This recorder can record a maximum of 6 channels of DC voltage, mA, thermocouples and resistance bulbs. The adoption of an ink jet system makes it possible to record measured data in analog trace mode or to print in digital mode at a high speed. This 100mm-wide recorder performs recording clearly in 6 different colors.

FEATURES

1. Compact size
   Compact and lightweight design, 199mm in depth and about 2.1kg in mass (weight).

2. High quality recording
   • Ink jet system is used for recording and printing measured data in 6 different colors at a high speed. Operating noise is minimized.
   • Six continuous traces without pen offset are possible with this compact size of recorder; a unique recording system is used for the first time in the industry.
   • Scale of each channel is printed on chart paper, eliminating the need for scales.

3. Easy setting of input signals
   DC voltage input (5mV span, 50V max.), 12 kinds of thermocouples (Type B, R, S, K, E, J, T, N, W, L, U, PN) and resistance bulbs (Pt100) can be set for each channel.

4. Digital printing
   Beside the analog recording of measured data, digital printing is also available (periodic printing, list printing, alarm printing, daily report printing, message printing).
   • Periodic data printing: Channel No., date, time, unit, chart speed, measured value
   • List printing: Date, time, unit, recording range, scaling value, alarm set value, chart speed, Tag No.
   • Alarm printing: Channel No., alarm type, on/off time, output relay No.
   • Daily report and totalized data printing: Printing of maximum, minimum, average and total of data measured during maximum 24 hours
   • Message printing: 10 messages, 16-character user-entered messages

5. Interactive key operation
   Fluorescent indicator is used to clearly indicate alphanumeric characters and symbols. Input mode, recording range, alarm value, chart speed, etc., can be set according to the comments indicated by the display and operating keys. No bothersome operation is required.

6. Easy handling
   • A cartridge type recording device is used for easy replacement.
   • Allow to draw out the chart paper while recording.
   • Shortage of ink is detected in early stages and an alarm is given to the operator.
   • The end of chart paper is detected and indicated on the front panel display.
   • Shortage of ink and the end of chart paper alarm output is possible.

7. Full variety of functions
   • Alarm relay output/external control (record start/stop, chart speed change, data printing, message printing). This unit can easily be connected to the recorder by user (option).
   • Chart paper illumination lamp (option): The result of printing can be checked even in lower light.
   • Burnout function is provided as a standard.
   • Various recording: Enlarged/reduced recording, auto-range recording, zone recording.
   • Calculation: Square root extraction, subtraction, engineering unit conversion, logarithm.
   • Language: Selectable 3 languages in display and printing.
   • Passcode security is configurable.
   • Transmission function: RS-485 (option)
   • The message print and alarm print function are operational, even when the recording mode is off.
   • All parameters of recording format, daily report, totalize, message and periodic data printing can be printed out.
SPECIFICATIONS

Input system

Input points: 3 or 6 continuous recording
6 intermittent recording

Input signal:
Thermocouple input...B, R, S, K, E, J, T, N, W, L, U, PN
Resistance bulb input...Pt100Ω
DC voltage input...50mV, 500mV, 5V, 50V range
DC current input...4 to 20mA DC, 10 to 50mA DC
(Shunt resistor (option) need to be connected to the terminal)

Max. input voltage:
- Thermocouple, resistance bulb and
DC voltage (50mV, 500mV range)
...±10VDC or less
- DC voltage input (5V, 50V range)
...±100VDC or less

Input signal setting and change:
Setting and change of input signal between thermocouple, resistance bulb and DC voltage (50mV, 500mV, 5V, 50V range) is possible for each channel by the setting pin in the instrument.

Setting of recording range:
Setting is possible within the reference range by using the keyboard.

Burnout function: When thermocouple or resistance bulb input is disconnected, the recording is deflected to 100%.

