



Figure similar

Data sheet for SIMOTICS S-1FT7

Article No. : 1FT7042-5AF70-1DD2

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)    | 2.7 Nm     |
| Rated current           | 2.10 A     |
| Static torque (60 K)    | 2.5 Nm     |
| Static torque (100 K)   | 3.0 Nm     |
| Stall current (60 K)    | 1.80 A     |
| Stall current (100 K)   | 2.10 A     |
| Rotor moment of inertia | 2.81 kgcm² |
| Efficiency              | 92.0 %     |

| Physical constants          |                               |
|-----------------------------|-------------------------------|
| Torque constant             | 1.38 Nm/A                     |
| Voltage constant at 20° C   | 87.5 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 3.60 Ω                        |
| Rotary field inductance     | 21.4 mH                       |
| Electrical time constant    | 5.90 ms                       |
| Mechanical time constant    | 1.60 ms                       |
| Thermal time constant       | 20 min                        |
| Shaft torsional stiffness   | 11,700 Nm/rad                 |
| Net weight of the motor     | 4.6 kg                        |

| Mechanical data          |                                                                                                                            |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Motor type               | Permanent-magnet synchronous motor                                                                                         |
| Motor type               | Compact                                                                                                                    |
| Shaft height             | 48                                                                                                                         |
| Cooling                  | Natural cooling                                                                                                            |
| Radial runout tolerance  | 0.021 mm                                                                                                                   |
| Concentricity tolerance  | 0.040 mm                                                                                                                   |
| Axial runout tolerance   | 0.040 mm                                                                                                                   |
| Vibration severity grade | Grade A                                                                                                                    |
| Degree of protection     | IP67                                                                                                                       |
| 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           | Fitted key and keyway                                                                                                      |
| Sensor design            | Encoder IC22DQ: incremental encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + commutation position 11 bits |
| Electrical connection    | Connector turnable                                                                                                         |
| Connector size           | 1                                                                                                                          |

| 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) | 6,600 rpm |
| Maximum torque                    | 13.0 Nm   |
| Maximum current                   | 11.00 A   |

| Recommended Motor Module |         |
|--------------------------|---------|
| Rated inverter current   | 3.00 A  |
| Maximum inverter current | 9.00 A  |
| Maximum torque           | 10.9 Nm |