



HIOKI

CLAMP ON POWER LOGGER PW3360-20, PW3360-21

Power Measuring Instruments



Handy and Easy to Use – Power Management Support



Now with
QUICK SET
Convenience

CE

NEW

Harmonic Measurement Model

PW3360-21

Reliable measurements start with proper wiring.

The QUICK SET function guides you in making the right connections.



Function Enhancement

Included from version 2.00

- See demand and trend graphs on site
- Supports single to three-phase, 4-wire circuits
 - Simultaneously measure up to three single-phase, 2-wire circuits (in the same power system).
- Measure up to 780V with a 1000V display range
- Broadly applicable for many jobs, including leakage current measurement
 - An optional clamp-on leakage sensor supports measurements as low as 50 mA.
- Store months of data on SD cards



ISO 9001
JMI-0216



ISO 14001
JQA-E-90091



www.hioki.com

HIOKI company overview, new products, environmental considerations and other information are available on our website.

Begin with QUICK SET Convenience

Select your Wiring Type, Clamp and Destination, and Connect

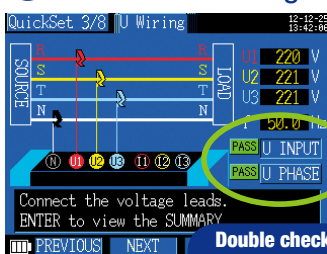
Select wiring type (example: 3P4W) and connect

1 Connect the leads to the PW3360-20.



Make proper connections simply by observing the colors of the displayed leads.

2 Connect the voltage clips.



PASS

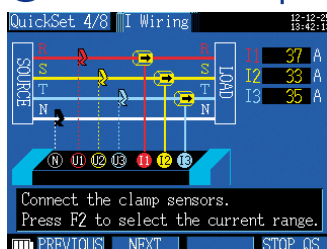
Proceed to the next step when PASS appears.

Check wire connection status and judgment indicators.

FAIL

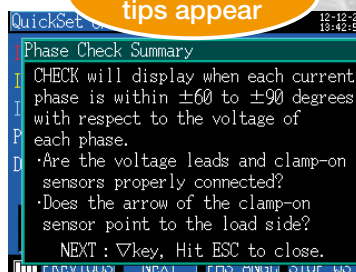
If FAIL appears, move the cursor to the indicator and press the [ENTER] key.

3 Connect the clamp sensors.



Select the current range

Corrective action tips appear



Miswiring Example (Clamp Orientation)

Correct Orientation

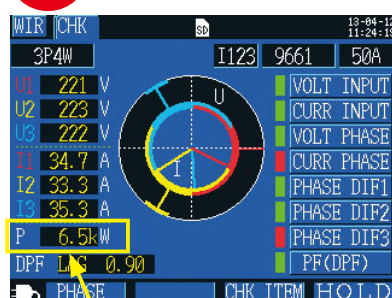
Power supply side



Wiring Screen Display Examples

FAIL

The I vector's phase direction is opposite the determination area.



PASS

The I vector's phase direction is within the determination area.



Changed I3 Clamp

Affected measurement values:

Examples: P (Power) displayed value is too low P: 6.5kW

P: 20.6kW

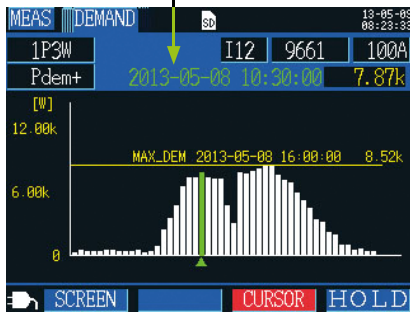
Reveal Power Consumption State! Graph Display Functions

Function Enhancement Included from version 2.00

Demand Graph Display

Shows the demand value transitions useful for managing power consumption. Check maximum demand values and times while recording.

Read values at cursor

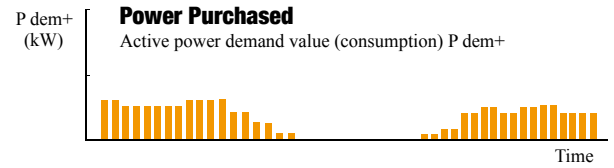


Maximum Demand Values

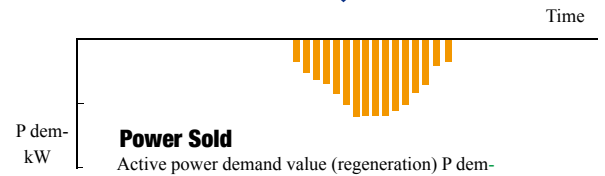
One-day graph showing 48 thirty-minute intervals

Automatically refreshes with latest values

Evaluate Photovoltaic Generation Capabilities



Switched Display

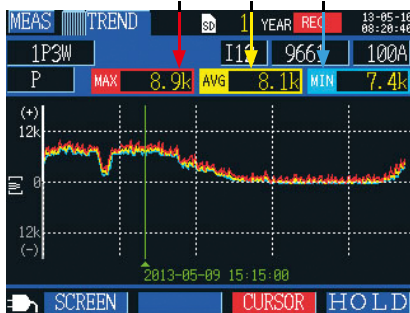


Trend Graph Display

From all measurement items, select one for display. Check states such as power fluctuations of devices in on-site operating conditions.

* Except for demand and harmonics

Read values at cursor



Of the interval time
Maximum Value
Average Value
Minimum Value
Graph Display

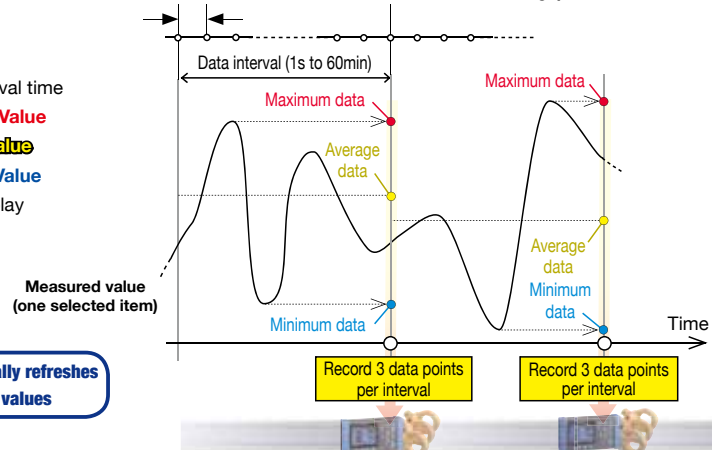
Graph showing intervals of up to 200 points

Automatically refreshes with latest values

Capture and record all fluctuations

To conveniently record fluctuations even over long periods, select "All" saving items to record maximum, minimum and average values within each recording interval.

Continuous calculation at 200 ms intervals without gaps



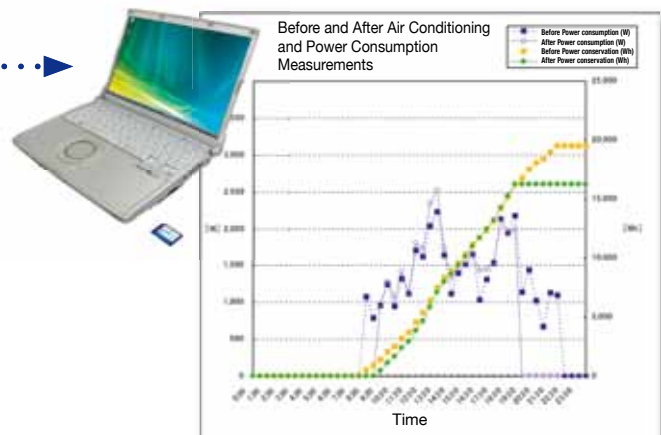
Create a Graph to Clearly Grasp Power Consumption



Record power consumption on an SD Card* at specific intervals. Load the data into the PC.



