

HIOKI

SME-8360

Instruction Manual

**ELECTRODE
FOR CHIP CAPACITOR**

Note

You are kindly asked to give your consent to that, if the instrument is to be repaired due to one of the following reasons, you will be asked to pay for a part or all of the actual expenses required for the repair even if it is in its period of warranty:

1. Trouble and damage due to an improper handling, use maintenance, storage, transportation, etc. in a way not specified by the instruction manual, product specifications, maintenance works manual, etc.
2. Trouble and damage due to a repair or modification made by a person other than those belonging to our company or commissioned to do so in place of our company.
3. Trouble and damage due to fire, earthquake, flood and wind disaster, lightening and other natural disasters.
4. Supply and replacement of consumable parts

Introduction

This unit SME-8360 is designed to measure the insulation resistance of chip capacitor in combination with digital super megohmmeter DSM-8103 or SM-8200 series super megohmmeter. It is used for manual measurement such as sample inspection.

Super megohmmeter (insulation resistance meter) generates high voltage of max. 1000VDC. If the operator uses mistakenly this meter in wrong procedure, electric shock accident might be suffered. Prior to operation, please read well this manual and pay attention fully to the safety.

Store this manual in a convenient place to get it soon at any time you need.

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1. Cares for using this unit in safety

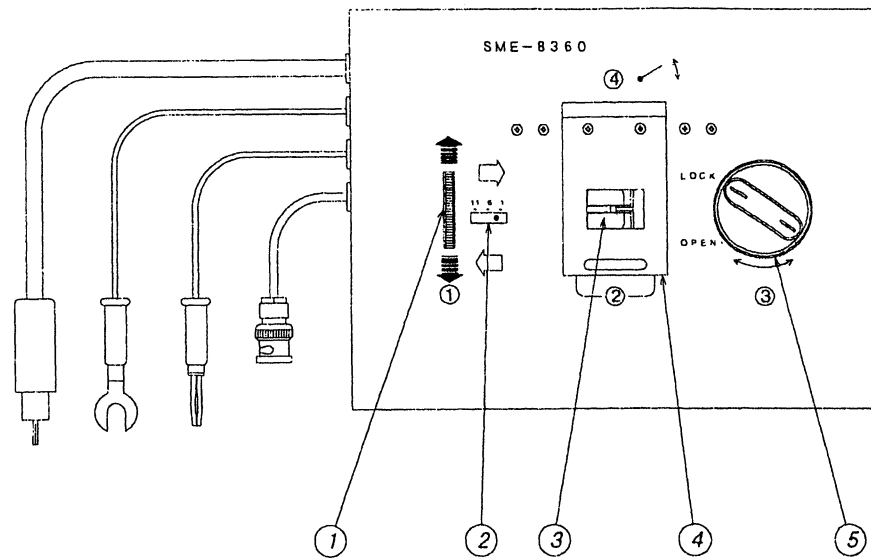
- (1) Please be sure to read carefully this manual prior to operation for protection against accident or danger. And also read the instruction manual of combined insulation resistance meter and follow the instructions such as all the warnings, cares, etc. mentioned in the manual.
- (2) When the digital insulation resistance meter DSM-8103 is used, use it after the INTERLOCK function becomes valid. When INTERLOCK [CONNECT] is set by the panel key, its function becomes effective. For detailed operation method, refer to the instruction manual of DSM-8103 or page 5 in this manual.
- (3) When SM-8200 series insulation resistance meter is used, make use of HV-EN (high voltage enable) function. When the HV-EN function of SM-8200 series is used, it is necessary to alter the connector of interlock cable of SME-8360.
- (4) Never open the lid (measurement section cover) of this unit during measurement. During measurement, max. 1000VDC is applied to the measurement section.
- (5) After finishing measurement, take out the capacitor after fully discharging measurement voltage.
In DSM-8103, SM-8213, SM-8215 or SM-8220, it is in discharging condition at measurement end. Take out the capacitor in a few seconds later.
In SM-8216, set the charge-discharge switch to [DISCHARGE] position and take out the capacitor in a few seconds. When charge-discharge switch is set to [DISCHARGE], inner resistance of the meter becomes approx. 100 kohm. Therefore, determine the discharge time by calculating the discharge time constant from electrostatic capacity value of capacitor.
- (6) Never use this unit at a place where a combustible gas exists.