Reference range:

<table>
<thead>
<tr>
<th>Kind</th>
<th>Reference range</th>
<th>Reference range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermocouple</td>
<td>400 to 1760°C</td>
<td>752 to 3200°F</td>
</tr>
<tr>
<td>R</td>
<td>0 to 1760°C</td>
<td>32 to 3200°F</td>
</tr>
<tr>
<td>S</td>
<td>0 to 1760°C</td>
<td>32 to 3200°F</td>
</tr>
<tr>
<td>K</td>
<td>-200 to 1370°C</td>
<td>-328 to 2498°F</td>
</tr>
<tr>
<td>E</td>
<td>-200 to 800°C</td>
<td>-328 to 1472°F</td>
</tr>
<tr>
<td>J</td>
<td>-200 to 1100°C</td>
<td>-328 to 2012°F</td>
</tr>
<tr>
<td>T</td>
<td>-200 to 400°C</td>
<td>-328 to 752°F</td>
</tr>
<tr>
<td>N</td>
<td>0 to 1300°C</td>
<td>32 to 2372°F</td>
</tr>
<tr>
<td>W</td>
<td>0 to 1760°C</td>
<td>32 to 3200°F</td>
</tr>
<tr>
<td>L</td>
<td>-200 to 900°C</td>
<td>-328 to 1652°F</td>
</tr>
<tr>
<td>U</td>
<td>-200 to 400°C</td>
<td>-328 to 752°F</td>
</tr>
<tr>
<td>PN</td>
<td>0 to 1300°C</td>
<td>32 to 2372°F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resistance bulb</th>
<th>Reference range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt100</td>
<td>-200 to 600°C</td>
</tr>
</tbody>
</table>

DC voltage
-50 to +50mV
-500 to +500mV
-5 to +5V
-50 to +50V

Scaling is possible within the range of -32767 to +32767 (decimal point may be put as necessary).

Note: N: Nicrosil/Nisil (IEC584)
W: +side 5% Re, side 26% Pt 18% ReW (Hoskins Mfg. Co., U.S.A.)
L: +side Fe, side CuNi alloy (DIN43710)
U: +side Cu, side CuNi alloy (DIN43710)
PN: Platinel
Pt100: DIN IEC751

Recording system

Writing system: Ink jet system, 6 colors
Chart width: 100mm
Recording color: No. 1 channel (orange), No. 2 channel (green), No. 3 channel (purple), No. 4 channel (red), No. 5 channel (black), No. 6 channel (blue)
Recording color can be assigned for each channel.

Chart length: Z fold 15.08m
Chart speeds: Continuous recording type
5 to 400 mm/h, continuous recording
401 to 1500 mm/h, intermittent recording
Intermittent recording type
5 to 1500 mm/h
Each can be set in 1 mm/h steps.

Recording cycle:
Intermitter recording...30 sec/all points
Continuous recording...Depends on chart speed.
<Calculation formula>
Recording cycle [sec] = Chart speed [mm/h] / (not faster than 2 seconds.)

Measuring cycle: Up to 3 inputs...160ms
6 inputs...320ms

Service life of ink: (Depends on operating conditions)
About 6 months for 6 points of linear recording at 20 mm/h of chart speed

Chart handling: Tear off without disturbance of recording.

Indicating system

Indication: Fluorescent indication (blue-green), 20 characters x 2 lines
Characters indicated:
5 x 7 dots, 4.16mm high, 2.25mm wide

Contents of indication:
(1) Measured value:
- Temperature...1 digit below decimal point;
- Voltage...6 digits (including sign and decimal point)
- Measured value of No.1 channel to No.6 can be indicated simultaneously.
(2) Channel No.: 1 digit (1 to 6)
(3) Engineering unit: Max. 7 digits (°C, °F, %, Pa, bar, ppm, m/h, etc.)
(4) Tag No....8 characters
(5) Time: Year, month, day, hour, minute
(6) Status indication: Record ON, chart end, battery alarm, alarm, ink short-age alarm, burnout, carriage failure

