

General Specifications

GS 77J01Q17-01E

Model VJQ7
Analog to Pulse Converter (Multi-function)
(Isolated Single-output and Isolated Dual-output Types)

JUXTA

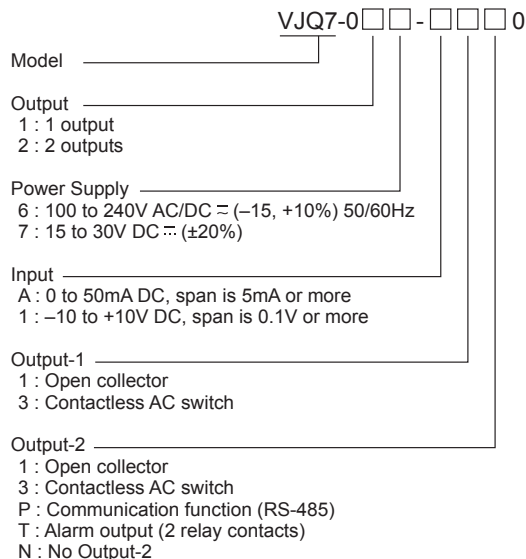
General

The VJQ7 is a plug-in type analog to pulse converter that converts DC current or DC voltage signal into isolated transistor-contact pulse or contactless AC switch pulse.

The VJQ7 converter features:

- Either pulse output, communication function (RS-485), or alarm output (2 relay contacts) is selectable as Output-2.
- Various parameters such as input ranges can be set and modified through a PC (VJ77) or Handy Terminal (JHT200 and the like).

Model and Suffix Codes



Input

Input Signal: DC voltage or DC current signal

Input Range:

Code A: 0 to 50mA DC, span is 5mA or more

Code 1: -10 to +10V DC, span is 0.1V or more

Input Resistance:

DC current signal: 100 Ω (External shunt resistor)

DC voltage signal: 1M Ω (100k Ω when power off)



Output

1. Output-1

The operation of Output-1 is same as that of Output-2.

Output signal: Open collector or contactless AC switch

Output frequency: 0.001Hz \leq F₁₀₀ \leq 2kHz

However, 1kHz or less for contactless AC switch

0Hz \leq F₀ < F₁₀₀

F₀ is 0% of output frequency.

F₁₀₀ is 100% of output frequency.

Frequency can be set in increments of 0.00001 (Hz or kHz) within 4 significant digits.

Output range unit: Either Hz or kHz is selectable.

Low-level output cutoff point: 0.0001Hz to 100% of output frequency

Maximum permissible load:

Open collector: 30V DC/200mA

Contactless AC switch: 100V AC/200mA

Pulse width type: Either 50% duty, fixed on-state pulse width, or fixed off-state pulse width is selectable.

Pulse width time: 0.1 to 500ms, settable by 0.1ms

Output frequency available for fixed pulse width:

$$\frac{1}{\text{Set value of pulse width (ms)} \times 2} \times 1000[\text{Hz}]$$

The frequency over the above is limited.

2. Output-2

• Pulse Output

Same as Output-1 specifications

When either Output-1 or Output-2 is contactless AC switch, output frequency is 1 kHz or less.

• Communication Function

This converter can be connected to a PC, graphic panel, YOKOGAWA programmable controller FA-M3, or programmable controllers of other manufacturers.

Standards: EIA RS-485

Maximum number of connectable units: 31 units

Maximum communication distance: 1200 m

Communication method: 2-wire half duplex, start-stop synchronization, non-procedural

Baud rate: 1200, 2400, 4800, 9600 bps

Data length: 8, 7 bit

Stop bit: 1, 2 bit

Parity: Even parity, odd parity, or none

■ Environmental Conditions

Temperature: 0 to 50 °C
 Humidity: 5 to 90% RH (no condensation)
 Ambient Condition: Avoid installation in such environments as corrosive gas like sulfide hydrogen, dust, sea breeze and direct sunlight
 Altitude: 2000 m or less.
 Installation location: Indoors

■ Mounting and Appearance

Construction: Compact plug-in type
 Material: Modified Polyphenylene Oxide (Case body)
 Mounting Method: Wall, DIN rail, or dedicated VJ mounting base (only when Output-2 is analog output) mountings
 Connection Method: M3 screw terminal
 External Dimension: 29.5x76x124.5mm (WxHxD)
 Weight: Approx. 170 g

■ Accessories

Tag Number Label: 1 sheet
 Range Label: 1 sheet
 Shunt Resistor: 1 (when current input is specified)

■ Items to Specify When Ordering

Shipped after setting the input range, output frequency, output range unit, low-level output cutoff point, pulse width type, pulse width time as specified.

