The DB2000 series is a 96×96mm digital indicating controller with the indicating accuracy of ±0.1% and the control cycle of approximately 0.1 seconds. The configuration of highly functional system is enabled by various options including 2 transmission signal outputs, 2 communications ports and arbitrarily-allocation of digital inputs.

**FEATURES**

**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.

**Versatile control functions provided**
Versatile control functions, such as the automatic PID system, which executes control by PID parameters preset at every SV sections, and selection of the 2-output control system from PID system and split system for 2-output types, are available.

**Communications 2-port type provided**
Models with 2 communications ports are available. In addition, speeding up and highly-functionalization of communications have been realized. For example, you can use 1 port for high order communications with a personal computer and another port for the communications remote (digital remote) function. The communications protocol can be arbitrarily selected from [MODBUS] and [PRIVATE].

**Transmission signal 2-output type available**
2 types of transmission signal output, the high-precision type (0.1% of full scale) and the general type (0.3% of full scale), are available. Transmission signal 2-output types with these 2 transmission signal outputs and models with transmitter power supply are available.

**READY function provided**
Although the DB2000 series is the constant value controller, switching to the state (READY) that any control is not wanted is enabled. In addition, the output value (MV) at READY can be set arbitrarily.

**DI arbitrarily-allocation**
When the digital input (DI) is added, arbitrarily-allocation for assigning functions to those DI's is enabled. It is the function enabling allocations such as [READY/RUN] to DI1 and [Manual output operation/Automatic output operation] to DI2.

**Heater disconnection alarm**
The heater disconnection alarm can be added to ON-OFF pulse types or SSR drive pulse types only. By connecting the designated CT externally, the current value of heater is measured and can be indicated on the operation screen.

**Other functions**
Various functions including multiple auto-tuning, timer function using the digital input (DI), control loop abnormality alarm and user calibration are built-in.

**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 *1
  - 3: Current output type PID *1
  - 5: SSR drive pulse type PID *1
  - 6: Voltage output type PID *1
  - 7: Remote signal input (0 - 1V)
  - 8: Remote signal input (0 - 10V)
  - 9: Heater disconnection alarm *2
- **1st zone**
  - 0: None
  - 5: Remote signal input (4 - 20mA)
  - 6: Remote signal input (0 - 1V)
  - 7: Remote signal input (0 - 10V)
  - 8: Remote signal input (Others)
  - 9: Heater disconnection alarm *2
- **2nd zone**
  - 0: None
  - 1: Transmission signal output (High precision type 4 - 20mA)
  - 2: Transmission signal output (High precision type 0 - 1V)
  - 3: Transmission signal output (High precision type 0 - 10V)
  - 4: Transmission signal output (High precision type Others)
  - 5: Transmission signal output (General type 4 - 20mA)
  - 6: Transmission signal output (General type 0 - 1V)
  - 7: Transmission signal output (General type 0 - 10V)
  - 9: Heater disconnection alarm *2
- **2nd PLUS zone**
  - 0: None
  - J: 2nd transmission signal output *3
  - (General type 4 - 20mA)
  - K: 2nd transmission signal output *3
  - (General type 0 - 1V)
  - L: 2nd transmission signal output *3
  - (General type 0 - 10V)
  - H: Transmitter power supply *4
- **3rd zone**
  - 0: None
  - R: Communications 1 port (RS232C) + 2 Digital inputs
  - A: Communications 1 port (RS422A)
  - B: Communications 2 ports (RS485) + 2 Digital inputs
  - C: Communications 2 ports (RS232C) + 2 Digital inputs
  - D: Communications 2 ports (RS422A)
  - E: Communications 2 ports (RS485) + 2 Digital inputs
  - F: Communications 2 ports (RS485) + 2 Digital inputs
  - G: Communications 2 ports (RS485) + 2 Digital inputs
  - 9: Heater disconnection alarm *2
- **P: Digital inputs**
  - M: 4 Digital inputs + Heater disconnection alarm *2
  - N: 6 Digital inputs + Heater disconnection alarm *2
  - V: 6 Digital inputs + Heater disconnection alarm *2
- **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)
  - B: 24VAC/24VDC

