

User's Manual

Model VJP1 Pulse Repeater (Isolated Single-output and Isolated Dual-output Types)

JUXTA

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

YOKOGAWA
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IM 77J01P01-01EN
1st Edition Aug. 2013 (YK)

CAUTIONARY NOTES FOR SAFE USE OF THE PRODUCT

This User's Manual should be carefully read before installing and operating the product. 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:

- VJP1: 1
- Tag number label: 1
- User's Manual (this manual)

GENERAL

The VJP1 is a compact, plug-in pulse repeater that receives contact, voltage or current pulse from a field and converts them into isolated transistor-contact pulses or contactless AC switch pulse.

MODEL AND SUFFIX CODES

[STYLE: S2]

Model	Suffix codes							Description	
VJP1	-0	□	□	-□	□	□	0	/□□	Pulse Repeater
	-0								Always 0
Output configuration	1								Single
	2								Dual
Power supply	6								100-240 V AC/DC (*1)
	7								15-30V DC (*2)
Transmitter Power Supply	-1								12V DC±10%
	-2								24V DC±10%
Output-1	1								Open collector (30 V DC/200 mA)
	2								Open collector (30 V DC/30 mA)
	3								Contactless AC switch
Output-2	1								Open collector (30 V DC/200 mA)
	2								Open collector (30 V DC/30 mA)
	3								Contactless AC switch
	N								None
	0								Always 0
Options									Blank: With socket
								/SN	Without socket

*1 Operating range: 85-264 V

*2 Operating range: 12-36 V

1. MOUNTING METHOD

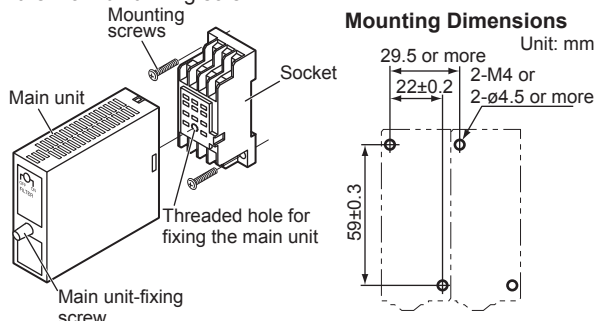


Note

Insert/pull out the main unit into/from the socket vertically to the face of socket. Otherwise the terminals are bent and it may cause a bad contact.

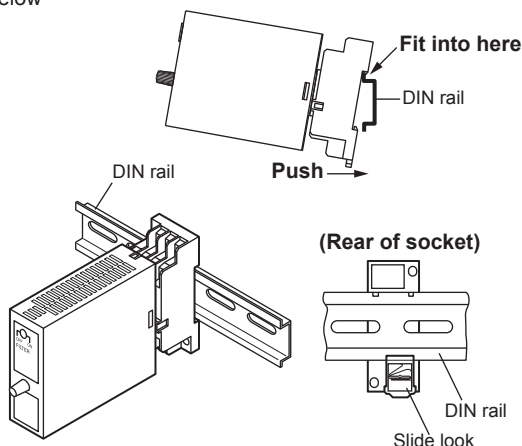
1.1 Wall Mounting

Loosen the main unit-fixing screw of the product and pull out the main unit from the socket. Fix the socket on the wall with screws. Next, insert the main unit into the socket and fasten the main unit with the main unit-fixing screw.



1.2 DIN Rail Mounting

Insert a DIN rail into the upper part of the DIN rail groove on the rear of the socket, and then slide the slide lock at the lower part of the socket upwards until the socket is fixed into position as shown below



1.3 Mounting Using

When using a multi-mounting base, see the User's Manual for VJCE (VJCE Mounting Base).

1.4 Using a Duct

When using a wiring duct, install the duct at least 30 mm away from the top and bottom faces of the main unit.

2. INSTALLATION LOCATION

- Avoid the following environments for installation locations: Areas with vibration, corrosive gases, dust, water, oil, solvents, direct sunlight, radiation, a strong electric field, and/or a strong magnetic field, altitude of more than 2000m above sea level.
- If there is any risk of a surge being induced into the power line and/or signal lines due to lightning or other factors, a dedicated lightning arrester should be used as protection for both this converter and a field-installed device.
- Operating temperature/humidity range: 0 to 50C/5 to 90%RH (no condensation)

3. EXTERNAL WIRING



WARNING

Be sure to turn OFF the power supply before wiring to avoid the risk of electric shock. Use a tester or similar device to ensure that no power is being supplied to a cable to be connected.

