

HIOKI

Field Measuring Instruments



ANNIVERSARY
1935 - 2025

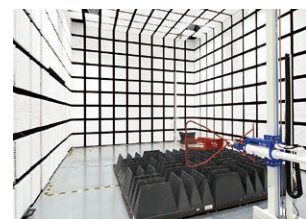


2025

Field-Proven Strength.

90 Years of Tradition and Innovation:

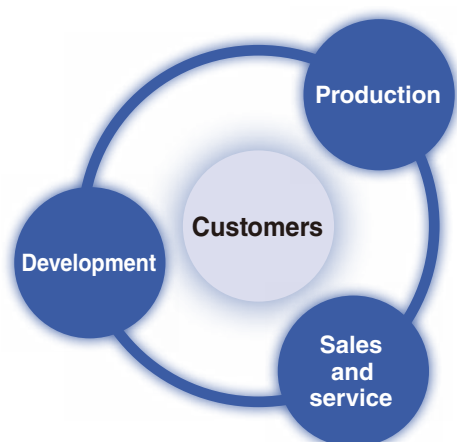
Celebrating a Milestone Anniversary of Excellence



In our mission to provide measurement technologies that protect the safety of society, we seek to contribute to the advancement of a brighter and more prosperous future.

Hioki's measurement technology is widely used in the maintenance, repair and operation of factories, businesses and infrastructures, contributing to the safety and security of our daily lives.

We also support the development of next generation technologies in the automotive and new energy sectors by delivering high quality instruments at a reasonable cost.



Founded in 1935, Hioki has grown to become a world leader in providing consistent delivery of tests and measuring instruments. By integrating both R&D and manufacturing in a central facility, we succeed in implementing a fully sustainable end-to-end product innovation life cycle to deliver instruments characterized by precision, safety, and quality to customers around the world.

HIOKI, an R&D-focused company

Technology advances on a daily basis, making possible safer and more comfortable human lifestyles and helping make dreams come true. The measuring instruments that underpin these advances also continue to evolve. To develop electrical measuring instruments that meet the changing needs of our times, one-third of all HIOKI employees work in research and development, an area where we invest approximately 10% of all revenue.

Pursuing agile production

HIOKI works to implement optimal production structures that are capable of meeting changing market needs with high-quality products. Due to the nature of electrical measuring instruments, which serve as yardsticks for measuring electricity, it is necessary to ensure a high level of quality in their production. Working with the cooperation of suppliers, we continuously strive to ensure our manufacturing operations conform to the world's highest standards of product quality.

Practicing customer-centric sales

Working with distributors, we actively visit customers to resolve their concerns. Information obtained during these visits is also utilized in product development, laying the groundwork for our ability to create products that satisfy our customers.




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About the Catalog

About the Marks
















| | |
|---|--------------------|
|  | Compliant with CE |
|  | Compliant with CSA |
|  | New product |



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 *For the latest information about countries and regions where wireless operation is currently supported, please visit the Hioki website.

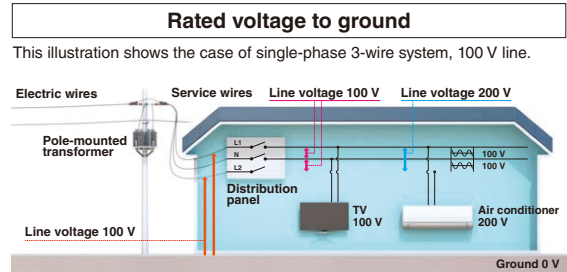
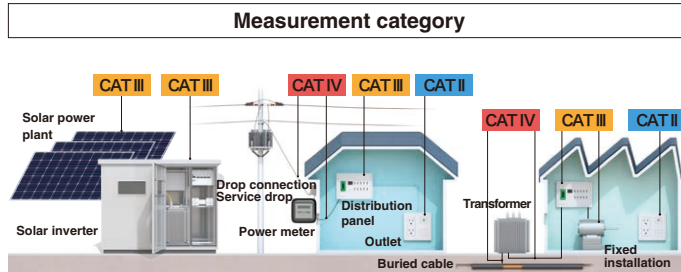
| | |
|---|--|
|  | Safety standard measurement categories* |
|  | Drop proof Robust design capable of withstanding a drop from a height of 1 m onto concrete |
|  | Backlight |
|  | Auto power OFF Automatically turns off after a certain time |
|  | Display hold |
|  | True RMS True RMS measurement for accurate measurement of even distorted current waveforms |
|  | Low-pass filter Cuts high frequency content to provide stable numerical values for measurement |
|  | AUTO AC/DC Automatically detects and measures AC and DC voltage |
|  | Decibel conversion Displays AC voltage measurements converted to decibel values (dbm/dbv) |
|  | MAX/MIN/AVG value* Displays the maximum, minimum, and average of the displayed values |
|  | Peak measurement* Displays the wave maximum and minimum peak values |
|  | Relative display Pressing the REL button displays subsequent measurements as values relative to that displayed when the button was pressed |
|  | Current sensor can be connected |
|  | Flexible current sensor can be connected |

*For more detailed information, please refer to the next page.

| | |
|---|--|
|  | AC voltage |
|  | DC voltage |
|  | DCV + ACV |
|  | Frequency |
|  | Resistance |
|  | Capacitance |
|  | Temperature |
|  | ACA current |
|  | DCA current |
|  | DCA + ACA |
|  | DC Power |
|  | Continuity check Buzzer sounds when continuity is detected |
|  | Diode check Displays voltage if in the correct direction, and OVER if in the reverse direction |
|  | Voltage detection Buzzer sounds when AC voltage is detected |
|  | Inrush (rush current) Measures inrush current when power is turned on, etc. |

Measurement Category and Anticipated Transient Overvoltage

Under safety standards (EN61010 Series, JIS C 1010 Series), measurement is classified into Categories II to IV according to the measurement point's rated voltage to ground, current capacity (size of current that flows in a short-circuit fault), etc., and the transient overvoltage that occurs at the measurement point.



CAT II Measurement at a point from the power plug to the equipment's power circuits, where equipment is directly connected to an outlet.

CAT III Measurement at a point on the power distribution cabling or power supply circuits, or at a point from the distribution panel to a distribution terminal behind an outlet, where equipment (for example a fixed installation) takes electricity directly from a distribution panel.

CAT IV Measurement at a point on a service drop to a building, or on the line from the drop connection to the power meter or distribution panel.

Anticipated Transient Overvoltage

| Rated voltage to ground | Transient overvoltage | | |
|-------------------------|-----------------------|---------|---------|
| | CAT II | CAT III | CAT IV |
| 300 V | 2500 V | 4000 V | 6000 V |
| 600 V | 4000 V | 6000 V | 8000 V |
| 1000 V | 6000 V | 8000 V | 12000 V |
| 1500 V | 8000 V | 10000 V | 15000 V |
| 2000 V | 12000 V | 15000 V | 18000 V |

Power lines in factories and similar facilities will at times include transient overvoltage (impulse voltage) that is around 10 times the power source voltage.

The transient overvoltage of the measurement points must be predicted in advance, and the instrument will need a safety design that will enable it to withstand such overvoltage.

Marks

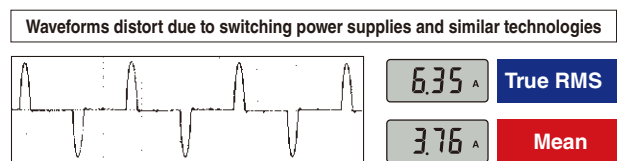
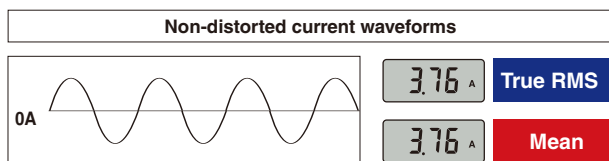
CAT IV 600 V
Measurement Category Rated voltage to ground

Assuming 600 V for the measurement point's voltage to ground, a Category IV location could potentially include transient overvoltage of 8000 V. Hence, CAT IV measurement instruments are designed to withstand transient overvoltage of 8000 V. CAT III measurement instruments can only withstand up to 6000 V, so if 8000 V transient overvoltage enters, it will cause insulation breakdown that could result in electric shock.

Never measure a measurement point with a higher category number than the category indicated on the measuring instrument. Doing so could lead to a serious accident such as electric shock.

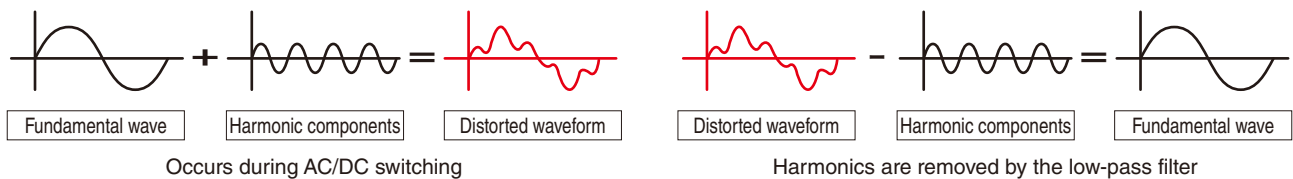
Rectification Methods: True RMS and Mean

A measuring instrument uses one of two rectification methods, "True RMS" or "Mean". Using mean rectification assumes that the signal is based on a sine wave without distortions in order to calculate the value. Distorted waveforms cannot be measured accurately using this method. As the performance of equipment increases, so do distorted waveforms. In order to accurately measure in these situations, using the True RMS method is necessary.

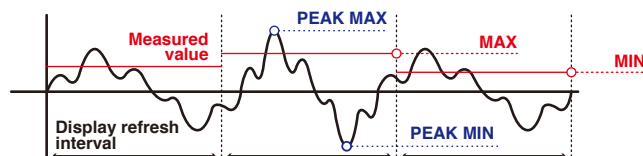


Low-Pass Filter Reduces the Effects of Harmonics and Measures the Fundamental Wave Component Accurately

Switching power supplies and the secondary side of inverters include harmonic components. Waveforms containing harmonics are distorted and difficult to measure with accuracy. By using a low-pass filter to remove harmonic components, accurate measurement values can be obtained.

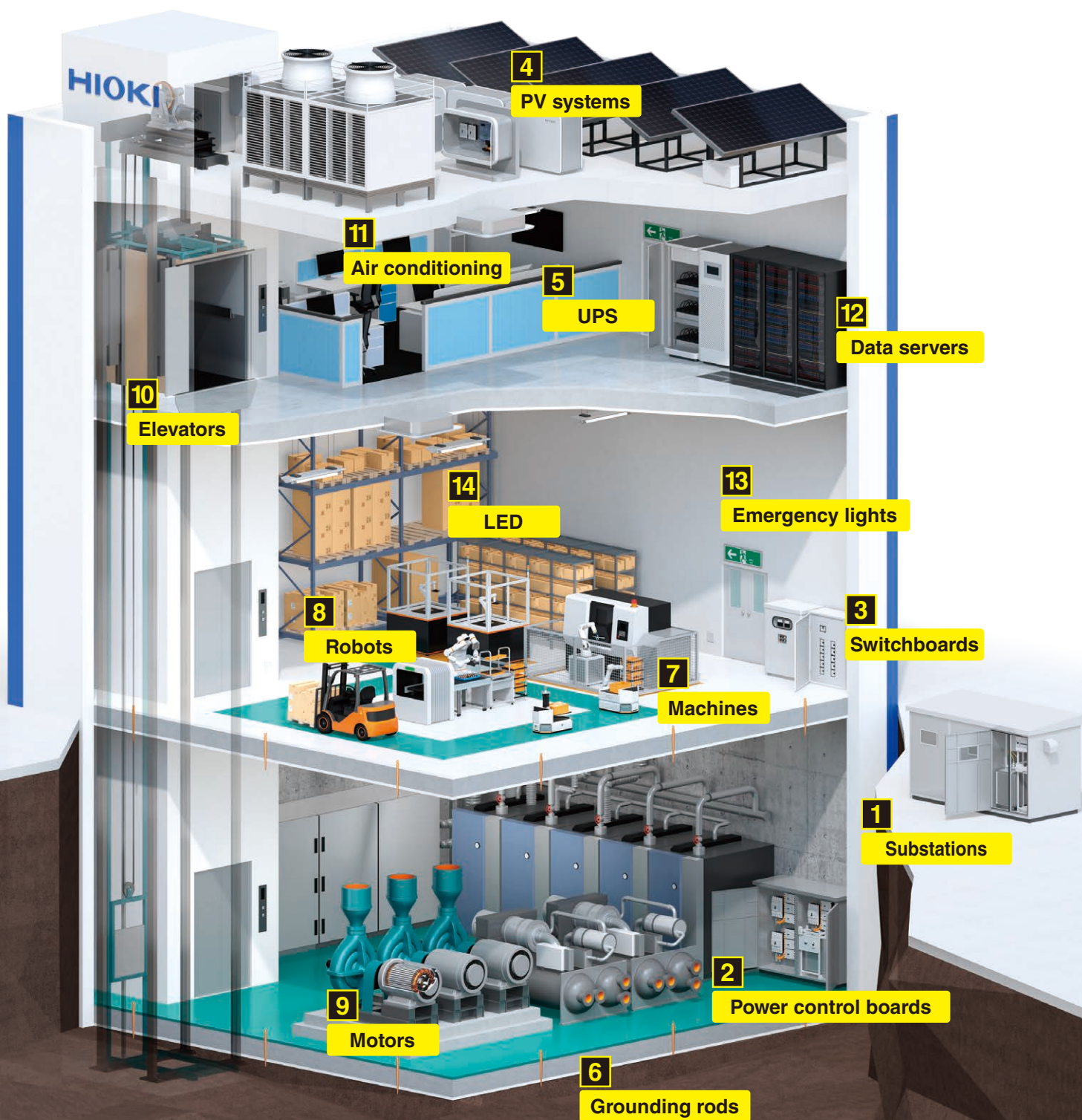


MAX/MIN/AVG/PEAK value











The ability to identify the maximum, minimum, average, and crest maximum and minimum values for equipment like machine tools whose load current fluctuates is useful in preventive maintenance and quality control.








Applications Factory










1 2 3**Power Receiving and Transforming Equipment, Power Control Boards, Switchboards**

| | | | | | | | |
|--|--|--|--|---|---|--|--|
| Verify phase rotation  p. 36 | Test insulation  p. 22 | Test supply voltage  p. 28 | Verify load current  p. 12 | Detect leakage current  p. 12 | Detect electrical disturbances, Analyze power quality  p. 44 | Record and analyze electrical consumption  p. 46 | Test 5kV insulation  p. 22 |
|--|--|--|--|---|---|--|--|








4**PV Systems**

| | | | | | | |
|---|---|--|--|--|---|---|
| Test bypass diodes  p. 52 | Test PV insulation  p. 22 | Verify string voltage  p. 28 | Verify string voltage  p. 12 | Verify string current  p. 12 | Test battery resistance and voltage  p. 50 | Verify grounding  p. 38 |
|---|---|--|--|--|---|---|

5**UPS****6****Earth, Ground****7 8 9****Machines, Robots, Motors**

| | | | | | | |
|--|--|--|--|--|--|--|
| Test supply voltage  p. 28 | Test load current  p. 12 | Check temperature  p. 58 | Verify motor insulation  p. 22 | Test supply voltage  p. 28 | Test load current  p. 12 | Verify phase rotation  p. 36 |
|--|--|--|--|--|--|--|

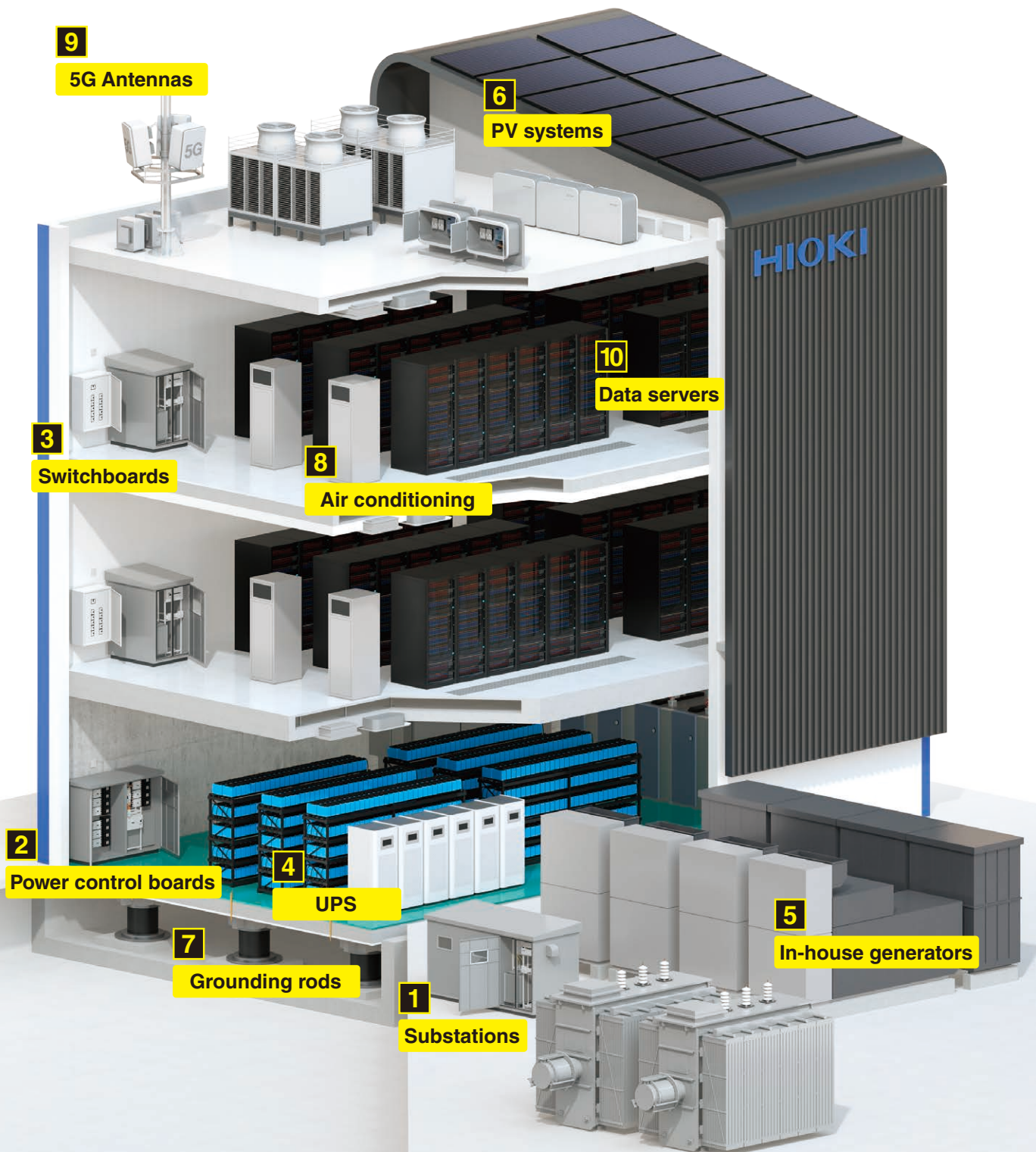
10**Elevators****11****Air Conditioning**

| | | | | | | |
|---|--|--|--|--|---|--|
| Check temperature and humidity  p. 54 | Check temperature  p. 58 | Test insulation  p. 22 | Test supply voltage  p. 28 | Test load current  p. 12 | Verify LAN wiring  p. 57 | Measure illuminance  p. 58 |
|---|--|--|--|--|---|--|









12**Servers****13 14****Emergency Lights**

Applications






Data Centers









1 2 3**Power Receiving and Transforming Equipment, Power Control Boards, Switchboards**

| | | | | | | | |
|--|--|--|--|---|---|--|--|
| Verify phase rotation  <p>p. 36</p> | Test insulation  <p>p. 22</p> | Test supply voltage  <p>p. 28</p> | Verify load current  <p>p. 12</p> | Detect leakage current  <p>p. 12</p> | Detect electrical disturbances, Analyze power quality  <p>p. 44</p> | Record and analyze electrical consumption  <p>p. 46</p> | Test 5kV insulation  <p>p. 22</p> |
|--|--|--|--|---|---|--|--|







4**UPS****5****Power Generators**

| | | | | |
|--|--|--|--|--|
| Test battery resistance and voltage  <p>p. 50</p> | Verify motor insulation  <p>p. 22</p> | Test supply voltage  <p>p. 28</p> | Test load current  <p>p. 12</p> | Verify phase rotation  <p>p. 36</p> |
|--|--|--|--|--|

6**PV Systems****7****Earth, Ground**

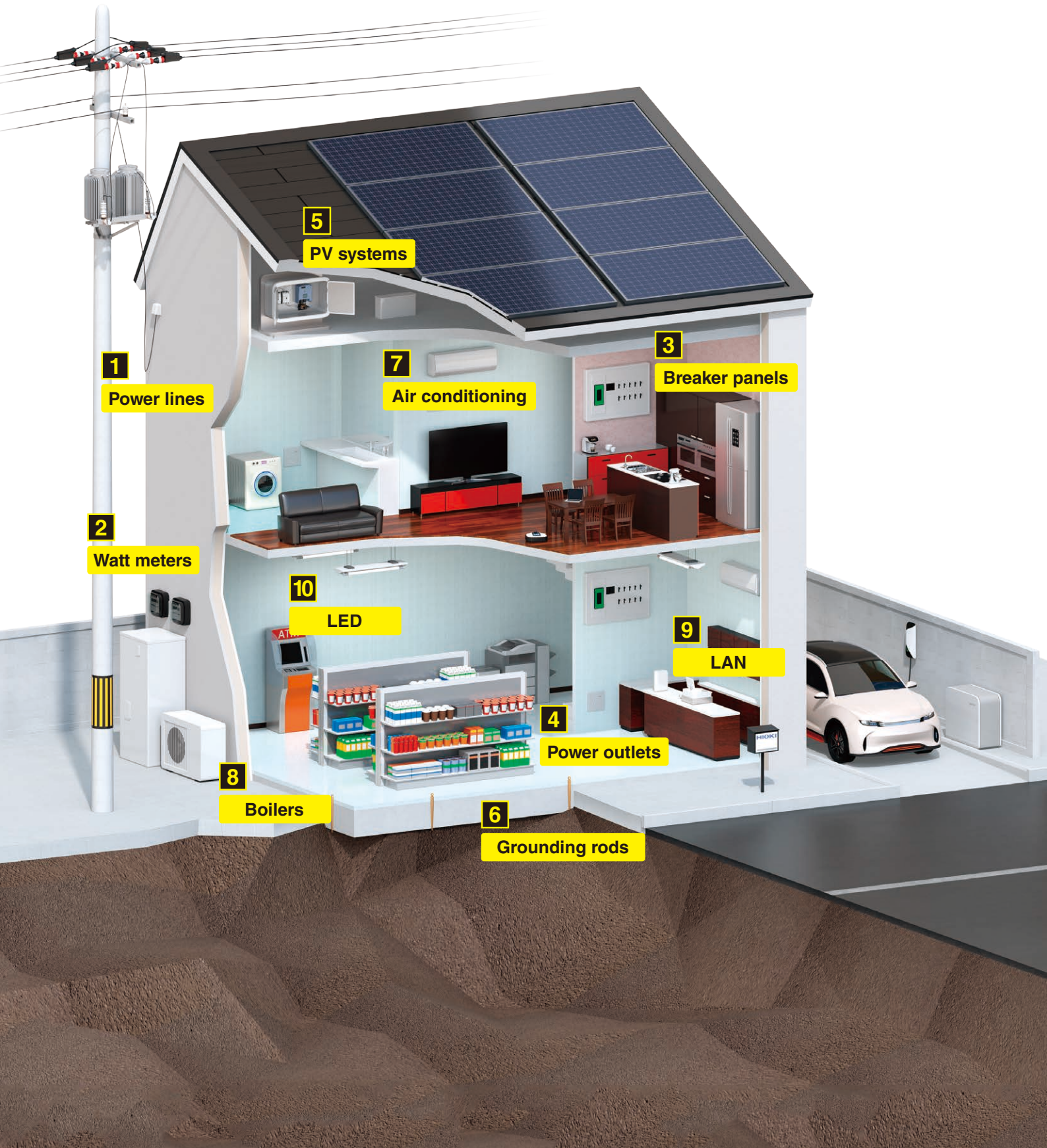
| | | | | | |
|---|---|--|--|--|--|
| Test bypass diodes  <p>p. 52</p> | Test PV insulation  <p>p. 22</p> | Verify string voltage  <p>p. 28</p> | Verify string voltage  <p>p. 12</p> | Verify string current  <p>p. 12</p> | Verify grounding  <p>p. 38</p> |
|---|---|--|--|--|--|

8 9**Air Conditioning, 5G Antennas****10****Servers**






| | | | | | |
|---|--|--|--|--|---|
| Check temperature and humidity  <p>p. 54</p> | Check temperature  <p>p. 58</p> | Test insulation  <p>p. 22</p> | Test supply voltage  <p>p. 28</p> | Test load current  <p>p. 12</p> | Verify LAN wiring  <p>p. 57</p> |
|---|--|--|--|--|---|

Applications




Residences & Commercial Buildings









1 2 3**Power Lines, Watt Meters, Breaker Panels**

| | | | | |
|---|---|---|---|---|
| Test insulation | Test supply voltage | Verify load current | Detect leakage current | Record and analyze electrical consumption |
|  |  |  |  |  |
| p. 22 | p. 28 | p. 12 | p. 12 | p. 46 |







4**Power Outlets**

| | | |
|---|---|---|
| Verify absence of voltage | Test supply voltage | Verify load current |
|  |  |  |
| p. 36 | p. 28 | p. 12 |







5**PV Systems**

| | | | | | |
|---|---|---|---|---|--|
| Test bypass diodes | Test PV insulation | Verify string voltage | Verify string voltage | Verify string current | Verify grounding |
|  |  |  |  |  |  |
| p. 52 | p. 22 | p. 28 | p. 12 | p. 12 | p. 38 |

6**Earth, Ground****7****Air Conditioning**

| | | | | | |
|---|---|---|---|---|---|
| Check temperature and humidity | Check temperature | Test insulation | Test supply voltage | Test load current | Detect leakage current |
|  |  |  |  |  |  |
| p. 54 | p. 58 | p. 22 | p. 28 | p. 12 | p. 12 |

8**Boilers**

| | | | | | |
|---|---|---|---|---|---|
| Test insulation | Test supply voltage | Test load current | Detect leakage current | Verify LAN wiring | Measure illuminance |
|  |  |  |  |  |  |
| p. 22 | p. 28 | p. 12 | p. 12 | p. 57 | p. 58 |

9**LAN****10****LED**

Manage Data on Mobile Devices and PC



for mobile devices

GENNECT Cross

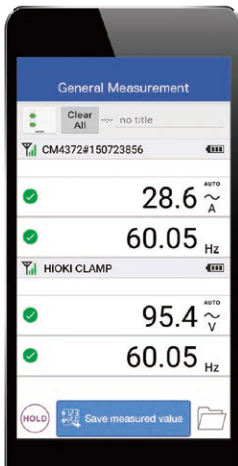


GENNECT Cloud expands your potential.

GENNECT Cross
Dedicated website

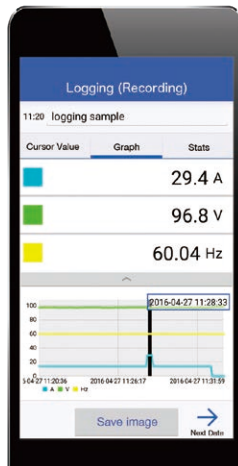


Checking and saving measured values



The measurement values displayed on the instrument can be displayed and saved on the tablet in real time.

Record fluctuations in measured values



Measurement values can be saved at set recording intervals. You can also check the maximum, minimum, and average values.

Waveform observation, FFT analysis



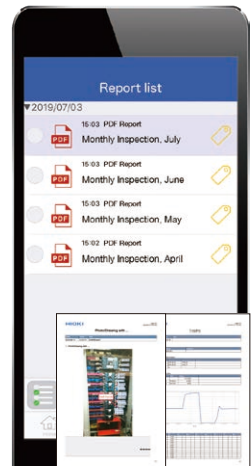
Waveforms such as current and voltage, and FFT analysis waveforms can be displayed.

Record on photos and drawings



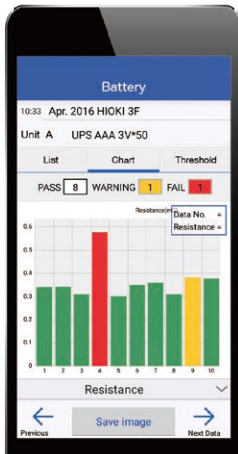
Measurements can be recorded on top of captured photos or imported drawing data.

Report writing



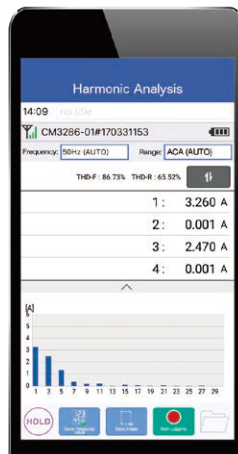
You can create reports from saved data, exporting them as PDF, JPG, or CSV.

Display judgment results in color and bar graph



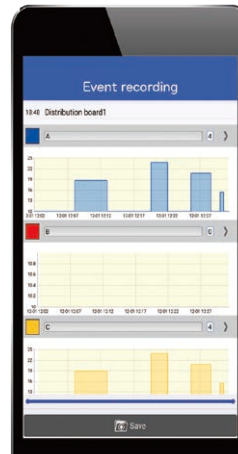
The measured value is compared with the judgment value, and the result is displayed in PASS/WARNING/FAIL.

Check power quality by analyzing harmonics up to the 30th order



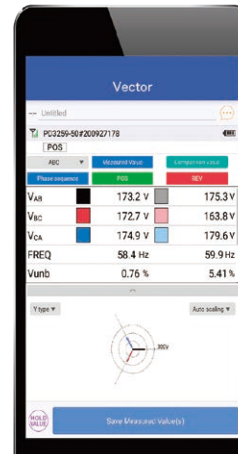
Calculate and display harmonic levels for individual orders, content percentages, and total harmonic distortion (THD-F and THDR).

Record the occurrence of intermittent leakage current



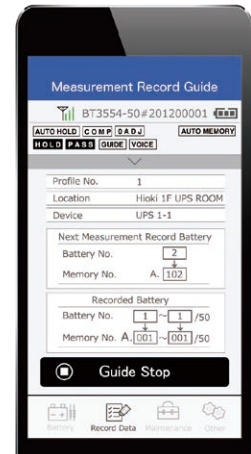
When a value greater than the threshold is measured, the time of occurrence, end time, and the maximum value for that period are recorded.

Display of disequilibrium rates and vector diagrams



Displays the disequilibrium rate and vector diagram.

Audio guidance about the battery measurement sequence



The app provides audio guidance about the battery measurement sequence. And, automatically saves the measurement results.

Supported instruments (available functions vary depending on the measurement device. For details, please visit the GENNECT Cross special website.)

Wireless adapter Z3210 (optional) must be attached to use GENNECT Cross.



Downloading GENNECT Cross

Data can be downloaded to tablets and smartphones using Hioki's dedicated apps available from the Google Play™ or App Store. Search for "HIOKI" and download the "GENNECT Cross" app.

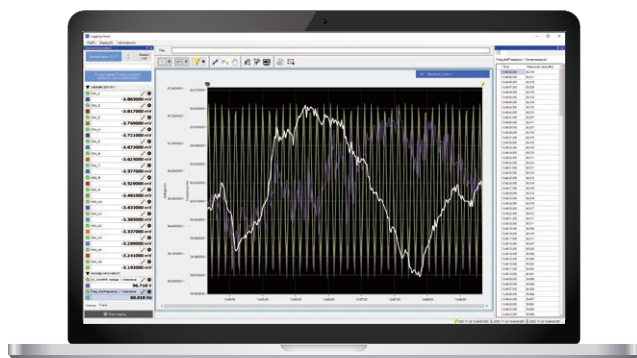


for PCs

GENNECT One



GENNECT Cloud expands your potential.

 GENNECT One
dedicated website


HUB

 Connect each measuring instrument
with LAN cable
(BT3554-50 series is USB connection)

LAN



Power Analysis

LAN

Monitoring Power
Quality

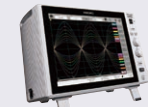
LAN

Understanding
Power
Consumption

LAN

Voltage and
temperature
management

LAN

Waveform
Analysis

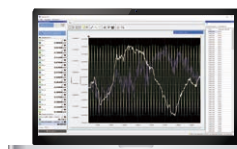
USB



UPS Inspection



Connect To and Manage Instruments With a Computer

 Collect and display
measured values by instrument

 Collect values
in graphs and lists

Logging: When logging is started, measurement data is acquired at regular intervals from multiple measuring instruments. The acquired data is displayed and stored on the PC in real time.

 Combine images and
other elements

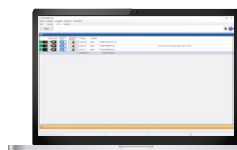
Dashboard: Create a dashboard by laying out measurements, background images, and other parts on the screen. You can display the measured values on the dashboard in real time.

