

DC/FREQUENCY CONVERTER (field-programmable)

MODEL **JAPD2**

BEFORE USE

Thank you for choosing M-System. Before use, please check contents of the package you received as outlined below. If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

■ PACKAGE INCLUDES:

Signal conditioner
(body + base socket + input resistor).....(1)
Input resistor is provided only with current input type.

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection, hardware setting, operation of the Programming Unit (model: PU-2x)* specific to this model and basic maintenance procedures.

This unit is factory adjusted and calibrated according to the Ordering Information included in the product package. If you don't need to change the pre-adjusted setting, you can skip the sections on hardware setting and calibration and Software Setting in this manual.

*When you need to change software settings, please refer to the Operation Manual for Model PU-2x (EM-9255), Section B: (B-1) Introduction, (B-2) General Operation Description, (B-3) Operation Flow chart for general information.

POINTS OF CAUTION

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:

100 – 240V AC rating: 85 – 264V, 47 – 66 Hz,
approx. 3.2VA at 100V AC
approx. 5.1VA at 200V AC
approx. 6.9VA at 264V AC

12 and 24V DC ratings: Rating $\pm 10\%$, approx. 2.5W
110V DC rating: 85 – 150V DC, approx. 2.5W

■ GENERAL PRECAUTIONS

- Before you remove the unit from its base socket or mount it, turn off the power supply and input signal for safety.

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -5 to +55°C (23 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

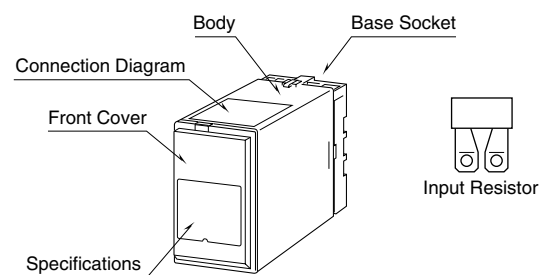
■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND

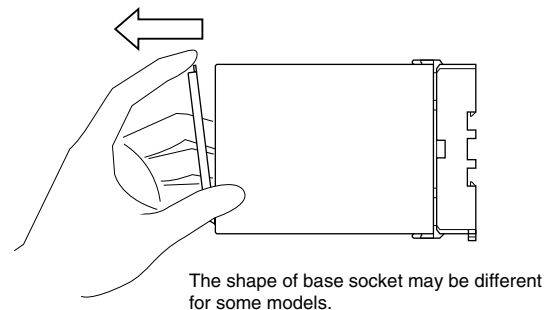
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

COMPONENT IDENTIFICATION

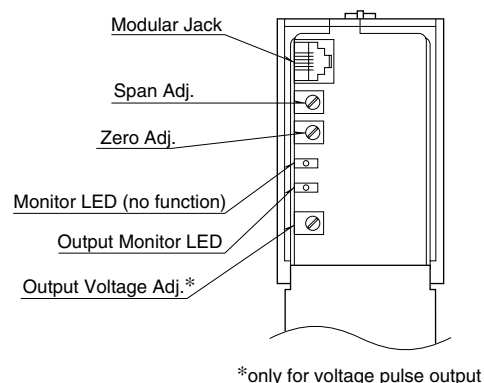


■ HOW TO OPEN THE FRONT COVER:

Hang your finger on the hook at the top of the front cover and pull.



■ FRONT PANEL CONFIGURATION



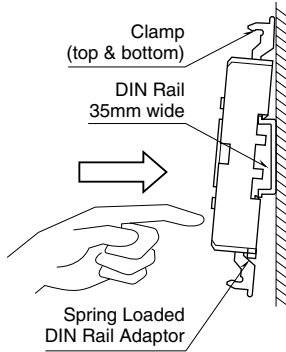
Note: The output voltage is already adjusted according to the ordering information sheet. Do NOT change the Output Voltage.

INSTALLATION

Detach the yellow clamps located at the top and bottom of the unit for separate the body from the base socket.

