

Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data1FK7060-5AF71-1PG3-Z  
B02



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)        | 4.7 Nm                        | Shaft height             | 63                                                                   |
| Rated current               | 3.7 A                         | Cooling                  | Natural cooling                                                      |
| Static torque (60 K)        | 5.00 Nm                       | Radial runout tolerance  | 0.040 mm                                                             |
| Static torque (100 K)       | 6.00 Nm                       | Concentricity tolerance  | 0.10 mm                                                              |
| Stall current (60 K)        | 3.70 A                        | Axial runout tolerance   | 0.10 mm                                                              |
| Stall current (100 K)       | 4.50 A                        | Vibration severity grade | Grade A                                                              |
| Moment of inertia           | 7.950 kgcm²                   | Connector size           | 1                                                                    |
| Efficiency                  | 90.0 %                        | Degree of protection     | IP64                                                                 |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                 |
| Torque constant             | 1.33 Nm/A                     | Temperature monitoring   | KTY84 temperature sensor in the stator winding                       |
| Voltage constant at 20° C   | 84.5 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                           |
| Winding resistance at 20° C | 1.44 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                                       |
| Rotating field inductance   | 14.7 mH                       | Holding brake            | without holding brake                                                |
| Electrical time constant    | 10.20 ms                      | Shaft end                | Plain shaft                                                          |
| Mechanical time constant    | 1.94 ms                       | Encoder system           | Resolver R14DQ: resolver 14 bits (resolution 16384, internal 2-pole) |
| Thermal time constant       | 30 min                        |                          |                                                                      |
| Shaft torsional stiffness   | 42000 Nm/rad                  |                          |                                                                      |
| Net weight of the motor     | 7.0 kg                        |                          |                                                                      |

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| Optimum operating point           |          | Recommended Motor Module |                        |
|-----------------------------------|----------|--------------------------|------------------------|
| Optimum speed                     | 3000 rpm | Rated inverter current   | 5 A                    |
| Optimum power                     | 1.5 kW   | Maximum inverter current | 10 A                   |
| Limiting data                     |          | Maximum torque           | 13.20 Nm               |
| Max. permissible speed (mech.)    | 7200 rpm | Special design           |                        |
| Max. permissible speed (inverter) | 6800 rpm | B02                      | Works test certificate |
| Maximum torque                    | 18.0 Nm  |                          |                        |
| Maximum current                   | 15.0 A   |                          |                        |