2. Product outline

SME-8360 is the electrode for chip capacitor, designed for manual measurement of insulation resistance of chip capacitor in combination with digital super megohmmeter DSM-8103 or SM-8200 series super megohmmeters.

The length of capacitor being measured is up to 11mm.

3. Name and function of each section



Each name and function are explained hereafter. The character with [] such as [LOCK] in the following sentence expresses the character indicated on the panel.

(1) Adjuster knob

A knob to adjust the position of fixing electrode, matching to approx. length of capacitor being measured. Adjusted length is shown at the indicator.

(2) Indicator

Approx. capacitor length is shown in conjunction with adjuster knob.

(3) Measurement section

This is the section to set the capacitor. This consists of insulating sample plate for putting the capacitor, fixing electrode which is moved by the adjuster and spring pin electrode moved by lock knob.

(4) Measurement section cover

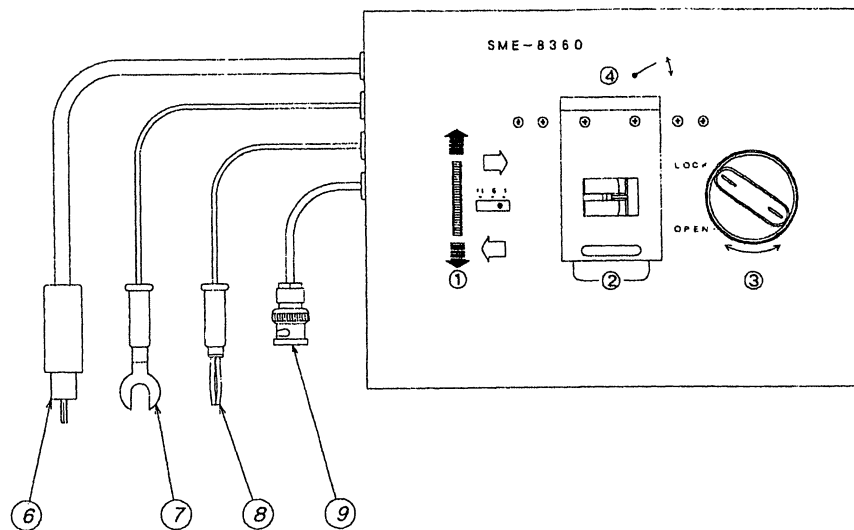
Lid for covering the measurement section.

It has the functions to protect high voltage during measurement and also to shield the measurement section against the noises.

(5) LOCK knob

Setting to [LOCK] side pushes the spring pin to hold the capacitor.

Setting to [OPEN] side pulls the spring pin to release the capacitor.



(6) Measurement cable

Our original coaxial plug is put at the tip of cable. It is connected to the [INPUT] of DSM-8103 or [-] side of [Rx] terminal of SM-8200 series.

(7) Grounding cable

A block spade-shape plug is put at the tip of cable. It is connected to the [GROUND] terminal of DSM-8103. In case of SM-8200 series, it is connected to <+> side cable and to [+] side of Rx terminal.

(8) <+> side cable

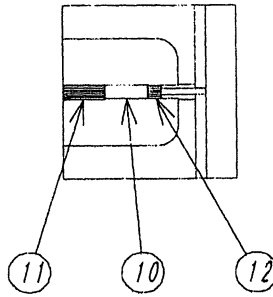
A red banana plug is put at the tip of cable. It is connected to [OUTPUT] terminal of DSM-8103. In case of SM-8200 series, <+> side cable and grounding cable are connected in common to [+] side of [Rx] terminal.

