Motionnet MNET-J3 Single Axis Motion Control Board for Mitsubishi J3 Servo

RoHS

Specifications

■ **Serial Communications**

Item	Specifications
Cyclic communication times and data transfer cycles	Data transfer cycle Maximum of 0.49 msec, when using 32 devices. (*1) Maximum of 0.97 msec, when using 64 devices. (*2)
Total serial communication line length	Maximum of 100 m (*3) Maximum of 50 m (*4) Maximum of 100 m (*5)
Serial communication interface	RS-485 with transformer isolation Half duplex communication 2.5/5/10/20 Mbps transmission rate can be set by software (Default 20 Mbps)
Serial communication device number	63 Devices Maximum
LED indicator	RUN: While receiving serial communications normally, the green LED is lit. ERR: When a serial communication error occurs continuously, the red LED is lit.

■ **Motion Control**

Item	Specifications	
Applicable servo driver	AC servo driver MR-J3 series made by Mitsubishi Electric **(Direct connections to the CN1 I/O signal connector)**	
Positioning control range	-134,217,728 to 134,217,727 (28 bits)	
Command counter setting range	-134,217,728 to 134,217,727 (28 bits)	
Pulse rate setting range	1 - 65,535 (16-bit)	
Pulse rate multiplier setting range	0.1 - 66.6	
Pulse train frequency	Maximum of 6.6 Mpps, with a minimum of 0.1 pps Output Voltage: ➢ Logic H: 2.5 V min. ➢ Logic L: 0.5 V max	
Command pulse output	Select from the types below based on the environment settings - CW/CCW method (2 pulse mode) - 90˚ phase difference method (AB phase pulse mode)	
Encoder signal input interface (High Speed Isolation I/F)	Encoder A phase and B phase input: Maximum response frequency; 3.5 MHz Input Voltage: ➢ Logic H: 3 - 5V ➢ Logic L: 0 - 2.4V	
Driver system Input (Isolation I/F)	Alarm input (ALM) Positioning complete input (INP) Servo ready input (SVRDY)	
Driver system Output (Open collector output I/F)	Deflection counter clear output (ERC) Alarm reset output (ALMRES)	Servo on output (SVON) Emergency stop output (EMGO)
Dedicated Mechanical Input (Isolation I/F)	Positive end limit input (PEL) Negative end limit input (MEL) Slowdown input (SD)	Zero position input (ORG) Emergency stop input (EMGI)
Dedicated Mechanical Output (Differential output I/F)	Comparator output (CPP, CPN)	

Note:
(*1, *2) Data transfer speed: 20 Mbps, when using ADLINK recommended cable *1:100m, *: 50m
(*3) Data transfer speed: 20 Mbps, with 32 devices connected by using ADLINK recommended cables
(*4) Data transfer speed: 20 Mbps, with 64 devices connected by using ADLINK recommended cables
(*5) Data transfer speed: 20 Mbps, with 64 devices connected by using ADLINK recommended cables

■ Dimension:
W52.4 x D16.3 x H69.5 (Unit: mm)
■ Weight: Approximately 50 g
■ Operating Temperature: 0 to 50˚C
■ Operating ambient humidity: 80%RH or less (Non condensing through the 10˚C to 50˚C range)
■ Power Consumption:
24 VDC±10%, 110 mA (Typ.)

Recycle Paper

Pin Assignment

CN1, 2 (serial communication connector)
Connect the Motionnet serial signal. The corresponding pins of CN1 and CN2 are internally connected.

No.	Signal name	Function	Signal direction	No.	Signal name	Function	Signal direction
1	RS485+	Serial communication data+	I/O	**2**	RS485-	Serial communication data-	I/O
3	FG	Frame ground	-	-	-	-	-

Note 1: The signal directions above refer to the signal flow direction as seen from the board: "I" = Input and "O" = Output.
Note 2: The FG above is connected to the FG on connector CN3.

CN3 (mechanical input/output, power supply connector)
Connect Mechanical system Input/Output signals and control power for the board.

No.	Signal name	Function	Signal direction	No.	Signal name	Function	Signal direction
1	PEL	Positive end limit	I	**2**	MEL	Negative end limit	I
3	SD/CPP	Slowdown input / comparator output (+)	I/O	**4**	ORG	Zero position input	I
5	EMGI	Emergency stop input	I	**6**	CPN	Comparator output (-)	O
7	24V	24 VDC Power source	I	**8**	GND	Ground	I
9	GND	Ground	I	**10**	FG	Frame ground	-

Note 3: The signal directions above refer to the signal flow direction as seen from the board: "I" = Input and "O" = Output.