 Change instrument settings
from your office

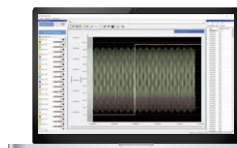
 Change instrument
settings from a computer

Remote control: Available to change the settings of the instrument and start and stop the measurement from the PC.

Instrument clock synchronization:
The clock of the measuring instrument can be synchronized with the PC clock.

 Collect and organize measurement files
from scattered locations

 Transfer measurement files
to a computer

Automatic file transfer:
Measurement data stored in the instrument can be automatically transferred to the PC.

Data import:
The measurement data stored in the instrument can be transferred to the PC manually.

 Review acquired files
on a single time axis

Time-series viewer: After acquiring the measurement data stored in the main unit of the instrument, the data can be checked in a single time series.

Supported instruments (available functions vary depending on the measurement device. For details, please visit the GENNECT One special website.)


PW8001



PW3335



PQ3198



PW3365



LR8400



LR8101



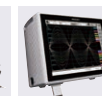
LR8450



LR5001



BT3554-50



MR6000



BT5525



IM3523A



RM3545A



BT4560-50



BT6065



DM7275

Downloading GENNECT One

GENNECT One is a free PC application. Please download from the HIOKI website by going to the "GENNECT One" landing page.



CLAMP METERS

Remarkable Ease of Use, New “Slim Jaw” Design

Traditional design



Slim jaw



Easily clamp within crowded cables with new slim jaw design

Innovative slim jaw resolves worksite issues such as crowded wiring to deliver safe, accurate and high-performance testing.



CM4375-50

CM4141-50

CM3289

CM3281
CM3291

CM4001

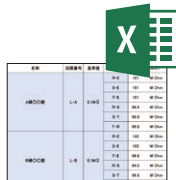
Manage Measurement Data Using Z3210^{*1}



WIRELESS
ADAPTER
Z3210 (option)



Attach to enable
Bluetooth® wireless
technology



Transport to the Excel® file

Open an Excel® file and select a cell. The measured value being held on the instrument's display will be transferred to the computer and entered into the selected cell.



Learn more
Z3210



PDF reports
CSV
measurement data
JPG image data

Transport to GENNECT Cross

GENNECT Cross, a free app designed specifically for use with Hioki measuring instruments, lets you check and manage measurement results and create reports. The software provides a range of functionality that helps manage data in the field, including photographing measurement sites, placing measurement results on photographs, and saving hand written memos.



Learn more
GENNECT Cross

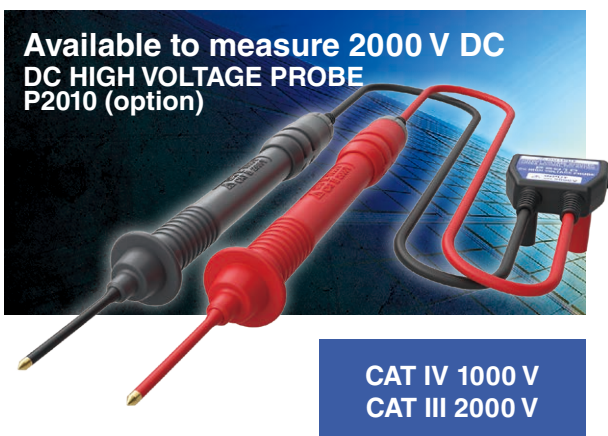


Verify current waveforms
on your mobile device

^{*1}: Supported models: CM4371-50, CM4373-50, CM4375-50, CM4141-50, CM4001, CM4002, CM4003, CM3286-50 (requires attaching WIRELESS ADAPTER Z3210)

Safe PV Measurement Using P2010^{*2}

Available to measure 2000 V DC
DC HIGH VOLTAGE PROBE
P2010 (option)



CAT IV 1000 V
CAT III 2000 V



CM4371-50



CM4373-50

CM4375-50

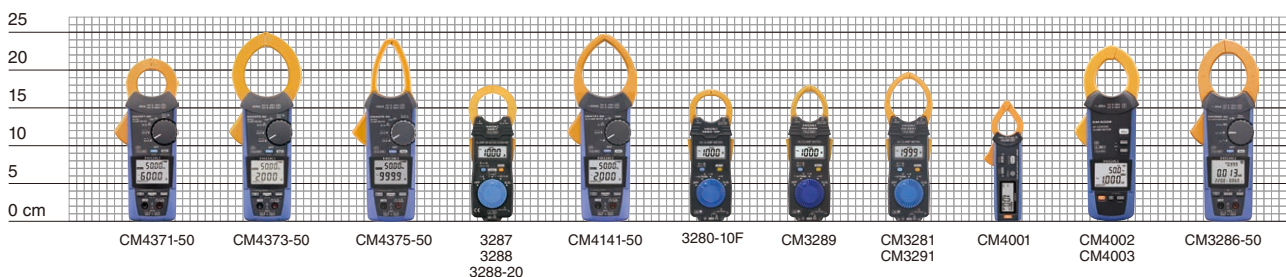
CM4141-50

^{*2}: Supported models: CM4371-50, CM4373-50, CM4375-50, CM4141-50 (requires using DC HIGH VOLTAGE PROBE P2010)

Lineup









| Measurement type | | AC/DC current | | | | |
|---------------------------------------|--|---|---|---|---|---|
| Model | | CM4371-50 | CM4373-50 | CM4375-50 | 3287 | 3288 3288-20 |
| Appearance | |  |  |  |  |  |
| Core jaw diameter | | Φ33 mm (1.30 in.) | Φ55 mm (2.17 in.) | Φ34 mm (1.34 in.) | Φ35 mm (1.38 in.) | Φ35 mm (1.38 in.) |
| AC measurement system | | True RMS | True RMS | True RMS | True RMS | Mean value True RMS (-20) |
| Frequency characteristics | | 10 Hz to 1 kHz | 10 Hz to 1 kHz | 10 Hz to 1 kHz | 10 Hz to 1 kHz | 10 Hz to 500 Hz |
| Measurement parameters | AC current (resolution) Guaranteed accuracy range | 600 A (0.01) 1 A to 600 A | 2000 A (0.1) 1 A to 2000 A | 1000 A (0.1) 1 A to 999.9 A | 100 A (0.01) Full display range ⁵ | 1000 A (0.1) Full display range ⁵ |
| | DC current (resolution) | 600 A (0.01) | 2000 A (0.1) | 999.9 A (0.1) | 100 A (0.01) | 1000 A (0.1) |
| | AC Voltage | 1000 V | 1000 V | 1000 V | 600 V | 600 V |
| | DC Voltage | 1000 V, 2000 V ¹ | 1000 V, 2000 V ¹ | 1000 V, 2000 V ¹ | 600 V | 600 V |
| | Power | 1200 kVA (DC) ¹ | 4000 kVA (DC) ¹ | 2000 kVA (DC) ¹ | N/A | N/A |
| | Resistance | 6 MΩ | 6 MΩ | 6 MΩ | 42 MΩ | 42 MΩ |
| | Temperature | -40°C to 400°C | -40°C to 400°C | -40°C to 400°C | N/A | N/A |
| | Electrostatic capacity | ✓ | ✓ | ✓ | N/A | N/A |
| | Frequency | 999.9 Hz | 999.9 Hz | 999.9 Hz | N/A | N/A |
| | Rush current | ✓ | ✓ | ✓ | N/A | N/A |
| | Continuity check | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Diode check | ✓ | ✓ | ✓ | N/A | N/A |
| Non-Contact Voltage | ✓ | ✓ | N/A | N/A | N/A | |
| Low-pass filter | | ✓ | ✓ | ✓ | N/A | N/A |
| Auto power off | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Auto range | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Data hold | | AUTO/MANUAL | AUTO/MANUAL | AUTO/MANUAL | MANUAL | MANUAL |
| Automatic AC/DC detection | | ✓ | ✓ | ✓ | N/A | N/A |
| MAX/MIN/AVG | | ✓ | ✓ | ✓ | N/A | N/A |
| Output | | N/A | N/A | N/A | N/A | N/A |
| Bluetooth® communication | | ✓ (with Z3210) | ✓ (with Z3210) | ✓ (with Z3210) | N/A | N/A |
| Backlight | | ✓ | ✓ | ✓ | N/A | N/A |
| Display refresh rate | | 5 times/s | 5 times/s | 5 times/s | 2.5 times/s | 2.5 times/s |
| Safety standard category | | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 1000 V | V: CAT III 300 V A: CAT III 600 V | V: CAT III 300 V A: CAT III 600 V |
| Safety standard category (with P2010) | | CAT IV 1000 V CAT III 2000 V | CAT IV 1000 V CAT III 2000 V | CAT IV 1000 V CAT III 2000 V | N/A | N/A |
| CE | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dustproof and waterproof | | IP20 ² /IP54 ³ | IP20 ² /IP54 ³ | IP20 ² /IP54 ³ | N/A | N/A |
| Drop proof | | N/A | N/A | N/A | N/A | N/A |
| Power supply | | LR03 x 2 Alkaline | LR03 x 2 Alkaline | LR03 x 2 Alkaline | CR2032 x 1 Coin type | CR2032 x 1 Coin type |
| Dimensions (W × H × D) | | 65 × 215 × 35 mm 2.56 × 8.46 × 1.38 in. | 65 × 250 × 35 mm 2.56 × 9.84 × 1.38 in. | 65 × 242 × 35 mm 2.56 × 9.53 × 1.38 in. | 57 × 180 × 16 mm 2.24 × 7.09 × 0.63 in. | 57 × 180 × 16 mm 2.24 × 7.09 × 0.63 in. |
| Weight | | 340 g, 12.0 oz. | 530 g, 18.7 oz. | 350 g, 12.3 oz. | 170 g, 6.0 oz. | 150 g, 5.3 oz. |

Size comparison



*1: Only when DC HIGH VOLTAGE PROBE P2010 is used *2: Voltage measurement in a completely dry condition. When jaw closes. *3: While in storage

*4: When measuring the current in an insulated conductor. Do not use it when wet. *5: Displayed 0 with below 0.06

| Measurement type | | AC current | | | | | Leakage current | | AC power |
|---------------------------------------|---|---|---|---|--|---|---|---|----------------------------------|
| Model | CM4141-50 | 3280-10F | CM3289 | CM3281 | CM3291 | CM4001 | CM4002 CM4003 | CM3286-50 | |
| Appearance |  |  |  |  |  |  |  |  | |
| Core jaw diameter | Φ55 mm (2.17 in.) | Φ33 mm (1.30 in.) | Φ33 mm (1.30 in.) | Φ46 mm (1.81 in.) | Φ46 mm (1.81 in.) | Φ24 mm (0.94 in.) | Φ40 mm (1.57 in.) | Φ46 mm (1.81 in.) | |
| AC measurement system | True RMS | Mean value | True RMS | Mean value | True RMS | True RMS | True RMS | True RMS | |
| Frequency characteristics | 45 Hz to 1 kHz | 50/60 Hz | 40 Hz to 1 kHz | 50/60 Hz | 40 Hz to 1 kHz | 40 Hz to 1 kHz | 15 Hz to 2 kHz | 45 Hz to 1 kHz | |
| Measurement parameters | AC current (resolution) Guaranteed accuracy range | 2000 A (0.01) 1 A to 2000 A | 1000 A (0.01) 4 A to 1000 A | 1000 A (0.01) 4 A to 1000 A | 2000 A (0.01) 4 A to 1999 A | 2000 A (0.01) 4 A to 1999 A | 600 A (0.01mA) 0.6 mA to 600 A | 200 A (0.001mA) 0.06 mA to 200 A | 600 A (0.001) 0.06 A to 600 A |
| | DC current (resolution) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | AC Voltage | 1000 V | 600 V | 600 V | 600 V | 600 V | N/A | N/A | 600 V |
| | DC Voltage | 1000 V, 2000 V ^{*1} | 600 V | 600 V | 600 V | 600 V | N/A | N/A | N/A |
| | Power | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 360 kW (AC) |
| | Resistance | 6 MΩ | 42 MΩ | 42 MΩ | 42 MΩ | 42 MΩ | N/A | N/A | N/A |
| | Temperature | -40°C to 400°C | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Electrostatic capacity | ✓ | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Frequency | 999.9 Hz | N/A | N/A | N/A | N/A | 999.9 Hz | 2000 Hz | 999.9 Hz |
| | Rush current | ✓ | N/A | N/A | N/A | N/A | ✓ | ✓ | N/A |
| | Continuity check | ✓ | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A |
| | Diode check | ✓ | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Non-Contact Voltage | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Low-pass filter | ✓ | N/A | N/A | N/A | N/A | ✓ | ✓ | N/A | |
| Auto power off | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Auto range | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Data hold | AUTO/MANUAL | MANUAL | MANUAL | MANUAL | MANUAL | AUTO/MANUAL | AUTO/MANUAL | AUTO/MANUAL | |
| Automatic AC/DC detection | ✓ (voltage only) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |
| MAX/MIN/AVG | ✓ | N/A | N/A | N/A | N/A | ✓ | ✓ | ✓ | |
| Output | N/A | N/A | N/A | N/A | N/A | N/A | ✓ (CM4003 only) | N/A | |
| Bluetooth® communication | ✓ (with Z3210) | N/A | N/A | N/A | N/A | ✓ (with Z3210) | ✓ (with Z3210) | ✓ (with Z3210) | |
| Backlight | ✓ | N/A | N/A | N/A | N/A | ✓ | ✓ | ✓ | |
| Display refresh rate | 5 times/s | 2.5 times/s | 2.5 times/s | 2.5 times/s | 2.5 times/s | 5 times/s | 5 times/s | 2 times/s | |
| Safety standard category | CAT IV 600 V CAT III 1000 V | V: CAT III 300 V A: CAT IV 300 V | V: CAT III 300 V A: CAT IV 300 V | V: CAT III 300 V A: CAT IV 300 V | V: CAT III 300 V A: CAT IV 300 V | CAT III 300 V | CAT IV 300 V (CM4002) CAT III 600 V (CM4002) CAT III 300 V (CM4003) | CAT IV 600 V CAT III 1000 V | |
| Safety standard category (with P2010) | CAT IV 1000 V CAT III 2000 V | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |
| CE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Dustproof and waterproof | IP50 ^{*3,4} | IP40 ^{*3} | N/A | N/A | N/A | N/A | IP40 | IP20 ^{*2} /IP50 ^{*3} | |
| Drop proof | N/A | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| Power supply | LR03 × 2 Alkaline | CR2032 × 1 Coin type | CR2032 × 1 Coin type | CR2032 × 1 Coin type | CR2032 × 1 Coin type | LR03 × 1 Alkaline | LR6 × 2 Alkaline | LR03 × 2 Alkaline | |
| Dimensions (W × H × D) | 65 × 247 × 35 mm 2.56 × 9.72 × 1.38 in. | 57 × 175 × 16 mm 2.24 × 6.89 × 0.63 in. | 57 × 181 × 16 mm 2.24 × 7.13 × 0.63 in. | 57 × 198 × 16 mm 2.24 × 7.80 × 0.63 in. | 57 × 198 × 16 mm 2.24 × 7.80 × 0.63 in. | 37 × 160 × 27 mm 1.46 × 6.30 × 1.06 in. | 64 × 233 × 36 mm 2.52 × 9.17 × 1.41 in. | 65 × 241 × 35 mm 2.56 × 9.49 × 1.38 in. | |
| Weight | 300 g, 10.6 oz. | 100 g, 3.5 oz. | 100 g, 3.5 oz. | 103 g, 3.6 oz. | 103 g, 3.6 oz. | 115 g, 4.1 oz. | 400 g, 14.1 oz. | 450 g, 15.9 oz. | |

Test leads with an integrated cap for greater convenience and safety



CAT IV 600V, CAT III 1000V

CAT II 1000V



The L9300 test lead with an integrated cap is included as a standard. The finger guard can be easily slid to switch between measurement categories without worrying about losing the cap.

AC/DC Current



Product warranty for 3 years
Accuracy guaranteed for 1 year

AC/DC CLAMP METER CM4371-50, CM4373-50, CM4375-50



Included accessories



L9300 C0203

- LR03 Alkaline battery × 2
- Instruction manual



WIRELESS ADAPTER
Z3210 (option)
**Attach to enable Bluetooth®
wireless technology**

Φ35 mm = 1.30 in.



CM4371-50

600 A AC/DC

True RMS

CAT IV 600 V
CAT III 1000 V

With P2010

CAT IV 1000 V DC
CAT III 2000 V DC

With Z3210



Please see www.hioki.com
for list of supported regions.



GENNECT
Cross

Φ55 mm = 2.17 in.



CM4373-50

2000 A AC/DC

True RMS

CAT IV 600 V
CAT III 1000 V

With P2010

CAT IV 1000 V DC
CAT III 2000 V DC

With Z3210



Please see www.hioki.com
for list of supported regions.



GENNECT
Cross

Φ34 mm = 1.34 in.



CM4375-50

1000 A AC/DC

True RMS

CAT IV 600 V
CAT III 1000 V

With P2010

CAT IV 1000 V DC
CAT III 2000 V DC

With Z3210



Please see www.hioki.com
for list of supported regions.



GENNECT
Cross



DC HIGH VOLTAGE PROBE
P2010 (option)
Available to measure 2000 V DC



Product warranty for 3 years
Accuracy guaranteed for 1 year

CLAMP ON AC/DC HiTESTER 3287, 3288, 3288-20



Included accessories



L9208 9398

- Coin type lithium battery CR2032 × 1
- Instruction manual

Φ35 mm = 1.38 in.



3287

100 A AC/DC

True RMS

V: CAT III 300 V
A: CAT III 600 V

Φ35 mm = 1.38 in.



3288

1000 A AC/DC

True RMS

V: CAT III 300 V
A: CAT III 600 V

Φ35 mm = 1.38 in.



3288-20

1000 A AC/DC

True RMS

V: CAT III 300 V
A: CAT III 600 V



For more details

Clamp

Insulation

DIMMS

Detectors

Earth

Power
qualityPower
loggers

Battery

PV

Logger

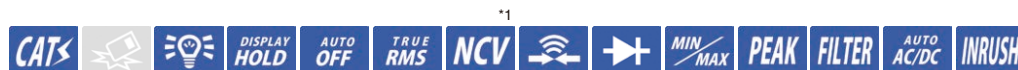
LAN

Signal

Lux

Temperature

Resistance



| Model | CM4371-50 | CM4373-50 | CM4375-50 | | Basic accuracy | |
|------------------------|-----------------|-----------|-----------|---|--|---------------------|
| Measurement parameters | AC Current | ✓ | N/A | N/A | 20.00 A, 600.0 A (guaranteed accuracy range: 1.00 A to 600.0 A) | ±1.3% rdg. ±0.08 A |
| | | N/A | ✓ | N/A | 600.0 A, 2000 A (guaranteed accuracy range: 1.0 A to 2000 A) | ±1.3% rdg. ±0.3 A |
| | | N/A | N/A | ✓ | 1000 A (guaranteed accuracy range: 1.0 A to 999.9 A) | ±1.3% rdg. ±0.3 A |
| | DC Current | ✓ | N/A | N/A | 20.00 A, 600.0 A (guaranteed accuracy range: ±1.00A to ±600.0 A) | ±1.3% rdg. ±0.08 A |
| | | N/A | ✓ | N/A | 600.0 A, 2000 A (guaranteed accuracy range: ±1.0A to ±2000 A) | ±1.3% rdg. ±0.3 A |
| | | N/A | N/A | ✓ | 1000 A (guaranteed accuracy range: ±1.0 A to ±999.9 A) | ±1.3% rdg. ±0.3 A |
| | AC + DC Current | ✓ | N/A | N/A | 20.00 A, 600.0 A (guaranteed accuracy range: 1.00 A to 600.0 A) | ±1.3% rdg. ±0.13 A |
| | | N/A | ✓ | N/A | 600.0 A, 2000 A (guaranteed accuracy range: 1.0 A to 2000 A) | ±1.3% rdg. ±1.3 A |
| | | N/A | N/A | ✓ | 1000 A (guaranteed accuracy range: 1.0 A to 999.9 A) | ±1.3% rdg. ±1.3 A |
| | AC Voltage | ✓ | ✓ | ✓ | 6.000 V, 60.00 V, 600.0 V, 1000 V | ±0.9% rdg. ±0.003 V |
| | DC Voltage | ✓ | ✓ | ✓ | 600.0 mV, 6.000 V, 60.00 V, 600.0 V, 1000 V, 2000 V ² | ±0.5% rdg. ±0.5 mV |
| | AC + DC Voltage | ✓ | ✓ | ✓ | 6.000 V, 60.00 V, 600.0 V, 1000 V | ±1.0% rdg. ±0.013 V |
| DC Power | ✓ | N/A | N/A | 0.0 VA to ±1200 kVA ² | ±2.0% rdg. ±20 dgt. | |
| | N/A | ✓ | N/A | 0.000 kVA to ±4000 kVA ² | ±2.0% rdg. ±20 dgt. | |
| | N/A | N/A | ✓ | 0.000 kVA to ±2000 kVA ² | ±2.0% rdg. ±0.020 kVA | |
| Resistance | ✓ | ✓ | ✓ | 600.0 Ω, 6.000 kΩ, 60.00 kΩ, 600.0 kΩ, 6.000 MΩ | ±0.7% rdg. ±0.5 Ω | |
| Temperature | ✓ | ✓ | ✓ | -40.0°C to 400.0°C | ±0.5% rdg. ±3.0°C | |
| Electrostatic capacity | ✓ | ✓ | ✓ | 1.000 μF, 10.00 μF, 100.0 μF, 1000 μF | ±1.9% rdg. ±0.005 μF | |
| Frequency | ✓ | ✓ | ✓ | 9.999 Hz, 99.99 Hz, 999.9 Hz | ±0.1% rdd. ±0.003 Hz | |

Order code **CM4371-50**

Includes Z3210

Order code **CM4373-50**Order code **CM4371-90**Order code **CM4375-50**Order code **CM4373-90**Order code **Z3210**Order code **CM4375-90**Order code **P2010**

Includes Z3210 and P2010

Order code **CM4373-93**Order code **CM4375-93**

*1: Excludes CM4375-50

*2: Only when DC HIGH VOLTAGE PROBE P2010 is used

*3: Excludes electrostatic capacity, frequency, and temperature

*4: Voltage measurement in a completely dry condition. When jaw closes.

*5: While in storage

*6: With backlight and Bluetooth® communications turned off



| Model | 3287 | 3288 | 3288-20 | | Basic accuracy | |
|------------------------|---------------------------|---|---------|-----|---|---------------------------|
| Measurement parameters | AC Current | ✓ | N/A | N/A | 10.00 A, 100.0 A (display range: 0A to 10.00/100.0 A) | ±1.5% rdg. ±5 dgt. |
| | | N/A | ✓ | ✓ | 100.0 A, 1000 A (display range: 0A to 100.0/1000 A) | ±1.5% rdg. ±5 dgt. |
| | DC Current | ✓ | N/A | N/A | 10.00 A, 100.0 A | ±1.5% rdg. ±5 dgt. |
| | | N/A | ✓ | ✓ | 100.0 A, 1000 A | ±1.5% rdg. ±5 dgt. |
| | AC Voltage | ✓ | ✓ | ✓ | 4.200 V, 42.00 V, 420.0 V, 600 V | ±2.3% rdg. ±8 dgt. |
| | DC Voltage | ✓ | ✓ | ✓ | 420.0 mV, 4.200 V, 42.00 V, 420.0 V, 600 V | ±1.3% rdg. ±4 dgt. |
| | Resistance | ✓ | ✓ | ✓ | 420.0 Ω, 4.200 kΩ, 42.00 kΩ, 420.0 kΩ, 4.200 MΩ, 42.00 MΩ | ±2.0% rdg. ±4 dgt. |
| Other | Display refresh rate | 2.5 times/s | | | | |
| | Operating temperature | 0°C to 40°C, 80% RH or less (non-condensating) | | | | |
| | Storage temperature | -10°C to 50°C, 80% RH or less (non-condensating) | | | | |
| | Dustproof and waterproof | N/A | | | | |
| | Power supply | Coin type lithium battery CR2032 × 1 | | | | Order code 3287 |
| | Continuous operating time | 25 hours | | | | |
| | Dimensions (W × H × D) | 57 × 180 × 16 mm (2.24 × 7.09 × 0.63 in.) | | | | Order code 3288 |
| | Weight | 3287: 170 g (6.0 oz.), 3288, 3288-20: 150 g (5.3 oz.) | | | | Order code 3288-20 |

Order code **3287**Order code **3288**Order code **3288-20**

AC Current

AC CLAMP METER CM4141-50



Product warranty for 3 years
Accuracy guaranteed for 1 year



Included accessories



L9300 C0203

- LR03 Alkaline battery × 2
- Instruction manual



WIRELESS ADAPTER
Z3210 (option)
Attach to enable Bluetooth®
wireless technology



DC HIGH VOLTAGE PROBE
P2010 (option)
Available to measure 2000 V DC

Φ55 mm = 2.17 in.



CM4141-50

2000 A AC

True RMS

CAT IV 600 V
CAT III 1000 V

With P2010

CAT IV 1000 V DC
CAT III 2000 V DC

With Z3210

Bluetooth®

Please see www.hioki.com
for list of supported regions.



GENNECT
Cross



Product warranty for 3 years
Accuracy guaranteed for 1 year

AC CLAMP METER 3280-10F, CM3289, CM3281, CM3291



Included accessories



L9208

- CARRYING CASE (models vary as shown on right)
- Coin type lithium battery CR2032 × 1
- Instruction manual



Φ33 mm = 1.30 in.

3280-10F
3280-70F

1000 A AC

Mean value

V: CAT III 300 V
A: CAT IV 300 V

9398 (3280-10F)
C0205 (3280-70F)



Φ33 mm = 1.30 in.

CM3289

1000 A AC

True RMS

V: CAT III 300 V
A: CAT IV 300 V

9398



Φ46 mm = 1.81 in.

CM3281
CM3291

2000 A AC

CM3281: Mean value
CM3291: True RMS

V: CAT III 300 V
A: CAT IV 300 V



CARRYING CASE

Leakage Current



Product warranty for 3 years
Accuracy guaranteed for 1 year

AC LEAKAGE CLAMP METER CM4001, CM4002, CM4003



WIRELESS ADAPTER
Z3210 (option)
Attach to enable Bluetooth®
wireless technology



Φ24 mm = 0.94 in.

CM4001

0.06 mA to 600 A AC

True RMS

CAT III 300 V

Included accessories



CARRYING CASE

- Strap
- LR03 Alkaline battery × 1
- Instruction manual

With Z3210

Bluetooth®

Please see www.hioki.com
for list of supported regions.



GENNECT
Cross



Φ40 mm = 1.57 in.

CM4002

0.06 mA to 200 A AC

True RMS

CAT IV 300 V
CAT III 600 V

Included accessories



C0203

- LR6 Alkaline battery × 2
- Instruction manual

With Z3210

Bluetooth®

Please see www.hioki.com
for list of supported regions.



GENNECT
Cross



Φ40 mm = 1.57 in.

CM4003

0.06 mA to 200 A AC

True RMS

CAT III 300 V

Included accessories



C0203 L9097

- LR6 Alkaline battery × 2
- Instruction manual
- USB cable

With Z3210

Bluetooth®

Please see www.hioki.com
for list of supported regions.



GENNECT
Cross

Functions

- External output
- External power supply



For more details



| Model | CM4141-50 | | Basic accuracy |
|------------------------|-----------|--|----------------------|
| AC Current | ✓ | 60.00A, 600.0 A, 2000 A (guaranteed accuracy range: 1.00A to 2000 A) | ±1.5% rdg. ±0.08 A |
| AC Voltage | ✓ | 6.000 V, 60.00 V, 600.0 V, 1000 V | ±0.9% rdg. ±0.003 V |
| DC Voltage | ✓ | 600.0 mV, 6.000 V, 60.00 V, 600.0 V, 1000 V, 2000 V ¹ | ±0.5% rdg. ±0.5 mV |
| AC + DC Voltage | ✓ | 6.000 V, 60.00 V, 600.0 V, 1000 V | ±1.0% rdg. ±0.013 V |
| Resistance | ✓ | 600.0 Ω, 6.000 kΩ, 60.00 kΩ, 600.0 kΩ, 6.000 MΩ | ±0.7% rdg. ±0.5 Ω |
| Temperature | ✓ | -40.0°C to 400.0°C | ±0.5% rdg. ±3.0°C |
| Electrostatic capacity | ✓ | 1.000 μF, 10.00 μF, 100.0 μF, 1000 μF | ±1.9% rdg. ±0.005 μF |
| Frequency | ✓ | 9.999 Hz, 99.99 Hz, 999.9 Hz | ±0.1% rdg. ±0.003 Hz |

| | |
|---------------------------|--|
| Display refresh rate | 5 times/s ² |
| Operating temperature | -25°C to 65°C, 90% RH or less (non-condensating) |
| Storage temperature | -30°C to 70°C, 90% RH or less (non-condensating) |
| Dustproof and waterproof | IP50 ^{3,4} |
| Power supply | Alkaline battery LR03 × 2 |
| Continuous operating time | 48 hours ⁵ |
| Dimensions (W × H × D) | 65 × 247 × 35 mm (2.56 × 9.72 × 1.38 in.) |
| Weight | 300 g (10.6 oz.) |

Order code **CM4141-50**Order code **CM4141-90**Order code **Z3210**

Model CM4141-90 includes Z3210 as a set

*1: Only when DC HIGH VOLTAGE PROBE P2010 is used *2: Excludes electrostatic capacity, frequency, and temperature

*3: Voltage measurement in a completely dry condition. When jaw closes. *4: While in storage. *5 With backlight and Bluetooth® communications turned off



| Model | 3280-10F | CM3289 | CM3281, CM3291 | | Basic accuracy |
|------------|----------|--------|----------------|---|--------------------|
| AC Current | ✓ | ✓ | N/A | 42.00 A, 420.0 A, 1000 A (guaranteed accuracy range: 4.00A to 1000 A) | ±1.5% rdg. ±5 dgt. |
| AC Voltage | N/A | N/A | ✓ | 42.00 A, 420.0 A, 2000 A (guaranteed accuracy range: 4.00A to 1999 A) | ±1.5% rdg. ±5 dgt. |
| DC Voltage | ✓ | ✓ | ✓ | 4.200 V, 42.00 V, 420.0 V, 600 V | ±1.8% rdg. ±7 dgt. |
| Resistance | ✓ | ✓ | ✓ | 420.0 mV, 4.200 V, 42.00 V, 420.0 V, 600 V | ±1.0% rdg. ±3 dgt. |
| | ✓ | ✓ | ✓ | 420.0 Ω, 4.200 kΩ, 42.00 kΩ, 420.0 kΩ, 4.200 MΩ, 42.00 MΩ | ±2.0% rdg. ±4 dgt. |

| | |
|---------------------------|--|
| Display refresh rate | 2.5 times/s |
| Operating temperature | -25°C to 65°C, 80% RH or less (non-condensating) |
| Storage temperature | -25°C to 65°C, 80% RH or less (non-condensating) |
| Dustproof and waterproof | IP40 (EN60529) ^{2,3} |
| Power supply | Coin type lithium battery CR2032 × 1 |
| Continuous operating time | 3280-10F, CM3281: 120 hours CM3289: 70 hours CM3291: 70 hours |
| Dimensions (W × H × D) | 3280-10F: 57 × 175 × 16 mm (2.24 × 6.89 × 0.63 in.) CM3289: 57 × 181 × 16mm (2.24 × 7.13 × 0.63 in.) CM3281, CM3291: 57 × 198 × 16 mm (2.24 × 7.80 × 0.63 in.) |
| Weight | 3280-10F: 100 g (3.5 oz.) CM3289: 100 g (3.5 oz.) CM3281, CM3291: 103 g (3.6 oz.) |



3280F, CM3289, CM3291 are compatible with the CT6280 AC Flexible Current Sensor

Φ130mm (5.1 in.), 4200 A AC

Model 3280-70F includes 3280-10F AC Clamp Meter and CT6280 AC Flexible Sensor as a set

Order code **3280-10F**Order code **3280-70F**Order code **CM3289**Order code **CM3291**Order code **CM3281**

*1: Excludes 3280-10F, 3280-70F

*2: Excludes CM3289, CM3281, CM3291

*3: While in storage

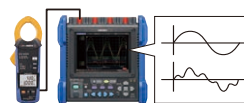


| Model | CM4001 | CM4002 | CM4003 | | Basic accuracy |
|------------|--------|--------|--------|--|----------------------|
| AC Current | ✓ | N/A | N/A | 60.00 mA, 600.0 mA, 6.000A, 60.00A, 600.0A (guaranteed accuracy range: 0.60 mA to 600.0A) | ±1.5% rdg. ±0.05 mA |
| | N/A | ✓ | ✓ | 6.000 mA, 60.00 mA, 600.0 mA, 6.000A, 60.00A, 200.0A (guaranteed accuracy range: 0.060 mA to 200.0A) | ±1.0% rdg. ±0.005 mA |
| Frequency | ✓ | N/A | N/A | 999.9 Hz | ±1.5% rdg. ±0.1 Hz |
| | N/A | ✓ | ✓ | 999.9 Hz, 2000 Hz | ±0.1% rdg. ±0.1 Hz |

| | |
|---------------------------|--|
| Display refresh rate | 5 times/s |
| Operating temperature | -10°C to 65°C (non-condensating) |
| Storage temperature | CM4001: -10°C to 65°C (non-condensating) CM4002, CM4003: -30°C to 70°C (non-condensating) |
| Dustproof and waterproof | CM4002, CM4003: IP40 (EN60529) |
| Power supply | CM4001: LR03 Alkaline battery × 1, 32 hours CM4002, CM4003: LR6 Alkaline battery × 2, 48 hours (LR6, without Z3210) |
| Continuous operating time | CM4003: AC ADAPTER Z1013 (option) |
| Dimensions (W × H × D) | CM4001: 37 × 160 × 27 mm (1.46 × 6.30 × 1.06 in.) CM4002, CM4003: 64 × 233 × 36 mm (2.52 × 9.17 × 1.41 in.) |
| Weight | CM4001: 115 g (4.1 oz.) CM4002, CM4003: 400 g (14.1 oz.) |

Includes external output function (CM4003 Only)

Pair with a recorder to capture instantaneous or current waveforms

**RMS value output**

(RMS mode)

DC 600 mV/f.s.

