

## Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data

1FK7084-2AF71-1RG0



Figure similar

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)        | 10.0 Nm                        | Shaft height             | 80                                                                                                                                                |
| Rated current               | 6.5 A                          | Cooling                  | Natural cooling                                                                                                                                   |
| Static torque (60 K)        | 16.60 Nm                       | Radial runout tolerance  | 0.050 mm                                                                                                                                          |
| Static torque (100 K)       | 20.0 Nm                        | Concentricity tolerance  | 0.10 mm                                                                                                                                           |
| Stall current (60 K)        | 9.80 A                         | Axial runout tolerance   | 0.10 mm                                                                                                                                           |
| Stall current (100 K)       | 12.10 A                        | Vibration severity grade | Grade A                                                                                                                                           |
| Moment of inertia           | 32.500 kgcm <sup>2</sup>       | Connector size           | 1                                                                                                                                                 |
| Efficiency                  | 93.0 %                         | Degree of protection     | IP64                                                                                                                                              |
| Physical constants          |                                | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                                              |
| Torque constant             | 1.66 Nm/A                      | Temperature monitoring   | Pt1000 temperature sensor                                                                                                                         |
| Voltage constant at 20° C   | 106.5 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                                        |
| Winding resistance at 20° C | 0.28 Ω                         | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                                                    |
| Rotating field inductance   | 5.9 mH                         | Holding brake            | without holding brake                                                                                                                             |
| Electrical time constant    | 21.00 ms                       | Shaft extension          | Plain shaft                                                                                                                                       |
| Mechanical time constant    | 1.01 ms                        | Encoder system           | Encoder AM20DQI: absolute encoder 20 bits (resolution 1048576, encoder-internal 512 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| Thermal time constant       | 55 min                         |                          |                                                                                                                                                   |
| Shaft torsional stiffness   | 93000 Nm/rad                   |                          |                                                                                                                                                   |
| Net weight of the motor     | 18.3 kg                        |                          |                                                                                                                                                   |



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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 |                          |          |
| Max. permissible speed (inverter) | 5400 rpm |                          |          |
| Maximum torque                    | 61.0 Nm  |                          |          |
| Maximum current                   | 41.0 A   |                          |          |