

**Preface**

Thank you for purchasing the AC voltage, AC current Transducer SC series. This manual contains instructions for the mounting, functions, operations and notes for operating the SB series. For model confirmation and unit specifications, please read this manual carefully before starting operation.

**To prevent accidents arising from the misuse of this instrument, please ensure the operator receives this manual.**

**Notes**

- This instrument should be used in accordance with the specifications described in the manual.
- If it is not used according to the specifications, it may malfunction or cause a fire.
- Be sure to follow the warnings, cautions and notices. If they are not observed, serious injury or accidents may occur.
- The contents of this instruction manual are subject to change without notice.
- Care has been taken to assure that the contents of this instruction manual are correct, but if there are any doubts, mistakes or questions, please inform our sales department.
- This instrument is designed to be installed on a DIN rail. Measures must be taken to ensure that power terminals or other high voltage sections cannot be touched.
- Any unauthorized transfer or copying of this document, in part or in whole, is prohibited.
- Shinko Technos Co., Ltd. is not liable for any damage or secondary damage(s) incurred as a result of using this product, including any indirect damage.

**Safety Precautions (Be sure to read this before using units)**

The safety precautions are classified into categories: "Warning" and "Caution". Depending on circumstances, procedures indicated by ⚠ Caution may cause serious results, so be sure to follow the directions for usage.

**⚠ Warning** Procedures which may lead to dangerous conditions and cause death or serious injury, if not carried out properly.

**⚠ Caution** Procedures which may lead to dangerous conditions and cause superficial to medium injury or physical damage or may degrade or damage the product, if not carried out properly.

**⚠ Warning**

- To prevent an electric shock or fire, only Shinko or other qualified service personnel may handle the inner assembly.
- To prevent an electric shock, fire or damage to the instrument, parts replacement may only be undertaken by Shinko or other qualified service personnel.

**⚠ Safety precautions**

- To ensure safe and correct use, thoroughly read and understand this manual before using this instrument.
- This instrument is intended to be used for industrial machinery, machine tools and measuring equipment. Verify correct usage after consulting purpose of use with our agency or main office. (Never use this instrument for medical purposes with which human lives are involved.)
- External protection devices must be installed, as malfunction of this product could result in serious damage to the system or injury to personnel. Also proper periodic maintenance is required.
- This instrument must be used under the conditions and environment described in this manual. Shinko Technos Co., Ltd. does not accept liability for any injury, loss of life or damage occurring due to the instrument being used under conditions not otherwise stated in this manual.

**Caution with respect to Export Trade Control Ordinance**

To avoid this instrument from being used as a component in, or as being utilized in the manufacture of weapons of mass destruction (i.e. military applications, military equipment, etc.), please investigate the end users and the final use of this instrument. In the case of resale, ensure that this instrument is not illegally exported.

**● Installation precautions**

**⚠ Caution**

This instrument is intended to be used under the following environmental conditions (IEC61010-1): Overvoltage category II, Pollution degree 2. Ensure the mounting location corresponds to the following conditions:

- A minimum of dust, and an absence of corrosive gases
- No flammable or explosive gases
- No mechanical vibrations or shocks
- No exposure to direct sunlight, an ambient temperature of -5 to 55°C (23 to 131°F) that does not change rapidly, and no icing
- An ambient non-condensing humidity of 35 to 85%RH
- No large capacity electromagnetic switches or cables through which large current is flowing
- No water, oil or chemicals or where the vapors of these substances can come into direct contact with the unit
- If the SC series is installed within a control panel, the ambient temperature of this unit must not exceed 55°C (131°F). Otherwise the life of electronic components (especially electrolytic capacitors) of the unit will be shortened.

**Note:** Avoid setting this instrument on or near flammable material even though the case of this instrument is made of flame-resistant resin.

