

# General Specifications

## Models WRUA, WRUV Cryogenic Temperature Converter



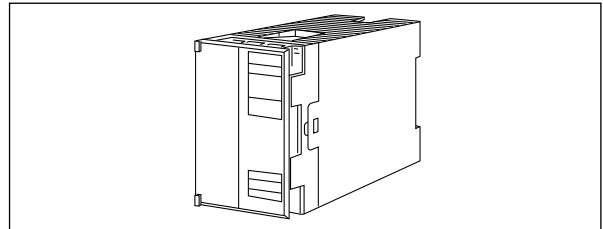
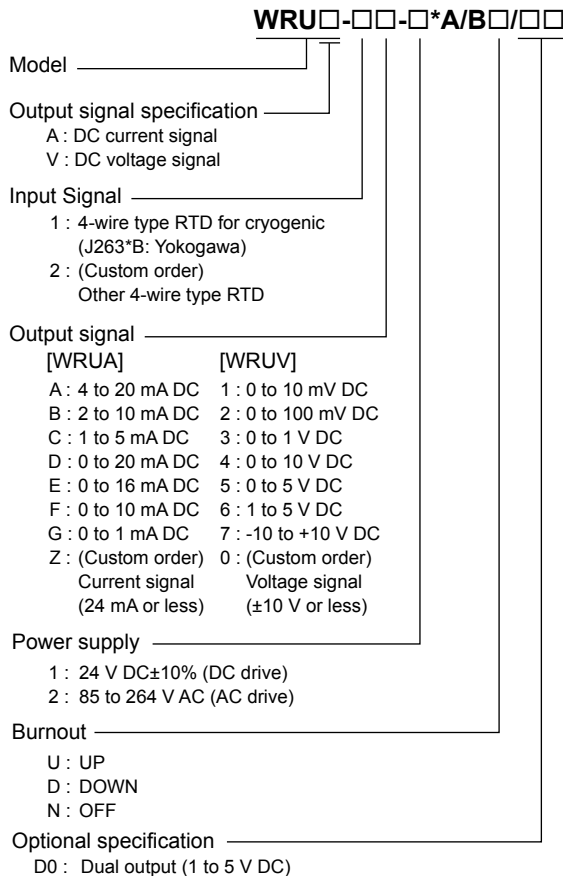
GS 77J09R11-01E

### ■ 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.

### ■ Model and Suffix Codes



Input resistance: 1 MΩ during 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.

### ■ 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 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

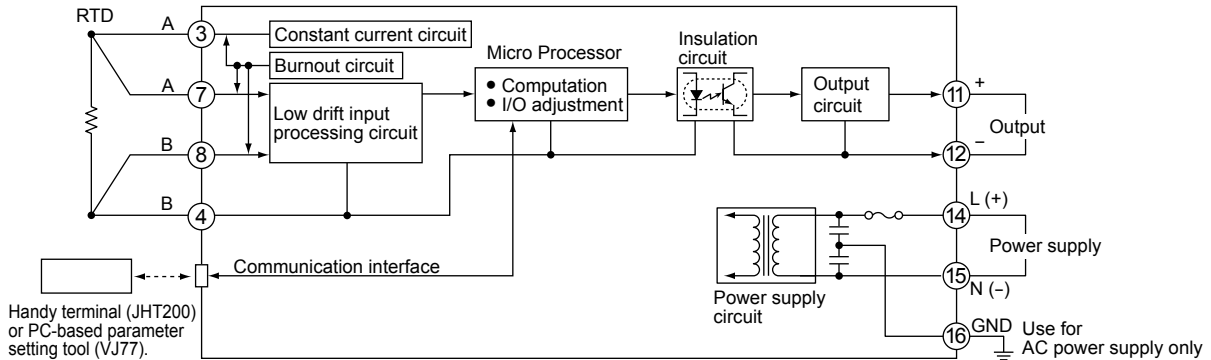
### ■ Environmental Conditions

- 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)

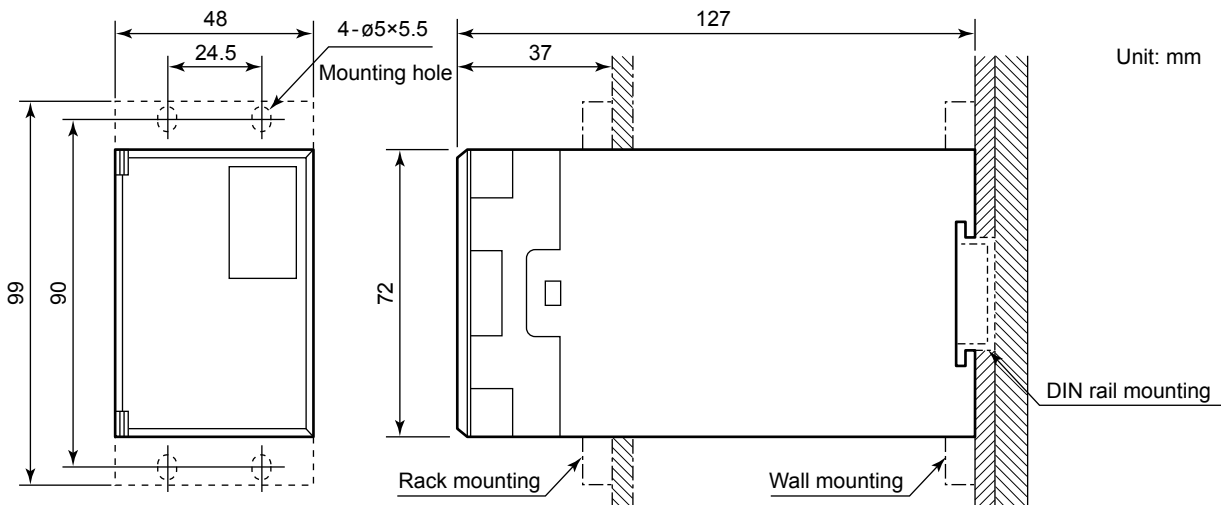
### ■ Mounting and Dimensions

- 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

### ■ Block Diagram



### ■ External Dimensions



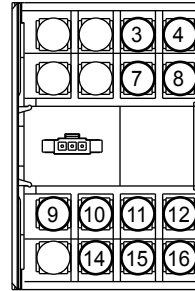
### ■ Standard Accessories

- 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.