Waveform output

(WAVE mode)

AC 600 mV/f.s.

*Using CONNECTION CABLE L9097 (included accessories)

Order code **CM4001**Order code **CM4001-90**Order code **CM4002**Order code **CM4002-90**Order code **CM4003**Order code **CM4003-90**Order code **Z3210**

Model CM4001-90, CM4002-90, CM4003-90 includes Z3210 as a set

Clamp

Insulation

DIMMS

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

LAN

Signal

Lux

Temperature

Resistance

AC Power



For more details



Product warranty for 3 years
Accuracy guaranteed for 1 year

AC CLAMP POWER METER CM3286-50

Φ46 mm = 1.81 in.



CM3286-50

AC 600 A

True RMS

CAT IV 600 V
CAT III 1000 V

With Z3210



Please see www.hioki.com
for list of supported regions.



GENNECT
Cross



WIRELESS ADAPTER
Z3210 (option)

Attach to enable Bluetooth®
wireless technology

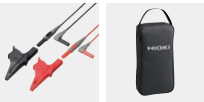
Order code **CM3286-50**

Order code **CM3286-90**

Order code **Z3210**

Model CM3286-90
includes Z3210 as a set

Included accessories



L9257 C0203

- LR03 Alkaline battery x 2
- Instruction manual

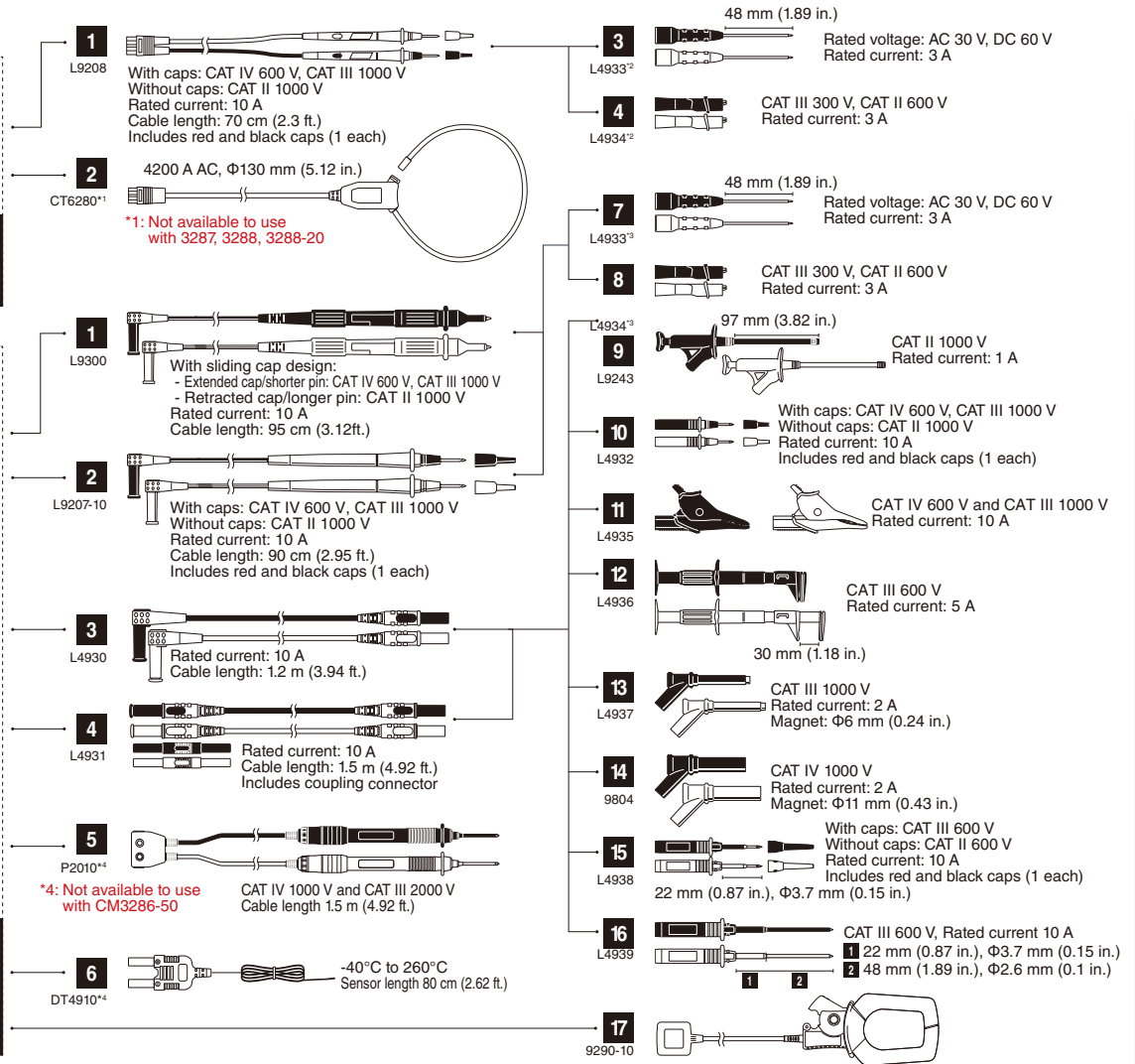
*1: Harmonics can be displayed using dedicated application software (GENNECT Cross)
*2: Voltage measurement in a completely dry condition. When jaw closes.
*3: While in storage.

| | | |
|---|--|--|
| Power (Active/ reactive/ apparent) | Single phase | 3.600 kW, 36.00 kW, 360.0 kW Guaranteed accuracy range: 0.005 kW to 360.0 kW Basic accuracy: ±2.0% rdg. ±7 dgt. |
| | Balanced three-phase 3-wire | 7.200 kW, 72.00 kW, 720.0 kW guaranteed accuracy range: 0.020 kW to 623.5 kW Basic accuracy: ±3.0% rdg. ±10 dgt. |
| | Balanced three-phase 4-wire | 10.80 kW, 108.0 kW, 1080 kW guaranteed accuracy range: 0.040 kW to 1080 kW Basic accuracy: ±2.0% rdg. ±3 dgt. |
| Measurement parameters | AC Current | 6.000 A, 60.00 A, 600.0 A Basic accuracy: ±1.0% rdg. ±3 dgt. |
| | AC Voltage | 600.0 V Basic accuracy: ±0.7% rdg. ±3 dgt. |
| | Power factor | Single-phase, Balanced three-phase 4-wire: [Regeneration] -1.000 to -0.001, [Consumption] 0.000 to 1.000 Balanced three-phase 3-wire: [Regeneration] -0.001, [Consumption] 0.000 to 1.000 |
| | Phase angle | Single-phase, Balanced three-phase 4-wire: [lead] -180.0° to -0.1°, [lag] 0.0° to 179.9° Balanced three-phase 3-wire: [lead] -90.0° to -0.1°, [lag] 0.0° to 90.0° |
| | Frequency | 45.0 Hz to 999.9 Hz |
| Other | Simple Active Energy Consumption (single-phase) | 99.99 Wh, 999.9 Wh, 9.999 kWh, 99.99 kWh, 999.9 kWh, 9999 kWh |
| | Harmonic*1 (with Z3210) | Voltage or current harmonic levels up to 30th order, content factor, total harmonic distortion ratio |
| | Display refresh rate | 2 times/s |
| | Operating temperature | -25°C to 65°C, 80% RH or less (non-condensating) |
| | Storage temperature | -25°C to 65°C, 80% RH or less (non-condensating) |
| | Dustproof and waterproof | IP20 ² /IP50 ³ |
| | Power supply Continuous operating time | LR03 Alkaline battery x 2 25 hours |
| | Dimensions (W x H x D) | 65 x 241 x 35 mm (2.56 x 9.49 x 1.38 inch) |
| | Weight | 450 g (15.9 oz.) |
| | | |

Options



**CM4371-50
CM4373-50
CM4375-50
CM4141-50
CM3286-50**



| 3280-10F, CM3289, CM3291, 3287, 3288, 3288-20 | | |
|---|-----------------------------------|---|
| 1 | TEST LEAD L9208 | With caps: CAT IV 600 V, CAT III 1000 V Without caps: CAT II 1000 V Rated current: 10 A |
| 2 | AC FLEXIBLE CURRENT SENSOR CT6280 | For 3280-10F, CM3289, CM3281, CM3291 AC 4200 A, Φ 130 mm (5.12 in.) |
| 3 | CONTACT PIN SET L4933 | AC 30 V, DC 60 V, 3 A |
| 4 | SMALL ALLIGATOR CLIP SET L4934 | CAT III 300 V, CAT II 600 V, 3 A |
| 5 | CARRYING CASE 9398 | For 3280-10F, CM3289, 3287, 3288, 3288-20 |
| 6 | CARRYING CASE C0205 | Bundled accessory for CT6280 |
| 7 | TEST LEADS HOLDER 9209 | For 3280-10F, CM3289, 3287, 3288, 3288-20 |



| CM4371-50, CM4373-50, CM4375-50, CM4141-50, CM3286-50 | | |
|---|--------------------------------|--|
| 1 | TEST LEAD L9300 | CAT IV 600 V, CAT III 1000 V CAT II 1000 V Rated current: 10 A |
| 2 | TEST LEAD L9207-10 | With caps: CAT IV 600 V, CAT III 1000 V Without caps: CAT II 1000 V 10 A |
| 3 | CONNECTION CABLE SET L4930 | 10 A |
| 4 | EXTENSION CABLE SET L4931 | 10 A |
| 5 | DC HIGH VOLTAGE PROBE P2010 | Excluding CM3286-20 CAT IV 1000 V, CAT III 2000 V |
| 6 | THERMOCOUPLES (K) DT4910 | Excluding CM3286-20 AC 30 V, DC 60 V, 3 A |
| 7 | CONTACT PIN SET L4933 | AC 30 V, DC 60 V, 3 A |
| 8 | SMALL ALLIGATOR CLIP SET L4934 | CAT III 300 V, CAT II 600 V, 3 A |
| 9 | GRABBER CLIP L9243 | CAT II 1000 V, 1 A |
| 10 | TEST PIN SET L4932 | With caps: CAT IV 600 V, CAT III 1000 V Without caps: CAT II 1000 V 10 A |
| 11 | ALLIGATOR CLIP SET L4935 | CAT IV 600 V, CAT III 1000 V, 10 A |
| 12 | BUS BAR CLIP SET L4936 | CAT III 600 V, 5 A |
| 13 | MAGNETIC ADAPTER SET L4937 | CAT III 1000 V, 2 A |
| 14 | MAGNETIC ADAPTER SET 9804 | CAT IV 1000 V, 2 A |
| 15 | TEST PIN SET L4938 | With caps: CAT III 600 V Without caps: CAT II 600 V 10 A |
| 16 | BREAKER PIN SET L4939 | CAT III 600 V, 10 A |
| 17 | CLAMP ON ADAPTER 9290-10 | For CM3286-50 AC 1000 A, Φ 55 mm, CT ratio 10 : 1 |
| 18 | CONNECTION CORD L9257 | Combination of L4930 and L4935 |
| 19 | CARRYING CASE C0203 | |



| CM4002, CM4003 | | |
|----------------|-------------------------|------------|
| 1 | CONNECTION CABLE L9097 | For CM4003 |
| 2 | CONVERSION ADAPTER 9704 | For CM4003 |
| 3 | AC ADAPTER Z1013 | For CM4003 |
| 4 | CARRYING CASE C0203 | |



Clamp

Insulation

DIMMS

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

LAN

Signal

Lux

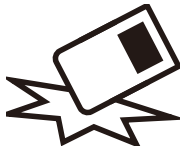
Temperature

Resistance



INSULATION TESTERS

Drop proof



Built tough to withstand a 1-meter drop onto a concrete floor



5 ranges

Rated output voltage (DC)
Effective maximum indicated value

50 V , 100 MΩ

125 V , 250 MΩ

250 V , 500 MΩ

500 V , 2000 MΩ

1000 V , 4000 MΩ

Manage Measurement Data Using Bluetooth® Communication



WIRELESS ADAPTER
Z3210 (option)
Attach to enable
Bluetooth® wireless
technology



Learn More

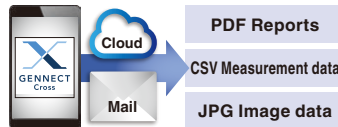
Transport to the Excel® file



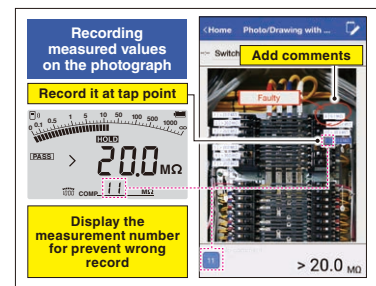
| Location | Circuit no. | Ref. value | Measurement place | Value (MΩ) |
|-------------------------|-------------|------------|-------------------|------------|
| Block Circuit Breaker A | L-A | SIM/D | R-E | 101 M Ohm |
| | | | S-E | 101 M Ohm |
| | | | T-E | 101 M Ohm |
| | | | R-S | 66.4 M Ohm |
| | | | S-T | 99.9 M Ohm |
| | | | T-R | 99.9 M Ohm |

Open an Excel® file and select a cell. The measured value being held on the instrument's display will be transferred to the computer and entered into the selected cell.

Transport to GENNECT Cross

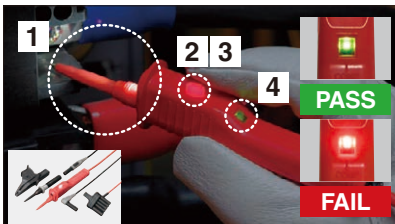


Learn More



GENNECT Cross, a free app designed specifically for use with Hioki measuring instruments, lets you check and manage measurement results and create reports. The software provides a range of functionality that helps manage data in the field, including photographing measurement sites, placing measurement results on photographs, and saving handwritten memos.

Significantly Improve Testing Speed using Test Lead with Remote Switch



- 1 LED light shines a spotlight on the target
- 2 Red light warns of live voltage detection
- 3 Measurement start switch
- 4 Identify pass/fail decisions with red or green light

TEST LEAD SET WITH REMOTE SWITCH L9788-11 (option)
*Standard with the IR4059 and IR4056-21

Identify PASS/FAIL using Light and Sound



Compare measured values to pre-set reference values to generate a pass or fail decision with the Comparator function.

Convenient for Inspections

Low resistance measurement^{*1}

Perform EV and HEV continuity checks as well as resistance measurement of protective conductors in facility electrical equipment as defined by IEC 60364.

AC/DC voltage measurement

Automatically detect AC or DC for testing. Use as a tester thanks to DC voltage measurement functionality.

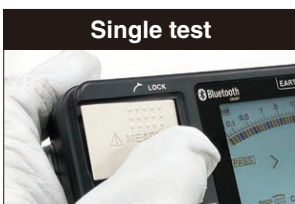
PV Ω dedicated function^{*2}

Measurement is not affected even when the PV system is online.

^{*1} Excludes IR4053 ^{*2} IR4053 Only

One-touch Start and Stop

Single test



Measurement voltage is applied while MEASURE key is pressed

Continuous test



Lift and lock the MEASURE key to apply a continuous stream of voltage

Prevent Accidental High Voltage Generation

Flashing light









Under [500V], [1000V], or [PVΩ] settings, the RELEASE button will blink. Press to unlock the release of high voltages as an extra safety measure.

Release lock



Lineup - Digital

| Measurement type | Low voltage (less than 1000 V) | | | | High voltage (less than 5000 V) | |
|--|---|---|---|--|---|---|
| | Standard | High-speed | EV | PV | | Standard |
| Model | IR4056-20 IR4056-21 | IR4057-50 | IR4059 | IR4053-10 | IR5051 | IR5050 |
| Appearance |  |  |  |  |  |  |
| Number of ranges | 5 | | | | 5 | |
| Applied voltage (DC) and effective maximum indicated value | 50 V, 100 MΩ 125 V, 250 MΩ 250 V, 500 MΩ 500 V, 2000 MΩ 1000 V, 4000 MΩ | | | | 250 V, 500 GΩ 500 V, 1.00 TΩ 1000 V, 2.00 TΩ 2500 V, 5.00 TΩ 5000 V, 10.00 TΩ | |
| PV Ω measurement | N/A | | | 500 V, 2000 MΩ 1000 V, 4000 MΩ | 500 V, 100 GΩ 1000 V, 100 GΩ 1500 V, 100 GΩ | N/A |
| Leakage current measurement | N/A | | | | 0.00 nA to 2.00 mA | |
| DC voltage measurement | 600 V | | | 1000 V | 2000 V | |
| AC voltage measurement | 600 V | | | | 1000 V | |
| Low resistance measurement | ✓ | | | N/A | N/A | |
| Displaying 1-min. values | N/A | ✓ | | N/A | N/A | |
| Comparator decision response time | ✓ 0.8 second | ✓ 0.3 second | | ✓ 0.8 second (PV: 4 second) | N/A | |
| AUTO power save | ✓ | | | | ✓ | |
| Bluetooth® communication | N/A | ✓ (with Z3210) | | N/A | ✓ (with Z3210) | |
| Resistance gauge | N/A | ✓ | | N/A | ✓ | |
| Backlight | ✓ | | | | ✓ | |
| Safety standard category | CAT III 600 V | | | | CAT IV 1000 V CAT III 2000 V | |
| CE | ✓ ^{*1} | | | | ✓ | |
| Dustproof and waterproof | IP40 ^{*2} | | | | IP40 ^{*2, *3} , IP65 ^{*4} | |
| Drop proof | ✓ | | | | N/A | |
| Power supply | LR03 (AAA) alkaline battery × 4 HR6 (AA) NiMH rechargeable battery x4 | | | | LR6 (AA) alkaline battery × 8 HR6 (AA) NiMH rechargeable battery x8 | |
| Dimensions (W × H × D) | 159 × 177 × 53 mm 6.26 × 6.97 × 2.09 in. | | 160 × 98 × 46 mm 6.30 × 3.86 × 1.81 in. | 159 × 177 × 53 mm 6.26 × 6.97 × 2.09 in. | 195 × 254 × 89 mm 7.68 × 10 × 3.50 in. | |
| Weight | 600 g (21.2 oz.) | 640 g (22.6 oz.) | 536 g (18.9 oz.) | 600 g (21.2 oz.) | 1.7 kg (59.97 oz.) | |

^{*1} IR4056-21 excluded ^{*2} Terminals are excluded ^{*3} When the protector is attached ^{*4} When stored in attached CARRYING CASE C0212



Product warranty for 3 years
Accuracy guaranteed for 1 year

Lineup - Analog Meters

| | | | | | | |
|------------------------|---------------|--|--|--|-------|--------------------------------------|
| Measurement parameters | 3 Ranges | | Applied voltage (DC) | 250 V | 500 V | 1000 V |
| | | | Effective maximum indicated value | 100 MΩ | | 4000 MΩ |
| | | | 1st effective measuring range | 0.05 MΩ to 50 MΩ | | 2 MΩ to 1000 MΩ |
| | | | 2nd effective measuring range | 0.01 MΩ to 0.05 MΩ or less 50 MΩ to 100 MΩ | | 0.5 MΩ to 2 MΩ 1000 MΩ to 4000 MΩ |
| | IR4016 -20 | | Applied voltage (DC) | 500 V | | |
| | | | Effective maximum indicated value | 100 MΩ | | |
| | | | 1st effective measuring range | 0.1 MΩ to 50 MΩ | | |
| | | | 2nd effective measuring range | 0.01 MΩ to 0.1 MΩ or less 50 MΩ or more to 100 MΩ | | |
| | 1 Range | | Applied voltage (DC) | 500 V | | |
| | | | Effective maximum indicated value | 1000 MΩ | | |
| | | | 1st effective measuring range | 1 MΩ to 500 MΩ | | |
| | | | 2st effective measuring range | 0.5 MΩ to 1 MΩ or less 500 MΩ or more to 1000 MΩ | | |
| | IR4018 -20 | | Applied voltage (DC) | 1000 V | | |
| | | | Effective maximum indicated value | 2000 MΩ | | |
| | | | 1st effective measuring range | 2 MΩ to 1000 MΩ | | |
| | | | 2nd effective measuring range | 1 MΩ to 2 MΩ or less 1000 MΩ or more to 2000 MΩ | | |
| Accuracy (insulation) | | | ±2% of scale length (1st effective measuring range) ±2% of scale length (2nd effective measuring range) | | | |
| AC Voltage | | | 0 to 600 V | | | |

| | | |
|-------|---------------------------|--|
| Other | Operating temperature | 0°C to 40°C, 90% RH or less (non-condensating) |
| | Storage temperature | -10°C to 50°C, 90% RH or less (non-condensating) |
| | Dustproof and waterproof | IP40 (terminal excluded) |
| | Drop proof | YES |
| | Backlight | YES |
| | Safety standard category | CAT III 600 V |
| | Standards | EN61010 (Safety), EN61326 (EMC) |
| | Power supply | LR6 alkaline battery × 4 |
| | Continuous operating time | 20 hours |
| | Dimensions (W × H × D) | 3490: 162 × 167 × 52 mm (6.38 × 6.57 × 2.05 in.) IR4016, IR4017, IR4018: 162 × 182 × 57 mm (6.38 × 7.17 × 2.24 in.) |
| | Weight | 3490: 840 g (29.6 oz.), IR4016, IR4017, IR4018: 820 g (28.9 oz.) |

Included accessories



L9787

- TEST LEAD L9787 (1.2 m)
- Neck strap
- LR6 alkaline battery × 4
- Instruction manual

| | |
|------------|------------------|
| Order code | 3490 |
| Order code | IR4016-20 |
| Order code | IR4017-20 |
| Order code | IR4018-20 |

Clamp

Insulation

DIMMS

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

LAN

Signal

Lux

Temperature

Resistance

INSULATION TESTER IR4056-20, IR4056-21

CE * IR4056-20 only
Product warranty for 3 years
Accuracy guaranteed for 1 year



- Included accessories
- TEST LEAD L9787
 - Neck strap
 - LR6 alkaline battery × 4
 - Instruction manual

IR4056-20



- Included accessories
- TEST LEAD SET WITH REMOTE SWITCH L9788-11
 - Neck strap
 - LR6 alkaline battery × 4
 - Instruction manual

IR4056-21 **Not CE marked**

CAT **DISPLAY HOLD** **AUTO OFF**

Comparator decision response time : 0.8 s

5 ranges

CAT III 600 V

INSULATION TESTER IR4057-50, IR4059

CE **SP** ^{US} * IR4057-50 only
Product warranty for 3 years
Accuracy guaranteed for 1 year



IR4057-50



IR4059



L4930



L4938



L4935



WIRELESS ADAPTER
Z3210 (option)

Attach to enable
Bluetooth®
wireless technology

With Z3210



Please see www.hioki.com
for list of supported regions.



CAT **DISPLAY HOLD** **AUTO OFF**

Comparator decision response time : 0.3 s

Digital bar graph

5 ranges

CAT III 600 V

- Included accessories
- CONNECTION CABLE L4930
 - ALLIGATOR CLIP SET L4935
 - TEST PIN SET L4938
 - TEST LEAD SET WITH REMOTE SWITCH (RED) L9788-10 (IR4059 only)
 - PROTECTOR Z5042 (IR4059 only)
 - Neck strap
 - LR6 alkaline battery × 4
 - Instruction manual

CE

INSULATION TESTER (for Photovoltaic Generation Systems) IR4053-10

Product warranty for 3 years
Accuracy guaranteed for 1 year



- Included accessories
- TEST LEAD L9787
 - Neck strap
 - LR6 alkaline battery × 4
 - Instruction manual

IR4053-10

CAT **DISPLAY HOLD** **AUTO OFF**

Comparator decision response time : 0.8 s

Comparator decision response time (PV) : 4 s

5 ranges

CAT III 600 V

| Model | IR4056-20 | IR4056-21 | IR4057-50 | IR4059 | IR4053 | | | | | | | Basic accuracy |
|------------------------|----------------------------|-----------|-----------|--------|--------|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------|
| Measurement parameters | Insulation resistance | ✓ | ✓ | ✓ | ✓ | Applied voltage (DC) | 50 V | 125 V | 250 V | 500 V | 1000 V | - |
| | | | | | | Effective maximum indicated value (MΩ) | 100 | 250 | 500 | 2000 | 4000 | - |
| | | | | | | 1st effective measuring range (MΩ) | 0.200 to 10.00 | 0.200 to 25.0 | 0.200 to 50.0 | 0.200 to 500 | 0.200 to 1000 | ±2% rdg. ±2 dgt. |
| | PV Ω measurement | N/A | N/A | ✓ | ✓ | 2nd effective measuring range (MΩ) | 10.1 to 100.0 | 25.1 to 250 | 50.1 to 500 | 501 to 2000 | 1010 to 4000 | ±5% rdg. |
| | | | | | | Applied voltage (DC) | 500 V | 1000 V | 1000 V | 1000 V | 1000 V | - |
| | | | | | | Effective maximum indicated value (MΩ) | 2000 | 4000 | 4000 | 4000 | 4000 | - |
| Other | DC Voltage | N/A | ✓ | N/A | ✓ | 1st effective measuring range (MΩ) | 0.200 to 500 | 0.200 to 500 | 0.200 to 500 | 0.200 to 1000 | 0.200 to 1000 | ±4% rdg. |
| | | | | | | 2nd effective measuring range (MΩ) | 501 to 2000 | 501 to 2000 | 501 to 2000 | 1010 to 4000 | 1010 to 4000 | ±8% rdg. |
| | AC Voltage | N/A | ✓ | N/A | ✓ | 4.200 V, 42.00 V, 420.0 V, 1000 V | 4.200 V, 42.00 V, 420.0 V, 600 V | 4.200 V, 42.00 V, 420.0 V, 600 V | 4.200 V, 42.00 V, 420.0 V, 600 V | 4.200 V, 42.00 V, 420.0 V, 600 V | 4.200 V, 42.00 V, 420.0 V, 600 V | ±1.3% rdg. ±4 dgt. *1 |
| | | | | | | 420.0 V *2, 600 V | 420.0 V *2, 600 V | 420.0 V *2, 600 V | 420.0 V *2, 600 V | 420.0 V *2, 600 V | 420.0 V *2, 600 V | ±1.3% rdg. ±4 dgt. *1 |
| Other | Low resistance measurement | ✓ | N/A | N/A | N/A | 10.00 Ω, 100.0 Ω, 1000 Ω | 10.00 Ω, 100.0 Ω, 1000 Ω | 10.00 Ω, 100.0 Ω, 1000 Ω | 10.00 Ω, 100.0 Ω, 1000 Ω | 10.00 Ω, 100.0 Ω, 1000 Ω | 10.00 Ω, 100.0 Ω, 1000 Ω | ±3% rdg. ±2 dgt. |

| | |
|---------------------------|---|
| Operating temperature | IR4056-20, IR4056-21, IR4057-50, IR4059: -25°C to 65°C, 90% RH or less (non-condensating) |
| | IR4053: 0°C to 50°C, 90% RH or less (non-condensating) |
| Storage temperature | IR4056-20, IR4056-21, IR4057-50, IR4059: -25°C to 65°C, 90% RH or less (non-condensating) |
| | IR4053: -10 °C to 50°C, 90% RH or less (non-condensating) |
| Dustproof and waterproof | IP40 (terminal excluded) |
| | Standards |
| Power supply | EN61326 (EMC), EN61557-1/2/4/3/10 |
| | LR6 alkaline battery × 4 |
| Continuous operating time | 20 hours |
| | Dimensions (W × H × D) |
| Weight | IR4056-20, IR4056-21, IR4057-50, IR4053-10: 159 × 177 × 53 mm (6.26 × 6.97 × 2.09 in.) |
| | IR4059: 160 × 98 × 46 mm (6.30 × 3.86 × 1.81 in.) |
| Weight | IR4056-20, IR4056-21, IR4053-10: 600 g (21.2 oz.) |
| | IR4059: 536 (18.9 oz.) |
| Weight | IR4057-50: 640 g (22.6 oz.) |

*1 Ranges in excess of 600 V, 1000 V are outside the accuracy guarantee
*2 Minimum indicated value: 30.0 V
*3 Subclause 4.3 of Part 4 (interchanging of test leads) is not applicable when L9788-10 is used

| | |
|---|------------------|
| Order code | IR4056-20 |
| Order code | IR4056-21 |
| Order code | IR4057-50 |
| Order code | IR4057-90 |
| Order code | IR4059 |
| Order code | IR4053-10 |
| Order code | Z3210 |
| Model IR4057-90 includes Z3210 as a set | |



HIGH VOLTAGE INSULATION TESTER IR5050, IR5051

Product warranty for 3 years
Accuracy guaranteed for 1 year



IR5050

IR5051
IR5051-90

(include Z3210 as a set)

| Standard | For PV systems |
|-------------------------------|-----------------------------|
| 5 ranges | |
| CAT IV 1000 V, CAT III 2000 V | |
| Order code IR5050 | Order code IR5051 |
| | Order code IR5051-90 |

Included accessories



- TEST LEAD L9850-01 (red), -02 (black), -03 (blue), 3 m (9.84 ft.)
- ALLIGATOR CLIP L9851-01 (red), -02 (black), -03 (blue)
- CARRYING CASE C0212
- LR6 alkaline battery x 8
- Instruction manual
- TEST PIN SET L9852 (IR5051 and IR5051-90 only)
- WIRELESS ADAPTER Z3210 (IR5051-90 only)

L9850, L9851

Options

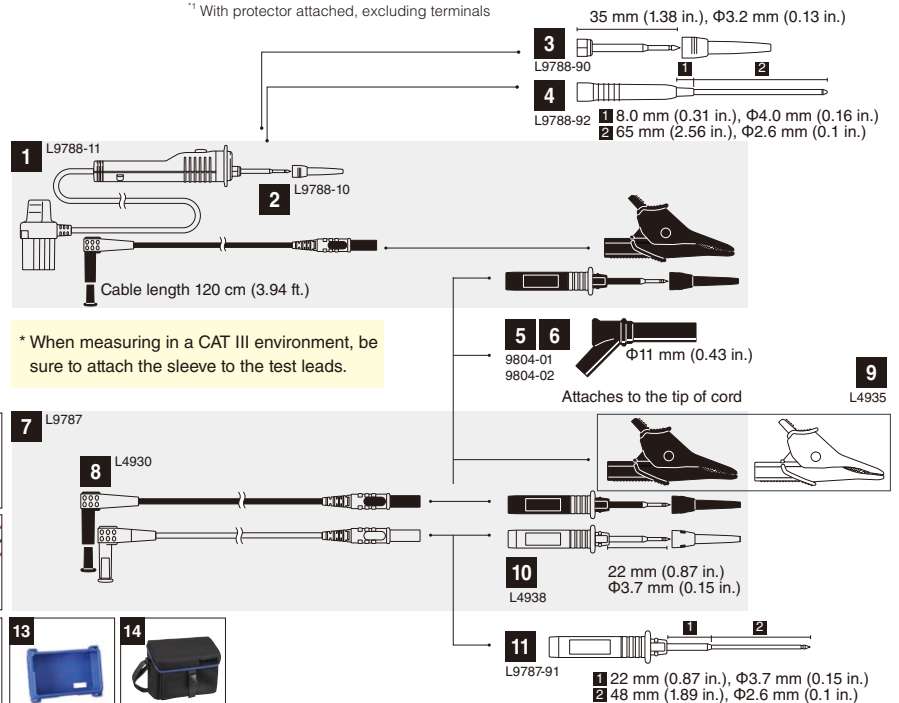
| | |
|----|--|
| 1 | TEST LEAD SET WITH REMOTE SWITCH L9788-11 |
| 2 | TEST LEAD WITH REMOTE SWITCH (RED) L9788-10 |
| 3 | TIP PIN L9788-90 |
| 4 | BREAKER PIN L9788-92 |
| 5 | MAGNETIC ADAPTER 9804-01 |
| 6 | MAGNETIC ADAPTER 9804-02 |
| 7 | TEST LEAD L9787 |
| 8 | CONNECTION CABLE SET L4930 |
| 9 | ALLIGATOR CLIP SET L4935 |
| 10 | TEST PIN SET L4938 |
| 11 | BREAKER PIN L9787-91 |
| 12 | WIRELESS ADAPTER Z3210 (for IR4057-50, IR4059) |
| 13 | PROTECTOR Z5042 (for IR4059) |
| 14 | CARRYING CASE C0213 (EV MAINTENANCE MANUAL INCLUDED) |



| IR5050, IR5051 | |
|----------------|--|
| 1 | TEST LEAD L9850-01 Red, 3 m (9.84 ft.) |
| 2 | TEST LEAD L9850-02 Black, 3 m (9.84 ft.) |
| 3 | TEST LEAD L9850-03 Blue, 3 m (9.84 ft.) |
| 4 | TEST LEAD L9850-11 Red, 10 m (32.81 ft.) |
| 5 | TEST LEAD L9850-12 Black, 10 m (32.81 ft.) |
| 6 | TEST LEAD L9850-13 Blue, 10 m (32.81 ft.) |
| 7 | ALLIGATOR CLIP L9851-01 Red |
| 8 | ALLIGATOR CLIP L9851-02 Black |
| 9 | ALLIGATOR CLIP L9851-03 Blue |
| 10 | TEST PIN SET L9852 Red and black |
| 11 | CARRYING CASE C0212 |
| 12 | WIRELESS ADAPTER Z3210 |
| 13 | COMMUNICATION PACKAGE DT4900-01 USB |

| | | |
|------------------------|--|---|
| Measurement parameters | Applied voltage (DC) and measurement range | 250 V 0.00 MΩ to 500 GΩ 500 V 0.00 MΩ to 1.00 TΩ 1000 V 0.00 MΩ to 2.00 TΩ 2500 V 0.00 MΩ to 5.00 TΩ 5000 V 0.00 MΩ to 10.00 TΩ |
| | Rated current | 1 mA to 1.2 mA |
| | Short-circuit current | 2 mA or less |
| | Accuracy | ±5% rdg. ±5 dgt., ±20% rdg. |
| | Induced noise removal | 3 mA max. |
| | Leakage current | 10 nA, 100 nA, 1000 nA, 10 μA, 100 μA, 1 mA Guaranteed accuracy range: 1.00 nA to 3.00 mA Accuracy: ±3% rdg. ±3 dgt. |
| | DC voltage | ±10 V to ±2000 V Accuracy: ±3% rdg. ±3 dgt. |
| | AC voltage | 30 V to 1000 V Accuracy: ±3% rdg. ±3 dgt. |
| | Capacitance | 100 nF, 1000 nF, 10 μF Guaranteed accuracy range: 10.0 nF to 25.0 μF Accuracy: ±10% rdg. ±5 nF |
| | PV insulation resistance (IR5051 only) | 500 V 0.00 MΩ to 100 GΩ 1000 V 0.00 MΩ to 100 GΩ 1500 V 0.00 MΩ to 100 GΩ |
| Other | Operating temperature and humidity range | -20°C to 40°C, less than 80% RH (no condensation) 40°C to 45°C, less than 60% RH (no condensation) 45°C to 50°C, less than 50% RH (no condensation) |
| | Storage temperature and humidity range | -25°C to 65°C, less than 80% RH (no condensation) |
| | Dustproof/waterproof | IP40 ¹ , IP65 (CARRYING CASE C0212) |
| | Standards | EN IEC61010 (safety), EN61326 (EMC), IEC61557-1, -2 (insulation resistance tester) |
| | Power supply | • LR6 (AA) alkaline battery x 8: • Approx. 5 hours without Z3210 installed • Approx. 4 hours with Z3210 installed and using wireless communication |
| | Continuous operating time | • HR6 (AA) nickel-metal hydride (NiMH) rechargeable battery x 8 |
| | Dimensions (W x H x D) | 195 mm (7.68 in.) x 254 mm (10 in.) x 89 mm (3.50 in.) |
| | Weight | 1.7 kg (59.97 oz.) |

¹ With protector attached, excluding terminals



* When measuring in a CAT III environment, be sure to attach the sleeve to the test leads.

