The DB1000 series is a 96×96mm digital indicating controller with the indicating accuracy of ±0.1% and the control cycle of approximately 0.1 seconds. Various functions including universal input and multiple setting values (8 types) are provided as standard.

FEATUES

- **Large easy-to-view 5-digit display**
  Process value (PV) and set value (SV) are displayed by large easy-to-view 5-digit display indicators. The resolution of 0.1°C is enabled for more than 1000°C.

- **Highly-functional operation screen and settings screen**
  The controller inherits the operation screen and the settings screen adopting the LCD (liquid-crystal-display) which has been familiarized for long time. Furthermore, the screens have become high-definition and highly sophisticated.

- **Outstanding controllability**
  Two types of PID algorithms, the position-type PID algorithm and the speed-type PID algorithm, have been installed. You can select the optimum PID algorithm for an object controlled.

- **Operability inheriting previous models**
  The controller inherits the settings screen which has been familiarized for long time. You can set up it with operation which is not different from previous models. The performance of touching-keys has been improved and the outstanding operability has been realized.

- **High-precision remote signal input and transmission signal output**
  The high-precision (0.1% of full scale) analog remote signal input and the analog transmission signal output can be added.

- **24V power supply voltage type available**
  The power supply voltage 24V (AC/DC) type, which is advantageous in respect of safe, is available.

- **Motor feedback value indication enabled in ON-OFF servo output type**
  Simultaneous indications of ON/OFF status of output, control output value (MV) and motor feedback value have been realized.

- **Universal input**
  Various measurement ranges of DC voltage (up to maximum 10V) inputs, DC current input, thermocouple inputs and resistance thermometer inputs have been built-in.

- **2 colors of casing available**
  You can select the color of casing from 2 colors of gray with OA equipment feeling and black with high-class feeling.

- **Conforming to international safety standards and European directives (CE)**
  The controller is in conformity with European directives (CE), and is UL and c-UL approved.

- **Conforming to RoHS**
  The controller is an environmental consideration product which does not contain directed hazardous substances such as lead, etc.
MODELS

- Input signal
  - 0: Universal input
  - 4: 4-wire resistance thermometer

- Control mode (Output No. 1)
  - 1: ON-OFF pulse type PID
  - 2: ON-OFF servo type PID
    (Standard load specification)
  - 3: Current output type PID
  - 5: SSR drive pulse type PID
  - 6: Voltage output type PID
  - 8: ON-OFF servo type PID
    (Very light load specification)

- Control mode (Output No. 2)
  - 0: None
  - 1: ON-OFF pulse type PID
  - 3: Current output type PID
  - 5: SSR drive pulse type PID
  - 6: Voltage output type PID

- Communications interface (1st zone)
  - 0: None
  - R: RS232C
  - A: RS422A
  - S: RS485
  - B: Remote input for set value switching

- Transmission signal output (2nd zone)
  - 0: None
  - 1: 4-20mA
  - 2: 0-1V
  - 3: 0-10V
  - 4: Other
  - B: External set value switching

- Remote signal input (3rd zone)
  - 0: None
  - 5: 4-20mA
  - 6: 0-1V
  - 7: 0-10V
  - 8: Other
  - B: External set value switching

- Case color
  - G: Gray
  - B: Black

- Panel sealing and terminal cover
  - 0: None
  - 1: Terminal cover
  - 2: IP54 panel sealing
  - 3: IP54 panel sealing + Terminal cover

- Power supply voltage
  - A: 100 to 240V (AC)
  - D: 24VAC / 24VDC

- Option
  - *1 The control mode (Output No.1) can be selected from 1, 3, 5 or 6 only.
  - *2 Multiple selection in different option zones is not available.
  - Assign it in the order of 3rd zone → 2nd zone → 1st zone

