

## Data sheet for SIMOTICS S-1FK7

Article No. : 1FK7042-2AF71-1CH0-Z  
Y84



Figure similar

Client order no. :  
Order no. :  
Offer no. :  
Remarks :

Item no. :  
Consignment no. :  
Project :

| Engineering data      |                         |
|-----------------------|-------------------------|
| Rated speed (100 K)   | 3,000 rpm               |
| Number of poles       | 8                       |
| Rated torque (100 K)  | 2.6 Nm                  |
| Rated current         | 2.0 A                   |
| Static torque (60 K)  | 2.50 Nm                 |
| Static torque (100 K) | 3.00 Nm                 |
| Stall current (60 K)  | 1.80 A                  |
| Stall current (100 K) | 2.20 A                  |
| Moment of inertia     | 3.200 kgcm <sup>2</sup> |
| Efficiency            | 89.0 %                  |

| Physical constants          |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 1.38 Nm/A                     |
| Voltage constant at 20° C   | 90.0 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 4.67 Ω                        |
| Rotating field inductance   | 35.0 mH                       |
| Electrical time constant    | 7.50 ms                       |
| Mechanical time constant    | 2.15 ms                       |
| Thermal time constant       | 30 min                        |
| Shaft torsional stiffness   | 11,400 Nm/rad                 |
| Net weight of the motor     | 5.3 kg                        |

| Mechanical data          |                                                                                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor type               | Permanent-magnet synchronous motor                                                                                                                  |
| Motor type               | Compact                                                                                                                                             |
| 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 end                | Plain shaft                                                                                                                                         |
| Encoder system           | Encoder AM24DQI: absolute encoder 24 bits (resolution 16777216, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |

| Optimum operating point |           |
|-------------------------|-----------|
| Optimum speed           | 3,000 rpm |
| Optimum power           | 0.8 kW    |

| Limiting data                     |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 9,000 rpm |
| Max. permissible speed (inverter) | 6,400 rpm |
| Maximum torque                    | 10.5 Nm   |
| Maximum current                   | 7.6 A     |

| Holding brake         |                        |
|-----------------------|------------------------|
| Holding brake version | Permanent-magnet brake |
| Holding torque        | 4.0 Nm                 |
| Power supply voltage  | DC 24 V ± 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   | 3 A      |
| Maximum inverter current | 9 A      |
| Maximum torque           | 10.50 Nm |

| Special design |                                          |
|----------------|------------------------------------------|
| Y84            | Customer specifications on rating plate: |

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