

Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data                      1FK7044-4CH71-1RB0

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

Item no. :  
Consignment no. :  
Project :

| Engineering data            |                               | Mechanical data          |                                                                                                                                                   |
|-----------------------------|-------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated speed (100 K)         | 4500 rpm                      | Motor type               | Permanent-magnet synchronous motor                                                                                                                |
| Number of poles             | 6                             | Motor type               | High Dynamic                                                                                                                                      |
| Rated torque (100 K)        | 3.0 Nm                        | Shaft height             | 48                                                                                                                                                |
| Rated current               | 3.9 A                         | Cooling                  | Natural cooling                                                                                                                                   |
| Static torque (60 K)        | 3.75 Nm                       | Radial runout tolerance  | 0.040 mm                                                                                                                                          |
| Static torque (100 K)       | 4.5 Nm                        | Concentricity tolerance  | 0.08 mm                                                                                                                                           |
| Stall current (60 K)        | 4.35 A                        | Axial runout tolerance   | 0.08 mm                                                                                                                                           |
| Stall current (100 K)       | 5.40 A                        | Vibration severity grade | Grade A                                                                                                                                           |
| Moment of inertia           | 1.620 kgcm²                   | Connector size           | 1                                                                                                                                                 |
| Efficiency                  | 91.0 %                        | Degree of protection     | IP64                                                                                                                                              |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                                              |
| Torque constant             | 0.83 Nm/A                     | Temperature monitoring   | Pt1000 temperature sensor                                                                                                                         |
| Voltage constant at 20° C   | 53.0 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                                        |
| Winding resistance at 20° C | 0.81 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                                                    |
| Rotating field inductance   | 10.2 mH                       | Holding brake            | with holding brake                                                                                                                                |
| Electrical time constant    | 12.50 ms                      | Shaft end                | Feather key                                                                                                                                       |
| Mechanical time constant    | 0.44 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       | 45 min                        |                          |                                                                                                                                                   |
| Shaft torsional stiffness   | 7900 Nm/rad                   |                          |                                                                                                                                                   |
| Net weight of the motor     | 8.0 kg                        |                          |                                                                                                                                                   |



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| Optimum operating point           |                        | Recommended Motor Module |          |
|-----------------------------------|------------------------|--------------------------|----------|
| Optimum speed                     | 4500 rpm               | Rated inverter current   | 9 A      |
| Optimum power                     | 1.4 kW                 | Maximum inverter current | 27 A     |
| Limiting data                     |                        | Maximum torque           | 13.00 Nm |
| Max. permissible speed (mech.)    | 9000 rpm               |                          |          |
| Max. permissible speed (inverter) | 9000 rpm               |                          |          |
| Maximum torque                    | 13.0 Nm                |                          |          |
| Maximum current                   | 16.4 A                 |                          |          |
| Holding brake                     |                        |                          |          |
| Holding brake version             | Permanent-magnet brake |                          |          |
| Holding torque                    | 4.0 Nm                 |                          |          |
| Power supply voltage              | DC 24 V ± 10 %         |                          |          |
| Coil current                      | 0.5 A                  |                          |          |
| Opening time                      | 70 ms                  |                          |          |
| Closing time                      | 30 ms                  |                          |          |
| Highest braking work              | 150 J                  |                          |          |