2. MOUNTING

In order to prevent electric shock or instrument failure, always mount or remove this instrument after power supplied to the entire system is turned off.

2.1 Mounting Environment

(1) The instrument is intended to be used under the following environmental conditions.
   • LAE0E, C22.2 N°14 (UL) POLLUTION DEGREE 2
   • Power supply voltage: 100 or more (20 or more for 200 or more)
   • Excessive current (Rated current) 190
   • Rated voltage 245 W

(2) Use the instrument within the following environment conditions.
   • Allowable ambient temperature: 0 to 50 °C.
   • Temperature characteristic of G5A type is the same as that for 200A type.

2.2 Mounting Cautions

Take the following points into consideration when mounting this instrument.

• Mount this instrument in the direction shown below.

• Provide adequate heat radiation spaces so that heat does not build up.
   - At least 20 cm in necessary on the left and right side and at least 100 cm on the top and bottom.
   - The temperature inside the control panel increases due to heat generation of this instrument itself.
   - Therefore, take into account full ventilation by mounting forced ventilation fans on the panel.

2.3 Dimensions

The above manuals can be downloaded from the official RKC website:

3. WIRING

To prevent electric shock or instrument failure, do not turn on the power until all wiring is completed. Make sure that the wiring is correct before applying power to the instrument.

3.1 Wiring of Main Circuit

• Always conduct wiring so that the phase of the main circuit (2/T1) coincides with that of terminal No. 4 and the phase of the main circuit (2/T1) on the transformer.
• The temperature characteristic of G5A type is the same as that for 200A type.

3.2 Wiring of Control Circuit

• Always conduct wiring so that the phase of the control circuit (2/T1) coincides with that of terminal No. 5, 6 and 7 (C7, C6, C5).

3.3 Wiring of Input/Output Cables

• Always conduct wiring so that the phase of the input/output lines coincides with that of terminal No. 2 and 3, and that of the transformer.

4. MOUNTING

Mount this instrument in the direction shown below.

 WARNING
Do not touch the heat radiation fin while the power is turned on or just after the power is turned off as it may be at high temperatures.
If touched, burning may result.

 CAUTION
This product is intended for use with industrial machinery. Test and measuring equipment. It is not designed for use with medical equipment and nuclear energy.

CAUTION
This is a Class I instrument. This instrument may cause radio interference. Therefore, take the necessary measures to avoid the interference.

 CAUTION
This product is mounted external to the instrument, and the product is exposed to electric shock by uncontrolled personnel.

 CAUTION
This product is a high-voltage instrument. When the input terminal is open, there is a potential difference between the input terminals and the earthed metal parts.

 CAUTION
This product is a high-voltage instrument. Be sure to provide an appropriate surge circuit respectively for the following:
   - In a normal input signal from the controller, the total length is 50 meters.
   - If input/output signal lines are to be used, use shielded cables with twisted pair wiring. Shield the cable with conductive shielding material.

 CAUTION
This product is not intended for use in locations subject to flammable or explosive gases.
Do not touch high-voltage connections such as power supply terminals, etc. to avoid electric shock.
When the withstand voltage test or each test is performed, please contact RKC sales office or the agent. If you make a mistake in the last method, the instrument failure may result.

 CAUTION
RKC is not responsible if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

CAUTION
Always treat the power line and the input/output lines with the protection devices such as fuses, etc., in the following conditions.

• If the product is defective or is damaged, it may be treated for hazardous noise or may be damaged. Therefore, in this case, take such measures as separating the power line from the main circuit and the cable from the input/output lines.

• Prevent metal fragments or lead wires from falling inside instrument case to avoid electric shock and malfunction.

• Turn both terminal screws to the specified torque found in the manual to avoid electric shock, fire or malfunction.

• For proper operation of this instrument, provide adequate ventilation for heat dispersion.

• Do not connect wires to unscrewed terminals as this will interfere with proper operation of the instrument.

• Turn off the power supply before cleaning the instrument.

• Do not use a volatile solvent such as paint thinner to clean the instrument. Deformation or discoloration of the surface will result in a soft, dry cloth to remove stains from the instrument.

