

HIOKI

3008

MULTI TESTER

STRUCTION MANUAL

Using the HIOKI "Model 3008 MULTI TESTER." To
formance from the instrument, please read this
p it handy for future reference.

ed for maintenance of industrial power lines (Max
signed in safety and complete protection against
gh-power fuse protects up to 50 kA. Supply current
10 Ω restricts short-circuit current.

dustrial power line" refers to electrical lines that
to electrical equipment and industrial machinery in
ldings, etc. It does not include indoor lines in
fences (lines protected by fuses or circuit breakers.)

ation

⚠ DANGER
instrument during use could result in injury
as damage to the instrument. Be certain
and the instructions and precautions in the
se. We disclaim any responsibility for
ries not resulting directly from instrument

ual provides information and warnings essential for
nent in a safe manner and for maintaining it in safe
Before using this equipment, be sure to carefully
fety notes.

ual, this mark indicates explanations which it is
/ important that the user read before using the

The following symbols are used in this Instruction Manual to indicate the
relative importance of cautions and warnings.

⚠ DANGER	Indicates that incorrect operation presents extreme danger of accident resulting in death or serious injury to the user.
⚠ WARNING	Indicates that incorrect operation presents significant danger of accident resulting in death or serious injury to the user.
⚠ CAUTION	Indicates that incorrect operation presents possibility of injury to the user or damage to the equipment.
NOTE	Denotes items of advice related to performance of the equipment or to its correct operation.

Inspection

When the unit is delivered, check and make sure that it has not been
damaged in transit. If the unit is damaged, or fails to operate according
to the specifications, contact your dealer or HIOKI representative.

Operating Precautions

Follow these precautions to ensure safe operation and to obtain the full
benefits of the various functions.

⚠ DANGER

- Observe the following precautions to avoid electric shock.
Always verify the appropriate setting of the range selector
switch before connecting the test leads. Disconnect the
test leads from the measurement object before switching
the range selector switch.
- Before taking a measurement, check the position of the
range switch. Do not measure voltage outside the set
voltage range or voltage at levels in excess of the
measurement limit. Doing so may damage the instrument
or cause an accident resulting in injury or death.
- Do not input voltage to the resistance measurement
ranges. Doing so may damage the instrument or cause
an accident resulting in injury or death.
- If the end of a test lead short-circuits lines with a voltage
between them, this is very dangerous and can lead to a
serious accident. Exercise great care when measuring
voltage.

⚠ WARNING

- Before using the unit, inspect it and check the operation
to make sure that the unit was not damaged due to poor
storage or transport conditions. If damage is found,
contact your dealer or HIOKI representative.
- To prevent electric shock, do not allow the unit to become
wet and do not use the unit when your hands are wet.
- To avoid electric shock when measuring live lines, wear
appropriate protective gear, such as insulated rubber
gloves, boots and a safety helmet.

⚠ CAUTION

- If the protective functions of the unit are damaged, either
remove the unit from service or post warnings to prevent
others from using the unit inadvertently.
- Note that the unit may be damaged if voltage or current in
excess of the measurement range is input.
- Do not store or use the unit where it will be exposed to
direct sunlight, high temperatures, high humidity, or
condensation. If exposed to such conditions, the unit may
be damaged, the insulation may deteriorate, and the unit
may no longer satisfy its specifications.
- After use, be sure to turn the power switch off.

NOTE

- If the meter pointer is not positioned in the 0 scale value, use the zero
adjuster to adjust it correctly.
- If the fuse is blown, or the test leads are damaged, any range does
not operate. To check the test leads wiring and fuse blowing, refer to
**3. Fuse and Test Leads Continuity Check in Battery and Fuse
Replacement.**
- If the meter cover becomes electrostatically charged, values may
display incorrectly because of attractive forces on the needle. In this
case, apply anti-static treatment to inhibit electrostatic charge buildup.
The efficacy of such electrostatic treatments dissipates over time, so
the treatment may need to be reapplied periodically.