(9) Interlock cable

A BNC plug is put at the tip of cable. It is connected to [INTERLOCK] connector at the rear panel of DSM-8103. In case of SM-8200 series, it is connected to [HV-EN] Connector at the rear panel. However, since the shape of connector is different, it is necessary previously to exchange it.

Interlock cable is connected to the switch in conjunction with measurement cover, and the switch is off when the cover is open, while it is on when the cover is close.

Interlock function of DSM-8103 and HV-EN function of SM-8200 series operate so that measurement voltage is ON when the switch is ON, while it is OFF when the switch is OFF. This function increases the safety so that high voltage is not output when the cover is open.



(10) Sample plate

Insulating plate to put the capacitor.

It contacts with measurement electrode in a condition that measurement section cover is open, but if the cover is closed, it goes down and is apart from both the sample and measurement electrode to protect the decrease of insulation resistance by the plate.

(11) Fixing electrode

It is $\langle + \rangle$ side measurement electrode of measurement voltage. It is connected to $\langle + \rangle$ side cable. It is moved to left or right side by the adjuster knob and used by matching the approx. capacitor length.

(12) Spring pin electrode

It is $\langle - \rangle$ side measurement electrode of measurement voltage. It is connected to center electrode of measurement cable. It is moved to left or right side by LOCK knob and functions to fix the sample by the spring pin.

4. Connection with digital insulation meter DSM-8103

Please make a connection as shown below when measurement is made in combination with DSM-8103. The interlock function is set to “effective” with the following operation.

The character with [] such as [SETUP] in the following sentence expresses the character indicated on the key switch of DSM-8103.

For detailed operation method of DSM-8103, please refer to the instruction manual.

- (1) Press the [SETUP] key on the panel.

Function key ([F1] ~ [F5]) under display screen changes and its function is displayed on the screen above the key.

- (2) Next, Pressing the [F1] CONF changes to the following screen. Move the invert character cursor by [←→↑↓] keys and select CONECT of INTERLOCK : CONECT/CUTOFF. Inverting character means “ effective”.

CONFIGURATION PAGE-1/2

INTERLOCK : CONECT/CUTOFF ← Select CONECT

BEEP : OFF/ON

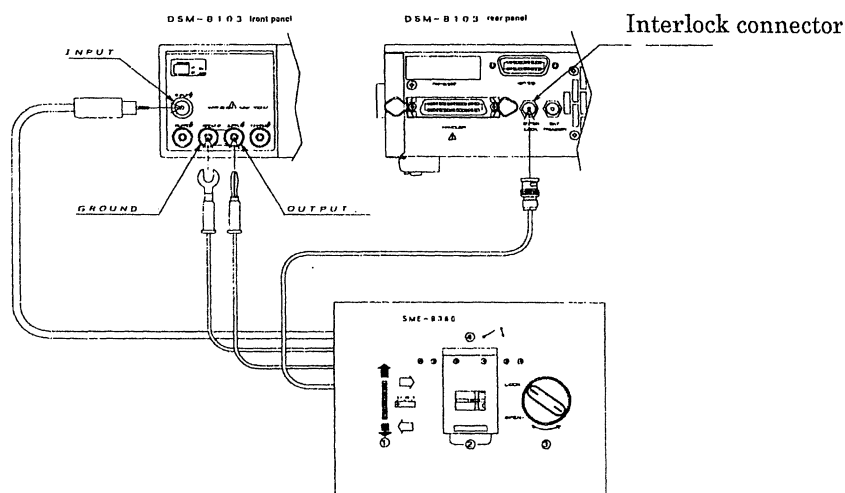
BEEP : NO/GO

CLICK : OFF/ON

ANALOGOUT: OFF/ON

At the delivery from out factory, INTERLOCK function is set to CUTOFF “invalid”

- (3) Pressing [ENTER] key resumes to measurement screen.

