General Specifications

Model VJH7
Isolator

JUXTA

GS 77J1H07-01E

■ General

This plug-in type isolator converts DC current or DC voltage signal into isolated DC current or DC voltage signal.

- DC voltage signal, communication output (RS485), or alarm output (2 relay contacts) is selectable as output-2.
- Incorporation of microcomputer allows the change of input ranges and I/O monitoring etc. through Handy Terminal (JHT200 etc.).

■ Specifications

VJH7-0□□-□□□0

Model

Output
1: 1 output
2: 2 outputs

Power Supply
6: 100 to 240 V AC/DC ≃ (-15, +10 %) 50/60 Hz
7: 15 to 30 V DC ⎓ (±20 %)

Input Signal
A: 0 to 50 mA DC, span is 5 mA or more
1: -10 to +10 V DC, span is 0.1 V or more

Output-1 Signal
A: 4 to 20 mA DC
6: 1 to 5 V DC
Z: (Custom Order) DC current/voltage signal

Output-2 Signal
A: 4 to 20 mA DC
6: 1 to 5 V DC
P: Communication function (RS485)
T: High limit / low limit alarm output (2 relay contacts)
N: No output-2

■ Input

Input Signal: DC voltage signal
Input Range:
Code A: 0 to +50 mA DC, span is 5 mA or more
Code 1 : -10 to +10 V DC, span is 0.1 V or more
Input Resistance:
DC current signal : 100 Ω (Shunt resistor)
DC voltage signal: 1 MΩ (100 kΩ when power off)

■ Output

1. Output-1

Output Signal	Output Resistance	Permissible Load Resistance
1 to 5 V DC	1 Ω or less	2 kΩ or more
4 to 20 mA DC	500 kΩ or more	750 Ω or less

● **Custom Order Output Signal**
2 to 10 mA DC, 1 to 5 mA DC, 0 to 20 mA DC,
0 to 16 mA DC, 0 to 10 mA DC, 0 to 1 mA DC
0 to 10 mV DC, 0 to 100 mV DC, 0 to 1 V DC,
0 to 10 V DC, 0 to 5 V DC, -10 to +10 V DC

2. Output -2

● **Analog Output**

Output Signal	Output Resistance	Permissible Load Resistance
1 to 5 V DC	1 Ω or less	2 kΩ or more
4 to 20 mA DC	500 kΩ or more	350 Ω or less

● **Communication Function**
This isolator can be connected to a personal computer, graphic panel, YOKOGAWA programmable controller FA-M3, or programmable controllers of other manufacturers.

Standards: EIA RS485
Maximum number of connectable controllers: 31 controllers
Maximum communication distance: 1200 m
Communication method: 2-wire half duplex, start-stop synchronization, non-procedural
Communication rate: 1200, 2400, 4800, 9600 bps
Data length: 8, 7 bit
Stop bit: 1, 2 bit
Parity: Even parity, odd parity, or none
Communication protocol: PC-link, PC-link with SUM, MODBUS ASCII, MODBUS RTU, or LADDER
PC-link communication: Communication protocol with a personal computer, graphic panel, UT link module of FA-M3
MODBUS communication: Communication protocol with a personal computer (SCADA).
Ladder communication: Communication protocol with ladder communication module of FA-M3 and programmable controller of other manufacturers

● **Alarm Output**
Signal type: Relay contact
Output signal: N. O. contact output (contact ON at excitation) 2 points, COM common

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Contact capacity: 30 V DC, 1 A
Alarm operating direction: High limit alarm or low limit alarm
Relay operating direction setting: Excitation or non-excitation at normal status
Alarm setting range: 0 to 100 % of input range
Setting resolution: 0.1 %, 4 significant digits
Hysteresis: Set the value added to alarm setting point at alarm release.
Setting range: 0 to 100 % of input range
Setting resolution: 0.1 %, 4 significant digits
Alarm on- delay setting: Delay time from alarm condition completion to output
(Ex. Outputted when alarm status continues for 1 second or more after input value is over alarm point in case of set value “1 second.”)
Setting range: 0 to 999 seconds
Setting resolution: 1 second (however, add about 0.2 seconds to setting time to prevent wrong operation)
Alarm off-delay setting: Delay time from alarm normal condition completion to output
(Ex. Released when normal status continues for 2 seconds or more after input value becomes normal status from alarm status in case of set value “2 seconds.”)
Setting range: 0 to 999 seconds
Setting resolution: 1 second (however, add about 0.2 seconds to setting time to prevent wrong operation)
Alarm operation display: Front LED lights at excitation, 2 LEDs

■ Items Available to Be Set

The following items can be set through Handy Terminal:

Input range, address number, communication rate, parity, data length, stop bit, protocol, alarm operating direction, relay operating direction, alarm setting, Hysteresis, alarm on-delay, alarm off-delay

