

# Servo motor EMMT-AS-60-S-HS-RS

Part number: 5242200

FESTO



 General operating condition

## Data sheet

| Feature   | Value  |
|---|--|
| Ambient temperature                                       | -40 °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                                       | -40 °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 V1<br>IM V3   |
| Mounting position   | Any  |
| Degree of protection                                      | IP40   |
| Note on degree of protection                              | 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                                 | 60P  |
| Electrical connection 1, connection type                  | Hybrid plug  |
| Electrical connection 1, connector system                 | M23x1  |
| Electrical connection 1, number of connections/cores      | 15   |
| Electrical connection 1, connection pattern               | 00995913   |
| Pollution degree  | 2  |
| Note on materials   | RoHS compliant   |
| Corrosion resistance class CRC                            | 0 - No corrosion stress  |
| 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<br>c UL us - Recognised (Oil)  |
| CE mark (see declaration of conformity)                   | To EU EMC Directive<br>To EU Low Voltage Directive<br>In accordance with EU RoHS Directive |

| Feature   | Value   |
|---|---|
| UKCA marking (see declaration of conformity)                | To UK RoHS instructions<br>To UK regulations 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   |
| Standstill torque   | 0.7 Nm  |
| Nominal torque  | 0.64 Nm   |
| Peak torque   | 1.6 Nm  |
| Nominal rotary speed  | 3000 rpm  |
| Max. rotational speed                                       | 15000 rpm   |
| Max. mechanical speed                                       | 16000 rpm   |
| Angular acceleration  | $\leq 100000 \text{ rad/s}^2$   |
| Nominal power rating of motor                               | 200 W   |
| Continuous stall current                                    | 1.7 A   |
| Nominal motor current                                       | 1.6 A   |
| Peak current  | 5.4 A   |
| Motor constant  | 0.41 Nm/A   |
| Standstill torque constant                                  | 0.49 Nm/A   |
| Voltage constant, phase-to-phase                            | 29.9 mVmin  |
| Phase-phase winding resistance                              | 11.7 Ohm  |
| Phase-phase winding inductance                              | 38 mH   |
| Winding longitudinal inductivity Ld (phase)                 | 15.5 mH   |
| Winding cross inductivity Lq (phase)                        | 19 mH   |
| Electric time constant                                      | 2.1 ms  |
| Thermal time constant                                       | 40 min  |
| Thermal resistance  | 1.3 K/W   |
| Measuring flange  | 250 x 250 x 15 mm, steel  |
| Total mass moment of inertia of output                      | 0.169 kgcm <sup>2</sup>   |
| Product weight  | 1180 g  |
| Permissible axial shaft load                                | 70 N  |
| Permissible radial shaft load                               | 350 N   |
| Rotor position sensor                                       | Absolute encoder, single turn   |
| rotor position sensor, manufacturer designation             | ECl 1118  |
| rotor position sensor, absolute detectable revolutions      | 1   |
| 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       | 262144  |
| Rotor position transducer resolution                        | 18 bit  |
| rotor position sensor, system accuracy of angle measurement | -120 arcsec ... 120 arcsec  |
| Mean time to failure (MTTF), subcomponent                   | 190 years, rotor position encoder                                     |