General Specifications

Model VJAK
Limit Alarm (DC Current Input Type)
(with Transmitter Power Supply)

JUXTA

GS 77J01A21-01E

■ General

This plug-in type Limit Alarm for DC current input receives 4 to 20 mA DC current signal. It is used in combination with two-wire type transmitter.

- Each parameter setting can be changed using a PC (VJ77 PC-based Parameters Setting Tool) or the Handy Terminal (JHT200).

■ Model and Suffix Codes

VJAK-0 2 □ - □ T 0 0/□

Model

Number of outputs
2: 2 outputs

Power supply
6: 100-240 V AC/DC (Operating range: 85 to 264 V)
7: 15-30 V DC (Operating range: 12 to 36 V)

Input signal
A: 4 to 20 mA DC
(Transmitter power supply: 24 to 28 V DC)

Output signal
T: Alarm output (2 points of relay contacts)

Optional specification
Blank: With socket
/SN: Without socket

■ Ordering Information

Specify the model and suffix codes at the time of order.

If the square root extraction function and low-cut point are specified with the order, the specified values will be assigned before shipment.

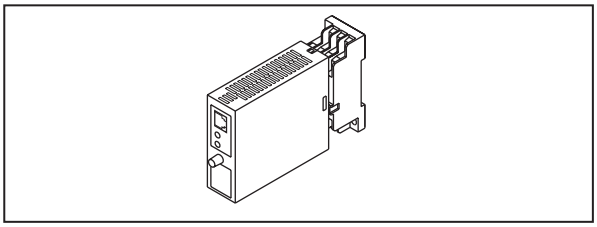
For other setting items, the initial values shown below are to be assigned.

- Model and suffix codes: e.g. VJAK-026-AT00
- Square root extraction function: e.g. With square root extraction function
- Low-cut point: e.g. 0.5%

■ Initial Values (Factory-set Values)

The initial values (factory-set values) are as follows.

- Square root extraction function: Without square root extraction function
- Low-cut point: 0.6%
- Direction of alarm action: High-limit alarm (alarm 1), low-limit alarm (alarm 2)
- Direction of relay action: De-energized under normal condition (alarm 1 and alarm 2).
- Alarm setting: 100% (alarm 1), 0% (alarm 2)
- Hysteresis: 3% (alarm 1 and alarm 2)
- Alarm ON delay: 0 second (alarm 1 and alarm 2)
- Alarm OFF delay: 0 second (alarm 1 and alarm 2)



■ Input Specifications

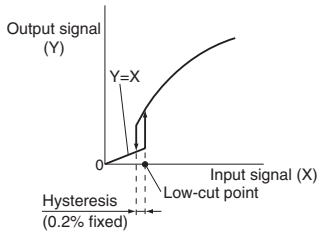
Input signal: 4 to 20 mA DC signal from two-wire type transmitter, 1 point
Input resistance: 250 Ω
Transmitter power supply: 24 to 28 V DC (provided with a current limiter to keep the current between 25 and 35 mA)
Allowable conductor resistance:

$$RL \leqq \frac{(19 - \text{transmitter's minimum operating voltage) [V]}}{0.02\ [A]}\ [\Omega]$$

Maximum allowable input current: 40 mA DC
Square root extraction function: Outputs to the result of having extracted the square root of the input.

$$Y = \left(\sqrt{\frac{X - (\text{input 0 \% value})}{\text{input span}}} \right) \times (\text{output span}) + (\text{output 0 \% value})$$

Low-cut point: Available only when the square root extraction function is specified. Output for low-cut point or less is cramped with straight line proportional to input.
Setting range: 0 to 100 % of input
Setting resolution: 0.1 %



■ Output Specifications

Signal type: Relay contact
Output signal: NO contact output (contact turns on when energized), 2 points
Contact rating: 120 V AC/1 A, 220 V AC/0.5 A (resistance load)
30 V DC/1 A, 120 V DC/0.1 A (resistance load)
Direction of alarm action: High-limit alarm or low-limit alarm

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Direction of relay action: Energized or de-energized under normal condition
Alarm setting range: 0 to 100% of input range
Setting resolution: 0.1%
Hysteresis setting range: 0 to 100% of input range
Setting resolution: 0.1%
Alarm ON delay: Condition monitoring time from the establishment of alarm conditions to its output.
(For example, when an alarm ON delay is set to 1 second, alarm output is generated if alarm status continues for 1 second or more after the input value exceeds the alarm setpoint.)
Setting range: 0 to 999 seconds
Setting resolution: 1 second (However, about 0.2 second is to be added to the set time to prevent wrong operation.)
Alarm OFF delay: Condition monitoring time from the establishment of return-to-normal conditions to its output.
(For example, when an alarm OFF delay is set to 2 seconds, alarm output is released if normal condition continues for 2 seconds or more after the input value has returned to normal from the alarm status.)
Setting range: 0 to 999 seconds
Setting resolution: 1 second (However, about 0.2 second is to be added to the set time to prevent wrong operation.)
Indication of alarm action: The alarm indicator lamp (LED) on the front panel lights up if an alarm occurs. (2 lamps)

