

# servo motor

## EMMT-AS-150-MKR-HS-R2MB

Part number: 8148310

FESTO



### Data sheet

| Feature   | Value   |
|---|---|
| Ambient temperature                                       | -15 ... 40 °C   |
| Note on ambient temperature                               | up to 80°C with derating -1.5%/°C   |
| Max. installation height                                  | 4,000 m   |
| Note on max. installation height                          | As of 1,000 m, only with derating of -1.0% per 100 m  |
| Storage temperature                                       | -20 ... 70 °C   |
| Relative air humidity                                     | 0 - 90 %  |
| Conforms to standard                                      | IEC 60034   |
| Thermal class according to EN 60034-1                     | F   |
| Max. winding temperature                                  | 155 °C  |
| Rating class according to EN 60034-1                      | S1  |
| Temperature monitoring                                    | Digital motor temperature transmission via EnDat® 2.2   |
| Motor type to EN 60034-7                                  | IM B5<br>IM V1<br>IM V3   |
| Assembly position   | Any   |
| Protection class  | IP21  |
| Note on degree of protection                              | IP21 for motor shaft without rotary shaft seal<br>IP65 motor shaft with RWDR<br>IP67 for motor housing with connection technology |
| Concentricity, coaxiality, axial runout to DIN SPEC 42955 | N   |
| Balance quality   | G 2,5   |
| Detent torque   | <1.0% of peak torque  |
| Storage lifetime under nominal conditions                 | 20,000 h  |
| Shaft design Featherkey                                   | DIN 6885<br>A 8 x 7 x 36  |
| Interface code, motor out                                 | 150A  |
| Electrical connection 1, connection type                  | Hybrid plugs  |
| Electrical connection 1, connection technology            | M23x1   |
| Electrical connection 1, number of pins/wires             | 15  |
| Degree of contamination                                   | 2   |
| Materials note  | Conforms to RoHS  |
| Corrosion resistance classification CRC                   | 0 - No corrosion stress   |
| PWIS conformity   | VDMA24364 zone III  |
| Vibration resistance                                      | as per EN 60068-2-6   |
| Shock resistance  | as per EN 60068-2-29<br>15 g/11 ms to EN 60068-2-27   |
| Authorisation   | RCM Mark<br>c UL us - Recognized (OL)   |
| CE mark (see declaration of conformity)                   | to EU directive for EMC<br>to EU directive low-voltage devices<br>in accordance with EU RoHS directive                            |
| UKCA marking (see declaration of conformity)              | To UK instructions for electrical equipment<br>To UK instructions for EMC<br>To UK RoHS instructions                              |
| Certificate issuing department                            | UL E342973  |
| Nominal operating voltage DC                              | 680 V   |

| Feature   | Value   |
|---|---|
| Type of winding switch                                      | Star inside   |
| Number of pole pairs  | 5   |
| Standstill torque   | 33 Nm   |
| Nominal torque  | 27.1 Nm   |
| Peak torque   | 64 Nm   |
| Nominal rotary speed  | 1,500 1/min   |
| Max. speed  | 2,368 1/min   |
| Max. mechanical speed                                       | 10,000 1/min  |
| Nominal motor power   | 4,257 W   |
| Continuous open-circuit current                             | 11.4 A  |
| Nominal motor current                                       | 9.5 A   |
| Peak current  | 24 A  |
| Motor constant  | 2.85 Nm/A   |
| Standstill torque constant                                  | 3.3 Nm/A  |
| Voltage constant, phase-to-phase                            | 199.4 mVmin   |
| Phase-phase winding resistance                              | 0.935 Ohm   |
| Phase-phase winding inductance                              | 14.6 mH   |
| Winding longitudinal inductivity Ld (phase)                 | 7.2 mH  |
| Winding cross inductivity Lq (phase)                        | 7.3 mH  |
| Electric time constant                                      | 15.4 ms   |
| Thermal time constant                                       | 45 min  |
| Thermal resistance  | 0.45 K/W  |
| Measuring flange  | 450 x 450 x 30, steel                                 |
| Overall mass moment of inertia at power take-off            | 46.9 kgcm <sup>2</sup>                                |
| Product weight  | 22,200 g  |
| Permissible axial shaft load                                | 294 N   |
| Permissible radial shaft load                               | 1,470 N   |
| Rotor position sensor                                       | Absolute multi-turn encoder                           |
| Rotor position sensor, manufacturer designation             | EQI 1331  |
| Rotor position sensor, absolute detectable revolutions      | 4,096   |
| Rotary position encoder interface                           | EnDat 22  |
| Rotary position encoder measuring principle                 | Inductive   |
| Rotor position sensor, DC operating voltage                 | 5 V   |
| Rotor position sensor, DC operating voltage range           | 3.6 ... 14 V  |
| Rotor position sensor, position values per revolution       | 524,288   |
| Rotor position encoder resolution                           | 19 Bit  |
| Rotor position sensor, system accuracy of angle measurement | -65 ... 65 arcsec                                     |
| Brake holding torque  | 45 Nm   |
| Operating voltage DC for brake                              | 24 V  |
| Brake current consumption                                   | 1.08 A  |
| Power consumption, brake                                    | 26 W  |
| Brake separation time                                       | 230 ms  |
| Brake closing time  | 45 ms   |
| DC brake response delay                                     | 6 ms  |
| Max. brake no-load speed                                    | 10,000 1/min  |
| Mass moment of inertia of brake                             | 8.2 kgcm <sup>2</sup>                                 |
| Switching cycles, holding brake                             | 5 million idle actuations (without work of friction!) |
| MTTF, subcomponent  | 190 years, rotor position sensor                      |
| Energy efficiency   | ENEFF (CN) / Class 1                                  |