HIOKI

QUICK START MANUAL

8420-51
8421-51
8422-51

MEMORY HiLOGGER

HIOKI E. E. CORPORATION

Contents

Introduction

- This manual is a quick reference source with examples for the 8420-51, 8421-51, 8422-51 MEMORY HiLOGGER for measurement purposes.
  For more detailed description of operations, refer to the Instruction Manual. In particular, before operating the instrument, be sure to read carefully and understand the Safety Notes and Chapter 2 "Measurement Preparations" (page 21) in the Instruction Manual.
- Refer to the Instruction Manual and the Communications/ Wave Viewer Instruction Manual provided with this instrument.

Safety Notes

The following symbols in this manual indicate the relative importance of cautions and warnings.

DANGER	Indicates that incorrect operation presents an extreme hazard that could result in serious injury or death to the user.
WARNING	Indicates that incorrect operation presents an extreme hazard that could result in serious injury or death to the user.
CAUTION	Indicates that incorrect operation presents a possibility of injury to the user or damage to the instrument.
NOTE	Indicates advisory items related to performance or correct operation of the instrument.

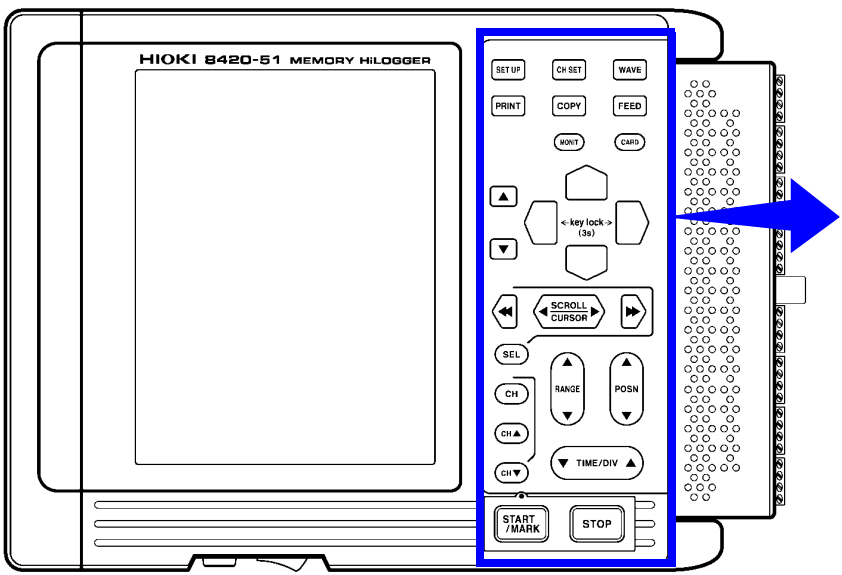
Other Symbols

	Indicates the prohibited action.
❖	Indicates the reference.

Identification of Controls and Indicators 1

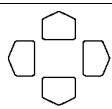
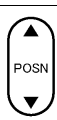
1.1 Identification of Controls and Indicators

Front Panel

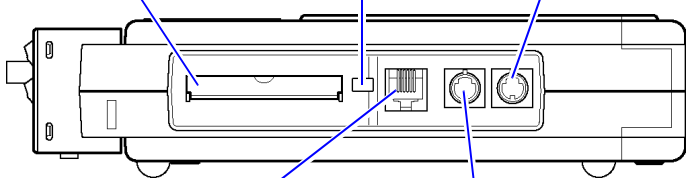


This is the 8420-51.

Buttons Operations

SET UP	Displays the Status Screen.
CH SET	Displays the Channel Screen.
WAVE	Displays the Waveform Screen, and selects the display format of the Waveform Screen.
PRINT	Prints measurement data stored in memory; while measuring, starts and stops real-time printing.
COPY	Prints the screen (or creates a screen image file); while measuring, prints the most recently logged data value.
FEED	Feeds recording paper while pressed.
MONIT	Displays the Monitor Screen.
CARD	Displays the File Screen (for loading and saving measurement data).
▲ ▼	Select and accept settings.
	Move the blinking cursor up, down, left and right.
◀◀ SCROLL ◀ CURSOR ▶ ▶▶	Scroll waveforms, move A-B cursors and search for event markers.
SEL	Switches between scrolling waveforms, moving A-B cursors and searching for event markers.
CH	Displays the Channel Setup Window on the Waveform Screen, for entering settings.
CH▲	Changes the setting channel to the previous channel.
CH▼	Changes the setting channel to the next channel.
	Selects the range for each channel.
	Selects the zero position for each channel.
▼ TIME/DIV ▲	Sets the time per division on the horizontal axis.
START /MARK	Starts measurement; while measuring, the LED above the button is lit.
STOP	Pressing this button twice stops measurement.

Upper Panel



PC Card Slot
A PC Card can be inserted here.

