

PW3365-20  
CLAMP ON POWER LOGGER  
Measurement Guide

Thank you for purchasing the HIOKI PW3365-20 Clamp On Power Logger. This guide introduces the PW3365-20's basic measurement procedure with the Quick Set to first time users. Before using the instrument, be sure to read the Instruction manual carefully.

**HIOKI**

EN

6 0 0 4 2 9 6 5 1 \*

Easy configuration with the **Quick Set**  
How to configure electric energy measurement for a 3-phase 4-wire 220 V line

| Setting Items         | Setting Example             |
|-----------------------|-----------------------------|
| Wiring                | : 3P4W (3-phase 4-wire)     |
| Clamp sensor          | : Model 9661 (500 A rating) |
| Current range         | : 50 A                      |
| Save to...            | : SD memory card            |
| Save interval         | : 5 minutes                 |
| Save items            | : Average only              |
| Folder/Filename       | : Automatic                 |
| Rec. start method     | : Interval                  |
| Rec. stop method      | : Manual                    |
| Clock setting         | : User-specified            |
| Measurement frequency | : 50 Hz                     |

**You will need**

Model PW3365-20

Model Z1008 AC Adapter

Model PW9020 Safety Voltage Sensor x4

Model 9661 Clamp on Sensor (optional) x 3

SD memory card (optional)

Color clips for clamp sensors

Color clips for voltage sensors

Concept image of measurement 3-phase 4-wire 220 V line

**Preparations**

- 1 Attach the color clips.
- 2 Insert the SD memory card. (on right side of instrument)
- 3 Connect the AC adapter. (on left side of instrument)

Model 9661

Model PW9020

Be sure to provide a Hioki optional SD Memory Card. Operation is not guaranteed with other SD memory cards.

**1. Starting the Quick Set**

- 1 Turn on the instrument. (on left side of instrument)
- 2 Press the **ENTER** key.
- 3 Press the **ENTER** key.

First time powered on only

Language setting

Measurement frequency setting (50 Hz)

QUICK SET START

Do you want to initialize the measurement/recording settings?

Yes: ENTER key STOP QS: ESC key

**2. Basic settings**

- 1 Configure settings as shown in screenshot below.
- 2 Press the **F2 [NEXT]** key.

QuickSet 1/9 BasicSet

WIRING 3P4W(3Phase4Wire)

V SENSOR PW9020

CLAMP SENSOR 9661(500A)

SAVE TO... SD CARD

CLOCK 2014 Y 05 M 15 D 15:50:00

Select a wiring method using ENTER. Wiring methods using QS are limited

3P4W

9661 (500 A)

SD CARD

Set the current time.

**Names of Parts (excerpt)**

POWER Switch

AC adapter connection jack

Voltage sensor input terminals (Connect voltage sensors.)

Current sensor input terminals (Connect clamp sensors.)

SD memory card slot

Left

Upper

Right

**3. Connect the sensors to the instrument.**

Match the color of each sensor's color clip to the color of the terminal.

- 1 Connect the voltage sensors to the voltage sensor input terminals.
- 2 Connect the clamp sensors to the current sensor input terminals.
- 3 Be sure that the SD memory card is inserted. (on right side of instrument)
- 4 Press the **F2 [NEXT]** key.

Voltage sensor connector

Align

Insert

Voltage sensor input terminals

Clamp sensor connector (BNC)

Line up

Insert

Current sensor input terminals

Lock the connector.

**4. Connecting voltage sensors to the measurement target**

- 1 Refer to the wiring diagram to check the locations to which you have connected the voltage sensors.
- 2 Connect the voltage sensors to the secondary side of the breaker.
- 3 Check the readings.
- 4 Verify the results of checking the wiring.
- 5 Press the **F2 [NEXT]** key.

QuickSet 3/9 Wiring

U1 218 V

U2 217 V

U3 219 V

f 50.0 Hz

PASS U INPUT

FAIL U PHASE

Connect the voltage sensors. ENTER to view the SUMMARY.

1 Move the cursor to **FAIL** item.

2 Press the **ENTER** key.

3 Check the contents of the dialog box and correct the wiring.

VOLTAGE PHASE SUMMARY

FAIL will display when the voltage phase exceeds the range ( $\pm 10$  degrees of reference.)

Are the wiring settings correct?

Are the voltage sensors correctly wired?

Were the phases incorrectly laid out during construction?

NEXT:  $\nabla$ , Hit ESC to close.

Proper application

Example: 3-phase 4-wire 220 V line Secondary side of breaker

Secondary side (Load side)

OK

Align the insulated wire with the marks on the voltage sensor to the wire.

For more information, see "3.6 Connecting the Voltage Sensors to Target to be Measured" in the instruction manual.

Improper application

Failure to apply the sensor properly will prevent you from being to make an accurate measurement.

Clamped with the tips of the clip

Clamped too far back in the clip

Clamped with the measurement target at an angle

Clamping targets with different voltages at the same time

Tip

The power source side of the breaker is called the primary side; whereas the load side, the secondary side. For your safety, connect the voltage sensors and the clamp sensors to the secondary side.

