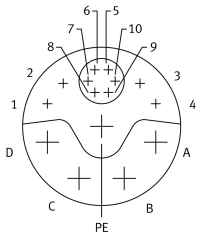
# Servo motor
# EMMT-AS-40-M-LS-R2SB

Part number: 8171418






## Data sheet

| Feature | Value |
|---|---|
| Ambient temperature | -40 °C...40 °C |
| Note on ambient temperature | Up to 80°C with derating of -2.25% 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 B5<br>IM V1<br>IM V3 |
| Mounting position | Any |
| 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 | 40P |
| 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<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 |
| 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 | UL E342973 |
| Nominal operating voltage DC | 325 V |
| Type of winding switch | Star inside |
| Number of pole pairs | 5 |
| Standstill torque | 0.45 Nm |
| Nominal torque | 0.32 Nm |
| Peak torque | 1.41 Nm |
| Nominal rotary speed | 7000 rpm |
| Max. rotational speed | 11800 rpm |
| Max. mechanical speed | 15000 rpm |
| Angular acceleration | 100000 rad/s² |
| Nominal power rating of motor | 234 W |
| Continuous stall current | 1.6 A |
| Nominal motor current | 1.2 A |
| Peak current | 6 A |
| Motor constant | 0.267 Nm/A |
| Standstill torque constant | 0.32 Nm/A |
| Voltage constant, phase-to-phase | 19.3 mVmin |
| Phase-phase winding resistance | 7.96 Ohm |
| Phase-phase winding inductance | 9.8 mH |
| Winding longitudinal inductivity Ld (phase) | 3.8 mH |
| Winding cross inductivity Lq (phase) | 4.9 mH |
| Electric time constant | 1.24 ms |
| Thermal time constant | 21.4 min |
| Thermal resistance | 1.35 K/W |
| Measuring flange | 200 x 200 x 15 mm, steel |
| Total mass moment of inertia of output | 0.076 kgcm² |
| Product weight | 800 g |
| Permissible axial shaft load | 30 N |
| Permissible radial shaft load | 150 N |
| Rotor position sensor | Absolute encoder, single turn |
| rotor position sensor, manufacturer designation | ECI 1119 |
| 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 | 524288 |
| Rotor position transducer resolution | 19 bit |
| rotor position sensor, system accuracy of angle measurement | -120 arcsec...120 arcsec |
| Brake holding torque | 0.45 Nm |
| Operating voltage DC for brake | 24 V |

| Feature | Value |
|---|---|
| Brake current consumption | 0.34 A |
| Power consumption, brake | 8.2 W |
| Brake coil resistance | 70.9 Ohm |
| Brake coil inductivity | 146 mH |
| Brake separation time | 28 ms |
| Brake closing time | 41 ms |
| DC brake response delay | 8 ms |
| Max. brake no-load speed | 12000 rpm |
| Max. friction per braking process | 1500 J |
| Number of emergency stops per hour | 1 |
| Total brake friction | 1.5 kJ |
| Mass moment of inertia of brake | 0.0058 kgcm² |
| Switching cycles holding brake | 10 million idle actuations (without friction work!) |
| Mean time to failure (MTTF), subcomponent | 190 years, rotor position encoder |