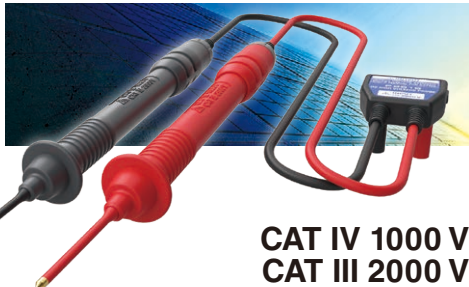




DMM TESTERS

Safely Inspects and Easily Manages Measurement Data for High-Voltage Solar Power Generation

High voltage measurement up to
CAT III 2000 V by connecting "P2010"



CAT IV 1000 V
CAT III 2000 V



DC HIGH VOLTAGE PROBE P2010 (options)

Supports wireless communication to
increase work efficiency



Cooperation with GENNECT Cross

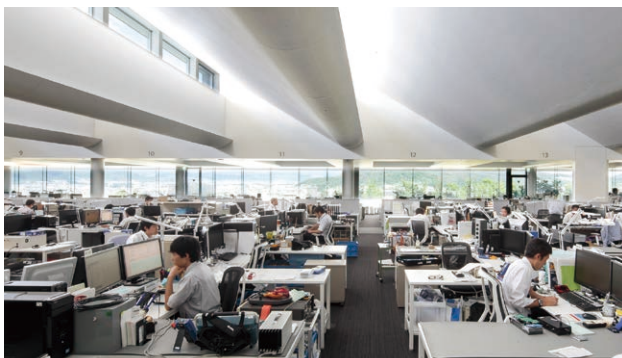


WIRELESS ADAPTER Z3210 (options)



DT4261

Designed and Manufactured in Japan



Development, design, and manufacturing processes for almost all Hiooki digital multimeters are carried out at our headquarters in Nagano Prefecture.

Withstand a 1-meter Drop onto a Concrete Floor

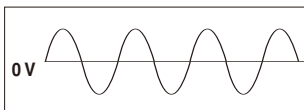


Products are dropped repeatedly until they are damaged in order to validate their impact performance. Test results are used to make design improvements and enhance durability.

Accurately Measure the Voltage of the Secondary Side of Inverters



Non-distorted current waveforms



Voltage waveforms with harmonic components

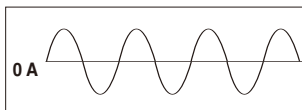


The secondary side of inverters include harmonic components. Waveforms containing harmonics are distorted and difficult to measure with accuracy. By using a low-pass filter to remove harmonic components, accurate measurement values can be obtained.

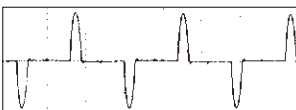
True RMS Measurement Correctly Captures Distorted Current Waveforms



Non-distorted current waveforms



Distorted waveforms due to switching power supplies



A measuring instrument uses one of two rectification methods, "True RMS" or "Mean". Using mean rectification assumes that the signal is based on a sine wave without distortions in order to calculate the value. Distorted waveforms cannot be measured accurately using this method.

Clamp

Insulation

DIMMS

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

LAN







Signal

Lux







Temperature

Resistance

Lineup

| Measurement type | Electrical work | General use | Solar power, General use | General use | Air conditioning, instrumentation | Electrical work |
|---------------------------|---|---|---|--|---|---|
| Model | High-end models | | New standard model | Standard models | | |
| | DT4281 | DT4282 | DT4261 | DT4252 | DT4253 | DT4255 |
| Appearance |  |  |  |  |  |  |
| AC measurement system | True RMS | True RMS | True RMS | True RMS | True RMS | True RMS |
| Display counts | 60000 | 60000 | 6000 | 6000 | 6000 | 6000 |
| DCV typical accuracy | ±0.025% rdg. ±2 dgt. | ±0.025% rdg. ±2 dgt. | ±0.15% rdg. ±2 dgt. | ±0.2% rdg. ±5 dgt. | ±0.3% rdg. ±5 dgt. | ±0.3% rdg. ±3 dgt. |
| Frequency characteristics | 20 Hz to 100 kHz | 20 Hz to 100 kHz | 40 Hz to 1 kHz | 40 Hz to 1 kHz | 40 Hz to 1 kHz | 40 Hz to 1 kHz |
| Measurement parameters | DC voltage (resolution) | 1000 V (0.001 mV) | 1000 V (0.001 mV) | 1000 V, 2000 V ¹ (0.1 mV) | 1000 V (0.1 mV) | 1000 V (0.1 mV) |
| | AC voltage (resolution) | 1000 V (0.001 mV) | 1000 V (0.001 V) | 1000 V (0.001 V) | 1000 V (0.001 V) | 1000 V (0.001 V) |
| | DCV + ACV | 1000 V | 1000 V | 1000 V | N/A | N/A |
| | DC current (resolution) | 600 mA (0.01 μA) | 10 A (0.01 μA) | 10 A (0.1 mA) | 10 A (0.001 A) | 60 mA (0.01 μA) |
| | AC current (resolution) | 600 mA (0.01 μA) | 10 A (0.01 μA) | 10 A (0.1 mA) | 10 A (0.001 A) | N/A |
| | AC current (clamp) | 1000 A | N/A | 1000 A | N/A | 1000 A |
| | Resistance | 600 MΩ | 600 MΩ | 60 MΩ | 60 MΩ | 60 MΩ |
| | Temperature | -40°C to 800°C | -40°C to 800°C | N/A | N/A | -40°C to 400°C |
| | Capacitance | 100 mF | 100 mF | 10 mF | 10 mF | 10 mF |
| | Frequency | 500 kHz | 500 kHz | 99 kHz | 99 kHz | 99 kHz |
| | Continuity check | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Diode check | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Conductance | N/A | ✓ | N/A | N/A | N/A |
| | Voltage detection | N/A | N/A | N/A | N/A | ✓ |
| Additional functions | AUTO AC/DCV | N/A | N/A | ✓ | ✓ | ✓ |
| | MAX/MIN/AVG | MAX/MIN | MAX/MIN | ✓ | ✓ | ✓ |
| | PEAK display | ✓ | ✓ | ✓ | N/A | N/A |
| | Relative display | ✓ | ✓ | N/A | ✓ | ✓ |
| | Decibel conversion | ✓ | ✓ | N/A | N/A | N/A |
| | Percentage conversion display (4-20 mA) | ✓ | ✓ | N/A | ✓ | N/A |
| Display | AUTO range | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Hold display value | AUTO /MANUAL | AUTO /MANUAL | AUTO /MANUAL | AUTO /MANUAL | AUTO /MANUAL |
| | Dual display | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Bar graph display | N/A | N/A | ✓ | ✓ | ✓ |
| | Backlight | ✓ | ✓ | ✓ | ✓ | ✓ |
| Safety | Internal memory | ✓ | ✓ | N/A | N/A | N/A |
| | USB communication ² | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Bluetooth® communication | N/A | N/A | ✓ (with Z3210) | N/A | N/A |
| | Mis-insertion prevention shutters | ✓ | ✓ | ✓ | N/A | N/A |
| | Circuit breaker false trip prevention | N/A | N/A | N/A | N/A | N/A |
| | Safety standard category | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 1000 V |
| | CE | N/A | N/A | ✓ | ✓ | ✓ |
| Safety | Dustproof and waterproof | IP40 | IP40 | IP40 (when operating) IP42 (while in storage) ^{*3 *4} | IP40 (when operating) IP42 (while in storage) ^{*3 *4} | IP40 (when operating) IP42 (while in storage) ^{*3 *4} |
| | Drop proof | ✓ | ✓ | ✓ | ✓ | ✓ |
| Auto power off | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Power supply | LR6 ×4 alkaline battery | LR6 ×4 alkaline battery | LR6 ×3 alkaline battery | LR03 ×4 alkaline battery | LR03 ×4 alkaline battery | LR03 ×4 alkaline battery |
| Dimensions (W × H × D) | 93 × 197 × 53 mm 3.66 × 7.76 × 2.09 in. | 93 × 197 × 53 mm 3.66 × 7.76 × 2.09 in. | 87 × 185 × 47 mm 3.43 × 7.28 × 1.85 in. | 84 × 174 × 52 mm 3.31 × 6.85 × 2.05 in. | 84 × 174 × 52 mm 3.31 × 6.85 × 2.05 in. | 84 × 174 × 52 mm 3.31 × 6.85 × 2.05 in. |
| Weight | 650 g, 22.9 oz. | 650 g, 22.9 oz. | 480 g, 16.9 oz. | 390 g, 13.8 oz. | 390 g, 13.8 oz. | 390 g, 13.8 oz. |

*1: 2000 V is supported only when using the optional DC HIGH VOLTAGE PROBE P2010 *2: Requires optional COMMUNICATION PACKAGE (USB) DT4900-01 *3: Do not use in wet conditions.
*4: Excludes measuring terminals

| Measurement type | General use | Electrical work | General use | Electrical work | Electrical work | Electrical work |
|--------------------------------------|---|---|---|--|---|---|
| Model | Standard models | Pocket models | | 3030-10 | 3244-60 | 3246-60 |
| | DT4256 | DT4223 | DT4224 | | | |
| Appearance |  |  |  |  |  |  |
| AC measurement system | True RMS | True RMS | True RMS | N/A | MEAN Value | MEAN Value |
| Display count | 6000 | 6000 | 6000 | N/A | 4199 | 4199 |
| DCV typical accuracy | ±0.3% rdg. ±3 dgt. | ±0.5% rdg. ±5 dgt. | ±0.5% rdg. ±5 dgt. | f.s. reading ±2.5% | ±0.7% rdg. ±4 dgt. | ±1.3% rdg. ±4 dgt. |
| Frequency characteristics | 40 Hz to 1 kHz | 40 Hz to 1 kHz | 40 Hz to 1 kHz | N/A | 50 Hz to 500 Hz | 50 Hz to 500 Hz |
| Measurement parameters | DC voltage (resolution) | 1000 V (0.1 mV) | 600 V (0.1 mV) | 600 V (0.1 mV) | 500 V (0.1 mV) | 600 V |
| | AC voltage (resolution) | 1000 V (0.001 V) | 600 V (0.001 V) | 600 V (0.001 V) | 500 V (0.001 V) | 600 V |
| | DCV + ACV | N/A | N/A | N/A | N/A | N/A |
| | DC current (resolution) | 10 A (0.01 mA) | N/A | N/A | N/A | N/A |
| | AC current (resolution) | 10 A (0.1 mA) | N/A | N/A | N/A | N/A |
| | AC current (clamp) | 1000 A | N/A | N/A | N/A | N/A |
| | Resistance | 60 MΩ | 60 MΩ | 60 MΩ | 42 MΩ | 42 MΩ |
| | Temperature | N/A | N/A | N/A | N/A | N/A |
| | Capacitance | 10 mF | N/A | 10 mF | N/A | N/A |
| | Frequency | 99 kHz | 9.9 kHz | 9.9 kHz | N/A | N/A |
| | Continuity check | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Diode check | ✓ | N/A | ✓ | N/A | ✓ |
| | Conductance | N/A | N/A | N/A | N/A | N/A |
| | Voltage detection | ✓ | ✓ | N/A | N/A | N/A |
| Additional functions | AUTO AC/DCV | ✓ | ✓ | N/A | N/A | N/A |
| | MAX/MIN/AVG | ✓ | N/A | N/A | N/A | N/A |
| | PEAK display | N/A | N/A | N/A | N/A | N/A |
| | Relative display | ✓ | ✓ | ✓ | N/A | N/A |
| | Decibel conversion | N/A | N/A | N/A | N/A | N/A |
| | Percentage conversion display (4-20 mA) | N/A | N/A | N/A | N/A | N/A |
| Display | AUTO range | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Hold display value | AUTO /MANUAL | AUTO /MANUAL | AUTO /MANUAL | N/A | ✓ |
| | Dual display | ✓ | N/A | N/A | N/A | N/A |
| | Bar graph display | ✓ | ✓ | ✓ | N/A | N/A |
| | Backlight | ✓ | ✓ | ✓ | N/A | ✓ |
| Internal memory | N/A | N/A | N/A | N/A | N/A | N/A |
| USB communication ² | ✓ | N/A | N/A | N/A | N/A | N/A |
| Bluetooth [®] communication | N/A | N/A | N/A | N/A | N/A | N/A |
| Safety | Mis-insertion prevention shutters | N/A | N/A | N/A | N/A | N/A |
| | Circuit breaker false trip prevention | N/A | ✓ | ✓ | N/A | N/A |
| | Safety standard category | CAT IV 600 V CAT III 1000 V | CAT IV 300 V CAT III 600 V | CAT IV 300 V CAT III 600 V | CAT III 300 V | CAT IV 300 V CAT III 600 V |
| | CE | ✓ | ✓ | ✓ | N/A | N/A |
| | Dustproof and waterproof | IP40 (when operating) IP42 (while in storage) *3 *4 | IP40 (when operating) IP42 (while in storage) *3 *4 | IP40 (when operating) IP42 (while in storage) *3 *4 | N/A | N/A |
| | Drop proof | ✓ | ✓ | ✓ | N/A | N/A |
| Auto power off | ✓ | ✓ | ✓ | N/A | ✓ | ✓ |
| Power supply | LR03 ×4 alkaline battery | LR03 ×1 alkaline battery | LR03 ×1 alkaline battery | R6P ×2 manganese battery | CR2032 ×1 coin type battery | CR2032 ×1 coin type battery |
| Dimensions (W × H × D) | 84 × 174 × 52 mm 3.31 × 6.85 × 2.05 in. | 72 × 149 × 38 mm 2.83 × 5.87 × 1.50 in. | 72 × 149 × 38 mm 2.83 × 5.87 × 1.50 in. | 95 × 141 × 39 mm 3.74 × 5.55 × 1.54 in. | 55 × 109 × 9.5 mm 2.17 × 4.29 × 0.37 in. | 30 × 182 × 26.5 mm 1.18 × 7.17 × 1.04 in. |
| Weight | 390 g, 13.8 oz. | 190 g, 6.7 oz. | 190 g, 6.7 oz. | 280 g, 9.9 oz. | 60 g, 2.1 oz. | 80 g, 2.8 oz. |

Product warranty for 3 years
Accuracy guaranteed for 1 year

DIGITAL MULTIMETER DT4281, DT4282



DT4281



DT4282

Electrical work



General use



High-end models

60000 Counts

DCV typical accuracy: $\pm 0.025\%$ rdg. ± 2 dgt.

CAT IV 600 V, CAT III 1000 V

Premium DMMs Deliver
High Precision and
Full Array of Features

extensive additional functionality

It is equipped with additional functions for more advanced measurements. It has a PEAK value display, useful for measuring ripple voltage in DC power supply systems, and a 4-20 mA and 0-20 mA conversion display, useful for measuring instrumentation signals.

- Display of maximum/minimum values
- Display of PEAK value
- Relative display
- Percent conversion 4-20mA

Product warranty for 3 years
Accuracy guaranteed for 1 year



DIGITAL MULTIMETER DT4261



DT4261

General use



New standard model

6000 Counts

DCV typical accuracy: $\pm 0.15\%$ rdg. ± 2 dgt.

CAT IV 600 V, CAT III 1000 V

With P2010 CAT IV 1000 V, CAT III 2000 V

Safely inspects for high-voltage
solar power generation

Safety and Convenience



measurable up to
CAT III 2000 V.

DC HIGH VOLTAGE PROBE P2010 (options)



Bluetooth®
communication is
available

WIRELESS ADAPTER Z3210 (options)



DIGITAL MULTIMETER DT4252, DT4253, DT4255, DT4256

Product warranty for 3 years
Accuracy guaranteed for 1 year



DT4252



DT4253



DT4255



DT4256

General use



Air conditioning, instrumentation



Electrical work



General use



Standard models

6000 Counts

DCV typical accuracy: $\pm 0.3\%$ rdg. ± 5 dgt.

CAT IV 600 V, CAT III 1000 V

Choose from 4 Models to Fit Your Application

Equipped with specialized functions
catering to your needs

Air conditioning, instrumentation

- Measure low currents with 60 μ A range
- Test temperature
- 4 to 20 mA % display

Electrical work

- Prevent short-circuit accidents with a fast-blow fuse and current-limiting resistor



DIGITAL MULTIMETER DT4223, DT4224

Product warranty for 3 years
Accuracy guaranteed for 1 year



DT4223



DT4224

Electrical work



General use



Pocket models

6000 Counts

DCV typical accuracy: $\pm 0.5\%$ rdg. ± 5 dgt.

CAT IV 300 V, CAT III 600 V

Compact and Convenient

Circuit breaker false trip prevention



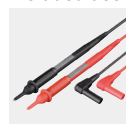
Eliminate accidents such as tripped earth leakage breakers or flash arcs even when mistakenly inputting voltage while in resistance measurement mode



| Model | DT4281 | DT4282 | Basic accuracy | Basic accuracy |
|--------------------|--------|--------|--|----------------------|
| DC voltage | ✓ | ✓ | 60.000 mV, 600.00 mV, 6.0000 V, 60.000 V, 600.00 V, 1000.0 V | ±0.025% rdg. ±2 dgt. |
| AC voltage | ✓ | ✓ | 60.000 mV, 600.00 mV, 6.0000 V, 60.000 V, 600.00 V, 1000.0 V | ±0.2% rdg. ±25 dgt. |
| DCV + ACV | ✓ | ✓ | 6.0000 V, 60.000 V, 600.00 V, 1000.0 V | ±0.3% rdg. ±30 dgt. |
| DC current | ✓ | N/A | 600.00 µA, 6000.0 µA, 60.000 mA, 600.00 mA | ±0.05% rdg. ±5 dgt. |
| AC current | N/A | ✓ | 600.00 µA, 6000.0 µA, 60.000 mA, 600.00 mA, 6.0000 A, 10.000 A | ±0.05% rdg. ±5 dgt. |
| AC current (clamp) | ✓ | N/A | 600.00 µA, 6000.0 µA, 60.000 mA, 600.00 mA | ±0.6% rdg. ±5 dgt. |
| Resistance | ✓ | ✓ | 600.00 µA, 6000.0 µA, 60.000 mA, 600.00 mA, 6.0000 A, 10.000 A | ±0.6% rdg. ±3 dgt. |
| Temperature | ✓ | ✓ | 10.00 A, 20.00 A, 50.00 A, 100.0 A, 200.0 A, 500.0 A, 1000 A | ±0.6% rdg. ±2 dgt. |
| Capacitance | ✓ | ✓ | 60.000 Ω, 600.00 Ω, 6.0000 kΩ, 60.000 kΩ, 600.00 kΩ, 6.0000 MΩ, 60.00 MΩ, 600.0 MΩ | ±0.03% rdg. ±2 dgt. |
| Frequency | ✓ | ✓ | -40.0°C to 800.0°C | ±0.5% rdg. ±3°C |
| Continuity check | ✓ | ✓ | 1.000 nF, 10.00 nF, 100.0 nF, 1.000 µF, 10.00 µF, 100.0 µF, 1.000 mF, 10.00 mF, 100.0 mF | ±1% rdg. ±5 dgt. |
| Diode check | ✓ | ✓ | 99.999 Hz, 999.99 Hz, 9.9999 kHz, 99.999 kHz, 500.00 kHz | ±0.005% rdg. ±3 dgt. |
| Conductance | N/A | ✓ | (Short detection) 20/50/100/500 Ω or less, (open detection) 220/250/300/600 Ω or more | - |
| | | | 0.15/0.5/1.0/1.5/2.0/2.5/3.0 V (continuous buzzer sound, flashing red light) | - |
| | | | 600.00 nS | - |

| | |
|---------------------------|---|
| Operating temperature | -15°C to 55°C (non-condensating) |
| Storage temperature | -30°C to 60°C (non-condensating) |
| Dustproof and waterproof | IP40 |
| Standards | EN61010 (Safety), EN61326 (EMC) |
| Power supply | LR6 alkaline battery x4 |
| Continuous operating time | 100 hours (backlight OFF) |
| Dimensions (W x H x D) | 93 x 197 x 53 mm (3.66 x 7.76 x 2.09 in.) |
| Weight | 650 g (22.9 oz.) |

Included accessories



L9300

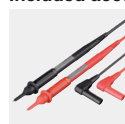
- LR6 alkaline battery x 4
- Instruction manual

Order code **DT4281**Order code **DT4282**

| Model | DT4252 | DT4253 | DT4255 | DT4256 | DT4261 | Basic accuracy |
|--------------------|--------|--------|--------|--------|--------|--|
| DC voltage | N/A | ✓ | ✓ | ✓ | N/A | 600.0 mV, 6.000 V, 60.00 V, 600.0 V, 1000 V |
| AC voltage | ✓ | N/A | N/A | N/A | N/A | 600.0 mV, 6.000 V, 60.00 V, 600.0 V, 1000 V |
| DCV + ACV | ✓ | ✓ | ✓ | ✓ | ✓ | 600.0 mV, 6.000 V, 60.00 V, 600.0 V, 1000 V, 2000 V ² |
| DC current | N/A | ✓ | ✓ | ✓ | ✓ | 6.000 V, 60.00 V, 600.0 V, 1000 V |
| AC current | N/A | ✓ | ✓ | ✓ | ✓ | 6.000 V, 60.00 V, 600.0 V, 1000 V |
| AC current (clamp) | N/A | ✓ | ✓ | ✓ | ✓ | 60.00 µA, 600.0 µA, 6.000 mA, 60.00 mA |
| Resistance | ✓ | ✓ | ✓ | ✓ | ✓ | 60.00 mA, 600.0 mA, 6.000 A, 10.00 A |
| Temperature | N/A | ✓ | ✓ | ✓ | ✓ | 600.0 mA, 6.000 A, 10.00 A |
| Capacitance | ✓ | ✓ | ✓ | ✓ | ✓ | 6.000 A, 10.00 A |
| Frequency | ✓ | ✓ | ✓ | ✓ | ✓ | 600.0 mA, 6.000 A, 10.00 A |
| Continuity check | ✓ | ✓ | ✓ | ✓ | ✓ | 6.000 A, 10.00 A |
| Diode check | ✓ | ✓ | ✓ | ✓ | ✓ | 10.00 A, 20.00 A, 50.00 A, 100.0 A, 200.0 A, 500.0 A, 1000 A |
| Voltage detection | N/A | N/A | ✓ | ✓ | N/A | 600.0 Ω, 6.000 kΩ, 60.00 kΩ, 600.0 kΩ, 6.000 MΩ, 60.00 MΩ |

| | |
|---------------------------|--|
| Operating temperature | DT4255, DT4256, DT4261: -25°C to 65°C (non-condensating) DT4252, DT4253: -10°C to 50°C (non-condensating) |
| Storage temperature | DT4255, DT4256, DT4261: -30°C to 70°C (non-condensating) DT4252, 53: -30°C to 60°C (non-condensating) |
| Dustproof and waterproof | DT4252, DT4253, DT4255, DT4256: IP40 (when operating) DT4261: IP54 ³ |
| Standards | EN61010 (Safety), EN61326 (EMC) |
| Power supply | DT4252, DT4253, DT4255, DT4256: LR03 alkaline battery x 4 DT4261: LR6 alkaline battery x 3 |
| Continuous operating time | DT4252, DT4253, DT4255, DT4256: 84 x 174 x 52 mm (3.31 x 6.85 x 2.05 in.) DT4261: 87 x 185 x 47 mm (3.43 x 7.28 x 1.85 in.) |
| Dimensions (W x H x D) | DT4252, DT4253, DT4255, DT4256: 84 x 174 x 52 mm (3.31 x 6.85 x 2.05 in.) DT4261: 87 x 185 x 47 mm (3.43 x 7.28 x 1.85 in.) |
| Weight | DT4252, DT4253, DT4255, DT4256: 390 g (13.8 oz.) DT4261: 480 g (16.9 oz.) |

Included accessories



L9300

- Included with DT4252, DT4253, DT4255**
- L9207-10
 - alkaline battery (LR03) x 4
 - Instruction manual

Order code **DT4252**Order code **DT4253**Order code **DT4255**Order code **DT4256**Order code **DT4261**Order code **DT4261-90**Order code **Z3210**

L9300

- Included with DT4261**
- L9300
 - alkaline battery (LR6) x 3
 - Instruction manual

Model DT4261-90 includes Z3210 as a set

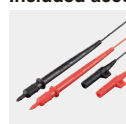
*1: DT4261 Only *2: Only when using the optional DC HIGH VOLTAGE PROBE P2010
*3: Do not use in wet conditions *4: Excludes measuring terminals



| Model | DT4223 | DT4224 | Basic accuracy |
|-------------------|--------|--------|---|
| DC voltage | ✓ | ✓ | 600.0 mV, 6.000 V, 60.00 V, 600.0 V |
| AC voltage | ✓ | ✓ | 6.000 V, 60.00 V, 600.0 V |
| Resistance | ✓ | ✓ | 600.0 Ω, 6.000 kΩ, 60.00 kΩ, 600.0 kΩ, 6.000 MΩ, 60.00 MΩ |
| Capacitance | N/A | ✓ | 1.000 µF, 10.00 µF, 100.0 µF, 1.000 mF, 10.00 mF |
| Frequency | ✓ | ✓ | 99.99 Hz, 999.9 Hz, 9.999 kHz |
| Continuity check | ✓ | ✓ | (Short detection) 25 Ω or less, (open detection) 245 Ω or more |
| Diode check | N/A | ✓ | 0.15 V to 1.5 V (continuous buzzer sound, flashing red light) |
| Voltage detection | ✓ | N/A | (Detection voltage range) 80 V AC to 600 V AC, (Detection frequency range) 50/60 Hz |

| | |
|---------------------------|--|
| Operating temperature | -10°C to 65°C (non-condensating) |
| Storage temperature | -30°C to 70°C (non-condensating) |
| Dustproof and waterproof | IP40 (when operating), IP42 (while in storage) *1 *2 |
| Standards | EN61010 (Safety), EN61326 (EMC) |
| Power supply | LR03 alkaline battery x 1 |
| Continuous operating time | 40 hours (backlight OFF) |
| Dimensions (W x H x D) | 72 x 149 x 38 mm (2.83 x 5.87 x 1.50 in.) |
| Weight | 190 g (6.7 oz.) |

Included accessories



DT4911

- LR03 alkaline battery x1
- Instruction manual

Order code **DT4223**Order code **DT4224**

*1: Do not use in wet conditions *2: Excludes measuring terminals

HiTESTER 3030-10

Product warranty for 3 years
Accuracy guaranteed for 1 year



CAT III 600 V

CARRYING CASE 9390



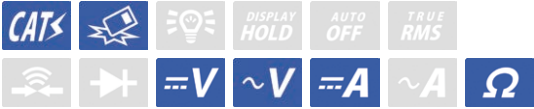
Included accessories



- TEST LEAD L9207-30
- CARRYING CASE 9390
- R6P manganese battery x2
- Spare fuse
- Instruction manual

L9207-30

Order code **3030-10**



| | | |
|------------------------|------------------------|--|
| Measurement parameters | DC Voltage | 0.3 V, 3 V, 12 V, 30 V, 120 V, 300 V, 600 V Accuracy: $\pm 2.5\%$ of f.s. reading |
| | AC Voltage | 12 V, 30 V, 120 V, 300 V, 600 V Accuracy: $\pm 2.5\%$ of f.s. reading, (12V: $\pm 4\%$) |
| | DC Current | 60 μ A, 30 mA, 300 mA Accuracy: $\pm 3\%$ of f.s. reading |
| | Resistance | 0 to 3k Ω : R \times 1, R \times 10, R \times 100, R \times 1k Accuracy: $\pm 3\%$ of scale length |
| | Battery check | 0.9 to 1.8 V Accuracy: $\pm 6\%$ of f.s. reading |
| Other | Operating temperature | 0°C to 40°C (non-condensating) |
| | Storage temperature | -10°C to 50°C (non-condensating) |
| | Power supply | R6P manganese battery x2 |
| | Dimensions (W x H x D) | 95 x 141 x 39 mm (3.74 x 5.55 x 1.54 in.) |
| | Weight | 280 g (9.9 oz.) |

CARD HiTESTER 3244-60

Product warranty for 3 years
Accuracy guaranteed for 1 year



Cord length
46cm (1.51 ft.)

CAT III 300V, CAT II 600V

CARRYING CASE
C0204



Included accessories

- CARRYING CASE C0204
- Sleeves (red, black @ 1 each)
- CR2032 coin type battery x1
- Instruction manual

Order code **3244-60**



| | | |
|------------------------|------------------------|--|
| Measurement parameters | DC Voltage | 420.0 mV, 4.200 V, 42.00 V, 420.0 V, 500 V Accuracy: $\pm 0.7\%$ rdg. ± 4 dgt. |
| | AC Voltage | 4.200 V, 42.00 V, 420.0 V, 500 V Accuracy: $\pm 2.3\%$ rdg. ± 8 dgt. |
| | Resistance | 420.0 Ω , 4.200 k Ω , 42.00 k Ω , 420.0 k Ω , 4.200 M Ω , 42.00 M Ω Accuracy: $\pm 2.0\%$ rdg. ± 4 dgt. |
| | Continuity check | Detection level: 50 Ω ± 40 Ω or less |
| | Operating temperature | 0°C to 40°C (non-condensating) |
| Other | Storage temperature | -20°C to 60°C (non-condensating) |
| | Power supply | CR2032 coin type battery x1 |
| | Dimensions (W x H x D) | 55 x 109 x 9.5 mm (2.17 x 4.29 x 0.37 in.) |
| | Weight | 60 g (2.1 oz.) |

PENCIL HiTESTER 3246-60

Product warranty for 3 years
Accuracy guaranteed for 1 year



Cord length
80 cm (2.62 ft.)