MEASURING RANGES

Universal input

<table>
<thead>
<tr>
<th>Measuring ranges</th>
<th>Scale ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>0.0 to 1820.0°C</td>
</tr>
<tr>
<td>R</td>
<td>0.0 to 1760.0°C, 0.0 to 1200.0°C</td>
</tr>
<tr>
<td>S</td>
<td>0.0 to 1760.0°C</td>
</tr>
<tr>
<td>K</td>
<td>-200.0 to 1370.0°C, 0.0 to 600.0°C, -200.0 to 300.0°C</td>
</tr>
<tr>
<td>E</td>
<td>-270.0 to 1000.0°C, 0.0 to 700.0°C, -270.0 to 300.0°C, -270.0 to 150.0°C</td>
</tr>
<tr>
<td>J</td>
<td>-200.0 to 1200.0°C, -200.0 to 900.0°C, -200.0 to 400.0°C, -200.0 to 200.0°C</td>
</tr>
<tr>
<td>T</td>
<td>-270.0 to 400.0°C, -200.0 to 200.0°C</td>
</tr>
<tr>
<td>WRe5-WRe28</td>
<td>0.0 to 2310.0°C</td>
</tr>
<tr>
<td>WRe28</td>
<td>0.0 to 2310.0°C</td>
</tr>
<tr>
<td>NiCoNi</td>
<td>-50.0 to 1410.0°C</td>
</tr>
<tr>
<td>CR-AuFe</td>
<td>0.0 to 280.0K</td>
</tr>
<tr>
<td>N</td>
<td>0.0 to 1300.0°C</td>
</tr>
<tr>
<td>PR5-20</td>
<td>0.0 to 1800.0°C</td>
</tr>
<tr>
<td>PtRh40-PtRh20</td>
<td>0.0 to 1980.0°C</td>
</tr>
<tr>
<td>Platine II</td>
<td>0.0 to 1390.0°C</td>
</tr>
<tr>
<td>L</td>
<td>-10 to 10mV</td>
</tr>
<tr>
<td>10mV</td>
<td>-10 to 10mV</td>
</tr>
<tr>
<td>20mV</td>
<td>-20 to 20mV</td>
</tr>
<tr>
<td>50mV</td>
<td>-50 to 50mV</td>
</tr>
<tr>
<td>100mV</td>
<td>-100 to 100mV</td>
</tr>
<tr>
<td>5V</td>
<td>-5 to 5V</td>
</tr>
<tr>
<td>10V</td>
<td>-10 to 0V</td>
</tr>
<tr>
<td>20mA</td>
<td>0 to 20mA</td>
</tr>
<tr>
<td>DC current</td>
<td>20mA</td>
</tr>
</tbody>
</table>

Resistance thermometer

<table>
<thead>
<tr>
<th>Measuring ranges</th>
<th>Scale ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP100</td>
<td>-200.0 to 649.0°C, -200.0 to 400.0°C, -200.0 to 200.0°C, -200.0 to 100.0°C</td>
</tr>
<tr>
<td>Old Pt100</td>
<td>-200.0 to 649.0°C, -200.0 to 400.0°C, -200.0 to 200.0°C, -100.0 to 100.0°C</td>
</tr>
<tr>
<td>JP50</td>
<td>-200.0 to 649.0°C</td>
</tr>
<tr>
<td>Pt100</td>
<td>-200.0 to 850.0°C, -200.0 to 400.0°C, -200.0 to 200.0°C, -100.0 to 100.0°C</td>
</tr>
</tbody>
</table>

4-wire resistance thermometer

<table>
<thead>
<tr>
<th>Measuring ranges</th>
<th>Scale ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP100</td>
<td>-200.0 to 649.0°C, -200.0 to 400.0°C, -200.0 to 200.0°C, -100.0 to 100.0°C</td>
</tr>
<tr>
<td>Old Pt100</td>
<td>-200.0 to 649.0°C, -200.0 to 400.0°C, -200.0 to 200.0°C, -100.0 to 100.0°C</td>
</tr>
<tr>
<td>JP50</td>
<td>-200.0 to 649.0°C</td>
</tr>
<tr>
<td>Pt-Co</td>
<td>4.0 to 374.0K</td>
</tr>
<tr>
<td>Pt100</td>
<td>-200.0 to 850.0°C, -200.0 to 400.0°C, -200.0 to 200.0°C, -100.0 to 100.0°C</td>
</tr>
</tbody>
</table>