Use Excel graph processing for before and after comparisons.



* Store up to one year's data acquired at one minute intervals. Performance cannot be guaranteed on storage media other than Hioki-specified SD card options.

Accommodates All Worksites

■ Tight spaces



Compact

**In dim environments
Easy-to-see color LCD**



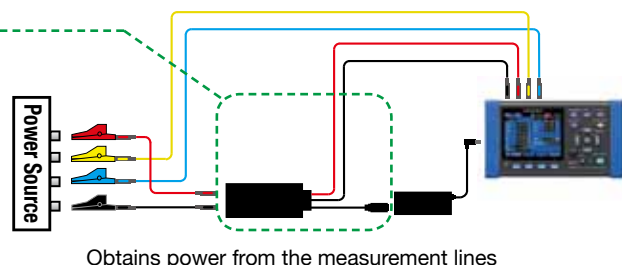
■ Where no AC power is available

Battery* power provides about eight hours of continuous operation. In addition, a **Voltage Line Power Adapter*** is available to power the PW3360-20 from the measurement lines.

* Battery Set PW9002 and Voltage Line Power Adapter PW9003 options are sold separately.



Battery Set PW9002



■ In severe temperature environments

The operating temperature range extends from **-10°C (14°F) to 50°C (122°F)**.

Even under battery operation, measurements can be performed from 0 °C (32°F) to 40°C (104°F) (0°C (32°F) to 50°C (122 °F) when using LAN communication).

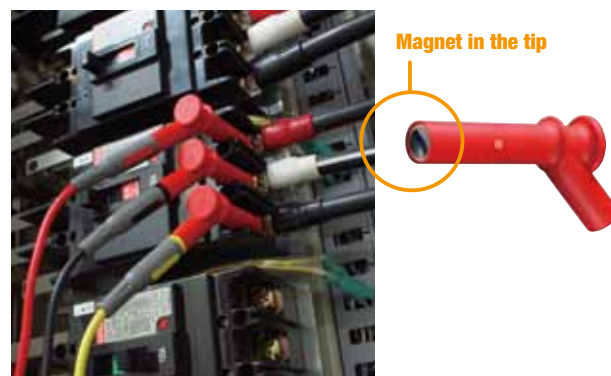


■ Magnetic voltage adapters for hard-to-clip terminals

Magnetic voltage adapters convertible with the Voltage Cords L9438-53 let you accurately detect voltage when the circuit terminals are too shallow for alligator clips to latch on.

* Magnetic Adapter 9804 option sold separately.

9804-01 Magnetic Adapter (red) usage example

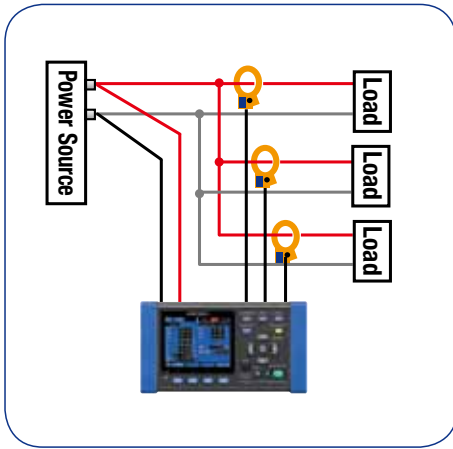


Generally compatible with M6 pan screws

Loaded with More Useful Functions

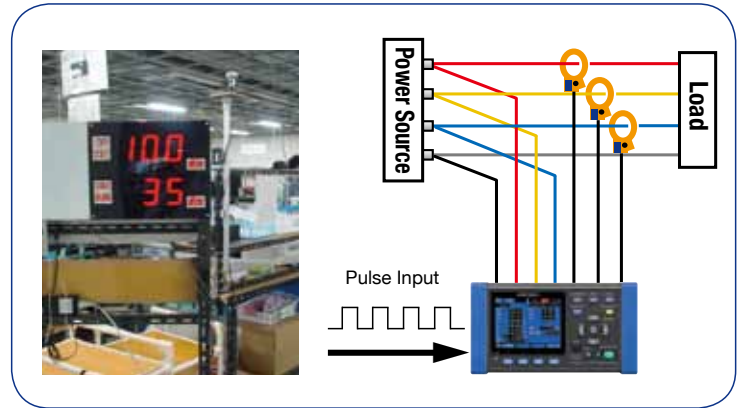
Simultaneous Measurements

Simultaneously measures three single-phase 2-wire circuits in the same system.



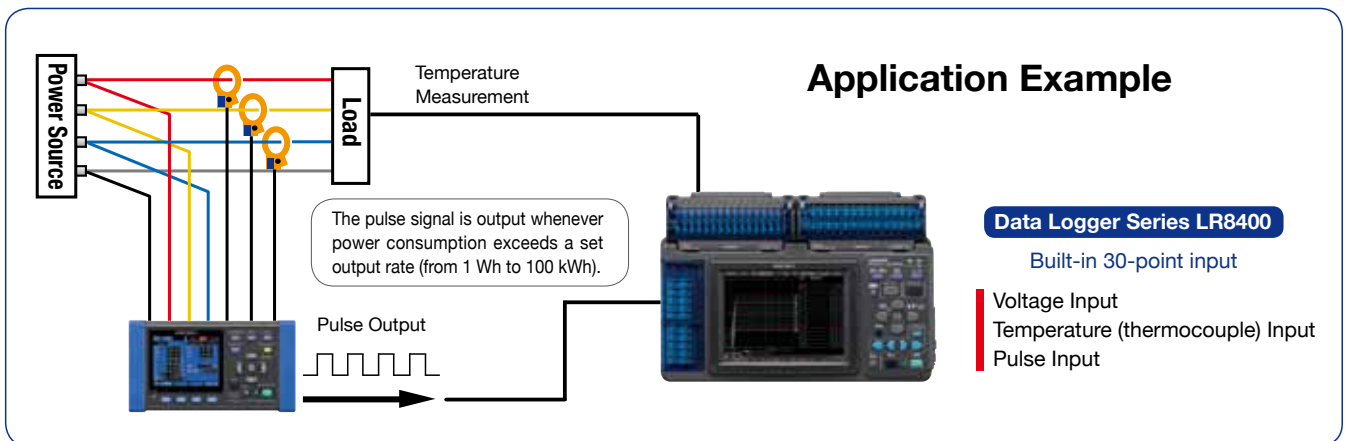
Pulse Input

The **pulse input function** can be used to record power data and production volume counts simultaneously. The power data and pulse volume (production volume) information are **useful for unit cost production management**.



