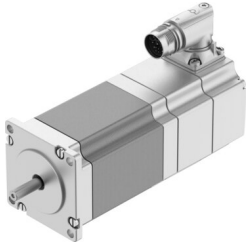


# Stepper motor EMMT-ST-57-L-RB

Part number: 8156182

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                                 | 0 - 90 %<br>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 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 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<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 instructions for EMC<br>To UK RoHS instructions                                                 |
| Certificate issuing authority                         | UL E342973                                                                                            |
| Nominal operating voltage DC                          | 48 V                                                                                                  |
| Number of pole pairs                                  | 50                                                                                                    |

| Feature                                     | Value                                               |
|---------------------------------------------|-----------------------------------------------------|
| Motor holding torque                        | 1.86 Nm                                             |
| Peak torque                                 | 2.1 Nm                                              |
| Max. rotational speed                       | 1500 rpm                                            |
| Max. mechanical speed                       | 8000 rpm                                            |
| Step angle with full step                   | 1.8 deg                                             |
| Step angle tolerance                        | ±5%                                                 |
| 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 mVmin                                          |
| 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 <sup>2</sup>                             |
| Product weight                              | 1660 g                                              |
| Permissible axial shaft load                | 15 N                                                |
| Permissible radial shaft load               | 75 N                                                |
| 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. brake friction work                    | 6000 J                                              |
| Number of emergency stops per hour          | 1                                                   |
| Brake mass moment of inertia                | 0.024 kgcm <sup>2</sup>                             |
| Switching cycles, holding brake             | 10 million idle actuations (without friction work!) |