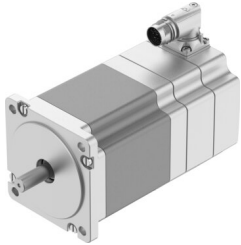


Stepper motor EMMT-ST-87-M-RMB

Part number: 8156196

FESTO



 General operating condition

Data sheet

| Feature | Value |
|--|--|
| Ambient temperature | -15 °C ... 40 °C |
| Note on ambient temperature | Up to 80°C with derating -2%/°C |
| 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 | -20 °C ... 70 °C |
| Relative air humidity | Non-condensing |
| Conforms to standard | IEC 60034 |
| Temperature class as per EN 60034-1 | B |
| Max. winding temperature | 130 °C |
| Rating class as per EN 60034-1 | S1 |
| Temperature monitoring | Dig. motor temp. via BiSS-C |
| Motor type to EN 60034-7 | IM V1 IM V3 |
| Mounting position | optional |
| Degree of protection | IP40 |
| Note on degree of protection | IP40 Motor shaft IP65 for motor housing, incl. connection technology |
| Interface code, motor out | 87A |
| Electrical connection 1, connection type | Hybrid plug |
| Electrical connection 1, connector system | M17x0.75 |
| Electrical connection 1, number of connections/cores | 12 |
| Electrical connection 1, connection pattern | 00997532 |
| 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 c UL us - Recognized (OL) |
| CE mark (see declaration of conformity) | To EU EMC Directive In accordance with EU RoHS Directive |
| UKCA marking (see declaration of conformity) | To UK RoHS instructions |
| Certificate issuing authority | UL E342973 |
| Nominal operating voltage DC | 48 V |
| Number of pole pairs | 50 |
| Motor holding torque | 6.6 Nm |

| Feature | Value |
|---|---|
| Nominal torque | 5.9 Nm |
| Peak torque | 6.8 Nm |
| Nominal rotary speed | 140 rpm |
| Max. rotational speed | 600 rpm |
| Max. mechanical speed | 7000 rpm |
| Stepper angle for complete step | 1.8 deg |
| Stepping angle tolerance | ±5% |
| Nominal power rating of motor | 87 W |
| Continuous stall current | 8.2 A |
| Nominal motor current | 7.5 A |
| Peak current | 12 A |
| Motor constant | 0.79 Nm/A |
| Voltage constant, phase | 56.6 mVmin |
| Phase winding resistance | 0.27 Ohm |
| Phase winding inductance | 2.3 mH |
| Winding longitudinal inductivity Ld (phase) | 3.6 mH |
| Winding cross inductivity Lq (phase) | 2.3 mH |
| Electric time constant | 8.5 ms |
| Thermal time constant | 32 min |
| Thermal resistance | 0.83 K/W |
| Measuring flange | 250 x 250 x 15 mm, steel |
| Total mass moment of inertia of output | 2.016 kgcm ² |
| Product weight | 4320 g |
| Permissible axial shaft load | 60 N |
| Permissible radial shaft load | 220 N |
| Rotor position sensor | Absolute multi-turn encoder |
| rotor position sensor, manufacturer designation | KCD-BC33B-1617-U09C-JAQ-009 |
| rotor position sensor, absolute detectable revolutions | 65536 |
| Rotor position encoder interface | BiSS-C |
| Rotor position sensor, encoder measuring principle | Magnetic |
| rotor position sensor, DC operating voltage | 14 V |
| rotor position sensor, DC operating voltage range | 4.75 V ... 15 V |
| Rotor pos. enc., sin/cosin p/r | 2 |
| rotor position sensor, position values per revolution | 131072 |
| Rotor position transducer resolution | 17 bit |
| rotor position sensor, system accuracy of angle measurement | -310 arcsec ... 310 arcsec |
| Brake holding torque | 4.26 Nm |
| Operating voltage DC for brake | 24 V |
| Brake current consumption | 0.49 A |
| Power consumption, brake | 12 W |
| Brake coil resistance | 49.2 Ohm |
| Brake coil inductivity | 110 mH |
| Brake separation time | ≤44 ms |
| Brake closing time | ≤110 ms |
| DC brake response delay | ≤30 ms |
| Max. brake no-load speed | 7000 rpm |
| Max. friction per braking process | 14000 J |
| Number of emergency stops per hour | 1 |
| Mass moment of inertia of brake | 0.11 kgcm ² |
| Switching cycles holding brake | 10 million idle actuations (without friction work!) |
| Mean time to failure (MTTF), subcomponent | 20 years, rotor position encoder |