• To avoid damage to instrument display, do not rub with an abrasive material or push front panel with hand objects.

• Do not connect modular connectors to telephone line.

2.4 Mounting Procedures

1. Prepare the holes as specified in 2.3 Dimensions.
2. Insert the mounting screws into the holes.
3. Mount the mounting positions (4 holes) at the top and bottom of the instrument onto the partially mounting screws.

3.1 Wiring of Main Circuit

• Always conduct wiring so that the phase of the main circuit (2/T1) coincides with that of terminal No. 4 or 7 (C7, C6, C5).
• Otherwise the instrument may not function properly.

 CAUTION
Be sure to provide an appropriate surge control circuit respectively for the following:
• If the input/output or signal lines within the building are longer than 30 meters.
• If the input/output or signal lines leave the building, regardless the length.

 CAUTION
This product is designed to be mounted within a control panel. If not, the instrument may be damaged.
All wiring must be in accordance with local codes and regulations.

 CAUTION
This product is a Class A instrument. In a domestic environment, this instrument may cause radio interference.

 CAUTION
When inserting control current into the instrument, be sure to use a surge control circuit.

 CAUTION
When selecting the mounting location, be sure to consider the following factors:

• The figures, diagrams and numeric values used in this manual are only for purpose of illustration.

• Periodic maintenance is required for safe and proper operation of this instrument. Some components have a service life as that changes the characteristic over time.

• To prevent instrument failure or indirect damage.

WARNING
Always conduct wiring so that the phase of the main circuit (2/T1) coincides with that of terminal No. 4 or 7 (C7, C6, C5).

 CAUTION
This product is not designed for use with medical equipment and nuclear energy.

 CAUTION
This product is a high-voltage instrument. Be sure to provide an appropriate surge circuit respectively for the following:
   - In a normal input signal from the controller, the total length is 50 meters.
   - If input/output signal lines are to be used, use shielded cables with twisted pair wiring. Shield the cable with conductive shielding material.

CAUTION
This product is a high-voltage instrument. Be sure to provide an appropriate surge circuit respectively for the following:

• If input/output or signal lines within the building are longer than 30 meters.
• If input/output or signal lines leave the building, regardless the length.
When using a solderless terminal lug, use ring type.

### Wiring diagram of main circuit
Always conduct wiring so that the phase of the main circuit (27T) coincides with that of terminal No. 1 and the phase of the main circuit (13T), with that of terminal No. 5. Otherwise the instrument may not function properly or the load may be damaged.

#### 3.3 Wiring for External Manual Mode, External Gradient Setting and Contact Input

##### Input connector pin number and details

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Details</th>
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<tbody>
<tr>
<td>1</td>
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<td>12</td>
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</tbody>
</table>

**For the setting, refer to THV-A1 Quick Operation Manual (MR80027-E2).**

#### Wiring of alarm output connector

- Alarm output: The type of alarm that is output must be selected with alarm 1 output logic (L1) or alarm 2 output logic (L2) after wiring is completed.

**For the setting, refer to THV-A1 Quick Operation Manual (MR80027-E2).**

#### Wiring of external input terminal

**For voltage input (0 or 5 V DC, 1 to 5 V DC) or voltage pulse input (0/12 V DC, 0/24 V DC) woo...**

### 3.4 Protective Earth (PE) Terminal

- Protective earth on other devices to the location where you earth this device.
- Avoid sharing earth line with electric motors, motorized equipment, and other equipment that uses large amounts of electricity.
- In the earth system, be careful to earth each point and not to create a earth loop.
- Connect so that the earth resistance is less than 100 Ω.
- Use wire of at least 2.5 mm² for earth line.

**For the setting, refer to THV-A1 Quick Operation Manual (MR80027-E2).**

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**For alarm output, the type of alarm that is output must be selected with alarm 1 output logic (L1) or alarm 2 output logic (L2) after wiring is completed.**

**For the setting, refer to THV-A1 Quick Operation Manual (MR80027-E2).**