

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7081-2AC71-1UB1

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

| Engineering data                        |                          | Mechanical data             |                                    |                        |  |
|---|--------------------------|-----------------------------|------------------------------------|------------------------|--|
| Rated speed (100 K)                     | 2000 rpm                 | Motor type                  | Permanent-magnet synchronous motor |                        |  |
| Number of poles                         | 8                        | Motor type                  | Compact                            |                        |  |
| Rated torque (100 K)                    | 10.0 Nm                  | Shaft height                | 80                                 |                        |  |
| Rated current                           | 4.4 A                    | Cooling                     | Natural cooling                    |                        |  |
| Static torque (60 K)                    | 10.00 Nm                 | Radial runout tolerance     | 0.050 mm                           |                        |  |
| Static torque (100 K)                   | 12.00 Nm                 | Concentricity tolerance     | 0.10 mm                            |                        |  |
| Stall current (60 K)                    | 4.05 A                   | Axial runout tolerance      | 0.10 mm                            |                        |  |
| Stall current (100 K)                   | 5.00 A                   | Vibration severity grade    | Grade A                            |                        |  |
| Moment of inertia                       | 23.500 kgcm <sup>2</sup> | Connector size              | 1                                  |                        |  |
| Efficiency                              | 93.0 %                   | Degree of protection        | IP65                               |                        |  |
| <th colspan="2">Physical constants</th> |                          | Physical constants          |                                    | Design acc. to Code I  | IM B5 (IM V1, IM V3)   |
|   |                          | Torque constant             | 2.40 Nm/A                          | Temperature monitoring | Pt1000 temperature sensor  |
|   |                          | Voltage constant at 20° C   | 154.5 V/1000*min <sup>-1</sup>     | Electrical connectors  | Connectors for signals and power rotatable                               |
|   |                          | Winding resistance at 20° C | 1.27 Ω                             | Color of the housing   | Standard (Anthracite RAL 7016)   |
|   |                          | Rotating field inductance   | 23.5 mH                            | Holding brake          | with holding brake   |
|   |                          | Electrical time constant    | 18.40 ms                           | Shaft end              | Feather key  |
|   |                          | Mechanical time constant    | 1.33 ms                            | Encoder system         | Resolver R15DQ: resolver 15 bits (resolution 32768, internal multi-pole) |
|   |                          | Thermal time constant       | 45 min                             |                        |  |
|   |                          | Shaft torsional stiffness   | 76000 Nm/rad                       |                        |  |
|   |                          | Net weight of the motor     | 15.9 kg                            |                        |  |



Figure similar

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### Optimum operating point

|               |          |
|---------------|----------|
| Optimum speed | 2000 rpm |
| Optimum power | 2.1 kW   |

### Limiting data

|                                   |          |
|-----------------------------------|----------|
| Max. permissible speed (mech.)    | 6000 rpm |
| Max. permissible speed (inverter) | 3750 rpm |
| Maximum torque                    | 37.0 Nm  |
| Maximum current                   | 17.2 A   |

### Holding brake

|                       |                        |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque        | 22.0 Nm                |
| Power supply voltage  | DC 24 V $\pm$ 10 %     |
| Coil current          | 0.9 A                  |
| Opening time          | 200 ms                 |
| Closing time          | 60 ms                  |
| Highest braking work  | 1400 J                 |

### Recommended Motor Module

|                          |          |
|--------------------------|----------|
| Rated inverter current   | 5 A      |
| Maximum inverter current | 15 A     |
| Maximum torque           | 33.30 Nm |