

## Data sheet for SIMOTICS S-1FT7

MLFB-Ordering data

1FT7042-5AK71-1DG1



Figure similar

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

Item no. :  
Consignment no. :  
Project :

| Engineering data            |                               | Mechanical data          |  |
|-----------------------------|-------------------------------|--------------------------|--|
| Rated speed                 | 6000 rpm                      | Motor type               | Permanent-magnet synchronous motor   |
| Number of poles             | 6                             | Design of the motor type | Compact  |
| Rated torque (100 K)        | 2.0 Nm                        | Shaft height             | 48 mm  |
| Rated current               | 3.0 A                         | Cooling                  | Natural cooling  |
| Static torque (60 K)        | 2.40 Nm                       | Radial runout tolerance  | N  |
| Static torque (100 K)       | 3.0 Nm                        | Vibration severity grade | Grade A  |
| Stall current (60 K)        | 3.1 A                         | Degree of protection     | IP65   |
| Stall current (100 K)       | 3.9 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                  | 91.0 %                        | Color of the housing     |  |
| Physical constants          |                               | Holding brake version    | no value   |
| Torque constant             | 0.77 Nm/A                     | Shaft end type           | Plain shaft  |
| Voltage constant at 20° C   | 48.6 V/1000*min <sup>-1</sup> | Sensor design            | Encoder IC22DQ: incremental encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + commutation position 11 bits |
| Winding resistance at 20° C | 1.11 Ω                        | Electrical connectors    | Connector turnable   |
| Rotating field inductance   | 6.5 mH                        | Connector size           | 1  |
| Electrical time constant    | 6.00 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                        |                          |  |

## Data sheet for SIMOTICS S-1FT7

MLFB-Ordering data

1FT7042-5AK71-1DG1



Figure similar

| Optimum operating point           |          | Recommended Motor Module |          |
|-----------------------------------|----------|--------------------------|----------|
| Optimum speed                     | 6000 rpm | Rated inverter current   | 5 A      |
| Optimum power                     | 1.3 kW   | Maximum inverter current | 15 A     |
| Limiting data                     |          | Maximum torque           | 10.40 Nm |
| Max. permissible speed (mech.)    | 9000 rpm |                          |          |
| Max. permissible speed (inverter) | 9000 rpm |                          |          |
| Maximum torque                    | 13.0 Nm  |                          |          |
| Maximum current                   | 21.0 A   |                          |          |