

# HIOKI

EARTH TESTER FT6031-50

NEW

**distrame**  
instruments de mesures électroniques

## *Tough and Ready for the Field*

IP67



**Dustproof and Waterproof**



WIRELESS ADAPTER  
Z3210

### Wireless support

Compatible with wireless adapter Z3210 (optional). It transfers measurements to your smartphone or tablet and allows you to quickly create reports with field photos and drawings.



# Field-tough. Site-ready. So you can get down to work.

Introducing an earth resistance tester engineered to handle dirt with true grit



IP67 protection, even with the terminal caps open

## IP67

No ingress of water even if temporarily submerged under defined conditions of pressure thanks to watertight design

No ingress of dust thanks to dust-proof enclosure

### Vibration-resistant design



#### Drop-proof

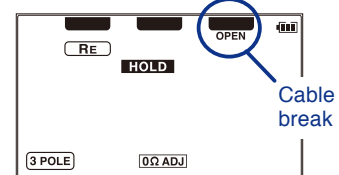
The FT6031-50 is engineered to withstand being dropped onto concrete from a height of 1 m.

### Large, easy-to-read display

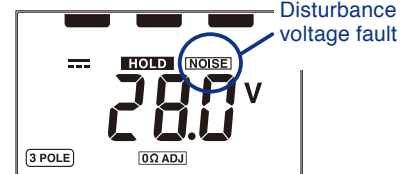
The FT6031-50's large LCD panel features a wide viewing angle for improved visibility outdoors.

### Automatic pre-check

The FT6031-50 automatically checks cables for line breaks and the disturbance voltage (noise) before measurement. A warning is shown if either check yields a FAIL result, allowing you to quickly assess the situation.



Cable break



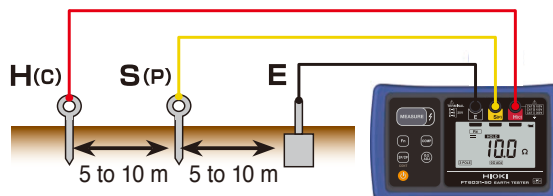
Disturbance voltage fault

### High precision & zero-adjustment

The FT6031-50 delivers high accuracy of  $\pm 1.5\%$  rdg.  $\pm 8$  dgt. The zero-adjustment function aids in delivering even better accuracy by canceling the wiring resistance of long measurement cable runs.

### Two- or three-electrode measurement

Choose either two- or three-electrode measurement. Automatic switching of connections internally eliminates the need to use a short bar or other apparatus.



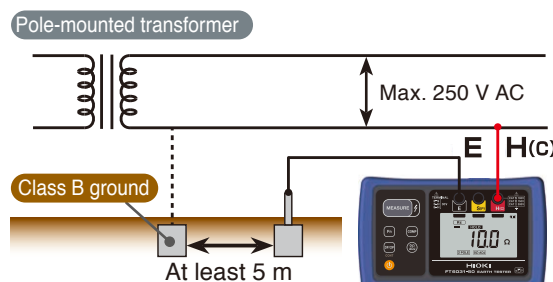
### Three-electrode measurement (for measurement classes A through D)

Measurement is performed after inserting an auxiliary earthing rod into the soil. For accurate measurement, position E-S(P)-H(C) in a straight line at an interval of about 5 to 10 m.

### Ground types

| Type    | Criterion                     | Locations used                     |
|---------|-------------------------------|------------------------------------|
| Class A | 10 $\Omega$                   | Special high voltage, high voltage |
| Class B | As per calculations           | Transformer neutral point          |
| Class C | 10 $\Omega$ /500 $\Omega$ *   | Low voltages in excess of 300 V    |
| Class D | 100 $\Omega$ / 500 $\Omega$ * | Low voltages of 300 V or less      |

\*With ground-fault interrupter that trips within 0.5 sec.



### Two-electrode measurement (for measurement class D)

Class D ground installations can be measured by using the Class B ground of a pole-mounted transformer. The measured value will include the resistance value of the Class B ground. The distribution panel's main ground terminal is typically connected to the power supply's ground line.

# Fast-track preparations, measurement, and cleanup.



## Prep

### Thin for a reason



Since variations in the thickness of auxiliary earthing rods cause almost no change in their grounding resistance, the FT6031-50 uses thinner rods that are easier to drive into the ground.

### Before



Thick rods had to be hammered into the ground and were difficult to remove.

### After



The FT6031-50 uses hard, rust-resistant rods made of stainless steel.

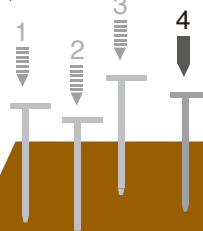
### You only need to do it once...

