

## Data sheet for SIMOTICS S-1FT7



Figure similar

MLFB-Ordering data

1FT7105-5AF71-1FH1

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

Item no. :  
Consignment no. :  
Project :

| Engineering data            |                                | Mechanical data          |   |
|-----------------------------|--------------------------------|--------------------------|---|
| Rated speed                 | 3000 rpm                       | Motor type               | Permanent-magnet synchronous motor  |
| Number of poles             | 10                             | Design of the motor type | Compact   |
| Rated torque (100 K)        | 28.0 Nm                        | Shaft height             | 100 mm  |
| Rated current               | 15.0 A                         | Cooling                  | Natural cooling   |
| Static torque (60 K)        | 41.00 Nm                       | Radial runout tolerance  | N   |
| Static torque (100 K)       | 50.0 Nm                        | Vibration severity grade | Grade A   |
| Stall current (60 K)        | 21.0 A                         | Degree of protection     | IP65  |
| Stall current (100 K)       | 26.0 A                         | Design acc. to Code I    | IM B5 (compatible with 1FT6)  |
| Rotor moment of inertia     | 0.0206000 kgm <sup>2</sup>     | Temperature monitoring   | Pt1000 temperature sensor   |
| Efficiency                  | 94.0 %                         | Color of the housing     |   |
| Physical constants          |                                | Holding brake version    | Permanent-magnet brake  |
| Torque constant             | 1.92 Nm/A                      | Shaft end type           | Plain shaft   |
| Voltage constant at 20° C   | 123.5 V/1000*min <sup>-1</sup> | Sensor design            | Encoder AM22DQ: absolute encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| Winding resistance at 20° C | 0.08 Ω                         | Electrical connectors    | Connector turnable  |
| Rotating field inductance   | 2.3 mH                         | Connector size           | 1.5   |
| Electrical time constant    | 27.00 ms                       |                          |   |
| Mechanical time constant    | 1.20 ms                        |                          |   |
| Thermal time constant       | 80 min                         |                          |   |
| Shaft torsional stiffness   | 107000 Nm/rad                  |                          |   |
| Net weight of the motor     | 50.4 kg                        |                          |   |

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| Optimum operating point           |          | Recommended Motor Module |           |
|-----------------------------------|----------|--------------------------|-----------|
| Optimum speed                     | 3000 rpm | Rated inverter current   | 30 A      |
| Optimum power                     | 8.8 kW   | Maximum inverter current | 90 A      |
| Limiting data                     |          | Maximum torque           | 157.00 Nm |
| Max. permissible speed (mech.)    | 6000 rpm |                          |           |
| Max. permissible speed (inverter) | 4630 rpm |                          |           |
| Maximum torque                    | 200.0 Nm |                          |           |
| Maximum current                   | 116.0 A  |                          |           |