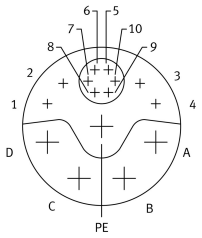
# Servo motor
# EMMT-AS-60-L-HS-RMY

Part number: 8160640






## 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 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 | 60P |
| 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>German Technical Control Board (TÜV)<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 | TÜV 968/INS 464.00/24<br>UL E342973 |
| Nominal operating voltage DC | 680 V |
| Type of winding switch | Star inside |
| Number of pole pairs | 5 |
| Standstill torque | 1.66 Nm |
| Nominal torque | 1.4 Nm |
| Peak torque | 5.6 Nm |
| Nominal rotary speed | 3000 rpm |
| Max. rotational speed | 14300 rpm |
| Max. mechanical speed | 16000 rpm |
| Angular acceleration | 100000 rad/s² |
| Nominal power rating of motor | 440 W |
| Continuous stall current | 3.8 A |
| Nominal motor current | 3.2 A |
| Peak current | 18.3 A |
| Motor constant | 0.44 Nm/A |
| Standstill torque constant | 0.52 Nm/A |
| Voltage constant, phase-to-phase | 31.2 mVmin |
| Phase-phase winding resistance | 2.68 Ohm |
| Phase-phase winding inductance | 12 mH |
| Winding longitudinal inductivity Ld (phase) | 5 mH |
| Winding cross inductivity Lq (phase) | 6 mH |
| Electric time constant | 3 ms |
| Thermal time constant | 43 min |
| Thermal resistance | 1 K/W |
| Measuring flange | 250 x 250 x 15 mm, steel |
| Total mass moment of inertia of output | 0.403 kgcm² |
| Product weight | 1910 g |
| Permissible axial shaft load | 70 N |
| Permissible radial shaft load | 350 N |
| Rotor position sensor | Absolute multi-turn safety encoder |
| rotor position sensor, manufacturer designation | EQI 1131 |
| rotor position sensor, absolute detectable revolutions | 4096 |
| 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 |
| Safety device | Safety device |

| Feature | Value |
|---|---|
| Maximum SIL | Safety integrity level 3<br>See user documentation |
| Safety sub-functions up to SIL2 | Reliable recording and transmission of single-turn position data |
| Safety sub-functions up to SIL3 | Reliable recording and transmission of single-turn position data, only with additional software function in the servo drive |
| Maximum PL and category | Performance Level e, category 3<br>See user documentation |
| Safety sub-function up to PL d, Cat. 3 | Reliable recording and transmission of single-turn position data |
| Safety sub-function up to PL e, Cat. 3 | Reliable recording and transmission of single-turn position data, only with additional software function in the servo drive |
| PFHd, subcomponent | 15 x 10E-9, encoder |
| Duration of use Tm, subcomponent | 20 years, rotor position encoder |