

General Specifications

Model VJG1
PT Converter (RMS)

JUXTA

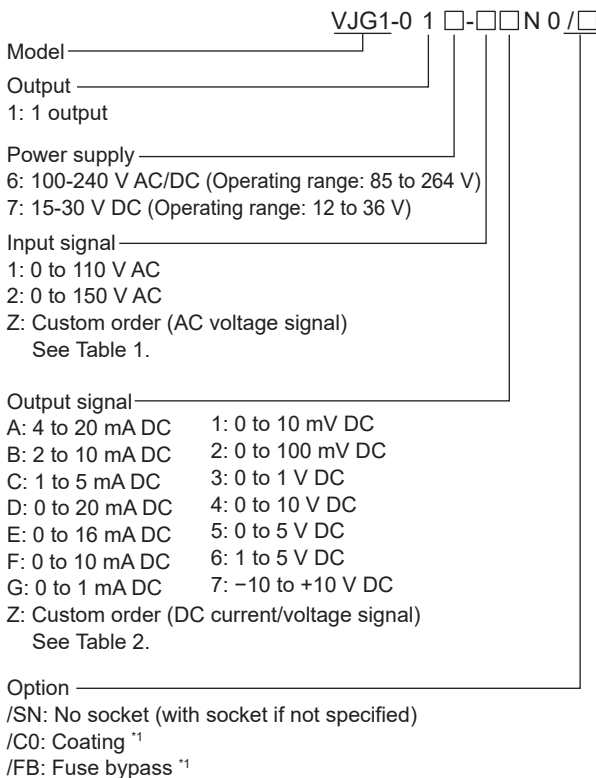
GS 77J01G01-01E

General

The VJG1 is a compact, plug-in type PT converter that receives AC voltage signal from a potential transformer (PT output, etc.) and converts it into isolated DC voltage or DC current signals.



Model and Suffix Codes



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

Note 1: "/CO" option: Polyurethane coating. The "/CO" 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. VJG1-016-1AN0

Input/Output Specifications

Input signal: 0 to 110 V AC or 0 to 150 V AC
 Input loss: 0.5 VA maximum
 Input frequency range: 40 Hz to 10 kHz
 Maximum allowable overrange input: 120% (continuous); 200% (for one minute)

Output signal: DC voltage or DC current
 Output variable range: -6 to 106 %
 Allowable load resistance:

Output Range	Allowable Load Resistance	Output 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 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%

Standard Performance

Accuracy rating: ±0.5% 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 speed: 250 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 II

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 II

UL: UL61010-1 (CSA NRTL/C)
 UL 61010-2-030 (CSA NRTL/C)
 Overvoltage category II², Pollution degree 2³,
 Measurement category II

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 $\pm 20\%$ 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 \approx 50/60 Hz or
 15-30 V DC \approx

Power supply input voltage:
 100-240 V AC/DC \approx (-15, +10%) 50/60 Hz
 or 15-30 V DC \approx ($\pm 20\%$)

Power consumption:
 1.3 W at 24 V DC ; 1.3 W at 110 V DC;
 3.2 VA at 100 V AC; 4.2 VA at 200 V AC

Insulation resistance: 100 M Ω minimum at 500 V DC
 between input, output, power supply and
 grounding terminals mutually

Withstanding voltage: 2000 V AC for one minute
 between input, output, power supply and
 grounding terminals mutually

■ 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/s² or less, 1 oct/min for 90 minutes each in the 3-axis directions.

Impact: 98 m/s² 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) \times 29.5 (W) \times 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

● Input custom specification

Table 1 Manufacturable Ranges

	AC Voltage Signal
Input range	0 to 300 V AC
Span	30 to 300 V AC
Zero elevation	0% only

Note: Customized specifications for input signals with a 100% input voltage of 150 V AC or less comply with safety standards, EMC standards, and environmental standards. Other customized specifications do not conform to these standards.

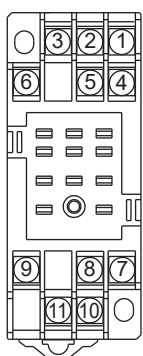
● Output custom specification

Table 2 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%

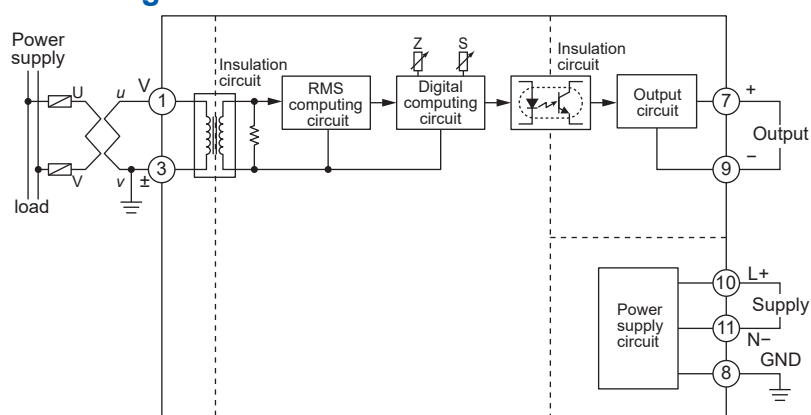
Note: Customized specifications for the output signal within 0 to 20 mA DC or within -10 to +10 V DC comply with safety standards, EMC standards, and environmental standards. Other customized specifications do not conform to these standards.

Terminal Assignments

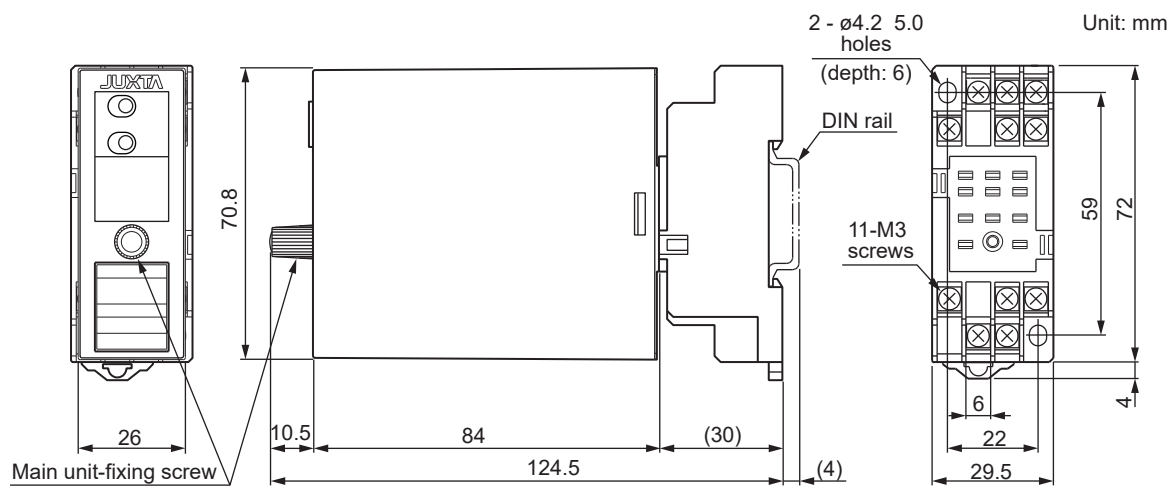


1	Input	(V)
2	Do not use	
3	Input	(±)
4	Do not use	
5	Do not use	
6	Do not use	
7	Output	(+)
8	GND	
9	Output	(-)
10	Supply	(L+)
11	Supply	(N-)

Block Diagram



External Dimensions



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