General Specifications

GS 77J01B03-01E

Model VJB3
AC Converter (RMS)
(Isolated Single-output and Isolated Dual-output Types)

JUXTA

■ General

The VJB3 is a compact, plug-in type AC converter that receives sinusoidal AC voltage or sinusoidal AC current signal and converts it into isolated DC voltage or DC current signals.

■ Model and Suffix Codes

VJB3-0 □□-□□□ 0/□

Model

Output
1: 1 output
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
1: AC current signal
2: AC voltage signal

Output-1 signal
A: 4 to 20 mA DC
B: 2 to 10 mA DC
C: 1 to 5 mA DC
D: 0 to 20 mA DC
E: 0 to 16 mA DC
F: 0 to 10 mA DC
G: 0 to 1 mA DC
1: 0 to 10 mV DC
2: 0 to 100 mV DC
3: 0 to 1 V DC
4: 0 to 10 V DC
5: 0 to 5 V DC
6: 1 to 5 V DC
7: -10 to +10 V DC
Z: Custom order (DC current/voltage signal)
See Table 1.

Output-2 signal
A: 4 to 20 mA DC
6: 1 to 5 V DC
N: No output-2
Z: Custom order (DC current/voltage signal)
See Table 1.

Option
/SN: No socket (with socket if not specified)
/C0: Coating *1
/FB: Fuse bypass *1

*1 When option code /C0 or /FB is specified, the conformity to the safety and EMC standards is excluded. CE marking is not applicable.

Note 1: "/C0" option: Polyurethane coating. The "/C0" option does not guaranteed the coating effect though it is expected that the corrosion resistance for electric circuit is reinforced. And it is not able to submit coating test data.

Note 2: "/FB" option: The primary power supply fuse is deleted, short circuit and ship it.

■ Ordering Information

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

■ Input/Output Specifications

Input signal:
- AC current signal
  0 to I_{100} mA AC (I_{100}: current for 100% input)
  where, $4 \leq I_{100} \leq 1000$ mA AC.
- AC voltage signal
  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 Ω maximum, for $4 \leq I100 \leq 10$ mA AC
  10 Ω maximum, for $10 \leq I_{100} \leq 100$ mA AC
  1 Ω maximum, for $100 \leq I_{100} \leq 1000$ mA AC
- AC voltage signal
  Approx. 1 MΩ

Input frequency: 40 Hz to 1 kHz
Maximum allowable input: 120% (continuous); 200% (for one minute)
Output signal: DC voltage or DC current
Output variable range: −6 to 106 % (Both output-1 and output-2)
Allowable load resistance:

Output-1 Range	Allowable Load Resistance	Output-1 Range	Allowable Load Resistance
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 Range	**Allowable Load Resistance**	**Output-2 Range**	**Allowable Load Resistance**
4 to 20 mA DC	350 Ω maximum	1 to 5 V DC	2 kΩ minimum

Output resistance:
Current output: 500 kΩ or more
Voltage output other than below: 1 Ω or less
0 to 10 mV DC, 0 to 100 mV DC: 100 Ω or less
Zero adjustment: −5 to +5%
Span adjustment: 95 to 105%

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■ Standard Performance

Accuracy rating: ±0.3% of span; accuracy is not guaranteed for output levels less than 0.5% of the span of a 0 to X mA output range type.
Response speed: 300 ms, 63% response (10 to 90%)
Effect of power supply voltage fluctuation: Within the accuracy range of span for power supply voltage fluctuation.
Effect of ambient temperature change: ±0.2% of span for change of 10°C

■ Safety and EMC Standards

CE:
EMC directive
EN 61326-1 Class A Table 2 *1 compliance
EN 61326-2-3 compliance
EN 61000-3-2 compliance
EN 61000-3-3 compliance
EN 55011 Class A Group 1 compliance
Low voltage directive:
EN 61010-1, EN 61010-2-030
Overvoltage category II *2, Pollution degree 2 *3, Measurement category O (other)
CSA: CAN/CSA C22.2 No. 61010-1
CAN/CSA C22.2 No. 61010-2-030
Overvoltage category II *2, Pollution degree 2 *3, Measurement category O (other)
UL: UL61010-1 (CSA NRTL/C)
UL 61010-2-030 (CSA NRTL/C)
Overvoltage category II *2, Pollution degree 2 *3, Measurement category O (other)
RCM: EN 55011 Class A Group 1 compliance
KC: Electromagnetic wave interference prevention standard, electromagnetic wave protection standard compliance

*1 The instrument continues to operate at a measurement accuracy of within ±20% of the range during testing.
*2 Overvoltage category II: Describes a number which defines a transient overvoltage condition. Implies the regulation for impulse withstand voltage.
"II" applies to electrical equipment which is supplied from the fixed installation like a distribution board.
*3 Pollution degree 2: Describes the degree to which a solid, liquid, or gas which deteriorates dielectric strength or surface resistivity is adhering.
"2" applies to normal indoor atmosphere. Normally, only non-conductive pollution occurs.

However, if optional code /C0 or /FB is specified, the conformity to the safety and EMC standards is excluded.

■ Environment Standard

EU RoHS directive: EN IEC 63000
(However, when option code /C0 or /FB is specified, CE marking is not applicable because the product does not comply with the Safety and EMC standards.)

■ 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:
2.2 W at 24 V DC ; 2.1 W at 110 V DC;
4.5 VA at 100 V AC; 5.8 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

Temperature: -10 to 55°C (45°C or less for side-by-side close installation*)
* If the previous model (style S3.xx earlier) is installed together, the ambient temperature is 0 to 40°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.
Magnetic field: 400 A/m or less.
Continuous vibration (at 5 to 9 Hz) Half amplitude of 3 mm or less (at 9 to 150 Hz) 4.9 m/s^2 or less, 1 oct/min for 90 minutes each in the 3-axis directions.
Impact: 98 m/s^2 or less, 11 msec, 3-axis 3 times each in 6 directions.
Altitude: 2000 m or less.
Installation location: Indoors
Warm-up time: At least 30 minutes after power on.