The tolerance for the supplemental grounding electrode's resistance has been increased by a factor of 10, eliminating the inconvenience of inserting and reinserting auxiliary earthing rods over and over again every time the resistance tolerance is exceeded due to dry soil or other non-optimal conditions.

### Repeated insertions ... Single insertion

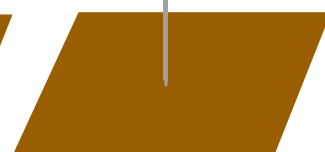
### Before

4 attempts needed



### After

Shorter work times



## Measurement

### You need only press the MEASURE button.

The FT6031-50 automatically checks the disturbance voltage, checks the auxiliary grounding electrode, and measures the grounding resistance. Auto-ranging operation eliminates the need to switch ranges, enabling efficient measurement.

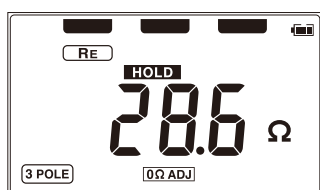
MEASURE



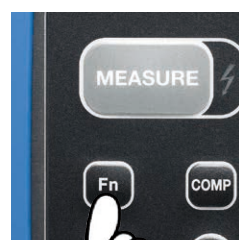
Disturbance voltage check

Auxiliary grounding electrode check

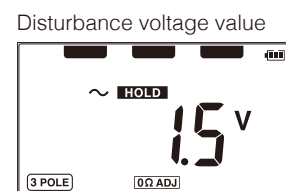
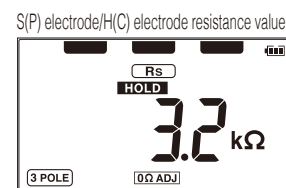
Grounding resistance measurement (Auto-ranging)



### It's easy to check the auxiliary grounding electrode's resistance value and the disturbance voltage value.



Toggle with the Fn button.



### Tangle- and twist-free measurement cord winders

## Cleanup

Easily rewind measurement cords, even if they're 20 m long.



## Specifications

(Accuracy guaranteed for 1 year)

| Measurement system                                   | Two-electrode method/three-electrode method (switchable)                                                                                                                                                                                                                                                            |               |                     |               |                        |          |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|---------------|------------------------|----------|
| Range configuration                                  | Range<br>(auto range)                                                                                                                                                                                                                                                                                               | Display range |                     | Resolution    |                        | Accuracy |
|                                                      |                                                                                                                                                                                                                                                                                                                     |               |                     | 3 electrode   | 2 electrode            |          |
|                                                      | 20 Ω                                                                                                                                                                                                                                                                                                                | 0 to 20.00 Ω  | 0.01 Ω <sup>1</sup> | -             | ±1.5 %rdg.±8 dgt.      |          |
|                                                      | 200 Ω                                                                                                                                                                                                                                                                                                               | 0 to 200.0 Ω  | 0.1 Ω               | 1 Ω           | ±1.5 %rdg.±4 dgt.      |          |
|                                                      | 2000 Ω                                                                                                                                                                                                                                                                                                              | 0 to 2000 Ω   | 1 Ω                 | 1 Ω           | ±1.5 %rdg.±4 dgt.      |          |
| Measuring frequency                                  | 128Hz±2Hz                                                                                                                                                                                                                                                                                                           |               |                     |               |                        |          |
| Measuring time                                       | Three-electrode method: Within 6 seconds (effective measurement time including disturbance voltage check and auxiliary grounding electrode check: 3 sec. [representative value]), Two-electrode method: Within 3 seconds                                                                                            |               |                     |               |                        |          |
| Measurement current                                  | Three-electrode method: 25 mA rms or less, Two-electrode method: 4 mA rms or less                                                                                                                                                                                                                                   |               |                     |               |                        |          |
| Resistance tolerance of auxiliary earthing electrode | 20 Ω range: 5 kΩ, 200 Ω range: 50 kΩ, 2000 Ω range: 50 kΩ                                                                                                                                                                                                                                                           |               |                     |               |                        |          |
| Earth potential measurement                          | 0 to 30.0 Vrms Accuracy: ±2.3 %rdg.±8 dgt. (50/60Hz), 1.3 %rdg.±4 dgt. (DC)                                                                                                                                                                                                                                         |               |                     |               |                        |          |
| Allowable earth potential                            | 25.0 Vrms (DC or sine wave)                                                                                                                                                                                                                                                                                         |               |                     |               |                        |          |
| Operating temperature                                | -25°C to 65°C (-13°F to 149°F)                                                                                                                                                                                                                                                                                      |               |                     |               |                        |          |
| Operating humidity                                   | -25°C to 40°C: 80 % rh or less (non-condensing) 40°C to 45°C: 60 % rh or less (non-condensing)<br>45°C to 50°C: 50 % rh or less (non-condensing) 50°C to 55°C: 40 % rh or less (non-condensing)<br>55°C to 60°C: 30 % rh or less (non-condensing) 60°C to 65°C: 25 % rh or less (non-condensing)                    |               |                     |               |                        |          |
| Storage temperature and humidity                     | -25°C to 65°C: 80 % rh or less (non-condensing)                                                                                                                                                                                                                                                                     |               |                     |               |                        |          |
| Operating environment                                | Indoor, outdoor (excluding farmland <sup>2</sup> ) pollution degree 3, altitude up to 2,000 (6,562-ft.)                                                                                                                                                                                                             |               |                     |               |                        |          |
| Power supply                                         | LR6 Alkaline battery × 4                                                                                                                                                                                                                                                                                            |               |                     |               |                        |          |
| Possible number of measurements on new batteries     | 500 times (measurement conditions: three-electrode method, auxiliary earthing electrode resistance 100 Ω, measuring 10 Ω at the 20 Ω range in 10-second intervals without Z3210 installed)                                                                                                                          |               |                     |               |                        |          |
| Dustproof and waterproof                             | IP65/IP67 (EN60529)                                                                                                                                                                                                                                                                                                 |               |                     |               |                        |          |
| Drop-proof                                           | 1 m above concrete (with protector attached)                                                                                                                                                                                                                                                                        |               |                     |               |                        |          |
| Maximum rated voltage to earth                       | 100 V AC/DC (measurement category IV), 150 V AC/DC (measurement category III), 300 V AC/DC (measurement category II), anticipated transient overvoltage 2500 V                                                                                                                                                      |               |                     |               |                        |          |
| Functions                                            | Live wire warning, zero-adjustment, continuous measurement mode, radio communication (only when Z3210 is installed), comparator                                                                                                                                                                                     |               |                     |               |                        |          |
| Applicable standards                                 | Safety: EN 61010 (main unit), EN 61010 (measuring circuit)                                                                                                                                                                                                                                                          |               |                     | EMC: EN 61326 | Earth tester: EN 61557 |          |
| Dimensions                                           | 185 W × 111H × 44D mm (7.28" W × 4.37" H × 1.73" D) (including protector, excluding terminal covers)                                                                                                                                                                                                                |               |                     |               |                        |          |
| Mass                                                 | 570 g(20.1 oz.) (including batteries and protector, excluding other accessories)                                                                                                                                                                                                                                    |               |                     |               |                        |          |
| Accessories                                          | Auxiliary Earthing Rod L9840 (2 piece set) ×1, Measurement Cable (alligator clip, black 4 m) L9841×1, Measurement Cable (yellow 10 m, equipped with winder) L9842-11×1, Measurement Cable (red 20 m, equipped with winder) L9842-22×1, Carrying Case ×1, Protector×1, LR6 Alkaline battery ×4, Instruction manual×1 |               |                     |               |                        |          |

