

General Specifications

Model VJA1/H (XJJV.014)
Distributor
(with HART Communication)



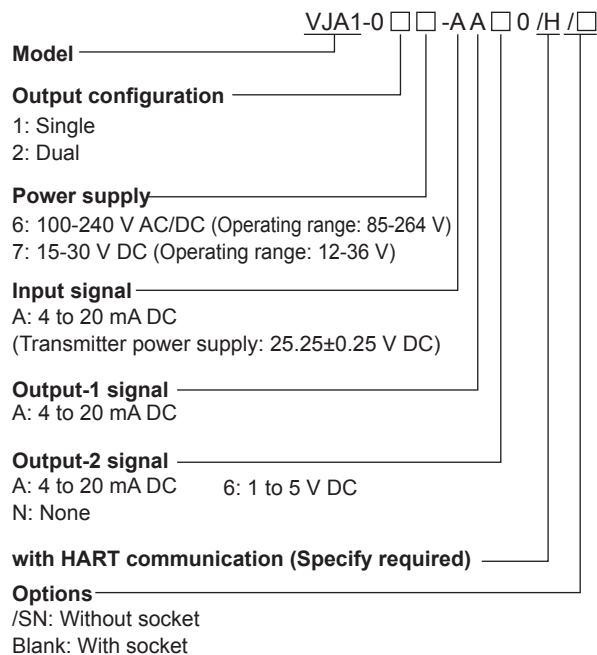
GS 77J01A01-11EN

General

The VJA1/H is a compact, plug-in type distributor that is used in combination with a two-wire type transmitter to convert the transmitter's 4 to 20 mA DC signals into isolated DC current or DC voltage signals.

- Bi-directional relay of HART communication signals is possible while the field devices and the higher-level device are isolated from each other.

Model and Suffix Codes



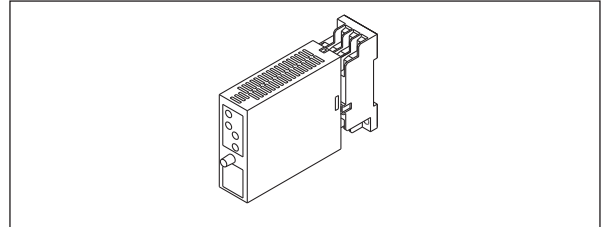
Ordering Information

Specify the following when ordering.

- Model and Suffix Codes: e.g. VJA1-026-AAA0/H

Input/Output Specifications

- Input signal: 4 to 20 mA DC signal from two-wire type transmitter
- Input resistance: 250 Ω equivalent
(Voltage drop 5 V or less at 20 mA input)
- Transmitter power supply: 25.25±0.25 V DC
(provided with a current limiter to keep the current between 25 and 35 mA)
- Allowable conductor resistance (RL): Up to [(20 – transmitter's minimum operating voltage) V/0.02 A] V
- Maximum allowable input current: 40 mA DC or less
- Output-1 signal: 4 to 20 mA DC
- Output-2 signal: 4 to 20 mA DC or 1 to 5 V DC



Allowable load resistance:

Output-1: 750 Ω or less * (4 to 20 mA DC)

* When using HART communication, observe the allowable load resistance range specified in the HART communication specifications.

Output-2: 350 Ω or less (4 to 20 mA DC)
2 kΩ or more (1 to 5 V DC)

Zero adjustment: -5 to 15%

Span adjustment: 95 to 105%

HART Communication Specifications

Frequency band: 500 Hz to 10 kHz

Transfer gain: Approx. -0.1 dB (from 1 to 3 kHz)

Allowable load resistance: 230 to 600 Ω

Communication direction: Bi-directional

Maximum number of connectable HART communication devices: 5 *

* In a multi-drop connection, the transmitter power supply on the VJA1/H cannot be used.

(Note) HART communication can only be used between the input and Output-1.

Standard Performance

Accuracy rating: ±0.1% of span

Response speed: 150 ms, 63% response (10 to 90%)

Effects of power line regulation: Up to ±0.1% of span for the regulation within allowable range of each supply voltage range

Effects of ambient temperature variations: Up to ±0.15% of span per 10°C

Power Supply and Isolation

Supply rated voltage range: 100-240 V AC/DC ≈ 50/60 Hz or 15-30 V DC ∴

Supply input voltage range: 100-240 V AC/DC ≈ (-15, +10%) 50/60 Hz or 15-30 V DC ∴ (±20%)

Power consumption: 3.2 W at 24 V DC ; 3.1 W at 110 V DC; 6.1 VA at 100 V AC; 8.3 VA at 200 V AC

Insulation resistance: 100 MΩ 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 and output-2), power supply and grounding terminals mutually;

1000 V AC for one 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.

External dimensions: 76 (H) × 29.5 (W) × 124.5 (D) mm (including a socket)
 Weight: Approx. 120 g (main unit), approx. 51 g (socket)

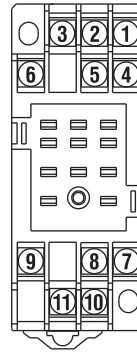
■ Mounting and Appearance

Material: Modified polyphenylene oxide (casing)
 Mounting method: Wall, DIN rail or dedicated VJ mounting base (VJCE) mounting *
 * If you install the VJA1/H into a VJCE-011, you cannot directly connect the VJCE-011 to a YOKOGAWA DCS with a KS2 cable (CN1). Connect them through a terminal block (such as the TE16).
 Connection method: M3 screw terminals

■ Accessories

Tag number label: One

■ Terminal Assignments

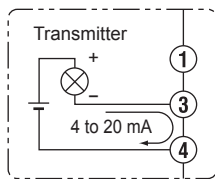


1	INPUT (PS+)
2	OUTPUT-2 (+)
3	INPUT (-)
4	INPUT (COM)
5	OUTPUT-2 (-)
6	Do not use
7	OUTPUT-1 (+)
8	GND
9	OUTPUT-1 (-)
10	SUPPLY (L+)
11	SUPPLY (N-)

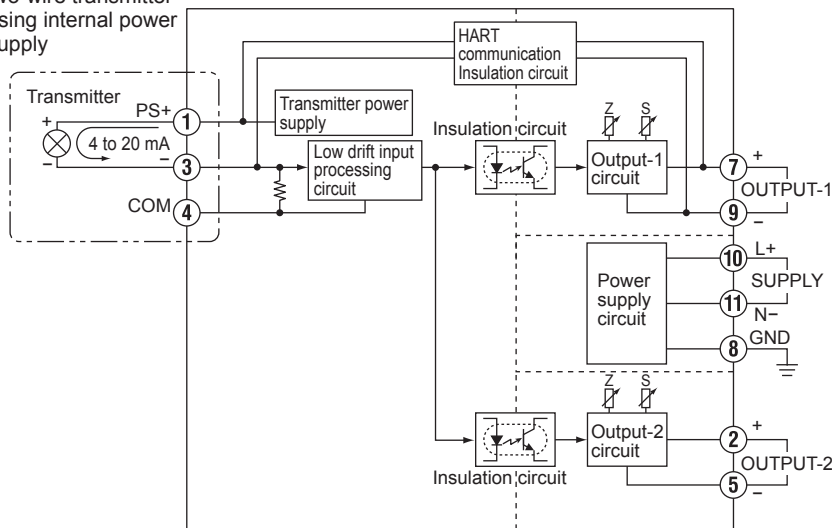
Do not use output-2 for the single-output type.

■ Block Diagrams

Combination with two-wire transmitter using external power supply



Combination with two-wire transmitter using internal power supply



■ External Dimensions

