

Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data 1FK7080-5AF71-1DA5



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)        | 6.8 Nm                         | Shaft height             | 80                                                                                                                         |
| Rated current               | 4.4 A                          | Cooling                  | Natural cooling                                                                                                            |
| Static torque (60 K)        | 6.60 Nm                        | Radial runout tolerance  | 0.050 mm                                                                                                                   |
| Static torque (100 K)       | 8.00 Nm                        | Concentricity tolerance  | 0.10 mm                                                                                                                    |
| Stall current (60 K)        | 4.00 A                         | Axial runout tolerance   | 0.10 mm                                                                                                                    |
| Stall current (100 K)       | 4.80 A                         | Vibration severity grade | Grade A                                                                                                                    |
| Moment of inertia           | 15.000 kgcm <sup>2</sup>       | Connector size           | 1                                                                                                                          |
| Efficiency                  | 92.0 %                         | Degree of protection     | IP65 and DE flange IP67                                                                                                    |
| Physical constants          |                                | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                                                                       |
| Torque constant             | 1.61 Nm/A                      | Temperature monitoring   | KTY84 temperature sensor in the stator winding                                                                             |
| Voltage constant at 20° C   | 102.5 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                                                                 |
| Winding resistance at 20° C | 1.04 Ω                         | Color of the housing     | Standard (Anthracite RAL 7016)                                                                                             |
| Rotating field inductance   | 14.0 mH                        | Holding brake            | without holding brake                                                                                                      |
| Electrical time constant    | 13.50 ms                       | Shaft end                | Feather key                                                                                                                |
| Mechanical time constant    | 1.78 ms                        | Encoder system           | Encoder IC22DQ: incremental encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + commutation position 11 bits |
| Thermal time constant       | 40 min                         |                          |                                                                                                                            |
| Shaft torsional stiffness   | 126000 Nm/rad                  |                          |                                                                                                                            |
| Net weight of the motor     | 10.0 kg                        |                          |                                                                                                                            |

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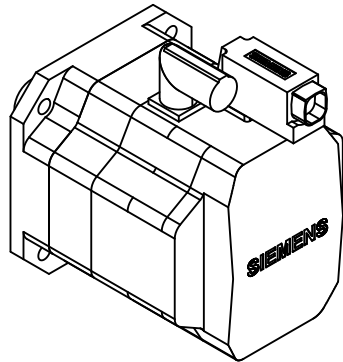
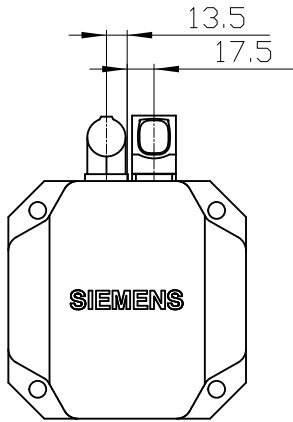
| Optimum operating point           |          | Recommended Motor Module |          |
|-----------------------------------|----------|--------------------------|----------|
| Optimum speed                     | 3000 rpm | Rated inverter current   | 5 A      |
| Optimum power                     | 2.1 kW   | Maximum inverter current | 10 A     |
| Limiting data                     |          | Maximum torque           | 16.60 Nm |
| Max. permissible speed (mech.)    | 6000 rpm |                          |          |
| Max. permissible speed (inverter) | 5600 rpm |                          |          |
| Maximum torque                    | 25.0 Nm  |                          |          |
| Maximum current                   | 18.0 A   |                          |          |

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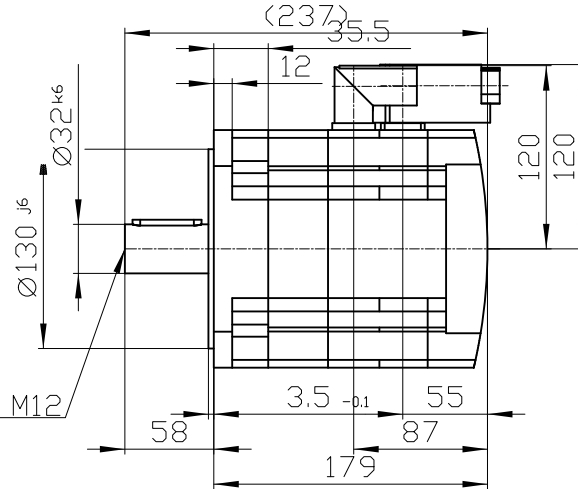
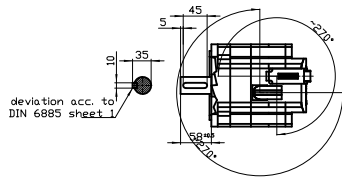
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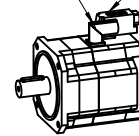
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DIN 332-DR M12



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



|            |  |         |
|------------|--|---------|
|            |  | -       |
| Unit       |  | mm [in] |
| Date       |  | 5/29/23 |
| SIEMENS AG |  | -       |
| -          |  | DT      |