

# General Specifications

## VJA1 Distributor (Isolated Single-output and Isolated Dual-output Models)



GS 77J1A01-01E

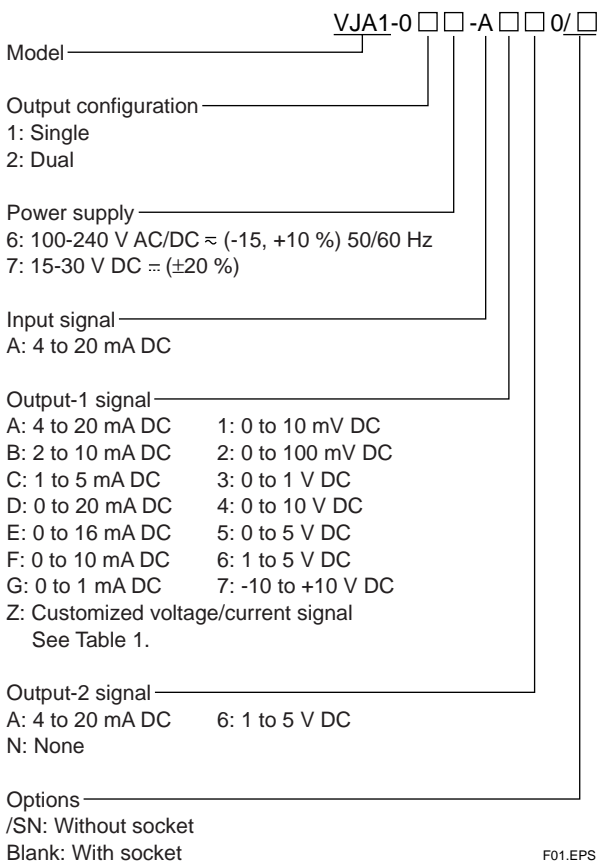
### General

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

The VJA1 distributor features:

- a wide choice of output signal ranges;
- four isolated ports (input, output-1, output-2, power supply and grounding) on a dual-output model;
- a withstanding voltage of 2000 V AC;
- a wide supply voltage range - supporting both 100 V and 200 V power lines of AC or DC; and
- close side-by-side mounting.

### Model and Suffix Codes



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### Items to be specified when ordering

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

### Input/Output Specifications

Type of input: 4 to 20 mA DC signal from a two-wire transmitter

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): Up to [(19 - transmitter's minimum operating voltage) V / 0.02 A] Ω

Maximum allowable input current: 40 mA DC

Output signal: DC voltage or DC current

Allowable load resistance:

#### • Output 1

Output Range	Output Range
4 to 20 mA DC: 750 Ω maximum	0 to 10 mV DC: 250 kΩ minimum
2 to 10 mA DC: 1500 Ω maximum	0 to 100 mV DC: 250 kΩ minimum
1 to 5 mA DC: 3000 Ω maximum	0 to 1 V DC: 2 kΩ minimum
0 to 20 mA DC: 750 Ω maximum	0 to 10 V DC: 10 kΩ minimum
0 to 16 mA DC: 900 Ω maximum	0 to 5 V DC: 2 kΩ minimum
0 to 10 mA DC: 1500 Ω maximum	1 to 5 V DC: 2 kΩ minimum
0 to 1 mA DC: 15 kΩ maximum	-10 to +10 V DC: 10 kΩ minimum

#### • Output 2

Output Range	Output Range
4 to 20 mA DC: 350 Ω maximum	1 to 5 V DC: 2 kV minimum

Zero and span adjustment: Within ±5% of span for both zero and span adjustment

### Standard Performance

Accuracy rating: ±0.1% of span; accuracy is not guaranteed for output level less than 0.5% of the span of a 0 to X mA output range types.

Response: 150 ms for a ±63% response (10 to 90% change of range)

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

Operating temperature range: 0 to 50°C  
 Operating humidity range: 5 to 90% RH (no condensation)  
 Supply voltage range: 100-240 V AC/DC  $\approx$  (-15, +10%)  
 50/60 Hz or 15-30 V DC  $\approx$  ( $\pm$ 20%)  
 Effects of power line regulation: Up to  $\pm$ 0.1% of span for  
 a supply voltage range of 85 to 264 V AC (47  
 to 63 Hz), 85 to 264 V DC or 12 to 36 V DC  
 Effects of ambient temperature variations: Up to  $\pm$ 0.2% of  
 span per 10°C  
 Current consumption: 149 mA at 24 V DC  
 Power consumption: 6.2 VA at 100 V AC; 8.2 VA at 200  
 V AC

**■ Conformance to EMC Standards**

Applicable EMC standard: EN55011: 1991 Class A  
 Group 1 for EMI (emission) regulations  
 EN50082-2: 1995 for EMS (immunity)  
 regulations  
 CE-certified models mean those which are CE  
 certified on condition that they be operated  
 over a supply voltage range of 15-30 V DC  $\approx$   
 ( $\pm$ 20%) only.

