General Specifications

Models WRUA, WRUV
Cryogenic Temperature Converter

JUXTA

GS 77J09R11-01E

■ General

*The WRUA/WRUV is a compact, front terminal connection type cryogenic temperature converter that is used in combination with a four-wire cryogenic RTD (*Yokogawa J263*B) and converts high-precision measured values of wide temperature ranges into isolated DC current or DC voltage signals.*

- Dual output specifications are available upon requests.
- For the Fahrenheit display, specify the option "/DF".

■ Model and Suffix Codes

WRU□-□□-□*A/B□/□□/□□

Model

Output signal specification
- A : DC current signal
- V : DC voltage signal

Input Signal
- 1 : 4-wire type RTD for cryogenic (J263*B: Yokogawa)
- 2 : (Custom order) Other 4-wire type RTD

Output signal

[WRUA]	[WRUV]
A : 4 to 20 mA DC	1 : 0 to 10 mV DC
B : 2 to 10 mA DC	2 : 0 to 100 mV DC
C : 1 to 5 mA DC	3 : 0 to 1 V DC
D : 0 to 20 mA DC	4 : 0 to 10 V DC
E : 0 to 16 mA DC	5 : 0 to 5 V DC
F : 0 to 10 mA DC	6 : 1 to 5 V DC
G : 0 to 1 mA DC	7 : -10 to +10 V DC
Z : (Custom order) Current signal (24 mA or less)	0 : (Custom order) Voltage signal (±10 V or less)

Power supply
- 1 : 24 V DC±10% (DC drive)
- 2 : 85 to 264 V AC (AC drive)

Burnout
- U : UP
- D : DOWN
- N : OFF

Optional specification
- D0 : Dual output (1 to 5 V DC)

Optional specification
- DF : Fahrenheit display function

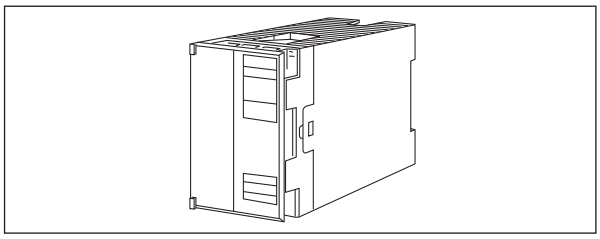
■ Ordering Information

Specify the following when ordering.

- Model and suffix codes: e.g. WRUV-16-2*A
- Input range :e.g. -150 to -50°C

■ Input/Output Specifications

Input signal: Yokogawa J263*B RTD (platinum/thin cobalt alloy)
Measuring unit:°C, K, °F(*1)
*1: When specify the option code "/DF".
Measuring range: Conform to the Yokogawa J263*B RTD reference resistance table
Measuring span: Standard span is 10°C or more
Zero elevation: Within 5 times of the measuring span



Input resistance: 1 MΩ durning power on, 3 kΩ during power off
Allowable leadwire resistance: 50 Ω or less per wire (Each resistance of the 3 lines should be equal.)
Output signal: DC current or DC voltage signal
Allowable load resistance:

DC current output	Allowable Load Resistance	DC voltage output	Allowable Load Resistance
4 to 20 mA	750 Ω or less	0 to 10 mV	250 kΩ or more
2 to 10 mA	1500 Ω or less	0 to 100 mV	250 kΩ or more
1 to 5 mA	3000 Ω or less	0 to 1 V	2 kΩ or more
0 to 20 mA	750 Ω or less	0 to 10 V	10 kΩ or more
0 to 16 mA	900 Ω or less	0 to 5 V	2 kΩ or more
0 to 10 mA	1500 Ω or less	1 to 5 V	2 kΩ or more
0 to 1 mA	15 kΩ or less	-10 to +10 V	10 kΩ or more

Input adjustment: ±1% (Zero/Span)
Output adjustment: ±10% (Zero/Span)