Test lead fits neatly
into back of instrument

Included accessories


- Sleeves (red, black @ 1 each)
- CR2032 coin type battery x1
- Instruction manual

Order code **3246-60**




| | | |
|------------------------|------------------------|--|
| Measurement parameters | DC Voltage | 420.0 mV, 4.200 V, 42.00 V, 420.0 V, 600 V Accuracy: $\pm 1.3\%$ rdg. ± 4 dgt. |
| | AC Voltage | 4.200 V, 42.00 V, 420.0 V, 600 V Accuracy: $\pm 2.3\%$ rdg. ± 8 dgt. |
| | Resistance | 420.0 Ω , 4.200 k Ω , 42.00 k Ω , 420.0 k Ω , 4.200 M Ω , 42.00 M Ω Accuracy: $\pm 2.0\%$ rdg. ± 4 dgt. |
| | Continuity check | Detection level: 50 Ω ± 40 Ω or less |
| | Diode check | Judges the right direction only. Open terminal voltage 3.4 V or less |
| Other | Operating temperature | 0°C to 40°C (non-condensating) |
| | Storage temperature | -20°C to 60°C (non-condensating) |
| | Power supply | CR2032 coin type battery x1 |
| | Dimensions (W x H x D) | 30 x 182 x 26.5 mm (1.18 x 7.17 x 1.04 in.) |
| | Weight | 80 g (2.8 oz.) |

Options



DT4223, DT4224



DT4252, DT4253, DT4255, DT4256, DT4261, DT4281, DT4282

- 1** DT4911
With caps: CAT IV 300 V, CAT III 600 V
Without caps: CAT II 600 V
Rated current: 2 A
Cable length: 54 cm (1.77 ft.)
Includes red and black caps (1 each)
- 2** L9300
With sliding cap design:
- Extended cap/shorter pin: CAT IV 600 V, CAT III 1000 V
- Retracted cap/longer pin: CAT II 1000 V
Rated current: 10 A
Cable length: 95 cm (3.12 ft.)
- 3** L9207-10
With caps: CAT IV 600 V, CAT III 1000 V
Without caps: CAT II 1000 V
Rated current: 10 A
Cable length: 90 cm (2.95 ft.)
Includes red and black caps (1 each)
- 4** P2010
DT4261 Only
CAT IV 1000 V and CAT III 2000 V
Cable length: 1.5 m (4.92 ft.)
- 5** L4930
Rated current: 10 A
Cable length: 1.2 m (3.94 ft.)
- 6** L4931
Rated current: 10 A
Cable length: 1.5 m (4.92 ft.)
Includes coupling connector
- 7** DT4910
-40°C to 260°C
Sensor length 80 cm (2.62 ft.)
- 8** 9704
- 9** 9010-50
- 10** 9018-50
- 11** 9132-50
- 12** L4933
48 mm (1.89 in.)
Rated voltage: AC 30 V, DC 60 V
Rated current: 3 A
- 13** L4934
CAT III 300 V, CAT II 600 V
Rated current: 3 A
- 14** L4935
CAT IV 600 V and CAT III 1000 V
Rated current: 10 A
- 15** L9243
97 mm (3.82 in.)
CAT II 1000 V
Rated current: 1 A
- 16** L4936
30 mm (1.18 in.)
CAT III 600 V
Rated current: 5 A
- 17** L4937
CAT III 1000 V
Rated current: 2 A
Magnet: Ø6 mm (0.24 in.)
- 18** L4932
With caps: CAT IV 600 V, CAT III 1000 V
Without caps: CAT II 1000 V
Rated current: 10 A
Includes red and black caps (1 each)
- 19** L4938
With caps: CAT III 600 V
Without caps: CAT II 600 V
Rated current: 10 A
Includes red and black caps (1 each)
- 20** L4939
CAT III 600 V, Rated current 10 A
1 22 mm (0.87 in.), Ø3.7 mm (0.15 in.)
2 48 mm (1.89 in.), Ø2.6 mm (0.1 in.)

| DT4223, DT4224, DT4252, DT4253, DT4255, DT4256, DT4261, DT4281, DT4282 | | |
|--|--|---|
| 1 | TEST LEAD DT4911 | With caps: CAT IV 600 V, CAT III 1000 V Without caps: CAT II 1000 V Rated current: 10 A |
| 2 | TEST LEAD L9300 | CAT IV 600 V, CAT III 1000 V CAT II 1000 V 10 A |
| 3 | TEST LEAD L9207-10 | With caps: CAT IV 600 V, CAT III 1000 V Without caps: CAT II 1000 V 10 A |
| 4 | DC HIGH VOLTAGE PROBE P2010 | For DT4261 CAT IV 1000 V, CAT III 2000 V |
| 5 | CONNECTION CABLE L4930 | 10 A |
| 6 | EXTENSION CABLE SET L4931 | 10 A |
| 7 | THERMOCOUPLES (K) DT4910 | |
| 8 | CONVERSION ADAPTER 9704 | |
| 9 | AC CLAMP ON PROBE 9010-50 ² | 500 A AC, Ø46mm, Frequency characteristics: 40 Hz to 1 kHz |
| 10 | AC CLAMP ON PROBE 9018-50 ² | 500 A AC, Ø46mm, Frequency characteristics: 40 Hz to 3 kHz |
| 11 | AC CLAMP ON PROBE 9132-50 ² | 1000 A AC, Ø55mm, Frequency characteristics: 40 Hz to 1 kHz |
| 12 | CONTACT PIN SET L4933 | AC 30 V, DC 60 V, 3 A |
| 13 | SMALL ALLIGATOR CLIP SET L4934 | CAT III 300 V, CAT II 600 V, 3 A |
| 14 | ALLIGATOR CLIP SET L4935 | CAT IV 600 V, CAT III 1000 V, 10 A |
| 15 | GRABBER CLIP L9243 | CAT II 1000 V, 1 A |
| 16 | BUS BAR CLIP SET L4936 | CAT III 600 V, 5 A |
| 17 | MAGNETIC ADAPTER SET L4937 | CAT III 1000 V, 2 A |
| 18 | TEST PIN SET L4932 | With caps: CAT IV 600 V, CAT III 1000 V Without caps: CAT II 1000 V 10 A |
| 19 | TEST PIN SET L4938 | With caps: CAT III 600 V Without caps: CAT II 600 V 10 A |
| 20 | BREAKER PIN L4939 | CAT III 600 V, 10 A |
| 21 | COMMUNICATION PACKAGE (USB) DT4900-01 | For DT4252, DT4253, DT4255, DT4256, DT4261, DT4281, DT4282 Windows 11/10 |
| 22 | MAGNETIC STRAP Z5004 | For DT4223, DT4224, DT4252, DT4253, DT4255, DT4256, DT4261 |
| 23 | MAGNETIC STRAP Z5020 | Extra strength |
| 24 | CARRYING CASE C0200 | For DT4223, DT4224 |
| 25 | CARRYING CASE C0201 | For DT4252, DT4253, DT4255, DT4256 |
| 26 | CARRYING CASE C0202 | For DT4252, DT4253, DT4255, DT4256, DT4261, DT4281, DT4282 |
| 27 | CARRYING CASE C0207 | |

² Adapter Model 9704 is required to connect AC CLAMP ON PROBES 9010-50, 9018-50 and 9132-50 to the DT4281, DT4253, DT4255, DT4256 or DT4261



Clamp

Insulation

DMMs

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

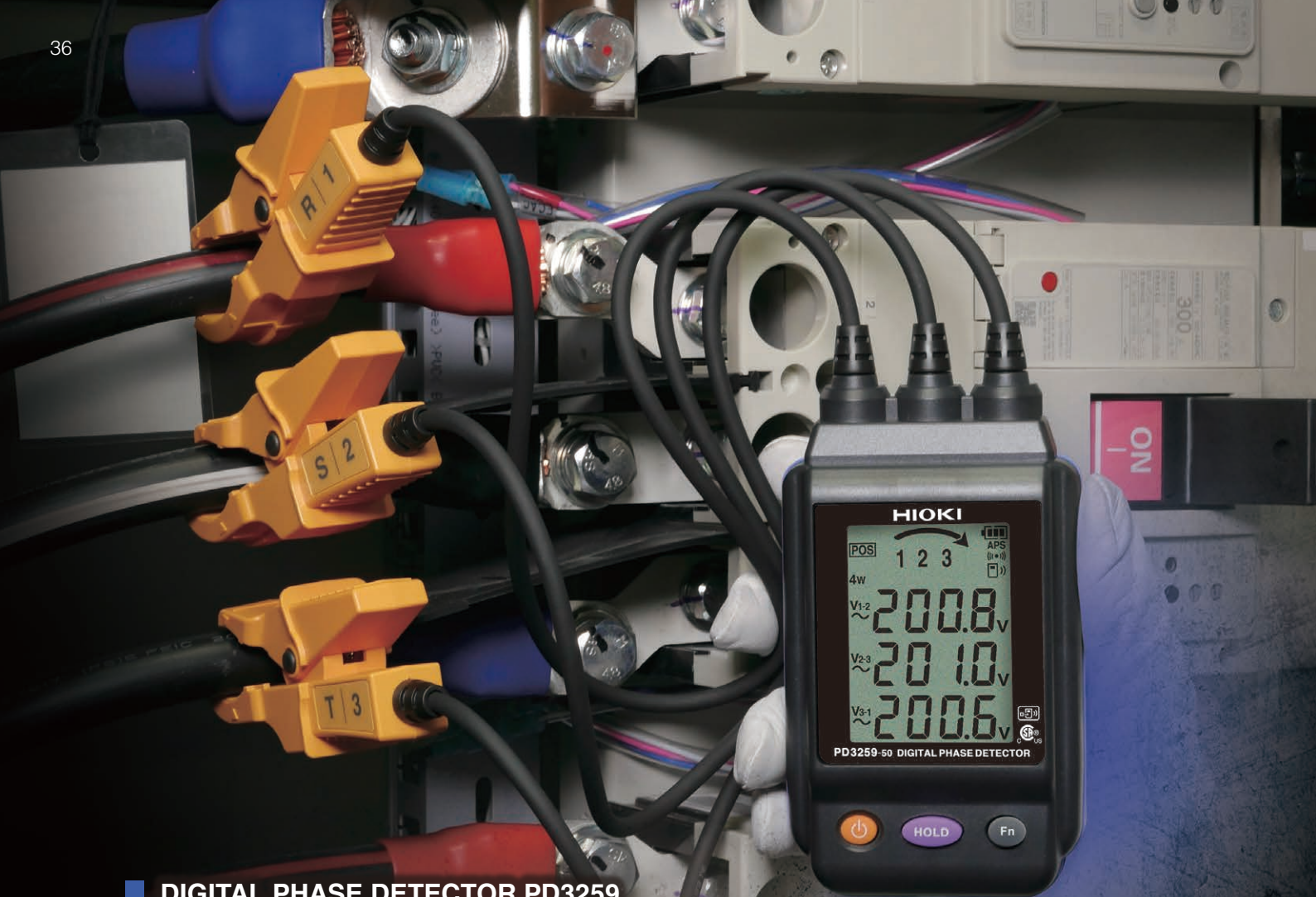
LAN

Signal

Lux

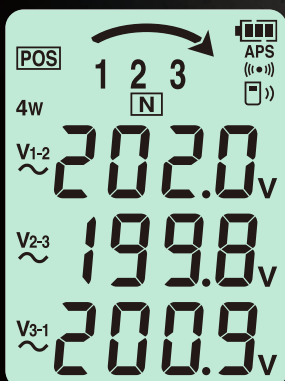
Temperature

Resistance

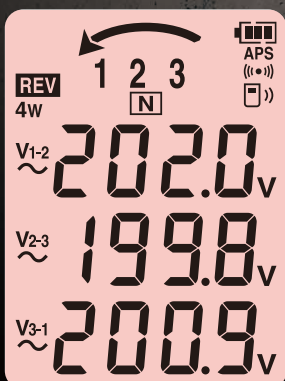


DIGITAL PHASE DETECTOR PD3259

**Just Clip the Probes onto Covered Cables,
and Your 3-phase Power Line Inspection is Complete**



Positive phase sequence display



Negative phase sequence display



**Display phase sequence, 3-phase voltage
Use as-is in work certification photos**

PHASE DETECTORS VOLTAGE DETECTORS

DIGITAL PHASE DETECTOR PD3259-50



Product warranty for 3 years
Accuracy guaranteed for 1 year



Without metal contact



Hands free Z5020 (option)



With Z3210

Attach to enable Bluetooth® wireless technology



WIRELESS ADAPTER Z3210 (option)

Bluetooth

Please see www.hioki.com for list of supported regions.

GENNECT Cross

Model PD3259-90 includes Z3210 as a set

Order code **PD3259-50**

Order code **PD3259-90**

Order code **Z3210**

Included accessories

- CARRYING CASE C0203

Dimensions:
W135 mm (5.31 in.) × H265 mm (10.43 in.) × D65 mm (2.56 in.)

- AA alkaline batteries (LR6) ×4
- Color clips (white ×2, red ×2, blue ×2, yellow ×2)
- Spiral tubes (black ×1)
- Instruction manual

Options

- MAGNETIC STRAP Z5020





C0203 Color clip Z5020








CAT IV 600 V

Soil, residue, or moisture on the insulated wires may result in lower voltage and power values than their true values. Use a dry cloth to remove before measuring.

| | | |
|------------------------|---|---|
| Measurement parameters | Detection functions | Phase detection, open phase, prediction of ground phase (three-phase line) |
| | Three-phase AC voltage (line-to-line voltage and voltage to ground) | 90.0 V to 520.0 V AC (three-phase line) accuracy: ±2.0% rdg. ±8 dgt. |
| | Frequency | 45 Hz to 66 Hz Accuracy: ±0.5% rdg. ±1 dgt. |
| | Measurement targets | Covered cables, metal portions*1 Finished outer diameter 6 to 30 mm (0.24 to 1.18 in.) |
| Other | Operating temperature | -25°C to 65°C, 80% RH or less (non-condensating) |
| | Storage temperature | -25°C to 65°C, 80% RH or less (non-condensating) |
| | Dustproof and waterproof | IP54 (device body only) |
| | Standards | EN61010 (Safety), EN61326 Class A (EMC) |
| | Power supply | LR6 alkaline battery ×4 |
| | Continuous operating time | 5 hours (without Z3210) |
| | Dimensions (W × H × D) | 84 × 146 × 46 mm (3.31 × 5.75 × 1.81 in.) Cable length 50 cm (1.64 ft.) |
| | Weight | 590 g (20.8 oz.) |

*1 Shielded cables not supported

PHASE DETECTOR PD3129, PD3129-10



Product warranty for 3 years




φ2.4 mm (0.09 in.) to φ17 mm (0.67 in.)

PD3129: Thin Conductors




φ7 mm (0.28 in.) to φ40 mm (1.57 in.)







PD3129-10: Thick Conductors

Included accessories

- Carrying case
- Strap
- AA alkaline battery (LR6) ×2
- Spiral tube
- Instruction manual

Order code **PD3129**

Order code **PD3129-10**

| | | | |
|----------------------------|---------------------------|---|--|
| | | PD3129 | CAT IV 600 V |
| | | PD3129-10 | CAT IV 600 V, CAT III 1000 V |
| Measurement parameters | Detection functions | Phase detection (positive and negative) | |
| | Voltage range | PD3129 | 70 to 600 V AC (continuous sine wave) |
| | | PD3129-10 | 70 to 1000 V AC (continuous sine wave) |
| | Frequency range | 45 Hz to 66 Hz | |
| Measurement targets | PD3129 | 2.4 mm (0.09 in.) to 17 mm (0.67 in.) of insulated wiring | |
| | PD3129-10 | 7 mm (0.28 in.) to 40 mm (1.57 in.) of insulated wiring | |
| Phase-detection indication | Positive | 4 LEDs lit in clockwise order and the buzzer sounds intermittently, green arrow lights up | |
| | Negative | 4 LEDs lit in counterclockwise order and the buzzer sounds continuously | |
| Other | Functions | Live line check, Battery check function | |
| | Operating temperature | 0°C to 40°C, 80% RH or less (non-condensating) | |
| | Storage temperature | -20°C to 60°C, 80% RH or less (non-condensating) | |
| | Standards | EN61010 (Safety), EN61326 (EMC) | |
| | Power supply | AA alkaline battery (LR6) × 2 | |
| | Continuous operating time | 200 hr | |
| | Dimensions (W × H × D) | 70 × 75 × 30 mm (2.76 × 2.95 × 1.18 in.) Cable length 70 cm (2.30 ft.) | |
| | Weight | PD3129: 200 g (7.1 oz.), PD3129-10: 240 g (8.5 oz.) | |

VOLTAGE DETECTOR 3481-20



Product warranty for 3 years
Accuracy guaranteed for 1 year



with LED light











Red for voltage detection

Included accessories

- LR44 button alkaline battery ×3
- Instruction manual

Order code **3481-20**

| | | | |
|------------------------|------------------------------------|---|--|
| | | CAT IV 600 V | |
| Measurement parameters | Operating voltage range | 40 to 600 V AC (50/60Hz) | |
| | Maximum sensitivity variable range | 40 to 80 V AC (50/60Hz) | |
| | Pilot light | Red LED lights up and the buzzer sounds when the wire is live | |
| Other | Operating temperature | 0°C to 40°C, 80% RH or less (non-condensating) | |
| | Storage temperature | -20°C to 60°C, 80% RH or less (non-condensating) | |
| | Standards | EN61010 (Safety), EN61326 (EMC) | |
| | Power supply | LR44 button alkaline battery × 3 | |
| | Continuous operating time | 5 hours | |
| | Dimensions (W × H × D) | 20 × 126 × 15 mm (0.79 × 4.96 × 0.59 in.) | |
| | Weight | 30 g (1.1 oz.) | |



EARTH TESTER FT6041 Field-capable, Fast-working



Fast measurement!
Cord rewinding that doesn't tangle or twist



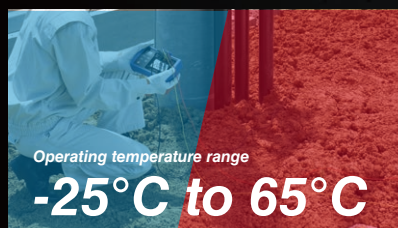
Insert just once thanks to 100 kΩ max.
allowable resistance



Make measurements, even on concrete.
Newly designed Earth Nets Module L9846



Dirt, sand, and rain resistance
IP67 dust and water protection







Extreme cold, extreme heat. The FT6041
won't fail, even during extended operation.



Withstands being dropped onto concrete
from a height of 1 m

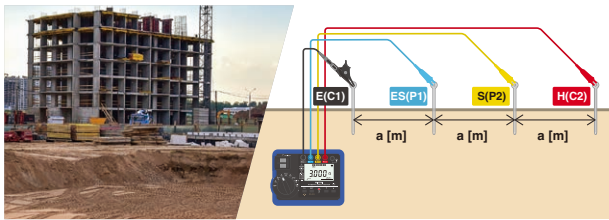
EARTH TESTERS

Lineup

| Model | | FT6041 | FT6031-50 | FT3151 | FT6380-50 |
|---|-------------------|---|---|---|---|
| Appearance | |  |  |  |  |
| Ground resistance | Two-pole method | ✓ | ✓ | ✓ | — |
| | Three-pole method | ✓ | ✓ | ✓ | — |
| | MEC function | ✓ | — | — | — |
| | 2-clamp method | ✓ | — | — | ✓ |
| Soil resistivity | Four-pole method | ✓ | — | — | — |
| Ground potential | | 0 to 30.0 V RMS | 0 to 30.0 V RMS | 0 to 30.0 V RMS | — |
| Measurement range (ground resistance) | | 3 Ω to 300 kΩ | 20 Ω to 2000 Ω | 10 Ω to 1000 Ω | 0.20 Ω to 1600 Ω |
| Measuring frequency | | 94, 105, 111, 128, 55 Hz | 128 Hz | 575, 600 Hz | 2375 Hz |
| Allowable ground potential | | 30 V RMS (DC or sine wave) | 25.0 V RMS (DC or sine wave) | 10 V | 3 V RMS (DC or sine wave) |
| Allowable resistance of auxiliary grounding electrode | | Max. 100 kΩ | Max. 50 kΩ | Max. 5 kΩ | — |
| Cord winders | | ✓ | ✓ | ✓ | — |
| Operating temperature | | -25°C to 65°C (-13°F to 149°F) | -25°C to 65°C (-13°F to 149°F) | 0°C to 40°C (32°F to 104°F) | -10°C to 50°C (14°F to 122°F) |
| Dustproof and waterproof | | IP67 | IP67 | IP40 | IP40 with jaws closed |
| Drop-proof | | 1 m above concrete (with protector attached) | 1 m above concrete (with protector attached) | — | — |
| Support for GENNECT Cross (storage of measured values) | | ✓ | ✓ | — | ✓ |
| Clamp measurement method (maximum measurable conductor diameter) | | (with optional sensor) Φ 52 mm (2.05 in.) 78 mm (3.07 in.) × 20 mm (0.79 in.) busbar | — | — | Φ 32 mm (1.26 in.) |

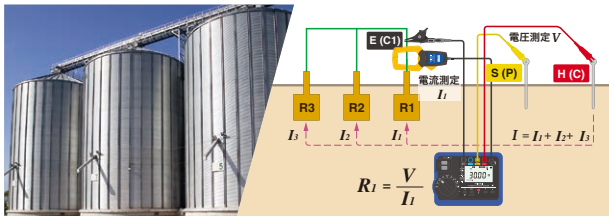


EARTH TESTER FT6041 Extensive Measurement Functionality



4-pole method

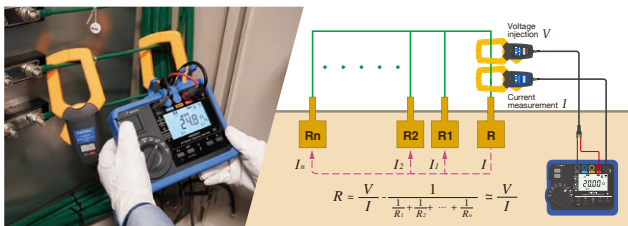
Measure soil resistivity when surveying a grounding design



MEC function

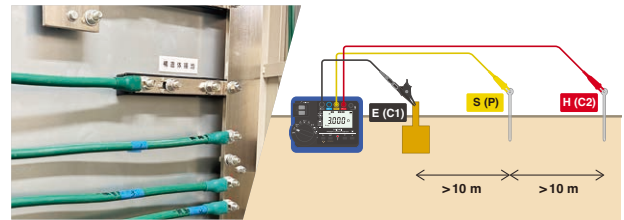
MEC stands for "measuring earth with a clamp."

Measure ground resistance without disconnecting ground electrodes



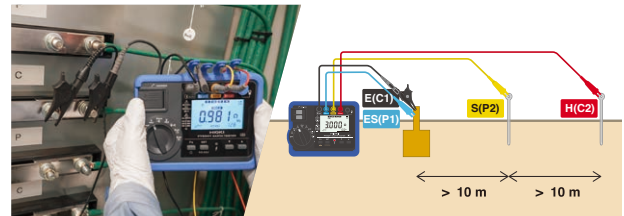
2-clamp method

Measure grounding resistance at multiple grounds



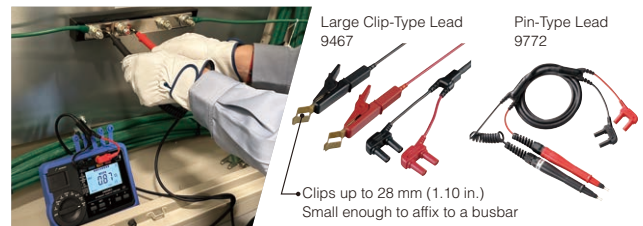
3-pole method

Precisely measure ground resistance



3-pole method using 4-terminal measurement

Measure ground resistance values of several ohms or less



Low-resistance measurement

Continuity test after ground resistance measurement

Clamp

Insulation

DMMs

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

LAN

Signal

Lux

Temperature

Resistance

EARTH TESTER FT6041

Product warranty for 3 years
Accuracy guaranteed for 1 year



Extensive measurement
functionality

Dustproof and waterproof: **IP67**

4-pole
method
Wenner's
4-pole method

3-pole
method

2-pole
method

Low-resistance
measurement

2-clamp
method
for multi grounded
systems

MEC
function

CAT IV 100 V
CAT III 150 V
CAT II 300 V

With Z3210

Bluetooth®

Please see www.hioki.com
for list of supported regions.



GENNECT
Cross



Z3210

Order code **FT6041**

Order code **FT6041-91**

Order code **Z3210**

FT6041-91: FT6041 and included accessories,
also includes clamps FT9847 and CT9848

Basic specifications

| | |
|--|--|
| Measurement parameters | <ul style="list-style-type: none"> Ground resistance measurement: 4-pole method, 3-pole method, 2-pole method, MEC function, clamp-on measurement (two clamps) Soil resistivity measurement: 4-pole method Low-resistance measurement: 4-terminal method, 2-terminal method Ground potential measurement |
| Ground potential | 0 to 30.0 V RMS, accuracy: $\pm 2.3\%$ rdg. ± 8 dgt. (50/60 Hz), $\pm 1.3\%$ rdg. ± 4 dgt. (DC) |
| Functions | Live wire warning, auto power save, soil resistivity display (4-pole method only), zero-adjustment, auto-hold, continuous measurement mode, wireless communication (only when Z3210 is connected), buzzer sound, comparator, switching the display, ground potential overload display (when measuring ground resistance) |
| Operating temperature and humidity | -25°C to 65°C ¹ (non-condensing) |
| Storage temperature and humidity | -25°C to 65°C: 80% RH or less (non-condensing) |
| Dustproof and waterproof | IP65/IP67 (EN60529) |
| Applicable standards | EN 61010 (safety), EN 61326 (EMC), EN61557-1/EN61557-10/EN61557-14 (low-resistance measurement, earth testers), EN61557-5 (earth testers) |
| Power supply | HR6 nickel-metal hydride battery x 4 or LR03 alkaline battery x 4 |
| Number of measurements per battery charge ² | 500 times (3-pole method, without Z3210 installed) 400 times (3-pole method, with Z3210 installed and using wireless communication) |
| Dimensions and mass | 189 mm (7.44 in.) W x 148 mm (5.83 in.) H x 48 mm (1.89 in.) D, approx. 765 g (27.98 oz.) (including battery, protector) |

| | | | | | | |
|--|--|------------------------|------------------------------|-----------------------------|--------------------------------------|------------------------------------|
| Ground resistance measurement: 4-pole method, 3-pole method, 2-pole method | | | | | | |
| Measurement principle | Apply voltage and measure voltage and current (measures effective resistance by synchronous detection) | | | | | |
| Ground resistance range | 3 Ω (0 to 3.000 Ω) | 30 Ω (0 to 30.00 Ω) | 300 Ω (30.0 Ω to 300.0 Ω) | 3000 Ω (300 Ω to 3000 Ω) | 30.00 k Ω (3.00 k Ω to 30.00 k Ω) | 300.0 k Ω (30.0 kΩ to 300.0 kΩ) |
| Accuracy | - | ±1.5% rdg. ±6 dgt. | ±1.5% rdg. ±4 dgt. | | | |
| Allowable resistance of auxiliary grounding electrode | 5 kΩ | | 50 kΩ | 100 kΩ | | |
| Allowable ground potential | 30 V RMS or 42.4 V peak | | | | | |
| MEC function: 4-pole method with clamp sensor, 3-pole method with clamp sensor | | | | | | |
| Measurement principle | Apply voltage and measure voltage and current (measures effective resistance by synchronous detection) | | | | | |
| Ground resistance range | 30 Ω (0.00 to 30.00 Ω) | | 300 Ω (30.0 Ω to 300.0 Ω) | 3000 Ω (300 Ω to 3000 Ω) | | 30.00 kΩ (3 kΩ to 30.00 kΩ) |
| Accuracy | ±5% rdg. ±6 dgt. | | ±5% rdg. ±3 dgt. | | | |
| Ground resistance measurement: 2-clamp method | | | | | | |
| Measurement principle | Apply voltage and measure voltage and current (measures effective resistance by synchronous detection) | | | | | |
| Ground resistance range | 20 Ω (0.02 Ω to 20.00 Ω) | | 200 Ω (20.0 Ω to 200.0 Ω) | | 500 Ω (200 Ω to 500 Ω) | |
| Accuracy | ±7% rdg. ±3 dgt. | | | | ±35% rdg. | |
| Low-resistance measurement | | | | | | |
| Open-circuit voltage | 4.0 V to 6.9 V | | | | | |
| Measuring current | 200 mA or more | | | | | |
| Measurement range | 30 Ω (0.00 to 30.00 Ω) | | 300 Ω (30.0 Ω to 300.0 Ω) | | 3000 Ω (300 Ω to 3000 Ω) | |
| Accuracy | ±3 dgt. (0.00 to 0.19 Ω) ±2% rdg. ±2 dgt. (0.20 Ω to 10.00 Ω) | | ±2% rdg. ±2 dgt. | | | |

¹ -25°C to 40°C, -13°F to 104°F (80% RH or less), 40°C to 45°C, 104°F to 113°F (60% RH or less), 45°C to 50°C, 113°F to 122°F (50% RH or less), 50°C to 55°C, 122°F to 131°F (40% RH or less), 55°C to 60°C, 131°F to 140°F (30% RH or less), 60°C to 65°C, 140°F to 149°F (25% RH or less)

² NiMH battery x 4 (reference value at 23°C)



Cord winders make cleanup
a snap



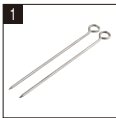
Sturdy, thin rods drive easier
into the ground



Make measurements, even
on concrete.

Included accessories

| | | |
|----|---|--|
| 1 | AUXILIARY EARTHING ROD L9840 | 2 piece set, 270 mm (10.63 in.), Stainless steel |
| 2 | MEASUREMENT CABLE L9845-31 | Yellow, 25 m (82.02 ft.), equipped with winder |
| 3 | MEASUREMENT CABLE L9845-33 | Blue, 25 m (82.02 ft.), equipped with winder |
| 4 | MEASUREMENT CABLE L9845-52 | Red, 50 m (164.04 ft.), equipped with winder |
| 5 | MEASUREMENT CABLE L9841 | Black 4 m (13.12 ft.) length |
| 6 | TEST LEAD L9787 | Bundled with line/ground lead, alligator clip, 1.2 m (3.94 ft.) long |
| 7 | EARTH NETS MODULE L9846 | 2 pcs, use with measuring cord set, built-in grounding/earth nets |
| 8 | CARRYING CASE C0208 | For storing FT6041 and clamp sensors, hard type |
| 9 | CARRYING CASE C0209 | For storing measurement cables, soft type |
| 10 | Protector | Attaches to and protect FT6041 |
| 11 | LR6 alkaline battery | 4 pcs |
| 12 | Instruction manual, Operating precautions | |



L9840



L9845-31



L9845-33



L9845-52



L9841



L9787



L9846



C0208



C0209

Protector
(attaches to FT6041)**Options**

| | | |
|----|-------------------------------|--|
| 1 | SIGNAL INDUCTION CLAMP FT9847 | For signal induction, Including resistance check loop |
| 2 | CLAMP ON SENSOR CT9848 | For detection |
| 3 | WIRELESS ADAPTER Z3210 | Bluetooth® communication will be possible by attaching to the FT6041 |
| 4 | MEASUREMENT CABLE L9842-11 | Yellow 10 m (32.81 ft.) long, equipped with winder |
| 5 | MEASUREMENT CABLE L9842-22 | Red 20 m (65.62 ft.) long, equipped with winder |
| 6 | MEASUREMENT CABLE L9843-51 | Yellow 50 m (164.04 ft.) long, equipped with flat cable winder |
| 7 | MEASUREMENT CABLE L9843-52 | Red 50 m (164.04 ft.) long, equipped with flat cable winder |
| 8 | MEASUREMENT CABLE L9844 | For grounding terminal board, red/yellow/black, each 1.2 m (3.94 ft.) long |
| 9 | PIN TYPE LEAD 9772 | For low-resistance measurement by 4-terminal method |
| 10 | LARGE CLIP TYPE LEAD 9467 | For low-resistance measurement by 4-terminal method |
| 11 | EARTH NETS 9050 | 2 sheets in set |



FT9847



CT9848



Z3210



L9842-11



L9842-22



L9843-51



L9843-52



L9844



9772



9467



9050

EARTH TESTER FT6031-50

Product warranty for 3 years
Accuracy guaranteed for 1 year



Dustproof and waterproof: **IP67**

2-pole
method
Class D

3-pole
method
Class A to Class D

CAT IV 100 V

CAT III 150 V

CAT II 300 V

With Z3210



Please see www.hioki.com
for list of supported regions.



