# Servo motor
# EMMT-AS-80-S-LS-RSB

Part number: 5255427

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 | optional |
| 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 | 80P |
| 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 trademark<br>c UL us - Recognized (OL) |
| 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 | 325 V |
| Type of winding switch | Star inside |
| Number of pole pairs | 5 |
| Standstill torque | 1.46 Nm |
| Nominal torque | 1.3 Nm |
| Peak torque | 2.8 Nm |
| Nominal rotary speed | 3000 rpm |
| Max. rotational speed | 6700 rpm |
| Max. mechanical speed | 14000 rpm |
| Angular acceleration | ≤100000 rad/s² |
| Nominal power rating of motor | 408 W |
| Continuous stall current | 3.1 A |
| Nominal motor current | 2.7 A |
| Peak current | 8.4 A |
| Motor constant | 0.48 Nm/A |
| Standstill torque constant | 0.57 Nm/A |
| Voltage constant, phase-to-phase | 34.3 mVmin |
| Phase-phase winding resistance | 4.93 Ohm |
| Phase-phase winding inductance | 16.3 mH |
| Winding longitudinal inductivity Ld (phase) | 10.2 mH |
| Winding cross inductivity Lq (phase) | 12.2 mH |
| Electric time constant | 4.9 ms |
| Thermal time constant | 42 min |
| Thermal resistance | 0.95 K/W |
| Measuring flange | 250 x 250 x 15 mm, steel |
| Total mass moment of inertia of output | 0.897 kgcm² |
| Product weight | 2720 g |
| Permissible axial shaft load | 120 N |
| Permissible radial shaft load | 620 N |
| Rotor position sensor | Absolute single-turn encoder |
| rotor position sensor, manufacturer designation | ECI 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 | 4.5 Nm |
| Operating voltage DC for brake | 24 V |
| Brake current consumption | 0.5 A |
| Power consumption, brake | 12 W |
| Brake coil resistance | 48 Ohm |
| Brake coil inductivity | 1000 mH |
| Brake separation time | ≤55 ms |
| Brake closing time | ≤15 ms |
| DC brake response delay | ≤3 ms |
| Max. brake no-load speed | 10000 rpm |
| Max. friction per braking process | 8200 J |

| Feature | Value |
|---|---|
| Number of emergency stops per hour | 1 |
| Total brake friction | 580 kJ |
| Mass moment of inertia of brake | 0.249 kgcm² |
| Switching cycles holding brake | 10 million idle actuations (without friction work!) |
| Mean time to failure (MTTF), subcomponent | 190 years, rotor position sensor |