[Standards]
- Pt100: IEC751 (1995), JIS C 1600 - 1997
NAMES OF VARIOUS PARTS

1. Operation status (RUN) indication
   Lights in operation.
2. Slope (SLOPE) indication
   Lights in slope operation of SV.
3. Alarm-standby (WAIT) indication
   Lights in alarm-standby status or when alarm is cancelled.
4. Remote (REM) indication
5. Executing set value number (NO.) indication
6. Error (ERR) indication
   Lights when sampling of input is abnormal.
7. Auto-tuning operation (AT) indication
   Lights in auto-tuning operation.
8. Manual operation (MAN1/MAN2) indication
   Lights when the output No.1 or No. 2 is in manual output operation.
15. Process value (PV) indication
16. Set value (SV) indication
17. Alarm activation (AL1 to 4) indication
18. LCD display
9. It is used for switching between the operation screen and the mode screen of Mode 0, or for switching from the settings screen to the mode screen.
10. It is used to switch the operation screen or to switch the settings screen.
11. It is used for switching between the automatic output operation and the manual output operation.
12. It is used for moving the cursor and for selecting a parameter.
13. It is used for changing a setting value (or selecting a parameter) in descending or ascending order.
14. It is used for registering the settings.
19. Engineering port
### INPUT SPECIFICATIONS

**Input type:**
- Thermocouple
- DC voltage
- ±10mV, ±20mV, ±50mV, ±100mV, ±5V, ±10V
- DC current
- 0 to 20mA
- Resistance thermometer
  - Pt100, JPt100, Old Pt100, PtPt50, Pt-Co

**Measuring range:**
- Thermocouple 28 ranges, DC voltage 6 ranges, DC current 1 range. Resistance thermometer 14 ranges
- *For details, refer to [Measuring ranges].

**Accuracy rating:**
- ±0.1% of measuring range ± 1 digit
- *For details, refer to [Detailed specifications of accuracy ratings].

**Reference junction compensation accuracy:**
- K, E, J, T, N, Platinel II --- ±0.5°C or a value equivalent to ±20μV, whichever is greater
- Others --- ±1.0°C or a value equivalent to ±40μV, whichever is greater

**Resolution:**
- Approx. 1/30000

**Sampling rate:**
- Approx. 0.1 seconds

**Burnout:**
- Upscale burnout is only enabled in thermocouple, DC voltage (±50mV or less) and resistance thermometer (3-wire type). For the burnout, the output value of Output No. 1 can be set arbitrarily, the output value of Output No. 2 is fixed at 0% and the high limit alarm is set to ON (for the upscale burnout).
- *The burnout is disabled in DC voltage (±100mV or more), DC current and resistance thermometer (4-wire type).

**Input impedance:**
- Thermocouple 1MΩ or more
- DC voltage 1MΩ or more
- DC current Approx. 250Ω

**Allowable signal source resistance:**
- Thermocouple 1000Ω or less
- DC voltage (mV) 1000Ω or less
- DC voltage (V) 3000Ω or less

**Allowable wire resistance (resistance thermometer):**
- 5Ω or less (same resistance for all wires)

**Rated current (resistance thermometer):**
- Approx. 1mA

**Maximum allowable input:**
- Thermocouple ±20V, DC voltage ±20V
- DC current ±30mA, ±7.5V
- Resistance thermometer 500Ω, ±5V

**Maximum common mode voltage:**
- 30VAC

**Common mode rejection ratio:**
- 130dB or more (50/60Hz)

**Normal mode rejection ratio:**
- 50dB or more (50/60Hz)

### DISPLAY SPECIFICATIONS

**Display element:**
- Upper display LED
- Lower display LCD (with back light) 108 x 24 dots

**Display content:**
- 1PV 5-digit, 5V 5-digit, status indications, etc.
- Lower display
  - MV, output status, setting screens, etc.

