# **General Specifications**

GS 77J01R06-01E

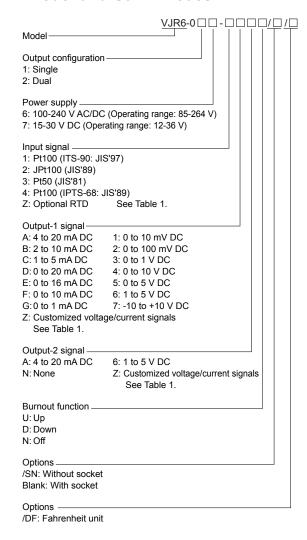
Model VJR6 RTD Converter (Isolated Single-output and Isolated Dual-output Types) **NTXUL** 

#### 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.

For the degree Fahrenheit, specify the option "/DF".

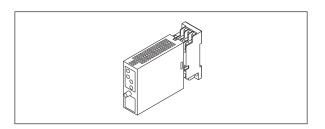
#### ■ Model and Suffix Codes



### • Items to be specified when ordering

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

Note: The specified input range cannot be changed after the delivery.



# ■ 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 unit: °C, K, °F<sup>(\*1)</sup>

\*1: When specify the option code "/DF".

Measuring range:

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

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

Measuring current: Approx. 1 mA DC Allowable leadwire resistance: [Input span (°C) x 0.4  $\Omega$ ] or 10  $\Omega$  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

Zero adjustment: -5 to +5% Span adjustment: 95 to 105%



## ■ 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  $\pm 0.2^{\circ}$ C per 10  $\Omega$ /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  $\eqsim$  50/60 Hz or 15-30 V DC  $\eqqcolon$ 

Supply input voltage range: 100-240 V AC/DC  $\approx$  (-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 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 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)x29.5 (W)x124.5 (D) mm
(including a socket)
Weight: Approx. 122 g (main unit), approx. 51 g (socket)

#### Accessories

Tag number label: One

# **■ Customized Signal Specifications**

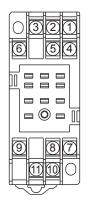
<Input range>

Special RTD with temperature table. The measuring range is between 0 and 2000  $\Omega$  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%

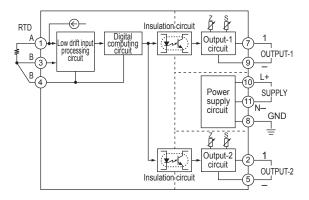
# ■ Terminal Assignments



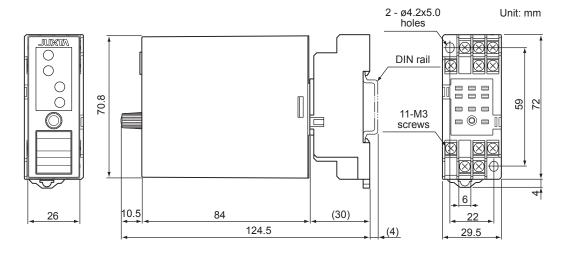
1	INPUT	(A)
2	OUTPUT-2	(+)
3	INPUT	(B)
4	INPUT	(B)
5	OUTPUT-2	(-)
6	N.C.	
7	OUTPUT-1	(+)
8	GND	
9	OUTPUT-1	(-)
10	SUPPLY	(L+)
11	SUPPLY	(N-)

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

# ■ Block Diagram



# **■ External Dimensions**



• The information covered in this document is subject to change without notice for reasons of improvements in quality and/or performance.