

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7022-5AK71-1PG0

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)                    | 0.6 Nm                  | Shaft height                | 28                                 |                        |  |
| Rated current                           | 1.4 A                   | Cooling                     | Natural cooling                    |                        |  |
| Static torque (60 K)                    | 0.70 Nm                 | Radial runout tolerance     | 0.035 mm                           |                        |  |
| Static torque (100 K)                   | 0.8 Nm                  | Concentricity tolerance     | 0.08 mm                            |                        |  |
| Stall current (60 K)                    | 1.50 A                  | Axial runout tolerance      | 0.08 mm                            |                        |  |
| Stall current (100 K)                   | 1.80 A                  | Vibration severity grade    | Grade A                            |                        |  |
| Moment of inertia                       | 0.280 kgcm <sup>2</sup> | Connector size              | 1                                  |                        |  |
| Efficiency                              | 86.0 %                  | Degree of protection        | IP64                               |                        |  |
| <th colspan="2">Physical constants</th> |                         | Physical constants          |                                    | Design acc. to Code I  | IM B5 (IM V1, IM V3)   |
|   |                         | Torque constant             | 0.46 Nm/A                          | Temperature monitoring | Pt1000 temperature sensor  |
|   |                         | Voltage constant at 20° C   | 29.0 V/1000*min <sup>-1</sup>      | Electrical connectors  | Connectors for signals and power rotatable                           |
|   |                         | Winding resistance at 20° C | 4.20 Ω                             | Color of the housing   | without  |
|   |                         | Rotating field inductance   | 9.1 mH                             | Holding brake          | without holding brake  |
|   |                         | Electrical time constant    | 2.20 ms                            | Shaft extension        | Plain shaft  |
|   |                         | Mechanical time constant    | 1.70 ms                            | Encoder system         | Resolver R14DQ: resolver 14 bits (resolution 16384, internal 2-pole) |
|   |                         | Thermal time constant       | 18 min                             |                        |  |
|   |                         | Shaft torsional stiffness   | 3000 Nm/rad                        |                        |  |
|   |                         | Net weight of the motor     | 1.8 kg                             |                        |  |

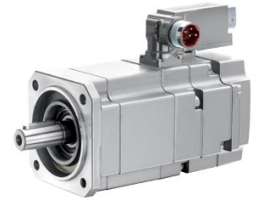


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| Optimum operating point           |           | Recommended Motor Module |         |
|-----------------------------------|-----------|--------------------------|---------|
| Optimum speed                     | 6000 rpm  | Rated inverter current   | 3 A     |
| Optimum power                     | 0.4 kW    | Maximum inverter current | 6 A     |
| Limiting data                     |           | Maximum torque           | 2.65 Nm |
| Max. permissible speed (mech.)    | 10000 rpm |                          |         |
| Max. permissible speed (inverter) | 10000 rpm |                          |         |
| Maximum torque                    | 3.4 Nm    |                          |         |
| Maximum current                   | 8.0 A     |                          |         |