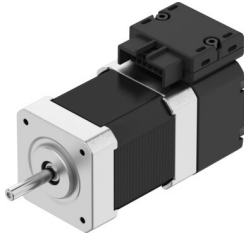


# Stepper motor EMMB-ST-42-L-SS

Part number: 8156132

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                                  | IP20                                                                                 |
| Note on degree of protection                          | IP40 for motor shaft without rotary shaft seal                                       |
| Interface code, motor out                             | 42A                                                                                  |
| Electrical connection 1, connection type              | Hybrid plug                                                                          |
| Electrical connection 1, connection technology        | Connection diagram L5                                                                |
| Electrical connection 1, number of pins/wires         | 14                                                                                   |
| Electrical connection for input 1, connection pattern | 00997534                                                                             |
| 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                                                                                   |
| Motor holding torque                                  | 0.63 Nm                                                                              |

| Feature                                                                | Value                              |
|------------------------------------------------------------------------|------------------------------------|
| Nominal torque                                                         | 0.47 Nm                            |
| Peak torque                                                            | 0.63 Nm                            |
| Nominal rotary speed                                                   | 1000 rpm                           |
| Max. rotational speed                                                  | 3200 rpm                           |
| Max. mechanical speed                                                  | 9000 rpm                           |
| Step angle with full step                                              | 1.8 deg                            |
| Step angle tolerance                                                   | ±5%                                |
| Motor nominal power                                                    | 49 W                               |
| Continuous stall current                                               | 3.7 A                              |
| Motor nominal current                                                  | 2.9 A                              |
| Peak current                                                           | 4 A                                |
| Motor constants                                                        | 0.162 Nm/A                         |
| Voltage constant, phase                                                | 10.6 mVmin                         |
| Phase winding resistance                                               | 0.6 Ohm                            |
| Winding inductance phase                                               | 0.8 mH                             |
| Winding longitudinal inductivity Ld (phase)                            | 1.45 mH                            |
| Cross inductivity Lq (phase)                                           | 0.8 mH                             |
| Electric time constant                                                 | 1.3 ms                             |
| Thermal time constant                                                  | 16 min                             |
| Thermal resistance                                                     | 2.4 K/W                            |
| Measuring flange                                                       | 200 x 200 x 15 mm, steel           |
| Total output inertia moment                                            | 0.082 kgcm <sup>2</sup>            |
| Product weight                                                         | 490 g                              |
| Permissible axial shaft load                                           | 10 N                               |
| Permissible radial shaft load                                          | 28 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         |
| MTTF, subcomponent                                                     | 9666 years, rotor position encoder |