**Notice**

This manual assumes that the reader has fundamental knowledge of the principles of electricity, process control, computer technology and communications. The figures, diagrams and images are only for reference. RKC is not responsible for any damage or injury that is caused as a result of using this instrument, instrument failure or incorrect action. This manual is only for guidance for any damage and/or injury resulting from the use of instruments made by installing this instrument.

**Mounting Cautions**

- Provide adequate heat radiation space so that heat does not build up.
- At least 20 mm is necessary on the left and right and at least 100 mm 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.
- At least 20 mm is necessary on the left and right and at least 100 mm on the top and bottom.
- When there is no heat radiation space, forced ventilation fans are required.
- Load (Heater, etc.)

**SAFETY PRECAUTIONS**

- Always mount this instrument on a solid foundation.
- Be sure to provide an appropriate surge control circuit respectively for the following:
  - Alarm output connector [plug] (THVAP-C01) ................................................................................... 1
  - THV-A1 Installation Manual (IMR02D01-E5) ................................................................................... 1
  - THV-A1 Quick Operation Manual (IMR02D02-E5) ....... 1

**Product Check**

- Before mounting, check the following points.
  - Mounting dimensions
    - THV-A1 installation manual: 1
    - THV-A1 quick operation manual: 1

**Mounting Dimensions**

- The Timor-A1 must be used in accordance with the specifications to prevent electric shock or instrument failure, or incorrect action.
- Failure to follow this manual may result in damage to the instrument, equipment, instrument failure, or incorrect action.
- All precautions described in this manual should be taken to avoid damage to the instrument or equipment.
- Do not touch the heat radiation fins while the power is turned on or just after the power is turned off as it may be at high temperature. If touched, burning may result.

**Mounting Procedures**

- 1. Mounting Environment
  - If used in an environment with dust, salt or iron particles, the filter must be cleaned frequently. It is recommended that the instrument be removed from the environment after a period of 24 hours. (The rated current drops when the ambient temperature exceeds 45 °C.)

- 2. Mounting Cautions
  - Take the following points into consideration when mounting this instrument.
  - For correct functioning mount this instrument in the direction shown below.
  - If there is a misalignment between the mounting holes, adjust the instrument using the mounting holes.
  - Do not connect wires to unused terminals as this will interfere with proper operation of the instrument.

- 3. Dimensions
  - 20 A/30 A types
    - Unit: mm
    - Dimensions A
      - 144 x 20 A
      - 178.9 x 30 A
  - 45 A/60 A types
    - 148 x 45 A
    - 178.9 x 60 A
  - 80 A/100 A types
    - 182 x 80 A
    - 198 x 100 A

- 4. Mounting Procedures
  - 1. Prepare the holes as specified in 2.3 Dimensions.
  - 2. Mount the instrument on the back side of the control panel. The control panel is used by those well-versed in the controls of the equipment.
  - 3. Hook the mounting positions at the top and bottom of the instrument onto the partially mounting screws.
  - 4. Tighten the mounting screws with a screwdriver. (Recommended tightening torque: 2.84 Nm (20 kg-cm))
  - 5. Customer must provide the set of screws.
  - 6. Tighten the head securing screws (Size: M5, Length: 10 mm)
  - 7. Set the temperature controller full scale/zero scale and confirm with a scale plate. When the instrument is pulled on the scale plate, the arrow on the scale plate will be in line with the scale plate.

**Congratulations on your purchase of the RKC THV-A1 single-phase thyristor unit.**
3. Wiring of Main Circuit

3.1 Wiring for Connector (plug) wiring

- **Power supply voltage:** 90 to 264 V AC [Including power supply voltage variation] (Rating: 100 to 240 V AC)
- **Allowable power frequency variations:** ±1 Hz, 60 Hz

**Voltage pulse input:** 0/12 V DC, 0/24 V DC (Input impedance 60 kΩ)

**Dry contact input**

- **Control of primary side of a transformer:** The magnetic flux density must be 1.25 T [12,500 Gauss] or less when the protection function for control of primary side of a transformer is not provided.

3.2 Wiring of Input Signal

- **Voltage input:** 0 to 10 V DC, 1 to 5 V DC, 4 to 20 mA DC, Voltage pulse input 0/12 V DC, Voltage pulse input 0/24 V DC

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

- **Input connector pin number and details**

3.4 Protective Earth (PE) Terminal

- **Input and power supply terminals**

**Input connector**