**● Wiring precautions**

**⚠ Caution**

- Do not leave wire remnants in the instrument, because they could cause a fire or a malfunction.
- When wiring terminals, use solderless terminals with an insulation sleeve and crimping pliers applicable to terminals.
- This instrument has no built-in power switch or circuit breaker. It is necessary to install them near the instrument. (Recommended fuse: Time-lag fuse, rated voltage 250V AC, rated current 2A)
- For an AC power supply, be sure to use exclusive terminals as described in this manual. If the AC power supply is connected to incorrect terminals, the unit will burn out.
- For a DC power supply, do not confuse polarity when wiring.
- Keep the input/output wires and power line separate.

**● Operation and maintenance precautions**

**⚠ Caution**

- Do not touch live terminals. This may cause electric shock or problems in operation.
- Turn the power supply to the instrument OFF before cleaning.
- Working on or touching the terminal with the power switched ON may result in severe injury or death due to Electric Shock.
- Use a soft, dry cloth when cleaning the instrument. (Alcohol based substances may tarnish or deface the unit.)

**1. Model**

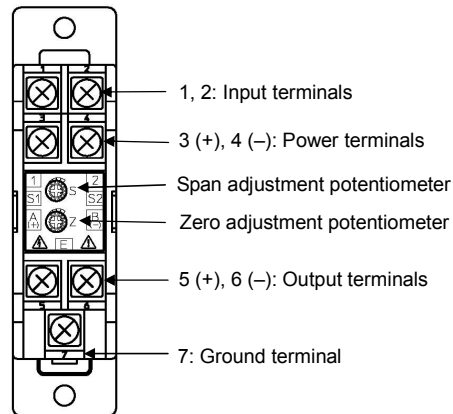
**1.1 Model**

SCPT-□ □ - □		AC voltage transducer (W25×H100×D128mm)
Input	01	0 to 150V AC
	02	0 to 300V AC
	03	0 to 86.6V AC
	04	0 to 110V AC
	05	Other
Output	01	4 to 20mA DC (Load resistance 600Ω or less)
	02	0 to 1mA DC (Load resistance 10kΩ or less)
	03	1 to 5V DC (Load resistance 1kΩ or more)
	04	0 to 5V DC (Load resistance 1kΩ or more)
	05	0 to 10V DC (Load resistance 1kΩ or more)
	06	Specified range
Power supply	0	85 to 264V AC/85 to 143V DC
	1	20 to 30V DC
	2	40 to 60V DC

SCCT-□ □ - □		AC current transducer (W25×H100×D128mm)
Input	01	0 to 5A AC
	02	0 to 1A AC
	03	0 to 6A AC
	04	Other
Output	01	4 to 20mA DC (Load resistance 600Ω or less)
	02	0 to 1mA DC (Load resistance 10kΩ or less)
	03	1 to 5V DC (Load resistance 1kΩ or more)
	04	0 to 5V DC (Load resistance 1kΩ or more)
	05	0 to 10V DC (Load resistance 1kΩ or more)
	06	Specified range
Power supply	0	85 to 264V AC/85 to 143V DC
	1	20 to 30V DC
	2	40 to 60V DC

**2. Name and functions of sections**

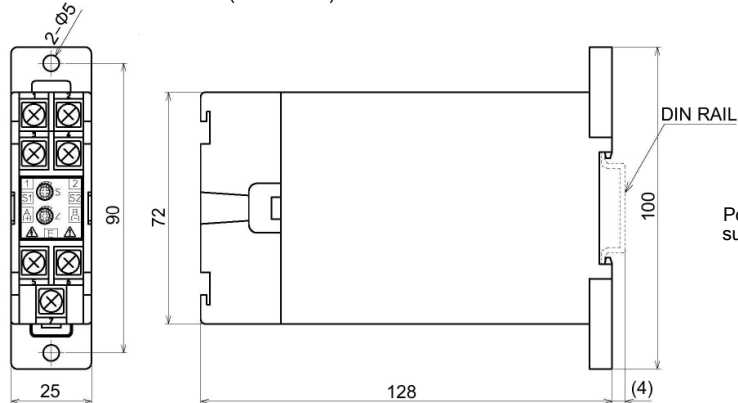
**● SCPT, SCCT**



(Fig 2-1)