### CONTROL SPECIFICATIONS

**Control cycle:**
- Approx. 0.1 seconds

**Output type:**
- ON-OFF pulse type, ON-OFF servo type, Current output type, SSR drive pulse type, Voltage output type

**ON-OFF pulse type:**
- Output signal
  - ON-OFF pulse conductive signal
- Contact capacity
  - Resistor load 100 to 240VAC
  - 30VDC 5A or less
  - Inductive load 100 to 240VAC
  - 30VDC 2.5A or less
  - Smallest load 5VDC 10mA or more
- Contact protection
  - Small CR element built-in

**ON-OFF servo type:**
- Output signal
  - ON-OFF servo conductive signal
- Contact capacity of standard load
  - Resistor load 100 to 240VAC 30VDC 5A or less
  - Inductive load 100 to 240VAC 30VDC 2.5A or less
  - Smallest load 5VDC 10mA or more
- Contact capacity of very light load
  - Resistor load 100 to 240VAC 30VDC 20mA or less
  - Inductive load 100 to 240VAC 30VDC 20mA or less
  - Smallest load 5VDC 1mA or more
- Feedback resistance
  - 100Ω to 2kΩ
- Contact protection
  - Small CR element built-in

**Current output type:**
- Output signal
  - 4 to 20mA
  - Load resistance
  - 750Ω or less
  - SSR drive pulse type
  - Output signal
    - ON-OFF pulse voltage signal
  - Output voltage
    - ON voltage
      - 12VDC ±20%
    - OFF voltage
      - 0.8VDC or less
    - Load current
      - 20mA or less
    - Pulse cycle
      - 1 to 180 seconds
    - Voltage output type
      - Output signal
        - 0 to 10V
        - Output impedance
          - Approx. 10Ω

### SETTING SPECIFICATIONS

**SV relations:**
- SV type (maximum 5 digits setting)

**SV rate of-change**

**Control relations:**
- PID 8 types
  - I 0 to 9999.9
  - D 0 to 9999 seconds
  - A.R.W. (Anti reset windup)
    - High limit --- 0 to 100.0%
    - Low limit --- -100 to 0.0%

**Output relays:**
- Output deadband
  - Output preset
  - Output limiter 8 types
  - Rate-of-change limiter for output 8 types

**Alarm relations:**
- Alarm value
  - 4 points
  - 8 types
  - Alarm types: alarm deadband

### ALARM SPECIFICATIONS

**Number of alarm points:**
- 4 points

**Alarm types:**
- Absolute value alarm, deviation alarm

**Output signal:**
- Relay output signal (a contact)
  - 1 common terminal for AL1 and AL2, 1 common terminal for AL3 and AL4
  - Contact capacity
    - Resistor load 100 to 240VAC 30VDC 3A or less
    - Inductive load 100 to 240VAC 30VDC 1.5A or less
    - Smallest load 5VDC 10mA or more
### GENERAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Spec</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated power voltage</td>
<td>General power supply specifications 100 to 240VAC 24V power supply specifications 24VAC/24VDC</td>
</tr>
<tr>
<td>Rated power supply frequency</td>
<td>General power supply specifications 50/60Hz 24V power supply specification 50/60Hz (24VAC)</td>
</tr>
<tr>
<td>Maximum power consumption</td>
<td>General power supply specifications 1000VAC 10VA 24VAC 15VA 240VAC 20VA 24V power supply specifications 24VAC 15VA 24VDC 10W</td>
</tr>
<tr>
<td>Working temperature range</td>
<td>-10 to 50°C</td>
</tr>
<tr>
<td>Working humidity range</td>
<td>10 to 90%RH</td>
</tr>
</tbody>
</table>

### POWER SUPPLY FREQUENCY

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>General power supply specifications 50/60Hz</td>
<td>24V power supply specifications 50/60Hz (24VAC)</td>
</tr>
<tr>
<td>General power supply specifications 24VAC/24VDC</td>
<td>General power supply specifications 24VAC/24VDC</td>
</tr>
</tbody>
</table>