CN4 (servo driver connector)

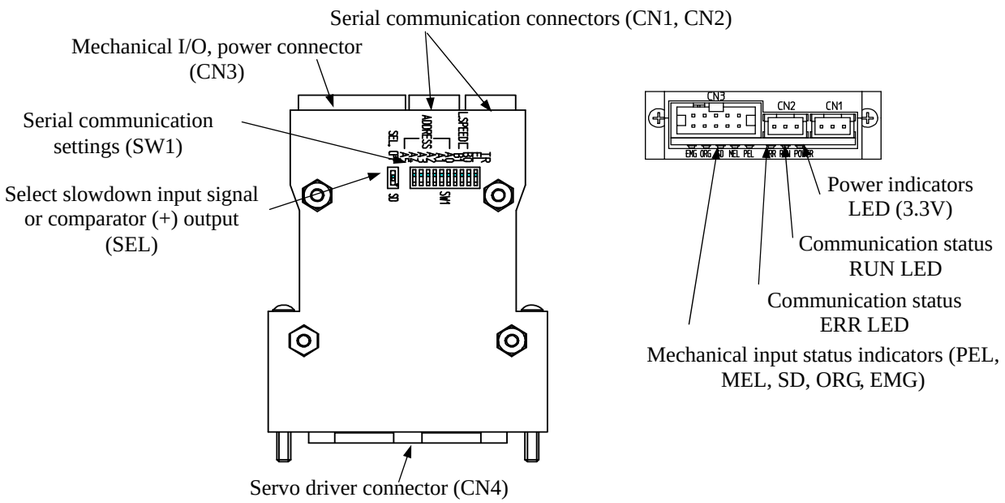
Insert the I/O signal connector CN1 on the MR-J3 series AC servo driver (Mitsubishi Electric) directly into this connector. The connector housing is also the frame ground.

No.	Signal name	Function	Signal direction	No.	Signal name	Function	Signal direction
1	-	-	-	**2**			
3	-	-	-	**4**	EAP	Encoder A phase (+)	I
5	EAN	Encoder A phase (-)	I	**6**	EBP	Encoder B phase (+)	I
7	EBN	Encoder B phase (-)	I	**8**	EZP	Encoder Z phase (+)	I
9	EZN	Encoder Z phase (-)	I	**10**	DIRN	Direction signal (-)	O
11	DIRP	Direction signal (+)	O	**12**	-	-	-
13	-	-	-	**14**	-	-	-
15	SVON	Servo ON	O	**16**	-	-	-
17	-	-	-	**18**	-	-	-
19	ALMRES	Alarm reset	O	**20**	24V	24 VDC power supply	O
21	-	-	-	**22**	24V	24 VDC power supply	O
23	-	-	-	**24**	INP	Positioning complete	I
25	-	-	-	**26**	-	-	-
27	-	-	-	**28**	-	-	-
29	-	-	-	**30**	-	-	-
31	-	-	-	**32**	-	-	-
33	-	-	-	**34**	-	-	-
35	PULSN	Pulse signal (-)	O	**36**	PULSP	Pulse signal (+)	O
37	-	-	-	**38**	-	-	-
39	-	-	-	**40**	-	-	-
41	ERC	Deflection counter clear	O	**42**	EMGO	Emergency stop	O
43	GND	Ground	O	**44**	GND	Ground	O
45	-	-	-	**46**	GND	Ground	O
47	GND	Ground	O	**48**	ALM	Alarm	I
49	SVRDY	Servo ready	I	**50**	-	-	-

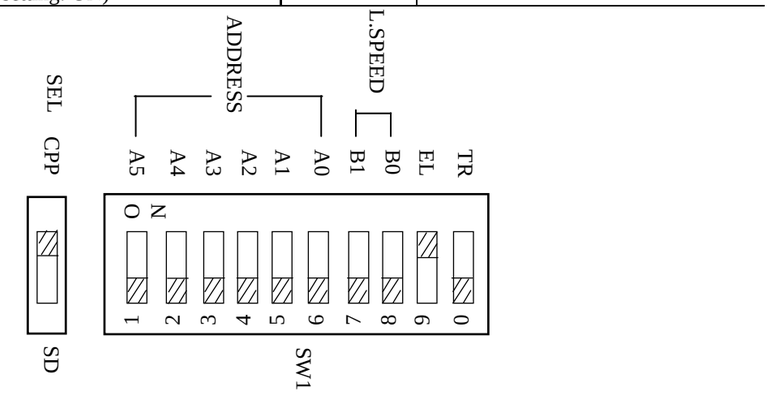
Note 4: The signal directions above refer to the signal flow direction as seen from the board: "I" = Input and "O" = Output.
Note 5: A blank means not connected.

