

MN-MP4U-DIN

Distributed Motionnet Four-axis Universal
Motion Control Module

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)
- Suitable for controlling a variety of servo drivers and stepper drivers



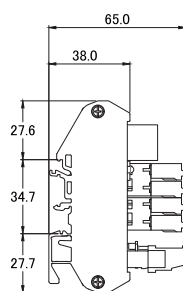
Introduction

The **MN-MP4U-DIN** is used to expand the number of axes for distributed motion control on a Motionnet field bus. These extension slave modules are serially connected to the controller using a simple and affordable Cat.5 LAN cable, and one serial line can support up to 16 four-axis modules. The 26-pin HD D-Sub connector can be used to easily connect with various servo drivers and stepper drivers. ICP DAS also provides a variety of cables suitable for a range of brands of servo drivers, which further reduces the amount of wiring required between the drivers and the controller, making this an ideal solution for highly integrated machine automation applications.

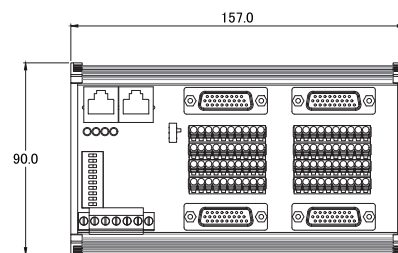
Specifications

| Model | MN-MP4U-DIN |
|------------------------------------|--|
| 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 Output: SVON, ERC, ALM_RST |
| High-Speed Position Compare Output | 5V TTL or 24V open collector |
| LED Diagnostics | Communication state (Link, Error) Mechanic Switch Input Internal 3.3V Power Termination Resistor Switch |
| Communication Connector | MN-MP4U-DIN: RJ-45 x2 |
| Environmental | |
| Operating Temperature | 0 ~ +60 °C |
| Storage Temperature | -20 ~ +80 °C |
| Operating Humidity | 10 ~ 85%; non-condensing |
| Storage Humidity | 5 ~ 95%; non-condensing |

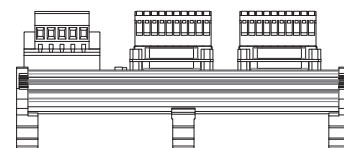
Dimensions: (Units: mm)



Left Side View

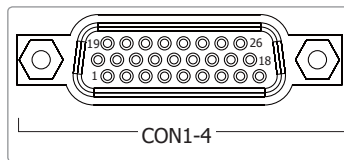
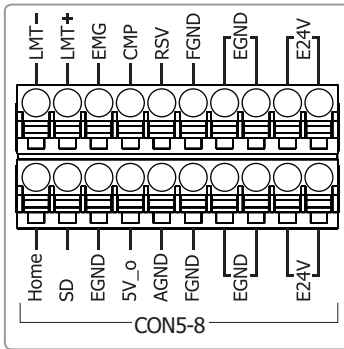


Front View



Bottom View

Pin Assignments



| Pin No. | Pin Name | Description | I/O Define. | Pin No. | Pin Name | Description | I/O Define. |
|---|----------|--|------------------------|---|----------|--|------------------------|
| CON5-8B (the lower one) Pin Assignments | | | | CON5-8A (the upper one) Pin Assignments | | | |
| 1 | HOME | Home position | Input | 1 | LMT- | Negative end limit | Input |
| 2 | SD | Slowdown | Input | 2 | LMT+ | Positive end limit | Input |
| 3 | EGND | External ground | Input | 3 | EMG* | Emergency stop | Input |
| 4 | 5V_o | Internal 5V power derived from 24V supply | Output | 4 | CMP | High-speed position compare | Output |
| 5 | AGND | Optional analog ground, no internal connection | Connect to CON1-4 only | 5 | RSV | Reserved signal (no internal connection) | Connect to CON1-4 only |
| 6 | FGND | Frame ground | None | 6 | FGND | Frame ground | None |
| 7 ~ 8 | EGND | External ground | Input | 7 ~ 8 | EGND | External ground | Input |
| 9 ~ 10 | E24V | External power 24V | Input | 9 ~ 10 | E24V | External power 24V | Input |

