

# General Specifications

DR5  
RTD Converter (Free Range Type)

JUXTA

GS 77J05R05-01E

## General

The DR5 is DCS correspondence nest stored type signal conditioner 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 input type, input range setting, burnout setting, output adjustment, I/O monitoring, and loop back test can be made using the optional Parameter Setting Tool (VJ77) or Handy Terminal (JHT200).
- For the Fahrenheit display, specify the option "/DF".
- Available for the combination with Safety barrier (BARD-700).

## Model and Suffix Codes

**DR5-□6□\*B/B□/□□**

Model \_\_\_\_\_

Input Signal \_\_\_\_\_  
 IEC/JIS specifications RTD  
 1 : Pt100 (IPTS-68: JIS'89)  
 2 : JPt100(JIS'89)  
 3 : Pt50 (JIS'81)  
 4 : Pt100 (ITS-90: JIS'97)  
 0 : Custom order

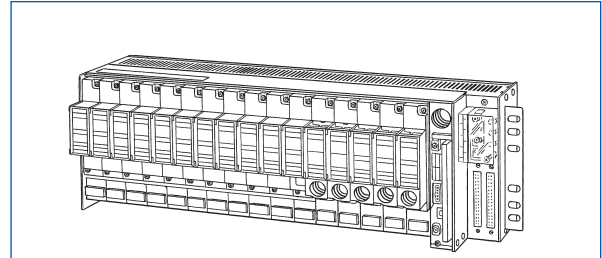
Output -1 signal \_\_\_\_\_  
 6 : 1 to 5 V DC

Output -2 signal \_\_\_\_\_  
 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)    0 : (Custom order)  
     Current signal      Voltage signal  
     (24 mA or less)    (±10 V or less)

Burnout \_\_\_\_\_  
 U : UP  
 D : DOWN  
 N : OFF

Optional specification \_\_\_\_\_  
 DF : Fahrenheit display function

Power supply : 24 V DC±10%



## Input/Output Specifications

Input signal: A three-wire RTD, IEC/JIS standard Compliant.

Input type and Measuring range:

Code	Input Type	Measuring Range (°C)	Measuring Span	Zero Elevation
1	Pt100 (IPTS-68: JIS'89)	-200 to +660	10°C or more	Within 5 times of the measuring span
2	JPt100 (JIS'89)	-200 to +510		
3	Pt50 (JIS'81)	-200 to +649		
4	Pt100 (ITS-90, JIS C 1604: '97, IEC 751: '95)	-200 to +850		

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

RTD detective current: Approx. 1 mA  
 Allowable leadwire resistance: 150 Ω or less per wire (3 lines should be in balance)

Output -1 signal: 1 to 5 V DC

Output -2 signal: DC voltage or DC current signal (In the case of current output, output is available only either from front terminals 3-4 or connector)

## Ordering Information

Specify the following when ordering.

- Model and suffix codes :e.g. DR5-16A\*B/BU
- Input range :e.g. 0 to 100°C

When the burnout is not specified, the product is manufactured as /BU.

Allowable load resistance:

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

Input adjustment : ±1% of span (Zero/Span)  
 Output adjustment : ±10% of span (Zero/Span)  
 In the case of the output specification code 7, it is ±5% of span.

### Standard Performance

Accuracy rating :  
 Output -1: ±0.1% of span or 0.1°C, whichever is greater;  
 for Pt50, ±0.2% of span or 0.2°C, whichever is greater  
 Output -2: ±0.2% or less of relative error of Span to the Ch1 output. 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: 200 ms, 63% response (10 to 90%)  
 Burnout: Up, Down or Off; the maximum burnout time is specified as 60 seconds.  
 Effect of power supply voltage fluctuations: ±0.1% of span or less for the fluctuation within the operating range of power supply voltage specification.  
 Effect of ambient temperature change: ±0.2% of span or less for a temperature change of 10°C.  
 Effect of leadwire resistance change: ±0.1°C or less for a change of 10 Ω (3 lines should be in balance).  
 Need adjustment when combining with BARD-700

### Environmental conditions

Operating temperature range: 0 to 50°C  
 Operating humidity range: 5 to 90% RH (no condensation)  
 Avoid the following environments for installation locations:  
 Areas with vibration, corrosive gases, dust, water, oil, solvents, direct, sunlight, radiation, a strong electric field, and/or a strong magnetic field, altitude of more than 2000 m above sea level.