Configuration:
These can be set according to the comments indicated by operating keys as follows,
Passcode
Main chart speed
Sub chart speed
Alarm setting
Record mode (trend/logging)
Recording range
Input signal
List print request
Tag No.
Daily report setting
Totalize function
Communication parameter
Date and time setting
Ink monitor clear
Illumination on/off
Message definition
Measured value shift
### Printing system

**Writing system:** Ink jet system, 6 colors

**Periodic data printing:**
- Measured value, unit, date, time, line, chart speed, channel No.
- (1) Measured value list (date, time, channel No., measured value, unit)
- (2) Parameter list (date, time, channel No., recording range, scaling, unit, alarm set value, chart speed, Tag No.)
- (3) Test pattern (all characters and color patterns)

**List printing:**
- 10 messages, 16-character user-entered messages

**Alarm printing:**
- Channel No., alarm type (H, L, RH, RL), output relay No., on/off time

**Burnout printing:**
- Burnout channel No. and time

**Message printing:** 10 messages, 16-character user-entered messages

**Alarm printing:**
- Channel No., alarm type (H, L, RH, RL), output relay No., on/off time

**Burnout printing:**
- Burnout channel No. and time

**Other:**
- Ink shortage message, automatic range selection mark, recording start mark, chart speed change mark

**Note:** Printing is not available for more than 401 mm/h (continuous recording), or more than 51 mm/h (intermittent recording).

### Performance and characteristics

**Accuracy and resolution:**
Performance under reference condition (23±2°C, 65±10%RH, power voltage and frequency variation ±1%, warm-up time 30 minutes or more, vertical mounting, free from the effect of external noise.

<table>
<thead>
<tr>
<th>Thermocouple</th>
<th>Indication (digital)</th>
<th>Recording Accuracy</th>
<th>Resolution</th>
<th>Indication accuracy, ±0.25% of recording span</th>
</tr>
</thead>
<tbody>
<tr>
<td>B R S K E J T N W U L PN</td>
<td>±(0.15% +1 digit) (without reference junction compensation error)</td>
<td>0.1°C</td>
<td>0.1°C</td>
<td>0.1°C</td>
</tr>
<tr>
<td>Pt100</td>
<td>±(0.15% +1 digit)</td>
<td>0.1°C</td>
<td>0.1°C</td>
<td>0.1°C</td>
</tr>
<tr>
<td>DC voltage</td>
<td>-50 to +50mV</td>
<td>±(0.15% +1 digit)</td>
<td>10μV</td>
<td>10μV</td>
</tr>
<tr>
<td></td>
<td>-500 to +500mV</td>
<td>±(0.15% +1 digit)</td>
<td>100μV</td>
<td>100μV</td>
</tr>
<tr>
<td></td>
<td>-5 to +5V</td>
<td>±(0.15% +1 digit)</td>
<td>1mV</td>
<td>1mV</td>
</tr>
<tr>
<td></td>
<td>-50 to +50V</td>
<td>±(0.15% +1 digit)</td>
<td>10mV</td>
<td>10mV</td>
</tr>
</tbody>
</table>

**Note:**
- Indication accuracy is in % of reference range.
- Indication accuracy of B type TC is ±(0.36% +1digit) between 400°C to 600°C.
- Indication accuracy of all type TC is ±(0.36% +1digit) between -20°C to +100°C.

**Input resistance:**
- Thermocouple: >10MΩ
  - 50mV range: >10MΩ
  - 50mV range: >100kΩ
  - 5V and 50V range: >1MΩ
- Chart speed accuracy:
  - ±0.1% (expansion and contraction of paper is not included)
- Clock accuracy:
  - ±50ppm or less (monthly error; about 2 minutes)
- Insulation resistance:
  - 100MΩ or more (between each terminal and earth, at 500V DC)

**Withstand voltage:**
- Input terminal - input terminal...500V AC, 1 minute
- Power supply terminal - ground...2000V AC, 1 minute
- Input terminal - ground...500V AC, 1 minute
- Power terminal - input terminal...500V AC, 1 minute
- Between alarm terminals...750V AC, 1 minute

