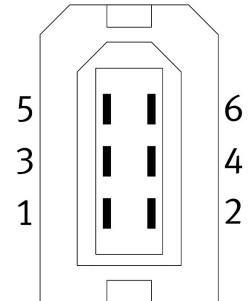


# Servo motor

## EMMB-AS-60-04-S30MB

Part number: 8097184

FESTO



## Data sheet

| Feature                                                   | Value                                                                                                                                                 |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient temperature                                       | -15 °C...40 °C                                                                                                                                        |
| Note on ambient temperature                               | Up to 60°C with derating of -1.5% per degree Celsius                                                                                                  |
| 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...55 °C                                                                                                                                        |
| Relative air humidity                                     | 0 - 90%                                                                                                                                               |
| Conforms to standard                                      | IEC 60034                                                                                                                                             |
| Temperature class as per EN 60034-1                       | F                                                                                                                                                     |
| Max. winding temperature                                  | 155 °C                                                                                                                                                |
| Rating class as per EN 60034-1                            | S1                                                                                                                                                    |
| Temperature monitoring                                    | Digital motor temperature transmission via Nikon A format                                                                                             |
| Motor type to EN 60034-7                                  | IM B5<br>IM V1<br>IM V3                                                                                                                               |
| Mounting position                                         | optional                                                                                                                                              |
| Degree of protection                                      | IP65                                                                                                                                                  |
| Note on degree of protection                              | IP40 for motor shaft without rotary shaft seal<br>IP54 for motor shaft with rotary shaft seal<br>IP65 for motor housing without connection technology |
| Concentricity, coaxiality, axial runout to DIN SPEC 42955 | N                                                                                                                                                     |
| Balance quality                                           | G 2.5                                                                                                                                                 |
| Bearing lifetime under nominal conditions                 | 20000 h                                                                                                                                               |
| Electrical connection 1, connection type                  | Plugs                                                                                                                                                 |
| Electrical connection 1, connector system                 | Connection pattern RE                                                                                                                                 |
| Electrical connection 1, number of connections/cores      | 6                                                                                                                                                     |
| Pollution degree                                          | 2                                                                                                                                                     |
| Note on materials                                         | RoHS-compliant                                                                                                                                        |
| Corrosion resistance class CRC                            | 0 - No corrosion stress                                                                                                                               |
| LABS (PWIS) conformity                                    | VDMA24364 zone III                                                                                                                                    |

| Feature                                                     | Value                                                                                               |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 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                                                    | c UL us - Recognized (OL)                                                                           |
| CE mark (see declaration of conformity)                     | To EU EMC Directive<br>To EU Low Voltage Directive<br>In accordance with EU RoHS Directive          |
| UKCA marking (see declaration of conformity)                | To UK instructions for EMC<br>To UK RoHS instructions<br>To UK regulations for electrical equipment |
| Certificate issuing authority                               | UL E342973                                                                                          |
| Nominal operating voltage DC                                | 300 V                                                                                               |
| Nominal voltage DC                                          | 300 V                                                                                               |
| Type of winding switch                                      | Star inside                                                                                         |
| Number of pole pairs                                        | 3                                                                                                   |
| Standstill torque                                           | 1.4 Nm                                                                                              |
| Nominal torque                                              | 1.27 Nm                                                                                             |
| Peak torque                                                 | 3.81 Nm                                                                                             |
| Nominal rotary speed                                        | 3000 rpm                                                                                            |
| Max. rotational speed                                       | 6000 rpm                                                                                            |
| Max. mechanical speed                                       | 10000 rpm                                                                                           |
| Nominal power rating of motor                               | 400 W                                                                                               |
| Continuous stall current                                    | 2.6 A                                                                                               |
| Nominal motor current                                       | 2.4 A                                                                                               |
| Peak current                                                | 7.2 A                                                                                               |
| Motor constant                                              | 0.562 Nm/A                                                                                          |
| Voltage constant, phase-to-phase                            | 34 mVmin                                                                                            |
| Phase-phase winding resistance                              | 5.8 Ohm                                                                                             |
| Phase-phase winding inductance                              | 11.5 mH                                                                                             |
| Electric time constant                                      | 1.98 ms                                                                                             |
| Measuring flange                                            | 255 x 255 x 8 mm, aluminium                                                                         |
| Total mass moment of inertia of output                      | 0.425 kgcm <sup>2</sup>                                                                             |
| Product weight                                              | 1900 g                                                                                              |
| Permissible axial shaft load                                | 90 N                                                                                                |
| Permissible radial shaft load                               | 180 N                                                                                               |
| Rotor position sensor                                       | Absolute multi-turn encoder                                                                         |
| rotor position sensor, manufacturer designation             | MAR-MX50AHN00                                                                                       |
| rotor position sensor, absolute detectable revolutions      | 65536                                                                                               |
| Rotor position encoder interface                            | Nikon A-format                                                                                      |
| Rotor position sensor, encoder measuring principle          | Optical                                                                                             |
| rotor position sensor, DC operating voltage                 | 5 V                                                                                                 |
| rotor position sensor, DC operating voltage range           | 4.75 V...5.25 V                                                                                     |
| rotor position sensor, position values per revolution       | 1048576                                                                                             |
| Rotor position transducer resolution                        | 20 bit                                                                                              |
| rotor position sensor, system accuracy of angle measurement | -120 arcsec...120 arcsec                                                                            |
| Brake holding torque                                        | 1.3 Nm                                                                                              |
| Operating voltage DC for brake                              | 24 V                                                                                                |
| Power consumption, brake                                    | 7.2 W                                                                                               |