1. OUTLINE

This instrument is a single-phase thyristor unit for power supply voltage 380 to 480 V, A. It is possible to adjust supply power suitable for heaters, etc. by setting the signal from the controller, setter (potentiometer, knob and scale plate) or front keys.

• Personal communication converter
• Loader communication
• Control controller
• Motor
• Water heater (not shown)
• Internal gradient setting, alarm setting, etc.
• Display unit
• Load (not shown)
• Mounting position (top)
• Mounting position (bottom)

1.2 Mounting Cautions

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

3. Wiring of Main Circuit

CAUTION

Make sure that the following supply voltage for the instrument and the supply voltage for the load works properly. The instrument may not work properly.

CAUTION

To avoid damage to instrument display, do not rub with an abrasive material or push front panel with a hard object.

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

• This is an Environment A instrument. In a domestic environment, this instrument may cause radio disturbance in the vicinity. Suppose the RLC is used in order to take additional measures.

• Be sure to provide an appropriate surge control circuit respectively for the following:
  (1) This instrument is intended to be used under the following environmental conditions.
  (2) Use this instrument within the following environment conditions:
  (3) Use this instrument within the following environment conditions:

2.1 Mounting Environment

The instrument is equipped to be used under the following environmental conditions:

• Absolute temperature: -20 to +50 °C

• Relative humidity: 0 to 100%

• Altitude: 0 to 2000 m

• Temperature characteristics: 125°C A-type in the same as that for 220 V A-type.

2.2 Mounting Cautions

Take the following points into consideration when mounting this instrument.

• The instrument must be mounted in a proper direction. When installing the instrument, observe mounting dimensions.

• Provide adequate heat radiation space so that heat does not build up.

• At least 100 mm is necessary on the left and right and at least 100 mm on the top and bottom.

• Set the potentiometer full counterclockwise and combine with a scale plate.

• Mounting screw

Customer must provide the set of screws.

Screw type: Pan-head screws
Recommended tightening torque: 3.6 Nm
Size: M6, Length: 10 mm

For dimensional details of a fuse holder, an output voltmeter and a stepdown transformer, refer to the THV-40 Instruction Manual (IMR02S03-E).

2.4 Mounting Procedures

1. Prepare the holes as specified in 2 Dimensions.

2. Place the instrument in mounting position.

3. Insert the mounting screws into the holes, then tighten them with a screwdriver.

• Mounting screw

Ingredient of 19.6 mm

At least 19.6 mm is necessary on the left and right and at least 100 mm on the top and bottom.

For dimensional details of a fuse holder, an output voltmeter and a stepdown transformer, refer to the THV-40 Instruction Manual (IMR02S03-E).

1. HAIR UNIT: 19.6 mm

40 50 60

0

10

20

30

40

50

60

80

100

80

48
3. Wiring of input signal

3.1 Wiring procedure for input signal

Make sure that the input signal switch set to the signal specified at the time of ordering. There is an input signal switch set under an Input/Output connector.

3.2 Wiring of input connector

When both of the gradient and manual setters are connected, connect the 0 V signal wires. Just connect a single wire to terminal 5.

Wiring of external gradient setter

Connect external gradient setter to pins 1, 2 and 3.

Wiring of external manual setter

Connect external manual setter to pins 2, 4 and 3.

Wiring of contact input

Connect to pins 6 and 7.

Wiring of setting unit

When both of gradient and manual setters are connected, connect the 0 V wires. Just connect a single wire to terminal 5.

Wiring of external gradient setter

Connect external gradient setter to pins 1, 2 and 3.

Wiring of external manual setter

Connect external manual setter to pins 2, 4 and 3.

Wiring of contact input

Connect to pins 6 and 7.

2. Correct output signals from a temperature controller, etc. to input terminal 1 (V) and 2 (I) of this instrument.

4.0 to 20 mA DC, 1 to 5 V DC, 0 to 10 V DC or 0/25 VA DC

Terminal screws size

1/4-20 UNF (1/4-20 UNF) or M3 (M3-0.5 x 12 mm square socket)

Pin number and details

- 2.5 V (Gradient setting input)
- 4.0 to 20 mA (Input)
- 1 to 5 V (Input)
- 0/25 VA (Input)
- Contact
- Input (Manual input)
- Manual mode input (manual input)
- Unused (Do not connect to device to terminal 4)
- Unused (Do not connect to device to terminal 4)
- Internal output connector (notched)
- Internal output connector (notched)

- Pin number 1
- Pin number 2
- Pin number 3
- Pin number 4
- Pin number 5
- Pin number 6
- Pin number 7

3.3 Input/Output Connector Pin Number and Details

Pin number and details

- 2.5 V (Gradient setting input)
- 4.0 to 20 mA (Input)
- 1 to 5 V (Input)
- 0/25 VA (Input)
- Contact
- Input (Manual input)
- Manual mode input (manual input)
- Unused (Do not connect to device to terminal 4)
- Unused (Do not connect to device to terminal 4)
- Internal output connector (notched)
- Internal output connector (notched)

- Pin number 1
- Pin number 2
- Pin number 3
- Pin number 4
- Pin number 5
- Pin number 6
- Pin number 7

Wiring of input/Output connector

Use the stranded terminals.

Stripping length: 8 mm

Power supply terminals (3, 4, 5, 6, 7)

Main circuit terminals (2/T1, 1/L1)

Input terminals (1, 2)

Power supply terminals (8)

Main circuit terminals (11, 12, 13, 14, 15, 16)

Input/Output connector (socket)

Input impedance of THV-40 input terminals

Voltage input or Voltage pulse input: Approx. 30 kΩ

Main circuit terminals (11, 12, 13, 14, 15, 16)

Input/Output connector (socket)

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