**Reference junction compensation accuracy:**
- K, E, J, T, N, L, U, PN ............ ±0.5°C
  (In case of minus input measurement: ±1.2°C)
- R, S, B, W .......................... ±1°C
  (In case of minus input measurement: ±2.4°C)

**Common mode noise rejection:**
- 120dB at 50, 60Hz ±0.1Hz

**Series mode noise rejection:**
- 30dB at 50, 60Hz ±0.1Hz

### Physical data

**Mounting:**
- Panel (may be inclined up to 30° backwards from the vertical.)

**Material:**
- Case...Steel plate
- Front door frame...Polycarbonate with glass wool

**Mass (weight):**
- Approx. 2.1 kg (without option)
- Approx. 2.2 kg (with option)

**Case size:**
- Bezel 144x144mm
- Depth 199mm
- Cutout 137x137mm

**Finish color:**
- Case...Black, Front door frame...Black

**External terminals:** Screw terminal (M4 screw)

### Power requirement

1) **Supply voltage 100 to 240V AC products (9digit of code symbol = “D”)**

- **Power supply voltage:**
  - 100V (-15%) to 240V (+10%) AC (Free power supply)
- **Supply frequency:**
  - 50/60Hz both employable
- **Power consumption:**
  - 100V AC with all options approximately 26VA

2) **Supply voltage 24V DC products (9digit of code symbol = “L”)**

- **Power supply voltage:**
  - 24V (±10%) DC
- **Power consumption:**
  - 26.4V DC with all options 26VA or less
### Operating environment

(for devices to operate continuously)

**Usage environment:** Indoor

**Temperature limits:**
0 to 50°C

**Humidity limits:**
20 to 80% RH, non-condensing is required

**Vibration:**
10 to 60 Hz, 0.2 m/s² (0.02 G) or less

**Mounting position:**
Front inclination 0°, rear inclination 30°, left/right inclination 0°

**Signal source resistance or wiring resistance influence:**
- Thermocouple: 10 μV per 100 Ω
- Voltage input: Variation of 0.1% change of resistance
- Resistance bulb: Variation of resistance with changes in 10 Ω per wire

**Temperature influence:**
- Change in indication: ±0.3% (1 digit) /10°C, max.
- Change in recording: ±0.5%/10°C, max.

**Mounting position influence:**
- Inclination within 30°
- Change in indication: ±0.1% (1 digit) max.
- Change in recording: ±0.2% of recording span, max.

**Vibration influence:**
- Linear vibration with 10 to 60 Hz of frequency and 0.2 m/s² (0.02 G) of acceleration is applied to each of 3 directions for 2 hours.
- Change in indication: ±0.1% (1 digit) max.
- Change in recording: ±0.2% of recording span, max.

### Operating environment influence

**Effect of power supply fluctuation:**
1. Supply voltage 100 to 240 V AC products (9th digit of code symbol = "D")
   - Voltage variation: 85 to 264 V AC
   - Frequency: 50/60 Hz 100 V AC base
     - Change in indication: ±(0.1% + 1 digit) max.
     - Change in recording: ±0.2% of recording span, max.
   - Frequency variation: 47 to 63 Hz
     - Power voltage: 100 V AC 50 Hz base
     - Change in indication: ±(0.1% + 1 digit) max.
     - Change in recording: ±0.2% of recording span, max.
2. Supply voltage 24 V DC products (9th digit of code symbol = "L")
   - With 21.6 to 26.4 V DC fluctuation, 24 V DC base
     - Change in indication: ±(0.1% + 1 digit) max.
     - Change in recording: ±0.2% of recording span, max.