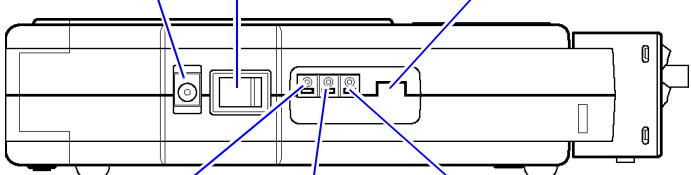
Eject button
Pressing this button ejects the PC Card.

Pulse Probe Connector (PULSE)
These are the pulse input terminals, for connecting the 9641CONNECTION CABLE.

10BASE-T Ethernet Connector
The 9642 LAN CABLE can be connected here.

RS-232C Connector
The 9612 RS-232C CABLE or 9721 RS-232C CABLE can be connected here.

Lower Panel



AC Adapter Connector
The AC adapter can be connected here.

Power Switch (POWER)
Turns the power on and off.

Contrast Adjustment Knob (CONTRAST)
Adjusts display contrast.

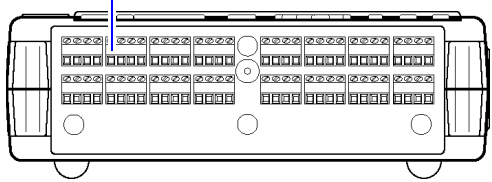
External Trigger Terminal (EXT TRIG)
External trigger source input.

Trigger Output Terminal (TRIG OUT)
Trigger signals are output at these terminals.

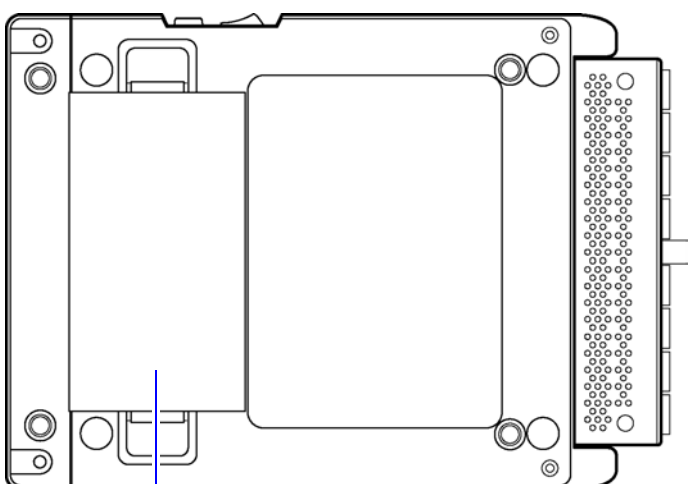
GND Terminal
This is the signal ground for use with the trigger terminal.

Right Panel

Analog Input Terminal Block
These are the analog input terminals.
The 8420-51 has 8 input channels, the 8421-51 has 16 input channels, and the 8422-51 has 32 input channels.



Bottom Panel

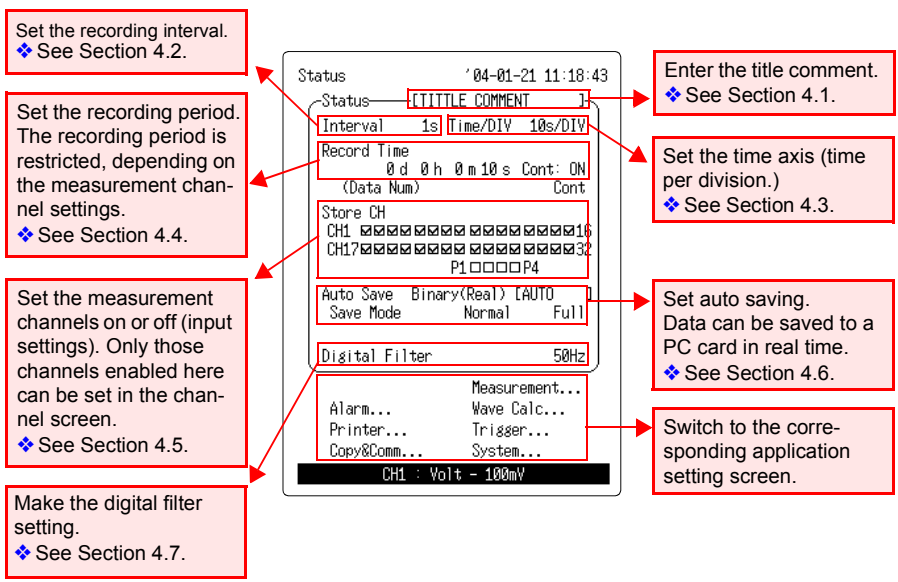


Battery Compartment
Contains the 9447 BATTERY PACK.

Display Screen and Setting Items 2

This chapter describes the major screens of the Memory HiLogger and parameters to be set on each screen.

2.1 Status Screen



NOTE The reference pages referred to above are those in the instruction manual.

2.2 Channel Screen

The settings can be copied from another channel.
❖ See Section 5.1.
❖ See Section 5.2.

Enter an input channel comment.
❖ See Section 5.1.