## 3. Mounting

### 3.1 External dimensions (Scale: mm)

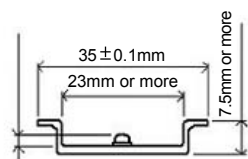


(Fig. 3.1-1)

### 3.2 Mounting to the DIN rail

#### ⚠ Notice

- Mount the DIN rail laterally.
- The following shows a DIN rail corresponding to the SC series. (Fig. 3.2-1)



(Fig. 3.2-1)

- Be sure to use commercially available fastening plates at both ends of the unit if it is in a position susceptible to vibration or shock.
- Do not confuse the top and bottom of this unit.
- When mounting to or removing the unit from the DIN rail, the units must be slanted a little.

Therefore do not mount any other instruments within a space of 50mm at the upside and downside from the unit, considering wiring space and heat radiation. When group mounting several units close together, ensure that 5mm or more of open space is kept on the right and left side.

#### Recommended fastening plate:

Manufacturer	Model
OMRON Corp.	End plate: PFP-M
IDEAC Corp.	Fastening plate: BNL6
Panasonic Electric Works Co., Ltd.	Fastening plate: ATA4806

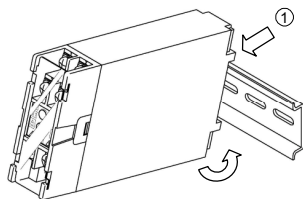
#### (1) Mounting and removal to/from the DIN rail

##### Mounting to the DIN rail

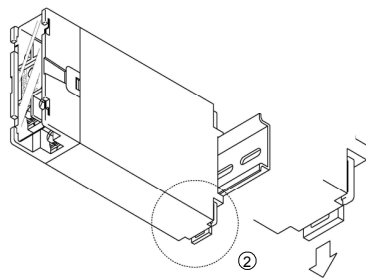
**First**, hook ① of the unit on the upper side of the DIN rail.

**Second**, making ① part of the unit as a support, fit the lower part of the unit to the DIN rail. The unit will be completely fixed to the DIN rail with a "Click" sound. (Fig. 3.2-2)

Fix the unit, using end plates at both ends of the unit.



(Fig. 3.2-2)



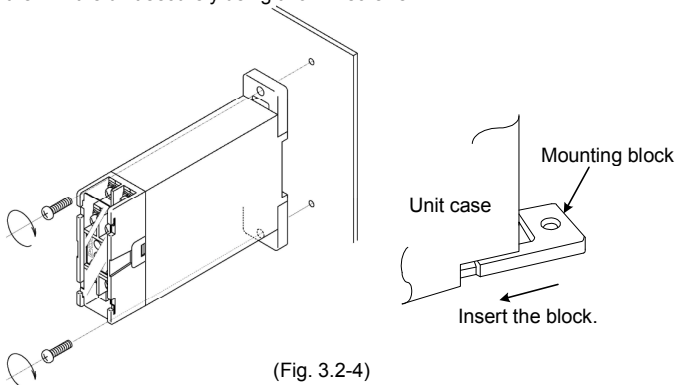
(Fig. 3.2-3)

##### Removal from the DIN rail

Insert a flat blade screwdriver into the release lever ②, and pull it down. The lock to the DIN rail will be released, then remove the unit from the DIN rail. Be sure to hold onto the unit or it will drop to the ground. (Fig. 3.2-3)

#### (2) Surface mounting

When mounting this unit with screws, insert the provided mounting block, then fix the unit securely using two M4 screws.

