

## PRODUCT DATASHEET

# ES-CM-BR02-M001

## Coreless Brushed Miniature And Standard Series

Coreless Brushed Miniature And Standard Series | ES-CM-BR02 16 mm Coreless Brushed Motor Series

### Product Overview

Coreless Brushed Miniature And Standard Series with rated Voltage 24 V, instantaneous Maximum Current 1.1 A and brush type Graphite brush.

### Key Specifications

| PARAMETER                     | VALUE          | UNIT |
|-------------------------------|----------------|------|
| Rated Voltage                 | 24             | V    |
| Instantaneous Maximum Current | 1.1            | A    |
| Brush type                    | Graphite brush |      |
| Commutator segment count      | 7              |      |
| Insulation Class              | F/155 °C       |      |
| Loaded Speed                  | 4600           | rpm  |
| Maximum efficiency            | 78             | %    |
| Maximum Continuous Current    | 0.37           | A    |
| Maximum Winding Temperature   | 155            | °C   |

## Technical Specifications

| PARAMETER                     | SPECIFICATION | UNIT    |
|-------------------------------|---------------|---------|
| PERFORMANCE                   |               |         |
| No-Load Rotational Speed      | 6600          | rpm     |
| Speed Constant                | 163           | rpm/mNm |
| Maximum efficiency            | 78            | %       |
| Loaded Speed                  | 4600          | rpm     |
| ELECTRICAL                    |               |         |
| Rated Voltage                 | 24            | V       |
| Instantaneous Maximum Current | 1.1           | A       |
| Maximum Continuous Current    | 0.37          | A       |
| Motor Speed Constant per Volt | 274           | rpm/V   |
| Insulation Class              | F/155 °C      |         |
| No-load Current               | 0.012         | A       |

## Technical Specifications

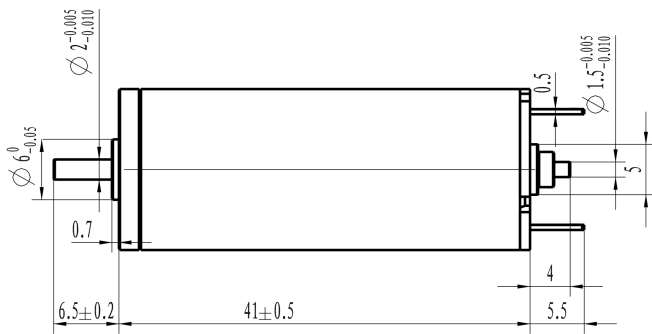
| PARAMETER                             | SPECIFICATION  | UNIT               |
|---------------------------------------|----------------|--------------------|
| ELECTRICAL                            |                |                    |
| Line-to-line inductance               | 1.46           | mH                 |
| Line-to-line resistance               | 22.6           | $\Omega$           |
| THERMAL                               |                |                    |
| Housing-to-Ambient Thermal Resistance | 21             | K/W                |
| Maximum Winding Temperature           | 155            | $^{\circ}\text{C}$ |
| MECHANICAL                            |                |                    |
| Mechanical Time Constant              | 5.02           | ms                 |
| Motor length                          | 40             | mm                 |
| Commutator segment count              | 7              |                    |
| Brush type                            | Graphite brush |                    |
| Motor diameter                        | 16             | mm                 |
| ENVIRONMENTAL                         |                |                    |
| Operating Temperature                 | -20 to 65      | $^{\circ}\text{C}$ |

## Dimensional & Integration Overview

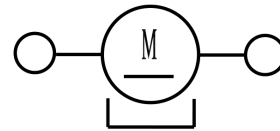
### Mechanical Overview

| PARAMETER                | VALUE          | UNIT |
|--------------------------|----------------|------|
| Mechanical Time Constant | 5.02           | ms   |
| Motor length             | 40             | mm   |
| Commutator segment count | 7              |      |
| Brush type               | Graphite brush |      |
| Motor diameter           | 16             | mm   |

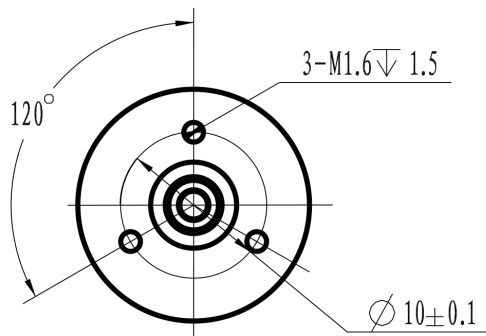
### Dimensional Drawings



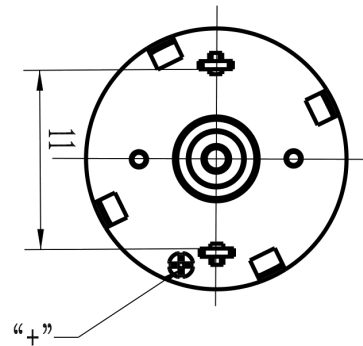
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Mechanical View 4

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                        | VALUE                             |
|-------------------|----------------------------------------------|-----------------------------------|
| Mechanical View 1 | Left shaft diameter with tolerance           | $\Phi 2 - 0.005 / - 0.010$        |
|                   | Left shaft collar diameter with tolerance    | $\Phi 6 - 0.05$                   |
|                   | Left shaft extension length                  | 0.7                               |
|                   | Left end total length                        | $6.5 \pm 0.2$                     |
|                   | Motor body length                            | $41 \pm 0.5$                      |
|                   | Right side step depth                        | 0.5                               |
|                   | Right shaft diameter with tolerance          | $\Phi 1.5 - 0.005 / - 0.010$      |
|                   | Right shaft segment length                   | 5                                 |
|                   | Right side boss width                        | 4                                 |
|                   | Right end total length                       | 5.5                               |
| Mechanical View 3 | Mounting hole thread specification and depth | 3 holes, M1.6 thread, 1.5mm depth |
|                   | Mounting hole angular distribution           | $120^\circ$                       |
|                   | Mounting hole pattern circle diameter        | $\varnothing 10 \pm 0.1$          |
| Mechanical View 4 | Front face local vertical dimension          | 11 mm                             |

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**01** Specifications are subject to change without notice. Verify the current product configuration before final design release.

**02** 2D drawings, CAD files and integration documentation are controlled documents and are supplied separately on request.