■ Items Available to Be Set

The following items can be set using a PC (VJ77 PC-based Parameters Setting Tool) or the Handy Terminal (JHT200):

Low-cut point, direction of alarm action, direction of relay action, alarm setting, hysteresis, alarm ON delay and alarm OFF delay

■ Standard Performance

Accuracy rating: ±0.1% of span
Response speed: 450 ms (Time to alarm output when the input change is 10 to 90% and alarm setpoint is 50%. When the alarm delay setting and hysteresis are minimum.)
Effect of power supply voltage fluctuations: ±0.1% of span or less for the fluctuations within the allowable range of each power supply voltage specification
Effect of ambient temperature change: ±0.2% of span or less for a temperature change of 10°C

■ Power Supply and Isolation

Power supply rated voltage:
100-240 V AC/DC ≂ 50/60 Hz or
15-30 V DC ⎓
Power supply input voltage: 100-240 V AC/DC ≂ (–15, +10%) 50/60 Hz or
15-30 V DC ⎓ (±20%)
Power consumption: 24 V DC 2.7 W, 110 V DC 2.7 W
100 V AC 5.1 VA, 200 V AC 6.9 VA
Insulation resistance: 100 MΩ/500 V DC between input, output 1, output 2, power supply and grounding terminals mutually.
Withstand voltage: 2000 V AC/minute between input, (output 1, output 2), power supply and grounding terminals mutually.
1000 V AC/minute between output 1 and output 2 terminals.

■ Environmental Conditions

Operating temperature range: 0 to 50°C
Operating humidity range: 5 to 90% RH (no condensation)
Operating conditions: Avoid installation in such environments as corrosive gas like sulfide hydrogen, dust, sea breeze and direct sunlight.
Installation altitude: 2000 m or less above sea level.

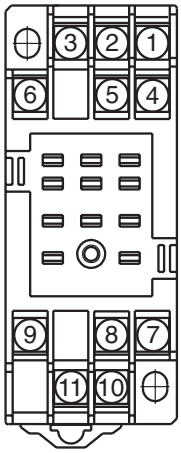
■ Mounting and Dimensions

Construction: Compact plug-in type
Material: Modified polyphenylene oxide resin (casing)
Mounting method: Wall or DIN rail mounting, or mounting using VJ mounting base
Connection method: M3 screw terminal
External dimensions: 29.5 (W) × 76(H) × 124.5 (D) mm (including a socket)
Weight: Approx. 170 g

■ Accessories

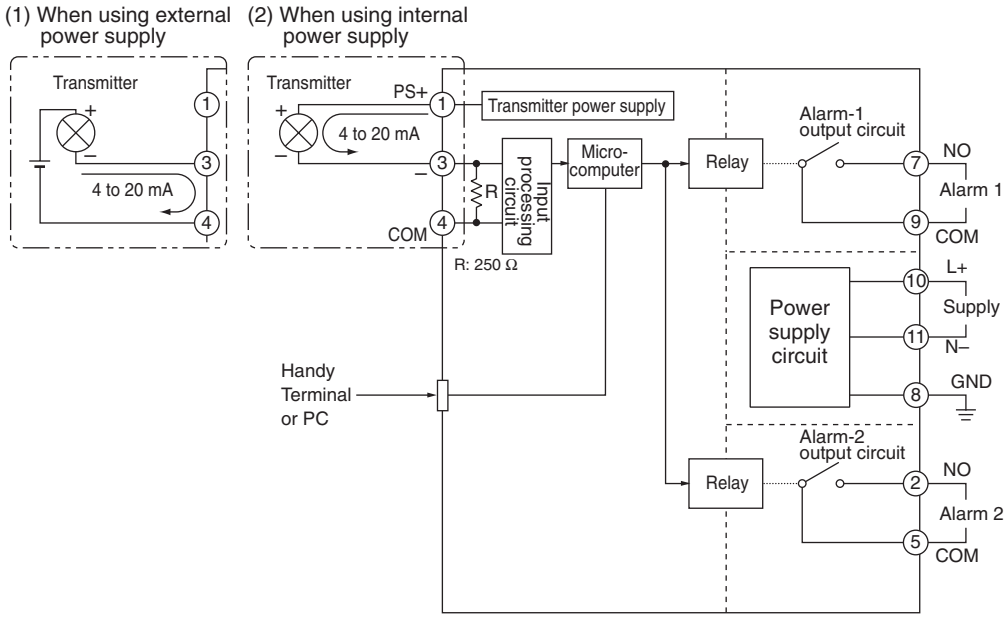
Tag number label: 1 sheet

■ Terminal Assignments



Terminal No.	Signal	
1	Input	(PS+)
2	Alarm 2	(NO)
3	Input	(–)
4	Input	(COM)
5	Alarm 2	(COM)
6	N.C.	
7	Alarm 1	(NO)
8	Ground	(GND)
9	Alarm 1	(COM)
10	Supply	(L+)
11	Supply	(N–)

■ Block Diagram



■ External Dimensions

Unit: mm