■ Transport and Storage Conditions

Ambient temperature: −25 to 70°C
Temperature change rate: 20°C per hour or less
Ambient humidity: 5 to 95%RH (no condensation)

■ Mounting and Appearance

Construction: Compact plug-in type
Material: Modified polyphenylene oxide (casing)
Mounting method: Wall, DIN rail or dedicated VJ mounting base (VJCE) mounting
Connection method: M3 screw terminals
External dimensions:
76 (H) × 29.5 (W) × 124.5 (D) mm (including a socket)
Weight: Main unit: 100 g or less
Socket: 50 g or less

■ Accessories

Tag number label: 1 sheet
Socket (T9093FL): 1 piece (when /SN option is not specified.)

■ Customized Signal Specifications

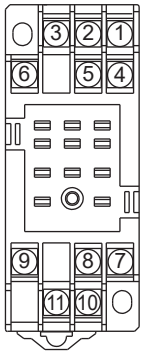
● **Output custom specification**

Table 1 Manufacturable Ranges

	Current Signal	Voltage Signal
Output range (DC)	0 to 24 mA	−10 to +10 V
Span (DC)	1 to 24 mA	10 mV to 20 V
Zero elevation	0 to 200%	−100 to +200%

Note: Customized specifications for the output-1 signal within 0 to 20 mA DC or within -10 to +10 V DC comply with safety standards, EMC standards, and environmental standards.
- The above note is limited to the standard specification of output-2.
- Other customized specifications do not conform to these standards.

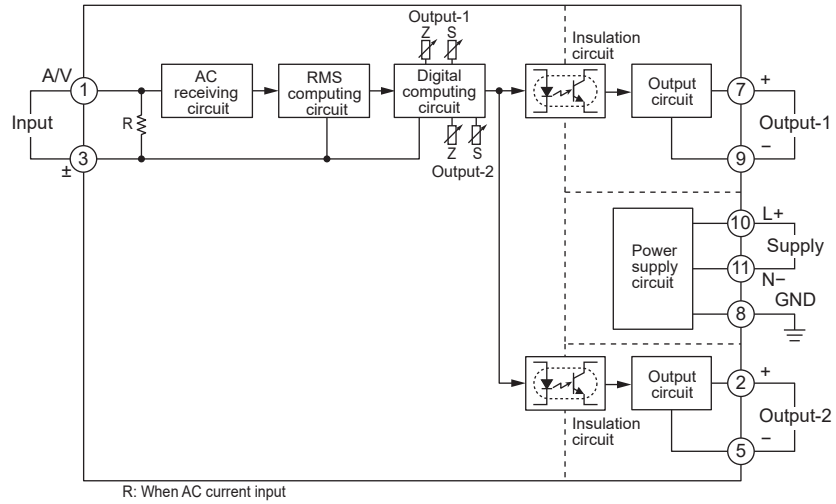
■ Terminal Assignment



1	Input	(A/V)
2	Output-2	(+)
3	Input	(±)
4	Do not use	
5	Output-2	(−)
6	Do not use	
7	Output-1	(+)
8	GND	
9	Output-1	(−)
10	Supply	(L+)
11	Supply	(N−)

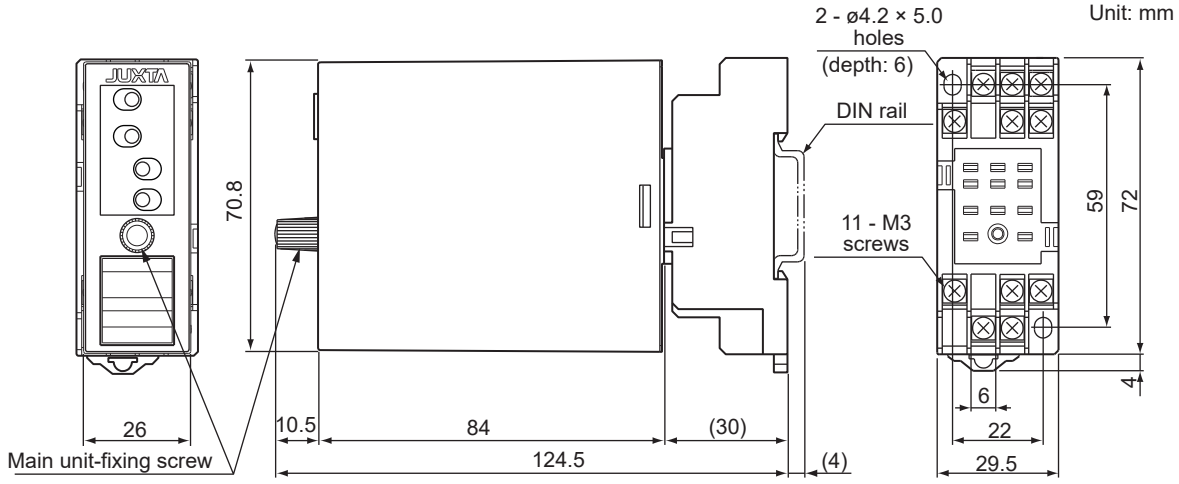
Do not use output-2 for the single-output type.

■ Block Diagram



R: When AC current input

■ External Dimensions



Normal Allowable Deviation= ± (Value of JIS B 0401-2016 tolerance grade IT18) / 2