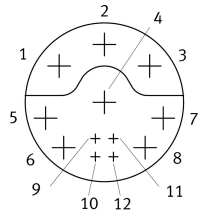
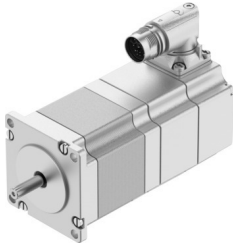


# Stepper motor EMMT-ST-57-M-RB

Part number: 8156176

FESTO



## 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                                | 0 - 90%<br>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                                                                                                    |
| Motor type to EN 60034-7                             | IM B5<br>IM V1<br>IM V3                                                                               |
| Mounting position                                    | optional                                                                                              |
| 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, connector system            | M17x0.75                                                                                              |
| Electrical connection 1, number of connections/cores | 12                                                                                                    |
| 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<br>c UL us - Recognized (OL)                                                            |

| Feature                                      | Value                                                       |
|----------------------------------------------|-------------------------------------------------------------|
| CE mark (see declaration of conformity)      | To EU EMC Directive<br>In accordance with 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                                                          |
| Motor holding torque                         | 1120 Nm                                                     |
| Peak torque                                  | 1100 Nm                                                     |
| Max. rotational speed                        | 2600 rpm                                                    |
| Max. mechanical speed                        | 8000 rpm                                                    |
| Stepper angle for complete step              | 1.8 deg                                                     |
| Stepping angle tolerance                     | ±5%                                                         |
| Continuous stall current                     | 6600 A                                                      |
| Nominal motor current                        | 5400 A                                                      |
| Peak current                                 | 8 A                                                         |
| Motor constant                               | 152 Nm/A                                                    |
| Voltage constant, phase                      | 13100 mVmin                                                 |
| Phase winding resistance                     | 170 Ohm                                                     |
| Phase winding inductance                     | 500 mH                                                      |
| Winding longitudinal inductivity Ld (phase)  | 700 mH                                                      |
| Winding cross inductivity Lq (phase)         | 500 mH                                                      |
| Electric time constant                       | 2900 ms                                                     |
| Thermal time constant                        | 27 min                                                      |
| Thermal resistance                           | 1600 K/W                                                    |
| Measuring flange                             | 200 x 200 x 15 mm, steel                                    |
| Total mass moment of inertia of output       | 0.324 kgcm <sup>2</sup>                                     |
| Product weight                               | 1300 g                                                      |
| Permissible axial shaft load                 | 15 N                                                        |
| Permissible radial shaft load                | 75 N                                                        |
| Brake holding torque                         | 1740 Nm                                                     |
| Operating voltage DC for brake               | 24 V                                                        |
| Brake current consumption                    | 380 A                                                       |
| Power consumption, brake                     | 9 W                                                         |
| Brake coil resistance                        | 63800 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 per braking process            | 6000 J                                                      |
| Number of emergency stops per hour           | 1                                                           |
| Mass moment of inertia of brake              | 0.024 kgcm <sup>2</sup>                                     |
| Switching cycles holding brake               | 10 million idle actuations (without friction work!)         |