

## Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data

1FK7043-4CH71-1UB0

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

### Engineering data

|                       |                         |
|-----------------------|-------------------------|
| Rated speed (100 K)   | 4500 rpm                |
| Number of poles       | 6                       |
| Rated torque (100 K)  | 2.6 Nm                  |
| Rated current         | 3.3 A                   |
| Static torque (60 K)  | 2.90 Nm                 |
| Static torque (100 K) | 3.5 Nm                  |
| Stall current (60 K)  | 3.30 A                  |
| Stall current (100 K) | 4.10 A                  |
| Moment of inertia     | 1.360 kgcm <sup>2</sup> |
| Efficiency            | 90.0 %                  |

### Physical constants

|                             |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 0.85 Nm/A                     |
| Voltage constant at 20° C   | 54.0 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 1.20 Ω                        |
| Rotating field inductance   | 13.6 mH                       |
| Electrical time constant    | 11.30 ms                      |
| Mechanical time constant    | 0.49 ms                       |
| Thermal time constant       | 40 min                        |
| Shaft torsional stiffness   | 9000 Nm/rad                   |
| Net weight of the motor     | 6.6 kg                        |

### Mechanical data

|                          |  |
|--------------------------|--|
| Motor type               | Permanent-magnet synchronous motor                                       |
| Motor type               | High Dynamic   |
| Shaft height             | 48   |
| Cooling                  | Natural cooling  |
| Radial runout tolerance  | 0.040 mm   |
| Concentricity tolerance  | 0.08 mm  |
| Axial runout tolerance   | 0.08 mm  |
| Vibration severity grade | Grade A  |
| Connector size           | 1  |
| Degree of protection     | IP64   |
| Design acc. to Code I    | IM B5 (IM V1, IM V3)   |
| Temperature monitoring   | Pt1000 temperature sensor  |
| Electrical connectors    | Connectors for signals and power rotatable                               |
| Color of the housing     | Standard (Anthracite RAL 7016)   |
| Holding brake            | with holding brake   |
| Shaft extension          | Feather key  |
| Encoder system           | Resolver R15DQ: resolver 15 bits (resolution 32768, internal multi-pole) |



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### Optimum operating point

|               |          |
|---------------|----------|
| Optimum speed | 4500 rpm |
| Optimum power | 1.2 kW   |

### Limiting data

|                                   |          |
|-----------------------------------|----------|
| Max. permissible speed (mech.)    | 9000 rpm |
| Max. permissible speed (inverter) | 9000 rpm |
| Maximum torque                    | 10.0 Nm  |
| Maximum current                   | 12.5 A   |

### Holding brake

|                       |                        |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque        | 4.0 Nm                 |
| Power supply voltage  | DC 24 V $\pm$ 10 %     |
| Coil current          | 0.5 A                  |
| Opening time          | 70 ms                  |
| Closing time          | 30 ms                  |
| Highest braking work  | 150 J                  |

### Recommended Motor Module

|                          |          |
|--------------------------|----------|
| Rated inverter current   | 5 A      |
| Maximum inverter current | 15 A     |
| Maximum torque           | 10.00 Nm |