

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7103-2AF71-1BB1

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)       | 36.00 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           | 112.000 kgcm²                 | Connector size           | 1.5                                                   |
| Efficiency                  | 93.0 %                        | Degree of protection     | IP65                                                  |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                  |
| Torque constant             | 1.39 Nm/A                     | Temperature monitoring   | Pt1000 temperature sensor                             |
| Voltage constant at 20° C   | 89.5 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable            |
| Winding resistance at 20° C | 0.09 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                        |
| Rotating field inductance   | 2.4 mH                        | Holding brake            | with holding brake                                    |
| Electrical time constant    | 27.00 ms                      | Shaft end                | Feather key                                           |
| Mechanical time constant    | 1.46 ms                       | Encoder system           | Encoder AS24DQI: absolute encoder single-turn 24 bits |
| Thermal time constant       | 65 min                        |                          |                                                       |
| Shaft torsional stiffness   | 108000 Nm/rad                 |                          |                                                       |
| Net weight of the motor     | 33.0 kg                       |                          |                                                       |



Figure similar

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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                 |                          |           |
| Holding brake                     |                        |                          |           |
| Holding brake version             | Permanent-magnet brake |                          |           |
| Holding torque                    | 43.0 Nm                |                          |           |
| Power supply voltage              | DC 24 V ± 10 %         |                          |           |
| Coil current                      | 1.0 A                  |                          |           |
| Opening time                      | 300 ms                 |                          |           |
| Closing time                      | 70 ms                  |                          |           |
| Highest braking work              | 3380 J                 |                          |           |