1. SAFETY WARNINGS

The instrument has been designed and tested according to IEC Publication 61010: Safety Requirements for Electrical Measurement, Sampling and Control Devices. Make sure to follow the safety instructions before using the instrument and to read and understand the safety section before starting to use the instrument. When in doubt, refer to a qualified service technician before using the instrument.

WARNING

Read through and understand the safety instructions contained in the manual before using the instrument.

WARNING

If the cable or plug is damaged, it may result in fire or electric shock. Do not use the instrument if the cable or plug is damaged.

WARNING

Keep the instrument in good working order, as the use of damaged instruments can cause injury or damage to the device.

WARNING

If the instrument is not in good condition, do not use the instrument. If the instrument is damaged, do not use the instrument.

2. FEATURES

2.1 Measuring Range

The instrument has a measuring range of 0 to 3999.5 Ohm, which can measure leakage current, conductance, and permittivity. The measuring range is displayed in real-time when the instrument is operating.

2.2 Measuring Range Indicator

The instrument uses a digital display to indicate the measuring range. The measuring range is displayed in real-time when the instrument is operating.

3. SPECIFICATIONS

3.1 Power Source

The instrument is powered by a 9V battery, providing the required power to operate the instrument. The battery life is approximately 200 hours.

3.2 Input Impedance

The instrument has an input impedance of 10 MΩ, which provides wide measuring range from very small to large current. The instrument is suitable for measuring leakage current, conductance, and permittivity.

3.3 Measurements

The instrument measures leakage current, conductance, and permittivity with high accuracy. The instrument is suitable for measuring leakage current, conductance, and permittivity in different environments.

3.4 Display

The instrument uses a digital display to indicate the measured values. The display is clear and easy to read, providing the required information to the user.

4. INSTRUMENT LAYOUT

4.1 Power Supply Bar

The power supply bar is used to select the power source of the instrument. The power source is selected by pressing the power button.

4.2 Range Selector Switch

The range selector switch is used to select the measurement range of the instrument. The range selector switch is selected by turning the switch.

4.3 Frequency Select Switch

The frequency select switch is used to select the frequency of the instrument. The frequency select switch is selected by turning the switch.

4.4 Display

The display is used to indicate the measured values. The display is clear and easy to read, providing the required information to the user.

5. PREPARATIONS FOR MEASUREMENT

5.1 Checking Battery Voltage

Before using the instrument, it is necessary to check the battery voltage. The battery voltage is displayed in the display section. The battery voltage is displayed in real-time when the instrument is operating.

5.2 Checking Switch Setting

Before using the instrument, it is necessary to check the switch setting. The switch setting is selected by turning the switch.

NOTE

When the instrument is not in use, the battery should be disconnected to prevent damage to the instrument. The battery should be disconnected when the instrument is not in use. The battery should be disconnected when the instrument is not in use. The battery should be disconnected when the instrument is not in use.
6. OPERATING INSTRUCTIONS

In order to avoid possible shock hazard, never remove measurement leads or change terminals when the meter is energized. At power levels exceeding 500 watts for 30 VAC, power, or if the meter is connected to a "hot" or "live" circuit, the meter may be damaged. The meter may be damaged if it is subjected to excessive electrical stress, which may be caused by a malfunctioning circuit. If you are unsure about its operation, consult a qualified technician; it should never be used for testing circuits unless it is specifically designed and approved for such use.

Never measure resistance with the battery compartment cover removed. Do not grasp meter leads with your fingers and hands behind the battery compartment cover.

CAUTION

Take sufficient care not to apply shock, vibration or excessive force to the switch. Otherwise, properly adjusted switches and controls may become inoperative. Do not apply excessive force to the terminals if they are not properly energized. This may cause damage to the meter.

6-1 Leakage Current Measurement
(1) Turn the Range Selector Switch to the desired position. Current may be more accurately determined when the leakage test is performed within the meter.
(2) Measure current by inserting the leakage test probe into the leakage test port.
(3) Measure leakage current (See Fig. 2). The leakage current is measured with a grounded meter. Measured current value is shown on the display.

6-2 How to Use Frequency Selector Button
When high frequencies from each equipment as inverters are present, the instrument measures AC current at not only 50/60 Hz of fundamental frequency but also at 3, 5, and 10 kHz. This feature is especially useful when high frequencies are present in the line or if they cannot properly operate. The transformer does not fully react to the high frequency, and the meter does not work properly. Make sure that the lamp changes by themselves after the transformer appears or in high frequencies if possible. Accurate measurement can be made on a considerably higher than this, because the transformer does not affect this.

When measuring leakage current, the transformer should be big. This may be affixed to the instrument for performance or safety. Notice that voltage cannot be determined by the instrument if the leakage current is measured in a higher frequency.

Output characteristics are shown in Fig. 5.

6-3 Load Current Measurement
(1) Set the Range Selector Switch to the desired position. Current may be more accurately determined when the leakage test is performed within the meter.
(2) Measure current by inserting the leakage test probe into the leakage test port.
(3) Measure leakage current (See Fig. 2). The leakage current is measured with a grounded meter. Measured current value is shown on the display.

7 OTHER FUNCTIONS

7-1 Sleep Function
This is a function to prevent the instrument from being left powered on when it is not in use. The Sleep (power-down) mode is engaged after 10 minutes. This may be turned on or off by pressing the Sleep (power-down) button. When the Sleep (power-down) mode is engaged, the instrument consumes less amount of current in the Sleep mode. When the Sleep (power-down) mode is set in use, make sure to set the Range Selector Switch back to the "OFF." (Fig. 2) 7-2 Data Hold Function
This is a function to freeze the readings on the display. When the display data is held, press the Data Hold Button again to turn off the Data Hold function. When the instrument is in the Data Hold mode, press the Data Hold Button again to turn off the Data Hold function. When the instrument is in the Data Hold mode, the display data is held for 10 minutes.

Recently there has been increased use of power by inverters, not regulated inverters, etc. When the high frequency power such as inverter or power supply is turned on, there is no "what" leakage. In such a case, the instrument does not work properly. Take current readings with the 50/60 Hz and Wideband Frequency Selectors for more effective use of the Frequency Selector Button.

3-Phase Current Transformer (VCT-300 Series)
(1) Measure AC current at not only 50/60 Hz of fundamental frequency but also at 3, 5, and 10 kHz. Use in three-phase systems.
(2) Measure AC current at not only 50/60 Hz of fundamental frequency but also at 3, 5, and 10 kHz. Use in single-phase systems.

4. BATTERY REPLACEMENT

When the battery voltage drops below 1.6V or when the battery is used for 5 years, the battery voltage may drop. After the battery voltage drops, the meter may not operate properly. If the battery voltage drops, the battery replacement may be performed as follows:

(1) Replace the batteries when the new P021 (1.5V-1.9V) battery of the battery compartment is not shown.

Note: When the battery changes to a 1.5V battery, the battery compartment is removed. When the battery is removed, the battery compartment may be replaced with a new battery.

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When the battery voltage drops below 1.5V or when the battery is used for 5 years, the battery voltage may drop. After the battery voltage drops, the meter may not operate properly. If the battery voltage drops, the battery replacement may be performed as follows:

(1) Replace the batteries when the new P021 (1.5V-1.9V) battery of the battery compartment is not shown.

Note: When the battery changes to a 1.5V battery, the battery compartment is removed. When the battery is removed, the battery compartment may be replaced with a new battery.