



Figure similar

Data sheet for SIMOTICS S-1FT7

Article No. : 1FT7044-5AF71-1CB2

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

Item no. :  
Consignment no. :  
Project :

| Engineering data        |            |
|-------------------------|------------|
| Rated speed             | 3,000 rpm  |
| Number of poles         | 6          |
| Rated torque (100 K)    | 4.3 Nm     |
| Rated current           | 2.60 A     |
| Static torque (60 K)    | 4.4 Nm     |
| Static torque (100 K)   | 5.0 Nm     |
| Stall current (60 K)    | 2.50 A     |
| Stall current (100 K)   | 2.80 A     |
| Rotor moment of inertia | 6.30 kgcm² |
| Efficiency              | 92.0 %     |

| Physical constants          |                                |
|-----------------------------|--------------------------------|
| Torque constant             | 1.74 Nm/A                      |
| Voltage constant at 20° C   | 110.5 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 2.35 Ω                         |
| Rotary field inductance     | 15.0 mH                        |
| Electrical time constant    | 6.40 ms                        |
| Mechanical time constant    | 1.30 ms                        |
| Thermal time constant       | 35 min                         |
| Shaft torsional stiffness   | 9,500 Nm/rad                   |
| Net weight of the motor     | 8.1 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  | 0.080 mm                                                                                                                                                                       |
| Axial runout tolerance   | 0.080 mm                                                                                                                                                                       |
| Vibration severity grade | Grade A                                                                                                                                                                        |
| Degree of protection     | IP67                                                                                                                                                                           |
| Design acc. to Code I    | IM B5 (compatible with 1FT6)                                                                                                                                                   |
| Temperature monitoring   | Pt1000 temperature sensor                                                                                                                                                      |
| Color of the housing     | Standard (pearl dark gray similar to RAL 9023)                                                                                                                                 |
| Shaft end type           | Fitted key and keyway                                                                                                                                                          |
| 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                                                                                                                                                                              |

| Optimum operating point |           |
|-------------------------|-----------|
| Optimum speed           | 3,000 rpm |
| Optimum power           | 1.4 kW    |

| Limiting data                     |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 9,000 rpm |
| Max. permissible speed (inverter) | 5,200 rpm |
| Maximum torque                    | 23.0 Nm   |
| Maximum current                   | 16.00 A   |

| Recommended Motor Module |         |
|--------------------------|---------|
| Rated inverter current   | 3.00 A  |
| Maximum inverter current | 9.00 A  |
| Maximum torque           | 14.8 Nm |

| Holding brake          |                        |
|------------------------|------------------------|
| Holding brake version  | Permanent-magnet brake |
| Holding torque         | 8.0 Nm                 |
| Braking torque         | 5.0 Nm                 |
| Power supply voltage   | DC 24 V                |
| Coil current           | 0.60 A                 |
| Permissible brake work | 270 J                  |
| Opening time           | 90 ms                  |
| Closing time           | 30 ms                  |