

Thank you for purchasing the JUXTA Signal Conditioner.
Please read through this manual before use for correct handling.

YOKOGAWA 
Yokogawa Electric Corporation

IM 77J09H02-01E
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CAUTIONARY NOTES FOR SAFE USE OF THE PRODUCT

This User's Manual should be carefully read before installing and operating the product. Please keep this User's Manual for future reference. The following symbol is used on the product and in this manual to ensure safe usage.



This symbol is displayed on the product when it is necessary to refer to the User's Manual for information on personal and instrument safety. This symbol is displayed in the User's Manual to indicate precautions to avoid danger to the operator, such as an electric shock.

The following symbols are used only in this manual.



NOTE

Draws attention to essential information for understanding the operations and/or functions of the product.

CHECKING PRODUCT SPECIFICATIONS AND PACKAGE

(1) Checking the Model and Product Specifications

Check that the model and specifications indicated on the nameplate attached to the main unit are as ordered.

(2) Packaged Items

Check that the package contains the following items:

- WH2A or WH2V: 1
- Mounting block: 2
- Tag number label and Range label: 1 each
- Mounting screw (M4 x 0.7): 4
- User's Manual (this manual : IM 77J09H02-01E)

GENERAL

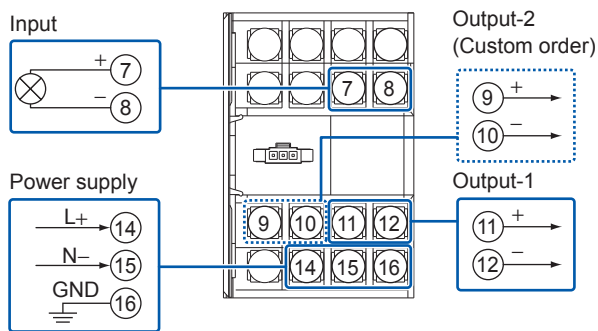
The WH2A/WH2V is a compact, front terminal connection type isolator that converts DC current or DC voltage signals into isolated DC current or DC voltage signals.

- I/O range setting, zero/span adjustment, and I/O monitoring can be made using optional Parameter Setting Tool (VJ77) or Handy Terminal (JHT200).

MODEL AND SUFFIX CODES

Model	Suffix codes				Description	
WH2A	-□	□	-□	*C	Isolator (Free Range Type)	
WH2V						
Input	-A				0 to 50 mA DC Span: 1 mA or more	
	-B				0 to 20 mA DC Span: 0.1 mA or more	
	-Z				(Custom order) DC current signal	
	-1				-10 to +10 V DC Span: 0.1 V or more	
	-2				-2 to +2 V DC Span: 10 mV or more	
	-0				(Custom order) DC voltage signal	
Output	A				0 to 20 mA DC Span: 2 mA or more	WH2A
	B				0 to 5 mA DC Span: 1 mA or more	
	1				0 to 10 V DC Span: 0.5 V or more	WH2V
	2				0 to 100 mV DC Span: 10 mV or more	
	0				(Custom order) DC voltage signal	
Power supply		-1			24 V DC \pm 10%	
		-2			100 to 240 V AC (-15%, +10%) 50/60 Hz	
Style code				*C	Style C	

Wiring Diagram



NOTE

- Do not connect anything to the terminals that are not used in the wiring diagram. Otherwise it may cause the malfunction or damage.
- The power line and input/output signal lines should be installed away from noise-generating sources. Otherwise accuracy cannot be guaranteed.
- The grounding resistance must be 100Ω or less (JIS Class D grounding). The length and thickness of the grounding cable should be as short and thick as possible. Directly connect the lead from the ground terminal ⑯ of the product to the ground. Do not carry out daisy chained inter-ground terminal wiring.
- The ground terminal ⑯ becomes effective for AC power only.
- Adhere strictly to the specifications to avoid overheating or damage. Before turning on the power, ensure the following:
 - Power supply voltage and input signal value applied to the product should meet the required specifications.
 - The external wiring to the terminals and wiring to ground are as specifications.
- Do not operate the product in the presence of flammable or explosive gases or vapors.
- This product is sensitive to static electricity; exercise care in handling. Before you operate the product, touch a nearby metal part to discharge static electricity.

Power Supply and Isolation

Power supply voltage:

100 to 240 V AC (-15%, +10%) 50/60Hz

24 V DC ±10% (percentage ripple: less than 5% p-p)

Current consumption: (24 V DC) WH2A 70 mA, WH2V 50mA

Power consumption: (100 V AC drive); WH2A 4 VA, WH2V 3 VA
(200 V AC drive); WH2A 5.5 VA, WH2V 4.5 VA

Insulation resistance: 100 MΩ at 500 V DC between input and output, input and power supply, input and ground, output and power supply, output and ground, and power supply and ground.

Withstand voltage:

(DC drive) 1500 V AC/min. between input and (output and power supply) 500 V AC/min. between output and power supply

(AC drive) 1500 V AC/min. between input and output, input and power supply, input and ground, output and power supply, output and ground, and power supply and ground.

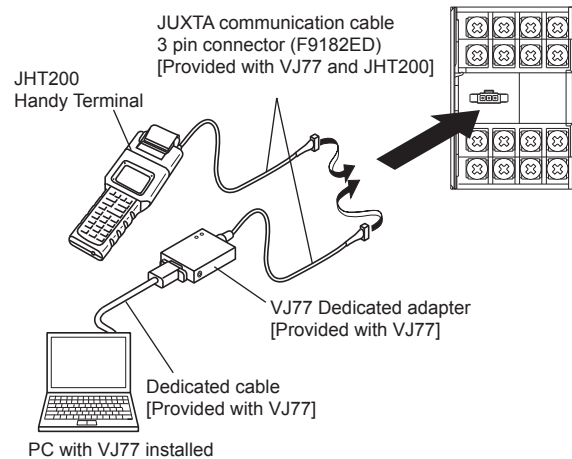
Power supply suffix codes: DC drive [-1], AC drive [-2]

4. SETTING PARAMETERS

The parameters are set as you specified in your order. Refer to the following to change the default settings.