### SAFETY STANDARD

- **CE**: EN61326: 1997+A1+A2+A3  
  EN61010-1: 2001 (Overvoltage category II, pollution degree 2)  
  * Under the test conditions of EMC directives, there may be variation of indication value or output value which is equivalent to maximum ±10% or maximum 2mV, whichever is greater.  
- **UL**: UL61010-1 2nd edition  
  c-UL: CAN/CSA C22.2 No.61010-1-04

### REFERENCE OPERATING CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>23°C ± 2°C</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>55%RH ± 5% (no dew condensation)</td>
</tr>
<tr>
<td>Power voltage</td>
<td>General power supply specifications 100VAC ± 1% 24V power supply specifications 24VDC ± 1%</td>
</tr>
<tr>
<td>Power supply frequency</td>
<td>General power supply specifications 50/60Hz ± 0.5% 24V power supply specifications DC</td>
</tr>
<tr>
<td>Mounting angle</td>
<td>Forward or backward ±3°, lateral ±3°</td>
</tr>
<tr>
<td>Installation height</td>
<td>Altitude 2000m or below</td>
</tr>
<tr>
<td>Vibration</td>
<td>0m/s²</td>
</tr>
<tr>
<td>Shock</td>
<td>0m/s²</td>
</tr>
<tr>
<td>Mounting condition</td>
<td>Single-unit panel mounting (Space above, below, right and left of the unit is needed.)</td>
</tr>
<tr>
<td>Wind</td>
<td>None</td>
</tr>
<tr>
<td>External noise</td>
<td>None</td>
</tr>
<tr>
<td>Warm up time</td>
<td>30 min. or longer</td>
</tr>
</tbody>
</table>

### NORMAL OPERATING CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>-10°C to 50°C (-10°C to 40°C for closed mounting)</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>10 to 90%RH (no dew condensation)</td>
</tr>
<tr>
<td>Power voltage</td>
<td>General power supply specifications 90 to 264VAC 24V Power supply specifications 21.6 to 26.4VDC/AC</td>
</tr>
<tr>
<td>Power supply frequency</td>
<td>General power supply specifications 50/60Hz ± 2% 24V Power supply specifications DC, 50/60Hz ± 2%</td>
</tr>
<tr>
<td>Mounting angle</td>
<td>Forward or backward ±10°, lateral ±10°</td>
</tr>
<tr>
<td>Installation height</td>
<td>Altitude 2000m or below</td>
</tr>
<tr>
<td>Vibration</td>
<td>2m/s²</td>
</tr>
<tr>
<td>Shock</td>
<td>0m/s²</td>
</tr>
<tr>
<td>Mounting condition</td>
<td>Single-unit panel mounting (Space above and below of the unit is needed.)</td>
</tr>
<tr>
<td>External noise</td>
<td>None</td>
</tr>
<tr>
<td>Rate of ambient temperature change</td>
<td>10°C/hour or less</td>
</tr>
</tbody>
</table>

### TRANSPORT CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>-20°C to 60°C</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>5 to 90%RH (no dew condensation)</td>
</tr>
<tr>
<td>Vibration</td>
<td>4.9m/s² (10 to 60Hz)</td>
</tr>
<tr>
<td>Shock</td>
<td>392m/s²</td>
</tr>
<tr>
<td>Under the condition that the unit is packed for shipment by the factory</td>
<td></td>
</tr>
</tbody>
</table>

### STORAGE CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>-20°C to 60°C</td>
</tr>
<tr>
<td>For long term storage, the temperature should be 10°C to 30°C.</td>
<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>5 to 90%RH (no dew condensation)</td>
</tr>
<tr>
<td>Vibration</td>
<td>0m/s²</td>
</tr>
<tr>
<td>Shock</td>
<td>0m/s²</td>
</tr>
<tr>
<td>Under the condition that the unit is packed for shipment by the factory</td>
<td></td>
</tr>
</tbody>
</table>