**Input signal source resistance or wiring resistance influence:**
- Thermocouple: 10 μV per 100 Ω
- Voltage input: Variation of 0.1% change of resistance
- Resistance bulb: Variation of resistance with changes in 10 Ω per wire

**Alarm**

**Setting method:** Setting from keyboard

**Number of alarm levels:**
Max. 4 levels for each channel

**Alarm types:**
- High (H), Low (L), High-rate of change (RH), Low-rate of change (RL)

**Alarm action indication:**
- Kind of alarm and output relay No. are indicated for each channel at occurrence of alarm.

**Printing:**
Channel No., kind of alarm, output relay No. and on/off time are printed on chart paper.

**Output:**
See optional specifications.

**Hysteresis:**
Approx. 0.5% of recording span

**Alarm timing:**
- Recognition: 1 second (worst case)
- Action: additional 1 second (worst case)

**Alarm latch:**
Hold the alarm display and alarm output.

**Others:**
- Shortage of ink and the end of chart paper alarm output is possible.

### Transportation/storage condition

(Detach a recording head from the main unit before transportation)

**Temperature limits:**
-10 to 60°C

**Humidity limits:**
5 to 90% RH, non-condensing is required

**Vibration:**
10 to 60 Hz, 2.45 m/s² (0.25 G)

**Shock:**
294 m/s² (30 G) or less
Optional specifications

1. Chart illumination:
   LED

2. Alarm output/3-point external control:
   This unit can be mounted from the rear side of the recorder.
   (1) Alarm output (DO):
       6 points of relay contact N.O. (1a) or N.C. (1b) output for individual channel operation or common operation
   Contact capacity:
       N.O. contact 240V AC/3A
       30V DC/3A (resistive load)
       N.C. contact 125V AC/0.4A
       30V DC/2A (resistive load)
   Only following specifications obtain UL approval.
       1a contact 30V AC/30V DC 3A (resistive load)

   (2) External control (DI):
       The following control is possible with external contact signal.
       • Recording start/stop:
         Recording start/stop is effected by contact signal. Recording is started when contact is closed and stopped when contact is open.
       • Chart speed change:
         Selection between normal and remote chart speeds is effected by contact signal. Remote chart speed is selected when contact is closed and normal when contact is open.
       • Measured value printing:
         Measured value list printing (date, time, channel No., measured value, unit) is effected by contact signal. Printing is started when contact is closed.
       • Message printing
         Note: For external control, use a dry contact. Contact capacity: 12V DC, 0.05A, N.O. (1a) contact

3. Transmission function:
   RS-485 interface for transmitting measured value and receiving the condition of setting.

   | Transmission method       | Half-duplex bit serial |
   | Synchronizing method      | Start-stop synchronizing |
   | Code                      | Binary Data length, 8 bits Parity: odd/even/none Stop bit: 1 or 2 |
   | Transmission speed        | 2400, 4800, 9600, 19200 bps |
   | Number of units connected | Max. 31 units |
   | Transmission distance     | Max. 1 km |

Remarks:
When connecting through RS-232C, be sure to use a 232 to 485 converter.
The following shows a recommended converter.
Maker: System Sakom Co., Ltd., Japan
Tel: +81-3-3797-0211
Type: K5-485