Connector and Switch Information

The layout of the connectors and switches is shown below.



Item	Setting details	Item	Setting details
Serial comm. device number assignment (SW1-A0 to 5)	Assign a device number for serial communication. (A0 to A5 correspond to 1, 2, 4, 8, 16, and 32. The sum of these values will be the device number.) (Default setting: All off)	Setting termination resistance (SW1-TR)	Setting termination resistance TR: OFF – -; ON – Insert a termination resistance (Default setting: Off)
Setting the transfer speed (SW1-B0, B1)	Setting the transfer speed B0 / B1 / Transfer speed: OFF OFF 20 Mbps; ON OFF 10 Mbps; OFF ON 5 Mbps; ON ON 2.5 Mbps (Default setting All off)	Switching mechanical input/output (SEL)	Select slowdown input signal or comparator (+) output SEL: SD – Slowdown input; CPP – Comparator (+) output (Default setting: CPP)
Setting the PEL + MEL logic (SW1-EL)	Setting the logic for PEL + MEL EL: OFF – The end limit signal goes on when the respective photocoupler turns on.; ON – The end limit signal goes off when the respective photocoupler turns on. (Default setting: ON)		



Ordering Information

DB-8153: Single Motionnet master controller daughter board
PCI-8154: Advanced 4-axis stepping & servo motion control card
PCI-8158: Advanced 8-axis stepping & servo motion control card
DPAC-3100: AMD LX-800 CPU with HSL and Motionnet bus
DPAC-3200: Intel® Celeron® M 1GHz with HSL and Motionnet bus

ADLINK on the Internet

Homepage www.adlinktech.com
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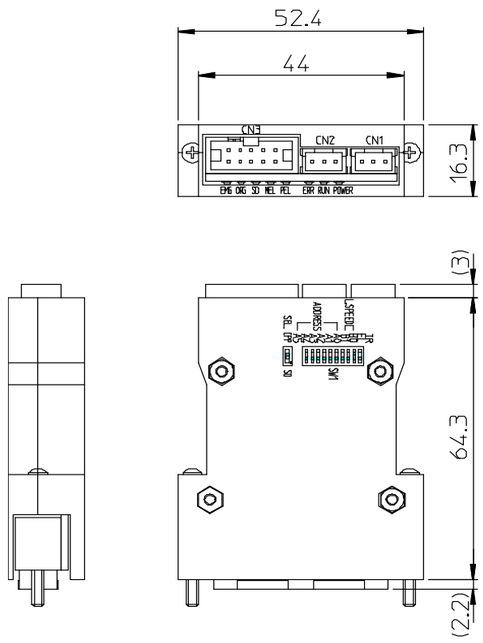
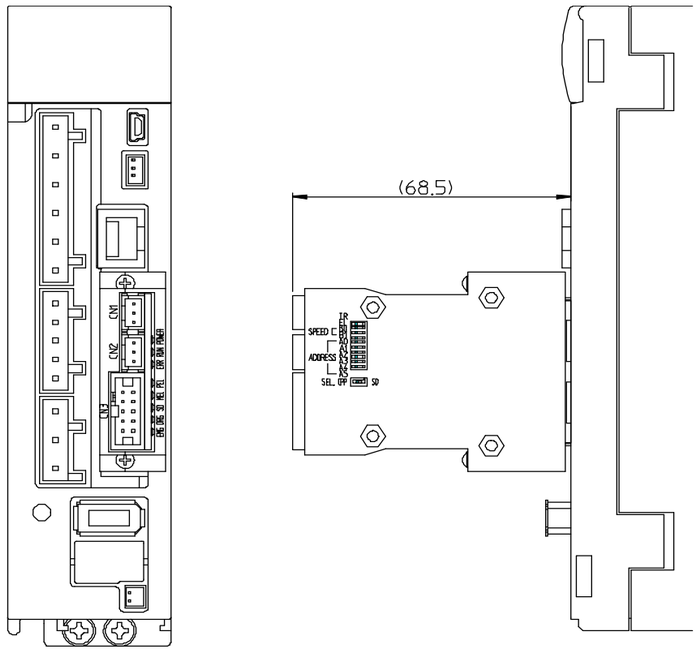
Dimensions

The external dimensions of MNET-J3 are shown below.



Unit: mm

Dimensions when connected to a Mitsubishi J3-A type servo driver



Unit: mm