

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7085-4CF71-1CH1

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               | High Dynamic                                                                                                                                        |
| Rated torque (100 K)        | 6.5 Nm                        | Shaft height             | 80                                                                                                                                                  |
| Rated current               | 7.0 A                         | Cooling                  | Natural cooling                                                                                                                                     |
| Static torque (60 K)        | 18.30 Nm                      | Radial runout tolerance  | 0.050 mm                                                                                                                                            |
| Static torque (100 K)       | 22.00 Nm                      | Concentricity tolerance  | 0.10 mm                                                                                                                                             |
| Stall current (60 K)        | 17.80 A                       | Axial runout tolerance   | 0.10 mm                                                                                                                                             |
| Stall current (100 K)       | 22.00 A                       | Vibration severity grade | Grade A                                                                                                                                             |
| Moment of inertia           | 25.000 kgcm²                  | Connector size           | 1.5                                                                                                                                                 |
| Efficiency                  | 92.0 %                        | Degree of protection     | IP65                                                                                                                                                |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                                                |
| Torque constant             | 1.00 Nm/A                     | Temperature monitoring   | Pt1000 temperature sensor                                                                                                                           |
| Voltage constant at 20° C   | 64.5 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                                          |
| Winding resistance at 20° C | 0.12 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                                                      |
| Rotating field inductance   | 3.7 mH                        | Holding brake            | with holding brake                                                                                                                                  |
| Electrical time constant    | 31.50 ms                      | Shaft end                | Plain shaft                                                                                                                                         |
| Mechanical time constant    | 0.78 ms                       | Encoder system           | Encoder AM24DQI: absolute encoder 24 bits (resolution 16777216, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| Thermal time constant       | 65 min                        |                          |                                                                                                                                                     |
| Shaft torsional stiffness   | 63000 Nm/rad                  |                          |                                                                                                                                                     |
| Net weight of the motor     | 26.0 kg                       |                          |                                                                                                                                                     |



Figure similar

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| Optimum operating point           |                        | Recommended Motor Module |          |
|-----------------------------------|------------------------|--------------------------|----------|
| Optimum speed                     | 2500 rpm               | Rated inverter current   | 30 A     |
| Optimum power                     | 3.1 kW                 | Maximum inverter current | 72 A     |
| Limiting data                     |                        | Maximum torque           | 59.80 Nm |
| Max. permissible speed (mech.)    | 6000 rpm               |                          |          |
| Max. permissible speed (inverter) | 6000 rpm               |                          |          |
| Maximum torque                    | 65.0 Nm                |                          |          |
| Maximum current                   | 84.0 A                 |                          |          |
| Holding brake                     |                        |                          |          |
| Holding brake version             | Permanent-magnet brake |                          |          |
| Holding torque                    | 22.0 Nm                |                          |          |
| Power supply voltage              | DC 24 V ± 10 %         |                          |          |
| Coil current                      | 0.9 A                  |                          |          |
| Opening time                      | 200 ms                 |                          |          |
| Closing time                      | 60 ms                  |                          |          |
| Highest braking work              | 1400 J                 |                          |          |