■ Standard Performance

Accuracy rating: ±0.1 % of span
However accuracy is limited in the following case according to the input ranges:
Input range is -10 to +10 V (H range), span is under 5 V; accuracy (%)=±0.1 %×5 V / input span [V]
Input range is -5 to +5 V (M range), span is under 2.5 V; accuracy (%)=±0.1 %×2.5 V / input span [V]
Input range is -1 to +1 V (L range), span is under 0.5 V; accuracy (%)=±0.1 %×0.5 V / input span [V]
When current input, apply [input range×input resistance] to the above, and add 0.1 % of resistance error.
Response Speed: 200 ms, 63 % response (10 to 90 %)
Alarm output: 350 ms (input change 10 to 90 %, alarm setting point 50 %, time till alarm output, when alarm delay setting and hysteresis are min.)
Effect of Power Supply Voltage Fluctuation: ±0.1 % or less of span for power supply voltage fluctuation of 15 to 30 V DC (±20 %), 100 to 240 V AC/DC.
Effect of Ambient Temperature Change: ±0.2 % or less of span for change of 10 °C

■ Safety and EMC Standards

The followings will be acquired.

Safety:

Conforms to IEC1010-1: 1990 and EN61010-11: 1993.
Certified for CSA1010
CSA1010 category: CAT II (IEC1010-1)
Certified for UL508

Non-Incendive Explosion-Proof:

CSA C22.2 No. 213 Class I, Division 2, Groups A, B, C & D
FM No. 3611 Class I, Division 2, Groups A, B, C & D

The above certified/approved instrument is only for voltage of 15 to 30 V DC.

EMC Standards:

Conforms to the following EMC standards.
EN55011: 1991 Class A Group1 for EMI (emissions)
EN50082-2: 1995 for EMS (immunity)
The above conformed instrument is only for voltage of 15 to 30 V DC.

■ Power Supply and Isolation

Power Supply Rated Voltage:
100 to 240 V AC/DC ≃ 50/60 Hz
15 to 30 V DC ⎓
Power Supply Input Voltage: 100 to 240 V AC/DC ≃ (-15, +10 %) 50/60 Hz
15 to 30 V DC ⎓ (±20 %)
Power Dissipation: 24 V DC 2.6 W, 110 V DC 2.6 W
100 V AC 5 VA, 200 V AC 6.7 VA
Insulation Resistance: 100 MΩ/500 V DC between input, output-1, output-2, power supply and ground mutually
Withstand Voltage: 2000 V AC / minute between input, (output-1, output-2), power supply, and ground mutually
1000 V AC / minute between output-1 and output-2
1000 V AC / minute between input and output-2 at alarm output

■ 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
Installation altitude 2000m or less above sea level.

■ Mounting and Appearance

Construction: Compact plug-in type
Material: Modified Polyphenylene Oxide (Case body)
Mounting Method: Wall, DIN rail, or dedicated VJ mounting base mountings
Connection Method: M3 screw terminal
External Dimension: 29.5×76×124.5mm (W×H×D)
Weight: Approx. 170 g

■ Accessories

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

■ Instruction Required When Ordering

• Model and suffix code
Shipped after setting the input ranges as specified.

■ Factory Setting

Factory settings are as follows:

• Input range: 1 to 5 V DC

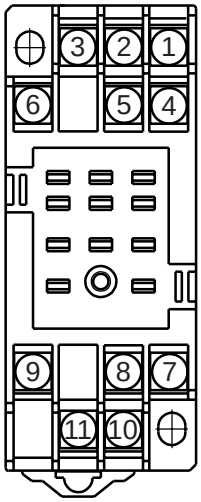
● **When output-2 is specified as communication output**

• Address No.: 01
• Communication 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)

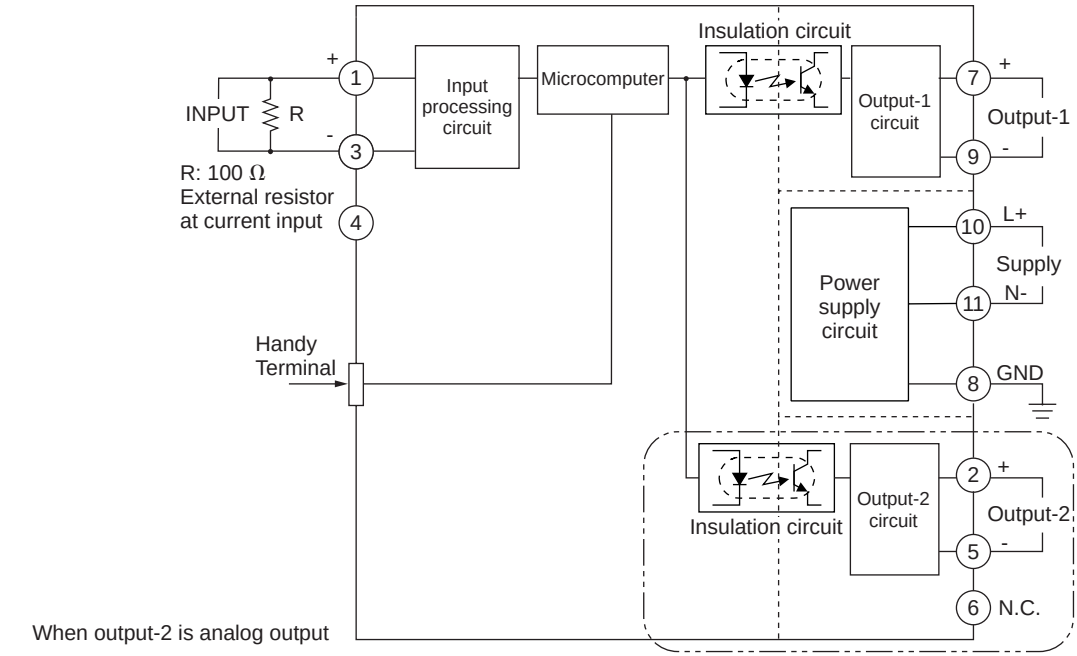
■ Terminal Arrangement & Terminal Connection