DIN RAIL MOUNTING

Set the base socket so that its DIN rail adaptor is at the bottom. Hang the upper hook at the rear side of base socket on the DIN rail and push in the lower. When removing the socket, push down the DIN rail adaptor utilizing a minus screwdriver and pull.



WALL MOUNTING

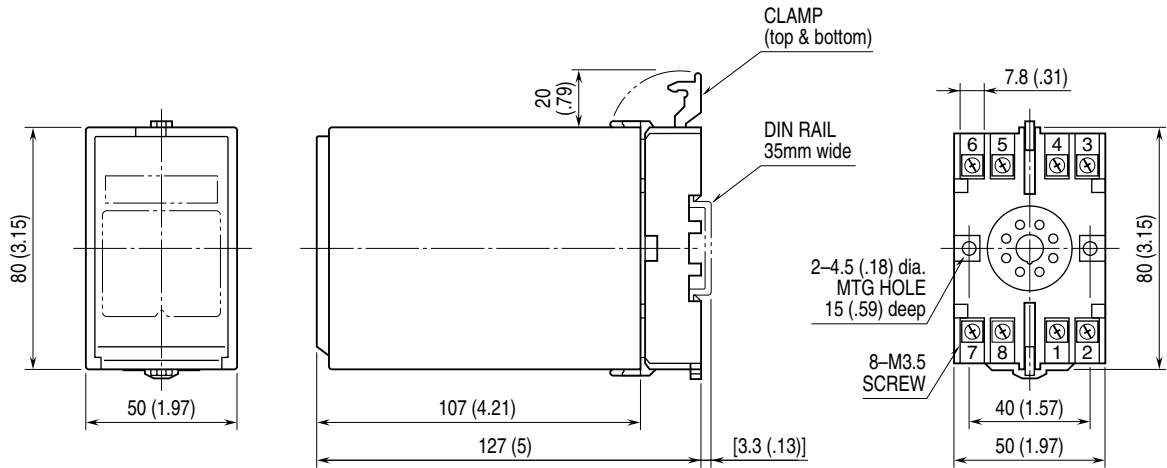
Refer to “EXTERNAL DIMENSIONS.”

Shape and size of the base socket are slightly different with various socket types.

TERMINAL CONNECTIONS

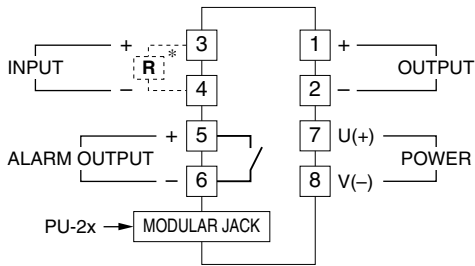
Connect the unit as in the diagram below or refer to the connection diagram on the top of the unit. When an input resistor is provided with the module, attach it together with input wiring to the input screw terminals.

EXTERNAL DIMENSIONS unit: mm (inch)



• When mounting, no extra space is needed between units.

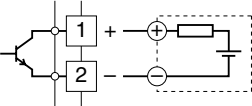
■ CONNECTION DIAGRAM



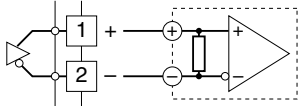
*Input shunt resistor attached for current input.

Output Connection Examples

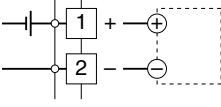
■ Open Collector



■ RS-422 Line Driver Pulse

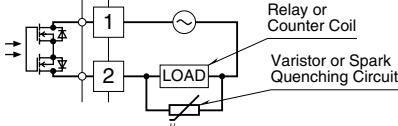


■ Voltage Pulse

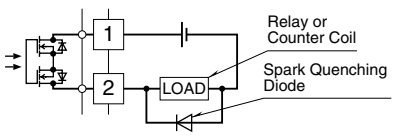


■ AC/DC Switch

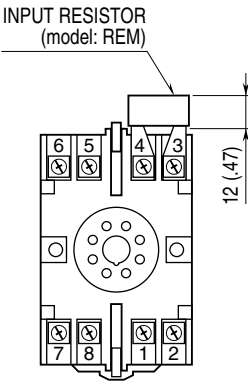
• AC Powered



• DC Powered



■ TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached for current input.