### NOTES

- Maximum power consumption: Between secondary terminals and ground terminal 20MΩ or more (500VDC)  
- Between primary terminals and secondary terminals 20MΩ or more (500VDC)  
- Between primary terminals and ground terminal 20MΩ or more (500VDC)  
- Between secondary terminals and ground terminal 20MΩ or more (500VDC)  
- *Primary terminal: Terminals for power supply (100 to 240VAC), control output and alarm output

### SERVICE CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Details</th>
</tr>
</thead>
</table>
| Insulation resistance            | Between primary terminals and secondary terminals 20MΩ or more (500VDC)  
|                                  | Between primary terminals and ground terminal 20MΩ or more (500VDC)  
|                                  | Between secondary terminals and ground terminal 20MΩ or more (500VDC)  
| With options                     | 100VAC 10VA 24VAC 15VA 240VAC 20VA (1 minute)  
| With options                     | 1500VAC (1 minute)  
| With options                     | 1500VAC (1 minute)  
| With options                     | 1500VAC (1 minute)  
| With options                     | 500VAC (1 minute)  
| With options                     | *Primary terminal: Terminals for power supply (100 to 240VAC), control output and alarm output

### CASING

- **Casing**: Fire-retardant polycarbonate  
- **Color**: Gray or black  
- **Mounting**: Panel mounting  
- **External dimensions**: 96 (H) x 96 (W) x 127 (D)  
  *The depth from the front panel is 120mm.*  
- **Weight**: Without options: Approx. 450g
  With options: Approx. 580g
**OPTIONS**

- **Transmission signal output**
  
  Output a signal corresponding to set value (SV), process value (PV), manipulated value (MV), etc.
  
  - **Number of output:** 1 point
  - **Output signal:** 4 - 20mA (Load resistance 400Ω or less)
  - 0 - 1V (Output resistance Approx.10Ω, Load resistance 50kΩ or more)
  - 0 - 10V (Output resistance Approx.10Ω, Load resistance 50kΩ or more)
  - **Output accuracy:** ±0.1% of full scale

- **Remote signal input**

  By using external contacts, switching of remote mode and local mode is enabled. With the remote mode, the setting of SV is enabled by remote signal.
  
  - **Number of inputs:** 1 point
  - **Input signal:** 4 - 20mA (Input impedance Approx.50Ω)
  - 0 - 1V (Input impedance Approx. 500kΩ)
  - 0 - 10V (Input impedance Approx.100kΩ)
  - **Input accuracy:** ±0.1% ± 1digit
  
  - **Remote signal input:** R/L (Remote/Local)

- **Communications interface**

  With RS232C, RS422A or RS485, the setting and measured values of the controller can be transmitted to a master CPU and various parameters can be set by the master CPU.
  
  - **Number of communications points:** 1 point
  - **Communications type:** RS232C, RS422A, RS485
  - **Communications speed:** 2400/4800/9600/19200/38400 bps
  
  - **Protocol:** MODBUS (RTU), MODBUS (ASCII), PRIVATE

- **2-output type**

  2 kinds of output with direct and reverse actions are outputted and simultaneous control of heating/cooling is enabled.
  
  - **Control cycle:** Approx. 0.1 seconds
  - **Output type:** ON-OFF pulse type, Current output type, Voltage output type, SSR drive pulse type
  - **Any combinations of these types are enabled.
  
  - **Control system:** PID system

- **External set value switching**

  The selection of executing No. (SV) is enabled.
  
  - **Number of inputs:** 4 points
  - **Input signal:** No-voltage contact, open-collector signal
  - **External contact capacity:** 5VDC 2mA

- **Panel sealing**

  By mounting the controller to a panel, it has the panel sealing equivalent to [IP54 compliance].

- **Terminal cover**

  It covers the terminals for safe. The cover is transparent.

