General Specifications

Model JR12
RTD Converter
(2-output, Free Range Type)

JUXTA

GS 77J03R01-02E

■ General

The JR12 is a 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.

- Selection of RTD type, input range setting, burnout setting, I/O adjustment, and I/O monitoring can be made through a PC (VJ77) or Handy Terminal (JHT200).
- The operation indicating lamp shows the operating status, abnormal setting and the like.
- Output adjustment and wiring resistance correction can be made using a switch on the front of the JR12 without a setting tool such as Handy Terminal.

■ Model and Suffix Codes

JR12 -□□ - □□□□

Model

Usage
1: General use

Power supply
3: 24V DC±10%
4: 100-130 V AC/DC (Operating range: 85 to 150V AC/DC)
5: 200-240 V AC (Operating range: 170 to 264V AC)

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

Output-1 signal

A: 4 to 20mA DC	1: 0 to 10mV DC
B: 2 to 10mA DC	2: 0 to 100mV DC
C: 1 to 5mA DC	3: 0 to 1V DC
D: 0 to 20mA DC	4: 0 to 10V DC
E: 0 to 16mA DC	5: 0 to 5V DC
F: 0 to 10mA DC	6: 1 to 5V DC
G: 0 to 1mA DC	7: -10 to +10V DC
Z: Customized current signals*	0: Customized voltage signals*

* See Customized Signal Specifications

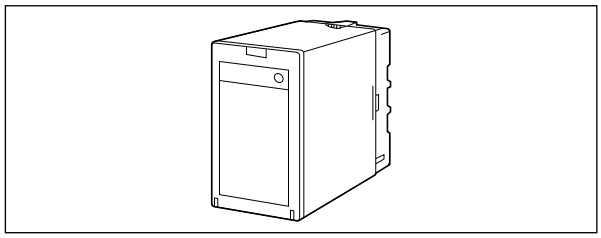
Output-2 signal

A: 4 to 20mA DC	6: 1 to 5V DC

Burnout function
U: Up
D: Down
N: Off

■ Items to be Specified when Ordering

- Model and Suffix Codes: e.g. JR12-14-1A6U
- Input range: e.g. 0 to 400 °C



■ 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

Range:

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

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

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

Input adjustment: ±1% of span minimum (Zero/Span)
Output adjustment: ±5% of span minimum (Zero/Span)

■ 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 levels less than 0.1mA for the output codes D, E, and F, and for output levels less than 0.0125mA for the output code G.

Response speed: 200 ms, 63% response (10 to 90%)

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Burnout: Up, Down or Off; the maximum burnout time is specified as 60 seconds.
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, output-2), power supply and grounding terminals mutually
1000 V AC for one minute between output-1, output-2 terminals mutually
Operating temperature range: 0 to 50°C
Operating humidity range: 5 to 90% RH (no condensation)
Supply voltage range: 24 V DC ±10%
100 to 130 V AC/DC (±15%)
200-240 V AC (-15%, +10%)
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 ±0.2% of span per 10°C
Effects of leadwire resistance variations: Up to ±0.1°C per 10 Ω/leadwire
Power consumption:
2.6 W at 24 V DC; 2.5 W at 110 V DC;
5.0 VA at 100 V AC; 7.0 VA at 200 V AC

■ Mounting and Appearance

Material: Case body; ABS resin (black), UL94 V-0
Socket; Modified polyphenylene oxide, including glass fiber (black), UL94 V-1
Mounting method: Wall or DIN rail mounting
More than 5 mm interval is required for side-by-side close mounting.
Connection method: M3.5 screw terminals
External dimensions: 86.5 (H)×51 (W)×133 (D) mm (including a socket)
Weight: Approx. 200 g (main unit), approx. 80 g (socket)

■ Accessories

Spacer: One (used for DIN rail mounting)
Range labels: Two

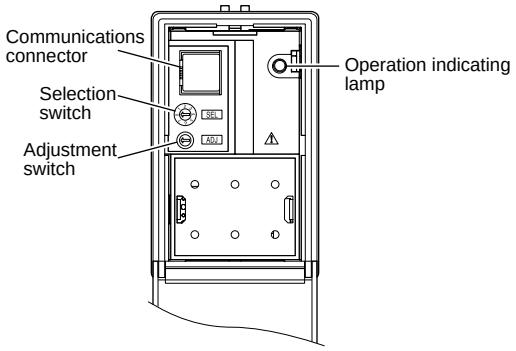
■ Customized Signal Specifications

	Current Signal	Voltage Signal
Output range (DC)	0 to 20 mA	-10 to +10 V
Span (DC)	1 to 20 mA	10mV to 20 V
Zero elevation	0 to 150 %	-125 to +400 % *

* -50 to +25% for the span of 20 mV DC or less.

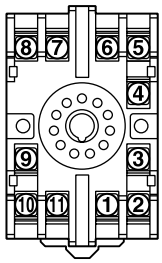
■ Front Panel

Output adjustment and wiring resistance correction are available using selection switch and adjustment switch.