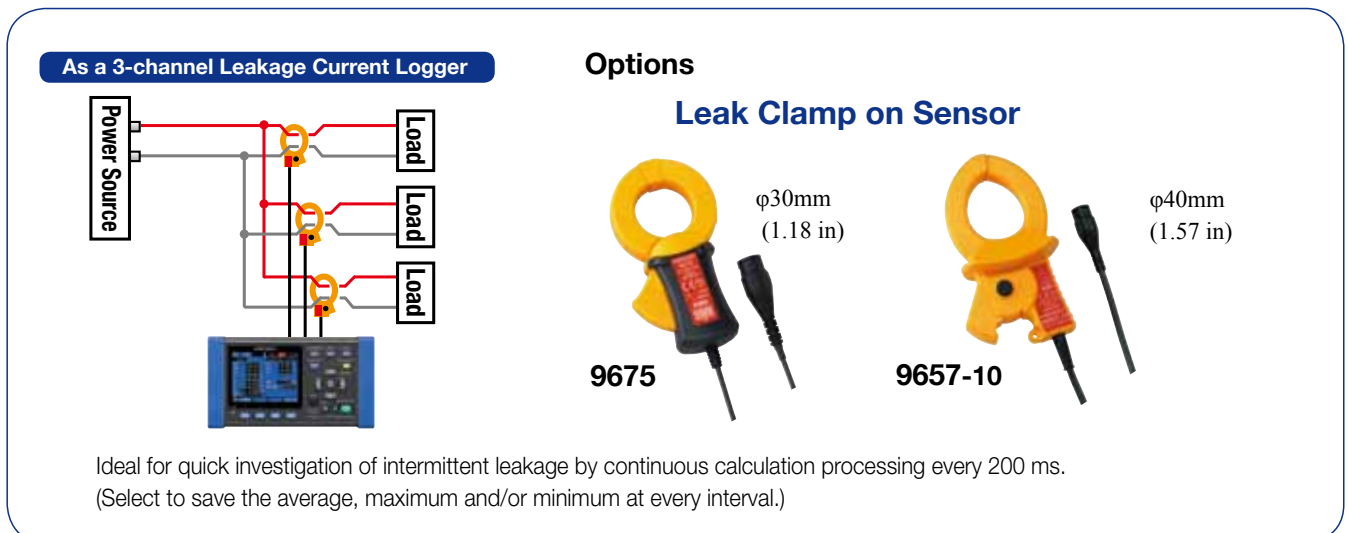
Pulse Output

Use the Pulse Output function to acquire temperature and pulse (electrical energy) data simultaneously with a data logger. Evaluate the relationship between air conditioner temperature control settings and power consumption.



Leakage Current Measurement

With the optional leakage current clamp on sensors, turn the instrument into a 3-channel leakage current logger to help identify trouble spots.



Harmonic Measurement Model

PW3360-21

NEW

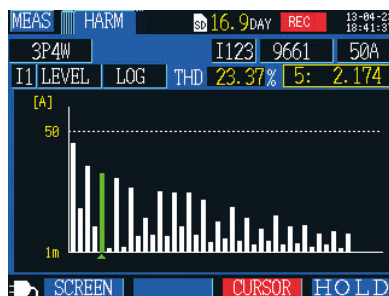
Analyze voltage and current harmonics on a 50/60 Hz power line from the fundamental waveform to the 40th order.

- Displays the RMS value, content, and phase angle (numerical list or graph display) for each harmonic order.
- Vector display of power phase angle



Maximum, average, and minimum values can be saved in binary format to SD card at each interval.

Harmonic Graph Screen



(vector display)

Harmonic power phase angle graph screen



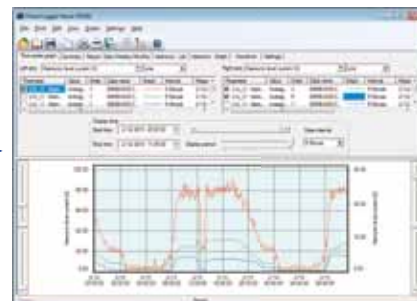
Power Logger Viewer SF1001 is required to display the data on a PC.



SF1001 Display Example

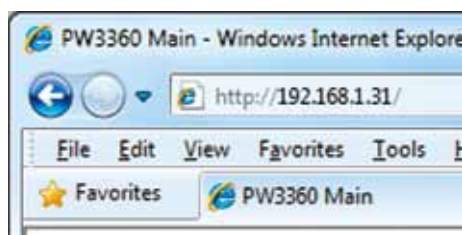
Harmonic Time Series Display

Select and display a time series graph of fundamental, third- and fifth-order current harmonics.

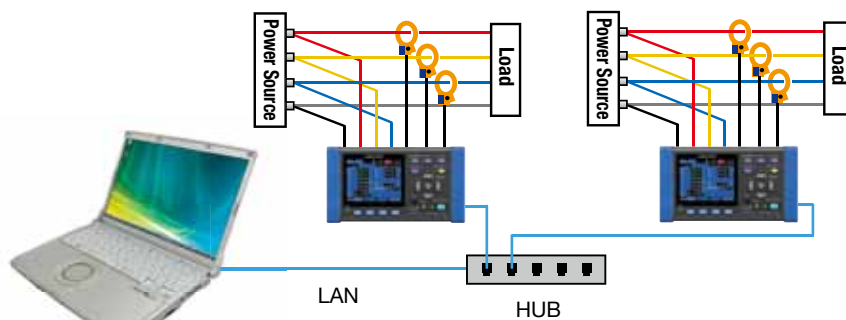

Remote Monitor

HTTP Server Function

Use a LAN cable to connect the PW3360-20 or PW3360-21 to a personal computer for real-time remote monitoring and measurement display in a web browser.



Enter the IP address in the browser.



Files recorded in the Clamp On Power Logger's internal memory or SD card are accessible via a LAN or USB connection, and are downloadable using the free **PW3360 Setup and Download Software**.



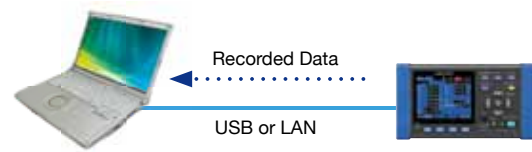
Click the on-screen keys to operate remotely.

Efficient Power Analysis on the PC

Freeware for Model PW3360-20, PW3360-21 (free download from the Hioki website)

PW3360 Setup and Download Software

Use with a LAN or USB connection to download data recorded in the PW3360's internal memory or SD Card to a PC, and to change instrument settings from the PC.



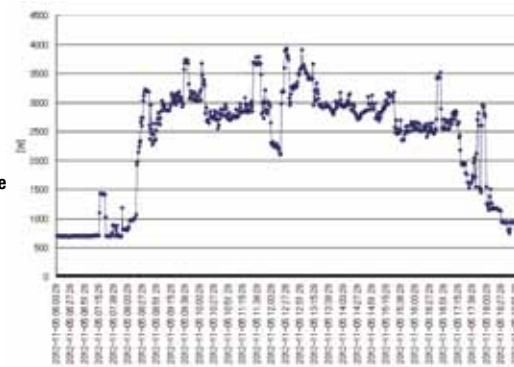
PW3360 Excel Graph Auto-Creation Software

Install the PW3360 Excel Graph Auto-Creation Software to create graphs in Excel automatically using recorded measurement data.



Indication example

Simple Operation and Easy Graph Creation



Power Logger Viewer SF1001 (option, sold separately)

Data saved to an SD card or internal memory can be loaded into a PC for expanded display, aggregation and analysis.

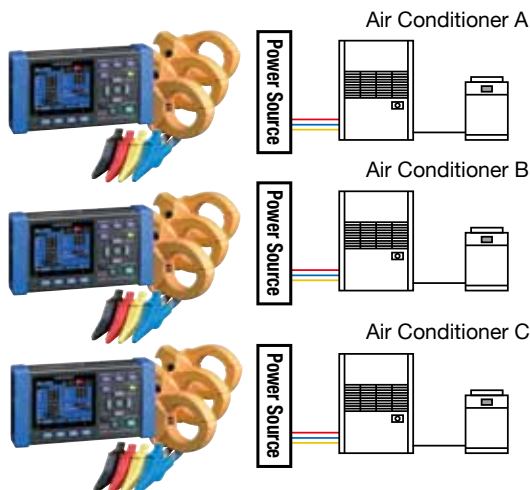
On the same time axis, view measured power consumption and equipment operating status at specific intervals, along with equipment characteristics and management details.

