

Servo motor EMMT-AS-60-M-LS-RSB

Part number: 5242206

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 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 c UL us - Recognised (Oil) |
| CE mark (see declaration of conformity) | To EU EMC Directive To EU Low Voltage Directive In accordance with EU RoHS Directive |

| Feature | Value |
|---|---|
| UKCA marking (see declaration of conformity) | To UK RoHS instructions To UK regulations for electrical equipment |
| Certificate issuing authority | UL E342973 |
| Nominal operating voltage DC | 325 V |
| Type of winding switch | Star inside |
| Number of pole pairs | 5 |
| Standstill torque | 1.15 Nm |
| Nominal torque | 1 Nm |
| Peak torque | 3.4 Nm |
| Nominal rotary speed | 3000 rpm |
| Max. rotational speed | 6800 rpm |
| Max. mechanical speed | 16000 rpm |
| Angular acceleration | $\leq 100000 \text{ rad/s}^2$ |
| Nominal power rating of motor | 310 W |
| Continuous stall current | 2.5 A |
| Nominal motor current | 2.2 A |
| Peak current | 11 A |
| Motor constant | 0.45 Nm/A |
| Standstill torque constant | 0.53 Nm/A |
| Voltage constant, phase-to-phase | 32 mVmin |
| Phase-phase winding resistance | 4.85 Ohm |
| Phase-phase winding inductance | 20 mH |
| Winding longitudinal inductivity Ld (phase) | 8 mH |
| Winding cross inductivity Lq (phase) | 10 mH |
| Electric time constant | 2.7 ms |
| Thermal time constant | 42 min |
| Thermal resistance | 1.3 K/W |
| Measuring flange | 250 x 250 x 15 mm, steel |
| Total mass moment of inertia of output | 0.373 kgcm ² |
| Product weight | 1850 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 |
| Brake holding torque | 2.5 Nm |
| Operating voltage DC for brake | 24 V |
| Brake current consumption | 0.46 A |
| Power consumption, brake | 11 W |
| Brake coil resistance | 52.4 Ohm |
| Brake coil inductivity | 700 mH |
| Brake separation time | $\leq 35 \text{ ms}$ |
| Brake closing time | 10 ms |
| DC brake response delay | $\leq 2 \text{ ms}$ |
| Max. brake no-load speed | 10000 rpm |
| Max. friction per braking process | 5600 J |

| Feature | Value |
|---|---|
| Number of emergency stops per hour | 1 |
| Total brake friction | 615 kJ |
| Mass moment of inertia of brake | 0.074 kgcm ² |
| Switching cycles holding brake | 10 million idle actuations (without friction work!) |
| Mean time to failure (MTTF), subcomponent | 190 years, rotor position encoder |