Tough and Ready for the Field

IP67
Dustproof and Waterproof

2- or 3-Pole Earth Resistance Testing

Utilizing Three-electrode Method
Field-tough. Site-ready.
So you can get down to work.

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

Vibration-resistant design
Drop-proof
The FT6031-03 is engineered to withstand being dropped onto concrete from a height of 1 m.

Large, easy-to-ready display
The FT6031-03’s large LCD panel features a wide viewing angle for improved visibility outdoors.

Automatic pre-check
The FT6031-03 automatically checks cables for line breaks and the ground potential (noise) before measurement. A warning is shown if either check yields a FAIL result, allowing you to quickly assess the situation.

High precision & zero-adjustment
The FT6031-03 delivers high accuracy of ±1.5% rdg. ±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.

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Ground types

<table>
<thead>
<tr>
<th>Type</th>
<th>Criterion</th>
<th>Locations used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>10 Ω</td>
<td>Special high voltage, high voltage</td>
</tr>
<tr>
<td>Class B</td>
<td>As per calculations</td>
<td>Transformer neutral point</td>
</tr>
<tr>
<td>Class C</td>
<td>10 Ω/500 Ω*</td>
<td>Low voltages in excess of 300 V</td>
</tr>
<tr>
<td>Class D</td>
<td>100 Ω/500 Ω*</td>
<td>Low voltages of 300 V or less</td>
</tr>
</tbody>
</table>

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

Three-electrode measurement
(for measurement classes A through D)
Measurement is performed after inserting an auxiliary grounding 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.

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.

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

Cable break
Ground potential fault

Pole-mounted transformer
Max. 250 V AC

Class B ground
At least 5 m

With ground-fault interrupter that trips within 0.5 sec.
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 grounding 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

4 attempts needed

Before

After

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

The FT6031-03 uses thinner rods that are easier to drive into the ground.

You only need to do it once...

You need only press the MEASURE button.

The FT6031-03 automatically checks the ground potential, checks the auxiliary grounding electrode, and measures the grounding resistance. Auto-ranging operation eliminates the need to switch ranges, enabling efficient measurement.

Before

After

It’s easy to check the auxiliary grounding electrode’s resistance value and the ground potential value.

Toggle with the DISPLAY button.

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Tangle- and twist-free measurement cord winders

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

Measurement cord retrieval is a time-consuming part of grounding resistance measurement. The FT6031-03’s newly developed winders allow cords to be rewound about twice as quickly as with conventional reels.
### Specifications

#### Measurement system

<table>
<thead>
<tr>
<th>Range configuration</th>
<th>Two-electrode method</th>
<th>Three-electrode method (switchable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range (auto range)</td>
<td>Display range</td>
<td>Resolution</td>
</tr>
<tr>
<td>20 Ω</td>
<td>0 to 20.00 Ω</td>
<td>0.01 Ω*1</td>
</tr>
<tr>
<td>200 Ω</td>
<td>0 to 200.0 Ω</td>
<td>0.1 Ω</td>
</tr>
<tr>
<td>2000 Ω</td>
<td>0 to 2000 Ω</td>
<td>1 Ω</td>
</tr>
</tbody>
</table>

#### Measuring frequency

128Hz±2Hz

#### Measuring time

Three-electrode method: Within 8 seconds (effective measurement time including ground potential check and auxiliary grounding electrode check: 4 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)

#### Operating temperature

-10°C to 55°C (14°F to 131°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) 45°C to 55°C: 40 % rh or less (non-condensing) 55°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*2) pollution degree 3, altitude up to 2,000 (6,562-ft.)

#### Power supply

LR6 Alkaline battery × 4

#### 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

#### Withstand voltage

100 V AC/DC (measurement category IV), 150 V AC/DC (measurement category III), 300 V AC/DC (measurement category II) Alternating voltage: 100 V AC/DC (measurement category IV), 150 V AC/DC (measurement category III), 300 V AC/DC (measurement category II) ±2.3 %rdg. ±4 dgt.

#### Measuring time

Three-electrode method: Within 8 seconds (effective measurement time including ground potential check and auxiliary grounding electrode check: 4 sec. Representative value). Two-electrode method: Within 3 seconds

#### Measuring frequency

128Hz±2Hz

#### Applicable standards

Safety: EN 61010 (main unit), EN 61010 (measuring circuit) EMC: EN 61326 Earth tester: EN 61557

#### Dimensions

Approx. 185 W × 111H × 44D mm (7.28″ W × 4.37″ H × 1.73″ D) (including protector, excluding terminal covers)

#### Mass

Approx. 570 g (20.1 oz.) (including batteries and protector, excluding other accessories)

#### Accessories

- **Auxiliary Earthing Rod L9840 (2 piece set)**
- **Measurement Cable (yellow 10 m, equipped with winder) L9841**
- **Measurement Cable (red 20 m, equipped with winder) L9842-22**
- **Carrying Case C0106**

*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

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Model No. (Order Code)

**FT6031-03**

#### Accessories

- **AUXILIARY EARTHING ROD L9840**
- **MEASUREMENT CABLE L9842-11**
- **MEASUREMENT CABLE L9842-22**
- **MEASUREMENT CABLE L9841**
- **MEASUREMENT CABLE L9844**
- **CARRYING CASE C0106**
- **TEST LEAD L9787**
- **EARTH NETS 9050**

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