

# General Specifications

## VJB3 AC-signal Transmitter (RMS-computing Type) (Isolated Single-output and Isolated Dual-output Models)



GS 77J1B03-01E

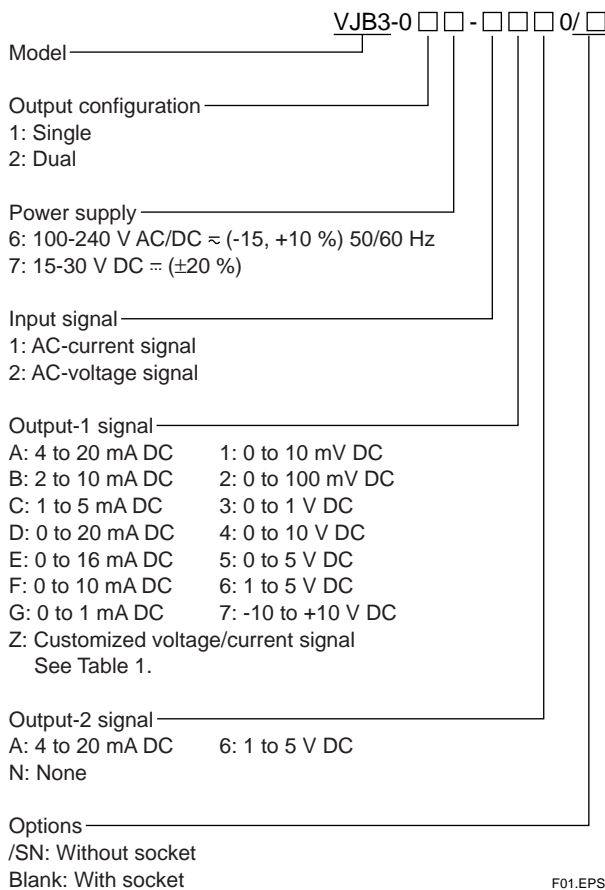
### General

The VJB3 is a compact, plug-in transmitter that receives AC voltage or AC current signal and converts it into DC voltage or DC current signals of various ranges.

The VJB3 transmitter features:

- a wide choice of input and 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



### Input/Output Specifications

Input signal:

- AC current  
0 to  $I_{100}$  mA AC ( $I_{100}$ : current for 100% input)  
where,  $4 \leq I_{100} \leq 1000$  mA AC.
- AC voltage  
0 to  $V_{100}$  V AC ( $V_{100}$ : voltage for 100% input)  
where,  $0.1 \leq V_{100} \leq 150$  V AC.

Input resistance:

- AC current signal  
25  $\Omega$  maximum, where  $4 \leq I_{100} \leq 10$  mA AC;  
10  $\Omega$  maximum, where  $10 \leq I_{100} \leq 100$  mA AC; and  
1  $\Omega$  maximum, where  $100 \leq I_{100} \leq 1000$  mA AC.
- AC voltage signal  
Approx. 1 M $\Omega$

Input frequency range: 40 Hz to 1 kHz

Maximum allowable overrange input: 120% (continuous);  
200% (for one minute)

Output signal: DC voltage or DC current

Allowable load resistance:

- Output 1

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

- Output 2

Output Range	Output Range
4 to 20 mA DC: 350 $\Omega$ maximum	1 to 5 V DC: 2 k $\Omega$ minimum

Zero and span adjustment: Within  $\pm$ 5% of span for both zero and span adjustment

### Items to be specified when ordering

- Model and Suffix Code: e.g. VJB3-026-1AA0
- Input signal: e.g. 0-100 mA AC

### ■ Standard Performance

- Accuracy rating:  $\pm 0.3\%$  of span; accuracy is not guaranteed for output level less than 0.5% of the span of a 0 to X mA output range type.
- Response: 300 ms for a 63% response (10 to 90% change of range)
- Insulation resistance: 100 M $\Omega$  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, 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: 95 mA at 24 V DC
- Power consumption: 5.4 VA at 100 V AC; 7.5 VA at 200 V AC