### Power Supply and Isolation

Supply input voltage range: 24 V DC±10% (Ripple content 5% p-p or less)  
 Consumption current: 24 V DC 95 mA (4 to 20 mA DC), 55 mA (1 to 5 V DC)  
 Insulation resistance: 100 MΩ minimum at 500 V DC between input, output and power supply mutually  
 Withstanding voltage: 1500 V AC for one minute between input, output and input, power supply. 500 V AC for one minute between output and power supply.

### Mounting and Appearance

Mounting method: Store in exclusive nest (Signal•power supply be connected through back board and connector)  
 Connection method: Connect to terminal M4 screw of input/output of exclusive nest  
 External dimensions: 130.6(H)×23.6(W)×126(D) mm  
 Weight: Approx. 120 g

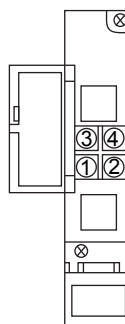
### Accessories

Tag number label: 1  
 Range label: 1

### Customized Signal Specifications

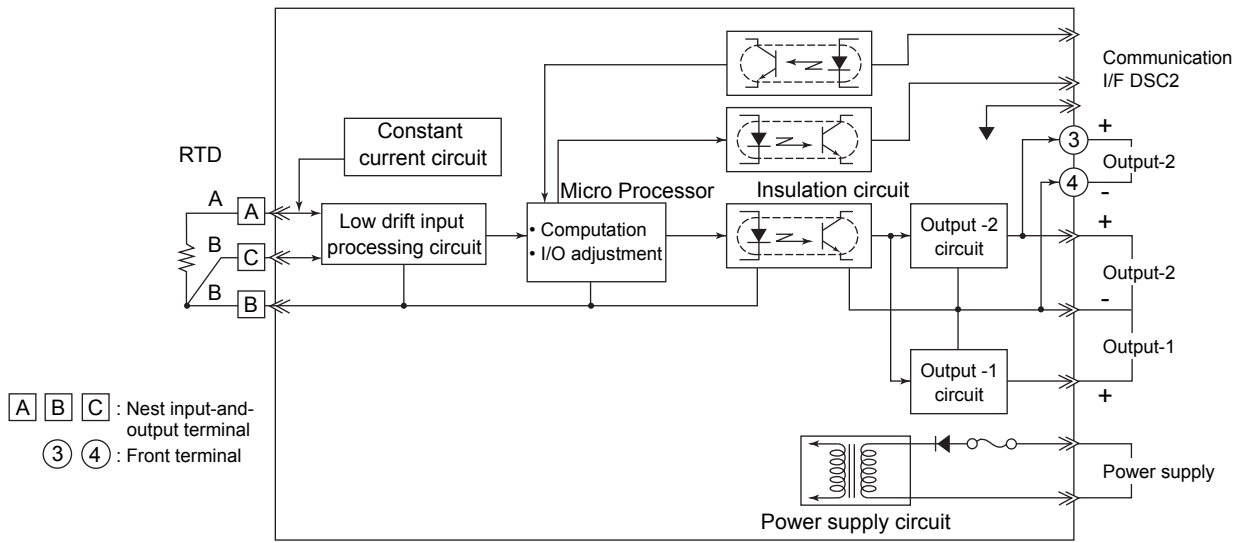
	Current Signal	Voltage Signal
Output range (DC)	0 to 24 mA	-10 to +10 V
Span (DC)	1 to 24 mA	10 mV to 20 V
Zero elevation	0 to 200%	-100 to +200%

### Terminal Assignments



Terminal No.	Signal name
1	
2	
3	Output-2 (+)
4	Output-2 (-)

### ■ Block Diagram



A B C : Nest input-and-output terminal  
③ ④ : Front terminal

The wiring resistance of input terminals A and B should be the same.

### ■ External Dimensions