---

### MEASURING RANGES

#### Universal input

<table>
<thead>
<tr>
<th>Measuring range</th>
<th>Scale range</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>0.0 to 1800℃</td>
</tr>
<tr>
<td>R</td>
<td>0.0 to 1760℃</td>
</tr>
<tr>
<td>S</td>
<td>0.0 to 1200℃</td>
</tr>
<tr>
<td>K</td>
<td>-200 to 1370℃</td>
</tr>
<tr>
<td>E</td>
<td>-200 to 300℃</td>
</tr>
<tr>
<td>J</td>
<td>-200 to 1200℃</td>
</tr>
<tr>
<td>T</td>
<td>-200 to 200℃</td>
</tr>
<tr>
<td>WR65-WR26</td>
<td>0.0 to 2310℃</td>
</tr>
<tr>
<td>WR26</td>
<td>0.0 to 2310℃</td>
</tr>
<tr>
<td>NiMo-Ni</td>
<td>-50 to 1410℃</td>
</tr>
<tr>
<td>CR-AuFe</td>
<td>0.0 to 280℃</td>
</tr>
<tr>
<td>N</td>
<td>0.0 to 1300℃</td>
</tr>
<tr>
<td>PtRh 40-PtRh 20</td>
<td>0.0 to 1850℃</td>
</tr>
<tr>
<td>Platine II</td>
<td>0.0 to 1390℃</td>
</tr>
<tr>
<td>U</td>
<td>-200 to 400℃</td>
</tr>
<tr>
<td>L</td>
<td>-200 to 900℃</td>
</tr>
<tr>
<td>10mV</td>
<td>-10 to 10mV</td>
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<td>50mV</td>
<td>-50 to 50mV</td>
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<tr>
<td>5V</td>
<td>-5 to 5 V</td>
</tr>
<tr>
<td>10V</td>
<td>-10 to 0 V</td>
</tr>
<tr>
<td>DC current</td>
<td>0 to 20 mA</td>
</tr>
<tr>
<td>JPH100</td>
<td>-200 to 649℃</td>
</tr>
<tr>
<td>JPH50</td>
<td>-200 to 649℃</td>
</tr>
<tr>
<td>Pt100</td>
<td>0 to 850℃</td>
</tr>
<tr>
<td>Pt100</td>
<td>-200 to 400℃</td>
</tr>
<tr>
<td>Pt100</td>
<td>-200 to 200℃</td>
</tr>
<tr>
<td>Pt100</td>
<td>-100 to 100℃</td>
</tr>
</tbody>
</table>

#### 4-wire resistance thermometer

<table>
<thead>
<tr>
<th>Measuring range</th>
<th>Scale range</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPH100</td>
<td>-200 to 649℃</td>
</tr>
<tr>
<td>JPH50</td>
<td>-200 to 649℃</td>
</tr>
<tr>
<td>Pt100</td>
<td>0 to 850℃</td>
</tr>
<tr>
<td>Pt100</td>
<td>-200 to 400℃</td>
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<td>Pt100</td>
<td>-200 to 200℃</td>
</tr>
<tr>
<td>Pt100</td>
<td>-100 to 100℃</td>
</tr>
</tbody>
</table>

**Standards**

- WRe5-WRe26, W-WRe26, NiMo-Ni, Platine II, CR-AuFe, PtRh 40-PtRh 20: ASTM Vol. 14.03
- U, L: DIN43710 -1985
- JPH100: JIS C 1604 -1981, JIS C 1600 -1986
- JPH50: JIS C 1604 -1981
## NAMES OF VARIOUS PARTS

