

# MN-SERVO-MJ3-EC / MN-SERVO-PA4-EC
# MN-SERVO-YSV-EC/ MN-SERVO-DAA-EC

Distributed Motionnet Single-axis Motion Control Modules
(With e-CON Mini-Clamp Connector)

## Features

- Maximum communication speed: 20 Mbps
- Pulse Output Rate: 6.6 MHz (Max.)
- Control up to 64 axes per line
- Multi-axis linear interpolation function
- 2-axis circular interpolation function
- T/S-curve acceleration and deceleration
- Change speed and position on the fly
- Slow down sensor, home sensor, positive and negative limit sensors for each axis
- Software limit and compare trigger output
- Three-way isolation for power, communication and I/O. (Provide better noise immunity and device protection)
- The EC module equipped with Mini-Clamp connector provide for an easier and debris-free wire termination process.

## Introduction

The **MN-SERVO -EC** series is used to expand the number of axes for distributed motion control on a Motionnet field bus. These extension slave modules can be directly connect to the servo driver and are serially connected to the controller using a simple and affordable Cat.5 LAN cable, reducing the amount of wiring required between the drivers and the controller, making this a highly suitable solution for integrated machine automation applications.
After the module is connected to the servo driver, all you need to do is connect a serial LAN cable between the modules. One serial line can support up to 64 single-axis modules. ICP DAS provides a variety of motion control modules suitable for a range of brands of servo drivers, such as Mitsubishi MELSERVO-J3/J4, Yaskawa Sigma II/III/V, Panasonic MINAS A4/A5, Delta ASDA-A/A2 and Teco TSTA-A/A+.

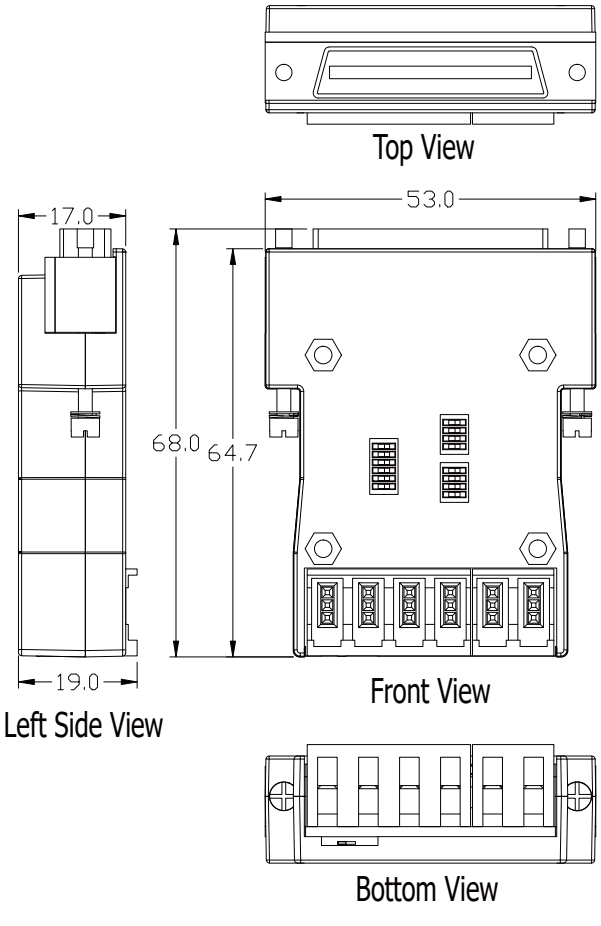
## Specifications

| Model | MN-SERVO-MJ3-EC | MN-SERVO-PA4-EC | MN-SERVO-YSV-EC | MN-SERVO-DAA-EC |
|---|---|---|---|---|
| **General** | | | | |
| Communication Speed | 2.5, 5, 10, 20 Mbps | | | |
| Pulse Output Rate | 6.6 MHz (Max.) | | | |
| Pulse Output Interface | OUT/DIR, CW/CCW | | | |
| Pulse Output Counter | 28-bit | | | |
| Encoder Interface | CW/CCW, A/B phase | | | |
| Encoder Counter | 28-bit | | | |
| Speed Profile | Trapezoidal/S Shaped Acc/Dec Driving | | | |
| Home Mode | 13 Types | | | |
| Mechanical Switch Input | LMT+, LMT-, HOME, SD, EMG | | | |
| Servo I/O Interface | Input: ALM, RDY, INP<br>Output: SVON, ERC, ALM_RST | | | |
| High-Speed Position Compare Output | 5 V TTL or 24 V open collector | | | |
| LED Diagnostics | Communication state (Link, Error)<br>Mechanic Switch Input<br>Internal 3.3 V Power<br>Termination Resistor Switch | | | |
| **Environmental** | | | | |
| Operating Temperature | 0 ~ +60 °C | | | |
| Storage Temperature | -20 ~ +80 °C | | | |
| Operating Humidity | 10 ~ 85%; non-condensing | | | |
| Storage Humidity | 5 ~ 95%; non-condensing | | | |

