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MLFB-Ordering data1FK7083-5AF71-1KB3

Client order no. :  
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| 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           | 35.900 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            | with holding brake                                                                                                                            |
| Electrical time constant    | 15.50 ms                      | Shaft end                | Feather key                                                                                                                                   |
| Mechanical time constant    | 1.41 ms                       | Encoder system           | Encoder AM16DQ: absolute encoder 16 bits (resolution 65536, encoder-internal 32 S/R) + 12 bits multi-turn (traversing range 4096 revolutions) |
| Thermal time constant       | 50 min                        |                          |                                                                                                                                               |
| Shaft torsional stiffness   | 105000 Nm/rad                 |                          |                                                                                                                                               |
| Net weight of the motor     | 16.5 kg                       |                          |                                                                                                                                               |

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| 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                 |                          |          |
| Holding brake                     |                        |                          |          |
| Holding brake version             | Permanent-magnet brake |                          |          |
| Holding torque                    | 22.0 Nm                |                          |          |
| Power supply voltage              | DC 24 V ± 10 %         |                          |          |
| Coil current                      | 0.9 A                  |                          |          |
| Opening time                      | 200 ms                 |                          |          |
| Closing time                      | 60 ms                  |                          |          |
| Highest braking work              | 1400 J                 |                          |          |