

# Servo motor EMMT-AS-150-M-HV-R3MYB

Part number: 8148281

FESTO



 General operating condition

## 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   |
| Information on max. installation height                             | with 1,000 m and longer 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  |
| 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 as per EN 60034-7  | IM V1<br>IM V3   |
| Mounting position   | Any  |
| Degree of protection  | IP21   |
| Note on degree of protection  | IP67 for motor housing, incl. connection technology                                    |
| Concentricity, coaxiality, axial runout according to DIN SPEC 42955 | N  |
| Balancing quality   | G 2.5  |
| Detent torque   | <1.0% of peak torque   |
| Bearing lifetime, under nominal conditions                          | 20000 h  |
| Interface code, motor out   | 150A   |
| Electrical connection 1, connection type                            | Hybrid plug  |
| Electrical connection 1, connection technology                      | M40x1  |
| Electrical connection 1, number of pins/wires                       | 15   |
| Electrical connection for input 1, connection pattern               | 00997380   |
| Contamination level   | 2  |
| Note on materials   | RoHS compliant   |
| Corrosion resistance class (CRC)                                    | 0 - No corrosion stress  |
| LABS (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 as per EN 60068-2-27                                |
| Certification   | RCM compliance mark<br>c UL us - recognized (OL)                                       |
| CE marking (see declaration of conformity)                          | As per EU EMC directive<br>As per EU low voltage directive<br>As per EU RoHS directive |

| Feature  | Value  |
|--|--|
| UKCA marking (see declaration of conformity)                 | To UK RoHS instructions<br>To UK instructions for electrical equipment |
| Certificate issuing authority                                | TÜV 968/FSP 2317.01/25<br>UL E342973                                   |
| Nominal operating voltage DC                                 | 680 V  |
| Type of winding switch                                       | Star inside  |
| Number of pole pairs   | 5  |
| Stall torque   | 33 Nm  |
| Nominal torque   | 13.5 Nm  |
| Peak torque  | 60 Nm  |
| Nominal rotary speed   | 3500 rpm   |
| Max. rotational speed  | 5051 rpm   |
| Max. mechanical speed  | 10000 rpm  |
| Angular acceleration   | $\leq 100000 \text{ rad/s}^2$  |
| Motor nominal power  | 4948 W   |
| Continuous stall current                                     | 24 A   |
| Motor nominal current  | 10.2 A   |
| Peak current   | 50 A   |
| Motor constants  | 1.32 Nm/A  |
| Standstill torque constant                                   | 1.54 Nm/A  |
| Voltage constant, phase-to-phase                             | 92.9 mVmin   |
| Phase-phase winding resistance                               | 0.211 Ohm  |
| Winding inductance phase-phase                               | 3.3 mH   |
| Winding longitudinal inductivity Ld (phase)                  | 1.65 mH  |
| Cross inductivity Lq (phase)                                 | 1.65 mH  |
| Electric time constant                                       | 15.6 ms  |
| Thermal time constant  | 45 min   |
| Thermal resistance   | 0.46 K/W   |
| Measuring flange   | 450 x 450 x 30 mm, steel   |
| Total output inertia moment                                  | 46.9 kgcm <sup>2</sup>   |
| Product weight   | 22200 g  |
| Permissible axial shaft load                                 | 217 N  |
| Permissible radial shaft load                                | 1085 N   |
| Rotor position sensor  | Safety encoder, absolute multi-turn                                    |
| Rotor position sensor for manufacturer designation           | EQI 1331   |
| Rotor position encoder for absolutely detectable revolutions | 4096   |
| Rotor position sensor interface                              | EnDat 22   |
| Rotor position sensor measuring principle                    | Inductive  |
| Rotor position encoder for DC operating voltage              | 5 V  |
| Rotor position encoder for DC operating voltage range        | 3.6 V ... 14 V   |
| Rotor position encoder for positional values per revolution  | 524288   |
| Rotor position sensor resolution                             | 19 bit   |
| Rotor position encoder system accuracy angle measurement     | -65 arcsec ... 65 arcsec   |
| Brake holding torque   | 45 Nm  |
| Brake DC operating voltage                                   | 24 V   |
| Brake current consumption                                    | 1.08 A   |
| Brake power consumption                                      | 26 W   |
| Brake separation time  | 230 ms   |
| Brake closing time   | 45 ms  |
| DC brake response delay                                      | 6 ms   |
| Max. brake no-load speed                                     | 10000 rpm  |
| Max. friction work per braking operation                     | 28000 J  |
| Number of emergency stops per hour                           | 1  |

| Feature                                | Value   |
|--|---|
| Total brake friction work              | 2600 kJ   |
| Brake mass moment of inertia           | 8.2 kgcm <sup>2</sup>   |
| Switching cycles, holding brake        | 5 million idle actuations (without friction work!)  |
| Safety device                          | Safety device   |
| Maximum SIL                            | Security integrity level 3<br>See user documentation  |
| Safety sub-functions up to SIL2        | Reliable acquisition 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 acquisition 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 encoder  |
| MTTF, subcomponent                     | 190 years, rotor position encoder   |