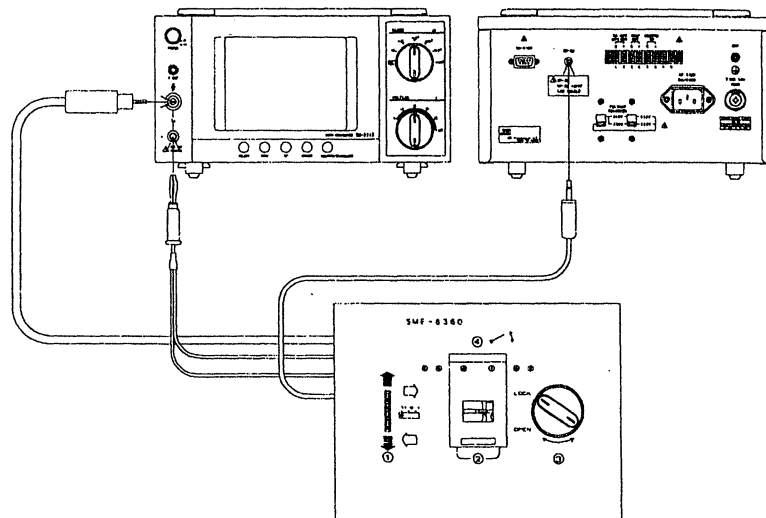


5. Connection with SM-8200 series insulation resistance meter

When it is used with SM-8200 series insulation resistance meter, the following 2 points modification are required.

- (1) Alter the connector of interlock cable.
- (2) Connect the grounding cable to + side cable and change to 1 pc. of banana plug.

Each cable is connected as shown below.



6. Operation method

For operation method of insulation resistance meter, refer to the instruction manual of respective meter. Carry measurement according to the following operation.

Connect all the cables and set the measuring conditions such as measurement voltage, etc.

- (1) Set the insulation resistance meter in discharge condition.

It means a LED for [START] key is off in the DSM-8103, a LED for [V.OUT] is off in SSM-8213, SM-8215, SM-8220, and charge-discharge switch to [DISCHARGE] in SM-8216.

- (2) Open the measurement section cover and set the LOCK knob to [OPEN] position.

- (3) Adjust to the approx. length of capacitor by a adjuster knob. Since the stroke of spring pin is approx. 6mm, it is not necessary to do adjustment strictly.

For the capacitor up to 10mm long, spring pin is set to be pushed by approx. 3mm.

- (4) Put the capacitor on the sample plate so that electrode of capacitor is coincide with the direction of measurement electrode.

- (5) Turn the lock knob gently and set it to [LOCK] position

If it is turned quickly, the capacitor might get out of place.

- (6) Close the measurement section cover gently.

When it is closed, sample plate goes down. When it is closed quickly, the capacitor might get out of place and fall down.

- (7) Carry measurement by operating the insulation resistance meter.

- (8) After finishing measurement, set the meter to discharge condition, then wait a few seconds.

When removing the capacitor, proceed operation in the reverse procedure of measurement.

- (9) Open the measurement section cover gently.

- (10) Next, set the lock knob to [OPEN] position.

If the lock knob is set to OPEN before opening the measurement section cover, the capacitor falls down.

- (11) Take out the capacitor with a pair of tweezers.

1. Maintenance and daily inspection

If the dust and/or stain are adhered to the sample plate, insulation between measurement electrodes becomes deteriorated.

When the stain is adhered, wipe off it with alcohol, etc. Dust is blown by air.

When storing this unit, keep it at a dustless and low humidity place.

2. Production specifications

Measurement voltage : 1000V Max.

Length of capacitor : 11mm Max.