\*1 If the auxiliary grounding resistance is 5 kΩ or greater, 0.1 Ω.

\*2 According to the requirements regarding the limits for open-circuit voltage in EN 61557-5

### Model : EARTH TESTER FT6031-50

Model No. (Order Code)

FT6031-50

FT6031-90 Set of FT6031-50 + Z3210 (Recommended)



### Add wireless communication capability by connecting WIRELESS ADAPTER Z3210

**WIRELESS ADAPTER Z3210**

**FT6031-50**

**X GENNECT Cross**

Transfer measurements to your phone or tablet. Generate reports with site photos and drawings with the free app GENNECT Cross

For more information, visit the GENNECT Net website.

## Accessories

**AUXILIARY EARTHING ROD L9840**

2 piece set, 270 mm (10.62") length, φ 6 mm (0.24"), stainless steel

**MEASUREMENT CABLE L9842-11 (Yellow), -22 (Red)**

-11: 10 m (32.81 ft) length, Red 20 m (65.62 ft) length, equipped with winder

**MEASUREMENT CABLE L9841**

Alligator clip, black 4 m (13.12 ft) length

**CARRYING CASE C0106**

324 mm W × 310 mm H × 125 mm D (12.8" W × 12.2" H × 4.92" D)

## Options

**MEASUREMENT CABLE L9843-51 (Yellow), -52 (Red)**

Each 50 m (164.06 ft) length, equipped with flat cable winder

**EARTH NETS 9050**

2 sheets in set, 300 mm × 300 mm (39.37" × 39.37")

**WIRELESS ADAPTER Z3210**

Bluetooth® For additional wireless communication functions

**MEASUREMENT CABLE L9844**

For earthing terminal board, red/yellow/black 1.2 m (3.94 ft) each length

**TEST LEAD L9787**

For simplified measurement method, indoor use only, red and black 1.2 m (3.94 ft) each length

**Z3210 Website**

For more information on supported regions and products, please visit this dedicated site.

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