

Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data                      1FK7101-3BC71-1CG2

Client order no. :  
Order no. :  
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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               | High Inertia                                                                                                                                        |
| Rated torque (100 K)        | 20.5 Nm                        | Shaft height             | 100                                                                                                                                                 |
| Rated current               | 9.7 A                          | Cooling                  | Natural cooling                                                                                                                                     |
| Static torque (60 K)        | 22.50 Nm                       | Radial runout tolerance  | 0.050 mm                                                                                                                                            |
| Static torque (100 K)       | 27.00 Nm                       | Concentricity tolerance  | 0.10 mm                                                                                                                                             |
| Stall current (60 K)        | 10.00 A                        | Axial runout tolerance   | 0.10 mm                                                                                                                                             |
| Stall current (100 K)       | 12.30 A                        | Vibration severity grade | Grade A                                                                                                                                             |
| Moment of inertia           | 127.000 kgcm <sup>2</sup>      | Connector size           | 1.5                                                                                                                                                 |
| Efficiency                  | 93.0 %                         | Degree of protection     | IP65 and DE flange IP67                                                                                                                             |
| Physical constants          |                                | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                                                |
| Torque constant             | 2.15 Nm/A                      | Temperature monitoring   | Pt1000 temperature sensor                                                                                                                           |
| Voltage constant at 20° C   | 144.5 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                                          |
| Winding resistance at 20° C | 0.34 Ω                         | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                                                      |
| Rotating field inductance   | 8.5 mH                         | Holding brake            | without holding brake                                                                                                                               |
| Electrical time constant    | 25.00 ms                       | Shaft end                | Plain shaft                                                                                                                                         |
| Mechanical time constant    | 2.60 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       | 60 min                         |                          |                                                                                                                                                     |
| Shaft torsional stiffness   | 164000 Nm/rad                  |                          |                                                                                                                                                     |
| Net weight of the motor     | 25.7 kg                        |                          |                                                                                                                                                     |



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| Optimum operating point           |          | Recommended Motor Module |          |
|-----------------------------------|----------|--------------------------|----------|
| Optimum speed                     | 2000 rpm | Rated inverter current   | 18 A     |
| Optimum power                     | 4.3 kW   | Maximum inverter current | 54 A     |
| Limiting data                     |          | Maximum torque           | 80.00 Nm |
| Max. permissible speed (mech.)    | 5000 rpm |                          |          |
| Max. permissible speed (inverter) | 4000 rpm |                          |          |
| Maximum torque                    | 80.0 Nm  |                          |          |
| Maximum current                   | 40.5 A   |                          |          |