GENNECT
Cross



Z3210

Order code **FT6031-50**

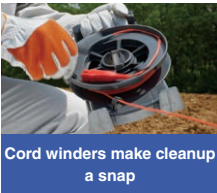
Order code **FT6031-90**

Order code **Z3210**

Basic specifications

| | | |
|------------------------------------|---|----------------------|
| Measurement system | Two-pole method or three-pole method | |
| Measurement range | 20 Ω (0 to 20.00 Ω) | 200 Ω (0 to 200.0 Ω) |
| Accuracy | ±1.5% rdg. ±8 dgt. | ±1.5% rdg. ±4 dgt. |
| Ground potential | 0 to 30.0 V RMS Accuracy: ±2.3% rdg. ±8 dgt. (50/60 Hz), ±1.3% rdg. ±4 dgt. (DC) | |
| Allowable ground potential | 25.0 V RMS (DC or sine wave) | |
| Operating temperature and humidity | -25°C to 65°C*1 (non-condensing) | |
| Storage temperature and humidity | -25°C to 65°C (-13°F to 149°F): 80% RH or less (non-condensing) | |
| Dustproof and waterproof | IP65/IP67 (EN60529) | |
| Applicable standards | Safety: EN 61010 (main unit), EN 61010 (measurement circuit); EMC: EN 61326; earth testers: EN 61557 | |
| Power supply | LR6 alkaline battery ×4, possible number of measurements for one set of batteries: 500 times (measurement conditions: three-pole method, measuring 10 Ω at 10-second intervals without Z3210 installed) | |
| Dimensions and mass | 185 mm (7.28 in.) W × 111 mm (4.37 in.) H × 44 mm (1.73 in.) D, 570 g (20.1 oz.) (including batteries and protector, excluding terminal covers and other accessories) | |

*1: -25°C to 40°C, -13°F to 104°F (80% RH or less), 40°C to 45°C, 104°F to 113°F (60% RH or less), 45°C to 50°C, 113°F to 122°F (50% RH or less), 50°C to 55°C, 122°F to 131°F (40% RH or less), 55°C to 60°C, 131°F to 140°F (30% RH or less), 60°C to 65°C, 140°F to 149°F (25% RH or less)



Cord winders make cleanup a snap



Sturdy, thin rods drive easier into the ground

Included accessories

| | | |
|---|------------------------------|--|
| 1 | AUXILIARY EARTHING ROD L9840 | 2 piece set, 270 mm (10.63 in.), Stainless steel |
| 2 | MEASUREMENT CABLE L9842-11 | Yellow 10 m (32.81 ft.) length, equipped with winder |
| 3 | MEASUREMENT CABLE L9842-22 | Red 20 m (65.62 ft.) length, equipped with winder |
| 4 | MEASUREMENT CABLE L9841 | Black 4 m (13.12 ft.) length |
| 5 | CARRYING CASE C0106 | Soft type, includes compartment for options |
| 6 | LR6 alkaline battery | 6 pcs |
| 7 | Instruction manual | |



L9840



L9842-11



L9842-22



L9841



C0106

Options

| | | |
|---|----------------------------|---|
| 1 | MEASUREMENT CABLE L9843-51 | 50 m (164.04 ft.) |
| 2 | MEASUREMENT CABLE L9843-52 | 50 m (164.04 ft.) |
| 3 | MEASUREMENT CABLE L9844 | For earthing terminal board red/yellow/black 1.2 m (3.94 ft.) each |
| 4 | TEST LEAD L9787 | For simplified measurement method |
| 5 | WIRELESS ADAPTER Z3210 | Bluetooth® communication will be possible by attaching to the FT6031-50 |
| 6 | EARTH NETS 9050 | 2 sheets in set |



L9843-51



L9843-52



L9844



L9787



Z3210

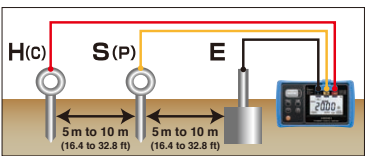
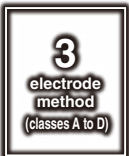


9050

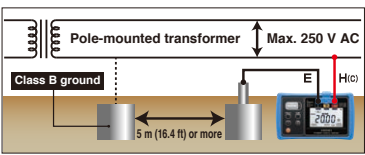
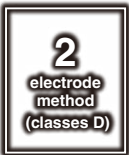
Ground types

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

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



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.



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.

EARTH TESTER FT3151

Product warranty for 3 years
Accuracy guaranteed for 1 year



Rewind with ease

2-pole
method
Class D

3-pole
method
Class A to Class D

CAT II 300 V

Order code **FT3151**

Basic specifications

| | | |
|------------------------|---------------------------------|---|
| Measurement parameters | Measurement system | Two-electrode method (Class D) Three-electrode method (Class A to D) |
| | Range configuration Accuracy | 10 Ω (0 to 11.5 Ω): ±0.25 Ω 100 Ω (0 to 115 Ω): ±2.5 Ω 1000 Ω (0 to 1150 Ω): ±25 Ω |
| Other | Earth potential: Accuracy | 0 to 30 V: ±3.0% f.s. |
| | Operating temperature | 0°C to 40°C, 80% RH or less (non-condensating) |
| | Storage temperature | -10°C to 50°C, 80% RH or less (non-condensating) |
| | Dustproof and waterproof | IP40 (EN60529) |
| | Standards | EN61010 (Safety, measuring circuit, probe), EN61326 (EMC), EN61557-1/-5 (Earth tester) |
| | Power supply | LR6 alkaline battery × 6 |
| | Number of uses | 1100 times ¹ |
| | Dimensions (W × H × D) | 164 × 119 × 88 mm (6.46 × 4.69 × 3.46 in.) |
| | Weight | 760 g (26.8 oz.) |

¹30 sec. measurement and 30 sec. rest, 3-electrode method, 575 Hz, auxiliary grounding electrode resistance of 100 Ω, measuring 10 Ω in the instrument's × 1 Ω range



Cord winders make cleanup a snap



Sturdy, thin rods drive easier into the ground

Included accessories

| | | |
|---|------------------------------|--|
| 1 | AUXILIARY EARTHING ROD L9840 | 2 piece set, 270 mm (10.63 in.), Stainless steel |
| 2 | MEASUREMENT CABLE L9842-11 | Yellow 10 m (32.81 ft.) length, equipped with winder |
| 3 | MEASUREMENT CABLE L9842-22 | Red 20 m (65.62 ft.) length, equipped with winder |
| 4 | MEASUREMENT CABLE L9841 | Black 4 m (13.12 ft.) length |
| 5 | CARRYING CASE C0106 | Soft type, includes compartment for options |
| 6 | LR6 alkaline battery | 6 pieces |
| 7 | Instruction manual | |



Options

| | | |
|---|----------------------------|--|
| 1 | MEASUREMENT CABLE L9843-51 | 50 m (164.04 ft.) |
| 2 | MEASUREMENT CABLE L9843-52 | 50 m (164.04 ft.) |
| 3 | MEASUREMENT CABLE L9844 | For earthing terminal board red/yellow/black 1.2 m (3.94 ft.) each |
| 4 | TEST LEAD L9787 | For simplified measurement method |
| 5 | SHOULDER STRAP Z5022 | |
| 6 | EARTH NETS 9050 | 2 sheets in set |



CLAMP ON EARTH TESTER FT6380-50

Product warranty for 3 years
Accuracy guaranteed for 1 year



For multi-grounded systems only

Clamp-on
method

Current
measurement
True RMS

CAT IV 600 V

WIRELESS ADAPTER Z3210 (option): Attach to enable Bluetooth® wireless technology

Model FT6380-90 includes Z3210 as a set

Order code **FT6380-50**

Order code **FT6380-90**

Order code **Z3210**



Included accessories



Carrying case Resistance check loop

- Carrying case
- Resistance check loop (1 Ω, 25 Ω)
- Strap
- LR06 alkaline battery ×2
- Instruction manual

Measurements for Multi-Grounded Systems



Hazardous Storage Tanks

Transmission Towers

| | | |
|------------------------|---------------------------|---|
| Measurement parameters | Measurement system | Instrument has two cores for voltage injection and current measurement. Total circuit loop resistance is calculated from defined voltage and measured current. ¹ |
| | Earthing resistance range | 0.20 Ω, 2.00 Ω, 20.00 Ω, 50.0 Ω, 100.0 Ω, 200.0 Ω, 400 Ω, 600 Ω, 1200 Ω, 1600 Ω Guaranteed accuracy range: 0.02 Ω to 1600 Ω Accuracy: ±1.5% rdg. ±0.02 Ω |
| Other | AC Current range | 20.00 mA, 200.0 mA, 2.000 A, 20.00 A, 60.0 A Guaranteed accuracy range: 1.00 mA to 60.0 A Accuracy: ±2.0% rdg. ±0.05 mA |
| | Operating temperature | -10°C to 50°C, 80% RH or less (non-condensating) |
| | Storage temperature | -20°C to 60°C, 80% RH or less (non-condensating) |
| | Dustproof and waterproof | IP40 (EN60529) ² |
| | Standards | EN61010 (Safety), EN61326 (EMC) |
| | Power supply | LR6 alkaline battery × 2 |
| | Continuous operating time | 35 hours (backlight OFF) |
| | Dimensions (W × H × D) | 73 × 218 × 43 mm (2.87 × 8.58 × 1.69 in.) |
| | Weight | 620 g (21.9 oz.) |

¹For multi-grounded systems only. In a multi-grounded system, the larger the number of grounding poles, the more accurate the measured value.

²When jaw closes

Clamp

Insulation

DMMS

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

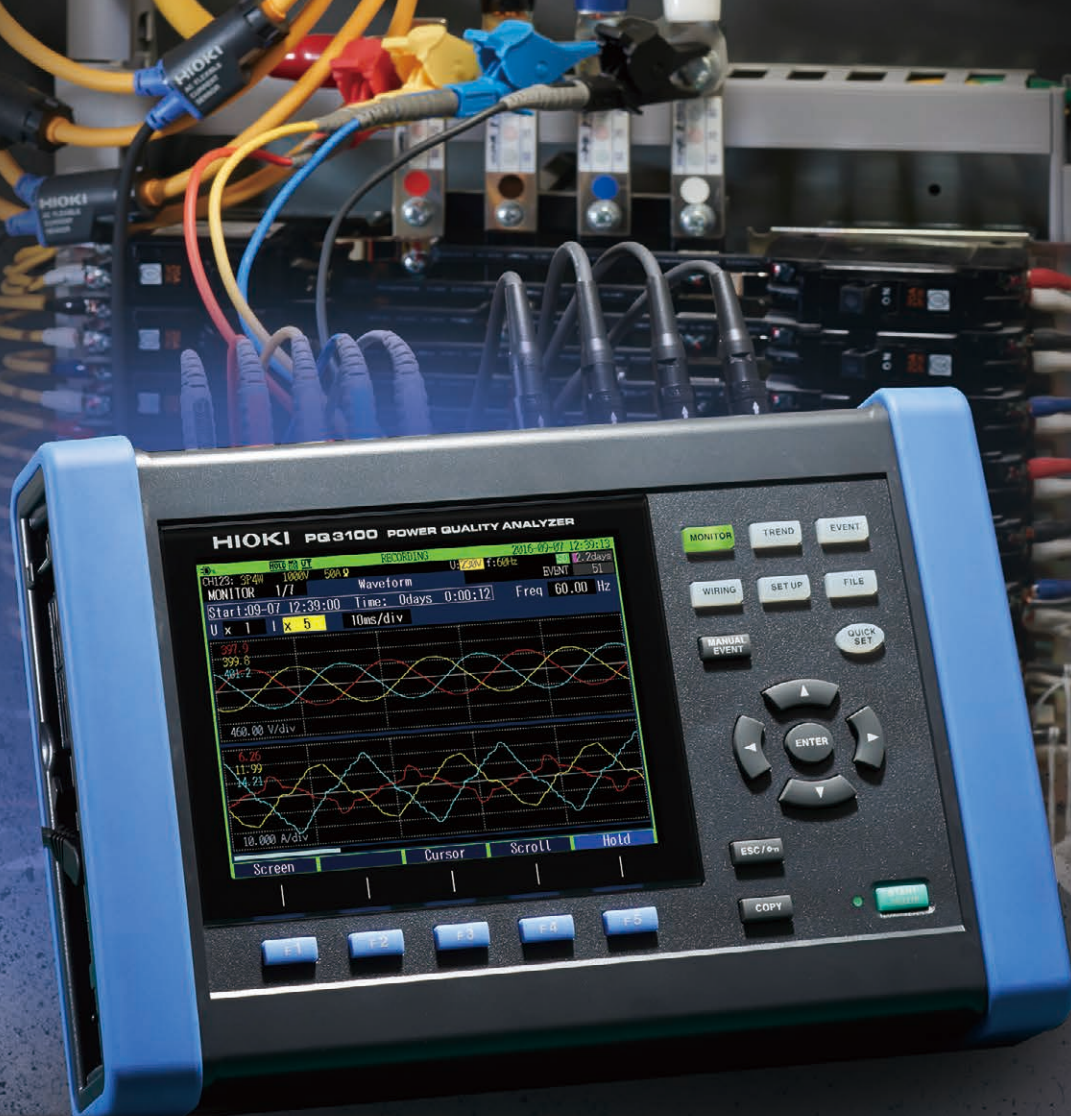
LAN

Signal

Lux

Temperature

Resistance



POWER QUALITY ANALYZER PQ3198, PQ3100 Monitor Power Quality and Analyze the Cause of Equipment Issues

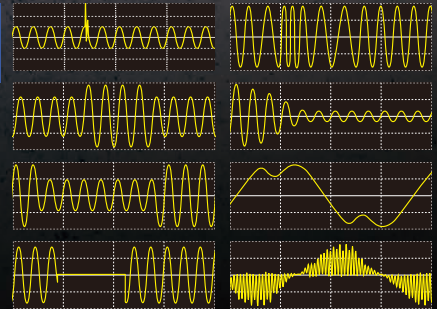


Power anomalies are a major cause of equipment malfunction and damage. The PQ3198 and PQ3100 detect power supply abnormalities without fail to help diagnose the cause of problems.



Capture all of these power anomalies simultaneously

- Transient voltages
- Voltage swells
- Voltage dips
- Interruptions
- Frequency fluctuations
- Inrush current
- Harmonics
- High-order harmonics (Supraharmonics)



POWER QUALITY ANALYZERS

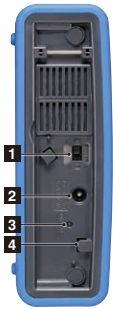


Product warranty for 3 years
Accuracy guaranteed for 1 year

POWER QUALITY ANALYZER PQ3198, PQ3100

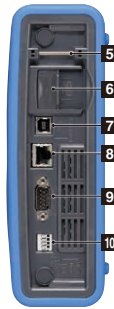
Shared features: Side

Left side



- 1 Power switch
- 2 AC adapter terminal
- 3 Charging indicator
- 4 Cable hook

Right side



- 5 Strap attachment point
- 6 SD card terminal
- 7 USB terminal
- 8 LAN terminal
- 9 RS-232C terminal
- 10 External I/O terminal



PQ3198 (High-end model)

CAT IV 600 V



Voltage input terminals
(4 channels: channels 1/2/3 and
channel 4 are isolated from each other)

Current input terminals
(4 channels)



PQ3100 (Standard model)

CAT IV 600 V, CAT III 1000 V



Voltage input
terminals (4 channels)

Current input
terminals (4 channels)

| Model | PQ3198 (High-end model) | PQ3100 (Standard model) |
|------------------------|---|--|
| Measurement lines | 1-phase/2-wire, 1-phase/3-wire, 3-phase/3-wire, 3-phase/4-wire + CH 4 | |
| Fundamental frequency | DC, 50 Hz, 60 Hz, 400 Hz | DC, 50 Hz, 60 Hz |
| Voltage ranges | Voltage measurement: 600.00 V rms Transient measurement: 6.0000 kV peak ±0.1% of nominal voltage | Voltage measurement: 1000.0 V rms or DC Transient measurement: 2.200 kV peak ±0.2% of nominal voltage |
| Accuracy | | |
| Current ranges | 500.00 mA to 5.0000 kA AC ¹ ±0.1% rdg. ±0.1% f.s. + current sensor accuracy | (AC) 50.000 mA to 5.0000 kA ¹ (DC) 10.000 A to 2.0000 kA ¹ ±0.1% rdg. ±0.1% f.s. + current sensor accuracy |
| Accuracy | | |
| Power ranges | 300.00 W to 3.0000 MW (AC) ±0.2% rdg. ±0.1% f.s. + current sensor accuracy (DC) ±0.5% rdg. ±0.5% f.s. + current sensor accuracy (CH4 Only) | 50.000 W to 6.0000 MW (AC) ±0.2% rdg. ±0.1% f.s. + current sensor accuracy (DC) ±0.5% rdg. ±0.5% f.s. + current sensor accuracy |
| Accuracy | | |
| Measurement items | 1. Transient voltage: 2MHz sampling 2. Frequency cycle: calculated as one cycle 3. Voltage (1/2) RMS: one cycle calculation refreshed every half cycle Current (1/2) RMS: half-cycle calculation 4. Voltage swell, voltage dips, voltage interruption 5. Inrush current 6. Voltage waveform comparison 7. Instantaneous flicker value: As per IEC61000-4-15 8. 200 ms frequency: calculated as 10 or 12 cycles, 40 to 70 Hz 9. 10 sec frequency: calculated as the whole-cycle time during the specified 10 s period, 40 to 70 Hz 10. Voltage waveform peak, Current waveform peak 11. Voltage, current, active power, apparent power, reactive power, active energy, reactive energy, power factor, displacement power factor, voltage unbalance factor, current unbalance factor, and efficiency 12. High-order harmonic (Supraharmonic) component (voltage/current): 2 kHz to 80 kHz 13. Harmonic value and Harmonic phase angle (voltage/current), harmonic power: 0th to 50th orders 14. Harmonic voltage-current phase angle: 1st to 50th orders 15. Total harmonic distortion factor (voltage/current) 16. Inter harmonic (voltage/current): 0.5th to 49.5th order 17. K Factor (multiplication factor) 18. IEC Flicker, Δ V10 Flicker | 1. Transient voltage: 200 kHz sampling 2. Frequency cycle: calculated as one cycle 3. Voltage (1/2) RMS and Current (1/2) RMS: one cycle calculation refreshed every half cycle 4. Voltage swell, voltage dips, voltage interruption, RVC: Voltage (1/2) RMS calculation 5. Inrush current 6. Frequency 200 ms: calculated as 10 or 12 cycles 7. 10-sec frequency: calculated as the whole-cycle time during the specified 10 s period 8. Voltage waveform peak, current waveform peak 9. Voltage, current, active power, apparent power, reactive power, active energy, apparent energy, reactive energy, energy cost, power factor, displacement power factor, voltage unbalance factor, current unbalance factor 10. Voltage crest factor, current crest factor 11. Harmonic/Harmonic phase angle (voltage/current), harmonic power: 0th to 50th orders 12. Harmonic voltage-current phase angle: 1st to 50th orders 13. Total harmonic distortion factor (voltage/current) 14. Inter harmonic (voltage/current): 0.5th to 49.5th orders 15. K Factor (multiplication factor) 16. IEC Flicker, Δ V10 Flicker |
| Record | Repeated ON: 1 year, maximum recording event: 9999 × 366 days (up to 9999 events per day) Repeated off: 35 days, maximum recording event: 9999 events | Maximum recording interval: 1 year, maximum number of recordable events: 9999 × 365 days |
| Setup assistance | Simplified setup function | QUICK SET (navigation-style assistance from connecting the instrument to the start of recording) |
| Interfaces | SD/SDHCmemory card ² , RS-232C, USB2.0, LAN | |
| Operating temperature | 0°C to 30°C (95% RH or less), 30°C to 50°C (80% RH or less) (non-condensating) | -20°C to 50°C (80% RH or less) (non-condensating) |
| Storage temperature | 10°C greater than operating temperature and humidity range | |
| Standards | EN61010 (Safety), EN61326 Class A (EMC) | |
| IEC 61000-4-30 | Class A | Class S |
| Power supply | AC ADAPTER Z1002, BATTERY PACK Z1003 | |
| Battery operating time | 3 hours | 8 hours |
| Dimensions (W × H × D) | 300 × 211 × 68 mm (11.81 × 8.31 × 2.68 in.) | |
| Weight | 2.6 kg (91.7 oz.) (including BATTERY PACK) | 2.5 kg (88.2 oz.) (including BATTERY PACK) |



L1000



L1000-05



Z1002



Z1003



Z4001

PQ3198 Included accessories

- VOLTAGE CORD L1000
- AC ADAPTER Z1002
- BATTERY PACK Z1003
- PQ ONE (software CD)
- SD MEMORY CARD Z4001
- USB cable
- Color clips
- Spiral tubes
- Strap
- Measurement guide
- User manual

PQ3100 Included accessories

- VOLTAGE CORD L1000-05
- AC ADAPTER Z1002
- BATTERY PACK Z1003
- PQ ONE (software CD)
- USB cable
- Color clips
- Spiral tubes
- Strap
- Measurement guide
- User manual

Order code **PQ3198**

Order code **PQ3198-92** Value Kits: PQ3198, CT7136³ (600A) × 4, L1021-02×3, CARRYING CASE C1009

Order code **PQ3198-94** Value Kits: PQ3198, CT7045³ (6000A) × 4, L1021-02×3, CARRYING CASE C1009

Order code **PQ3100**

Order code **PQ3100-91** Value Kits: PQ3100, CT7136³ (600A) × 2, SD MEMORY CARD 2GB Z4001, CARRYING CASE C1009

Order code **PQ3100-92** Value Kits: PQ3100, CT7136³ (600A) × 4, SD MEMORY CARD 2GB Z4001, CARRYING CASE C1009

Order code **PQ3100-94** Value Kits: PQ3100, CT7045³ (6000A) × 4, SD MEMORY CARD 2GB Z4001, CARRYING CASE C1009

¹ Depends on current sensor in use

² Use only SD Cards sold by HIOKI. Compatibility and performance are not guaranteed for PC cards made by other manufacturers.

³ For more detailed information on CT7136, CT7045, and options, please refer to p.48 and p.49.



CLAMP ON POWER LOGGER PW3365, PW3360

Accurately Measure Power Consumption, also Available with Non-contact Voltage Sensor for Added Safety

SAFETY VOLTAGE SENSOR PW9020 (for PW3365 only)

- Clamp on top of cable insulation
- Quick setup
- Safely avoid contact/with live parts



Compared with standard alligator clips that are hard to use and require metal-to-metal contact



Toggle displays to easily verify data

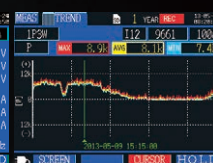


List display



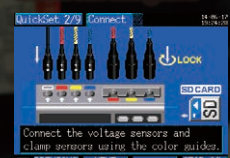
Waveform

Demand Graph



Trend Graph

QUICK SET navigation



Highly Intuitive



Check Connection Status

POWER LOGGERS

CLAMP ON POWER LOGGER PW3365, PW3360

Product warranty for 3 years
Accuracy guaranteed for 1 year

SAFETY VOLTAGE SENSOR PW9020

Compatible with PW3365 only

Finished outer diameter

Φ6 mm (0.24 in.) to Φ30 mm (1.18 in.)



PW3365

CAT IV 300 V, CAT III 600 V



PW3360

CAT IV 300 V, CAT III 600 V



| Model | PW3365 + PW9020 | PW3360 |
|-------------------|--|---|
| Measurement line | 1-phase/2-wire (1/2/3 circuits), 1-phase/3-wire (1 circuit), 3-phase/3-wire (1 circuit), 3-phase/4-wire (1 circuit), Current only: 1 to 3 channels | |
| Frequency | 50 Hz/60 Hz | |
| Voltage ranges | 400 V AC (Effective measurement range: 90.0 V to 520.0 V) | 600 V AC (Effective measurement range: 90.0 V to 780.0 V) |
| Accuracy | ±1.5% rdg. ±0.2% f.s. (combined accuracy with PW9020) | ±0.3% rdg. ±0.1% f.s. |
| Current ranges | 500.00 mA AC to 5.0000 kA ¹ (Leak clamp on sensor only: 50.000 mA AC to 5.0000 A) | |
| Accuracy | ±0.3% rdg. ±0.1% f.s. + current sensor accuracy | |
| Power ranges | 200.00 W to 6.0000 MW | 300.00 W to 9.0000 MW |
| Accuracy | ±2.0% rdg. ±0.3% f.s. + current sensor accuracy | ±0.3% rdg. ±0.1% f.s. + current sensor accuracy |
| Measurement items | Voltage | RMS value, fundamental wave value, waveform peak (absolute value), fundamental wave phase angle, frequency (U1) |
| | Current | RMS value, fundamental wave value, waveform peak (absolute value), fundamental wave phase angle |
| | Power | Active power, reactive power, apparent power, power factor, (with lag, lead display) or displacement power factor (with lag, lead display), active energy (consumption, regeneration), reactive energy (lag, lead), Energy cost display (per-kWh price × power consumption) |
| | Demand | Active power demand value (consumption, regeneration), reactive power demand value (lag, lead), Active power demand quantity (consumption, regeneration), reactive power demand quantity (lag, lead), power factor demand value |
| | Harmonics | Harmonic voltage, harmonic current, voltage total harmonic distortion (THD-F or THD-R), current total harmonic distortion (THD-F or THD-R), up to the 13th order |
| | Pulse input | N / A |
| Other | Data save interval | 1 sec to 30 sec, 1 minute to 60 minutes, 14 selections |
| | Interfaces | SD/SDHC memory card ² , LAN, USB2.0, FTP |
| | Operating temperature | 0°C to 50°C, 80% RH or less (non-condensating) |
| | Storage temperature | -10°C to 60°C, 80% RH or less (non-condensating) |
| | Standards | EN61010 (Safety), EN61326 (EMC) |
| | Power supply | AC ADAPTER Z1008, BATTERY PACK 9459 |
| | Battery operating time | 3 hours |
| | Dimensions (W × H × D) | 180 × 100 × 68 mm (7.09 × 3.94 × 2.68 in.) (with PW9002) |
| Weight | 820 g (28.9 oz.) (with PW9002) | 830 g (29.3 oz.) (with PW9002) |

SAFETY VOLTAGE SENSOR PW9020 Specifications

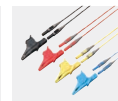
| | |
|--------------------------------|---|
| Compatible conductor types | Insulated wires ³ (indoor PVC) or metal parts |
| Compatible conductor diameters | Finished outer diameter Φ6 mm to Φ30 mm (Φ0.24 in. to Φ1.18 in.) |
| Effective measurement range | 90 V to 520 V |
| Safety standard category | CAT IV 300 V/CAT III 600 V |
| Operating temperature | 0°C to 50°C, 80% RH or less (non-condensating) |
| Storage temperature | -10°C to 60°C, 80% RH or less (non-condensating) |
| Standards | EN61010 (Safety), EN61326 (EMC) |
| Cord length | 3 m (9.84 ft.) |
| Weight | 220 g (7.8 oz.) |

¹ Depends on current sensor in use. For more detailed information on sensors, please refer to p.48, and p.49.² Use only SD Cards sold by HIOKI. Compatibility and performance are not guaranteed for PC cards made by other manufacturers.³ Shielded wires cannot be measured. The product may not be able to accurately measure multicore cables or cables that have thick insulation.

PW9020



Z1008



L9438-53



Z1006

PW3360 Included accessories

- VOLTAGE CORD L9438-53 (black, red, yellow, blue @ 1 each)
- AC ADAPTER Z1006
- USB cable 0.9 m (2.95 ft.)
- Instruction manual, Measurement guide
- Color clips (red, blue, yellow, white @ 2 each)
- Spiral tubes × 5







PW3365 Included accessories








- SAFETY VOLTAGE SENSOR PW9020 × 4
- AC ADAPTER Z1008
- USB cable 0.9 m (2.95 ft.)
- Instruction manual, Measurement guide
- Color clips (red, blue, yellow, white @ 4 each)
- Spiral tubes × 10

Order code **PW3365-20**Order code **PW3360-20**Order code **PW3360-21** with harmonic analysis function







Options






CURRENT SENSOR (For PQ3198, PQ3100, CM7290)

| Features | Make measurements over extended period of time without zero-adjustment, even in locations with temperature variations | | | AC/DC current sensors for observing instantaneous waveforms | | |
|--------------------------------------|---|---|---|--|---|---|
| Model name | AC/DC AUTO-ZERO CURRENT SENSOR | | | AC/DC CURRENT SENSOR | | |
| Model | CT7731 | CT7736 | CT7742 | CT7631 | CT7636 | CT7642 |
| Appearance |  |  |  |  |  |  |
| Rated measurement current | 100 A AC/DC | 600 A AC/DC | 2000 A AC/DC | 100 A AC/DC | 600 A AC/DC | 2000 A AC/DC |
| Max. allowable peak input | 150 A peak | 900 A peak | 2840 A peak | 150 A peak | 900 A peak | 2840 A peak |
| Bandwidth | DC to 5 kHz (-3dB) | DC to 5 kHz (-3dB) | DC to 5 kHz (-3dB) | DC to 10 kHz (-3dB) | DC to 10 kHz (-3dB) | DC to 10 kHz (-3dB) |
| Amplitude accuracy (DC, 45 to 66 Hz) | ±1.0% rdg. ±0.5% f.s. | ±2.0% rdg. ±0.5% f.s. | ±1.5% rdg. ±0.5% f.s. | ±1.0% rdg. ±0.5% f.s. | ±2.0% rdg. ±0.5% f.s. | ±1.5% rdg. ±0.5% f.s. |
| Output rate | 1 mV/A | 1 mV/A | 0.1 mV/A | 1 mV/A | 1 mV/A | 0.1 mV/A |
| Max. rated voltage to earth | (AC/DC) CAT IV 600 V | (AC/DC) CAT IV 600 V, CAT III 1000 V | (AC/DC) CAT IV 600 V, CAT III 1000 V | (AC/DC) CAT IV 600 V | (AC/DC) CAT IV 600 V, CAT III 1000 V | (AC/DC) CAT IV 600 V, CAT III 1000 V |
| Operating temperature | -25°C to 65°C | -25°C to 65°C | -25°C to 65°C | -25°C to 65°C | -25°C to 65°C | -25°C to 65°C |
| Core jaw diameter | Φ33 mm or less | Φ33 mm or less | Φ55 mm or less | Φ33 mm or less | Φ33 mm or less | Φ55 mm or less |

| Features | Attaches easily to thick cables, even in confined spaces | | | For accurately measuring load current | | | For measuring leakage current |
|----------------------------------|---|---|---|---|--|---|---|
| Model name | AC FLEXIBLE CURRENT SENSOR | | | AC CURRENT SENSOR | | | AC LEAKAGE CURRENT SENSOR |
| Model | CT7044 | CT7045 | CT7046 | CT7126 | CT7131 | CT7136 | CT7116 |
| Appearance |  |  |  |  |  |  |  |
| Rated measurement current | 6000 A AC | 6000 A AC | 6000 A AC | 60 A AC | 100 A AC | 600 A AC | 6 A AC |
| Max. allowable peak input | 15000 A peak | 15000 A peak | 15000 A peak | 100 A peak | 200 A peak | 900 A peak | 30 A peak |
| Bandwidth | 10 to 50 kHz (within ±3 dB) | 10 to 50 kHz (within ±3 dB) | 10 to 50 kHz (within ±3 dB) | 40 to 20 kHz | 40 to 20 kHz | 40 to 20 kHz | 40 to 5 kHz |
| Amplitude accuracy (45 to 66 Hz) | ±1.5% rdg. ±0.25% f.s.* | ±1.5% rdg. ±0.25% f.s.* | ±1.5% rdg. ±0.25% f.s.* | ±0.3% rdg. ±0.01% f.s. | ±0.3% rdg. ±0.02% f.s. | ±0.3% rdg. ±0.01% f.s. | ±1.0% rdg. ±0.05% f.s. |
| Output rate | 1 mV/A (600 A) 0.1 mV/A (6000 A) | 1 mV/A (600 A) 0.1 mV/A (6000 A) | 1 mV/A (600 A) 0.1 mV/A (6000 A) | 10 mV/A | 1 mV/A | 1 mV/A | 100 mV/A |
| Max. rated voltage to earth | (AC) CAT IV 600 V, CAT III 1000 V | (AC) CAT IV 600 V, CAT III 1000 V | (AC) CAT IV 600 V, CAT III 1000 V | (AC) CAT III 300 V | (AC) CAT III 300 V | (AC) CAT IV 600 V, CAT III 1000 V | Insulated conductor |
| Operating temperature | -25°C to 65°C | -25°C to 65°C | -25°C to 65°C | -10°C to 50°C | -10°C to 50°C | -10°C to 50°C | -25°C to 65°C |
| Core jaw diameter | Φ100 mm or less | Φ180 mm or less | Φ254 mm or less | Φ15 mm or less | | Φ46 mm or less | Φ40 mm or less |

