

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7080-2AH71-1CG1

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  |
| <b>Physical constants</b>   |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)  |
|                             |                               | Temperature monitoring   | Pt1000 temperature sensor   |
| Torque constant             | 1.08 Nm/A                     | Electrical connectors    | Connectors for signals and power rotatable  |
| Voltage constant at 20° C   | 68.5 V/1000*min <sup>-1</sup> | Color of the housing     | Standard (Anthracite RAL 7016)  |
| Winding resistance at 20° C | 0.42 Ω                        | Holding brake            | without holding brake   |
| Rotating field inductance   | 7.3 mH                        | Shaft end                | Plain shaft   |
| Electrical time constant    | 17.30 ms                      | Encoder system           | Encoder AM24DQI: absolute encoder 24 bits (resolution 16777216, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| Mechanical time constant    | 1.54 ms                       |                          |   |
| 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   |                          |          |