

Data sheet for SIMOTICS S-1FT7

Article No. : 1FT7105-5AF70-1CH0



Figure similar

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

Item no. :  
Consignment no. :  
Project :

| Engineering data        |                          |
|-------------------------|--------------------------|
| Rated speed             | 3,000 rpm                |
| Number of poles         | 10                       |
| Rated torque (100 K)    | 28.0 Nm                  |
| Rated current           | 15.00 A                  |
| Static torque (60 K)    | 41.0 Nm                  |
| Static torque (100 K)   | 50.0 Nm                  |
| Stall current (60 K)    | 21.00 A                  |
| Stall current (100 K)   | 26.00 A                  |
| Rotor moment of inertia | 206.00 kgcm <sup>2</sup> |
| Efficiency              | 94.0 %                   |

| Physical constants          |                                |
|-----------------------------|--------------------------------|
| Torque constant             | 1.92 Nm/A                      |
| Voltage constant at 20° C   | 123.5 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 0.08 Ω                         |
| Rotary field inductance     | 2.3 mH                         |
| Electrical time constant    | 27.00 ms                       |
| Mechanical time constant    | 1.20 ms                        |
| Thermal time constant       | 80 min                         |
| Shaft torsional stiffness   | 107,000 Nm/rad                 |
| Net weight of the motor     | 50.4 kg                        |

| Mechanical data          |                                                                                                                                                                                |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor type               | Permanent-magnet synchronous motor                                                                                                                                             |
| Motor type               | Compact                                                                                                                                                                        |
| Shaft height             | 100                                                                                                                                                                            |
| Cooling                  | Natural cooling                                                                                                                                                                |
| Radial runout tolerance  | 0.050 mm                                                                                                                                                                       |
| Concentricity tolerance  | 0.100 mm                                                                                                                                                                       |
| Axial runout tolerance   | 0.100 mm                                                                                                                                                                       |
| Vibration severity grade | Grade A                                                                                                                                                                        |
| Degree of protection     | IP64                                                                                                                                                                           |
| Design acc. to Code I    | IM B5 (new flange design)                                                                                                                                                      |
| Temperature monitoring   | Pt1000 temperature sensor                                                                                                                                                      |
| Color of the housing     | Standard (pearl dark gray similar to RAL 9023)                                                                                                                                 |
| Shaft end type           | Plain shaft                                                                                                                                                                    |
| Sensor design            | Encoder AM24DQI: Absolute encoder 24 bit (resolution 16777216, encoder-internal 2048 S/R) + 12 bit Multiturn (traversing range 4096 revolutions) - with signal connection RJ45 |
| Electrical connection    | Connector turnable                                                                                                                                                             |
| Connector size           | 1.5                                                                                                                                                                            |

| Optimum operating point |           |
|-------------------------|-----------|
| Optimum speed           | 3,000 rpm |
| Optimum power           | 8.8 kW    |

| Limiting data                     |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 6,000 rpm |
| Max. permissible speed (inverter) | 4,630 rpm |
| Maximum torque                    | 200.0 Nm  |
| Maximum current                   | 116.00 A  |

| Recommended Motor Module |          |
|--------------------------|----------|
| Rated inverter current   | 30.00 A  |
| Maximum inverter current | 90.00 A  |
| Maximum torque           | 157.0 Nm |

| Holding brake          |                        |
|------------------------|------------------------|
| Holding brake version  | Permanent-magnet brake |
| Holding torque         | 85.0 Nm                |
| Braking torque         | 35.0 Nm                |
| Power supply voltage   | DC 24 V                |
| Coil current           | 1.60 A                 |
| Permissible brake work | 5,300 J                |
| Opening time           | 250 ms                 |
| Closing time           | 70 ms                  |