

## PRODUCT DATASHEET

# ES-DC-SL08-M002

## Slotted Series

Slotted Series | ES-DC-SL08 86 mm Slotted Brushless DC Motor Series

### Product Overview

Slotted Series with rated Torque 1 Nm, rated Speed 3000 rpm and continuous Rated Output Power 314.1 W.

### Key Specifications

| PARAMETER                     | VALUE              | UNIT |
|-------------------------------|--------------------|------|
| Rated Torque                  | 1                  | N·m  |
| Rated Speed                   | 3000               | rpm  |
| Continuous Rated Output Power | 314.1              | W    |
| Rated Voltage                 | 48                 | V    |
| Continuous Rated Current      | 9.4                | A    |
| Instantaneous Maximum Current | 28.2               | A    |
| Body Length                   | 81                 | mm   |
| Dielectric strength           | 500VAC/1KHz/1mA/1s |      |
| Duty Cycle                    | S1                 |      |

## Technical Specifications

| PARAMETER                     | SPECIFICATION      | UNIT   |
|-------------------------------|--------------------|--------|
| PERFORMANCE                   |                    |        |
| Rated Torque                  | 1                  | Nm     |
| Rated Speed                   | 3000               | rpm    |
| Continuous Rated Output Power | 314.1              | W      |
| No-Load Rotational Speed      | 3600               | rpm    |
| Motor efficiency              | 85.5               | %      |
| ELECTRICAL                    |                    |        |
| Rated Voltage                 | 48                 | V      |
| Continuous Rated Current      | 9.4                | A      |
| Instantaneous Maximum Current | 28.2               | A      |
| Dielectric strength           | 500VAC/1KHz/1mA/1s |        |
| Insulation Resistance         | 100 MOhm 20C       |        |
| Duty Cycle                    | S1                 |        |
| Rotational Back-EMF Constant  | 11.1               | V/krpm |
| No-load Current               | 0.7                | A      |

## Technical Specifications

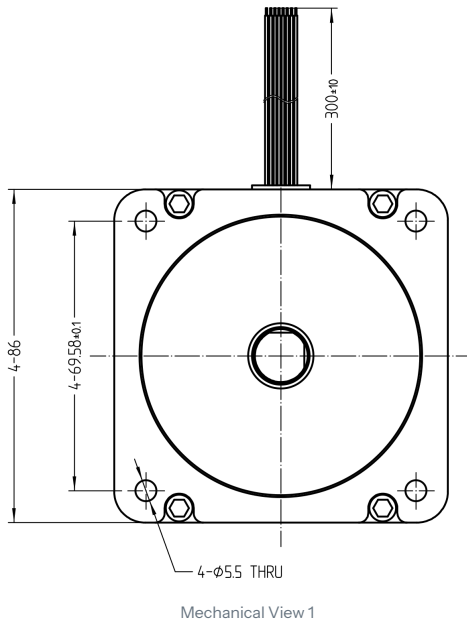
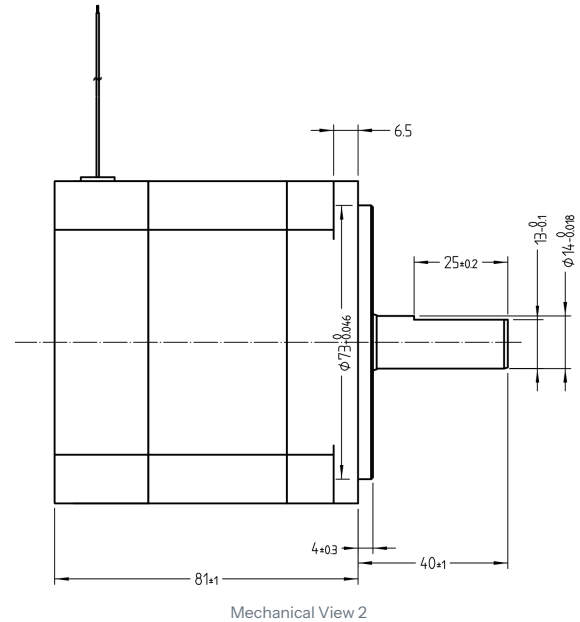
| PARAMETER                             | SPECIFICATION | UNIT               |
|---------------------------------------|---------------|--------------------|
| ELECTRICAL                            |               |                    |
| Line resistance                       | 0.21          | $\Omega$           |
| Line inductance                       | 0.44          | mH                 |
| THERMAL                               |               |                    |
| Housing-to-Ambient Thermal Resistance | 0.31          | K/W                |
| Maximum Winding Temperature           | 90            | $^{\circ}\text{C}$ |
| MECHANICAL                            |               |                    |
| Body Length                           | 81            | mm                 |
| Housing Type                          | No housing    |                    |
| Frame size                            | 86            | mm                 |
| Housing shape                         | Square        |                    |
| Commutation angle                     | 120           | $^{\circ}$         |
| Motor Weight                          | 2.18          | g                  |
| ENVIRONMENTAL                         |               |                    |
| Noise                                 | $\leq 50$     | dB                 |
| Ambient temperature                   | 30            | $^{\circ}\text{C}$ |

## Dimensional & Integration Overview

### Mechanical Overview

| PARAMETER         | VALUE      | UNIT |
|-------------------|------------|------|
| Body Length       | 81         | mm   |
| Housing Type      | No housing |      |
| Frame size        | 86         | mm   |
| Housing shape     | Square     |      |
| Commutation angle | 120        | °    |
| Motor Weight      | 2.18       | g    |

### Dimensional Drawings



## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                                 | VALUE                |
|-------------------|-------------------------------------------------------|----------------------|
| Mechanical View 1 | Shaft extension length                                | 300±10               |
|                   | Mounting hole pitch circle diameter                   | 4-Φ69.58±0.1         |
|                   | Square flange side dimension                          | 86×86 (4 sides)      |
|                   | Mounting through hole diameter                        | 4×Φ5.5 through holes |
| Mechanical View 2 | Mounting face width                                   | 6.5 mm               |
|                   | Shaft diameter with negative tolerance                | Φ14 -0.018/0 mm      |
|                   | Shaft extension length                                | 25±0.2 mm            |
|                   | Mounting flange bore diameter with positive tolerance | Φ73 +0.046/0 mm      |
|                   | Bottom mounting surface thickness                     | 4±0.3 mm             |
|                   | Mounting face width                                   | 40±1 mm              |
|                   | Overall width                                         | 81±1 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.