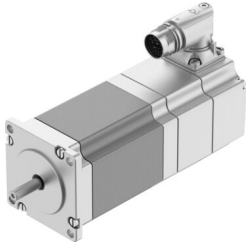


Stepper motor EMMT-ST-57-L-RSB

Part number: 8156183

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 |
| Information on max. installation height | with 1,000 m and longer 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 |
| Thermal class according to EN 60034-1 | B |
| Max. winding temperature | 130 °C |
| Rating class according to EN 60034-1 | S1 |
| Motor type as per EN 60034-7 | IM V1 IM V3 |
| Mounting position | Any |
| Degree of protection | IP40 |
| Note on degree of protection | IP40 Motor shaft IP65 for motor housing, incl. connection technology |
| Interface code, motor out | 57A |
| Electrical connection 1, connection type | Hybrid plug |
| Electrical connection 1, connection technology | M17x0.75 |
| Electrical connection 1, number of pins/wires | 12 |
| Electrical connection for input 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 as per FN 942017-4 and EN 60068-2-6 |
| Shock resistance | Shock test with severity level 2 as per FN 942017-5 and EN 60068-2-27 |
| Certification | RCM compliance mark c UL us - Recognized (OL) |
| CE marking (see declaration of conformity) | As per EU EMC directive As per 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 | 1.86 Nm |
| Nominal torque | 1.64 Nm |

| Feature | Value |
|--|---|
| Peak torque | 2.1 Nm |
| Nominal rotary speed | 500 rpm |
| Max. rotational speed | 1500 rpm |
| Max. mechanical speed | 8000 rpm |
| Step angle with full step | 1.8 deg |
| Step angle tolerance | ±5% |
| Motor nominal power | 86 W |
| Continuous stall current | 6.1 A |
| Motor nominal current | 5.2 A |
| Peak current | 8 A |
| Motor constants | 0.32 Nm/A |
| Voltage constant, phase | 22.6 mV/min |
| Phase winding resistance | 0.26 Ohm |
| Winding inductance phase | 0.95 mH |
| Winding longitudinal inductivity Ld (phase) | 1.75 mH |
| Cross inductivity Lq (phase) | 0.95 mH |
| Electric time constant | 3.7 ms |
| Thermal time constant | 30 min |
| Thermal resistance | 1.3 K/W |
| Measuring flange | 200 x 200 x 15 mm, steel |
| Total output inertia moment | 0.504 kgcm ² |
| Product weight | 1660 g |
| Permissible axial shaft load | 15 N |
| Permissible radial shaft load | 75 N |
| Rotor position sensor | Absolute encoder, single-turn |
| Rotor position sensor for manufacturer designation | Festo iC-MHM |
| Rotor position encoder for absolutely detectable revolutions | 1 |
| Rotor position sensor interface | BiSS-C |
| Rotor position sensor measuring principle | Magnetic |
| Rotor position encoder for DC operating voltage | 5 V |
| Rotor position encoder for DC operating voltage range | 4.75 V ... 5.25 V |
| Rotor position encoder, sinusoidal/cosinusoidal periods per revolution | 2 |
| Rotor position encoder for positional values per revolution | 65536 |
| Rotor position sensor resolution | 16 bit |
| Rotor position encoder system accuracy angle measurement | -540 arcsec ... 540 arcsec |
| Brake holding torque | 1.74 Nm |
| Brake DC operating voltage | 24 V |
| Brake current consumption | 0.38 A |
| Brake power consumption | 9 W |
| Brake coil resistance | 63.8 Ohm |
| Brake coil inductivity | 107 mH |
| Brake separation time | ≤32 ms |
| Brake closing time | ≤97 ms |
| DC brake response delay | ≤11 ms |
| Max. brake no-load speed | 8000 rpm |
| Max. friction work per braking operation | 6000 J |
| Number of emergency stops per hour | 1 |
| Brake mass moment of inertia | 0.024 kgcm ² |
| Switching cycles, holding brake | 10 million idle actuations (without friction work!) |
| MTTF, subcomponent | 106 years, rotor position encoder |