

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data 1FK7034-2AK71-1RG1-Z L13

Client order no. :  
Order no. :  
Offer no. :  
Remarks :  
Item no. :  
Consignment no. :  
Project :

| Engineering data            |                               | Mechanical data          |                                                                                                                                                   |
|-----------------------------|-------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated speed (100 K)         | 6000 rpm                      | Motor type               | Permanent-magnet synchronous motor                                                                                                                |
| Number of poles             | 6                             | Motor type               | Compact                                                                                                                                           |
| Rated torque (100 K)        | 1.0 Nm                        | Shaft height             | 36                                                                                                                                                |
| Rated current               | 1.3 A                         | Cooling                  | Natural cooling                                                                                                                                   |
| Static torque (60 K)        | 1.35 Nm                       | Radial runout tolerance  | 0.035 mm                                                                                                                                          |
| Static torque (100 K)       | 1.6 Nm                        | Concentricity tolerance  | 0.08 mm                                                                                                                                           |
| Stall current (60 K)        | 1.55 A                        | Axial runout tolerance   | 0.08 mm                                                                                                                                           |
| Stall current (100 K)       | 1.90 A                        | Vibration severity grade | Grade A                                                                                                                                           |
| Moment of inertia           | 0.900 kgcm²                   | Connector size           | 1                                                                                                                                                 |
| Efficiency                  | 88.0 %                        | Degree of protection     | IP65                                                                                                                                              |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                                              |
| Torque constant             | 0.84 Nm/A                     | Temperature monitoring   | Pt1000 temperature sensor                                                                                                                         |
| Voltage constant at 20° C   | 55.0 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                                        |
| Winding resistance at 20° C | 4.46 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                                                    |
| Rotating field inductance   | 17.2 mH                       | Holding brake            | without holding brake                                                                                                                             |
| Electrical time constant    | 3.85 ms                       | Shaft extension          | Plain shaft                                                                                                                                       |
| Mechanical time constant    | 1.71 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       | 30 min                        |                          |                                                                                                                                                   |
| Shaft torsional stiffness   | 5300 Nm/rad                   |                          |                                                                                                                                                   |
| Net weight of the motor     | 3.5 kg                        |                          |                                                                                                                                                   |



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| Optimum operating point           |           | Recommended Motor Module |                            |
|-----------------------------------|-----------|--------------------------|----------------------------|
| Optimum speed                     | 6000 rpm  | Rated inverter current   | 3 A                        |
| Optimum power                     | 0.6 kW    | Maximum inverter current | 9 A                        |
| Limiting data                     |           | Maximum torque           | 6.50 Nm                    |
| Max. permissible speed (mech.)    | 10000 rpm | Special design           |                            |
| Max. permissible speed (inverter) | 10000 rpm | L13                      | External ground connection |
| Maximum torque                    | 6.5 Nm    |                          |                            |
| Maximum current                   | 8.0 A     |                          |                            |