*Note: The EMG signal is only accessible at CON5, this pin is not connected on CON6-8.

| Pin No. | Pin Name | Description | I/O Define. | Pin No. | Pin Name | Description | I/O Define. |
|---------|----------|---|-------------|---------|----------|---|------------------------|
| 1 | SRV_ON | Servo On | Output | 15 | AGND | Optional analog ground (no internal connection) | Connect to CON5-8 only |
| 2 | INP | In Position | Input | 16 | B- | Encoder B-phase pulse | Input |
| 3 | ERC | Error Counter Clear | Output | 17 | B+ | Encoder B-phase pulse | Input |
| 4 | RDY | Servo Ready | Input | 18 | N.C. | No internal connection | N.C. |
| 5 | P- | Forward rotation pulse train (differential line driver) | Output | 19 | EMG | Emergency stop | Input |
| 6 | P+ | | Output | 20 | RSV | Reserved signal (no internal connection) | Connect to CON5-8 only |
| 7 | A- | Encoder A-phase pulse | Input | 21 | EGND | External ground | Input |
| 8 | A+ | | Input | 22 | EGND | External ground | Input |
| 9 | N.C. | No internal connection | N.C. | 23 | N- | Forward rotation pulse train (differential line driver) | Output |
| 10 | RESET | Alarm Reset | Output | 24 | N+ | | Output |
| 11 | ALARM | Servo Alarm | Input | 25 | Z- | Encoder Z-phase pulse | Input |
| 12 | E24V | External power 24V | Input | 26 | Z+ | | Input |
| 13 | EGND | External ground | Input | | | | |
| 14 | N.C. | No internal connection | N.C. | | | | |

Ordering Information

| | |
|-----------------------|--|
| MN-MP4U-DIN CR | Distributed Motionnet Four-axis Universal Motion Control Module with RJ-45 Connector. Includes 4x "CA-PC26M". (RoHS) |
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Related Products

| | |
|--------------------------------|---|
| PISO-MN200(T/EC) CR | PCI Bus, Dual-line Motionnet Master Card (RoHS) |
| MN-SERVO-xxx(-EC) 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-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-DA2-DIN CR | Distributed Motionnet 2-ch Analog Output Module (RoHS) |
| MN-AD8-DIN CR | Distributed Motionnet 8-ch Analog Input Module (RoHS) |
| MN-HUB4(EC) CR | Distributed Motionnet 4 Port Hub Module (RoHS) |

Accessories

| | |
|------------------------|---|
| CA-PC26M | 26-pin HD D-Sub solder cup Male connector with plastic cover |
| CA-26-MJ3-15/30/50(B) | 26-pin HD D-Sub Male cable for Mitsubishi servo amplifier, 1.5/3/5 M (for MELSERVO-J3/J4 series) |
| CA-26-YSV-15/30/50(B) | 26-pin HD D-Sub Male cable for Yaskawa servo amplifier, 1.5/3/5 M (for Sigma II/III/V series) |
| CA-26-PA4-15/30/50(B) | 26-pin HD D-Sub Male cable for Panasonic servo amplifier, 1.5/3/5 M (for MINAS A4/A5 series) |
| CA-26-DAA2-15/30/50(B) | 26-pin HD D-Sub Male cable for Delta A2 servo amplifier, 1.5/3/5 M (for ASDA-A2 series) |
| CA-26-DAB2-15/30/50(B) | 26-pin HD D-Sub Male cable for Delta B2 servo amplifier, 1.5/3/5 M (for ASDA-B2 series) |
| CA-26-FFW-15/30/50 | 26-pin HD D-Sub Male cable for Fuji servo amplifier, 1.5/3/5 M (for FALDIC-W and ALPHA5 Smart series) |
| CA-26-TTA-15/30/50 | 26-pin HD D-Sub Male cable for Teco servo amplifier, 1.5/3/5 M (for TSTA-A/A+ series) |