

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7080-2AH71-1BG1

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                         | 8                        | Motor type                  | Compact                            |                        |   |
| Rated torque (100 K)                    | 4.5 Nm                   | Shaft height                | 80                                 |                        |   |
| Rated current                           | 4.8 A                    | Cooling                     | Natural cooling                    |                        |   |
| Static torque (60 K)                    | 6.60 Nm                  | Radial runout tolerance     | 0.050 mm                           |                        |   |
| Static torque (100 K)                   | 8.00 Nm                  | Concentricity tolerance     | 0.10 mm                            |                        |   |
| Stall current (60 K)                    | 6.00 A                   | Axial runout tolerance      | 0.10 mm                            |                        |   |
| Stall current (100 K)                   | 7.40 A                   | Vibration severity grade    | Grade A                            |                        |   |
| Moment of inertia                       | 14.200 kgcm <sup>2</sup> | Connector size              | 1                                  |                        |   |
| Efficiency                              | 92.0 %                   | 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             | 1.08 Nm/A                          | Temperature monitoring | Pt1000 temperature sensor                             |
|   |                          | Voltage constant at 20° C   | 68.5 V/1000*min <sup>-1</sup>      | Electrical connectors  | Connectors for signals and power rotatable            |
|   |                          | Winding resistance at 20° C | 0.42 Ω                             | Color of the housing   | Standard (Anthracite RAL 7016)                        |
|   |                          | Rotating field inductance   | 7.3 mH                             | Holding brake          | without holding brake                                 |
|   |                          | Electrical time constant    | 17.30 ms                           | Shaft end              | Plain shaft   |
|   |                          | Mechanical time constant    | 1.54 ms                            | Encoder system         | Encoder AS24DQI: absolute encoder single-turn 24 bits |
|   |                          | Thermal time constant       | 40 min                             |                        |   |
|   |                          | Shaft torsional stiffness   | 120000 Nm/rad                      |                        |   |
|   |                          | Net weight of the motor     | 10.3 kg                            |                        |   |



Figure similar

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| Optimum operating point           |          | Recommended Motor Module |          |
|-----------------------------------|----------|--------------------------|----------|
| Optimum speed                     | 4000 rpm | Rated inverter current   | 9 A      |
| Optimum power                     | 2.4 kW   | Maximum inverter current | 27 A     |
| Limiting data                     |          | Maximum torque           | 24.70 Nm |
| Max. permissible speed (mech.)    | 6000 rpm |                          |          |
| Max. permissible speed (inverter) | 6000 rpm |                          |          |
| Maximum torque                    | 25.0 Nm  |                          |          |
| Maximum current                   | 27.5 A   |                          |          |