Measurement Procedure

Pre-Operation Inspection

To avoid the possibility of electric shock or incorrect measurement,
check the following items before using the instrument.

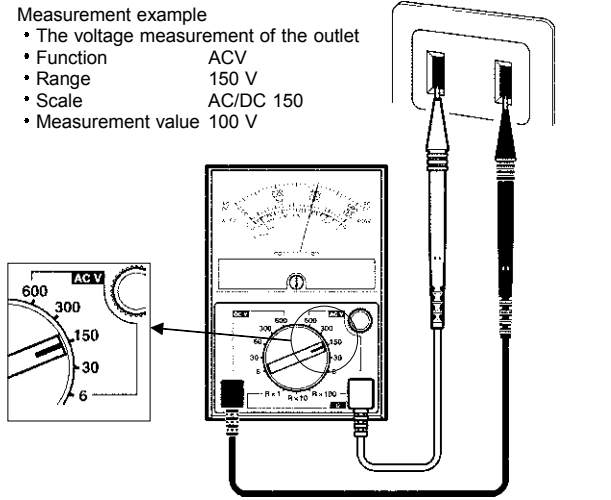
⚠ WARNING
Before using the instrument check that the body of the
instrument is not damaged. Also make sure that the
insulation on the test leads is undamaged and that no bare
conductors are improperly exposed.
Using the product in such conditions could cause an electric
shock, so contact your dealer or Hioki representative for
replacements. (Model 9060 TEST LEAD)

- For voltage measurement, short the test leads and check that 0 V is
indicated.
- For resistance measurement, short the test leads and adjust the
reading to zero using the zero ohm adjuster (0 Ω ADJ knob).
- Measure a test item with a known value (battery, AC supply, resistor,
etc.) to check that the instrument is functioning correctly.

Voltage Measurement (AC, DCV)

⚠ DANGER
The maximum permissible input is 600 VAC/DC. Do not
measure voltage in excess of these limitations (including the
fuse interrupting rating), as doing so may damage the unit or
cause an accident that might result in injury or death.

1. Set the range selector switch to the ACV or DCV range proper for the
voltage to be measured.
NOTE: If the voltage value is unclear, initially set the range switch to the
600 V range, and after obtaining a reading in this range, change
to the range proper for the voltage value.
 2. Connect the black test lead to the Negative (-) terminal, and the red
one to the Positive (+) terminal.
 3. Connect the test leads to the circuit to be measured in parallel, then
read the results on the AC/DC scale. When the DCV is selected, if
connecting the red test lead to the positive side, and the black one to
the negative side, then the pointer deflects normally.
- NOTE:** When changing the range, disconnect the test leads from the
object to be measured.



Resistance Measurement (Ω)

⚠ DANGER
Do not input voltage to the resistance measurement
functions. Doing so may damage the unit or cause an
accident resulting in injury or death.

⚠ WARNING
Turn off the power and discharge the capacitors before
measuring resistance in a circuit.

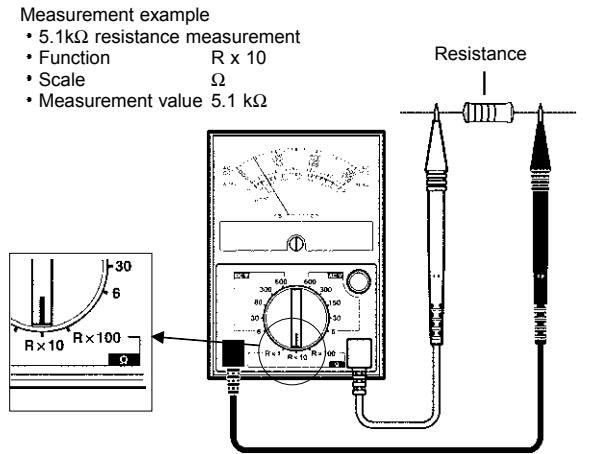
1. Set the range selector switch to the proper Ω range.
Accurate measurement can be made by selecting a range where the
reading will be about the center of the range.
2. Connect the black test lead to the Negative (-) terminal, and the red
one to the Positive (+) terminal.
3. Short the test leads, and use the zero ohm adjuster (0 ΩADJ knob) to
adjust the pointer to the 0 Ω scale.