### Display

1. **Operation status (RUN) indication**
   - Lights in operation.
2. **Slope (SLOPE) indication**
   - Lights in slope operation of SV.
3. **Ready state (READY) indication**
   - Lights during idling.
4. **Alarm-standby (WAIT) indication**
   - Lights in alarm-standby status or when alarm is cancelled.
5. **Remote (REM) indication**
6. **Executing set value number (NO.) indication**
7. **Error (ERR) indication**
   - Lights when sampling of input is abnormal.
8. **Auto-tuning operation (AT) indication**
   - Lights in auto-tuning operation.
9. **Manual operation (MAN1/MAN2) indication**
   - Lights when the output No.1 or No. 2 is in manual output operation.
10. **Process value (PV) indication**
11. **Set value (SV) indication**
12. **Alarm activation (AL1 to 4) indication**
13. **LCD display**

### Function keys

10. 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.
11. It is used to switch the operation screen or to switch the settings screen.
12. It is used for switching between the automatic output operation and the manual output operation.
13. It is used for moving the cursor and for selecting a parameter.
14. It is used for changing a setting value (or selecting a parameter) in descending or ascending order.
15. It is used for registering the settings.
16. **Engineering port**
**INPUT SPECIFICATIONS**

**Input type:** Thermocouple  
B, R, S, K, J, T, N, WRe5-WRe26, W-WRe26, NiMo-Ni, CR-AuFe, PR5-20, PtRh40-PtRh20, Platinel II, L  
DC voltage: ±10mV, ±20mV, ±50mV, ±100mV, ±5V, ±10V  
DC current: 0 to 20mA  
Resistance thermometer: Pt100, JPt100, Old Pt100, JPt50, Pt-Co  
Measuring range:  
Thermocouple: 28 ranges  
DC voltage: 6 ranges, Direct 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 (at ambient temperature of 23°C ± 10°C)

**Resolution:** Approximately 1/30000

**Sampling rate:** Approximately 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 at ON (for the upscale burnout).  
*The burnout is disabled in DC voltage (±100mV or more), DC current, resistance temperature (4-wire type).*

**Input impedance:**  
Thermocouple: 1MΩ or more  
DC voltage: 1MΩ or more  
DC current: Approximately 250Ω

**Allowable signal source resistance:**  
Thermocouple: 100Ω or less  
DC voltage (mV): 100Ω or less  
DC voltage (V): 300Ω or less

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

**Rated current (resistance thermometer):**  
Approximately 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)

---

**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:  
Resistive 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 pulse cycle: 1 to 180 seconds

**ON-OFF servo type:**  
Output signal: ON-OFF servo conductive signal  
Contact capacity of standard load:  
Resistive 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:  
Resistive 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: Approximately 10Ω  
Load resistance: 50kΩ or more

**Output limiter:**  
-5.0 to 105.0%

**Rate-of-change limiter for output:**  
0.1 to 100.0%

**Output preset:**  
With P action (Settings of I and D = 0), Output at PV = SV, -100.0 to 100.0%

**Output deadband:** In case of 2-position control (Setting of P = 0), Setting range 0.1 to 9.9%

**Control action:** With direct/reverse selection

**Output at PV abnormality:** Over-range, under-range, abnormal internal data

**Manual output operation:**  
Output by manual setting: -5.0 to 105.0%  
MAN → AUTO Balanceless bumpless  
AUTO → MAN Keeping output at AUTO

---

**SETTING SPECIFICATIONS**

**SV relations:**  
SV 8 types (maximum 5 digits setting)

**SV range, SV rate-of-change**

**Control relations:**  
PID 8 types  
P: 0 to 999.9%  
I: ∞, 1 to 9999 seconds  
D: 0 to 9999 seconds

**A.R.W. (Anti reset windup)**  
High limit: 0 to 100.0%  
Low limit: -100 to 0.0%

**Output relations:**  
Output deadband 8 types

**Output preset 8 types**

**Output limiter 8 types**

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

---

**DISPLAY SPECIFICATIONS**

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

**Display content:**  
Upper display: PV 5-digit, SV 5-digit, status indications, etc.  
Lower display: MV, output status, setting screens, etc.
**ALARM SPECIFICATIONS**