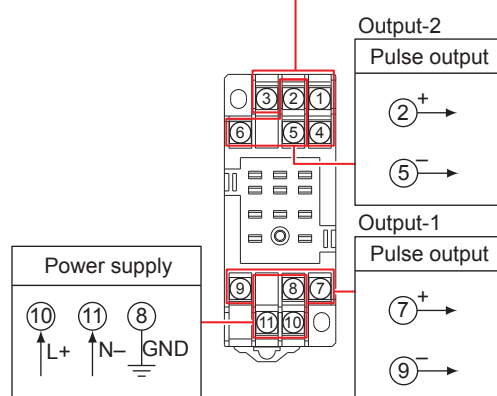
Note

When power of VJP1 is turned on/off, one pulse may be counted by the pulse input device which connects to the VJP1.

Wiring should be connected to the terminals on the socket of the product. The terminals for external connections are of M3 screws. Use crimp-on terminal lugs for connections to the terminals.

- Recommended cables: A nominal cross-sectional area of 0.5 mm² or thicker for signal cables, and that of 1.25 mm² or thicker for power cables.

Input	When receiving non-voltage contact signal or voltage pulse	When receiving current pulse by running a transmitter on an internal power supply	When receiving voltage pulse by running a transmitter on an internal power supply
	Transmitter PS+ Transmitter + 3 4	Transmitter PS+ 1 3 4	Transmitter PS+ 1 3 4



Note

- Do not use output-2 for the single-output type.
- The power line and input/output signal lines should be installed away from noise-generating sources. Other wise accuracy cannot be guaranteed.
- The grounding resistance must be 100 Ω (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 (terminal no. 8) of the product to the ground. Do not carry out daisy-chained inter-ground terminal wiring
- Use of the product ignoring the specifications may cause 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. To do so is highly dangerous.
- The product is sensitive to static electricity; exercise care in operating it. Before you operate the product, touch a nearby metal part to discharge static electricity.
- For 15-30 V DC (±20%) power supply, as a safety measure, always install a circuit breaker (an IEC 60947-compatible product, 1 A, 30 V DC) in an easily accessible location near the instrument. Moreover, provide indication that the switch is a device for turning off the power to the instrument.

4. SETTING INPUT FILTER

The input filter is used to suppress the influence of chattering noise or the like.

Setting: Set the filter switch on the front panel of the signal conditioner to "ON." (The factory default setting is "OFF")

- The input filter, time constant (approx.10ms), is connected. However, the input frequency is limited to 100 Hz or less, and the pulse width is 3ms or more.



"OFF" setting



"ON" setting

5. MAINTENANCE

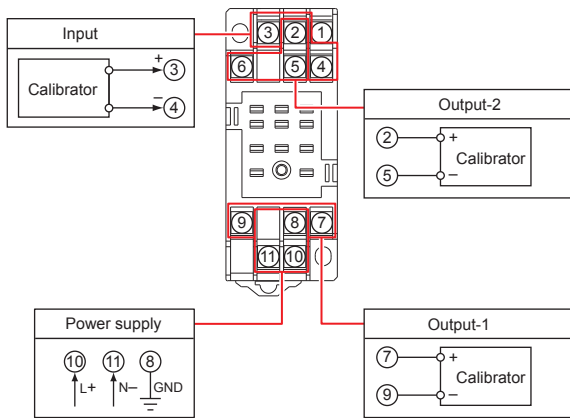
The product starts running immediately when the power is turned on; however, it needs 10 to 15 minutes of warm-up before it meets the specified performance.

5.1 Calibration Apparatus

- A calibrator (Yokogawa CA150 or equivalent)

5.2 Calibration Procedure

1. Connect the instruments as shown below. First check the output-1 signal and then the output-2 signal.



2. Produce a rectangular pulse of any frequency from the calibrator to measure the value using a calibrator, then check that the frequency is output.