- Trend graph display function
- Summary display function
- Waveform display
- Harmonic display
- Copy function
- Print function
- Report printing

Stacked Graph Display Example

Use the [Stacked Display] to confirm at a glance comparative power consumption at multiple locations simultaneously.

Simultaneously measure and record separate loads using three PW3360-20s



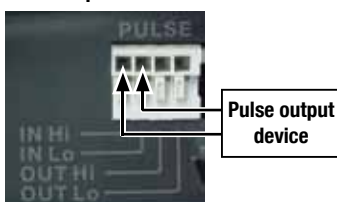
PW3360-20, PW3360-21 Specifications

(product guaranteed for one year)

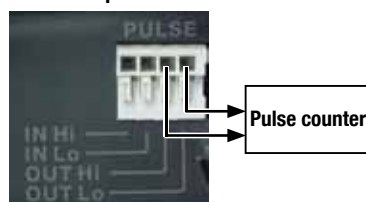
| Input specifications | |
|---|--|
| Measurement line type | Single-phase 2-wire, single-phase 3-wire, three-phase 3-wire, three-phase 4-wire |
| Measurement line Frequency | 50/ 60 Hz |
| Number of input channels | Voltage: 3 channels U1 to U3 Current: 3 channels I1 to I3 |
| Voltage range | 600 V AC Total display area: 5V to 1000 V (less than 5 V displays as 0 V) When RMS voltage is zero, zero is displayed for all orders of harmonic voltage. Effective measurement range: 90 V to 780 V, peak: $\pm 1400V$ [OVER] indicates over-range warning |
| Current ranges | Load current CLAMP ON SENSOR 9694 : 500m/1/5/10/50 A CLAMP ON SENSOR 9695-02 : 500m/1/5/10/50 A CLAMP ON SENSOR 9660 : 5/10/50/100 A CLAMP ON SENSOR 9695-03 : 5/10/50/100 A CLAMP ON SENSOR 9661 : 5/10/50/100/500 A CLAMP ON SENSOR 9669 : 100/200/1k A FLEXIBLE CLAMP ON SENSOR CT9667 : 500/5k A Leakage current LEAK CLAMP ON SENSOR 9657-10 : 50m/100m/500m/1/5 A LEAK CLAMP ON SENSOR 9675 : 50m/100m/500m/1/5 A Total display range: Within 0.4 to 130% of the range (zero is suppressed for less than 0.4%) When RMS current is zero, zero is displayed for all orders of harmonic current. Effective measurement range: Within 5 to 110% of the range peak: $\pm 400\%$ of range, however, maximum range is 200%. [OVER] indicates over-range warning |
| Power ranges | 300.00 W to 9.0000 MW Depends on voltage/current combination and measured line type (see Measurement Range Configuration Tables) Total display range: Within 0 to 130% of the range ("0W" display indicates zero rms voltage and/or current) When RMS voltage and current are zero, zero is displayed for all orders of harmonic active power and harmonic reactive power. Effective measurement area: Within 5 to 110% of the range |
| VT ratio settings | Any (0.01 to 9999.99) Selections (1/60/100/200/300/600/700/1000/2000/2500/5000) |
| CT ratio settings | Any (0.01 to 9999.99) Selections (1/40/60/80/120/160/200/240/300/400/600/800/1200) |
| Input methods | Voltage: Isolated inputs (except between U1, U2, U3 and N) Current: Isolated input using a clamp-on sensor |
| Input resistance | Voltage input part: 3 M Ω $\pm 20\%$ (50/ 60 Hz) |
| Maximum rated voltage between terminals | Voltage input section: 1000 VAC, 1400 Vpeak Current input section: 1.7 VAC, 2.4 Vpeak |
| Maximum rated voltage to earth | Voltage input section: 600V Measurement Category III 300V Measurement Category IV Current input section: Depends on clamp sensor in use. |

| Pulse input | |
|----------------------|---|
| Input specifications | No-voltage contact input (counts when shorted terminals open) Voltage input (Hi: 2 V to 45 V, Lo: 0 V to 0.5 V, counts at Lo to Hi) Maximum rated input between terminals: 45 V DC Maximum rated input to ground: not isolated (GND is equipment common) |
| Measurement range | 0 to 9999 (maximum pulse count per save interval) |
| Filter | Filter On (for mechanical contacts) 25 Hz or less, and at least 20 ms Hi and Lo pulse width Filter Off (for solid-state contacts) 5 kHz or less, and at least 100 μ s Hi and Lo pulse width |
| Scaling | Displays product of pulse count and scaling factor setting Setting ranges: 0.001 to 1.000, and 1.000 to 100.00 |

Pulse input terminals



Pulse output terminals



Specifications in green available from version 2.00

Specifications in orange available in Model PW3360-21 only

| Measurement items | |
|-------------------|--|
| Voltage | RMS value, fundamental wave value, waveform peak (absolute value), fundamental wave phase angle, frequency (1) |
| Current | RMS value, fundamental wave value, waveform peak (absolute value), fundamental wave phase angle |
| Power | Active power, reactive power (with lag/lead display), apparent power, power factor, (with lag/lead display) or displacement power factor (with lag/lead display), active energy (consumption, regeneration, regeneration), reactive energy (lag, lead) Energy cost display (per-kWh price \times 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, pulse input * Only data output to SD card |
| Harmonic | Harmonic voltage, current, power level, content, phase angle Total harmonic distortion factor (THD-F or THD-R) |

| Measurement screen | |
|--------------------|---|
| List | Voltage RMS value, current RMS value, frequency, total active power, total reactive power, apparent power, power factor or displacement power factor, active energy (consumption), elapsed time |
| U/I | Voltage RMS value, voltage fundamental wave value, voltage waveform peak, voltage fundamental wave phase angle, current RMS value, current fundamental wave value, current waveform peak, current fundamental wave phase angle |
| Power | Per-channel and total active power, apparent power, reactive power, power factor or displacement power factor |
| Integ | Active energy (consumption, regeneration), reactive energy (lag, lead), recording start time, recording stop time, elapsed time, energy cost |
| Demand | Active power demand value (consumption, regeneration), reactive power demand value (lag, lead), power factor demand value, or pulse input Displays the maximum active power demand value and the time at which it occurred (this information is not saved). (data from up to 48 intervals is internally stored, then refreshed oldest-first). |
| Harmonic | Graph (voltage, current and power levels, content percentage and phase angle) List (voltage, current and power levels, content percentage and phase angle) |
| Waveform | Displays voltage and current waveform, voltage and current RMS values, and frequency. With a 3P3W3M connection, displays the phase voltage waveform from the virtual neutral point. |
| Zoom | Enlarged view of 4 user-selected parameters |
| Trend | For one selected measurement item (except demand and harmonics), displays maximum, average and minimum values, with cursor calculations available (Note: with Trend display, there is no power-off backup function). |

| External interfaces Specifications | |
|------------------------------------|--|
| SD card Interface | Settings data, measurement data, screen data, waveform data (support planned from version 2.00) |
| LAN interface | 10BASE-T/100BASE-TX IEEE802.3 Compliance - HTTP server function - Download settings and data by communication application program |
| USB interface | USB Ver 2.0, Windows 8 (32/64bit)/Windows 7 (32/64bit) / Vista (32bit) / XP - When connected to a computer, the SD Card and internal memory are recognized as removable storage devices. - Download settings and data by communication application program |

| Pulse output | |
|---------------|---|
| Function | Output pulse rate is proportional to active power consumption (WP+) when measuring integral power consumption |
| Pulse rate | OFF/1Wh/10Wh/100Wh/1kWh/10kWh/100kWh/1000kWh (Default: 1 kWh) |
| Pulse width | approx. 100 ms |
| Output signal | Open-collector 30 V, 5 mA max (photocoupler isolated) Active Low |