FUNCTIONS

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range setting</td>
<td>Recording range can be set for each channel.</td>
</tr>
<tr>
<td>Input setting</td>
<td>Any input can be set for each channel.</td>
</tr>
<tr>
<td>Skip function</td>
<td>Used to skip recording, indication and alarm at any measuring point.</td>
</tr>
<tr>
<td>Measured value list</td>
<td>Date, time, and measured value unit can be printed.</td>
</tr>
<tr>
<td>Parameter list</td>
<td>Date, time, recording range, scaling, unit, kind of input, alarm set value, chart speed, and Tag No. can be printed.</td>
</tr>
<tr>
<td>Test pattern</td>
<td>All characters and color patterns can be printed.</td>
</tr>
<tr>
<td>Periodic data printing function</td>
<td>Time, date, chart speed, measured value and unit can be printed at fixed intervals. Printing can be enabled/disabled from keyboard.</td>
</tr>
<tr>
<td>Message printing function</td>
<td>Maximum 10 messages, 16-character user-entered messages can be printed.</td>
</tr>
<tr>
<td>Alarm printing function</td>
<td>Time, channel No., kind of alarm, and output relay No. can be printed when alarm is on or off.</td>
</tr>
<tr>
<td>Unit indication</td>
<td>Engineering units such as °C, °F, %, mV, mA, Pa, l, etc., are indicated (setting from key board).</td>
</tr>
<tr>
<td>Scaling function</td>
<td>Scaling with DC voltage input is possible. (Setting of decimal point is also possible within the range of -32767 to +32767).</td>
</tr>
<tr>
<td>Subtract function</td>
<td>Difference between any channels is recorded (channel is set from keyboard).</td>
</tr>
<tr>
<td>Logarithm</td>
<td>Measured value can be displayed and printed by 10^n power.</td>
</tr>
<tr>
<td>Auto-range recording</td>
<td>Recording range is automatically changed for recording in the event of overrange or under-range (setting with keyboard). This function is not available for combination of zone recording and enlarged/reduced recording.</td>
</tr>
<tr>
<td>Zone recording</td>
<td>Recording area is divided into a maximum of 3 zones for recording. This function is not available for combination of automatic range selection and enlarged/reduced recording.</td>
</tr>
<tr>
<td>Enlarged/reduced recording</td>
<td>A part of recording area of each channel is expanded or contracted for recording. This function is not available for combination of automatic range selection and zone recording.</td>
</tr>
<tr>
<td>Square-root extraction function</td>
<td>Square-root extraction of DC voltage input is possible.</td>
</tr>
<tr>
<td>Daily report function</td>
<td>Measured value of every hour for maximum one day (24 data) in each channel is stored for printing. Maximum, minimum and average values are also printed at the same time. ON-OFF operation, ON-OFF of each channel and operation start time/stop time can be set from keyboard.</td>
</tr>
<tr>
<td>Totalize function</td>
<td>Integrated value of every hour for maximum one day (24 data) in each channel is stored for printing (integration in 1 sec steps). Possible to print total value only. Total value is also printed at the same time. ON-OFF operation, ON-OFF of each channel and operation start time/stop time can be set from keyboard.</td>
</tr>
<tr>
<td>Measured value shift</td>
<td>Shift the zero point and inclination of the measured value so that the measured value can be adjusted according to other instruments.</td>
</tr>
<tr>
<td>Memory backup</td>
<td>Set data and clock function are protected by built-in lithium battery (expected battery life, about 10 years under normal temperature).</td>
</tr>
<tr>
<td>Input filter</td>
<td>Response is delayed according to sudden changes in input of each channel (1st order lag filter). Time constant setting range: 0 to 900 sec (setting from keyboard).</td>
</tr>
<tr>
<td>Burnout function</td>
<td>When thermocouple or resistance bulb input is disconnected, it is deflected 100%. Also, it is indicated and printed at the same time.</td>
</tr>
<tr>
<td>Passcode</td>
<td>4 digits passcode security is available.</td>
</tr>
<tr>
<td>Language</td>
<td>English, German, or French is selectable for display and printing.</td>
</tr>
</tbody>
</table>
### SCOPE OF DELIVERY

Recorder, panel mounting bracket, accessories (ink cartridge (1), chart paper (1), ink absorption cloth (1)). Instruction manual (1).

Note: Ink cartridge is not mounted on the recorder at the time of delivery.

