

# General Specifications

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



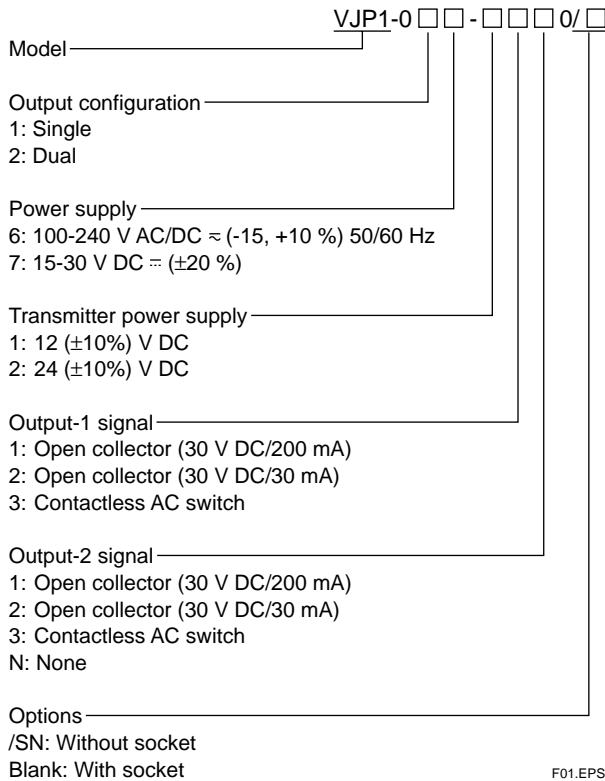
GS 77J01P01-01E

### 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.

- four isolated ports (input, output-1, output-2, power supply and grounding) on a dual-output model;
- a withstanding voltage of 2000 V AC;
- a wide supply voltage range - supporting both 100 V and 200 V power lines of AC or DC;
- a switch-selectable internal filter (10 ms time constant) for receiving signals containing a large amount of chattering; and
- close side-by-side mounting.

### Model and Suffix Codes



### Items to be specified when ordering

- Model and Suffix Code: e.g. VJP1-026-1110
- Internal load resistor: e.g. 220 Ω

### Input/Output Specifications

Input signal:

	Signal Form
	Voltage-free Contact
ON-state input	Contact resistance of 200 Ω maximum
OFF-state input	Contact resistance of 100 kΩ minimum

	Signal Form	
	Voltage Pulse	Current Pulse
High level	2 to 50 V DC	2/R <sub>L</sub> to 50/R <sub>L</sub> mA
Low level	-1 to +8 V DC	-1/R <sub>L</sub> to +8/R <sub>L</sub> mA

Voltage pulse amplitude: 2 to 50 V DC  
Maximum allowable input voltage: 58 V DC  
R<sub>L</sub>: Internal load resistor (kΩ)

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Input frequency range: 0 to 10 kHz

Input resistance: 15 kΩ minimum for contact and voltage pulses

Value of the load resistor for current pulse

Input pulse width: 40 μs minimum for both ON-state and OFF-state durations

Power supply for contact input signal: At least 15 V DC/15 mA

Input filter: Has an approx. 10 ms time constant, which can be turned on or off at the front panel (turned off at factory shipment). When the filter is turned on, the upper limit of the input frequency range reduces to 100 Hz (requiring a pulse width of at least 3 ms).

Transmitter power supply: 12 V DC/30 mA or 24 V DC/30 mA (provided with a current limiter to keep the current between 40 and 60 mA)

Internal load resistor (R<sub>L</sub>): None, 220 Ω, 510 Ω, or 1 kΩ (Select either of the three resistor values for the current pulse input and select "none" for the voltage pulse input and voltage-free contact input.)

Output frequency: The output circuit turns on and off synchronously as the input signal changes between the on and off states.

Output signal form: Open collector or contactless AC switch

Maximum allowable load: 30 V DC/200 mA for large-current open collector output,  
30 V DC/30 mA for small current open-collector output,  
100 V AC/200 mA for contactless AC switch output

## ■ Standard Performance

Insulation resistance: 100 M $\Omega$  minimum at 500 V DC  
between input, output-1, output-2, power supply and grounding terminals mutually

Withstanding voltage: 2000 V AC for one minute between input, (output-1, output-2), power supply and grounding terminals mutually;  
1000 V AC for one minute between output-1 and output-2 terminals

Operating temperature range: 0 to 50°C

Operating humidity range: 5 to 90% RH (no condensation)

Supply voltage range: 100-240 V AC/DC  $\approx$  (-15, +10%)  
50/60 Hz or 15-30 V DC  $\approx$  ( $\pm$ 20%)

Effects of power line regulation: Normal operation is guaranteed for a supply voltage range of 85 to 264 V AC (47 to 63 Hz), 85 to 264 V DC or 12 to 36 V DC.

Effects of ambient temperature variations: Normal operation is guaranteed over the rated operating temperature range.

Current consumption: 113 mA at 24 V DC

Power consumption: 3.1 VA at 100 V AC; 4.3 VA at 200 V AC

## ■ Conformance to EMC Standards

Applicable EMC standard: EN61326

CE-certified models mean those which are CE certified on condition that they be operated over a supply voltage range of 15-30 V DC  $\approx$  ( $\pm$ 20%) only;  
models that have a contactless AC switch output are not CE certified.

