

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

- Attach the color clips.
- Insert the SD memory card. (on right side of instrument)
- 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

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

- Configure settings as shown in screenshot below.
- 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.

- Connect the voltage sensors to the voltage sensor input terminals.
- Connect the clamp sensors to the current sensor input terminals.
- Be sure that the SD memory card is inserted. (on right side of instrument)
- 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

- Refer to the wiring diagram to check the locations to which you have connected the voltage sensors.
- Connect the voltage sensors to the secondary side of the breaker.
- Check the readings.
- Verify the results of checking the wiring.
- 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 (± 10 degrees of reference.)

Are the wiring settings correct?

Are the voltage sensors correctly wired?

Were the phases incorrectly laid out during construction?

NEXT: ∇ , 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

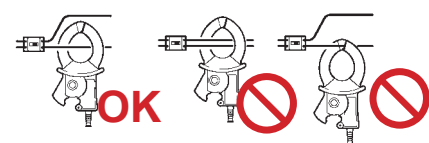
*Example: For the 500 A range, values that are less than or equal to 2 A (0.4% of 500 A) will be displayed as 0 A.

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

QuickSet 6/9 I Range

Select the current range.

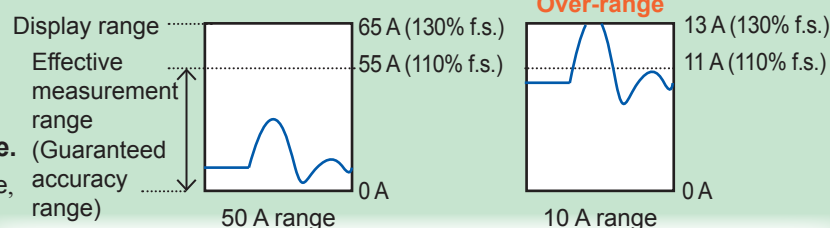
SENSOR	VALUE	RANGE
I1 9661(500A)	32.125 A	50A
I2 9661(500A)	30.033 A	50A
I3 9661(500A)	34.020 A	50A

For proper range selection, consider the rated current of the load/breaker and estimate maximum load current.

F2

1 Set the range.

In this example, the instrument is set to 50 A.



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.

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

I1 35.0 A
I2 32.0 A
I3 30.3 A
P 0.6 kW
DPFLD 0.48

PASS CURR INPUT
FAIL CURR PHASE
PASS PHASE DIF1
FAIL PHASE DIF2
PASS PHASE DIF3
FAIL PHASE DIF4
CHECK PF(DPF)

ENTER to display wiring condition.
Hit F5 to display the phase angle.

F2

If there is a **FAIL** result

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

2 Press the **Enter** key.

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

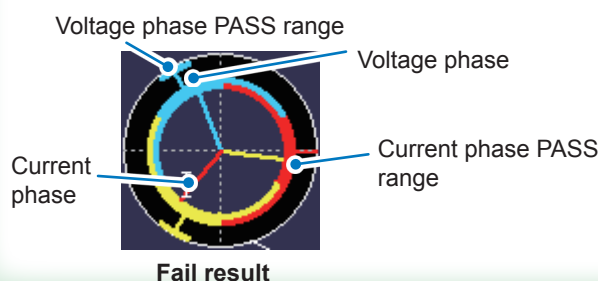
CURRENT PHASE SUMMARY

FAIL will display when the current phase sequence is incorrect.

- Are the clamp-on sensors clamped correctly?
- Does the arrow of the clamp-on sensor point to the load side?

Hit ESC to close.

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



8. Recording settings

1 Configure settings as shown in screenshot below.

QuickSet 8/9 Rec Set

SAVE INTVL 5min SaveTime 1 YEAR
SAVE ITEM AVG only(noHarmonic)
REC START INTERVAL
REC STOP MANUAL
FILE NAME AUTO
Select the interval to save.

F2

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

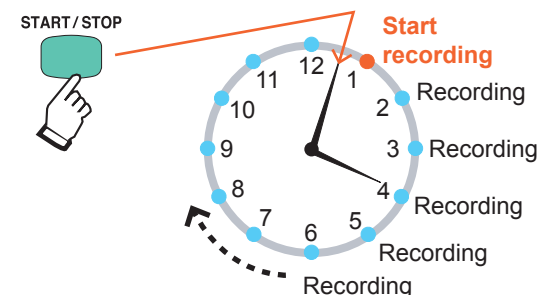
If the **SaveTime** is shorter than the measurement period, the following methods can be used to increase the available save time:

- 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.)

2 Press the **F2 [NEXT]** key.

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.

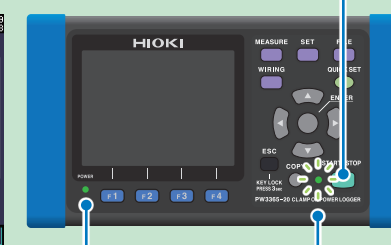
QuickSet 9/9 Start

Recording settings are:

SAVE INTVL 5min SaveTime 1 YEAR
SAVE ITEM AVG only(noHarmonic)
REC START INTERVAL
REC STOP MANUAL
FILE NAME AUTO

Start recording?
YES: START/STOP NO: F4

F2



The standby screen will be shown. Pressing any key will display the Measurement screen.

MEAS LIST

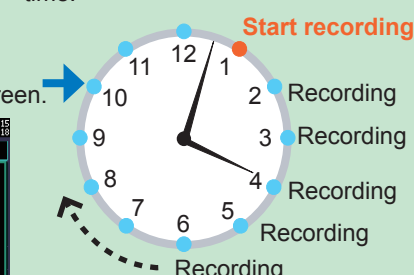
3P4W I123 9661 50A

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

CLOSE: Hit Any Key.

SCREEN HOLD

Recording will start at a well-defined time.



Data will be saved to the SD memory card for each save interval.

Recording LED lit up (recording)



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 **START/STOP** 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.

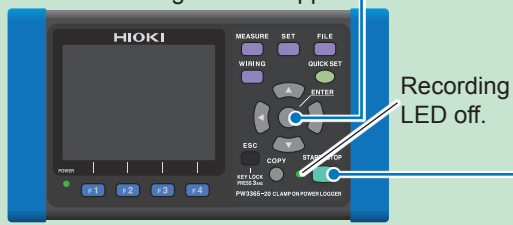
REC STOP

Stop recording.
Are you sure?

YES: ENTER key NO: ESC key

2 Press the **Enter** key.

Recording will be stopped.



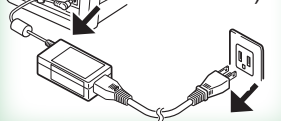
After measurement is complete

- 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.