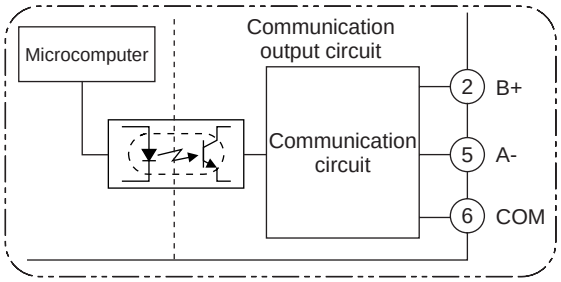


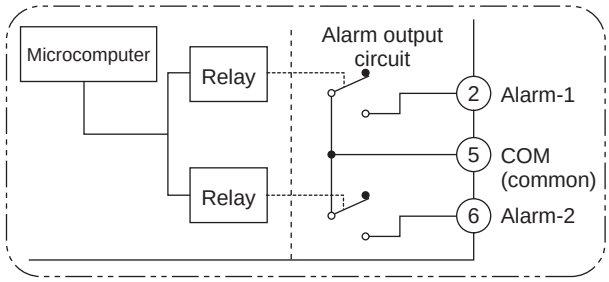
Terminal No.	Signal	Output-2 Analog output	Output-2 Communication output	Output-2 Alarm output
1	Input	(+)		
2	Output-2	(+)	B (+)	ALM1
3	Input	(-)		
4	Input	N.C.		
5	Output-2	(-)	A (-)	COM
6	Output-2	N.C.	COM	ALM2
7	Output-1	(+)		
8	GND	GND		
9	Output-1	(-)		
10	Supply	(L+)		
11	Supply	(N-)		

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

■ Block Diagram

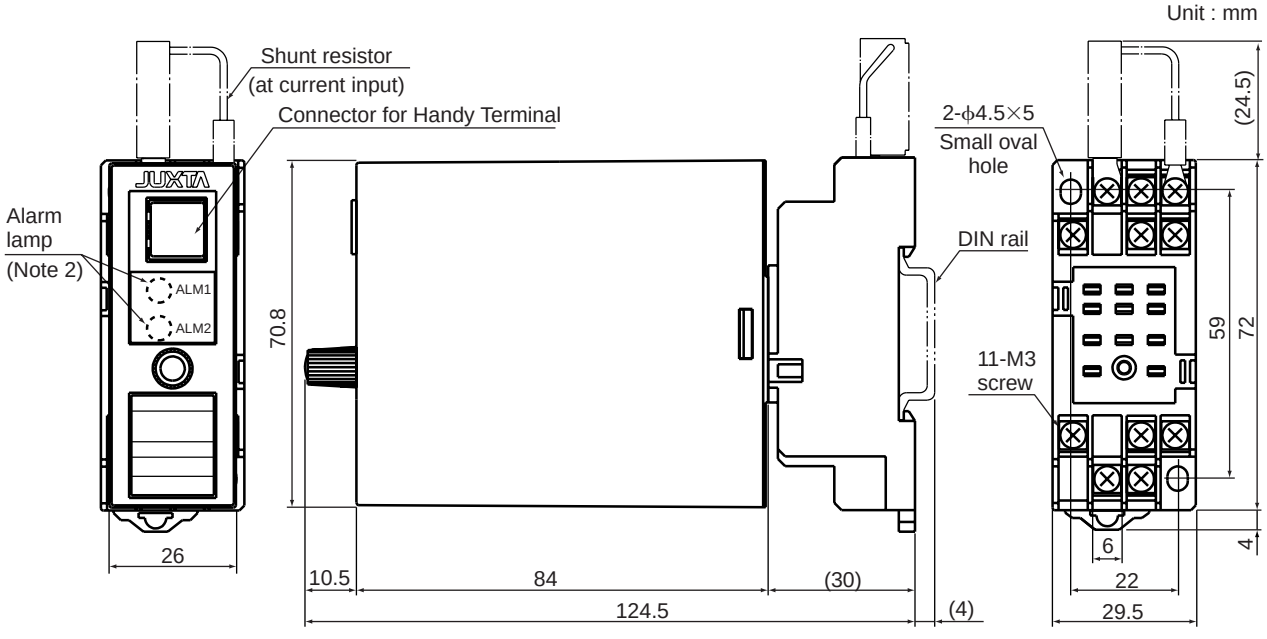






■ External Dimension

Unit : mm



Note 2: Only when output-2 is alarm output