

Data sheet for SIMOTICS S-1FK7



Figure similar

MLFB-Ordering data                      1FK7042-2AF71-1CH0

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

Item no. :  
Consignment no. :  
Project :

| Engineering data            |                               | Mechanical data          |                                                                                                                                                     |
|-----------------------------|-------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated speed (100 K)         | 3000 rpm                      | Motor type               | Permanent-magnet synchronous motor                                                                                                                  |
| Number of poles             | 8                             | Motor type               | Compact                                                                                                                                             |
| Rated torque (100 K)        | 2.6 Nm                        | Shaft height             | 48                                                                                                                                                  |
| Rated current               | 2.0 A                         | Cooling                  | Natural cooling                                                                                                                                     |
| Static torque (60 K)        | 2.50 Nm                       | Radial runout tolerance  | 0.040 mm                                                                                                                                            |
| Static torque (100 K)       | 3.00 Nm                       | Concentricity tolerance  | 0.08 mm                                                                                                                                             |
| Stall current (60 K)        | 1.80 A                        | Axial runout tolerance   | 0.08 mm                                                                                                                                             |
| Stall current (100 K)       | 2.20 A                        | Vibration severity grade | Grade A                                                                                                                                             |
| Moment of inertia           | 3.200 kgcm²                   | Connector size           | 1                                                                                                                                                   |
| Efficiency                  | 89.0 %                        | Degree of protection     | IP64                                                                                                                                                |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                                                |
| Torque constant             | 1.38 Nm/A                     | Temperature monitoring   | Pt1000 temperature sensor                                                                                                                           |
| Voltage constant at 20° C   | 90.0 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                                          |
| Winding resistance at 20° C | 4.67 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                                                      |
| Rotating field inductance   | 35.0 mH                       | Holding brake            | with holding brake                                                                                                                                  |
| Electrical time constant    | 7.50 ms                       | Shaft end                | Plain shaft                                                                                                                                         |
| Mechanical time constant    | 2.15 ms                       | Encoder system           | Encoder AM24DQI: absolute encoder 24 bits (resolution 16777216, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| Thermal time constant       | 30 min                        |                          |                                                                                                                                                     |
| Shaft torsional stiffness   | 11400 Nm/rad                  |                          |                                                                                                                                                     |
| Net weight of the motor     | 5.3 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           | 10.50 Nm |
| Max. permissible speed (mech.)    | 9000 rpm               |                          |          |
| Max. permissible speed (inverter) | 6400 rpm               |                          |          |
| Maximum torque                    | 10.5 Nm                |                          |          |
| Maximum current                   | 7.6 A                  |                          |          |
| Holding brake                     |                        |                          |          |
| Holding brake version             | Permanent-magnet brake |                          |          |
| Holding torque                    | 4.0 Nm                 |                          |          |
| Power supply voltage              | DC 24 V ± 10 %         |                          |          |
| Coil current                      | 0.5 A                  |                          |          |
| Opening time                      | 70 ms                  |                          |          |
| Closing time                      | 30 ms                  |                          |          |
| Highest braking work              | 150 J                  |                          |          |