

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7100-2AC71-1CB1

Client order no. :  
Order no. :  
Offer no. :  
Remarks :

Item no. :  
Consignment no. :  
Project :

| Engineering data            |                                | Mechanical data          |                                                                                                                                                     |
|-----------------------------|--------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated speed (100 K)         | 2000 rpm                       | Motor type               | Permanent-magnet synchronous motor                                                                                                                  |
| Number of poles             | 8                              | Motor type               | Compact                                                                                                                                             |
| Rated torque (100 K)        | 14.5 Nm                        | Shaft height             | 100                                                                                                                                                 |
| Rated current               | 7.1 A                          | Cooling                  | Natural cooling                                                                                                                                     |
| Static torque (60 K)        | 14.90 Nm                       | Radial runout tolerance  | 0.050 mm                                                                                                                                            |
| Static torque (100 K)       | 18.00 Nm                       | Concentricity tolerance  | 0.10 mm                                                                                                                                             |
| Stall current (60 K)        | 6.80 A                         | Axial runout tolerance   | 0.10 mm                                                                                                                                             |
| Stall current (100 K)       | 8.40 A                         | Vibration severity grade | Grade A                                                                                                                                             |
| Moment of inertia           | 62.000 kgcm <sup>2</sup>       | Connector size           | 1                                                                                                                                                   |
| Efficiency                  | 92.0 %                         | Degree of protection     | IP65                                                                                                                                                |
| Physical constants          |                                | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                                                |
| Torque constant             | 2.14 Nm/A                      | Temperature monitoring   | Pt1000 temperature sensor                                                                                                                           |
| Voltage constant at 20° C   | 138.0 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                                          |
| Winding resistance at 20° C | 0.55 Ω                         | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                                                      |
| Rotating field inductance   | 12.7 mH                        | Holding brake            | with holding brake                                                                                                                                  |
| Electrical time constant    | 23.00 ms                       | Shaft end                | Feather key                                                                                                                                         |
| Mechanical time constant    | 1.95 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       | 55 min                         |                          |                                                                                                                                                     |
| Shaft torsional stiffness   | 135000 Nm/rad                  |                          |                                                                                                                                                     |
| Net weight of the motor     | 21.0 kg                        |                          |                                                                                                                                                     |



Figure similar

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| Optimum operating point           |                        | Recommended Motor Module |          |
|-----------------------------------|------------------------|--------------------------|----------|
| Optimum speed                     | 2000 rpm               | Rated inverter current   | 9 A      |
| Optimum power                     | 3.0 kW                 | Maximum inverter current | 27 A     |
| Limiting data                     |                        | Maximum torque           | 53.40 Nm |
| Max. permissible speed (mech.)    | 5000 rpm               |                          |          |
| Max. permissible speed (inverter) | 4200 rpm               |                          |          |
| Maximum torque                    | 55.0 Nm                |                          |          |
| Maximum current                   | 28.0 A                 |                          |          |
| Holding brake                     |                        |                          |          |
| Holding brake version             | Permanent-magnet brake |                          |          |
| Holding torque                    | 23.0 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                 |                          |          |