## ■ Mounting and Appearance

Material: ABS resin (casing)

Mounting: Wall mounting, DIN rail mounting, or mounting on a side-by-side multiple mounting base

Connection: Terminals with M3 size screws

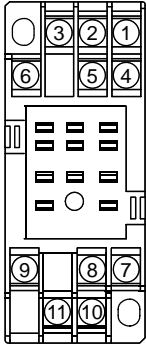
External dimensions: 76 (H)  $\times$  29.5 (W)  $\times$  124.5 (D) mm

Weight: Main unit = approx. 95 g; socket = approx. 51 g

## ■ Accessories

Tag number label: One

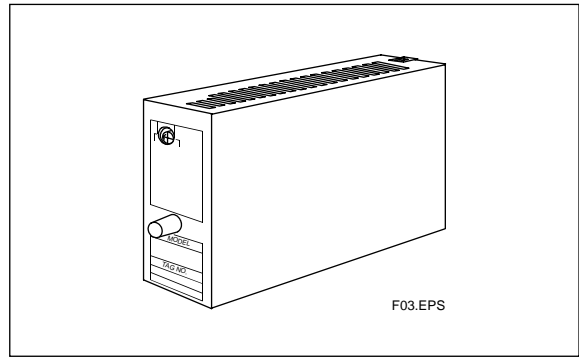
### Terminal Assignments



1	INPUT	(PS+)
2	OUTPUT 2	(+)
3	INPUT	(+)
4	INPUT	(-)
5	OUTPUT 2	(-)
6	N.C.	
7	OUTPUT 1	(+)
8	GND	
9	OUTPUT 1	(-)
10	SUPPLY	(L+)
11	SUPPLY	(N-)

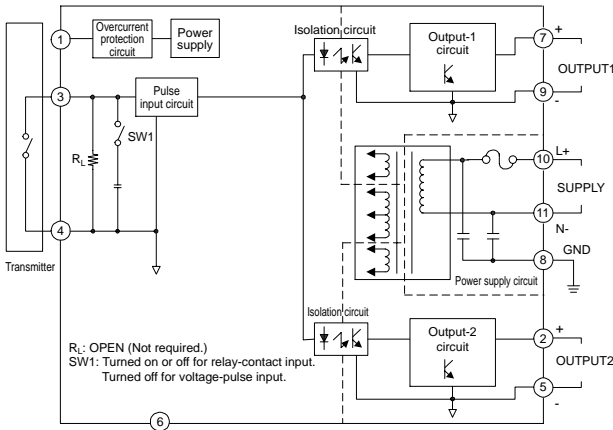
Note: For single-output models, OUTPUT2 is N.C.

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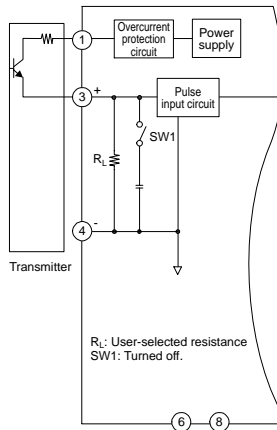
### Block Diagrams

(1) When Receiving Voltage-free Contact Signal or Voltage Pulse (where, terminal 3 is the positive input (+) and terminal 4 is the negative input (-) for voltage pulse)

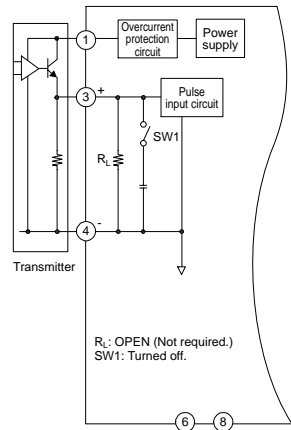


Note: Single-output models do not contain the output-2 circuit.

(2) When Receiving Current Pulse by Running a Transmitter on an Internal Power Supply

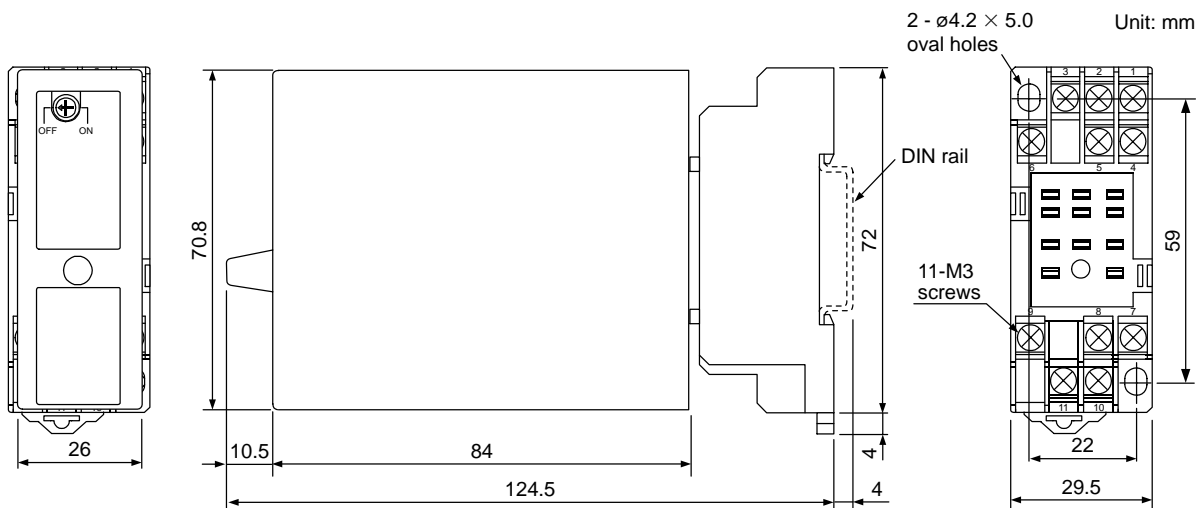


(3) When Receiving Voltage Pulse by Running a Transmitter on an Internal Power Supply



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### External Dimensions



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• The information covered in this document is subject to change without notice for reasons of improvements in quality and/or performance.