

Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data1FK7042-5AK71-1PA0



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

Item no. :  
Consignment no. :  
Project :

| Engineering data            |                               | Mechanical data          |                                                                      |
|-----------------------------|-------------------------------|--------------------------|----------------------------------------------------------------------|
| Rated speed (100 K)         | 6000 rpm                      | Motor type               | Permanent-magnet synchronous motor                                   |
| Number of poles             | 8                             | Motor type               | Compact                                                              |
| Rated torque (100 K)        | 1.5 Nm                        | Shaft height             | 48                                                                   |
| Rated current               | 2.5 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)        | 3.60 A                        | Axial runout tolerance   | 0.08 mm                                                              |
| Stall current (100 K)       | 4.40 A                        | Vibration severity grade | Grade A                                                              |
| Moment of inertia           | 3.010 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             | 0.69 Nm/A                     | Temperature monitoring   | KTY84 temperature sensor in the stator winding                       |
| Voltage constant at 20° C   | 44.0 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                           |
| Winding resistance at 20° C | 1.20 Ω                        | Color of the housing     | without                                                              |
| Rotating field inductance   | 6.7 mH                        | Holding brake            | without holding brake                                                |
| Electrical time constant    | 5.60 ms                       | Shaft end                | Feather key                                                          |
| Mechanical time constant    | 2.27 ms                       | Encoder system           | Resolver R14DQ: resolver 14 bits (resolution 16384, internal 2-pole) |
| Thermal time constant       | 30 min                        |                          |                                                                      |
| Shaft torsional stiffness   | 16000 Nm/rad                  |                          |                                                                      |
| Net weight of the motor     | 4.9 kg                        |                          |                                                                      |

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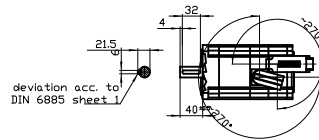
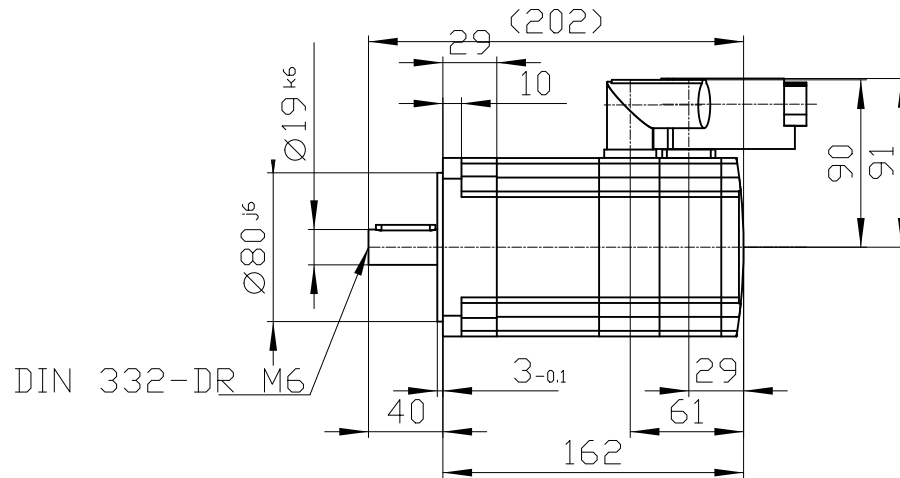
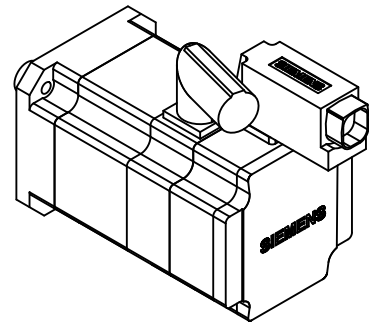
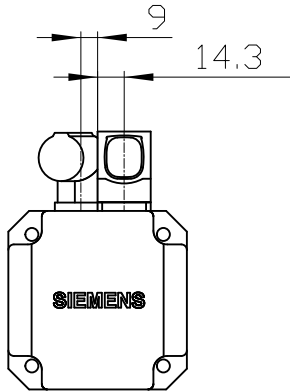
| Optimum operating point           |          | Recommended Motor Module |         |
|-----------------------------------|----------|--------------------------|---------|
| Optimum speed                     | 5000 rpm | Rated inverter current   | 5 A     |
| Optimum power                     | 1.0 kW   | Maximum inverter current | 10 A    |
| Limiting data                     |          | Maximum torque           | 6.80 Nm |
| Max. permissible speed (mech.)    | 9000 rpm |                          |         |
| Max. permissible speed (inverter) | 9990 rpm |                          |         |
| Maximum torque                    | 10.5 Nm  |                          |         |
| Maximum current                   | 15.3 A   |                          |         |

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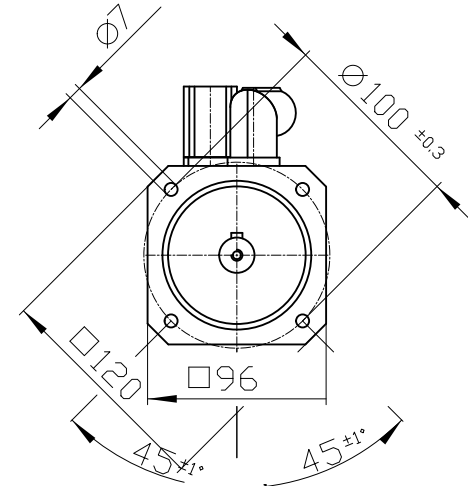
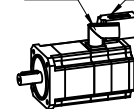
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Connector size 1 = M23;  
6-pole for power and brake 10-pole RJ45 socket



|            |         |                    |
|------------|---------|--------------------|
|            | -       |                    |
|            | -       |                    |
| Unit       | mm [in] | 1FK7042-5AK71-1PA0 |
| Date       | 3/14/23 |                    |
| SIEMENS AG |         | -                  |
| -          |         | DT                 |