**■ Mounting and Appearance**

Material: ABS resin (casing)  
 Mounting: Wall mounting, DIN rail mounting, or  
 mounting on a side-by-side multiple mounting  
 base  
 Connection: Terminals with M3 size screws  
 External dimensions: 76 (H)  $\times$  29.5 (W)  $\times$  124.5 (D) mm  
 Weight: Main unit = approx. 120 g; socket = approx. 51 g

**■ Accessories**

Tag number label: One

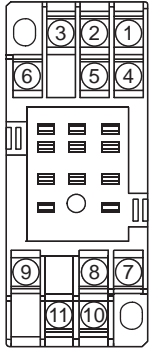
**■ Customized Signal Specifications**

**Table 1 Manufacturable Ranges**

	<b>Current Signal</b>	<b>Voltage Signal</b>
Output range	0 to 24 mA DC	-10 to +10 V DC
Span	1 to 24 mA DC	10 mV to 20 V DC
Zero elevation	0 to 200%	-100% to +200%

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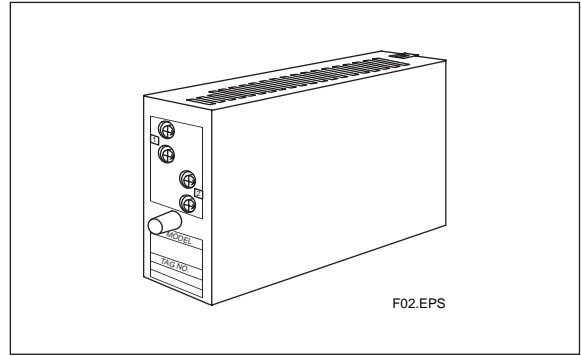
### Terminal Assignments



1	INPUT	(PS+)
2	OUTPUT 2	(+)
3	INPUT	(-)
4	INPUT	(COM)
5	OUTPUT 2	(-)
6	N.C.	
7	OUTPUT 1	(+)
8	GND	
9	OUTPUT 1	(-)
10	SUPPLY	(L+)
11	SUPPLY	(N-)

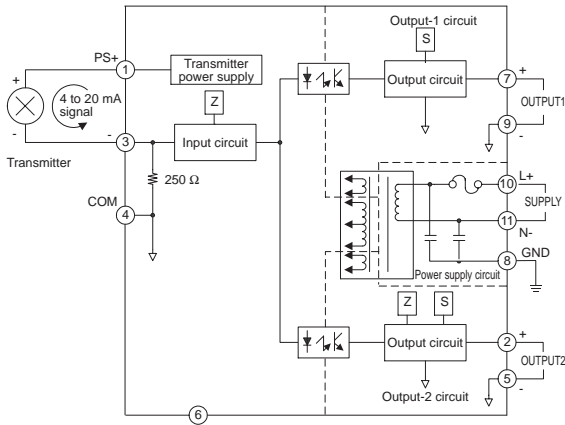
Note: For single-output models, OUTPUT2 is N.C.

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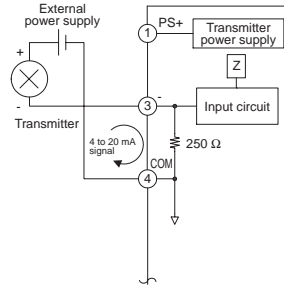


### Block Diagrams

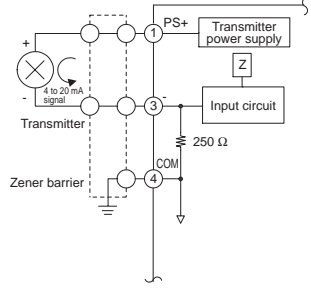
(1) When Combined with a Two-wire Transmitter Using the Internal Power Supply



(2) When Combined with a Two-wire Transmitter Using an External Power Supply



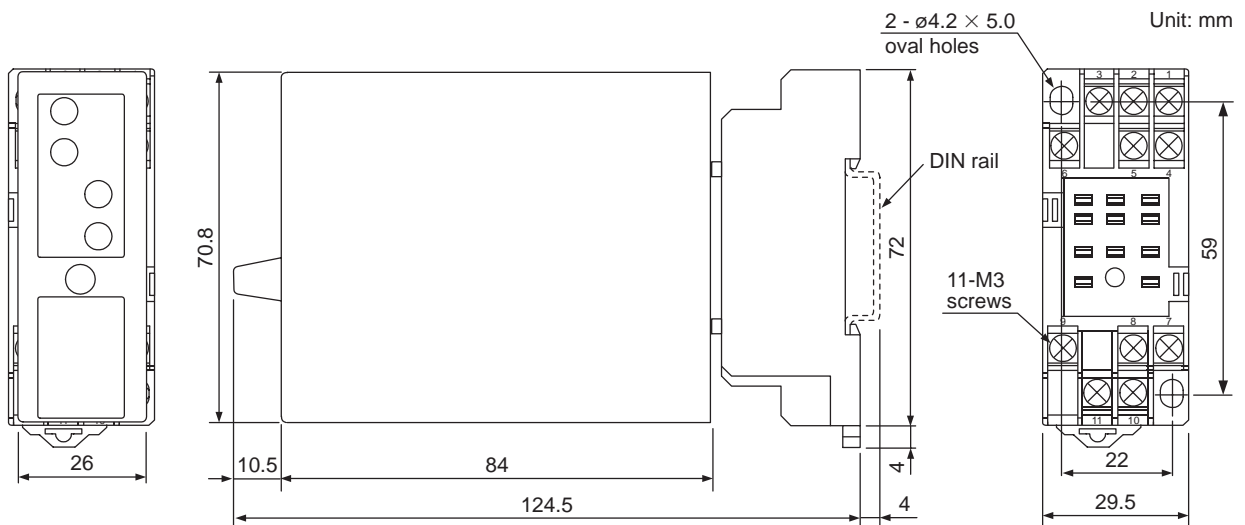
(3) When Configuring an Intrinsically Safe System Using a Zener Barrier



Note: Single-output models do not contain the output-2 circuit.

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### External Dimensions



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• The information covered in this document is subject to change without notice for reasons of improvements in quality and/or performance.