

PRODUCT DATASHEET

ES-SM-A03-080D-T2P39NM-750W-003

AC Servo Motors

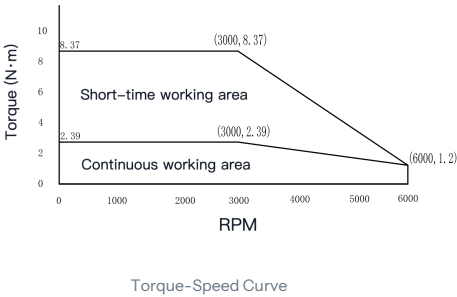
AC Servo Motors | ES-SM-A03-080D Compact 80 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 2.39 N·m, instantaneous Maximum Torque 7.17 N·m and rated Speed 3000 rpm.

Key Specifications

| PARAMETER                     | VALUE | UNIT  |
|-------------------------------|-------|-------|
| Rated Torque                  | 2.39  | N·m   |
| Instantaneous Maximum Torque  | 7.17  | N·m   |
| Rated Speed                   | 3000  | rpm   |
| Continuous Rated Output Power | 750   | W     |
| Rated Voltage                 | 220   | VAC   |
| Continuous Rated Current      | 4     | A     |
| Instantaneous Maximum Current | 12.7  | A     |
| Flange Size                   | 80    | mm    |
| Torque Constant               | 0.64  | N·m/A |



## Technical Specifications

| PARAMETER                     | SPECIFICATION                                            | UNIT   |
|-------------------------------|----------------------------------------------------------|--------|
| PERFORMANCE                   |                                                          |        |
| Rated Torque                  | 2.39                                                     | Nm     |
| Instantaneous Maximum Torque  | 7.17                                                     | Nm     |
| Rated Speed                   | 3000                                                     | rpm    |
| Continuous Rated Output Power | 750                                                      | W      |
| Torque Constant               | 0.64                                                     | Nm/A   |
| ELECTRICAL                    |                                                          |        |
| Rated Voltage                 | 220                                                      | VAC    |
| Continuous Rated Current      | 4                                                        | A      |
| Instantaneous Maximum Current | 12.7                                                     | A      |
| Pole Pairs                    | 5                                                        |        |
| Rotational Back-EMF Constant  | 39                                                       | V/krpm |
| Electrical Time Constant      | 3.59                                                     | ms     |
| Insulation Class              | F                                                        |        |
| Position Feedback Device      | 23-bit multi-turn communication optical absolute encoder |        |
| Motor Outlet Mode             | Standard socket                                          |        |
| MECHANICAL                    |                                                          |        |
| Flange Size                   | 80                                                       | mm     |
| Mechanical Time Constant      | 0.88                                                     | ms     |
| Bearing Radial Force Capacity | 392                                                      | N      |
| Bearing Axial Force Capacity  | 147                                                      | N      |
| CONFIGURATION                 |                                                          |        |
| Output Shaft Type             | Keyed shaft                                              |        |



2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                 | VALUE                |
|-------------------|---------------------------------------|----------------------|
| Mechanical View 1 | Shaft diameter tolerance (left view)  | Φ6 h8 (+0 / -0.018)  |
|                   | Shaft diameter tolerance (right view) |                      |
|                   | Shaft extension length                | 25 mm                |
|                   | Keyway label                          | KEY (keyway present) |
|                   | Threaded through hole specification   | M3 Through Hole      |

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                | VALUE                                     |
|-------------------|--------------------------------------|-------------------------------------------|
| Mechanical View 3 | Keyway position marker               | KEY                                       |
|                   | Mounting threaded hole specification | M6×20                                     |
|                   | Primary datum A                      | Datum A                                   |
|                   | Shaft diameter and tolerance         | Ø70h7 (0/-0.03)                           |
|                   | Position tolerance                   | Position Ø0.04 relative to datum A        |
|                   | Shaft length and tolerance           | 21.5 (0/-0.2)                             |
|                   | Overall length (reference)           | 95.5 (reference)                          |
|                   | Chamfer or step (reference)          | 0.5 (reference)                           |
|                   | Shaft end diameter and tolerance     | Ø19h6 (0/-0.013)                          |
|                   | Shaft end boss length                | 3±0.3                                     |
|                   | Keyway depth                         | 8                                         |
|                   | Perpendicularity tolerance           | Perpendicularity 0.06 relative to datum A |
|                   | First section length                 | 35±1                                      |
|                   | Total length                         | 95±1                                      |
|                   | Circular runout tolerance            | Circular runout 0.02 relative to datum A  |

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                     | VALUE           |
|-------------------|-------------------------------------------|-----------------|
| Mechanical View 4 | Mounting face depth                       | 15.5 +0/-0.1 mm |
|                   | Mounting hole angular distribution        | 45°             |
|                   | Mounting hole pitch circle diameter (PCD) | Ø90 mm          |
|                   | Mounting hole quantity and diameter       | 4× Ø6.5 mm      |
|                   | Mounting flange size (square)             | 80×80 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.