---

**DETAILED SPECIFICATIONS OF ACCURACY RATINGS**

<table>
<thead>
<tr>
<th>Input type</th>
<th>Accuracy rating</th>
<th>Exceptional specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>±0.1%±1digit</td>
<td>Less than 400°C: Not specified / 400°C to less than 800°C: ±0.2% ± 1 digit 0°C to less than 400°C: ±0.2% ± 1 digit</td>
</tr>
<tr>
<td>R, S</td>
<td></td>
<td>-200°C to less than 0°C: ±0.2% ±1digit or the value equivalent to ±60μV, whichever is greater</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>-270°C to less than 0°C: ±0.2% ±1digit or the value equivalent to ±60μV, whichever is greater</td>
</tr>
<tr>
<td>K</td>
<td></td>
<td>-200°C to less than 0°C: ±0.2% ±1digit or the value equivalent to ±80μV, whichever is greater</td>
</tr>
<tr>
<td>E</td>
<td>±0.2%±1digit</td>
<td>-270°C to less than 0°C: ±0.2% ±1digit or the value equivalent to ±40μV, whichever is greater</td>
</tr>
<tr>
<td>J</td>
<td></td>
<td>-200°C to less than 0°C: ±0.2% ±1digit or the value equivalent to ±40μV, whichever is greater</td>
</tr>
<tr>
<td>T</td>
<td></td>
<td>-200°C to less than 0°C: ±0.2% ±1digit or the value equivalent to ±40μV, whichever is greater</td>
</tr>
<tr>
<td>U</td>
<td></td>
<td>-200°C to less than 0°C: ±0.2% ±1digit or the value equivalent to ±40μV, whichever is greater</td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>0°C to less than 400°C ±0.3% ±1 digit</td>
</tr>
<tr>
<td>WRe5-WRe26</td>
<td>±0.2%±1digit</td>
<td>0K to less than 200K: ±0.5% ±1 digit / 20K to less than 50K: ±0.3% ±1 digit</td>
</tr>
<tr>
<td>W</td>
<td></td>
<td>0°C to less than 100°C: Not specified / 100°C to less than 200°C: ±0.5% ±1 digit</td>
</tr>
<tr>
<td>W-Re26</td>
<td>±0.2%±1digit</td>
<td>0°C to less than 400°C ±1.5% ±1 digit / 400°C to less than 800°C: ±0.8% ±1 digit</td>
</tr>
<tr>
<td>NiMo-Ni</td>
<td></td>
<td>For the measuring range of [−100°C to 100°C] only: ±0.15% ±1digit</td>
</tr>
<tr>
<td>Platinel II</td>
<td>±0.1%±1digit</td>
<td>For the measuring range of [-100°C to 100°C] only: ±0.15% ±1digit</td>
</tr>
</tbody>
</table>


* The above ratings are the measurement range conversion accuracies under the reference operating conditions.
### TERMINAL ARRANGEMENT

![Terminal Arrangement Diagram]

**Option terminals**

Communications interface (1st zone)  | Transmission signal output (2nd zone)  | Remote signal input (3rd zone)  | External set value switching  
--- | --- | --- | ---
R  | A  | S  | 1/2/3/4  | 5/6/7/8  
RD  | RDA  | SA  |  |  
SD  | RDB  | SB  |  |  
SG  | SDA  | SG  |  |  
SDB  |  |  |  |  
R/L only  | R/L only  | R/L only  |  |  
COM  | COM  | COM  |  |  

R: RS232C  | A: RS422A  | S: RS485  

**B**

1st  | 2nd  | 3rd zone  
--- | --- | ---
※  |  |  
※  |  |  
SV8  |  |  
SV4  |  |  
SV2  |  |  
SV1  |  |  
COM  |  |  

Based on combination with other options, assign the zone in the above order.

※: Preset manual or remote A/M switching terminals (option)
### EXTENAL DIMENSIONES

#### PANEL CUTOUT

- Closed mounting panel dimensions

#### ABOUT CRIMP STYLE TERMINALS

- Ring type
- Spade type

*Use terminal with insulation.*

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