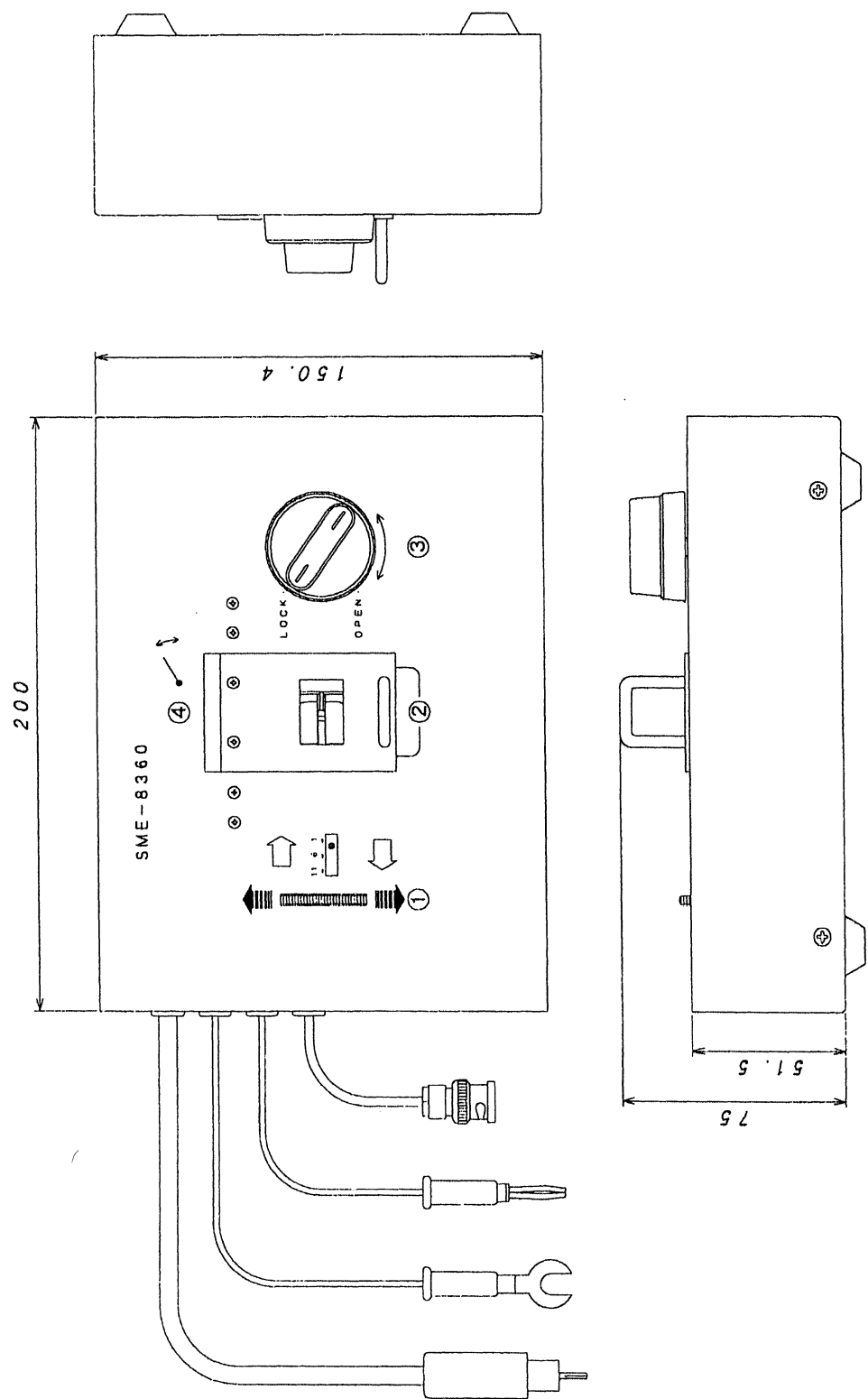
Insulation resistance between
measurement electrode : 2E13 ohm or more

Cable length : approx. 850mm

Dimensions : 200(W)x150.4(d)x51.5(h) mm

Weight : approx. 1.2kg

9. External drawing



HIOKI

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