Number of alarm points: 4 points

Alarm types: Absolute value alarm, deviation alarm, absolute value deviation alarm, setting value alarm, output value alarm, control loop abnormality alarm, FAIL, timer

Output signal: Relay output signal (a contact)
1 common terminal for AL1 and AL2, 1 common terminal for AL3 and AL4

Contact capacity
- Resistive 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**

Rated power voltage: General power supply specifications 100 to 240VAC
24V Power supply specifications 24VAC/24VDC

Rated power supply frequency:
- General power supply specifications 50/60Hz
- 24V Power supply specification 50/60Hz (24VAC)

Maximum power consumption:
- General power supply specifications
  - Without options: 100VAC 10VA
  - 240VAC 15VA
  - With options: 100VAC 15VA
  - 240VAC 20VA
- 24V power supply specifications
  - Without options: 24VAC 10VA
  - 24VDC 5W
  - With options: 24VAC 15VA
  - 24VDC 10W

Working temperature range: -10 to 50°C
Working humidity range: 10 to 90%RH
Power failure countermeasures: Settings stored in EEPROM
(Rewrite count: One million times or less)

Terminal screws: M3.5
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)

* Primary terminal: Terminals for power supply (100 to 240VAC), control output and alarm output

Withstand voltage:
- Between primary terminals and secondary terminals: 1500VAC (for 1 minute)
- Between primary terminals and ground terminal: 1500VAC (for 1 minute)
- Between secondary terminals and ground terminal: 500VAC (for 1 minute)

* Primary terminal: Terminals for power supply (100 to 240VAC), control output and alarm output

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

**SAFTY 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**

Ambient temperature: 23°C ± 2°C
Ambient humidity: 55%RH ± 5% (no dew condensation)
Power voltage: General power supply specifications 100VAC ± 1%
24V power supply specifications 24V ± 1%

Power supply frequency:
- General power supply specifications 50/60Hz ± 0.5%
- 24V power supply specifications DC

Mounting angle: Forward or backward ±3°, lateral ±3°
Installation height: Altitude 2000m or below
Vibration: 0m/s²
Shock: 0m/s²
Mounting condition: Single-unit panel mounting (Space above, below, right and left of the unit is needed.)
Wind: None
External noise: None
Warm up time: 30 min. or longer

**NORMAL OPERATING CONDITIONS**

Ambient temperature: -10°C to 50°C (-10°C to 40°C for closed mounting)
Ambient humidity: 10 to 90%RH (no dew condensation)
Power voltage: General power supply specifications 90 to 264VAC
24V Power supply specifications 21.6 to 26.4VDC/AC

Power supply frequency:
- General power supply specifications 50/60Hz ± 2%
- 24V Power supply specifications DC, 50/60Hz ± 2%

Mounting angle: Forward or backward ±10°, lateral ±10°
Installation height: 2m/s²
Vibration: Altitude 2000m or below
Shock: 0m/s²
Mounting condition: Single-unit panel mounting (Space above and below of the unit is needed.)
External noise: None
Rate of ambient temperature change: 10°C/hour or less

**TRANSPORT CONDITIONS**

Ambient temperature: -20°C to 60°C
Ambient humidity: 5 to 90%RH (no dew condensation)
Vibration: 4.9m/s² (10 to 60Hz)
Shock: 392m/s²