WIRE SPECIFICATIONS

Electric wires that conform with:

- single line: $\phi 0.65$ mm (AWG22)
- twisted wire: 0.32 mm² (AWG22)
- strand diameter: $\phi 0.12$ mm or more

Supported electric wires:

- single line: $\phi 0.32$ mm to $\phi 0.65$ mm (AWG28 to AWG22)
- twisted wire: 0.08 mm² to 0.32 mm² (AWG28 to AWG22)
- strand diameter: $\phi 0.12$ mm or more
- exposed wire length: 8 mm

Specifications in green available from version 2.00

Specifications in orange available in Model PW3360-21 only

| General Specifications | |
|--|--|
| Display device | 3.5 inch TFT color LCD (320 × 240 pixel) Japanese, English, Chinese (Simplified, supported from version 2.00) Backlight auto-off function (after 2 minutes) When AUTO OFF is active, the Power LED blinks |
| Operating environment | Indoors, Pollution degree 2, altitude up to 2000 m (6562-ft.) |
| Operating temperature and humidity (no condensation) | -10°C to 50°C (14°F to 122°F), 80% RH or less During LAN communication: 0°C to 50°C (32°F to 122°F), 80% RH or less During battery operation: 0°C to 40°C (32°F to 104°F), 80% RH or less During battery charging: 10°C to 40°C (50°F to 104°F), 80% RH or less |
| Storage temperature and humidity (no condensation) | -20°C to 60°C (-4°F to 140°F), 80% RH or less However, the battery's storage temperature range is -20°C to 30°C (-4°F to 86°F), 80% RH or less |
| Dielectric strength | 4.29 kVrms AC (1 mA sense current) between voltage input terminals and external terminals, 50/ 60 Hz for 60 sec. |
| Applicable standards | Safety: EN61010, EMC: EN61326, EN61000-3-2, EN61000-3-3 |
| Power supply | •Z1006 AC Adapter (12 V, 1.25 A), Rated supply voltage 100 VAC to 240 VAC, Rated power supply frequency 50/60 Hz •Model 9459 Battery Pack (Ni-MH DC7.2 V 2700 mAh) |
| Charge function | Charges the battery regardless of whether the instrument is on or off. Charge time: Max. 6 hr. 10 min. (reference value at 23°C) |
| Maximum rated power | •When the Z1006 AC Adapter is used: 40 VA (including AC adapter), 13 VA (PW3360-20 instrument only) •When the 9459 Battery Pack is used: 3 VA |
| Continuous battery operation time | Approx. 8 hr. (Continuous, backlight off) (when using the battery pack) |
| Backup battery life | Clock and settings (Lithium battery), Approx. 10 years @23°C (@73.4°F) |
| Dimensions | Approx. 180W(7.09") × 100H(3.94") × 48D (1.89") mm (without PW9002) Approx. 180W(7.09") × 100H(3.94") × 68D (2.68") mm (with PW9002) |
| Mass | Approx. 550g (19.4 oz) (without PW9002), Approx. 830g (29.3 oz) (with PW9002) |
| Accessories | Voltage Cord L9438-53(1 set), AC Adapter Z1006 (1), USB cable(1), instruction manual (1), measurement guide (1), color spiral tubes (1 set): red, yellow, blue/two each, for color-coding clamp sensors, spiral tubes for grouping clamp sensor cords (5) |

Accuracy guarantee period: One year 23°C ±3°C, 80%RH or less, (no condensation)

| Measurement Specifications | |
|---|---|
| Connection | Single-phase 2-wire (1P2W, 1P2W × 2 circuits, 1P2W × 3 circuits) Single-phase 3-wire (1P3W, 1P3W+I, 1P3W1U, 1P3W1U+I) Three-phase 3-wire (3P3W2M, 3P3W2M+I, 3P3W3M) Three-phase 4-wire (3P4W), Current only: 1 to 3 channels |
| Simultaneous power/current measurement modes | 1P3W+I: 1 power circuit and 1 current channel 3P3W2M+I: 1 power circuit and 1 current channel |
| Calculation selection | Power factor, reactive and apparent power: rms calculation/fundamental wave calculation |
| Measurement accuracy (50/ 60Hz, power factor = 1) | Voltage: ±0.3% rdg. ±0.1% f.s. Current: ±0.3% rdg. ±0.1% f.s. + clamp sensor accuracy Active power: ±0.3% rdg. ±0.1% f.s. + clamp sensor accuracy Clamp-On Sensor 9661 accuracy: ±0.3% rdg. ±0.01% f.s. (Accuracy depends on clamp sensor. See page 6 for the accuracy of each model, and page 7 for combined accuracy of Model PW3360-20 and each clamp sensor.) |
| Display update rate | Approx. 0.5 sec (except when accessing SD card or internal memory, or during LAN/USB communication) However, approx. 1 s for power-related values |
| Measurement method | Digital sampling and zero cross synchronization calculation method Sampling: 10.24 kHz (2048 points) Calculation processing 50 Hz: Continuous, gapless measurement at 10 cycles 60 Hz: Continuous, gapless measurement at 12 cycles |
| A/D converter resolution | 16bit |

Recording Specifications

| | |
|-------------------------|---|
| Save destination | SD Card, internal memory (capacity: approx. 320 KB) |
| Save interval time | 1/2/5/10/15/30 seconds, 1/2/5/10/15/20/30/60 minutes * Available storage time is displayed on PW3360-20's setting screen |
| Save items | Measurement save: Average only / all (average, maximum, minimum) Harmonic data save: Binary format (average, maximum and minimum) Screen save: ON/OFF Saves the displayed screen as a BMP at a fixed interval. (The minimum interval time for saving screen copies is 5 min. If the setting is less than 5 min., screen copies will be saved every 5 min.) Waveform save: Stores binary waveform data (with shortest interval 1 minute). When set to less than 1 minute, waveforms are saved once every minute |
| Recording start methods | Interval time, manual, or at specified time |
| Recording stop methods | Manual, or at specified time (up to one year) |

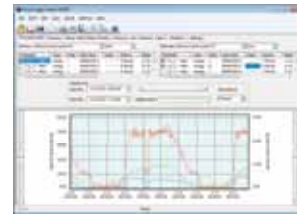
Harmonic Specifications (PW3360-21 only)

| | |
|---------------------------|--|
| Standard | IEC61000-4-7:2002 compliant, but without interharmonics |
| Window width | 10 cycles at 50 Hz, and 12 cycles at 60 Hz (with interpolation) |
| Points per window | Rectangular, 2048 points |
| Analysis orders | Up to the 40th order |
| THD calculation selection | THD-F/THD-R |
| Analysis items | Harmonic level: Voltage, current and power levels for each harmonic (U12 and I12 obtained by calculation of the third channel in 3P3W2M wiring are not displayed. Phase voltage is used for 3P3W3M wiring.) Harmonic content: Voltage, current and power contents for each harmonic Harmonic phase angle: Voltage, current and power phase angles for each harmonic Total harmonic distortion factor: Voltage and current (THD-F or THD-R) |
| Measurement accuracy | Harmonic level 1st to 15th orders : ±5% rdg. ±0.2% f.s. 16th to 20th orders : ±10% rdg. ±0.2% f.s. 21st to 40th orders : ±20% rdg. ±0.3% f.s. For voltage and current, add accuracy of clamp sensor. Harmonic power phase angle 1st to 3rd orders : ±3°+clamp sensor accuracy 4th to 40th orders : ±0.1°×k±3°+clamp sensor accuracy For each harmonic order at 6 V, harmonic current level is regulated at 1% f.s. Total harmonic distortion factor: Accuracy unspecified |