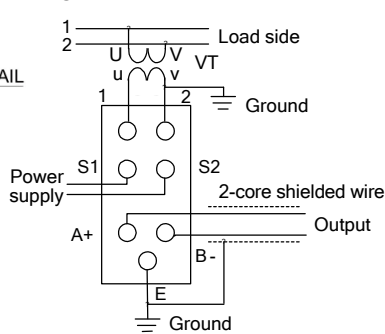


(Fig. 3.2-4)

## 4. Wiring

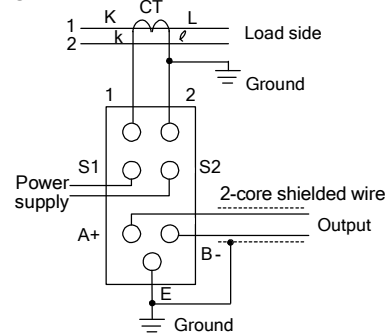
Use solderless terminals with an insulation sleeve in which an M4 screw fits and crimping pliers. (Fig. 4-1), (Fig. 4-2)

### SCPT



(Fig. 4-1)

### SCCT



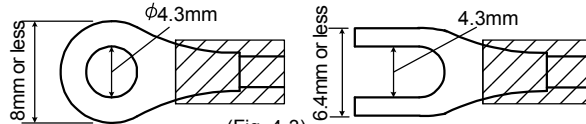
(Fig. 4-2)

- Ground one side of the VT and CT of the secondary side for safety. (For low voltage circuits, grounding is not required.)
  - For the output signal wiring, use 2-core shielded wire to reduce noise.
  - Be sure to ground the earth wire for safety.
  - Keep wires (input, output, power supply) to this unit away from other wires which may make noise.
  - Do not confuse polarity and phase sequence, referring to the diagram above.
- When removing the CT of the input, short both ends of the CT, then remove it.

#### Lead wire solderless terminal

Use a solderless terminal with an insulation sleeve in which an M4 screw fits as shown below.

Solderless terminal	Manufacturer	Model	Torque
Y type	Nichifu Terminal Industries CO.,LTD.	1.25Y-4N	0.6N•m Max.
	Japan Solderless Terminal MFG CO.,LTD.	VD1.25-YS4A	
Ring type	Nichifu Terminal Industries CO.,LTD.	R1.25-4	0.8N•m
	Japan Solderless Terminal MFG CO.,LTD.	V1.25-4	

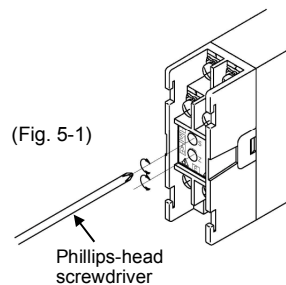


(Fig. 4-3)

## 5. Adjustment

The output of this unit has been already adjusted before shipping. No adjustment is necessary when use follows ordered Input/Output specifications.

However, in the case of fine adjustment or calibration between connected units, adjust the value following the procedures described below.



(Fig. 5-1)

- Connect measuring equipment (digital multimeter, etc) which can read output value correctly, to output terminals.
- Remove the potentiometer cap, and use a small Phillips-head screwdriver for adjustment.
- Start adjustment more than 15 minutes after power is turned on.
- Output value increases when turning the potentiometer clockwise.
- Approx.  $\pm 3$  to 5% of output value can be adjusted.

#### SCCT, SCPT (zero/span adjustment method)

- Input "zero", then adjust the output value so that it can be a value corresponding to "zero", by turning the potentiometer for zero adjustment, while viewing the output value (digital multimeter indication).
- Input the span value, then adjust the output value so that it can be the value corresponding to the span value, by turning the potentiometer for span adjustment, while viewing the output value (digital multimeter indication).
- Input zero and span value again, and check the output value (digital multimeter indication).
- If Output value does not correspond to zero or span input value, repeat steps from (1) to (3) until output corresponds to the input value.

## Inquiry

For any inquiry about this unit, please contact the vendor where you purchased the unit or our agency after checking the following.

- (e.g.)
- Model ----- SCCT-0101-1
- Serial number ----- No.123456

In addition to the above, please let us know the details of malfunction, if any, and the operating conditions.

### SHINKO TECHNOS CO., LTD. OVERSEAS DIVISION

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