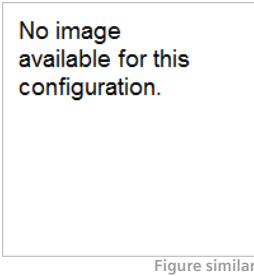


Data sheet for SIMOTICS S-1FK7

MLFB-Ordering data 1FK7083-5AF71-1AA3



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)        | 10.5 Nm                       | Shaft height             | 80                                                                               |
| Rated current               | 7.4 A                         | Cooling                  | Natural cooling                                                                  |
| Static torque (60 K)        | 13.30 Nm                      | Radial runout tolerance  | 0.050 mm                                                                         |
| Static torque (100 K)       | 16.00 Nm                      | Concentricity tolerance  | 0.10 mm                                                                          |
| Stall current (60 K)        | 8.60 A                        | Axial runout tolerance   | 0.10 mm                                                                          |
| Stall current (100 K)       | 10.40 A                       | Vibration severity grade | Grade A                                                                          |
| Moment of inertia           | 27.300 kgcm²                  | Connector size           | 1                                                                                |
| Efficiency                  | 93.0 %                        | Degree of protection     | IP64                                                                             |
| Physical constants          |                               | Design acc. to Code I    | IM B5 (IM V1, IM V3)                                                             |
| Torque constant             | 1.52 Nm/A                     | Temperature monitoring   | KTY84 temperature sensor in the stator winding                                   |
| Voltage constant at 20° C   | 97.0 V/1000*min <sup>-1</sup> | Electrical connectors    | Connectors for signals and power rotatable                                       |
| Winding resistance at 20° C | 0.40 Ω                        | Color of the housing     | Standard (Anthracite RAL 7016)                                                   |
| Rotating field inductance   | 6.0 mH                        | Holding brake            | without holding brake                                                            |
| Electrical time constant    | 15.50 ms                      | Shaft end                | Feather key                                                                      |
| Mechanical time constant    | 1.41 ms                       | Encoder system           | Encoder IC2048S/R: incremental encoder sin/cos 1 Vpp 2048 S/R with C and D track |
| Thermal time constant       | 50 min                        |                          |                                                                                  |
| Shaft torsional stiffness   | 105000 Nm/rad                 |                          |                                                                                  |
| Net weight of the motor     | 14.0 kg                       |                          |                                                                                  |

MLFB-Ordering data                      1FK7083-5AF71-1AA3

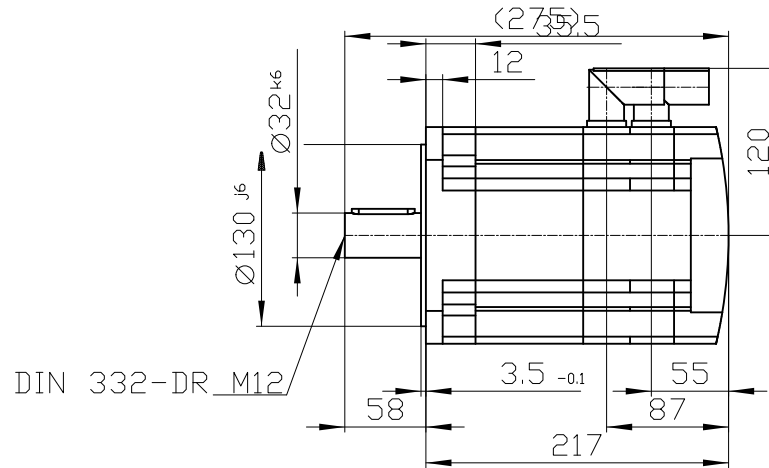
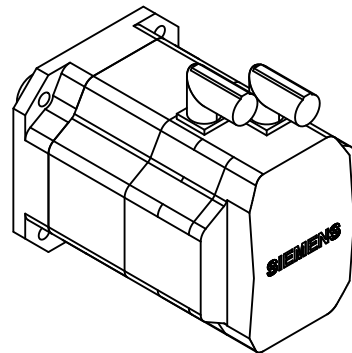
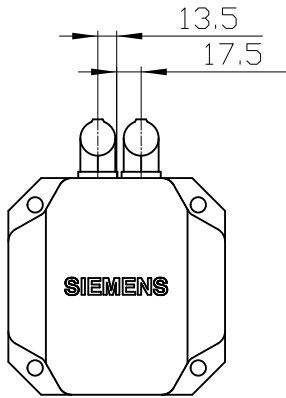
| Optimum operating point           |          | Recommended Motor Module |          |
|-----------------------------------|----------|--------------------------|----------|
| Optimum speed                     | 3000 rpm | Rated inverter current   | 9 A      |
| Optimum power                     | 3.3 kW   | Maximum inverter current | 18 A     |
| Limiting data                     |          | Maximum torque           | 27.80 Nm |
| Max. permissible speed (mech.)    | 6000 rpm |                          |          |
| Max. permissible speed (inverter) | 5900 rpm |                          |          |
| Maximum torque                    | 50.0 Nm  |                          |          |
| Maximum current                   | 37.0 A   |                          |          |

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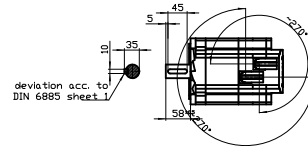
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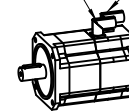
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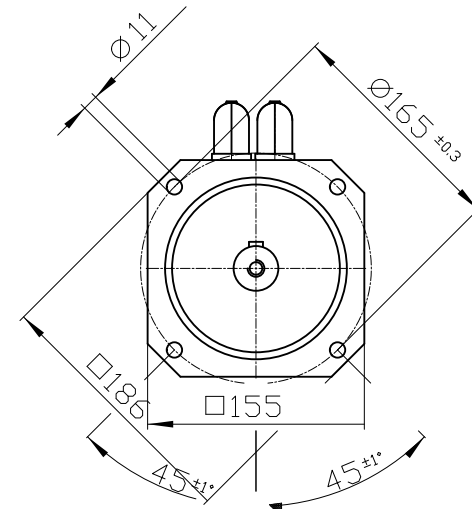
DIN 332-DR M12



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



Connector size M23, 17-pole



|            |         |                     |  |
|------------|---------|---------------------|--|
|            |         |                     |  |
| Unit       | mm [in] | 1FK7083-5AF 71-1AA3 |  |
| Date       | 7/5/23  |                     |  |
| SIEMENS AG |         |                     |  |
|            |         |                     |  |
|            |         | DT                  |  |