Under the condition that the unit is packed for shipment by the factory

**STORAGE CONDITIONS**

Ambient temperature: -20°C to 60°C
For long term storage, the temperature should be 10°C to 30°C.
Ambient humidity: 5 to 90%RH (no dew condensation)
Vibration: 0m/s²
Shock: 0m/s²
Under the condition that the unit is packed for shipment by the factory
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>Thermocouple</td>
<td>±0.1%±1digit</td>
<td>Less than 400°C: Not specified / 400°C to less than 800°C: ±0.2%±1digit</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>0°C to less than 400°C: ±0.2%±1digit</td>
</tr>
<tr>
<td></td>
<td>K</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></td>
<td>E</td>
<td>-270°C to less than 0°C: ±0.2%±1digit or the value equivalent to ±80µV, whichever is greater</td>
</tr>
<tr>
<td></td>
<td>J</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></td>
<td>T</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></td>
<td>U</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></td>
<td>L</td>
<td>-270°C to less than 0°C: ±0.2%±1digit</td>
</tr>
<tr>
<td></td>
<td>WRe5-WRe26</td>
<td>0°C to less than 400°C: ±0.3%±1digit</td>
</tr>
<tr>
<td></td>
<td>W-VRe26</td>
<td>0°C to less than 400°C: ±0.3%±1digit</td>
</tr>
<tr>
<td></td>
<td>NiMo-Ni</td>
<td>0K to less than 200K: ±0.5%±1digit / 20K to less than 50K: ±0.3%±1digit</td>
</tr>
<tr>
<td></td>
<td>Platinel II</td>
<td>0°C to less than 100°C: Not specified / 100°C to less than 200°C: ±0.5%±1digit</td>
</tr>
<tr>
<td></td>
<td>CR-AuFe</td>
<td>0°C to less than 400°C: ±1.5%±1digit / 400°C to less than 800°C: ±0.8%±1digit</td>
</tr>
<tr>
<td>PR5-20</td>
<td>±0.2%±1digit</td>
<td>For the measuring range of [-100°C to 100°C] only: ±0.15%±1digit</td>
</tr>
<tr>
<td>PRh40-PRh20</td>
<td>±0.1%±1digit</td>
<td>4K to less than 20K: ±0.5%±1digit / 20K to less than 50K: ±0.3%±1digit</td>
</tr>
</tbody>
</table>

DC voltage / DC current ±0.1%±1digit

Resistance thermometer ±0.1%±1digit

* The above ratings are the measurement range conversion accuracies under the reference operating conditions. For thermocouple inputs, the reference junction compensation accuracy is added.

WRe5-WRe26, W-VRe26, NiMo-Ni, Platinel II, CR-AuFe, PRh40-PRh20: ASTM Vol.14.03
U, L: DIN43710 - 1985
■ TERMINAL ARRANGEMENT

Option terminals

Options common to each zone

9  P  M  1st ➔ 2nd ➔ 3rd zone
CT  DI  CT
CT  DI  CT
DI  DI  DI
DI  DI  DI
DI  DI  DI
DI  DI  DI
COM  COM  COM

9 : Heater disconnection alarm
P : Digital input 6 points
M : Digital input 4 points + Heater disconnection alarm

Remote signal input (1st zone)
5/6/7/8

Transmission signal output (2nd zone)
1/2/3/4  J/K/L  H  J/K/L  1/2/3/4  J/K/L

R/L only
COM

3rd zone

<table>
<thead>
<tr>
<th>Terminals</th>
<th>R</th>
<th>A</th>
<th>S</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<th>V</th>
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<tbody>
<tr>
<td>RD</td>
<td>RD</td>
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<td>SA</td>
<td>RD1</td>
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<td>SA1</td>
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<td>SA1</td>
<td>DI</td>
<td>CT</td>
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R : Communications RS232C + Digital input 2 points
A : Communications RS422A
S : Communications RS485 + Digital input 2 points
B : Communications RS232C + Communications RS232C
C : Communications RS232C + Communications RS422A
D : Communications RS423C + Communications RS485
E : Communications RS423C + Communications RS485
F : Communications RS485 + Communications RS422A
G : Communications RS485 + Communications RS485
H : Digital input 8 points
U : Digital input 6 points + Heater disconnection alarm
V : Digital input 6 points + Heater disconnection alarm

1/2/3/4 : High-precision type
J/K/L : General type
H : Transmitter power supply
● ABOUT CRIMP STYLE TERMINALS

- Ring type
  - 7 or less
  - φ5.7 or less
  - (in pressed condition)

- Spade type
  - 7 or less
  - φ3.7 or less
  - (in pressed condition)

*Use terminal with insulation

■ EXTERNAL DIMENSIONS

- Panel cutout

- Closed mounting panel dimensions

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