POWER LOGGER VIEWER SF1001 Specifications

Specifications in green available from version 2.00

| General Specifications | |
|--------------------------------------|--|
| Supported models | PW3360-20, PW3360-21 |
| Supported computer operating systems | Windows 8 (32/64bit) Windows 7 SP1 or later (32/64bit) Windows Vista SP2 or later (32bit) Windows XP SP3 or later (32bit) |









Functions Specifications

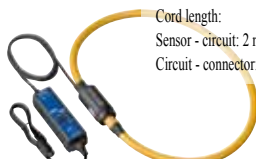
| | |
|------------------------------|---|
| Trend graph display function | Display items: Voltage, current, active power, reactive power, apparent power, power factor, frequency, integrated active power, integrated reactive power, demand volume, demand value, voltage disequilibrium factor, pulse, harmonics (level, content, phase angle, total value, THD) Stacked bar graph display: Up to 16 types of data series can be displayed in an overlay graph Cursor measurements: Measurement values can be displayed by the cursor |
| Summary display function | Displayed items are the same as for the trend Graph Display Daily, weekly and monthly report displays: Accumulates and displays daily, weekly and monthly reports over specified period. Load factor calculation display: Calculates and displays load factor and demand factor results with daily, weekly and monthly reports Time span aggregation: Aggregates data into up to four specified time spans |
| Waveform display | Displays waveform data at specified date and time |
| Harmonic display | List display: Displays a list of harmonic data at specified date and time Graph display: Displays a bar graph of harmonic data at specified date and time Cursor calculation: Calculates measurement data at cursors in waveform and graph displays |
| Copy function | Captures any display image to the clipboard |
| Print function | Preview and print content shown on the trend graph, report, harmonic graph and settings displays. Comment entry (Text comments can be entered in any printout) Header/Footer settings: Sets the header and footer for each printout Printing support: Any color or monochrome printing supported by the operating system |
| Report printing | Print (static) contents over a specific time period Output contents: Standard or selected output items Available output items: Trend graph, summary, daily report, harmonic list, harmonic graph, waveform Report creation method: Standard print Report output settings: Save/load report output settings |

CLAMP SENSOR Specifications



CLAMP ON SENSOR

| | | 9694 | 9660 | 9661 | 9669 | 9695-02 | 9695-03 |
|--|-------------------------|--|--|--|---|---|--|
| Appearance | |  Cord length: 3 m (9.84ft) |  Cord length: 3 m (9.84ft) |  Cord length: 3 m (9.84ft) |  Cord length: 3 m (9.84ft) |  CONNECTION CORD 9219 Connect with the 9695-02/-03, Output BNC terminal |  Cord length: 3 m (9.84ft) |
| Measurable conductor diameter | | φ15mm (0.59") | φ15mm (0.59") | φ46mm (0.81") | φ55mm (2.17"), 80 (3.15")×20 (0.79")mm | φ15mm (0.59") | φ15mm (0.59") |
| Primary current rating | | 5A AC | 100A AC | 500A AC | 1000A AC | 50A AC | 100A AC |
| Accuracy | Amplitude (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. |
| | Phase (45 Hz to 5 kHz) | Within ±2° | Within ±1° | Within ±0.5° | Within ±1° | Within ±2° | Within ±1° |
| Frequency characteristic 40Hz to 5kHz (deviation from accuracy) | | Within ±1.0% | | | Within ±2.0% | Within ±1.0% | |
| Effect of external magnetic field (with a magnetic field of 400 A/ m AC) | | Equivalent to 0.1 A or less | | | Equivalent to 1 A or less | Equivalent to 0.1 A or less | |
| Effect of conductor position | | Within ±0.5% | | | Within ±1.5% | Within ±0.5% | |
| Maximum rated voltage to earth | | CAT III 300Vrms | CAT III 300Vrms | CAT III 600Vrms | CAT III 600Vrms | CAT III 300Vrms | |
| Maximum input (45 to 66Hz) | | 50 A continuous | 130 A continuous | 550 A continuous | 1000 A continuous | 60 A continuous | 130 A continuous |
| Dimensions | | 46W (1.81") × 135H (5.31") × 21D (0.83") mm | 46W (1.81") × 135H (5.31") × 21D (0.83") mm | 77W (3.03") × 151H (5.94") × 42D (1.65") mm | 99.5W (3.92") × 188H (7.40") × 42D (1.65") mm | 50.5W (2.28") × 58H (2.28") × 18.7D (0.74") mm | |
| Mass | | 230g (8.1 oz) | 230g (8.1 oz) | 380g (13.4 oz) | 590g (20.8 oz) | 50g (1.8 oz) | |

FLEXIBLE CLAMP ON SENSOR

| | | CT9667 |
|--|-----------|---|
| Appearance | |  Cord length: 2 m (6.56ft) Sensor - circuit: 2 m (6.56ft) Circuit - connector: 1 m (3.28ft) |
| Measurable conductor diameter | | φ254mm |
| Primary current rating | | 500A AC/5,000A AC |
| Accuracy (45 to 66Hz) | Amplitude | ±2.0% rdg. ±0.3% f.s. |
| | Phase | Within ±1° |
| Frequency characteristic 10Hz to 20kHz (deviation from accuracy) | | Within ±3 dB |
| Effect of external magnetic field (with a magnetic field of 400 A/ m AC) | | 1.5% / f.s. or less. |
| Effect of conductor position | | Within ±3.0% |
| Maximum rated voltage to earth | | CAT III 1000Vrms, CAT IV 600Vrms |
| Maximum input (45 to 66Hz) | | 10000 A continuous |
| Dimensions | | Circuit box: 35W (1.38") × 120H (4.74") × 34D (1.34") mm |
| Mass | | 470g (16.6 oz.) (Sensor + Circuit Box, w/battery) |
| Power supply | | LR06 alkaline battery × 2 (continuous operation max. 7 days) or AC ADAPTER 9445-02/9445-03 (optional) |

CLAMP ON LEAK SENSOR (Leakage Current Measurement Only)

| | | 9657-10 | 9675 |
|--|---------------------------|--|--|
| Appearance | |  Cord length: 3 m (9.84ft) |  Cord length: 3 m (9.84ft) |
| Measurable conductor diameter | | φ40mm (1.57") | φ30mm (1.18") |
| Primary current rating | | 10A AC* | 10A AC* |
| Accuracy | Amplitude (45 to 66 Hz) | ±1.0% rdg. ±0.05% f.s. | ±1.0% rdg. ±0.005% f.s. |
| | Phase angle (60 or 60 Hz) | Within ±3° | Within ±5° |
| Frequency characteristic 40Hz to 5kHz (deviation from accuracy) | | Within ±5% | Within ±5% |
| Effect of external magnetic field (with a magnetic field of 400 A/ m AC) | | 7.5 mA max. | 7.5 mA max. |
| Effect of conductor position | | Within ±0.1% | Within ±0.1% |
| Maximum rated voltage to earth | | CAT III 300Vrms | CAT III 300Vrms |
| Maximum input (45 to 66Hz) | | 30 A continuous | 10 A continuous |
| Dimensions | | 74W (2.91") × 145H (5.71") × 42D (1.65") mm | 60W (2.36") × 112.5H (4.43") × 23.6D (0.95") mm |
| Mass | | 380g (13.4 oz) | 160g (5.6 oz) |
| Notes | | Not used for power measurements | |

* Maximum AC measurement range with PW3360-20 is 5A.

