



Figure similar

## Data sheet for SIMOTICS S-1FT7

Article No. : 1FT7105-5AF71-1BA0

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

Item no. :  
Consignment no. :  
Project :

### Engineering data

|                         |                          |
|-------------------------|--------------------------|
| Rated speed             | 3,000 rpm                |
| Number of poles         | 10                       |
| Rated torque (100 K)    | 28.0 Nm                  |
| Rated current           | 15.00 A                  |
| Static torque (60 K)    | 41.0 Nm                  |
| Static torque (100 K)   | 50.0 Nm                  |
| Stall current (60 K)    | 21.00 A                  |
| Stall current (100 K)   | 26.00 A                  |
| Rotor moment of inertia | 178.00 kgcm <sup>2</sup> |
| Efficiency              | 94.0 %                   |

### Physical constants

|                             |                                |
|-----------------------------|--------------------------------|
| Torque constant             | 1.92 Nm/A                      |
| Voltage constant at 20° C   | 123.5 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 0.08 Ω                         |
| Rotary field inductance     | 2.3 mH                         |
| Electrical time constant    | 27.00 ms                       |
| Mechanical time constant    | 1.20 ms                        |
| Thermal time constant       | 80 min                         |
| Shaft torsional stiffness   | 146,000 Nm/rad                 |
| Net weight of the motor     | 44.2 kg                        |

### Mechanical data

|                          |  |
|--------------------------|--|
| Motor type               | Permanent-magnet synchronous motor   |
| Motor type               | Compact  |
| Shaft height             | 100  |
| Cooling                  | Natural cooling  |
| Radial runout tolerance  | 0.050 mm   |
| Concentricity tolerance  | 0.100 mm   |
| Axial runout tolerance   | 0.100 mm   |
| Vibration severity grade | Grade A  |
| Degree of protection     | IP64   |
| 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 AS24DQI: Absolut encoder Singleturn 24 bit - with signal connection RJ45 |
| Electrical connection    | Connector turnable   |
| Connector size           | 1.5  |

### Optimum operating point

|               |           |
|---------------|-----------|
| Optimum speed | 3,000 rpm |
| Optimum power | 8.8 kW    |

### Limiting data

|                                   |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 6,000 rpm |
| Max. permissible speed (inverter) | 4,630 rpm |
| Maximum torque                    | 200.0 Nm  |
| Maximum current                   | 116.00 A  |

### Recommended Motor Module

|                          |          |
|--------------------------|----------|
| Rated inverter current   | 30.00 A  |
| Maximum inverter current | 90.00 A  |
| Maximum torque           | 157.0 Nm |