

## PRODUCT DATASHEET

# ES-SD-C01-S006-V003

## Industrial Motion Controller

24-60 V Low Voltage Micro Servo Drives | 24-60 V Compact Servo Drive Series - ES-SD-C01-S006

### Product Overview

Industrial Motion Controller with logic Supply Voltage No separate logic-supply input listed V DC, peak Output Current 12 A peak and continuous Output Current Without Auxiliary Heatsink 5 Arms.

### Key Specifications

| PARAMETER                                            | VALUE                                                                          | UNIT |
|------------------------------------------------------|--------------------------------------------------------------------------------|------|
| Logic Supply Voltage                                 | No separate logic-supply input listed                                          | V DC |
| Peak Output Current                                  | 12 A peak                                                                      |      |
| Continuous Output Current Without Auxiliary Heatsink | 5 Arms                                                                         |      |
| Communication Protocol                               | RS232; RS485; Modbus RTU; Pulse                                                |      |
| Control Method                                       | RS232, RS485 and pulse                                                         |      |
| Protection Class                                     | IP20 except FD164S power terminals                                             |      |
| Weight                                               | 0.3                                                                            | kg   |
| Digital I/O                                          | 4 digital inputs; 2 digital outputs; brake-motor variants use 1 digital output |      |
| Altitude Derating Rate                               | 1.5 % per 100 m                                                                |      |

## Technical Specifications

| PARAMETER                                            | SPECIFICATION                                                                                                    | UNIT |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------|
| <b>PERFORMANCE</b>                                   |                                                                                                                  |      |
| Continuous Output Current Without Auxiliary Heatsink | 5 Arms                                                                                                           |      |
| Supported Motor Power Range                          | 50 to +3000                                                                                                      | W    |
| <b>ELECTRICAL</b>                                    |                                                                                                                  |      |
| Logic Supply Voltage                                 | No separate logic-supply input listed                                                                            | V DC |
| Peak Output Current                                  | 12 A peak                                                                                                        |      |
| Braking Absorption Voltage                           | 73 ±2 V VDC / 73                                                                                                 | V DC |
| Braking Resistor                                     | External braking resistor supported when required by the duty cycle, particularly for rapid start/stop operation |      |
| External Braking Resistor Required                   | Yes / 1                                                                                                          |      |
| Overvoltage Alarm Voltage                            | 83 ±2 V VDC / 83                                                                                                 | V DC |
| Undervoltage Alarm Voltage                           | 18 ±2 V VDC / 18                                                                                                 | V DC |
| Servo Drive AC Supply Voltage                        | 24 to +60                                                                                                        | V DC |
| Protection Functions                                 | Overvoltage; Undervoltage; Motor overtemperature (I <sup>2</sup> T); Short circuit; Drive overtemperature        |      |
| <b>MECHANICAL</b>                                    |                                                                                                                  |      |
| Weight                                               | 0.3                                                                                                              | kg   |

## Technical Specifications

| PARAMETER                | SPECIFICATION                                                                  | UNIT |
|--------------------------|--------------------------------------------------------------------------------|------|
| INTERFACES               |                                                                                |      |
| Communication Protocol   | RS232; RS485; Modbus RTU; Pulse                                                |      |
| Control Method           | RS232, RS485 and pulse                                                         |      |
| Digital I/O              | 4 digital inputs; 2 digital outputs; brake-motor variants use 1 digital output |      |
| Pulse Input Supported    | Yes / 1                                                                        |      |
| Digital Output Count     | 2                                                                              |      |
| RS232 Maximum Baud Rate  | 115.2 kbit/s                                                                   |      |
| Digital Input Count      | 4                                                                              |      |
| Pulse Input Voltage      | 3.3 to +24                                                                     | V DC |
| Feedback Signal Support  | 2500 P/R incremental differential 5 V encoder; Magnetic encoder; Resolver      |      |
| ENVIRONMENTAL            |                                                                                |      |
| Protection Class         | IP20 except FD164S power terminals                                             |      |
| Relative humidity        | ≤90% RH, non-condensing                                                        |      |
| Installation Environment | Dry, dust-free enclosed location such as an electrical cabinet                 |      |

## Technical Specifications

| PARAMETER                  | SPECIFICATION                       | UNIT |
|----------------------------|-------------------------------------|------|
| ENVIRONMENTAL              |                                     |      |
| Atmospheric Pressure       | 86 to +106                          | kPa  |
| Operating Temperature      | 0 to +40                            | °C   |
| Storage Temperature        | -10 to +70                          | °C   |
| Installation Orientation   | Vertical or horizontal              |      |
| Cooling Method             | Natural cooling                     |      |
| Altitude Derating Start    | 1000                                | m    |
| Maximum Operating Humidity | 90                                  | %RH  |
| Maximum Operating Altitude | 3000                                | m    |
| Altitude Derating Rate     | 1.5 % per 100 m                     |      |
| SAFETY                     |                                     |      |
| STO Support                | No / false                          |      |
| CONFIGURATION              |                                     |      |
| Servo Drive Axis Count     | 1                                   |      |
| Drive Architecture         | Single-axis low-voltage servo drive |      |

## Mechanical Overview

## Dimensional Drawings



## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                          | VALUE                      |
|-------------------|------------------------------------------------|----------------------------|
| Mechanical View 1 | Left-side horizontal width                     | 75.50 mm                   |
|                   | Right-side horizontal width                    | 80.00 mm                   |
|                   | Upper-left clearance/notch width               | 30.00 mm                   |
|                   | Upper vertical clearance                       | 20.00 mm                   |
| Mechanical View 2 | Front view height dimension                    | 25.40 mm                   |
| Mechanical View 3 | Horizontal mounting hole position dimension    |                            |
|                   | Horizontal mounting hole offset from side edge | 13.90 mm                   |
|                   | Vertical mounting hole position dimension      | 137.50 mm                  |
|                   | Mounting hole or slot width quantity           | 5.50 mm, 2 places          |
|                   | Hole position note for fixation                | Hole position for fixation |

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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.