

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7080-2AH74-1TB0

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             | 8                             | Motor type               | Compact                                    |
| Rated torque (100 K)        | 4.5 Nm                        | Shaft height             | 80   |
| Rated current               | 4.8 A                         | Cooling                  | Natural cooling                            |
| Static torque (60 K)        | 6.60 Nm                       | Radial runout tolerance  | 0.050 mm                                   |
| Static torque (100 K)       | 8.0 Nm                        | Concentricity tolerance  | 0.10 mm                                    |
| Stall current (60 K)        | 6.00 A                        | Axial runout tolerance   | 0.10 mm                                    |
| Stall current (100 K)       | 7.40 A                        | Vibration severity grade | Grade A                                    |
| Moment of inertia           | 17.500 kgcm <sup>2</sup>      | Connector size           | 1  |
| Efficiency                  | 92.0 %                        | Degree of protection     | IP64                                       |
| <b>Physical constants</b>   |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                       |
|                             |                               | Temperature monitoring   | Pt1000 temperature sensor                  |
| Torque constant             | 1.08 Nm/A                     | Electrical connectors    | Connectors for signals and power rotatable |
| Voltage constant at 20° C   | 68.5 V/1000*min <sup>-1</sup> | Color of the housing     | Standard (Anthracite RAL 7016)             |
| Winding resistance at 20° C | 0.42 Ω                        | Holding brake            | with holding brake                         |
| Rotating field inductance   | 7.3 mH                        | Shaft extension          | Feather key                                |
| Electrical time constant    | 17.30 ms                      | Encoder system           | Resolver 2-pole                            |
| Mechanical time constant    | 1.54 ms                       |                          |  |
| Thermal time constant       | 40 min                        |                          |  |
| Shaft torsional stiffness   | 81000 Nm/rad                  |                          |  |
| Net weight of the motor     | 13.3 kg                       |                          |  |



Figure similar

MLFB-Ordering data

1FK7080-2AH74-1TB0

### Optimum operating point

|               |          |
|---------------|----------|
| Optimum speed | 4000 rpm |
| Optimum power | 2.4 kW   |

### Limiting data

|                                   |          |
|-----------------------------------|----------|
| Max. permissible speed (mech.)    | 6000 rpm |
| Max. permissible speed (inverter) | 6000 rpm |
| Maximum torque                    | 25.0 Nm  |
| Maximum current                   | 27.5 A   |

### Holding brake

|                       |                        |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque        | 22.0 Nm                |
| Power supply voltage  | DC 24 V $\pm$ 10 %     |
| Coil current          | 0.9 A                  |
| Opening time          | 200 ms                 |
| Closing time          | 60 ms                  |
| Highest braking work  | 1400 J                 |

### Recommended Motor Module

|                          |          |
|--------------------------|----------|
| Rated inverter current   | 9 A      |
| Maximum inverter current | 27 A     |
| Maximum torque           | 24.70 Nm |