■ Standard Performance

Accuracy rating: ±0.1% of span or ±0.3°C, whichever is greater (including linearization error) Accuracy is not guaranteed for output level less than 0.5% of the span of a 0 to X mA output range type.
Dual output (optional): Relative error between output 1 and 2 is within ±0.2%. These outputs are not insulated.
Response speed: 200 ms, 63% response (10 to 90%)
Burnout: Up, Down or Off; burnout time is 60 sec. or less.
Insulation resistance: 100 MΩ or more at 500 V DC between input and output, input and power supply, input and ground, output and power supply, output and ground, and power supply and ground.
Withstand voltage:
DC drive: 1500 V AC/min. between input and (output and power supply). 500 V AC/min. between output and power supply.
AC drive: 1500 V AC/min. between input and output, input and power supply, input and ground, output and power supply, output and ground, and power supply and ground.

YOKOGAWA

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■ Environmental Conditions

Operating temperature range: 0 to 50°C
Operating humidity range: 5 to 90% RH (no condensation)
Power supply voltage: 85 to 264 V AC, 47 to 63Hz or 24 V DC±10%
Effect of wire resistance: when the resistance unbalance between two voltage pick-up wires is 10 Ω, the error is 0.01°C
Effect of power supply voltage fluctuations: ±0.1% of span or 0.3°C or less for fluctuation within the operating range of power supply voltage specification.
Effect of ambient temperature change: ±0.2% of span or 0.6°C or less for a temperature change of 10°C.
Current consumption: 24 V DC 100 mA (WRUA), 70 mA (WRUV)
Power consumption: 100 V AC 11 VA (WRUA), 7 VA (WRUV)

■ Mounting and Dimensions

Material: ABS resin (Case body)
Mounting method: Rack, Wall or DIN rail mounting
Connection method: M4 screw terminals
External dimensions: 72 (H) × 48 (W) × 127 (D) mm
Weight: DC; Approx. 150 g, AC; Approx. 300 g

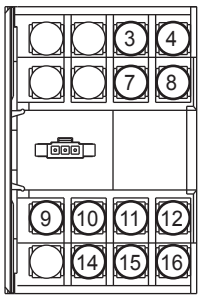
■ Standard Accessories

Tag number label: 1
Mounting block: 2
Mounting screw: M4 screw x 4

■ Custom Order Specifications

	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

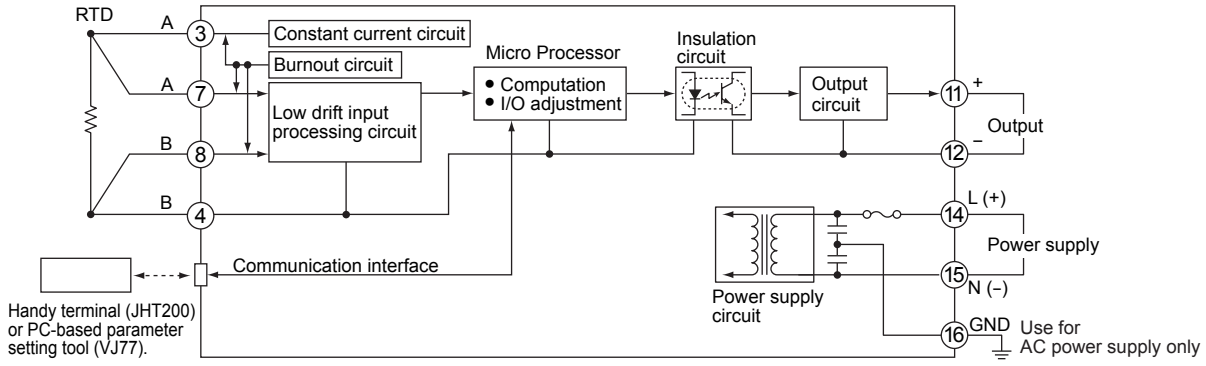


3	Input	(A)
4	Input	(B)
7	Input	(A)
8	Input	(B)
9	Output 2	(+)
10	Output 2	(–)
11	Output 1	(+)
12	Output 1	(–)
14	Supply	(L+)
15	Supply	(N–)
16	Ground	(GND)*

* Use for AC power supply only.

Terminal ⑨-⑩ are used for output-2 in case dual output is specified.

■ Block Diagram



■ External Dimensions