1-2 Warning Instruction for safe use

1. The panel and the case are not resistant to volatile solvent and places under direct sunlight or where condensation is anticipated.
2. The instrument must be calibrated and inspected at least once a year.
3. Do not use the instrument in rain or snow.
4. The panel and the case are not resistant to heat. Do not place the instrument near a heater or in a hot environment.
5. The instrument must be used by qualified personnel only.
6. Do not use the instrument under the following conditions: in high humidity, in the presence of corrosive gases, in areas with extreme temperature fluctuations, in areas with strong magnetic fields, or in areas with significant vibration.

1-3 Maximum Overload Protection Input

AC Voltage: 50 Hz, 200 V±10 %
DC Voltage: 100 V±10 %
DC Current: 2.5 mA ±20 %
Resistance: 2 MΩ ±1 %
Capacitance: 2.5 μF ±25 %
Frequency: 1 KHz ±25 %
Temperature: 0 °C ~ 40 °C

2-1 Warning:
Never use input leads excessively since the maximum allowable voltage may be exceeded.
2-2 Warning:
Always use the test leads with the appropriate current capacity.

2-4 How to Replace Battery

1. Turn off the power to the instrument.
2. Remove the battery lid by using the screwdriver supplied with the instrument.
3. Insert the new battery pack into the slot provided in the lid.
4. Replace the battery lid.

2-5 Switching the Measuring Range

1. When using the instrument, always make sure that the pointer is in the zero position.
2. When measuring AC voltage, always make sure that the pointer is in the zero position.
3. When using the instrument, always make sure that the pointer is in the zero position.

2-6 How to Use the Voltmeter

1. Connect the test leads to the input terminals.
2. Set the range selector knob to the appropriate range.
3. Apply the black test pin to the negative potential side of the circuit under measurement.
4. Apply the red test pin to the positive potential side of the circuit under measurement.

2-7 How to Measure Resistance

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate DCV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

2-8 How to Use the Capacitance Meter

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

2-9 How to Use the Temperature Meter

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

3-1 Warning:
Never use input leads excessively since the maximum allowable voltage may be exceeded.
3-2 Warning:
Always use the test leads with the appropriate current capacity.
3-3 Warning:
Always use the test leads with the appropriate current capacity.
3-4 Warning:
Always use the test leads with the appropriate current capacity.

4-10 Optional Temperature Probe (T-THP) Max value +200 °C

1. Connect the tip of the temperature probe to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.
5. Set the range selector knob to an appropriate ACV range.
6. Apply the red test pin to the positive potential side of the circuit under measurement.
7. Apply the black test pin to the negative potential side of the circuit under measurement.
8. Set the range selector knob to an appropriate ACV range.
9. Apply the red test pin to the positive potential side of the circuit under measurement.
10. Apply the black test pin to the negative potential side of the circuit under measurement.

4-11 End of Measurement

1. Turn off the power to the instrument.
2. Disconnect the test leads from the input terminals.
3. Remove the battery pack from the instrument.
4. Keep the battery pack in a cool, dry place.

5-1 Calibration

1. The instrument must be calibrated and inspected at least once a year.
2. The instrument must be calibrated and inspected at least once a year.
3. The instrument must be calibrated and inspected at least once a year.

5-2 Calibration

1. The instrument must be calibrated and inspected at least once a year.
2. The instrument must be calibrated and inspected at least once a year.
3. The instrument must be calibrated and inspected at least once a year.
4. The instrument must be calibrated and inspected at least once a year.

6-1 Measurement Range and Accuracy

Accuracy assurance range: 2% of ±67 75% or less
Accuracy: ±0.1% + 0.1
Accuracy: ±0.1% + 0.1
Accuracy: ±0.1% + 0.1
Accuracy: ±0.1% + 0.1

6-2 How to Use the Voltmeter

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the black test pin to the negative potential side of the circuit under measurement.
4. Apply the red test pin to the positive potential side of the circuit under measurement.

6-3 How to Use the Capacitance Meter

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-4 How to Use the Temperature Meter

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-5 How to Use the Temperature Probe

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-6 How to Use the Temperature Probe

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-7 How to Use the Temperature Probe

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-8 How to Use the Temperature Probe

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-9 How to Use the Temperature Probe

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-10 How to Use the Temperature Probe

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.

6-11 How to Use the Temperature Probe

1. Connect the black plug of the test lead to the −input terminal and the red plug of the test lead to the input terminal.
2. Set the range selector knob to an appropriate ACV range.
3. Apply the red test pin to the positive potential side of the circuit under measurement.
4. Apply the black test pin to the negative potential side of the circuit under measurement.