General Specifications

GS 77J01T06-01E

Model VJT6
Thermocouple Converter
(Isolated Single-output and
Isolated Dual-output Types)

JUXTA

■ General

The VJT6 is a compact, plug-in type thermocouple converter that is connected to an IEC/JIS-standard thermocouple (TC), such as a Type K, T, E, J, R, S, B or N thermocouples to convert temperature signals into isolated DC current or DC voltage signals.

■ Model and Suffix Codes

VJT6-0□□-□□□□/□

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: K (CA)
2: T (CC)
3: E (CRC)
4: J (IC)
5: R
6: S
7: B (RH)
8: N
Z: Optional TC

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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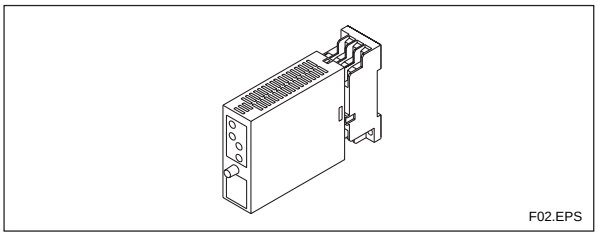
● Items to be specified when ordering

- Model and Suffix Code: e.g. VJT6-026-1A6U
- Input range: e.g. 0 to 400°C



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■ Input/Output Specifications

Input signal: An IEC/JIS-standard thermocouple
(ITS-90, JIS C 1602: '95, IEC 584: '95)
Measuring range:

Code	Input Type	Measuring Range	Measuring Span	Zero Elevation
1	Type K	-270 to 1372°C	3 mV or more	Within 3 times the measuring span or ±25 mV, whichever is smaller
2	Type T	-270 to 400°C		
3	Type E	-270 to 1000°C		
4	Type J	-210 to 1200°C		
5	Type R	-50 to 1768°C		
6	Type S	-50 to 1768°C		
7	Type B	0 to 1820°C		
8	Type N	-270 to 1300°C		

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Input resistance: 1 MΩ or more; 10 kΩ or more during power off
Allowable leadwire resistance: 500 Ω maximum; if the converter is combined with a BARD-600, this value is that of a resistance that can be attached externally, aside from the BARD-600 internal resistance.
Allowable input voltage level: Within ±15 V DC
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; see the following exceptions:
- ±0.1% of span or ±1°C, whichever is greater when
  Type K, T and E < –200°C,
  400°C ≤ Type B < 600°C,
  Type E and J > 750°C, or
  Type N >1200°C.
- ±0.1% of span or ±2°C, whichever is greater when
  Type N < –200°C.
- Accuracy is not guaranteed when Type B is below –400°C, or for output levels less than 0.5% of the span of a 0 to X mA output range type.
- The accuracy derived from the following expression is applied when the measuring span is below 10 mV in thermoelectromotive force.
  10/measuring span (mV)×accuracy*

* Any of ±0.1%, ±1°C or ±2°C.

Accuracy of reference junction compensation: ±1°C (25°C±15°C) for Type K, T, E, J, B and N thermocouples; ±2°C (25°C±15°C) for Type R and S thermocouples

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 ±15 μV per 100 Ω

■ 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 ; 2.2 W at 110 V DC; 5.5 VA at 100 V AC; 7.4 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. 120 g (main unit), approx. 51 g (socket)

■ Accessories

Tag number label: One

RJC (reference junction conpensation) sensor (Part number: A1167HT): One (except for Type B)

■ Customized Signal Specifications

<Input range>

Special thermocouple with temperature table. The measuring range is between -100 and +100 mV in thermoelectromotive force.

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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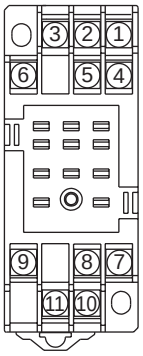
■ Terminal Assignments



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

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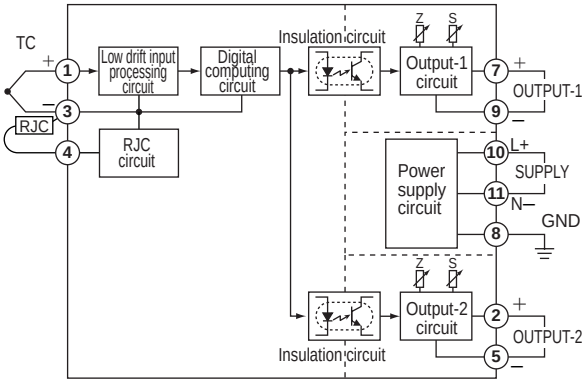
Note: For single-output type, OUTPUT-2 is N.C.

■ Block Diagram



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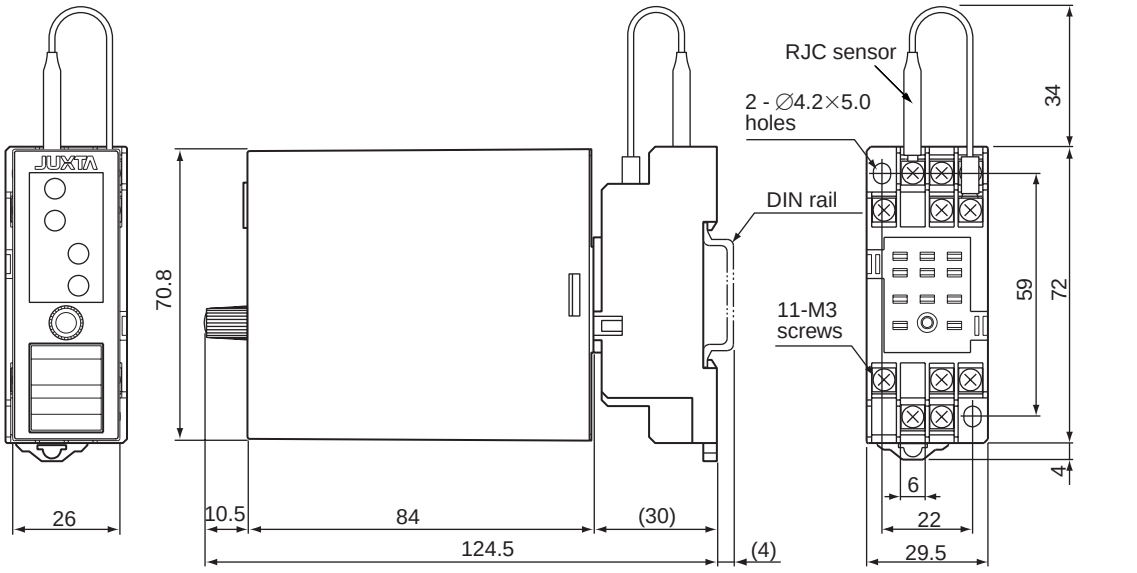
■ External Dimensions

Unit: mm



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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.