Primary side

Secondary side

Source side

Load side

Breaker

## 5. Connecting clamp sensors to the measurement target

- 1 Refer to the wiring diagram to check the locations to which you have connected the clamp sensors.
- 2 Connect the clamp sensors to the secondary side of the breaker.
- 3 Verify that measured values are being displayed.
- 4 Press the **F2 [NEXT]** key.

**Power source side**  
**Load side**  
Point the arrow toward the load side.  
When using 9660 sensor

**Current direction mark**



**Tip**

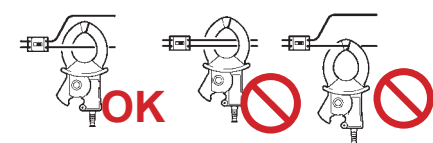
\*Example: For the 500 A range, values that are less than or equal to 2 A (0.4% of 500 A) will be displayed as 0 A.

### When the measured value is shown as 0 A

The zero-display processing (which forces the display to read "0 A" when the reading is 0.4% of the range) may cause the display to read "0 A." Try lowering the current range while referring to "11.6 Range Configuration and Accuracy by Clamp Sensor" in the instruction manual.

### Reference

Clamp 1 conductor only.



**PROHIBITED**

## 6. Setting the current range

- 1 **Set the range.**  
In this example, the instrument is set to 50 A.
- 2 Press the **F2 [NEXT]** key.

**Tip**  
Set the current range based on the anticipated maximum load current that will occur during the measurement period. (Refer to the operating status, load rating, breaker rating, and other data to make this determination.) If the range is too low, the instrument will experience an over-range event during measurement, making accurate measurement impossible. If the range is too high, a large error component will result, making accurate measurement impossible.

Display range ..... 65 A (130% f.s.)  
Effective measurement range ..... 55 A (110% f.s.)  
(Guaranteed accuracy range)  
0 A

Over-range  
13 A (130% f.s.)  
11 A (110% f.s.)  
0 A

50 A range  
10 A range

## 7. Checking the clamp sensor (current) wiring

- 1 **Check measured values.**  
Is the value low or negative? Verify that the instrument has been wired (connected) correctly.  
Is the value low? If the value is lower than 0.5, the instrument may be wired incorrectly. Check the wiring.
- 2 **Verify the results of checking the wiring.**  
If all results are **PASS**, or if you check the wiring because **CHECK** is displayed but find no problems.
- 3 Press the **F2 [NEXT]** key.

**QuickSet 7/9 I Check**

**FAIL** result

**Pass result**

Check even if the graph display falls within the pass range.

Voltage phase **PASS** range  
Voltage phase  
Current phase **PASS** range  
Current phase

**Fail result**

**Pass result**

## 8. Recording settings

- 1 **Configure settings as shown in screenshot below.**
- 2 Press the **F2 [NEXT]** key.

**5 min** Is this value shorter than the measurement interval? (SaveTime: It's calculated automatically by the free space of the SD memory card and save items. Up to 1 year)

**AVG only (no Harmonic)**

**MANUAL**

**AUTO**

**Tip**  
If the **SaveTime** is shorter than the measurement period, the following methods can be used to increase the available save time:  
• Increase the **SAVE INTVL**.  
• If there is any unnecessary data on the SD memory card, delete it or reformat the card. (Exit the Quick Set and access the File screen.)

**Rec. start method: INTERVAL**  
Example: With the save interval set to 5 min.

## 9. Checking settings and starting recording

For more information, see "Chapter 6 Starting and Stopping Recording and Measurement" in the instruction manual.

- 1 **Check the settings.**
- 2 Press the **START/STOP** key.

**POWER LED**  
**Recording LED flashing (standby)**  
(Standby state continues.)  
**Recording LED lit up (recording)**

Recording will start at a well-defined time.

Recording method has been set to **INTERVAL**. Waiting until next interval time begins at 2014-05-15 16:00:00.

**Tip**  
• The auto power-off function will cause the screen to turn off, but recording will continue (the Recording and Power LEDs will stay on).  
• Press the **ESC** key to display the Setting Confirmation screen, which allows you to check key recording and setting information on a single screen.

## 10. Stopping recording

- 1 Press the **START/STOP** key.  
A dialog box asking you to confirm that you wish to stop recording will be displayed.
- 2 Press the **Enter** key.  
Recording will be stopped.  
Recording LED off.

## After measurement is complete

- 1 Disconnect the sensors from the measurement target.
- 2 Turn off the instrument.
- 3 Disconnect the sensors from the instrument.
- 4 Disconnect the AC adapter. (on left side of instrument)
- 5 Remove the SD memory card.

**Tip**  
For more information, see "9.3 SF1001 Power Logger Viewer (Optional)" in the instruction manual.

Saved data can be loaded onto a computer and analyzed using the SF1001 Power Logger Viewer (optional) or an application such as Spreadsheet software.