NOTE: If the pointer cannot be adjusted to the 0 Ω scale, replace the
battery.

4. Connect the test leads to the circuit to be measured, and read the
value from the scale.

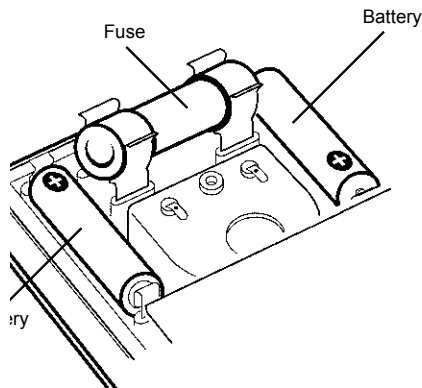
NOTE: When changing the range, disconnect the test leads from the
object to be measured.
For resistance measurement, the indication may be unstable if the
ends of the test leads are dirty, and the contact is poor. If the
indication is unstable, increase the contact pressure, or clean the
ends of the test leads by wiping with alcohol or similar solvent.

5. In order to obtain the true value, it is necessary to multiply the reading
shown by the factor for the range in use.



Batter

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- After screw



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- Hand regul
- To a batte time.

1. Remov
2. Replac
3. After re the scr

2. Fuse

- Repl chara non-s a life Fuse

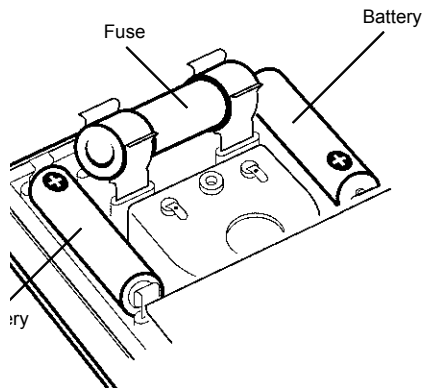
1. Remov
2. Replac
3. After re screw

NOTE:If a cc

use Replacement

⚠ WARNING

ric shock when replacing the batteries and connect the test leads from the object to be
the batteries or fuse, replace the case and using the instrument.



ement

⚠ WARNING

l and new batteries, or different types of , be careful to observe battery polarity ion. Otherwise, poor performance or battery leakage could result.
possibility of explosion, do not short circuit, r incinerate batteries.
sponse of batteries in accordance with local

sion from battery leakage, remove the the instrument if it is to be stored for a long

back screw and take off the case back.
atteries.
: batteries, always replace the case back and tighten using the unit.

nent

⚠ WARNING

ise only with one of the specified and voltage and current ratings. Using a use or shorting the fuse holder may cause ng hazard.
rrupting rating 50 kA,500 V 1 A

back screw and take off the case back.
with a new one.

is provided inside the carrying case.
pply a new spare fuse if the spare fuse is used to wn fuse.

: fuse, always replace the case back and tighten the g the unit.

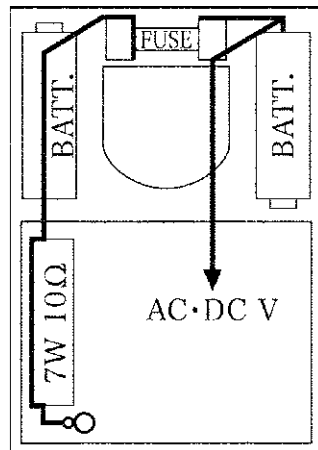
own, when measuring industrial power lines, there is of an internal 3008 failure. Replace the fuse and dealer or HIOKI representative.

