

# Servo motor EMMT-AS-150-LR-HS-R3MB

Part number: 8148352

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                                | UL E342973   |
| Nominal operating voltage DC                                 | 680 V  |
| Type of winding switch                                       | Star inside  |
| Number of pole pairs   | 5  |
| Stall torque   | 45.5 Nm  |
| Nominal torque   | 29 Nm  |
| Peak torque  | 87 Nm  |
| Nominal rotary speed   | 2100 rpm   |
| Max. rotational speed  | 3495 rpm   |
| Max. mechanical speed  | 8000 rpm   |
| Angular acceleration   | $\leq 100000 \text{ rad/s}^2$  |
| Motor nominal power  | 6377 W   |
| Continuous stall current                                     | 23.6 A   |
| Motor nominal current  | 15.4 A   |
| Peak current   | 49.5 A   |
| Motor constants  | 1.88 Nm/A  |
| Standstill torque constant                                   | 2.23 Nm/A  |
| Voltage constant, phase-to-phase                             | 135.1 mV/min   |
| Phase-phase winding resistance                               | 0.25 Ohm   |
| Winding inductance phase-phase                               | 4.4 mH   |
| Winding longitudinal inductivity Ld (phase)                  | 2.15 mH  |
| Cross inductivity Lq (phase)                                 | 2.2 mH   |
| Electric time constant                                       | 17.1 ms  |
| Thermal time constant  | 55 min   |
| Thermal resistance   | 0.39 K/W   |
| Measuring flange   | 450 x 450 x 30 mm, steel   |
| Total output inertia moment                                  | 70.1 kgcm <sup>2</sup>   |
| Product weight   | 29700 g  |
| Permissible axial shaft load                                 | 274 N  |
| Permissible radial shaft load                                | 1370 N   |
| Rotor position sensor  | Absolute encoder, 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   | 65 Nm  |
| Brake DC operating voltage                                   | 24 V   |
| Brake current consumption                                    | 1.08 A   |
| Brake power consumption                                      | 26 W   |
| Brake separation time  | 200 ms   |
| Brake closing time   | 40 ms  |
| DC brake response delay                                      | 10 ms  |
| Max. brake no-load speed                                     | 8000 rpm   |
| Max. friction work per braking operation                     | 40000 J  |
| Number of emergency stops per hour                           | 1  |
| Total brake friction work                                    | 4500 kJ  |

| Feature                         | Value  |
|---------------------------------|--|
| Brake mass moment of inertia    | 12.5 kgcm <sup>2</sup>                             |
| Switching cycles, holding brake | 5 million idle actuations (without friction work!) |
| MTTF, subcomponent              | 190 years, rotor position sensor                   |
| Energy efficiency               | ENEFF (CN) / Class 1                               |