



## MN-2091U/MN-2091U-T

Distributed Motionnet Single-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



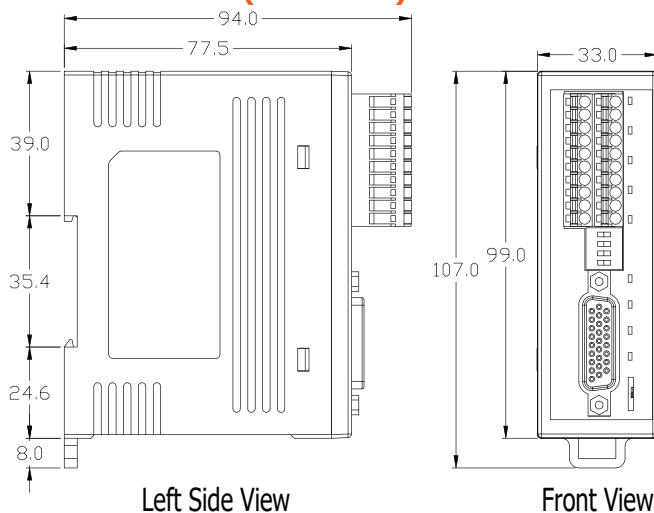
### Introduction

The **MN-2091U(-T)** 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 64 single-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.

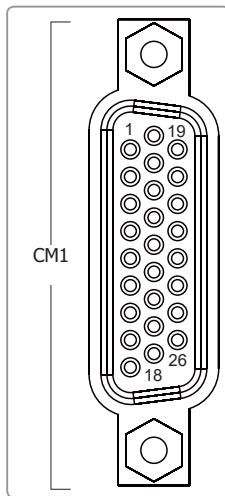
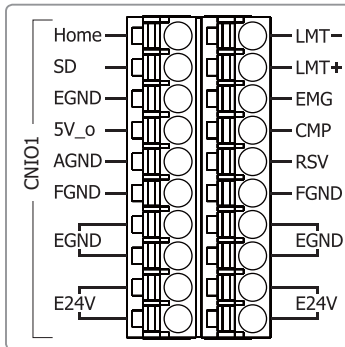
### Specifications

Model	MN-2091U	MN-2091U-T
<b>General</b>		
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-2091U: RJ-45 x2 MN-2091U-T: 5-pin terminal block	
<b>Environmental</b>		
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)



## Pin Assignments



Pin No.	Pin Name	Description	I/O Define.	Pin No.	Pin Name	Description	I/O Define.
CNIO1B (Left) Pin Assignments				CNIO1A (Right) 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 CM1 only	5	RSV	Reserved signal (no internal connection)	Connect to CM1 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
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 CNIO1 only
2	INP	In Position	Input	16	B-	Encoder B-phase pulse	Input
3	ERC	Error Counter Clear	Output	17	B+		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 CNIO1 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

<b>MN-2091U CR</b>	Distributed Motionnet Single-axis Universal Motion Control Module with RJ-45 Connector (RoHS)
<b>MN-2091U-T CR</b>	Distributed Motionnet Single-axis Universal Motion Control Module with Terminal Block (RoHS)

## 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-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

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)