Set the parameters using a PC (VJ77 Parameter Setting Tool) or the Handy Terminal. Refer to "5. List of Parameters" in this manual and the User's Manual for VJ77 PC-based Parameters Setting Tool (IM 77J01J77-01E) or the User's Manual for JHT200 Handy Terminal (IM JF81-02E). Parameters are shown in brackets "[]".

Connection of Setting Tools



*Be sure to use the VJ77 of version R1.05 or later.

Setting Input Range

Set the zero percent value of input range in [B13: INP ZERO], and the span of input range in [B14 : INP SPAN].

Setting Output Range

Set the zero percent value of output range in [B15: OUT ZERO], and the span of output range in [B16 : OUT SPAN].

5. LIST OF PARAMETERS

Parameter Display		Items
A	DISPLAY	Display
A01	INPUT	Input value
A02	OUTPUT	Output value
A03	STATUS	Status (*1)
A04	REV NO	Revision number
B	SET	Setting
B01	TAG NO.1	Tag number 1
B02	TAG NO.2	Tag number 2
B03	COMMENT1	Comment 1
B04	COMMENT2	Comment 2
B13	INP ZERO	Zero (0% of input range)
B14	INP SPAN	Span (Input span)
B15	OUT ZERO	Zero (0% of output range)
B16	OUT SPAN	Span (Output span)
C	ADJUST	Adjustment
C01	OUT 0%	Output 0% adjustment
C02	OUT 100%	Output 100% adjustment
C04	ZERO ADJ	Input zero adjustment
C05	SPAN ADJ	Input span adjustment

*1: This "STATUS" is for the customer's engineer to check the history.

6. MAINTENANCE

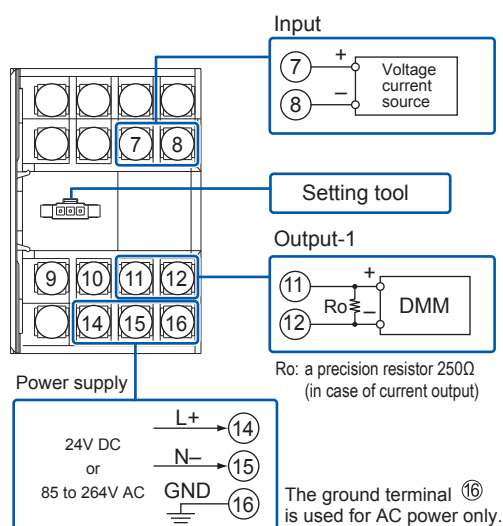
The product starts running immediately when the power is turned on; however, it needs 10 to 15 minutes of warm-up before it meets the specified performance.

6.1 Calibration Apparatus

- A voltage current source (Yokogawa 7651 or equivalent)
- A digital multimeter, DMM (Yokogawa 7561 or equivalent)
- A precision resistor of $250\ \Omega \pm 0.01\%$, 1W
- A setting tool for adjustment (Refer to "4. Setting Parameters" in this manual)

6.2 Calibration Procedure

1. Connect the instruments as shown below.



2. Use the voltage current source and apply signals equivalent to 0, 25, 50, 75, and 100% of the input range to the isolator.
3. Verify that the corresponding output-1 voltages are 0, 25, 50, 75, and 100% respectively and within the specified accuracy rating. (Ro is used for current output.)

For checking the output-2, connect the DMM to the output-2 terminals: ⑨ +, ⑩ -.

The relative error between output-1 and 2 is within $\pm 0.2\%$.

- Use the setting tool (VJ77 Parameter Setting Tool or JHT200 Handy Terminal) to adjust the input/output signals.

Input Adjustment Procedure

- (1) Input the value equivalent to 0% value of the input range to the isolator.
- (2) Read the parameter **[C04: ZERO ADJ]** and check the input value.
- (3) Select "INC" or "DEC" in the parameter **[C04: ZERO ADJ]** to adjust
 - Adjust so that the indicated value and measured value of **[C04: ZERO ADJ]** become equal.
 - INC: Increase (Adjusts the increased value of the input value)
 - DEC: Decrease (Adjusts the decreased value of the input value)
 - RST: Reset of the adjustment value
- (4) Input the value equivalent to 100% value of the input range to the isolator.
- (5) Read the parameter **[C05: SPAN ADJ]** and check the input value.
- (6) Adjust the span in the same way as (3).

Output Adjustment Procedure

When adjusting 0% value of output:

- (1) Set the adjustment value 0% in the parameter **[C01: OUT 0%]**.
 - The value equivalent to 0% of the output range will be output, irrespective of the input.
 - (2) Check the output value via digital multimeter, and adjust it in the parameter **[C01: OUT 0%]**.
 - If the indicating value of DMM deviates to the (+) side, set (-) value equivalent to the deviation; if it deviates to the (-) side, set (+) value equivalent to the deviation for adjusting the output value to 0%.
- *: The 100% value of output can be adjusted by the same operation as the above in **[C02: OUT100%]**

For adjustment using a setting tool, refer to the User's Manual for each setting tool and "5. List of Parameters" in this manual.

Use the VJ77 of version R1.05 or later.

User's Manual for the VJ77 [Document No.: IM 77J01J77-01E]

User's Manual for the JHT200 [Document No.: IM JF81-02E]