### ■ 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. 114 g; socket = approx. 51 g

### ■ Accessories

- Tag number label: One

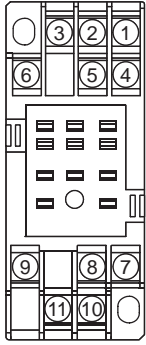
### ■ Customized Signal Specifications

Table 1 Manufacturable Ranges

	Current Signal	Voltage Signal
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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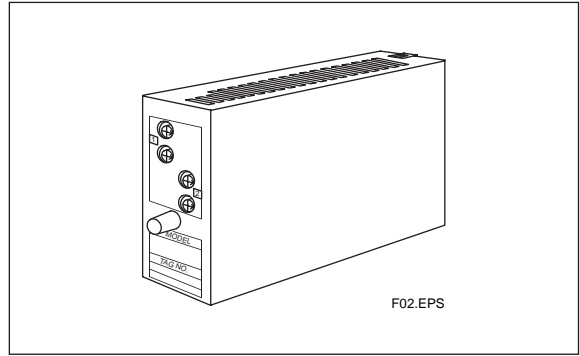
### Terminal Assignment



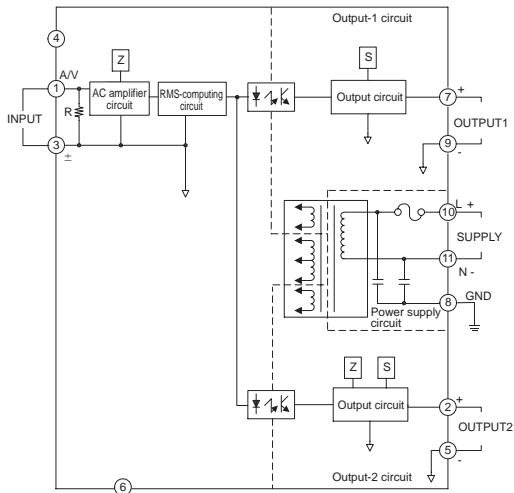
1	INPUT	(A/V)
2	OUTPUT 2	(+)
3	INPUT	(±)
4	N.C.	
5	OUTPUT 2	(-)
6	N.C.	
7	OUTPUT 1	(+)
8	GND	
9	OUTPUT 1	(-)
10	SUPPLY	(L+)
11	SUPPLY	(N-)

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

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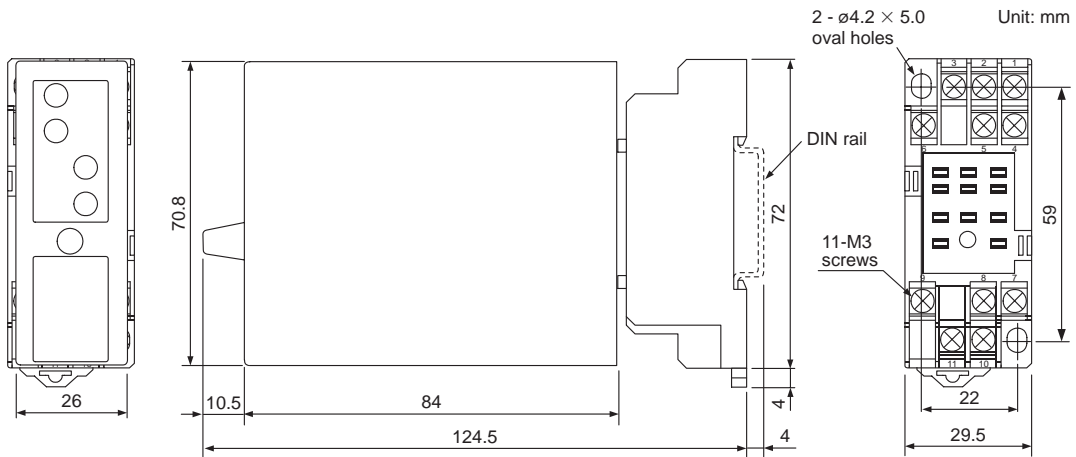
### Block Diagram



Note: Single-output models do not contain the output-2 circuit.  
R: Effective for AC current input only.

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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.