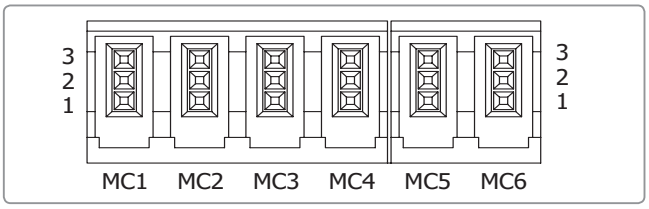


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## Dimensions: (Units: mm)




## Pin Assignments




| Connector | No. | Name | Description | Signal Direction |
|---|---|---|---|---|
| MC1 | 3 | Data- | Serial communication data- | Both |
| | 2 | Data+ | Serial communication data+ | Both |
| | 1 | F.G. | Frame ground | None |
| MC2 | 3 | Data- | Serial communication data- | Both |
| | 2 | Data+ | Serial communication data+ | Both |
| | 1 | F.G. | Frame ground | None |
| MC3 | 3 | E24V | External power 24V | Input |
| | 2 | EGND | External ground | Input |
| | 1 | F.G. | Frame ground | None |
| MC4 | 3 | E24V | External power 24V | Input |
| | 2 | EGND | External ground | Input |
| | 1 | F.G. | Frame ground | None |
| MC5 | 3 | CMP | High-speed position compare | Output |
| | 2 | EMG | Emergency stop | Input |
| | 1 | SD | Slowdown | Input |
| MC6 | 3 | LMT+ | Positive end limit | Input |
| | 2 | HOME | Home position | Input |
| | 1 | LMT- | Negative end limit | Input |

## Ordering Information

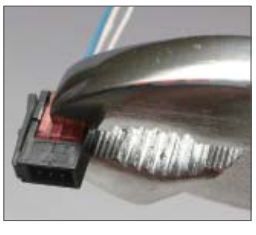
| | |
|---|---|
| **MN-SERVO-MJ3-EC CR** | Distributed Motionnet Single-axis Motion Control Module with e-CON Mini-Clamp connector for Mitsubishi MELSERVO-J3/J4 (RoHS) |
| **MN-SERVO-PA4-EC CR** | Distributed Motionnet Single-axis Motion Control Module with e-CON Mini-Clamp connector for Panasonic MINAS A4 (RoHS) |
| **MN-SERVO-YSV-EC CR** | Distributed Motionnet Single-axis Motion Control Module with e-CON Mini-Clamp connector for Yaskawa Sigma II/III/V (RoHS) |
| **MN-SERVO-DAA-EC CR** | Distributed Motionnet Single-axis Motion Control Module with e-CON Mini-Clamp connector for Delta ASDA-A/A2 (RoHS) |

## Related Products

| | |
|---|---|
| PISO-MN200(T/EC) CR | PCI Bus, Dual-line Motionnet Master Card (RoHS) |
| MN-SERVO Series CR | Distributed Motionnet Single-axis Motion Control Modules (MJ3 / PA4 / YSV / DAA) (RoHS) |
| MN-2091U(-T) CR | Distributed Motionnet Single-axis Universal Motion Control Module (RoHS) |
| MN-MP4U-DIN CR | Distributed Motionnet Four-axis Universal Motion Control Module (RoHS) |
| MN-3254(T) CR / MN-D622-DIN CR | Distributed Motionnet 16-ch Isolated DI 16-ch Isolated DO Module (RoHS) |
| MN-3253(T) CR / MN-D640-DIN CR | Distributed Motionnet 32-ch Isolated DI Module (RoHS) |
| MN-3257(T) CR / MN-D604-DIN CR | Distributed Motionnet 32-ch Isolated DO Module (RoHS) |
| MN-AD8-DIN CR | Distributed Motionnet 8-ch Analog Input Module (RoHS) |
| MN-DA2-DIN CR | Distributed Motionnet 2-ch Analog Output Module (RoHS) |
| MN-HUB4(EC) CR | Distributed Motionnet 4 Port Hub Module (RoHS) |

## Accessories

| Mini Clamp Wiremount Plug | | | Applicable Wire | | |
|---|---|---|---|---|---|
| ICP DAS Part No. | Cover Color | 3M Part No. | AWG No. | Cross-sectional Area (mm2) | Finished External Diameter Φ (mm) |
| 4PKD1O0000001 | Gray | 37103-2206-000FL | 20 – 22 | 0.3 – 0.5 | 1.6 – 2.0 |
| 4PKD1O0000002 | Red | 37103-3101-000FL | 24 – 26 | 0.14 – 0.3 | 0.8 – 1.0 |
| 4PKD1O0000003 | Orange | 37103-3163-000FL | 24 – 26 | 0.14 – 0.3 | 1.2 – 1.6 |





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