General Specifications

GS 77J01R06-01E

Model VJR6
RTD Converter
(Isolated Single-output and
Isolated Dual-output Types)

JUXTA

■ General

The VJR6 is a compact, plug-in type RTD converter that is connected to an IEC/JIS-standard resistance temperature detector (RTD) to convert temperature signals into isolated DC current or DC voltage signals.

■ Model and Suffix Codes

VJR6-0□□-□□□□/□

Model

Output configuration
1: Single
2: Dual

Power supply
6: 100-240 V AC/DC (Operating range: 85-264 V)
7: 15-30 V DC (Operating range: 12-36 V)

Input signal
1: Pt100 (ITS-90: JIS'97)
2: JPt100 (JIS'89)
3: Pt50 (JIS'81)
4: Pt100 (IPTS-68: JIS'89)
Z: Optional RTD See Table 1.

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: Customized voltage/current signals
See Table 1.

Output-2 signal
A: 4 to 20 mA DC
N: None
6: 1 to 5 V DC
Z: Customized voltage/current signals
See Table 1.

Burnout function
U: Up
D: Down
N: Off

Options
/SN: Without socket
Blank: With socket

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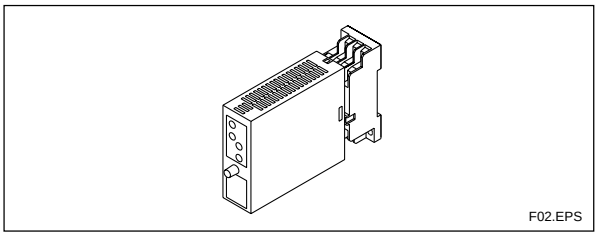
● Items to be specified when ordering

- Model and Suffix Code: e.g. VJR6-026-166U
- Input range: e.g. 0 to 400°C



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■ Input/Output Specifications

Input signal: A three-wire RTD, among the IEC/JIS-standard Pt100 (ITS-90: JIS'97), JPt100 (JIS'89), Pt50 (JIS'81) and Pt100 (IPTS-68: JIS'89) detectors

Measuring range:

Code	Input Type	Measuring Range	Measuring Span	Zero Elevation
1	Pt100 (ITS-90: JIS'97)	-200 to 850¡C	10¡C minimum	Within 5 times the measuring span
2	JPt100 (JIS'89)	-200 to 510¡C		
3	Pt50 (JIS'81)	-200 to 649¡C		
4	Pt100 (IPTS-68: JIS'89)	-200 to 660¡C		

Pt100 (ITS-90) :R0 = 100 Ω, R100/R0 = 1.3851
JPt100 (JIS'89) :R0 = 100 Ω, R100/R0 = 1.3916
Pt100 (IPTS-68) :R0 = 100 Ω, R100/R0 = 1.3850

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Measuring current: Approx. 1 mA DC

Allowable leadwire resistance: [Input span (°C) × 0.4 Ω] or 10 Ω per leadwire, equal or less than whichever is smaller; if the converter is combined with a BARD-700, this value is that of a resistance that can be attached externally, aside from the internal resistance of the BARD-700.

Output signal: DC voltage or DC current signal

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	15k Ω 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

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Zero adjustment: –5 to +5%

Span adjustment: 95 to 105%

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■ Standard Performance

Accuracy rating: ±0.1% of span or 0.1°C, whichever is greater; for Pt50, ±0.2% of span or 0.2°C, whichever is greater; 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: 150 ms, 63% response (10 to 90%)
Burnout function: One of the three options is selected - Up, Down or Off; the maximum burnout time is specified as 60 seconds.
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
Effects of leadwire resistance variations: Up to ±0.2°C per 10 Ω/leadwire

■ Conformance to EMC Standards

Applicable EMC standard: EN61326
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 ⎓ (±20%) only.

■ 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: 2.2 W at 24 V DC ; 2.1 W at 110 V DC; 4.2 VA at 100 V AC; 6.1 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.

■ Mounting and Appearance

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: Approx. 122 g (main unit), approx. 51 g (socket)

■ Accessories

Tag number label: One

■ Customized Signal Specifications

<Input range>

Special RTD with temperature table. The measuring range is between 0 and 2000 Ω in resistance value.

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%

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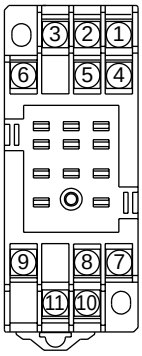
■ Terminal Assignments



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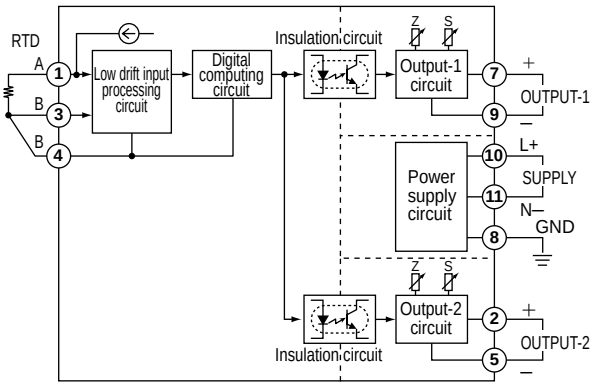
1	INPUT	(A)
2	OUTPUT-2	(+)
3	INPUT	(B)
4	INPUT	(B)
5	OUTPUT-2	(–)
6	N.C.	
7	OUTPUT-1	(+)
8	GND	
9	OUTPUT-1	(–)
10	SUPPLY	(L+)
11	SUPPLY	(N–)

Note: For single-output type, OUTPUT-2 is N.C.

■ Block Diagram



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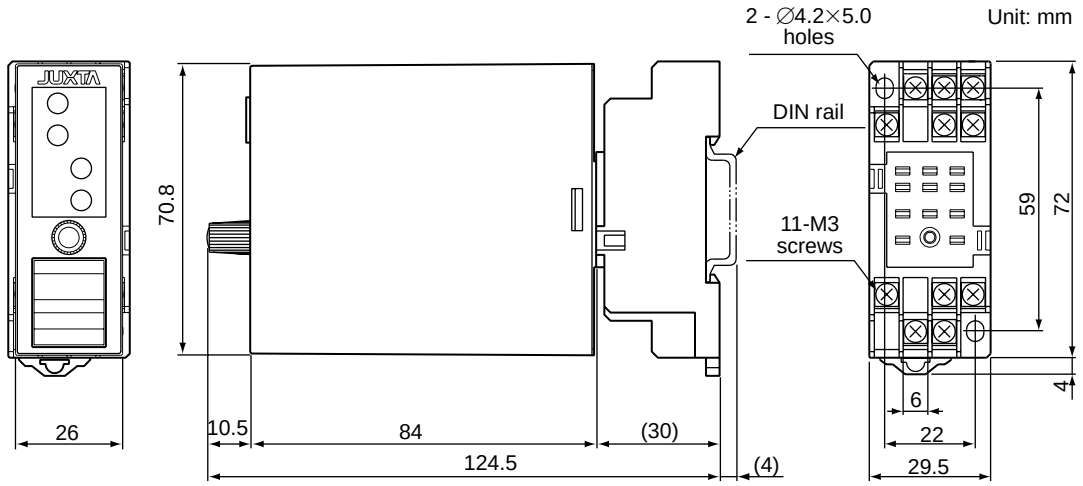
■ External Dimensions



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