

## Data sheet for SIMOTICS S-1FT7

MLFB-Ordering data

1FT7042-5AF71-1DA1



Figure similar

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                         | 6                             | Design of the motor type | Compact  |                       |          |
| Rated torque (100 K)                    | 2.7 Nm                        | Shaft height             | 48 mm  |                       |          |
| Rated current                           | 2.1 A                         | Cooling                  | Natural cooling  |                       |          |
| Static torque (60 K)                    | 2.50 Nm                       | Radial runout tolerance  | N  |                       |          |
| Static torque (100 K)                   | 3.0 Nm                        | Vibration severity grade | Grade A  |                       |          |
| Stall current (60 K)                    | 1.8 A                         | Degree of protection     | IP65   |                       |          |
| Stall current (100 K)                   | 2.1 A                         | Design acc. to Code I    | IM B5 (compatible with 1FT6)   |                       |          |
| Rotor moment of inertia                 | 0.0002810 kgm <sup>2</sup>    | Temperature monitoring   | Pt1000 temperature sensor  |                       |          |
| Efficiency                              | 92.0 %                        | Color of the housing     | Pearl dark grey RAL 9023   |                       |          |
| <th colspan="2">Physical constants</th> |                               | Physical constants       |  | Holding brake version | no value |
|   |                               | Shaft end type           | Fitted key and keyway  |                       |          |
| Torque constant                         | 1.38 Nm/A                     | Sensor design            | Encoder IC22DQ: incremental encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + commutation position 11 bits |                       |          |
| Voltage constant at 20° C               | 87.5 V/1000*min <sup>-1</sup> | Electrical connectors    | Connector turnable   |                       |          |
| Winding resistance at 20° C             | 3.60 Ω                        | Connector size           | 1  |                       |          |
| Rotating 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               | 11700 Nm/rad                  |                          |  |                       |          |
| Net weight of the motor                 | 4.6 kg                        |                          |  |                       |          |

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| Optimum operating point           |          | Recommended Motor Module |          |
|-----------------------------------|----------|--------------------------|----------|
| Optimum speed                     | 3000 rpm | Rated inverter current   | 3 A      |
| Optimum power                     | 0.8 kW   | Maximum inverter current | 9 A      |
| Limiting data                     |          | Maximum torque           | 10.90 Nm |
| Max. permissible speed (mech.)    | 9000 rpm |                          |          |
| Max. permissible speed (inverter) | 6600 rpm |                          |          |
| Maximum torque                    | 13.0 Nm  |                          |          |
| Maximum current                   | 11.0 A   |                          |          |