

## Data sheet for SIMOTICS S-1FK7



Figure similar

## MLFB-Ordering data

1FK7084-3BF71-1QA0-Z  
N05

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

| Engineering data            |                                |
|-----------------------------|--------------------------------|
| Rated speed (100 K)         | 3000 rpm                       |
| Number of poles             | 8                              |
| Rated torque (100 K)        | 10.0 Nm                        |
| Rated current               | 6.5 A                          |
| Static torque (60 K)        | 16.60 Nm                       |
| Static torque (100 K)       | 20.0 Nm                        |
| Stall current (60 K)        | 9.80 A                         |
| Stall current (100 K)       | 12.10 A                        |
| Moment of inertia           | 99.000 kgcm²                   |
| Efficiency                  | 93.0 %                         |
| Physical constants          |                                |
| Torque constant             | 1.66 Nm/A                      |
| Voltage constant at 20° C   | 106.5 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 0.28 Ω                         |
| Rotating field inductance   | 5.9 mH                         |
| Electrical time constant    | 21.00 ms                       |
| Mechanical time constant    | 3.10 ms                        |
| Thermal time constant       | 55 min                         |
| Shaft torsional stiffness   | 82000 Nm/rad                   |
| Net weight of the motor     | 23.0 kg                        |

| Mechanical data          |                                                       |
|--------------------------|-------------------------------------------------------|
| Motor type               | Permanent-magnet synchronous motor                    |
| Motor type               | High Inertia                                          |
| Shaft height             | 80                                                    |
| Cooling                  | Natural cooling                                       |
| Radial runout tolerance  | 0.050 mm                                              |
| Concentricity tolerance  | 0.10 mm                                               |
| Axial runout tolerance   | 0.10 mm                                               |
| Vibration severity grade | Grade A                                               |
| Connector size           | 1                                                     |
| Degree of protection     | IP64                                                  |
| 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 AS20DQI: absolute encoder single-turn 20 bits |



Figure similar

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| Optimum operating point           |          | Recommended Motor Module |                                                              |
|-----------------------------------|----------|--------------------------|--------------------------------------------------------------|
| Optimum speed                     | 2500 rpm | Rated inverter current   | 18 A                                                         |
| Optimum power                     | 3.2 kW   | Maximum inverter current | 54 A                                                         |
| Limiting data                     |          | Maximum torque           | 61.00 Nm                                                     |
| Max. permissible speed (mech.)    | 6000 rpm | Special design           |                                                              |
| Max. permissible speed (inverter) | 5400 rpm | N05                      | Non-standard shaft extension (dimensions as for 1FT5 motors) |
| Maximum torque                    | 61.0 Nm  |                          |                                                              |
| Maximum current                   | 41.0 A   |                          |                                                              |