CURRENT SENSOR (For PW3365, PW3360)

| Features | For load current levels: Voltage output | | | | | |
|----------------------------------|---|---|---|--|---|---|
| Model name | CLAMP ON SENSOR | | | | | |
| Model | 9694 | 9660 | 9661 | 9669 | 9695-02 | 9695-03 |
| Appearance |  |  |  |  |  |  |
| Rated measurement current | 5 A AC | 100 A AC | 500 A AC | 1000 A AC | 50 A AC | 100 A AC |
| Output rate | 10 mV/A | 1 mV/A | 1 mV/A | 0.5 mV/A | 10 mV/A | 1 mV/A |
| Amplitude accuracy (45 to 66 Hz) | ±0.3% rdg. ±0.02% f.s. | ±0.3% rdg. ±0.02% f.s. | ±0.3% rdg. ±0.01% f.s. | ±1.0% rdg. ±0.01% f.s. | ±0.3% rdg. ±0.02% f.s. | ±0.3% rdg. ±0.02% f.s. |
| Max. rated voltage to earth | (AC) CAT III 300 V | (AC) CAT III 300 V | (AC) CAT III 600 V | (AC) CAT III 600 V | (AC) CAT III 300 V | (AC) CAT III 300 V |
| Operating temperature | 0°C to 50°C | 0°C to 50°C | 0°C to 50°C | 0°C to 50°C | 0°C to 50°C | 0°C to 50°C |
| Core jaw diameter | Φ15 mm or less | Φ15 mm or less | Φ46 mm or less | Φ55 mm or less 80×20 mm busbar | Φ15 mm or less | Φ15 mm or less |

| Features | For load current levels: Voltage output | | | For leak current: Voltage output | |
|----------------------------------|---|---|---|---|---|
| Model name | AC FLEXIBLE CURRENT SENSOR | | | CLAMP ON LEAK SENSOR | |
| Model | CT9667-01 | CT9667-02 | CT9667-03 | 9657-10 | 9675 |
| Appearance |  |  |  |  |  |
| Rated measurement current | 5000 A AC/500 A AC | 5000 A AC/500 A AC | 5000 A AC/500 A AC | 10 A AC | 10 A AC |
| Output rate | 0.1 mV/A (5000 A) 1 mV/A (500 A) | 0.1 mV/A (5000 A) 1 mV/A (500 A) | 0.1 mV/A (5000 A) 1 mV/A (500 A) | 100 mV/A | 100 mV/A |
| Amplitude accuracy (45 to 66 Hz) | ±2% rdg. ±0.3% f.s.* | ±2% rdg. ±0.3% f.s.* | ±2% rdg. ±0.3% f.s.* | ±1.0% rdg. ±0.05% f.s. | ±1.0% rdg. ±0.005% f.s. |
| Max. rated voltage to earth | (AC) CAT IV 600 V (AC) CAT III 1000 V | (AC) CAT IV 600 V (AC) CAT III 1000 V | (AC) CAT IV 600 V (AC) CAT III 1000 V | Insulated conductor | Insulated conductor |
| Operating temperature | -25°C to 65°C | -25°C to 65°C | -10°C to 50°C | 0°C to 50°C | 0°C to 50°C |
| Core jaw diameter | Φ100 mm or less | Φ180 mm or less | Φ254 mm or less | Φ40 mm or less | Φ30 mm or less |

*At center of flexible loop

| | | |
|----|--------------------------|---|
| 1 | EXTENSION CABLE L0220-01 | 2 m (6.56 ft.), for PL14 connectors |
| 2 | EXTENSION CABLE L0220-02 | 5 m (16.4 ft.), for PL14 connectors |
| 3 | EXTENSION CABLE L0220-03 | 10 m (32.81 ft.), for PL14 connectors |
| 4 | EXTENSION CABLE L0220-04 | 20 m (65.62 ft.), for PL14 connectors |
| 5 | EXTENSION CABLE L0220-05 | 30 m (98.43 ft.), for PL14 connectors |
| 6 | EXTENSION CABLE L0220-06 | 50 m (164.04 ft.), for PL14 connectors |
| 7 | EXTENSION CABLE L0220-07 | 100 m (328.08 ft.), for PL14 connectors |
| 8 | CONNECTION CABLE 9219 | For 9695, 3 m (9.84 ft.) |
| 9 | AC ADAPTER 9445-02 | For CT9667 |
| 10 | CONVERSION CABLE L9910 | To convert output connector: BNC to PL 14 |



| PQ3198, PQ3100 | | |
|----------------|----|--|
| Voltage | 1 | VOLTAGE CORD L1000 Red/ Yellow/ Blue/Gray @ 1 each, Black x 4, 3 m (9.84 ft.), Alligator clip x 8 |
| | 2 | VOLTAGE CORD L1000-05 Red/ Yellow/ Blue/Gray/Black @ 1 each 1, 3 m (9.84 ft.) ; Alligator clip x 5 |
| | 3 | MAGNETIC ADAPTER 9804-01 Red, Alternative tip for the L1000, L1000-05 |
| | 4 | MAGNETIC ADAPTER 9804-02 Black, Alternative tip for the L1000, L1000-05 |
| | 5 | GRABBER CLIP L9243 Alternative tip for the L1000, L1000-05 |
| | 6 | PATCH CORD L1021-01* 0.5 m (1.64 ft.), Red, Banana branch-banana |
| | 7 | PATCH CORD L1021-02* 0.5 m (1.64 ft.), Black, Banana branch-banana |
| Record | 8 | SD MEMORY CARD 2GB Z4001 Use only SD Cards sold by HIOKI. Compatibility and performance are not guaranteed for PC cards made by other manufacturers. |
| | 9 | SD MEMORY CARD 8GB Z4003 |
| Communication | 10 | RS-232C CABLE 9637 For PQ3100, pin - 9 pin, cross, 1.8 m (5.91 ft.) |
| | 11 | LAN CABLE 9642 5 m (16.4 ft.), Straight, Cross conversion adapter |
| Power supply | 12 | AC ADAPTER Z1002 100 V AC to 240 V AC |
| | 13 | BATTERY PACK Z1003 7.2 V, Ni-MH |
| Connection | 14 | WIRING ADAPTER PW9000 For PQ3198, for 3-phase/3-wire connection |
| | 15 | WIRING ADAPTER PW9001 For PQ3198, for 3-phase/4-wire connection |
| Other | 16 | GPS BOX PW9005 For PQ3198 |
| | 17 | CARRYING CASE C1009 Bag type |
| | 18 | CARRYING CASE C1002 Hard trunk type |
| | 19 | MAGNETIC STRAP Z5004 |
| | 20 | MAGNETIC STRAP Z5020 Extra strength |

* Only for PQ3198

| PW3365, PW3360 | | |
|----------------|----|--|
| Voltage | 1 | SAFETY VOLTAGE SENSOR PW9020 For PW3365, 3 m (9.84 ft.) |
| | 2 | VOLTAGE CORD L9438-53 For PW3360, Black/ Red/ Yellow/ Blue, 3 m (9.84 ft.) length, Alligator clip x 4 |
| | 3 | MAGNETIC ADAPTER 9804-01 For PW3360, Red, $\Phi 11$ mm (0.43 in.) |
| | 4 | MAGNETIC ADAPTER 9804-02 For PW3360, Black, $\Phi 11$ mm (0.43 in.) |
| | 5 | PATCH CORD L1021-01 For PW3360, 0.5 m (1.64 ft.), Red, Banana branch-banana |
| | 6 | PATCH CORD L1021-02 For PW3360, 0.5 m (1.64 ft.), Black, Banana branch-banana |
| | 7 | SD MEMORY CARD 2GB Z4001 Use only SD Cards sold by HIOKI. Compatibility and performance are not guaranteed for PC cards made by other manufacturers. |
| Record | 8 | SD MEMORY CARD 8GB Z4003 |
| | 9 | LAN CABLE 9642 5 m (16.4 ft.), Straight, Cross conversion adapter |
| Communication | 10 | POWER LOGGER VIEWER SF1001 Software to analyze measurement data |
| | 11 | AC ADAPTER Z1008 For PW3365, 100V AC to 240V |
| Power supply | 12 | AC ADAPTER Z1006 For PW3360, 100V AC to 240V |
| | 13 | BATTERY SET PW9002 Battery case and 9459 Set |
| Other | 14 | BATTERY PACK 9459 |
| | 15 | CARRYING CASE C1005 |
| | 16 | CARRYING CASE C1008 For PW3365 |
| | 17 | MAGNETIC STRAP Z5004 |

| CM7290 | | |
|--------------|---|--|
| Output | 1 | OUTPUT CORD L9094 Connect to Banana terminal, 1.5 m (4.92 ft.) |
| | 2 | OUTPUT CORD L9095 Connect to BNC terminal, 1.5 m (4.92 ft.) |
| | 3 | OUTPUT CORD L9096 Connect to terminal block, 1.5 m (4.92 ft.) |
| Power supply | 4 | AC ADAPTER 9445-02 |
| | 5 | CARRYING CASE C0220 |
| Other | 6 | CARRYING CASE C0221 |
| | 7 | MAGNETIC STRAP Z5004 |



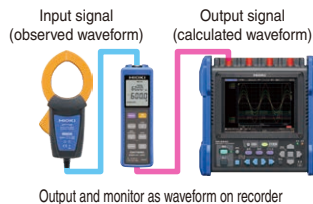
DISPLAY UNIT CM7290

CE
Product warranty for 3 years
Accuracy guaranteed for 3 years

Measurement sensors sold separately



CM7290

Order code **CM7290**

Included accessories

- Alkaline battery LR6 x 2
- Instruction manual
- Protector

| Measurement parameters | | DC, AC, DC+AC, Hz | | | |
|------------------------|---------------------------|---|--|--------------------|--------------------|
| Measurement parameters | WAVE | | Input signal Output signal | | |
| | RMS | | Convert and output as RMS value | | |
| | PEAK | | Output peak of each interval as absolute value | | |
| | FREQ | | Output frequency count per interval | | |
| | Sensor | | CT7731 CT7631 | CT7736 CT7636 | CT7742 CT7642 |
| Accuracy (output) | DC WAVE | ±1.5% rdg. ±1.3 mV | ±2.5% rdg. ±3.8 mV | ±2.0% rdg. ±1.8 mV | - |
| | AC WAVE | ±1.5% rdg. ±1.3 mV | ±2.5% rdg. ±3.8 mV | ±2.5% rdg. ±1.8 mV | ±2.0% rdg. ±2.3 mV |
| | AC RMS | ±1.8% rdg. ±1.3 mV | ±2.8% rdg. ±3.8 mV | ±2.8% rdg. ±1.8 mV | ±2.3% rdg. ±2.3 mV |
| Other | Output update time | PEAK: 0.02s (FAST)/0.2s (NORMAL)/1s (SLOW) FREQ: 0.2s (FAST)/0.2s (NORMAL)/3s (SLOW) (WAVE, RMS: analog output) | | | |
| | Operating temperature | -25°C to 65°C, 80% RH or less (non-condensating) | | | |
| | Storage temperature | -25°C to 65°C, 80% RH or less (non-condensating) | | | |
| | Dustproof and waterproof | IP54 ¹⁾ | | | |
| | Standards | EN61010 (Safety), EN61326 (EMC) | | | |
| | Power supply | Alkaline battery LR6 x 2, external power supply | | | |
| | Continuous operating time | 16 hours (backlight OFF) | | | |
| | Dimensions (W x H x D) | 52 x 163 x 37 mm (2.05 x 6.42 x 1.46 in.) | | | |
| | Weight | 220 g (7.8 oz.) | | | |

¹⁾ With sensor connected and caps fitted to AC adapter and power connector

Clamp

Insulation

DMMs

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

LAN

Signal

Lux

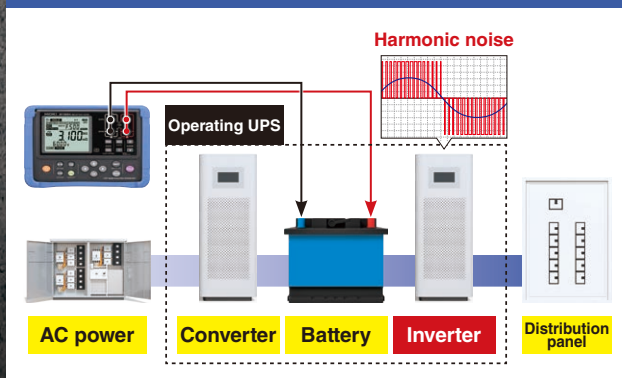
Temperature

Resistance

BATTERY TESTER BT3554-50, BT3554-51, BT3554-52

Properly Diagnose Deterioration of UPS Lead-acid Batteries even Under Noisy Environments

Tough against inverter noise during UPS startup



Completing an intensive inspection workload efficiently



BATTERY TESTERS

BATTERY TESTER BT3554-50, BT3554-51, BT3554-52



Product warranty for 3 years
Accuracy guaranteed for 1 year



BT3554-50: Instrument only

With Z3210



Please see www.hioki.com
for list of supported regions.



**GENNECT
Cross**

BT3554-51: with 9465-10

With Z3210



Please see www.hioki.com
for list of supported regions.



**GENNECT
Cross**

BT3554-52: with L2020

With Z3210



Please see www.hioki.com
for list of supported regions.



**GENNECT
Cross**



**WIRELESS ADAPTER
Z3210 (options):** Attach to
enable Bluetooth® wireless
technology



Included accessories

- PIN TYPE LEAD 9465-10 (BT3554-51 only)
- PIN TYPE LEAD L2020 (BT3554-51 only)
- Carrying Case C1014
- Protector Z5041
- Fuse Set Z5050
- ZERO ADJUSTMENT BOARD
- Neck strap
- USB cable
- GENNECT One Software CD
- Power-on option sticker
- Alkaline battery LR6 × 8
- Instruction manual

Order code **BT3554-50** Instrument only

Order code **BT3554-51** With 9465-10

Order code **BT3554-52** With L2020

Order code **BT3554-91** With 9465-10, Z3210

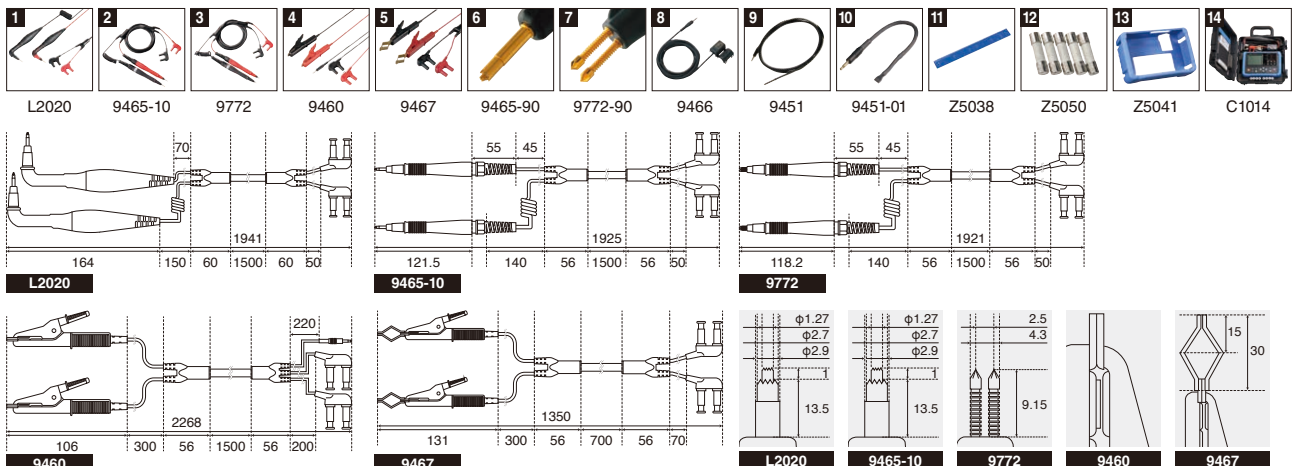
Order code **BT3554-92** With L2020, Z3210

Order code **Z3210**

| Options | |
|---------|---|
| 1 | PIN TYPE LEAD L2020 |
| 2 | PIN TYPE LEAD 9465-10 |
| 3 | PIN TYPE LEAD 9772 |
| 4 | CLIP TYPE LEAD WITH TEMPERATURE SENSOR 9460 |
| 5 | LARGE CLIP TYPE LEAD 9467 |
| 6 | TIP PIN 9465-90 |
| 7 | TIP PIN 9772-90 |
| 8 | REMOTE CONTROL SWITCH 9466 |
| 9 | TEMPERATURE PROBE 9451 |
| 10 | TEMPERATURE PROBE 9451-01 |
| 11 | 0 ADJ BOARD Z5038 |
| 12 | FUSE SET Z5050 |
| 13 | PROTECTOR Z5041 |
| 14 | CARRYING CASE C1014 |

| Measurement parameters | | Internal resistance measurement for batteries (AC four-terminal method) Terminal voltage measurement for batteries (DC voltage) Temperature measurement (when using the 9460) |
|---------------------------|--|---|
| Measurement | Range | 3 mΩ (Max. display: 3.100 mΩ, Resolution: 1 μΩ) 30 mΩ (31.00 mΩ, 10 μΩ) 300 mΩ (310.0 mΩ, 100 μΩ) 3 Ω (3.100 Ω, 1 mΩ) Accuracy: ±0.8% rdg. ±6 dgt. |
| | Accuracy | |
| | Measurement Current | 160 mA (3 mΩ, 30 mΩ range) 16 mA (300 mΩ range) 1.6 mA (3 Ω range) |
| | Measurement frequency | 1 kHz ±30 Hz (with function for avoiding noise frequency enabled: 1 kHz ±80 Hz) |
| Voltage | | 6.000 V, 60.00 V Accuracy: ±0.08% rdg. ±6 dgt. |
| Temperature | | -10.0°C to 60.0°C Accuracy: ±1.0°C |
| Function | <ul style="list-style-type: none"> • Memory function (up to 6000 data) • Auto memory function • Auto-hold function • Measurement Navigator (When using Z3210, GENNECT Cross: Voice guide output) • Tablet app (GENNECT Cross) • PC app (GENNECT One) • Comparator function (PASS/ WARNING/ FAIL) • Excel® Direct Input function (When using Z3210) | |
| | | |
| | | |
| | | |
| Other | Interfaces | USB2.0 |
| | Operating temperature | 0°C to 40°C, 80% RH or less (non-condensating) |
| | Storage temperature | -10°C to 50°C, 80% RH or less (non-condensating) |
| | Standards | EN61010 (Safety), EN61326 (EMC) |
| Power supply | | LR6 alkaline battery × 8 |
| Continuous operating time | | 8.5 hours |
| Dimensions (W × H × D) | | 199 × 132 × 60.6 mm (7.83 × 5.20 × 2.39 in.) |
| Weight | | 960 g (33.8 oz.) |

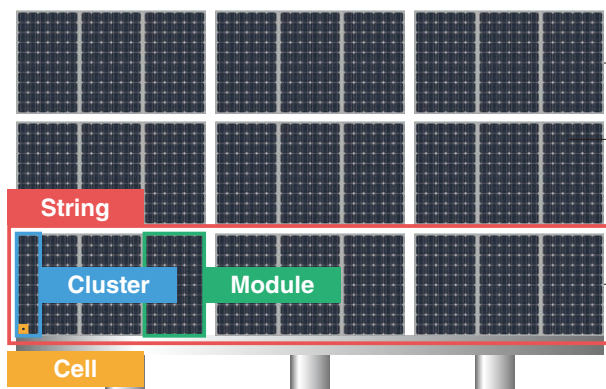
The thresholds for determining the pass/fail condition of a battery depend on the specifications and standards of the battery manufacturer, battery type, capacity, etc. It is important and necessary to always conduct battery testing against the internal resistance and terminal voltage of a new or reference battery. In some cases, it may be difficult to determine the deterioration state of traditional open type (liquid) lead-acid or alkaline batteries, which demonstrate smaller changes in internal resistance than sealed lead acid batteries.



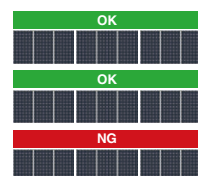
PV Maintenance

Inspect Solar Panel Bypass Diodes for Opens and Shorts

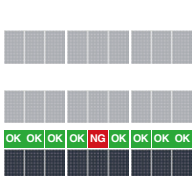
Improve testing efficiency by first inspecting the PV string, then testing individual modules for issues



String Inspection

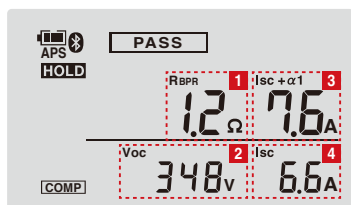


Module Testing

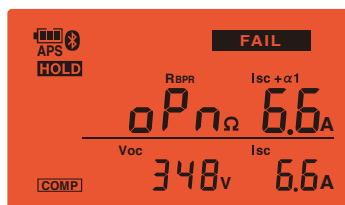


A FAIL decision will be output even if only one module within the string has malfunctioned. After identifying the problematic string, pinpoint the exact location by further inspecting at the module level.

- 1 RBPR: Bypass route resistance
- 2 Voc: Open-circuit voltage
- 3 Isc + α1: Measurement current
- 4 Isc: Short-circuit current

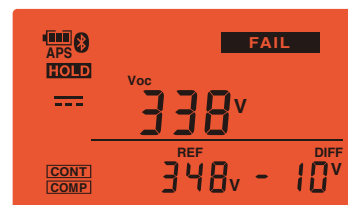


Normal reading



Open fault

Test open-circuit voltage, short-circuit current, and bypass route resistance at the same time



Short-circuit fault

Measure open-circuit voltage within 1 second and compare to reference value



Product warranty for 3 years
Accuracy guaranteed for 1 year

BYPASS DIODE TESTER FT4310



Please see www.hioki.com for list of supported regions.



GENNECT
Cross

Order code **FT4310**

Included accessories



- TEST LEAD SET WITH REMOTE SWITCH L9788-11
- CARRYING CASE C0206
- Instruction manual
- Alkaline battery LR6 x6

L9788-11

C0206

Options

| | | |
|---|---|-------------------------------|
| 1 | TEST LEAD SET WITH REMOTE SWITCH L9788-11 | 1.2 m (3.94 ft.) |
| 2 | TEST LEAD WITH REMOTE SWITCH L9788-10 | 1.2 m (3.94 ft.) |
| 3 | TIP PIN L9788-90 | For L9788, L9788-10 |
| 4 | BREAKER PIN L9788-92 | For checking breaker terminal |
| 5 | CARRYING CASE C0206 | |



L9788-11



L9788-10



L9788-90



L9788-92



C0206

*For detailed information about L9788, please refer to p.27

BPD TEST mode (Bypass diode)

| | |
|--|--|
| Measurement items | Bypass diode comparator judgment Bypass route resistor Open-circuit voltage Short-circuit current Measurement (applied) current |
| Measurement object | Crystal system string Open-circuit voltage: 1000 V DC or less Rated current: 2 A to 12 A DC |
| Measurement method | Short-circuit and pulse voltage application |
| Duration of shorting between terminals | 10 ms or less |
| Output pulse | Voltage: 100 V DC or less, Pulse width: 5 ms or less Limiting current: Measured short-circuit current + 1 A or less, Maximum: 13 A |
| Voc mode (open-circuit voltage) | |
| Measurement items | Open-circuit voltage |
| Measurement range | 0 V to 1000 V DC (displayed up to 1200 V DC) |
| Response time | Within 1 sec. |
| Functions | Displays the number of bypass diode measurements Automatic polarity judgment function Comparison display Live circuit indicator Comparator Auto hold Backlight Auto power off Buzzer sounds Battery indicator |
| Operating temperature | -10°C to 65°C, 80% RH or less (non-condensing) |
| Storage temperature | -20°C to 65°C, 80% RH or less (non-condensing) |
| Dustproof and waterproof | IP40 (EN60529) |
| Standards | EN61010 (Safety), EN61326 Class A (EMC) |
| Maximum input voltage | 1000 V DC |
| Power supply | LR6 alkaline battery x 6 |
| Continuous operating time | 45 hours (Bluetooth® OFF) |
| Dimensions (W x H x D) | 152 x 92 x 69 mm (5.98 x 3.62 x 2.72 in.), Cable length 0.5m (1.64 ft.) |
| Weight | 650 g (22.9 oz.) |

Measure Insulation Resistance while the Solar PV System Continues to Generate



PV insulation resistance measurement function

In the past, it was impossible to measure a PV system's insulation resistance while the system was operating because the measurement current and generated current would mix together. Consequently, it was necessary to make such measurements at night, when the system being measured was not generating electricity. The PV insulation resistance measurement function can measure PV systems while they're operating during daylight hours, without being affected by the generated current.

HIGH VOLTAGE INSULATION TESTER IR5051
Up to 2000V

INSULATION TESTER IR4053
Up to 600V

Safe Inspects and Easily Manages Measurement Data for High-voltage Solar Power Generation



Available to measure 2000 V DC^{*1}
DC HIGH VOLTAGE PROBE P2010 (option)

CAT IV 1000 V
CAT III 2000 V

CM4375-50

DT4261

Supports wireless communication to increase work efficiency

WIRELESS ADAPTER Z3210 (option)
Attach to enable Bluetooth® wireless technology

With Z3210
Bluetooth®
Please see www.hioki.com for list of supported regions.

GENNECT Cross

*1: Supported models: CM4371-50, CM4373-50, CM4375-50, CM4141-50, DT4261 (requires using DC HIGH VOLTAGE PROBE P2010)

COMPACT DATA LOGGERS

Collect Data with Portable Transfer Devices

Use the LR5091 or LR5092 to capture data and upload to the PC for analysis



*Attach display side

*SD MEMORY CARD is available as an option

| Model | HUMIDITY LOGGER LR5001 | TEMPERATURE LOGGER LR5011 | INSTRUMENTATION LOGGER LR5031 | CLAMP LOGGER LR5051 |
|-------------------|--|---------------------------------|---------------------------------|----------------------------------|
| Log | Temperature, Humidity | Temperature | 4-20 mA Instrumentation Signals | Load Current, Leak Current |
| Appearance | | | | |
| Channels | 1ch (temperature), 1ch (humidity) | 1ch | 1ch | 2ch |
| Measurement range | -40.0°C to 85.0°C (temperature) 0% RH to 100% RH (humidity) | -40.0°C to 180.0°C ¹ | -30.00 mA to 30.00 mA | 0.00 A to 1000 A AC ¹ |
| Accuracy | ±0.5°C (temperature) ±5% RH (humidity) | ±0.5°C | ±0.5% rdg. ±5 dgt. | ±0.5% rdg. ±5 dgt. |
| Bundled sensor | HUMIDITY SENSOR LR9504 | Sensor sold separately | CONNECTION CABLE LR9801 | Sensor sold separately |

| Model | VOLTAGE LOGGER LR5041 | VOLTAGE LOGGER LR5042 | VOLTAGE LOGGER LR5043 |
|-------------------|---|-------------------------|-------------------------|
| Log | Instrumentation signals, Analog outputs | | |
| Appearance | | | |
| Channels | 1ch | 1ch | 1ch |
| Measurement range | -50.00 mV to 50.00 mV | -5.000 V to 5.000 V | -50.00 V to 50.00 V |
| Accuracy | ±0.5% rdg. ±5 dgt. | ±0.5% rdg. ±5 dgt. | ±0.5% rdg. ±5 dgt. |
| Bundled sensor | CONNECTION CABLE LR9802 | CONNECTION CABLE LR9802 | CONNECTION CABLE LR9802 |

LR5091 or LR5092-20 is necessary to transfer data from a LR5000 series logger to a PC

COMMUNICATION ADAPTER LR5091
(USB cable bundled)

DATA COLLECTOR LR5092-20
(USB cable bundled)

¹ Depends on current sensor in use

LR5000 Series Common Specifications

| | | |
|-------------|---------------------------|---|
| Measurement | Recording intervals | 1/2/5/10/15/20/30 sec., 1/2/5/10/15/20/30/60 min. |
| | Recording modes | Instantaneous value, MAX/MIN/AVG |
| | Storage capacity | 60,000 data sets per channel (instantaneous value) |
| Other | Operating temperature | LR5001, LR5011, LR5031, LR5041, LR5042, LR5043: -20°C to 70°C, 80% RH or less LR5051: 0°C to 50°C, 80% RH or less |
| | Power supply | LR6 alkaline battery x1 LR5051: LR6 alkaline battery x2 |
| | Continuous operating time | LR5001: 3 months (1min. recording interval), 20 days (1sec.) LR5011: 2 years (1min. recording interval), 2 months (1sec.) LR5051: 1 years (1min. recording interval), 1 month (1sec.) LR5031, LR5041, LR5042, LR5043: 2 years (1min. recording interval), 2 months (1sec.) |
| | Dimensions (W × H × D) | 79 × 57 × 28 mm (3.11 × 2.24 × 1.10 in.) LR5051: 79 × 70 × 37 mm (3.11 × 2.76 × 1.46 in.) |
| | Weight | 105 g (3.7 oz.), LR5051: 165 g (5.8 oz.) |
| | | |

Order code **LR5001** HUMIDITY SENSOR LR9504, Kickstand

Order code **LR5011** Kickstand

Order code **LR5031** CONNECTION CABLE LR9801, Kickstand

Order code **LR5041** CONNECTION CABLE LR9802, Kickstand

Order code **LR5042** CONNECTION CABLE LR9802, Kickstand

Order code **LR5043** CONNECTION CABLE LR9802, Kickstand

Order code **LR5051**

LR5000 Series Included accessories

- LR6 alkaline battery × 1 (LR5051: LR6 alkaline battery × 2)
- Instruction manual, Operation guide



Product warranty for 3 years
Accuracy guaranteed for 1 year

Make Logger Settings and Transfer Data via Bluetooth® Wireless Communication

Use your tablet or PC to download data and configure measurement conditions



| Model | WIRELESS PULSE LOGGER LR8512 | WIRELESS CLAMP LOGGER LR8513 | WIRELESS HUMIDITY LOGGER LR8514 | WIRELESS VOLTAGE/TEMP LOGGER LR8515 |
|-------------------|---|---|--|--|
| Log | Pulse | Load Current, Leak Current | Temperature, Humidity | DCV, Temperature |
| Appearance | | | | |
| Channels | 2ch | 2ch | 2ch (temperature), 2ch (humidity) | 2ch |
| Measurement range | Pulse: 0 to 1000M pulse No. of revolutions: 0 to 5000/n ¹ [r/s] | 500.0 mA to 5000 A AC ² 10.00 A to 2000 A DC ² | -40.0°C to 80.0°C (temperature) 0.0% rh to 100% RH (humidity) | Voltage: -50 V to 50 V Thermocouple (K): -200°C to 999.9°C Thermocouple (T): -200°C to 400°C |
| Accuracy | - | ±0.5% rdg. ±5 dgt. | Temperature: ±0.5°C Humidity: ±3% RH ³ | Voltage: ±0.05 mV Thermocouple: ±0.6°C |
| Bundled sensor | CONNECTION CABLE L1010 | Sensor sold separately | Sensor sold separately | Sensor sold separately |

¹n is the number of pulses, 1 to 1000, per revolution. ²Depends on current sensor in use ³Hysteresis: ±1% rh (added to the humidity measurement accuracy).

