

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7103-2AF71-1RA2

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

| Engineering data          |                           | Mechanical data             |   |  |  |
|---------------------------|---------------------------|-----------------------------|---|--|--|
| Rated speed (100 K)       | 3000 rpm                  | Motor type                  | Permanent-magnet synchronous motor  |  |  |
| Number of poles           | 8                         | Motor type                  | Compact   |  |  |
| Rated torque (100 K)      | 14.0 Nm                   | Shaft height                | 100   |  |  |
| Rated current             | 11.5 A                    | Cooling                     | Natural cooling   |  |  |
| Static torque (60 K)      | 30.00 Nm                  | Radial runout tolerance     | 0.050 mm  |  |  |
| Static torque (100 K)     | 36.0 Nm                   | Concentricity tolerance     | 0.10 mm   |  |  |
| Stall current (60 K)      | 21.00 A                   | Axial runout tolerance      | 0.10 mm   |  |  |
| Stall current (100 K)     | 26.00 A                   | Vibration severity grade    | Grade A   |  |  |
| Moment of inertia         | 104.000 kgcm <sup>2</sup> | Connector size              | 1.5   |  |  |
| Efficiency                | 93.0 %                    | Degree of protection        | IP65 and DE flange IP67   |  |  |
| <b>Physical constants</b> |                           | 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               | without holding brake   |  |  |
|                           |                           | Shaft extension             | Feather key   |  |  |
|                           |                           | Encoder system              | Encoder AM20DQI: absolute encoder 20 bits (resolution 1048576, encoder-internal 512 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |  |  |
|                           |                           | Torque constant             | 1.35 Nm/A   |  |  |
|                           |                           | Voltage constant at 20° C   | 89.5 V/1000*min <sup>-1</sup>   |  |  |
|                           |                           | Winding resistance at 20° C | 0.09 Ω  |  |  |
| Rotating field inductance | 2.4 mH                    |                             |   |  |  |
| Electrical time constant  | 27.00 ms                  |                             |   |  |  |
| Mechanical time constant  | 1.46 ms                   |                             |   |  |  |
| Thermal time constant     | 65 min                    |                             |   |  |  |
| Shaft torsional stiffness | 148000 Nm/rad             |                             |   |  |  |
| Net weight of the motor   | 28.5 kg                   |                             |   |  |  |



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| Optimum operating point           |          | Recommended Motor Module |           |
|-----------------------------------|----------|--------------------------|-----------|
| Optimum speed                     | 2500 rpm | Rated inverter current   | 30 A      |
| Optimum power                     | 5.4 kW   | Maximum inverter current | 90 A      |
| Limiting data                     |          | Maximum torque           | 108.00 Nm |
| Max. permissible speed (mech.)    | 5000 rpm |                          |           |
| Max. permissible speed (inverter) | 5000 rpm |                          |           |
| Maximum torque                    | 108.0 Nm |                          |           |
| Maximum current                   | 84.0 A   |                          |           |