

Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data 1FK7101-5AF71-1AB3



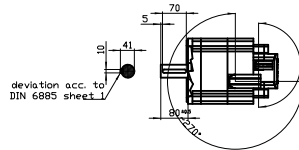
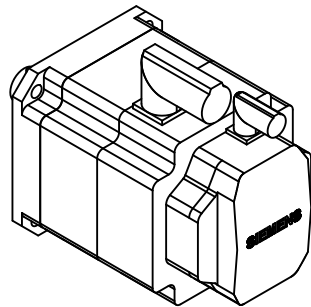
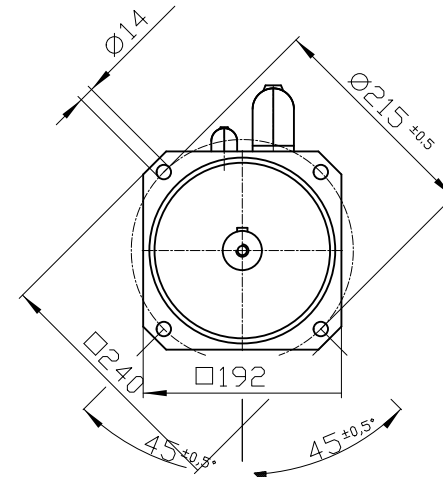
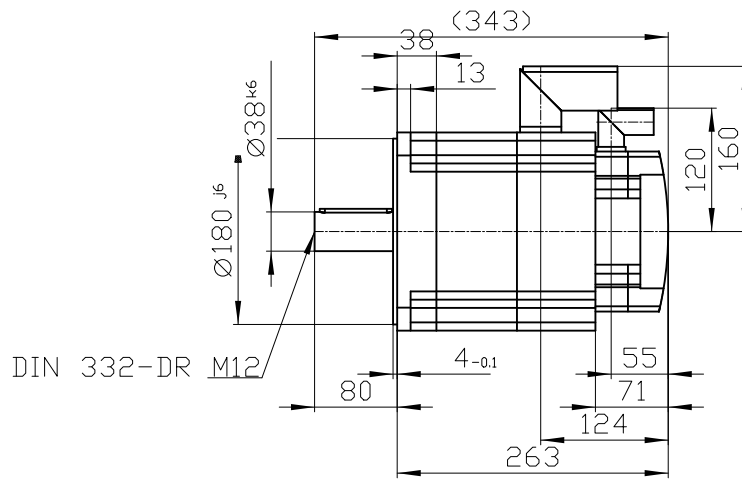
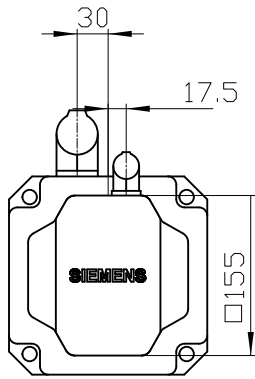
Client order no. :  
Order no. :  
Offer no. :  
Remarks :

Item no. :  
Consignment no. :  
Project :

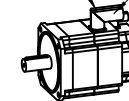
| Engineering data            |                               | Mechanical data          |                                                                                  |
|-----------------------------|-------------------------------|--------------------------|----------------------------------------------------------------------------------|
| Rated speed (100 K)         | 3000 rpm                      | Motor type               | Permanent-magnet synchronous motor                                               |
| Number of poles             | 8                             | Motor type               | Compact                                                                          |
| Rated torque (100 K)        | 15.5 Nm                       | Shaft height             | 100                                                                              |
| Rated current               | 11.8 A                        | Cooling                  | Natural cooling                                                                  |
| Static torque (60 K)        | 22.40 Nm                      | Radial runout tolerance  | 0.050 mm                                                                         |
| Static torque (100 K)       | 27.00 Nm                      | Concentricity tolerance  | 0.10 mm                                                                          |
| Stall current (60 K)        | 15.70 A                       | Axial runout tolerance   | 0.10 mm                                                                          |
| Stall current (100 K)       | 19.00 A                       | Vibration severity grade | Grade A                                                                          |
| Moment of inertia           | 92.300 kgcm²                  | Connector size           | 1.5                                                                              |
| Efficiency                  | 93.0 %                        | Degree of protection     | IP64                                                                             |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                             |
| Torque constant             | 1.41 Nm/A                     | Temperature monitoring   | KTY84 temperature sensor in the stator winding                                   |
| 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 | 0.15 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                                                   |
| Rotating field inductance   | 3.0 mH                        | Holding brake            | with holding brake                                                               |
| Electrical time constant    | 20.00 ms                      | Shaft end                | Feather key                                                                      |
| Mechanical time constant    | 1.80 ms                       | Encoder system           | Encoder IC2048S/R: incremental encoder sin/cos 1 Vpp 2048 S/R with C and D track |
| Thermal time constant       | 60 min                        |                          |                                                                                  |
| Shaft torsional stiffness   | 165000 Nm/rad                 |                          |                                                                                  |
| Net weight of the motor     | 24.0 kg                       |                          |                                                                                  |

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| Optimum operating point           |                        | Recommended Motor Module |          |
|-----------------------------------|------------------------|--------------------------|----------|
| Optimum speed                     | 3000 rpm               | Rated inverter current   | 18 A     |
| Optimum power                     | 4.9 kW                 | Maximum inverter current | 36 A     |
| Limiting data                     |                        | Maximum torque           | 51.00 Nm |
| Max. permissible speed (mech.)    | 5000 rpm               |                          |          |
| Max. permissible speed (inverter) | 6400 rpm               |                          |          |
| Maximum torque                    | 80.0 Nm                |                          |          |
| Maximum current                   | 63.0 A                 |                          |          |
| Holding brake                     |                        |                          |          |
| Holding brake version             | Permanent-magnet brake |                          |          |
| Holding torque                    | 43.0 Nm                |                          |          |
| Power supply voltage              | DC 24 V ± 10 %         |                          |          |
| Coil current                      | 1.0 A                  |                          |          |
| Opening time                      | 300 ms                 |                          |          |
| Closing time                      | 70 ms                  |                          |          |
| Highest braking work              | 3380 J                 |                          |          |



Connector size 1.5 = M40;  
6-pole for power and brake



Connector size M23, 17-pole

|                                                                                       |  |                    |  |
|---------------------------------------------------------------------------------------|--|--------------------|--|
|  |  | 1FK7101-5AF71-1AB3 |  |
| Unit                                                                                  |  | mm [in]            |  |
| Date                                                                                  |  | 7/27/23            |  |
| SIEMENS AG                                                                            |  | -                  |  |
| -                                                                                     |  | DT                 |  |

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