LR8512, LR8513, LR8514, LR8515 Common Specifications

| | | |
|-------------|--|--|
| Measurement | Recording intervals | 0.1 ¹ /0.2 ¹ /0.5/1/2/5/10/20/30 sec., 1/2/5/10/20/30/60 min. |
| | Recording modes | Instantaneous value, MAX/MIN/AVG (LR8513 only) |
| | Communication reaches | 30 m, line of sight |
| | Storage capacity | 500,000 data sets per channel |
| Other | Operating temperature | -20°C to 60°C, 80% RH or less |
| | Power supply | LR6 alkaline battery × 2 AC ADAPTER Z2003 (option, DC12V) |
| | Continuous operating time ² | LR8512: 2 months (1min. recording interval), 2 months (1sec.) LR8513: 3 months (1min. recording interval), 1 month (1sec.) LR8514: 3.5 months (1min. recording interval), 3 months (1sec.) LR8515: 2.5 months (1min. recording interval), 10 days (1sec.) |
| | Dimensions (W × H × D) | LR8512, LR8514: 85 × 61 × 31 mm (3.35 × 2.40 × 1.22 in.) LR8513, LR8515: 85 × 75 × 38 mm (3.35 × 2.95 × 1.50 in.) |
| | Weight | LR8512, LR8514: 95 g (3.4 oz.), LR8513: 130 g (4.6 oz.), LR8515: 126 g (4.4 oz.) |

¹LR8512, LR8515 only ²With Bluetooth® communication OFF

Order code **LR8512** CONNECTION CABLE L1010 × 2

Order code **LR8513** -

Order code **LR8514** -

Order code **LR8515** -

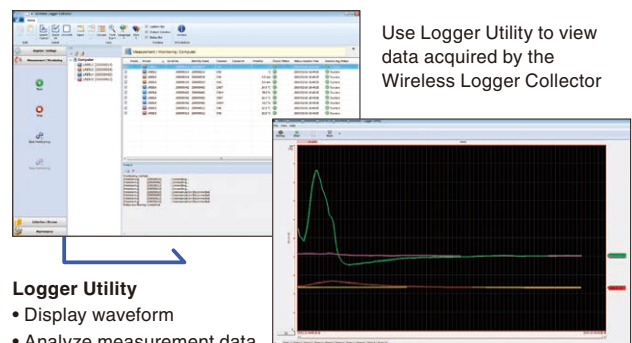
Included accessories for LR8512, LR8513, LR8514, LR8515

- LR6 alkaline battery × 2
- CD-R, Measurement Guide, Caution for Using Radio Waves (CD-R: Instruction Manual PDF, Logger Utility, Wireless Logger Collector)

| Wireless Logger Collector (for collecting measurement data) | |
|---|---|
| Supported devices | Android tablet, Android smartphone Windows PC |
| OS | Android OS 4.0.3 or later Windows 11/10 |
| Number of available registrations | Max. 100 units |
| Output format | Logger Utility format LR5000 format Smart Site compatible format CSV format Text format |

How to obtain software

For Windows PC: Supplied bundled CD-R or download from the HIOKI website
For Android tablet: Google Play™



Logger Utility

- Display waveform
- Analyze measurement data

Clamp

Insulation

DIMMS

Detectors

Earth

Power quality

Power loggers

Battery

PV

Logger

LAN

Signal

Lux

Temperature

Resistance

Options



| HUMIDITY LOGGER LR5001 | | |
|--|----------------------------|---|
| 1 | HUMIDITY SENSOR LR9501 | 1 m (3.28 ft.) |
| 2 | HUMIDITY SENSOR LR9502 | 5 m (16.4 ft.) |
| 3 | HUMIDITY SENSOR LR9503 | 10 m (32.81 ft.) |
| 4 | HUMIDITY SENSOR LR9504 | 4 cm (1.57 in.) |
| TEMPERATURE LOGGER LR5001 | | |
| 5 | TEMPERATURE SENSOR LR9601 | Molded plastic type, 1 m (3.28 ft.) |
| 6 | TEMPERATURE SENSOR LR9602 | Molded plastic type, 5 m (16.4 ft.) |
| 7 | TEMPERATURE SENSOR LR9603 | Molded plastic type, 10 m (32.81 ft.) |
| 8 | TEMPERATURE SENSOR LR9604 | Molded plastic type, 4.5 cm (1.77 in.) |
| 9 | TEMPERATURE SENSOR LR9611 | Lug type, 1 m (3.28 ft.) |
| 10 | TEMPERATURE SENSOR LR9612 | Lug type, 5 m (16.4 ft.) |
| 11 | TEMPERATURE SENSOR LR9613 | Lug type, 10 m (32.81 ft.) |
| 12 | TEMPERATURE SENSOR LR9621 | Sheathed type, 1 m (3.28 ft.) |
| 13 | TEMPERATURE SENSOR LR9631 | Needle type, 1 m (3.28 ft.) |
| INSTRUMENTATION LOGGER LR5031 | | |
| 14 | CONNECTION CABLE LR9801 | 1 m (3.28 ft.), 2 wires |
| VOLTAGE LOGGER LR5041, LR5042, LR5043, PULSE LOGGER LR5061 | | |
| 15 | CONNECTION CABLE LR9802 | 1 m (3.28 ft.), 4 wires |
| LR5000 Series | | |
| 16 | WALL-MOUNTED HOLDER LR9901 | Cannot be used with LR5051 |
| 17 | MAGNETIC STRAP Z5004 | |
| DATA COLLECTOR LR5092 | | |
| 18 | SD MEMORY CARD 2GB Z4001 | Use only SD Cards sold by HIOKI. Compatibility and performance are not guaranteed for PC cards made by other manufacturers. |



| WIRELESS PULSE LOGGER LR8512 | | |
|---|------------------------|-------------------|
| 1 | CONNECTION CABLE L1010 | 1.5 m (4.92 ft.) |
| WIRELESS HUMIDITY LOGGER LR8514 | | |
| 2 | HUMIDITY SENSOR Z2010 | 50 mm (1.97 in.) |
| 3 | HUMIDITY SENSOR Z2011 | 1.5 m (4.92 ft.) |
| WIRELESS LOGGER Series LR8512, LR8513, LR8514, LR8515 | | |
| 4 | AC ADAPTER Z2003 | 100 V to 240 V AC |
| 5 | MAGNETIC STRAP Z5004 | |
| 6 | MAGNETIC STRAP Z5020 | Extra strength |



^{*1} At center of flexible loop
^{*2} Maximum measurable current when used with the LR8513, LR5051

| CURRENT SENSORS (For LR8513, LR5051) | | | | | | |
|--------------------------------------|---|------------------------|------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Measurement application | For load current levels: Voltage output | | | | | |
| Model name | CLAMP ON SENSOR | | | AC FLEXIBLE CURRENT SENSOR | | |
| Model | 9669 | 9695-02 | CT6500 | CT9667-01 | CT9667-02 | CT9667-03 |
| Appearance | | | | | | |
| Rated measurement current | 1000 A AC | 50 A AC | 500 A AC | 5000/500 A AC | 5000/500 A AC | 5000/500 A AC |
| Output rate | 0.5 mV/A | 10 mV/A | 1 mV/A AC | 0.1 mV/A (5000 A) 1 mV/A (500 A) | 0.1 mV/A (5000 A) 1 mV/A (500 A) | 0.1 mV/A (5000 A) 1 mV/A (500 A) |
| Amplitude accuracy (DC, 45 to 66 Hz) | ±1.0% rdg. ±0.01% f.s. | ±0.3% rdg. ±0.02% f.s. | ±1.5% rdg. ±0.03% f.s. | ±2% rdg. ±0.3% f.s. ^{*1} | ±2% rdg. ±0.3% f.s. ^{*1} | ±2% rdg. ±0.3% f.s. ^{*1} |
| Max. rated voltage to earth | CAT III 600 V | CAT III 300 V | CAT III 600 V | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 1000 V | CAT IV 600 V CAT III 100 V |
| Operating temperature | 0°C to 50°C | 0°C to 50°C | 0°C to 50°C | -25°C to 65°C | -25°C to 65°C | -10°C to 50°C |
| Core jaw diameter | Φ55 mm or less 80 × 20 mm busbar | Φ15 mm or less | Φ46 mm or less | Φ100 mm or less | Φ180 mm or less | Φ254 mm or less |

| Measurement application | For leak current: Voltage output | |
|--------------------------------------|----------------------------------|-------------------------|
| Model name | CLAMP ON LEAK SENSOR | |
| Model | 9657-10 | 9675 |
| Appearance | | |
| Rated measurement current | 5 A AC ^{*2} | 5 A AC ^{*2} |
| Output rate | 100 mV/A | 100 mV/A |
| Amplitude accuracy (DC, 45 to 66 Hz) | ±1.0% rdg. ±0.05% f.s. | ±1.0% rdg. ±0.005% f.s. |
| Max. rated voltage to earth | Insulated conductor | Insulated conductor |
| Operating temperature | 0°C to 50°C | 0°C to 50°C |
| Core jaw diameter | Φ40 mm or less | Φ30 mm or less |

9219

For CLAMP ON SENSOR 9695-02

CONNECTION CABLE 9219 For 9695, 3 m (9.84 ft.)

The following sensors can be used with Model LR8513 via the DISPLAY UNIT CM7290 (requires OUTPUT CORD L9095)

| | |
|---|--------------------|
| • AC/DC CURRENT SENSOR CT7631 | : Φ33 mm, 100 A |
| • AC/DC CURRENT SENSOR CT7636 | : Φ33 mm, 200 A* |
| • AC/DC CURRENT SENSOR CT7642 | : Φ55 mm, 2000 A |
| • AC/DC AUTO-ZERO CURRENT SENSOR CT7731 | : Φ33 mm, 100 A |
| • AC/DC AUTO-ZERO CURRENT SENSOR CT7736 | : Φ33 mm, 200 A* |
| • AC/DC AUTO-ZERO CURRENT SENSOR CT7742 | : Φ55 mm, 2000 A |
| • AC FLEXIBLE CURRENT SENSOR CT7044 | : Φ100 mm, 5000 A* |
| • AC FLEXIBLE CURRENT SENSOR CT7045 | : Φ180 mm, 5000 A* |
| • AC FLEXIBLE CURRENT SENSOR CT7046 | : Φ254 mm, 5000 A* |

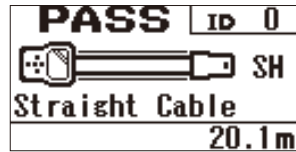
* Maximum measurable current when used with the LR8513.
For more detailed information about sensors and output cords, please refer to p.48 & p.49.

LAN Cable Testers

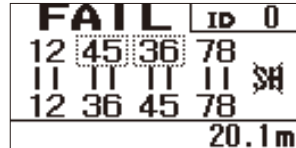
LAN CABLE HiTESTER 3665



Product warranty for 3 years
Accuracy guaranteed for 1 year



Display wire map, cable length, and ID of connected terminal



Pins 3 and 6 have been incorrectly paired with Pins 4 and 5

Included accessories

- TERMINATOR 9690 (ID 0)
- Carrying case
- LR6 alkaline battery x 2
- Instruction manual

Order code **3665**

| Options | | |
|---------|--------------------|-------------|
| 1 | TERMINATOR 9690-01 | ID 1 to 5 |
| 2 | TERMINATOR 9690-02 | ID 6 to 10 |
| 3 | TERMINATOR 9690-03 | ID 11 to 15 |
| 4 | TERMINATOR 9690-04 | ID 16 to 20 |
| 5 | CARRYING CASE 9249 | |



9690-01
9690-02
9690-03
9690-04

9249

| | | |
|-------------|-----------------------------------|---|
| Measurement | Measurable cable | Twisted-pair cable, characteristic impedance: 100 Ω, shielded and unshielded, CAT 3, 4, 5, 5e, 6 and 6A *Not available for CAT 7 |
| | Compatible connectors | RJ-45 plugs |
| | Wire Map test (detectable errors) | Open, short, reversed, transposed, split pairs and other incorrect wiring |
| | Cable length | 2.0 to 300.0 m Accuracy: ±4% rdg. ±1 m (in case of single line) |
| Other | Direction | Up to 21 cables can be identified ¹⁾ |
| | Functions | Backlight, auto power off |
| | Operating temperature | 0°C to 40°C, 80% rh or less (non-condensating) |
| | Storage temperature | -10°C to 50°C, 80% rh or less (non-condensating) |
| Other | Standards | EN61010 (Safety), EN61326 (EMC) |
| | Power supply | LR6 alkaline battery x 2 |
| | Continuous operating time | 50 hours |
| | Dimensions (W x H x D) | 85 x 130 x 33 mm (3.35 x 5.12 x 1.30 in.) |
| Other | Mass | 160 g (5.6 oz.) |

¹⁾Using the supplied Terminator 9690 and optional Models 9690-01 to 9690-04

Signal Generators

DC SIGNAL SOURCE SS7012



Product warranty for 3 years
Accuracy guaranteed for 1 year



To be discontinued



Instrumentation system loop test:

- Verify the sensor output of 2-wire transmission sensors
- Verify distributor operation

- INPUT CORD 9168
- TEST LEAD L9170-10
- Spare fuse
- LR6 alkaline battery x 4
- Instruction manual

Order code **SS7012**

Options

| Options | | |
|---------|------------------------------|------------------------------------|
| 1 | INPUT CORD 9168 | |
| 2 | TEST LEAD L9170-10 | |
| 3 | TEMPERATURE PROBE 9184 | |
| 4 | COMMUNICATION PACKAGE SS9000 | for reference contact compensation |
| 5 | CARRYING CASE 9782 | |
| 6 | CARRYING CASE 9380 | |
| 7 | AC ADAPTER 9445-02 | |

| | | |
|-------------|--|---|
| Sourcing | Constant Voltage (CV) | 0 to ±2.5000 V Accuracy: ±0.03% of setting ±300 μV 0 to ±25.000 V Accuracy: ±0.03% of setting ±3 mV |
| | Constant Current (CC) | 0 to ±25.000 mA Accuracy: ±0.03% of setting ±3 μA |
| | Thermoelectromotive Force (TC: 0°C) (TC: RJ) | (K) -174.0°C to 1372.0°C (E) -220.0°C to 839.0°C (J) -208.0°C to 1108.0°C (T) -169.0°C to 400.0°C (R) -50°C to 1768°C (S) -50°C to 1768°C (B) 300°C to 1820°C (N) -113.0°C to 1300.0°C Accuracy: ±0.05% of setting ±0.5°C |
| | Memory Sourcing (RECALL, SCAN) | One type for each function: CV2.5, CV25, CC, TC (0°C and RJ) |
| Measurement | Standard Resistance (Rs) | 100 Ω |
| | Voltage | 0 V to ±2.8000 V (accuracy: ±0.03% rdg. ±300 μV) 0 V to ±28.000 V (accuracy: ±0.03% rdg. ±3 mV) |
| | Current | 0 A to ±28.000 mA (accuracy: ±0.03% rdg. ±3 μA) |
| | Temperature | -25.0 to 80.0°C (accuracy: ±0.5°C at 23 ±5°C) |
| Other | Interfaces | USB Communication |
| | Operating temperature | 0°C to 40°C, 80% rh or less (non-condensating) |
| | Storage temperature | -20°C to 50°C, 80% rh or less (non-condensating) |
| | Standards | EN61010 (Safety), EN61326 (EMC) |
| Other | Power supply | LR6 alkaline battery x 4 HR6 Ni-MH batteries Z0101 AC ADAPTER 9445-02/-03 |
| | Continuous operating time | |
| | Dimensions (W x H x D) | 104 x 180 x 58 mm (4.09 x 7.09 x 2.28 in.) |
| | Mass | 570 g (20.1 oz.) without batteries |



Lux Testers

LUX METER FT3424, FT3425



Product warranty for 3 years
Accuracy guaranteed for 2 years



FT3424

FT3425



Extension cart minimizes physical stress



- Built-in Bluetooth® wireless technology
- Verify and record measured data with free GENNECT Cross mobile app
- *Available only with products displayed with the GENNECT Cross icon



Please see www.hioki.com for list of supported regions.



GENNECT Cross

Order code **FT3424**

Order code **FT3425**

Included accessories

- CARRYING CASE
- LR6 alkaline battery × 2
- Sensor cap (with strap)
- Strap
- USB cable (0.9 m)
- CD-R (USB driver, dedicated computer application software, and communications specifications)
- Instruction manual
- Precautions concerning use of equipment that emits radio waves (only FT3425)

Options

- | | |
|---|--|
| 1 | EXTENSION CART Z5023 |
| 2 | CONNECTION CABLE L9820 |
| 3 | CARRYING CASE C0202 Soft case |
| 4 | CARRYING CASE C0201 Semi-hard case |
| 5 | OUTPUT CORD L9094 Mini plug to banana 1.5 m (4.92 ft.) |
| 6 | OUTPUT CORD L9095 Connect to BNC terminal 1.5 m (4.92 ft.) |
| 7 | OUTPUT CORD L9096 Connect to terminal block 1.5 m (4.92 ft.) |



Z5023



L9820



C0202



C0201



L9094



L9095



L9096

Temperature Testers

INFRARED THERMOMETER FT3700-20, FT3701-20

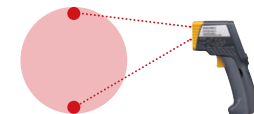


Product warranty for 1 year
Accuracy guaranteed for 1 year

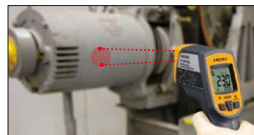


FT3700

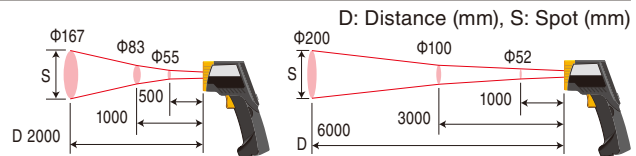
FT3701



Measure the average temperature inside a circle whose diameter is defined by the two indicated points.



Measure areas that cannot be touched or unreachable locations due to moving parts



D : S = 12 : 1 **FT3700**

D : S = 30 : 1 **FT3701**

Included accessories

- CARRYING CASE
- LR03 alkaline battery × 2
- Instruction manual

Order code **FT3700-20**

Order code **FT3701-20**

| | | |
|-------------|---|--|
| Measurement | Measurement range | FT3700: -60.0 to 550.0°C (-76 to 1022°F) ¹ FT3701: -60.0 to 760.0°C (-76 to 1400°F) ¹ |
| | Accuracy | 0.0 to 100.0°C (-32.0 to 212.0°F): ±2°C 100.1 to 500.0°C (212.1 to 932.0°F): ±2% rdg. -35.0 to -0.1°C (-31.0 to 31.9°F): ±10% rdg. ±2°C ² |
| | Measurement field diameter | FT3700: Φ83 mm at 1000 mm FT3701: Φ100 mm at 3000 mm |
| Other | Functions | MAX/MIN/DIF (MAX-MIN)/AVG measurement, alarm, backlight, continuous measurement mode, auto power off |
| | Operating temperature | 0°C to 50°C, 80% RH or less (non-condensating) |
| | Storage temperature | -10°C to 50°C, 80% RH or less (non-condensating) 50°C to 60°C, 70% RH or less (non-condensating) |
| | Accuracy guarantee for temperature and humidity | 23°C ±3°C, 80% RH or less (non-condensating) |
| | Standards | IEC 60825-1 CLASS2 (Laser), EN61326 (EMC) |
| | Power supply Continuous operating time | LR03 alkaline battery × 2 140 hours |
| | Dimensions (W × H × D) | 48 × 172 × 119 mm (1.89 × 6.77 × 4.69 in.) |
| | Weight | 256 g (9.0 oz.) |

¹ Guaranteed accuracy range is -35 to 500°C.

² -60.0 to -35.1°C (-76.0 to -31.1°F): Accuracy not specified

Resistance meter

RESISTANCE METER RM3548-50



Product warranty for 3 years
Accuracy guaranteed for 1 year



The RM3548-50 offers effortless operation and accuracy, making it ideal for EV maintenance, aircraft overhaul, and motor inspections.



Bluetooth® communication enables seamless data integration with mobile apps or Excel®, speeding up data sharing and report creation.

With Z3210



Please see www.hioki.com for list of supported regions.



GENNECT
Cross



Z3210

Included accessories

- Clip Type Lead L2107
- Temperature Sensor Z2002
- Protector Z5041
- LR6 alkaline battery × 8
- Instruction manual
- USB cable (A to mini-B)
- Strap
- Spare fuse

Order code **RM3548-50**

Order code **Z3210**

Options

| | | |
|----|---------------------------------|---|
| 1 | TEST LEADS L2140 | |
| 2 | PIN TYPE LEAD L2141 | |
| 3 | PIN TYPE LEAD L2142 | |
| 4 | PIN TYPE LEAD 9465-10 | |
| 5 | PIN TYPE LEAD 9465-11 | |
| 6 | PIN TYPE LEAD 9772 | |
| 7 | FOUR TERMINAL LEAD 9453 | |
| 8 | LARGE CLIP TYPE LEAD 9467 | tip φ 28 mm (1.10 in.) |
| 9 | CLIP TYPE LEADS L2107 | |
| 10 | TIP PIN 9465-90 | To replace the tip on the 9465-10, 9465-11, L2140 (one piece) |
| 11 | PIN TYPE LEAD 9772-90 | To replace the tip on the 9772 (one pin) |
| 12 | TEST LEAD (RED) L2140-01 | L2140 red lead |
| 13 | TEST LEAD (BLACK) L2140-02 | L2140 black lead |
| 14 | TEMPERATURE SENSOR Z2002 | 100 mm (3.94 in.) |
| 15 | LED COMPARATOR ATTACHMENT L2105 | 2 m (78.74 in.) |
| 16 | ZERO ADJUSTMENT BOARD 9454 | For 9465-10 and 9465-11 |
| 17 | 0 ADJ BOARD Z5038 | For 9465-10, and 9772 |
| 18 | PROTECTOR Z5041 | |
| 19 | CARRYING CASE C1015 | Hard case |

| | | |
|-------------|--|--|
| Measurement | Measurement parameters | Resistance measurement, temperature measurement |
| | Measurement method | Resistance: DC four-terminal method, Temperature: thermistor |
| | Resistance range | 3 mΩ (3.5000 mΩ display max., 0.1 μΩ resolution) to 3 MΩ range (3.5000 MΩ display max., 100 Ω resolution), 10 steps Measurement accuracy: ±0.020 % rdg. ±0.007 % f.s. |
| | Temperature measurement | -10.0°C to 99.9°C, accuracy: ±0.5°C (temperature Sensor Z2002 and RM3548 combined accuracy) |
| | Operating temperature and humidity range | 0°C to 40°C (32°F to 104°F), 80% RH or less (non-condensing) |
| | Storage temperature and humidity range | -10°C to 50°C (14°F to 122°F), 80% RH or less (non-condensing) |
| | Applicable standards | EN61010 (safety), EN61326 (EMC) |
| | Circuit protection | The circuit is protected until 42.4 V peak AC, 60 V DC is reached |
| | Memory storage | Number of recordable data points: up to 1,000 for manual/auto, up to 6,000 for interval; interval: 0.2 s to 10.0 s (0.2 s step); acquisition of data from memory: display, USB mass storage (CSV, TXT files) |
| | Communication functions | USB, wireless communications via Bluetooth® (Z3210 is necessary) |
| Other | Power supply | LR6 alkaline battery × 8 or HR6 nickel-metal hydride battery × 8 |
| | Maximum rated voltage | 5 VA |
| | Continuous operating time | Approx. 10 hours (when eight fresh LR6 alkaline batteries or eight HR6 nickel-metal hydride batteries are used) |
| | Dimensions (W × H × D) | 199 × 132 × 60.6 mm (7.83 × 5.20 × 2.39 in.) |
| | Weight | 890 g (31.4 oz.) |



Measurement Lead Selection Guide
For detailed dimensions, features,
and measurement target information,
please refer here.



Clamp

Insulation

DIMMS

Detectors

Earth

Power
qualityPower
loggers

Battery

PV

Logger

LAN

Signal

Lux

Temperature

Resistance

Product Warranties

Hioki products are generally covered by a three-year warranty.

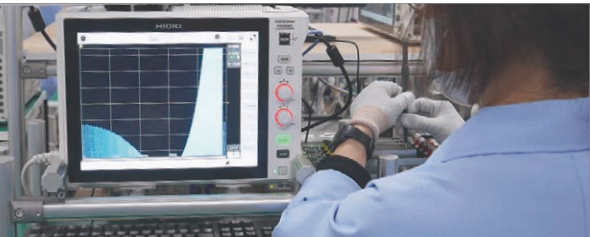
| | |
|--------------------|---|
| Product warranty | In the event Hioki is responsible for the failure of a product during the warranty term beginning on the date of purchase (or beginning in the month the product was manufactured if the date of purchase is unclear), we will repair or replace the product free of charge. |
| Warranty scope | We check products on a standalone basis to verify their specifications, performance, and functionality. Although we verify proper operation of components that are connected to Hioki products in standard configurations, we ask that customers verify proper operation of their Hioki products when connected to other manufacturers' products. The scope of Hioki's warranty is limited to Hioki products. Connected devices and issues caused by connected devices are considered outside the scope of the warranty. In the event of physical damage, any compensation that might be provided by Hioki is limited to the purchase price of the product. |
| Accuracy guarantee | For products with an accuracy guarantee, we guarantee the level of accuracy indicated in the specifications for a certain period of time following shipment from the factory. In the event of an accuracy defect during that period of time, we will adjust the product free of charge. |

Calibration and Repair Service

| | |
|---|---|
| Calibration Expiration (Calibration Interval) | Values obtained on the date of calibration are used as the calibration results. When calibration expires (i.e., the calibration interval) depends on the customer's operating conditions and environment. Consequently, the customer is ultimately responsible for determining calibration expiration while taking into account the calibration interval recommended by Hioki. |
| Recommended calibration interval | Hioki recommends that each product's accuracy guarantee period be treated as the recommended calibration interval. |
| Guarantee after Calibration Service*1 | If a customer reports a loss of accuracy after calibration while the instrument in question is covered by the recommended calibration interval and we are able to verify the issue, we will adjust the instrument free of charge. (If the product is subject to a regular calibration request, we will adjust it as part of the calibration fee.) |
| Guarantee Conditions | <ul style="list-style-type: none">• If a loss of accuracy is caused by a part's having reached its service life or deteriorated, fees will apply to the repair.• If the loss of accuracy is deemed likely to have been caused by damage or by the operating or storage environment, fees will apply to the repair.• If a product is deemed likely to experience a loss of accuracy after shipment, for example due to the end of the repair period, we may contact the customer and decline to offer a guarantee.• The guarantee applies to products that are calibrated at Hioki. |
| Guarantee of repaired products | If, within six months of the original repair, Hioki is responsible for an issue requiring an additional repair (a repair of the same issue) of a product that has been used as described in its user manual, we will repair it free of charge. |
| Repair term | We may improve products or switch models without notice in order to enhance the competitiveness of our products and our productivity. We will repair discontinued products for a minimum of five years from the date of their discontinuation, although we may elect to propose that the customer switch to an alternative model if it is difficult to repair a product due to social or economic conditions. *Once five years have passed since a product's discontinuation, we will only accept inspection and calibration requests for that product if we are able to perform that work in-house. |

*1: Not all products are covered by this guarantee.

Quality of Hioki's calibration and repair service

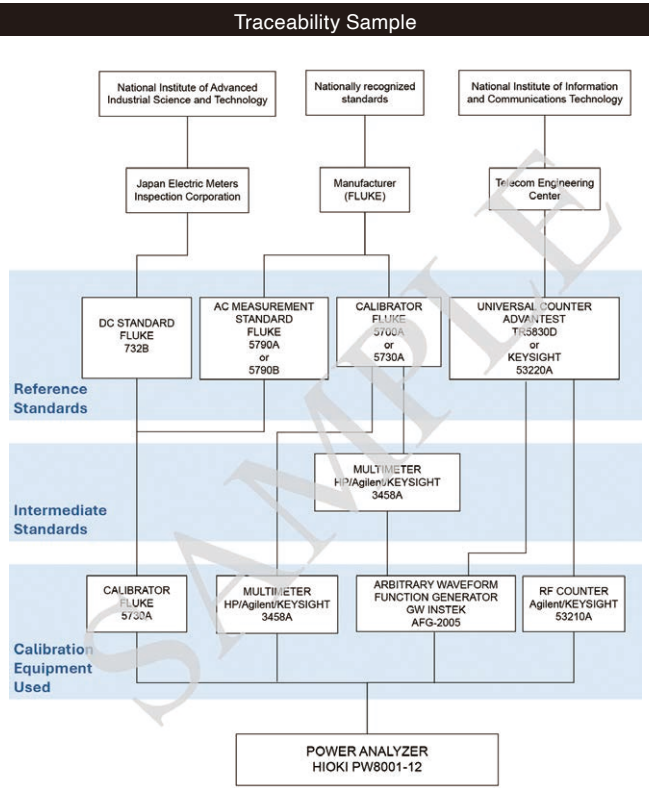


90 years of history and fine-grained, expert service
Technicians performing calibration, adjustment, and repair work undergo in-house training to ensure they possess the specialized expertise and skills that such work demands.

Precise calibration and adjustment guidelines compiled by product designers
We determine everything from the procedures for measuring instrument functionality checks to calibration points based on the results of reviews conducted by designers who are well versed in the characteristics of products' internal circuitry and the principles that underlie their operation. In this way, we are able to provide optimal, extensive calibration and adjustment service as only the manufacturer can.

Highly reliable service that's traceable to national standards
The standard devices we use to calibrate and adjust products are all linked to national standards, ensuring that we can issue inspection reports with accurate, reliable calibrated values.

Comprehensive calibration and repair service with fast turnaround
If we discover a malfunction or failure during the calibration process, we'll contact you to let you know where the problem is and what's necessary to address it. If you wish, we'll then repair the product. This capability eliminates unnecessary back-and-forth so you can put your product back to work as soon as possible.



Calibration and Repair Service

(1) Service content

Hioki's calibration services were updated effective April 2022.

"Calibration Services"

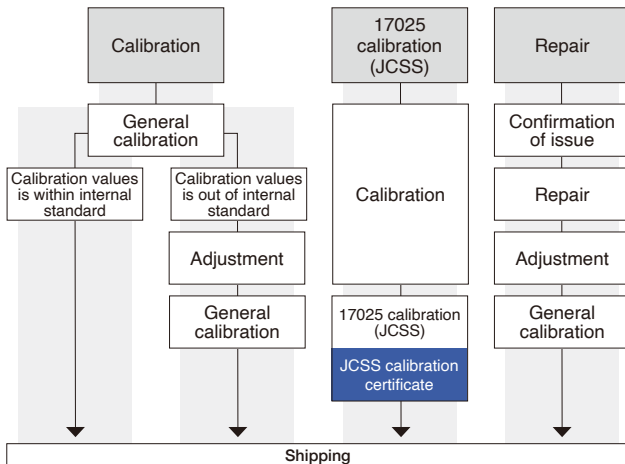
When an instrument is calibrated and its measured values are found not to satisfy internal Hioki standards, the instrument is adjusted. Through the ongoing use of calibration services offered as only an instrument manufacturer can, customers are able to use their instruments with peace of mind while maintaining their precision.

This calibration service will allow us to return products to customers with minimal downtime, since there are no work interruptions.

Notes

*If you do not wish your instrument to be adjusted, please let us know when you request calibration. Your product will be returned without adjustment, even if the calibration report indicates a FAIL judgment (non-compliance).

*This service does not extend to products that cannot be adjusted or to discontinued products.



*JCSS calibration is also available as a standalone service

(2) Documents we can issue and their content

Sample documents are also available on Hioki's website.



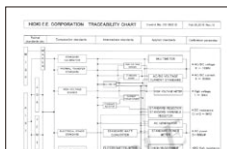
Test report

- Calibration results
- Judgment



General calibration certificate

- Calibration certificate declaration
- Information about equipment used in calibration



Traceability chart (overall)

An overview tracing Hioki product groups to national standards via individual standard devices



Traceability chart (model-specific)

A detailed diagram tracing a particular product model to national standards via individual standard devices



JCSS calibration certificate

- Calibration results
- Inaccuracies
- Coverage factor
- Calibration certificate declaration
- ilac-MRA, IA Japan, and JCSS logos

Calibration

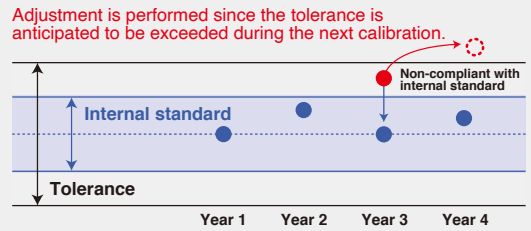
Calibration provides a way to check the condition of a measuring instrument by comparing the ideal value indicated by a standard device with the value indicated by the instrument being calibrated.

Adjustment

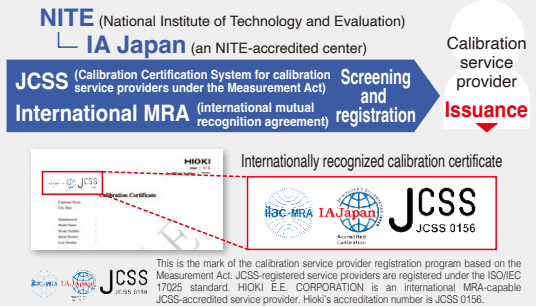
Calibration values will be optimized so that the instrument satisfies Hioki's internal standards.

If an instrument is adjusted as part of calibration service

Values are optimized so that they satisfy Hioki's internal standards to reduce the risk that they will subsequently exceed the tolerance.



Difference between general calibration and 17025 calibration (JCSS)



JCSS calibration is a type of third-party-accredited calibration based on ISO/IEC 17025. General calibration is a type of calibration determined by Hioki based on ISO 9001. Hioki can issue calibration certificates bearing the JCSS mark for instruments that have undergone JCSS certification, and they are valid internationally since they are international MRA-compliant.

Differences in calibration points

General calibration

Calibration is performed for all parameters that need to be checked in order to maintain the performance of the measuring instrument as determined by the product designer.

17025 calibration (JCSS)

Calibration is performed using points registered as the JCSS calibration range and selected by the customer.

Differences in information on calibration documents

General calibration

- Calibration results: Included on inspection report
- Inaccuracies: Not included
- Traceability chart: Yes

17025 calibration (JCSS)

- Calibration results: Included on calibration certificate
- Inaccuracies: Included on calibration certificate
- Traceability chart: No (*JCSS and other logos certify traceability.)

Service capability and warranty duration

You can find out whether Hioki accepts repair and calibration requests for your instrument, associated lead times if so, and the information listed below simply by entering the product model number on Hioki's website.

| | | | |
|----------------------------------|----------------------|--------------------|--|
| Product Search | 01234 | Search | Availability of repair and calibration service |
| Results | Calibration Interval | | |
| Model | Product | Available services | Product warranty period |
| 01234 | DIGITAL MULTIMETER | Calibration Repair | Date production discontinued |
| Recommended calibration interval | 12 months | | |
| Product service period | 36 months | | |

Sales and service network

● HQ ● Regional Group HQ ● Offices of Group Companies



Bringing the Hioki brand and products to the world through a global network.

We're working to develop markets worldwide through sales companies in ten overseas locations. We work closely with local employees to assess markets needs quickly and accurately and to provide feedback to aid in new-product development. In this way, we're focused on globalizing Hioki's high-quality products.

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