Available Recording Time

PW3360-20 and PW3360-21 with Z4001 2-GB SD card, measuring 3P3W2M wiring

Saved Items: ALL data (Saves all data: average, maximum, and minimum values)

Screen save: OFF Waveform save: OFF

| Interval time | Save Time | | Interval time | Save Time | |
|---------------|--|--|----------------------|--|--|
| | PW3360-20 PW3360-21 (Saving of harmonic data: OFF) | PW3360-21 (Saving of harmonic data: ON) | | PW3360-20 PW3360-21 (Saving of harmonic data: OFF) | PW3360-21 (Saving of harmonic data: ON) |
| 1 seconds | 15.9 days | 24.7 hours | 30s | 1 year | 30.8 days |
| 2 seconds | 31.9 days | 2.1 days | 1 minutes | 1 year | 61.7 days |
| 5 seconds | 79.7 days | 5.1 days | 2 minutes | 1 year | 123 days |
| 10 seconds | 159 days | 10.3 days | 5 minutes | 1 year | 308 days |
| 15 seconds | 242 days | 15.4 days | More than 10 minutes | 1 year | 1 year |

The maximum recording time based on the settings can be confirmed right on the Settings screen.

In any case, the maximum file size for measurement data is about 200 MB. When this is exceeded, a new file is created and saving continues.

<NOTE>

Regardless of the settings, the maximum save time of the PW3360-20, PW3360-21 is one year.

Measurement Range Configurations

| <div>Current</div> <div>Voltage</div> <div>Connection</div> | | CLAMP ON SENSOR 9694 (CAT III 300V) *1 | | | | |
|---|----------------------------|--|-----------|-----------|-----------|-----------|
| | | CLAMP ON SENSOR 9695-02 (CAT III 300V) | | | | |
| | | 500.00 mA | 1.0000 A | 5.0000 A | 10.000 A | 50.000 A |
| 600.00 V | 1P2W | 300.00 W | 600.00 W | 3.0000 kW | 6.0000 kW | 30.000 kW |
| | 1P3W | | | | | |
| | 1P3W1U 3P3W2M 3P3W3M | 600.00 W | 1.2000 kW | 6.0000 kW | 12.000 kW | 60.000 kW |
| | 3P4W | 900.00 W | 1.8000 kW | 9.0000 kW | 18.000 kW | 90.000 kW |

*1. For the 9694 sensor, the range of guaranteed accuracy is from 500 mA to 5 A, and for the 9695-02, from 500 mA to 50 A.

| <div>Current</div> <div>Voltage</div> | | CLAMP ON SENSOR 9660, 9695-03 (CAT III 300V) *2 | | | | |
|---------------------------------------|----------------------------|---|-----------|-----------|-----------|-----------|
| | | CLAMP ON SENSOR 9661 | | | | |
| Connection | | 5.0000 A | 10.000 A | 50.000 A | 100.00 A | 500.00 A |
| 600.00 V | 1P2W | 3.0000 kW | 6.0000 kW | 30.000 kW | 60.000 kW | 300.00 kW |
| | 1P3W | | | | | |
| | 1P3W1U 3P3W2M 3P3W3M | 6.0000 kW | 12.000 kW | 60.000 kW | 120.00 kW | 600.00 kW |
| | 3P4W | 9.0000 kW | 18.000 kW | 90.000 kW | 180.00 kW | 900.00 kW |

*2. For the 9660 and 9695-03 sensors, the range of guaranteed accuracy is from 5 A to 100 A, and for the 9661, from 5 A to 500 A.

| Voltage | Connection | CLAMP ON SENSOR 9669 | | |
|----------|------------|----------------------|-----------|-----------|
| | | 100.00 A | 200.00 A | 1.0000 kA |
| 600.00 V | 1P2W | 60.000 kW | 120.00 kW | 600.00 kW |
| | 1P3W | | | |
| | 1P3W1U | 120.00 kW | 240.00 kW | 1.2000 MW |
| | 3P3W2M | | | |
| | 3P3W3M | | | |
| | 3P4W | 180.00 kW | 360.00 kW | 1.8000 MW |

| Voltage | Connection | FLEXIBLE CLAMP ON SENSOR CT9667 | |
|----------|------------|---------------------------------|-----------|
| | | 500.00 A | 5.0000 kA |
| 600.00 V | 1P2W | 300.00 kW | 3.0000 MW |
| | 1P3W | | |
| | 1P3W1U | 600.00 kW | 6.0000 MW |
| | 3P3W2M | | |
| | 3P3W3M | | |
| | 3P4W | 900.00 kW | 9.0000 MW |

| Leak current: CLAMP ON LEAK SENSOR 9657-10, 9675 | |
|--|---|
| Range | 50.000 mA/100.00 mA/500.00 mA/1.0000 A/5.0000 A |

Measurement accuracy

| | |
|--------------|--|
| Voltage | ±0.3% rdg. ±0.1% f.s. |
| Current | ±0.3% rdg. ±0.1% f.s. + clamp sensor accuracy |
| Active power | ±0.3% rdg. ±0.1% f.s. + clamp sensor accuracy (power factor = 1) |

Combined accuracy of PW3360-20 + clamp sensors

| Range | 9694 | 9695-02 |
|-----------|------------------------|------------------------|
| 50.000 A | — | ±0.6% rdg. ±0.12% f.s. |
| 10.000 A | — | ±0.6% rdg. ±0.2% f.s. |
| 5.0000 A | ±0.6% rdg. ±0.12% f.s. | ±0.6% rdg. ±0.3% f.s. |
| 1.0000 A | ±0.6% rdg. ±0.2% f.s. | ±0.6% rdg. ±1.1% f.s. |
| 500.00 mA | ±0.6% rdg. ±0.3% f.s. | ±0.6% rdg. ±2.1% f.s. |

| Range | 9660, 9695-03 | 9661 |
|----------|------------------------|------------------------|
| 500.00 A | — | ±0.6% rdg. ±0.11% f.s. |
| 100.00 A | ±0.6% rdg. ±0.12% f.s. | ±0.6% rdg. ±0.15% f.s. |
| 50.000 A | ±0.6% rdg. ±0.14% f.s. | ±0.6% rdg. ±0.2% f.s. |
| 10.000 A | ±0.6% rdg. ±0.3% f.s. | ±0.6% rdg. ±0.6% f.s. |
| 5.0000 A | ±0.6% rdg. ±0.5% f.s. | ±0.6% rdg. ±1.1% f.s. |

| Range | 9669 |
|-----------|------------------------|
| 1.0000 kA | ±1.3% rdg. ±0.11% f.s. |
| 200.00 A | ±1.3% rdg. ±0.15% f.s. |
| 100.00 A | ±1.3% rdg. ±0.2% f.s. |

| Range | CT9667 5.000 kA range | CT9667 500 A range |
|-----------|-----------------------|-----------------------|
| 5.0000 kA | ±2.3% rdg. ±0.4% f.s. | — |
| 500.00 A | — | ±2.3% rdg. ±0.4% f.s. |

Total display range

Voltage is displayed from 5 V to 1000 V, with less than 5 V displayed as 0 V.

Current is displayed from 0.4% to 130% of the selected range, with less than 0.4% displayed as 0 A

Power is displayed from 0 to 130% of full scale, with 0 W displayed when voltage or current is zero.

The range configurations for apparent power (S) and reactive power (Q) are the same, with units of [VA] and [var], respectively.

When VT and CT ratios are set, the range configuration is the product (VT ratio × CT ratio).

