

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7044-4CH74-1EH2

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

| Engineering data   |                         | Mechanical data             |                                    |                        |   |
|--|-------------------------|-----------------------------|------------------------------------|------------------------|---|
| Rated speed (100 K)  | 4500 rpm                | Motor type                  | Permanent-magnet synchronous motor |                        |   |
| Number of poles  | 6                       | Motor type                  | High Dynamic                       |                        |   |
| Rated torque (100 K)   | 3.0 Nm                  | Shaft height                | 48                                 |                        |   |
| Rated current  | 3.9 A                   | Cooling                     | Natural cooling                    |                        |   |
| Static torque (60 K)   | 3.75 Nm                 | Radial runout tolerance     | 0.040 mm                           |                        |   |
| Static torque (100 K)  | 4.5 Nm                  | Concentricity tolerance     | 0.08 mm                            |                        |   |
| Stall current (60 K)   | 4.35 A                  | Axial runout tolerance      | 0.08 mm                            |                        |   |
| Stall current (100 K)  | 5.40 A                  | Vibration severity grade    | Grade A                            |                        |   |
| Moment of inertia  | 1.620 kgcm <sup>2</sup> | Connector size              | 1                                  |                        |   |
| Efficiency   | 91.0 %                  | Degree of protection        | IP65 and DE flange IP67            |                        |   |
| <th colspan="2">Physical constants</th> <td>Design acc. to Code I</td> <td>IM B5 (IM V1, IM V3)</td> |                         | Physical constants          |                                    | Design acc. to Code I  | IM B5 (IM V1, IM V3)  |
|  |                         | Torque constant             | 0.83 Nm/A                          | Temperature monitoring | Pt1000 temperature sensor   |
|  |                         | Voltage constant at 20° C   | 53.0 V/1000*min <sup>-1</sup>      | Electrical connectors  | Connectors for signals and power rotatable  |
|  |                         | Winding resistance at 20° C | 0.81 Ω                             | Color of the housing   | Standard (Anthracite RAL 7016)  |
|  |                         | Rotating field inductance   | 10.2 mH                            | Holding brake          | with holding brake  |
|  |                         | Electrical time constant    | 12.50 ms                           | Shaft extension        | Plain shaft   |
|  |                         | Mechanical time constant    | 0.44 ms                            | Encoder system         | Encoder AM2048S/R: absolute encoder 2048 S/R, 4096 revolutions multi-turn, with EnDat interface |
|  |                         | Thermal time constant       | 45 min                             |                        |   |
|  |                         | Shaft torsional stiffness   | 7900 Nm/rad                        |                        |   |
|  |                         | Net weight of the motor     | 8.0 kg                             |                        |   |



Figure similar

MLFB-Ordering data

1FK7044-4CH74-1EH2

### Optimum operating point

|               |          |
|---------------|----------|
| Optimum speed | 4500 rpm |
| Optimum power | 1.4 kW   |

### Limiting data

|                                   |          |
|-----------------------------------|----------|
| Max. permissible speed (mech.)    | 9000 rpm |
| Max. permissible speed (inverter) | 9000 rpm |
| Maximum torque                    | 13.0 Nm  |
| Maximum current                   | 16.4 A   |

### Holding brake

|                       |                        |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque        | 4.0 Nm                 |
| Power supply voltage  | DC 24 V $\pm$ 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   | 9 A      |
| Maximum inverter current | 27 A     |
| Maximum torque           | 13.00 Nm |