GS 77J1A07-01E

■ General

This plug-in type distributor is used in combination with 2wire type transmitter and converts 4 to 20 mA DC signal into isolated DC current or DC voltage signal.

- DC voltage signal, DC current signal, communication output (RS485), or alarm output (2 relay contacts) is selectable as output-2.
- Incorporation of microcomputer allows the selection of square root extraction function and I/O monitoring etc. through Handy Terminal (JHT200 etc.).
- "With square root extraction function" can be specified.

■ Specifications

VJA7-0 🗆 🗆 🗆 🗆 🗆 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: 4 to 20 mA DC 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 1 to 5 V DC

P: Communication function (RS485)

Alarm output (2 relay contacts)

N: No output-2

Input

Input Signal: 4 to 20 mA DC from 2-wire transmitter, 1 point Input Resistance: 250 Ω

Transmitter Power Supply: 24 to 28 V DC

(with current limit circuit at 25 to 35 mA)

Permissible Conductance Resistance: RL≤ (19 - transmitter minimum operating voltage) V/0.02 A (Ω)

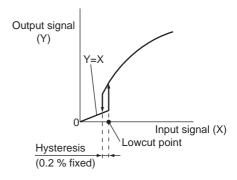
Permissible Input Current: 40 mA or less

Square Root Extraction Function: Outputted against the result of extracting square root of input.

Lowcut Function: Available only when the square root extraction function is specified.

Setting Range: 0 to 100 % of input, setting available by 0.1 % notch

> Output lowcut point or less is cramped with straight line proportional to input.



Output

Output-1

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

Output -2

Analog Output

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

Communication Function

This distributor 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, or 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

Contact capacity: 30 V DC, 1 A

Alarm operating direction: High limit alarm or low limit

Relay operating direction setting: Excitation or nonexcitation 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:

Square root extraction, lowcut, 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

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 lockup width 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 $\stackrel{\sim}{\sim}$ 50/60 Hz 15 to 30 V DC $\stackrel{\sim}{\sim}$

Power Supply Input Voltage: 100 to 240 V AC/DC $\stackrel{\sim}{\sim}$ (-15, +10%) 50/60 Hz

15 to 30 V DC = (±20%)

Power Dissipation: 24 V DC 3.6 W, 110 V DC 3.6 W 100 V AC 6.6 VA, 200 V AC 8.8 VA

Insulation Resistance: $100~\text{M}\Omega/500~\text{V}$ 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: 29.5×76×124.5 mm (W×H×D)

Weight: Approx. 170 g

Accessories

Tag Number Label: 1 sheet

■ Instruction Required When Ordering

• Model and suffix code Shipped after setting the value of square root extraction, lowcut as specified.

■ Factory Setting

Factory settings are as follows:

• Square root extraction: without square root extraction

• Lowcut: 0 %

● When output-2 is specified as communication output

• Address No.: 01

• Communication rate: 9600 bps

Parity: EvenData length: 8 bitStop bit: 1 bitProtocol: PCLINK

● When output-2 is specified as alarm output

• Alarm operating direction: High limit alarm (alarm-1), low limit alarm (alarm-2)

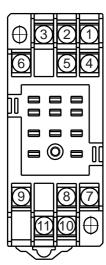
• Relay operating direction:

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

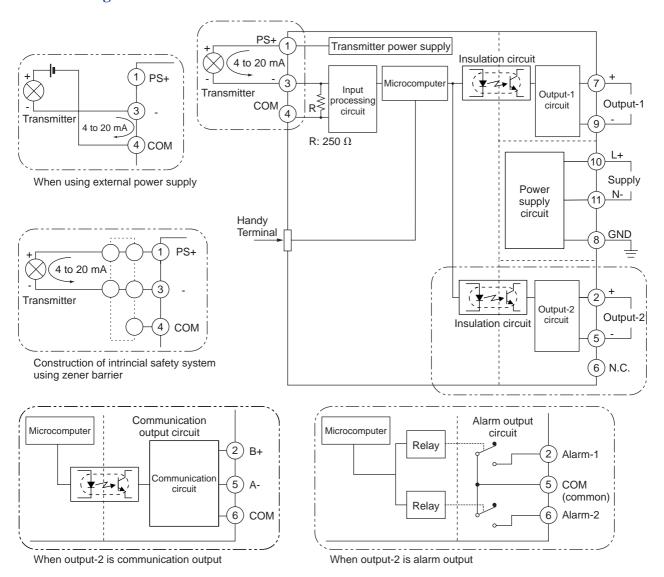


Terminal No.	Signal	Output-2 Analog output	Output-2 Communication output	Output-2 Alarm output
1	Input	(PS+)		
2	Output-2	(+)	B (+)	ALM1
3	Input	(-)		
4	Input	СОМ		
5	Output-2	(-)	A (-)	COM
6	Output-2	N.C.	СОМ	ALM2
7	Output-1	(+)		
8	GND	GND		
9	Output-1	(-)		
10	Supply	(L+)		
11	Supply	(N-)		

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

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■ Block Diagram



■ External Dimension