Effective measurement range

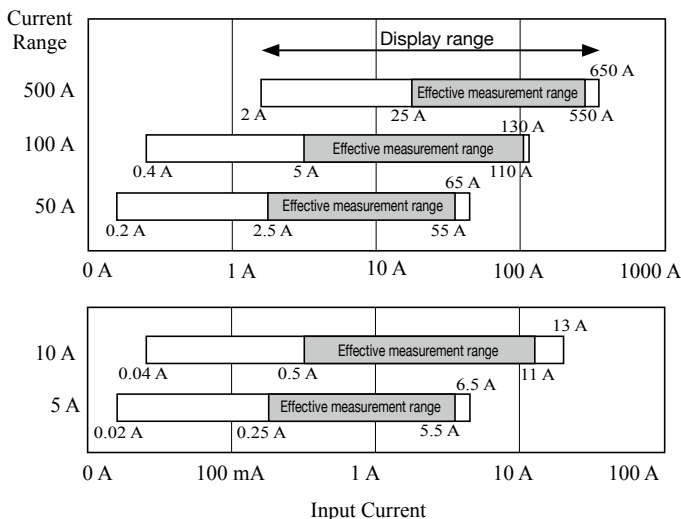
For voltage, 90 to 780 V, with max. 1400 V peak.

For current, 5% to 110% of the selected range with peak ±400% of range, but maximum range is ±200%.

For power, 5% to 110% of the selected range.

For frequency, 45 to 66 Hz.

Current Display and Effective Measurement Ranges (typical)



| | |
|--|--|
| Conditions of guaranteed accuracy | After 30 minute warm-up, with 50/60 Hz sine wave input |
| Temperature and humidity for guaranteed accuracy | 23°C ±5°C (73 ±9°F), 80%RH or less (applies to all specifications unless otherwise noted) |
| Display area of guaranteed accuracy | Effective measurement range |
| Period of guaranteed accuracy | 1 year |
| Real-time clock accuracy | Within ±0.3 sec/day (with power on, within specified operating temperature and humidity ranges) |
| Temperature characteristic | Within ±0.1% f.s./ °C (except 23 ±5°C) |
| Effect of common mode voltage | Within ±0.2% f.s. (600 V AC, 50/60 Hz, between voltage input terminal and case) |
| Effect of external magnetic field | Within ±1.5% f.s. (in a magnetic field of 400 A/m rms AC, 50/60 Hz) |
| Effect of phase | Phase accuracy ±0.3° equivalent (with 50/60 Hz f.s. input) |
| Apparent power | ±1 dgt. for the calculation obtained from each measurement value |
| Reactive power | Fundamental waveform calculations ±0.3% rdg. ±0.1% f.s. + clamp-on sensor accuracy (w/power factor = 1) Rms calculations From each measurement applied to calculation ±1 dgt. |
| Energy | Active and reactive power measurement accuracies ±1 dgt. |
| Power factor | From each measurement applied to calculation ±1 dgt. |
| Frequency | ±0.5% rdg. (with 90 to 780 V sine wave input) |
| Demand value | Active and reactive power measurement accuracies ±1 dgt. |
| Demand quantity | Active and reactive power measurement accuracies ±1 dgt. |
| Pulse input | ±1 dgt. for the calculation obtained from each measurement value |
| Frequency characteristic | At 50/60 Hz fundamental waveform frequency, up to 1 kHz, ±3% rdg. ±0.2% f.s. up to 3kHz, ±10% rdg. ±0.2% f.s. For current and active power, add clamp-on sensor accuracy. Note: only for 3P3W3M wiring, add ±0.5% rdg. |

CLAMP ON POWER LOGGER PW3360-20

Harmonic Measurement Model ----- CLAMP ON POWER LOGGER PW3360-21



Accessories

VOLTAGE CORD L9438-53 (1 set), **AC ADAPTER Z1006** (1), USB cable (1), instruction manual (1), measurement guide (1), color spiral tubes (1 set): red, yellow, blue/two each, for color-coding clamp sensors, spiral tubes for grouping clamp sensor cords (5)

Clamp-On Power Logger PW3360-20, PW3360-21 by itself does not support current and power measurements. Current and power measurements require clamp-on sensors, sold separately. Also, use only HIOKI-issued SD cards guaranteed to work for saving measurement data, (options, sold separately).

AC ADAPTER Z1006



VOLTAGE CORD L9438-53



cord length: 3m (9.84 ft)

1 cord each of black, red yellow, and blue, and five spiral tubes for bundling cords

Options

CLAMP ON SENSOR (for load current measurement)

CLAMP ON SENSOR 9694 (AC5A)
CLAMP ON SENSOR 9660 (AC100A)
CLAMP ON SENSOR 9661 (AC500A)
CLAMP ON SENSOR 9669 (AC1000A)
FLEXIBLE CLAMP ON SENSOR CT9667 (AC5000A)
CLAMP ON SENSOR 9695-02 (AC50A)
CLAMP ON SENSOR 9695-03 (AC100A)
CONNECTION CORD 9219 (for connection to 9695-02, 9695-03)
When purchasing the 9695-02 and 9695-03, we recommend also purchasing the separately sold 9219 Connection Cord.

CLAMP ON LEAK SENSOR (for leakage current measurement)

CLAMP ON LEAK SENSOR 9657-10
CLAMP ON LEAK SENSOR 9675

CLAMP ON ADAPTER

9290-10

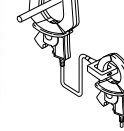
MAX. 1500A AC (continuous: 1000A)



Primary side
1000A

CAT III 600V

Cord length: 3m (9.84 ft)



Secondary side
100A

Measurable conductor diameter

φ55 mm (2.17in)

Bus bar: ■ 80 mm (3.46in) × 20 mm (0.79 in)

CT ratio: 10:1

SD MEMORY CARD 2GB

Z4001



Stores up to one year's data when acquired at one minute intervals. Performance cannot be guaranteed on storage media other than Hioki-specified SD card options.

VOLTAGE LINE POWER ADAPTER

PW9003

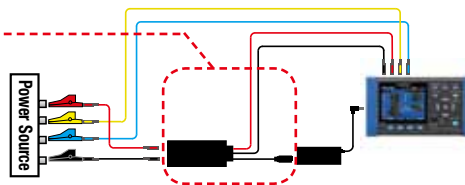
(supplies power from measurement lines)

Rated voltage: 240 V AC

Operating temperature and humidity range: -10 to 50°C, 80% RH or less



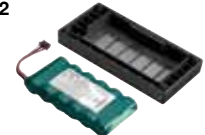
CAT III 300V



BATTERY SET

Battery Case and Battery Pack Set

PW9002



BATTERY PACK 9459

For purchase as replacement battery pack

CARRYING CASE

C1005



Dimension:
Approx. 390W (15.4") × 275H (10.8") × 110D (4.3") mm

MAGNET ADAPTER



9804-01 Red

9804-02 Black

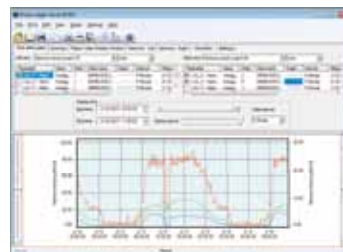
φ11mm (0.43 in)
(generally compatible with M6 pan screws)

Magnetic tip for use with the standard
VOLTAGE CORD L9438-53

Red and black adapters sold separately.
Purchase the quantity and color appropriate for your application.
(Example: 3P3W-3 adapters, 3P4W-4 adapters)

POWER LOGGER VIEWER

SF1001



LAN CABLE

9642



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HIOKI

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