time constant    | 7.40 ms                        |
| Mechanical time constant    | 2.15 ms                        |
| Thermal time constant       | 30 min                         |
| Shaft torsional stiffness   | 11,400 Nm/rad                  |
| Net weight of the motor     | 5.3 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 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            | with holding brake                                    |
| Shaft end                | Feather key   |
| Encoder system           | Encoder AS24DQI: absolute encoder single-turn 24 bits |

### Optimum operating point

|               |           |
|---------------|-----------|
| Optimum speed | 2,000 rpm |
| Optimum power | 0.6 kW    |

### Limiting data

|                                   |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 9,000 rpm |
| Max. permissible speed (inverter) | 4,750 rpm |
| Maximum torque                    | 10.5 Nm   |
| Maximum current                   | 5.6 A     |

### Holding brake

|                       |                        |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque        | 4.0 Nm                 |
| Power supply voltage  | DC 24 V ± 10 %         |
| Coil current          | 0.5 A                  |
| Opening time          | 70 ms                  |
| Closing time          | 30 ms                  |
| Highest braking work  | 150 J                  |

### Recommended Motor Module

|                          |          |
|--------------------------|----------|
| Rated inverter current   | 3 A      |
| Maximum inverter current | 9 A      |
| Maximum torque           | 10.50 Nm |

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