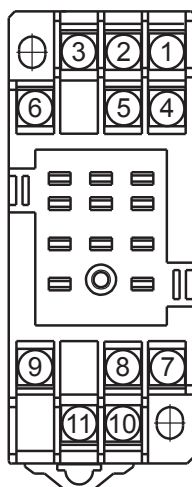
- Model and Suffix Code: e.g. VJQ7-026-A110
 - Input range: e.g. 4 to 20 mA DC
 - Output frequency: e.g. 0 to 10 Hz
 - Low cut point (Hz): e.g. 0.0001
 - Pulse width type: e.g. Duty of 50%
- * When specifying "Duty of 50%" for pulse width type, the specification of pulse width (ms) is unnecessary.

■ Factory Setting

Factory settings are as follows:

- Input range: 4 to 20mA DC (for current input), or 1 to 5V DC (for voltage output)
 - Output frequency: 0 to 10Hz
 - Low cut point (Hz): 0.0001
 - Pulse width type: fixed on-state pulse width
 - Pulse width (ms): 30
- **When output-2 is specified as communication output**
 - Address No.: 01
 - Baud rate: 9600 bps
 - Parity: Even
 - Data length: 8 bit
 - Stop bit: 1 bit
 - Protocol: PCLINK
 - **When output-2 is specified as alarm output**
 - Alarm operating direction: High limit alarm (alarm-1), low limit alarm (alarm-2)
 - Relay operating direction: Excitation at alarm (alarm-1 / 2)
 - Alarm setting: 100% (alarm-1), 0% (alarm-2)
 - Hysteresis: 3% (alarm-1 / 2)
 - Alarm on-delay: 0 second (alarm-1 / 2)
 - Alarm off- delay: 0 second (alarm-1 / 2)