3. Fuse and Test Leads Continuity Check

1. Connect the black test lead to the Negative (-) terminal, and the red one to the Positive (+) terminal.
2. Set the range switch to the $\Omega \times 100$ range, and short the test leads.
3. If the pointer deflects, the fuse and test leads conduct (are not blown and damaged).
If the pointer does not deflect, the test leads or fuse may be damaged. Check again after replacing the fuse.

About the Fuse Type Protective Circuit

This tester is provided with a protective resistor (10Ω) for prevention of accidental short circuit in measuring power voltage, and has a 1 A Fuse (500 V AC,With a Interrupting rating of 50 kA) connected in series from the terminal (refer to figure.)
If a short circuit occurs in the tester circuit, the protective resistor holds down the short circuit with the fuse.
As the protective resistor keeps excessive short circuit current from running, the arc at the tip etc. of the test bar can be held down to the minimum for greater safety.

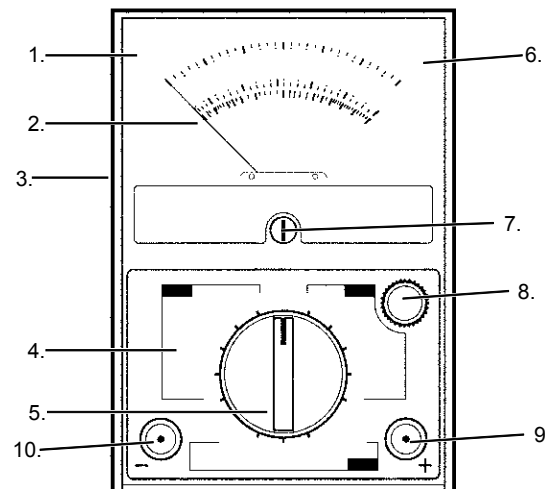


Specifications

Accuracy guaranteed for one year at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ($73^{\circ}\text{F} \pm 9^{\circ}\text{F}$), 80%RH or less.)

DCV	0 to 6/30/60/300/600 V 20 k Ω /V , $\pm 2.5\%$ of f.s. reading
ACV	0 to 6/30/150/300/600 V 10 k Ω /V , $\pm 2.5\%$ of f.s. reading
Ω	0 to 10 k Ω , central scale 100 Ω , R x 1/R x 10/R x 100, $\pm 3\%$ of scale length
Protection	Circuit : Fuse-protected, Internal circuit protection using the 10 Ω resistance Meter : Diode-protected
Fuse	Interrupting rating 50 kA, 500 V
Power supply	Rated power voltage 1.5 VDC x 2, R6P manganese battery x 2
Location for Use	Altitude up to 2000 m (6562 feet), indoors
Dimensions and mass	Approx. 94W x 134H x 56D mm, Approx. 350 g Approx. 3.7"W x 5.28"H x 2.2"D, Approx. 12.3 oz.
Maximum permissible input	600 VAC/DC
Accessories	9060 TEST LEAD 1 Spare fuse (Interrupting rating 50 kA,500 V) 1 manganese battery (R6P) 2 Instruction Manual 1 Carrying case 1

Part Names



Meter Nomenclature

1. Panel
2. Pointer
3. Case back
4. Face plate
5. Range selector switch
6. Scale plate
7. Zero adjuster
8. Zero ohm adjuster
9. Positive (+) terminal
10. Negative (-) terminal

Maintenance

Gently wipe dirt from the surface of the unit with a soft cloth moistened with a small amount of water or mild detergent.
Do not try to clean the unit using cleaners containing organic solvents such as benzine, alcohol, acetone, ether, ketones, thinners, or gasoline. They may cause discoloration or damage.

Service

If the unit is not functioning properly, check the batteries, the test leads wiring, and fuse blowing. If a problem is found, contact your dealer or HIOKI representative. Pack the unit carefully so that it will not be damaged during transport, and write a detailed description of the problem. HIOKI cannot bear any responsibility for damage that occurs during shipment.