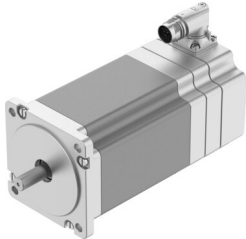


# Stepper motor EMMT-ST-87-L-RB

Part number: 8156200

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<br>IM V3   |
| Mounting position                                     | Any  |
| Degree of protection                                  | IP40   |
| Note on degree of protection                          | IP40 Motor shaft<br>IP65 for motor housing, incl. connection technology              |
| Interface code, motor out                             | 87A  |
| 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<br>c UL us - Recognized (OL)                                     |
| CE marking (see declaration of conformity)            | As per EU EMC directive<br>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                                  | 9.4 Nm   |
| Peak torque   | 9.4 Nm   |

| Feature                                     | Value   |
|---|---|
| Max. rotational speed                       | 430 rpm   |
| Max. mechanical speed                       | 7000 rpm  |
| Step angle with full step                   | 1.8 deg   |
| Step angle tolerance                        | ±5%   |
| Continuous stall current                    | 10 A  |
| Motor nominal current                       | 8.4 A   |
| Peak current                                | 10 A  |
| Motor constants                             | 1.06 Nm/A   |
| Voltage constant, phase                     | 78.9 mVmin  |
| Phase winding resistance                    | 0.3 Ohm   |
| Winding inductance phase                    | 2.7 mH  |
| Winding longitudinal inductivity Ld (phase) | 4.1 mH  |
| Cross inductivity Lq (phase)                | 2.7 mH  |
| Electric time constant                      | 9 ms  |
| Thermal time constant                       | 37 min  |
| Thermal resistance                          | 0.75 K/W  |
| Measuring flange                            | 250 x 250 x 15 mm, steel                            |
| Total output inertia moment                 | 3.11 kgcm <sup>2</sup>                              |
| Product weight                              | 5490 g  |
| Permissible axial shaft load                | 60 N  |
| Permissible radial shaft load               | 220 N   |
| Brake holding torque                        | 4.26 Nm   |
| Brake DC operating voltage                  | 24 V  |
| Brake current consumption                   | 0.49 A  |
| Brake power consumption                     | 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 work per braking operation    | 14000 J   |
| Number of emergency stops per hour          | 1   |
| Brake mass moment of inertia                | 0.11 kgcm <sup>2</sup>                              |
| Switching cycles, holding brake             | 10 million idle actuations (without friction work!) |