

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7022-5AK21-1TH0

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           | 0.350 kgcm <sup>2</sup>       | Connector size           | 1  |
| Efficiency                  | 86.0 %                        | Degree of protection     | IP64   |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                           |
| Torque constant             | 0.46 Nm/A                     | Temperature monitoring   | KTY84 temperature sensor in the stator winding |
| 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            | with holding brake                             |
| Electrical time constant    | 2.20 ms                       | Shaft extension          | Plain shaft                                    |
| Mechanical time constant    | 1.70 ms                       | Encoder system           | Resolver 2-pole                                |
| Thermal time constant       | 18 min                        |                          |  |
| Shaft torsional stiffness   | 3000 Nm/rad                   |                          |  |
| Net weight of the motor     | 2.0 kg                        |                          |  |



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### Optimum operating point

|               |          |
|---------------|----------|
| Optimum speed | 6000 rpm |
| Optimum power | 0.4 kW   |

### Limiting data

|                                   |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 10000 rpm |
| Max. permissible speed (inverter) | 9990 rpm  |
| Maximum torque                    | 3.4 Nm    |
| Maximum current                   | 8.0 A     |

### Holding brake

|                       |                        |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque        | 1.0 Nm                 |
| Power supply voltage  | DC 24 V $\pm$ 10 %     |
| Coil current          | 0.3 A                  |
| Opening time          | 30 ms                  |
| Closing time          | 20 ms                  |
| Highest braking work  | 8 J                    |

### Recommended Motor Module

|                          |         |
|--------------------------|---------|
| Rated inverter current   | 2 A     |
| Maximum inverter current | 5 A     |
| Maximum torque           | 2.00 Nm |