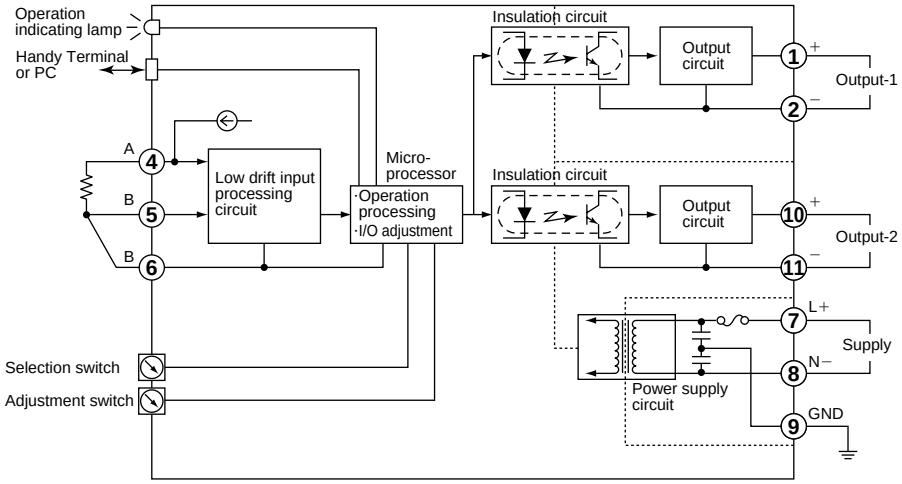
The position of a selection switch	Adjustment item
0	No function
1	Output-1 zero adjustment
2	Output-1 span adjustment
3	Output-2 zero adjustment
4	Output-2 span adjustment
5	Wiring resistance correction

■ Terminal Assignments

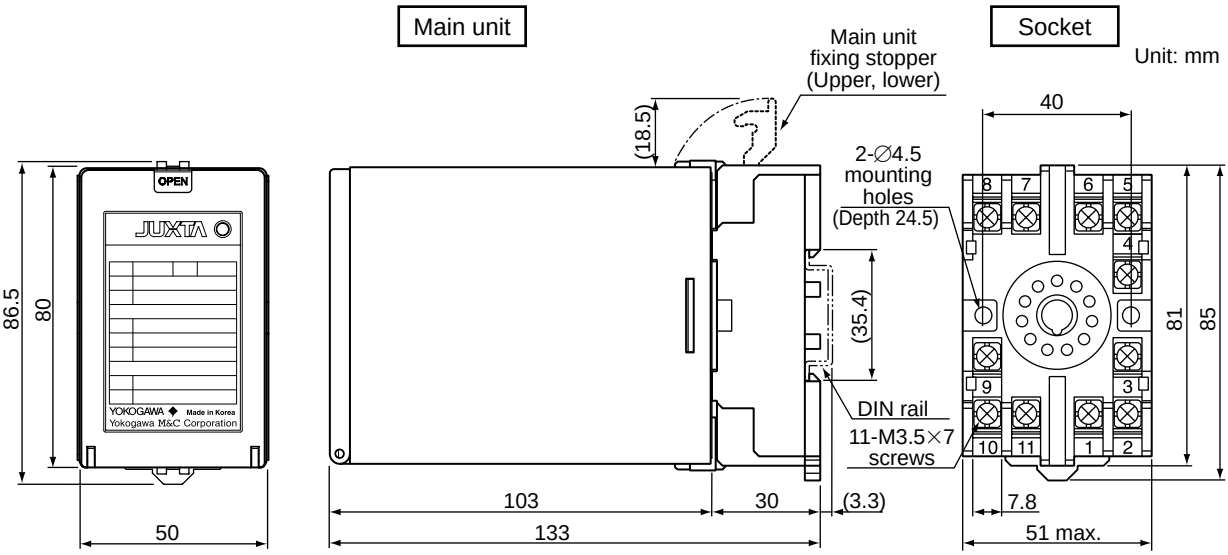


1	OUTPUT-1	(+)
2	OUTPUT-1	(−)
3	N.C.	
4	INPUT	(A)
5	INPUT	(B)
6	INPUT	(B)
7	SUPPLY	(L+)
8	SUPPLY	(N−)
9	GND	
10	OUTPUT-2	(+)
11	OUTPUT-2	(−)

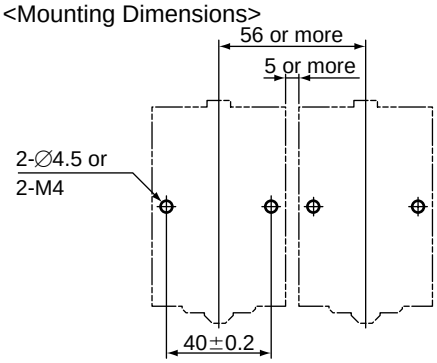
■ Block Diagrams



■ External Dimensions



<Mounting Dimensions>



Unit: mm

(1)More than 5 mm interval is required for side-by-side close mounting.
(2)Use the supplied spacer for DIN rail mounting to keep 5 mm interval.

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