

# Servo motor EMMT-AS-80-H-HS-RMY

Part number: 8185112

**FESTO**



## Data sheet

| Feature   | Value   |
|---|---|
| Ambient temperature                                       | -15 °C...40 °C  |
| Note on ambient temperature                               | Up to 80°C with derating of -1.5% per degree Celsius  |
| Max. installation height                                  | 4000 m  |
| Note on max. installation height                          | As of 1,000 m: only with derating of -1.0% per 100 m  |
| Storage temperature                                       | -20 °C...70 °C  |
| Relative air humidity                                     | 0 - 90%   |
| Conforms to standard                                      | IEC 60034   |
| Temperature class as per EN 60034-1                       | F   |
| Max. winding temperature                                  | 155 °C  |
| Rating class as per 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   |
| Mounting position   | optional  |
| Degree of protection                                      | IP40  |
| Note on degree of protection                              | IP40 for motor shaft without rotary shaft seal<br>IP65 for motor shaft with rotary shaft seal<br>IP67 for motor housing including connection components |
| Concentricity, coaxiality, axial runout to DIN SPEC 42955 | N   |
| Balance quality   | G 2.5   |
| Detent torque   | <1.0% of peak torque  |
| Bearing lifetime under nominal conditions                 | 20000 h   |
| Interface code, motor out                                 | 80P   |
| Electrical connection 1, connection type                  | Hybrid plug   |
| Electrical connection 1, connector system                 | M23x1   |
| Electrical connection 1, number of connections/cores      | 15  |
| Pollution degree  | 2   |
| Note on materials   | RoHS-compliant  |
| Corrosion resistance class CRC                            | 0 - No corrosion stress   |

| Feature   | Value   |
|---|---|
| LABS (PWIS) conformity                                      | VDMA24364 zone III  |
| Vibration resistance  | Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6                    |
| Shock resistance  | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27                                   |
| Approval  | RCM trademark<br>German Technical Control Board (TÜV)<br>c UL us - Recognized (OL)                  |
| CE mark (see declaration of conformity)                     | To EU EMC Directive<br>To EU Low Voltage Directive<br>In accordance with EU RoHS Directive          |
| UKCA marking (see declaration of conformity)                | To UK instructions for EMC<br>To UK RoHS instructions<br>To UK regulations for electrical equipment |
| Certificate issuing authority                               | TÜV 968/INS 464.00/24<br>UL E342973   |
| Nominal operating voltage DC                                | 565 V   |
| Type of winding switch                                      | Star inside   |
| Number of pole pairs  | 5   |
| Standstill torque   | 4.3 Nm  |
| Nominal torque  | 3.4 Nm  |
| Peak torque   | 13.5 Nm   |
| Nominal rotary speed  | 3000 rpm  |
| Max. rotational speed                                       | 6500 rpm  |
| Max. mechanical speed                                       | 14000 rpm   |
| Angular acceleration  | 100000 rad/s <sup>2</sup>   |
| Nominal power rating of motor                               | 1070 W  |
| Continuous stall current                                    | 4.8 A   |
| Nominal motor current                                       | 3.8 A   |
| Peak current  | 21.7 A  |
| Motor constant  | 0.9 Nm/A  |
| Standstill torque constant                                  | 1 Nm/A  |
| Voltage constant, phase-to-phase                            | 61.4 mVmin  |
| Phase-phase winding resistance                              | 2.21 Ohm  |
| Phase-phase winding inductance                              | 10.7 mH   |
| Winding longitudinal inductivity Ld (phase)                 | 6.6 mH  |
| Winding cross inductivity Lq (phase)                        | 8 mH  |
| Electric time constant                                      | 7.2 ms  |
| Thermal time constant                                       | 51 min  |
| Thermal resistance  | 0.65 K/W  |
| Measuring flange  | 250 x 250 x 15 mm, steel  |
| Total mass moment of inertia of output                      | 1.91 kgcm <sup>2</sup>  |
| Product weight  | 3910 g  |
| Permissible axial shaft load                                | 120 N   |
| Permissible radial shaft load                               | 620 N   |
| Rotor position sensor                                       | Absolute multi-turn safety encoder  |
| rotor position sensor, manufacturer designation             | EQI 1131  |
| rotor position sensor, absolute detectable revolutions      | 4096  |
| Rotor position encoder interface                            | EnDat® 22   |
| Rotor position sensor, encoder measuring principle          | Inductive   |
| rotor position sensor, DC operating voltage                 | 5 V   |
| rotor position sensor, DC operating voltage range           | 3.6 V...14 V  |
| rotor position sensor, position values per revolution       | 524288  |
| Rotor position transducer resolution                        | 19 bit  |
| rotor position sensor, system accuracy of angle measurement | -120 arcsec...120 arcsec  |
| Safety device   | Safety device   |

| Feature                                | Value   |
|--|---|
| Maximum SIL                            | Safety integrity level 3<br>See user documentation  |
| Safety sub-functions up to SIL2        | Reliable recording and transmission of single-turn position data  |
| Safety sub-functions up to SIL3        | Reliable recording and transmission of single-turn position data, only with additional software function in the servo drive |
| Maximum PL and category                | Performance Level e, Category 3<br>See user documentation   |
| Safety sub-function up to PL d, Cat. 3 | Reliable recording and transmission of single-turn position data  |
| Safety sub-function up to PL e, Cat. 3 | Reliable recording and transmission of single-turn position data, only with additional software function in the servo drive |
| PFHd, subcomponent                     | 15 x 10E-9, encoder   |
| Duration of use Tm, subcomponent       | 20 years, rotor position sensor   |
| Energy efficiency                      | ENEFF (CN) / Class 2  |