SOFTWARE SETTING

Please refer to the Operation Manual for Model PU-2x (EM-9255), Section B: (B-1) Introduction, (B-2) General Operation Description, (B-3) Operation Flowchart for general information.

[GROUP 01]

ITEM	MDFY.	DATA INPUT	DISPLAY	DEFAULT	CONTENTS
01	S			N/A	MAINTENANCE SWITCH
		0	MTSW : MON.MODE		0: Data indication only.
		1	MTSW : PRG.MODE		1: All 'P' marked parameters are modifiable.
02	P	Alphabets & No	TG : XXXXXXXXXX	N/A	Tag name entry (10 characters max.)
03	P	Percentage	OUTPER: XXX.XX	N/A	Output monitor (%) & simulation output (-5.00 to 105.00%)
04	D	No input	OUTFRQ: XXXXXX	N/A	Output monitor (Frequency unit as set in ITEM 11)
05	D	No input	INPPER: XXX.XX	N/A	Input monitor (%)
06	D	No input	Z: XXXX/S: XXXX	N/A	Check input adjuster Zero/Span (160 to 2048)
11	P			2 (4)*1	Frequency range (1 to 6) (For AC/DC switch, 4 to 6)
		1	RNG1: 10 kHz		0 to 10 kHz (0.000 to 20.000)
		2	RNG2: 1 kHz		0 to 1 kHz (0.0000 to 2.0000)
		3	RNG3: 100 Hz		0 to 100 Hz (0.00 to 200.00)
		4	RNG4: 10 Hz		0 to 10 Hz (0.000 to 20.000)
		5	RNG5: 1 Hz		0 to 1 Hz (0.0000 to 2.0000)
		6	RNG6: 100 mHz		0 to 100 mHz (0.00 to 200.00)
12	P	Numeric	FRQZER: XXXXXX	0.0000	Output zero frequency (Range and unit as set in ITEM 11)
13	P	Numeric	FRQSPN: XXXXXX	1.0000 (10.000)*1	Output span frequency (Range and unit as set in ITEM 11)
19	P	Percentage	FINZER: XXX.XX OUTPER: XXX.XX	0.00	Fine zero adjustment (-5.00 to +5.00%) When data is entered, output (%) is shown.
20	P	Percentage	FINSN: XXX.XX OUTPER: XXX.XX	100.00	Fine span adjustment (95.00 to 105.00%) When data is entered, output (%) is shown.
21	P			0	Alarm mode (0 to 2)
		0	NO ALARM		No alarm trip
		1	UPPER ALARM		High alarm trip
		2	LOWER ALARM		Low alarm trip
22	P	Percentage	ALARM: XXX.XX	100.00	Alarm setpoint (-5.00 to +105.00%)
23	P	Percentage	ALMHYS: XX.XX	1.00	Alarm deadband (hysteresis) (0.00 to 20.00%)
24	P	Seconds	ALTIME: XXXX.X	3.0	Alarm delay at the startup (2.0 to 1000.0 seconds)*2

*1. Value in parentheses for AC/DC switch.

*2. Accuracy: ± 2 seconds.

ROM Version Indication

[GROUP 00] [ITEM 99]

CHECKING

- 1) Terminal wiring: Check that all cables are correctly connected according to the connection diagram.
- 2) Power input voltage: Check voltage across the terminal 7 – 8 with a multimeter.
- 3) Input: Check that the input signal is within 0 – 100% of the full-scale.
- 4) Output: Check that the load resistance meets the described specifications as shown below.

OUTPUT		OUTPUT LOAD
Open collector		50 V DC @ 50 mA max.
Voltage pulse	5V	1 k Ω minimum
	12V	2.4 k Ω minimum
	24V	4.8 k Ω minimum
AC/DC switch		120 V AC or 120 V DC @ 200 mA (resistive load)

LIGHTNING SURGE PROTECTION

M-System offers a series of lightning surge protector for protection against induced lightning surges. Please contact M-System to choose appropriate models.