#### Spare parts

<table>
<thead>
<tr>
<th>Item</th>
<th>Part No.</th>
<th>Unit of quantity for sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ink cartridge</td>
<td>PHZH1002</td>
<td>1 pc</td>
</tr>
<tr>
<td>Chart paper (0 to 50, 50 uniform division)</td>
<td>PEX00DL1-5000B</td>
<td>1 box (6 charts)</td>
</tr>
</tbody>
</table>

#### Other (optional items)

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shunt resistor PHZT1101</td>
<td></td>
<td>For 10Ω ± 0.1%</td>
</tr>
<tr>
<td>Alarm output/external control unit PHZK1601</td>
<td>With 6-point alarm output (N.O.)/3-point external control</td>
<td></td>
</tr>
<tr>
<td>Alarm output/external control unit PHZK1611</td>
<td>With 6-point alarm output (N.C.)/3-point external control</td>
<td></td>
</tr>
</tbody>
</table>

The product conforms to the requirements of the Electromagnetic compatibility Directive 89/336/EEC as detailed within the technical construction file number TN510406. The applicable standards used to demonstrate compliance are:

- EN 50081-1 :1992 Conducted and Radiated emissions
- EN 50082-1 :1992 Radiated immunity, ESD and FBT

--

### CODE SYMBOLS

<table>
<thead>
<tr>
<th>1 2 3 4 5 6 7 8 9 10 11 12 13</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHC</td>
<td>Recording points</td>
</tr>
<tr>
<td>D</td>
<td>3 continuous recording</td>
</tr>
<tr>
<td>C</td>
<td>6 continuous recording</td>
</tr>
<tr>
<td>B</td>
<td>6 intermittent recording</td>
</tr>
<tr>
<td>A</td>
<td>Power Supply</td>
</tr>
<tr>
<td>Y</td>
<td>100 to 240V AC 50/60Hz Note 1</td>
</tr>
<tr>
<td>R</td>
<td>24V DC</td>
</tr>
<tr>
<td>D</td>
<td>Chart paper illumination</td>
</tr>
<tr>
<td>L</td>
<td>Without</td>
</tr>
<tr>
<td>A</td>
<td>With</td>
</tr>
<tr>
<td>0</td>
<td>Alarm output/external control</td>
</tr>
<tr>
<td>1</td>
<td>Without</td>
</tr>
<tr>
<td>2</td>
<td>6-point alarm output (N.O.)/3-point external control Note 2</td>
</tr>
<tr>
<td>3</td>
<td>6-point alarm output (N.C.)/3-point external control Note 1</td>
</tr>
<tr>
<td>4</td>
<td>Transmission function</td>
</tr>
<tr>
<td>5</td>
<td>Without</td>
</tr>
<tr>
<td>R</td>
<td>With RS-485 Note 1</td>
</tr>
</tbody>
</table>

Note 1) This is not conformed to UL61010-1:2001 approval.

Note 2) This is conformed to UL approval with conditions attached.

Please refer to "Optional specifications" on page 5.

**Remarks:**

- Input signal:
  - Thermocouple K: 0 to 1200°C

- Contact Fuji Electric for additional features not listed such as Flow integration record and Calculation of input signals.

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**Alarm latch function**

The alarm display and alarm output are held even after the cause of alarming was gone. ON-OFF operation can be set from keyboard. Cancellation of the held alarm can be made from external control (D).

**Parameter copy**

Set parameters on any channel can be copied to any other channels.

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**Parameter copy**

Set parameters on any channel can be copied to any other channels.
CONNECTION DIAGRAMS

Input terminal

- Resistance bulb
- Thermocouple
- Voltage
- ... Input 1
- ... Input 2
- ... Input 3
- ... Input 4
- ... Input 5
- ... Input 6
- Transmission (option)

Alarm/external control unit (option)

- DI 1
- DI 2
- DI 3
- Alarm 1
- Alarm 2
- Alarm 3
- Alarm 4
- Alarm 5
- Alarm 6

Power terminal

- Power source 100 to 240V AC 50/60Hz
- Power source 24V DC

AC

AC

G

+ 

- 

G

Note: Alarm relay contact is selectable N.O. or N.C. by Code Symbols.
Caution on Safety

*Before using this product, be sure to read its instruction manual in advance.

Fuji Electric Co., Ltd.

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