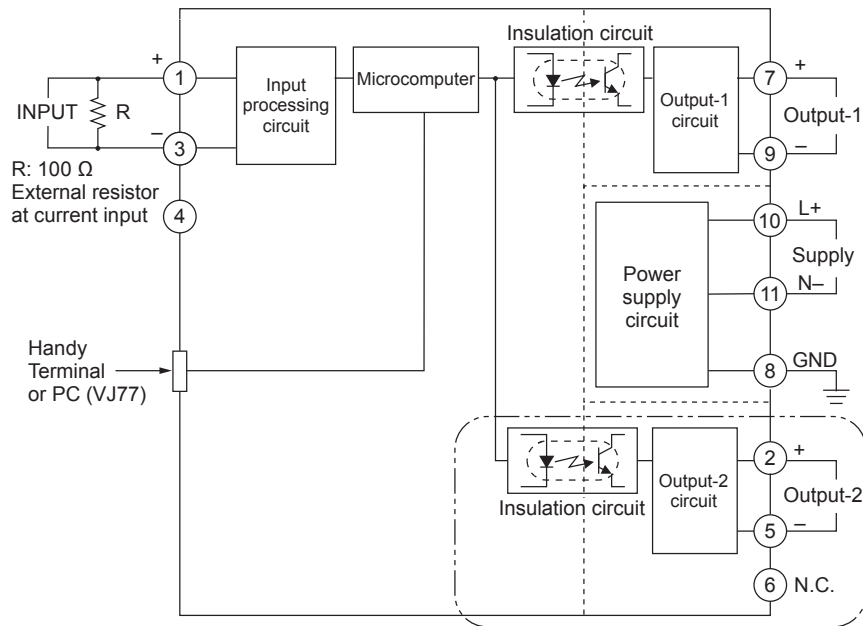
■ Terminal Arrangement



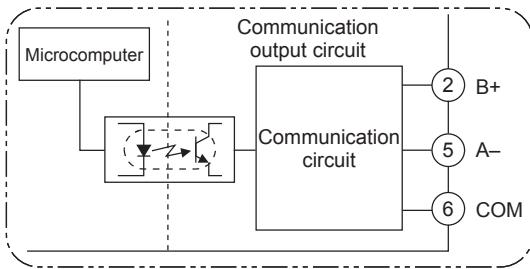
Terminal No.	Signal	Output-2 Analog output	Output-2 Communication output	Output-2 Alarm output
1	Input	(+) (+)		
2	Output-2	(+)	B (+)	ALM1
3	Input	(-) (-)		
4		N.C.		
5	Output-2 (Note 1)	(-)	A (-)	COM
6	Output-2 (Note 1)	N.C.	COM	ALM2
7	Output-1	(+) (+)		
8	GND	GND		
9	Output-1	(-) (-)		
10	Supply	(L+) (L+)		
11	Supply	(N-) (N-)		

Note 1: In case of one output type, output-2 is N.C.

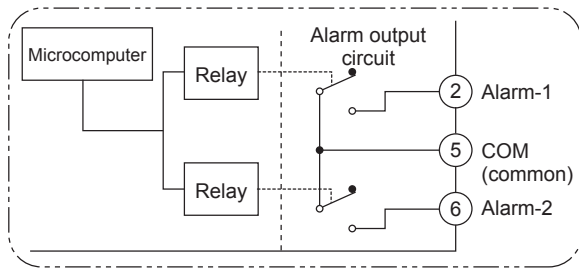
■ Block Diagram



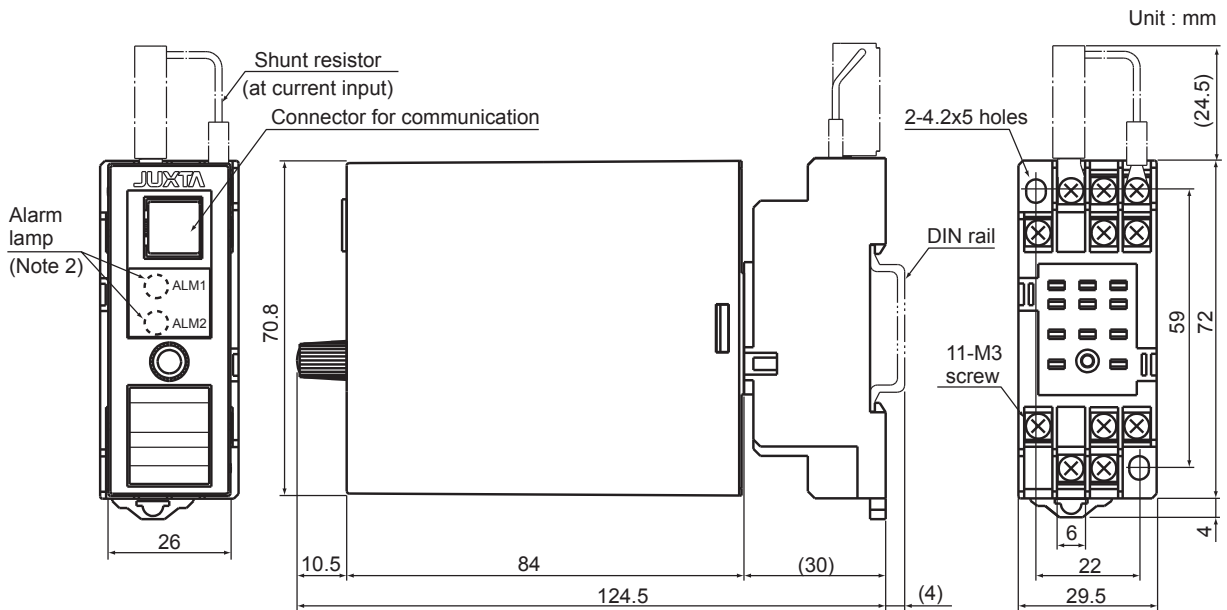
- When output-2 is communication output



- When output-2 is alarm output



■ External Dimensions



Note 2: Only when output-2 is alarm output