Set the waveform display area (range.)
❖ See Section 5.1.5.

Shows the setting channel.

Set the waveform screen color.
❖ See Section 5.1.6.

Set the input type.
❖ See Section 5.1.
❖ See Section 5.2.

Set the waveform magnification factor.
❖ See Section 5.1.7.

Set the range.
The settings depend on the type of input.
❖ See Section 5.1.
❖ See Section 5.2.

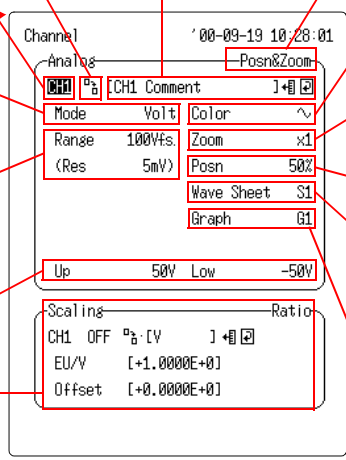
Set the waveform display position.
❖ See Section 5.1.8.

Shows the waveform display range.

Set the waveform sheet. It is possible to divide into wave sheets S1 to S4, for display and recording.
❖ See Section 5.1.9.

Set the scaling.
❖ See Section 5.4.

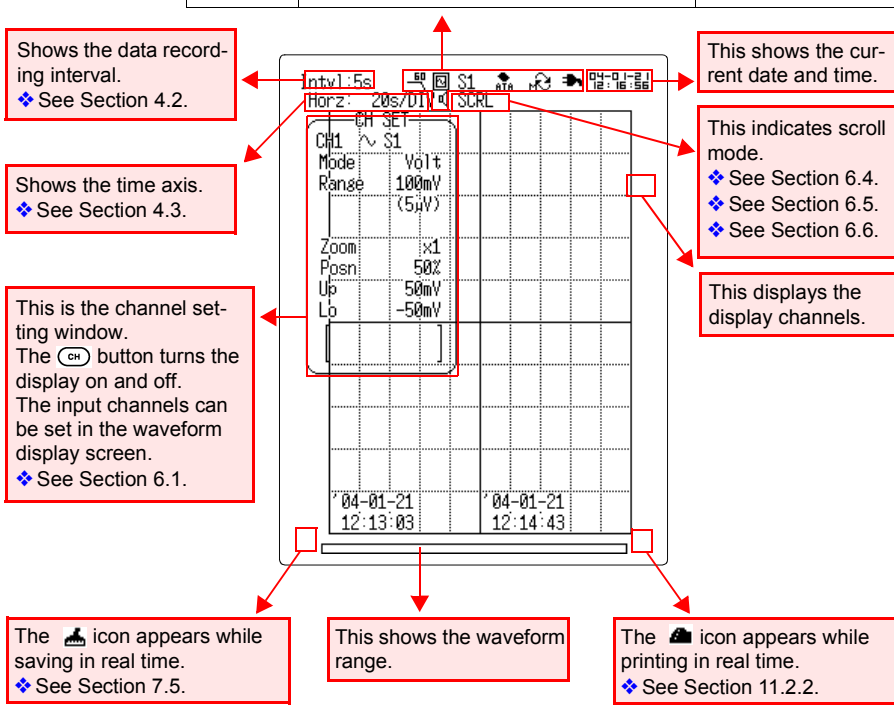
Set the display layout. This can be set when there are Dual or Quad waveform display screens.
❖ See Section 5.1.10.



2.3 Waveform Screen

Display Marks

60	Sets the digital filter.	❖ See Section 4.7.
	Switch the waveform display screen. This is also possible with the WAVE button.	❖ See Section 6.2.
S1	Shows the wave sheet of the waveform being displayed.	❖ See Section 5.1.9.
ATA	This indicates that a PC card is inserted.	❖ See Chapter 7.
	This indicates the method of changing channels for numeric display.	❖ See Section 6.3.
	This indicates the power supply.	❖ See Section 2.3.
	This indicates whether the speaker is on or off for the alarm function.	❖ See Section 12.2.

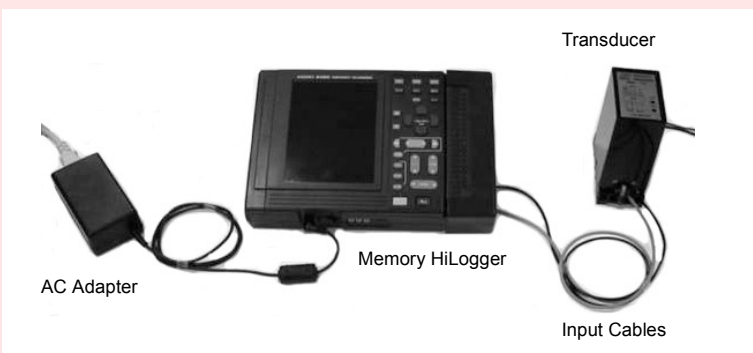


Measurement Examples 3

3.1 Voltage Measurement

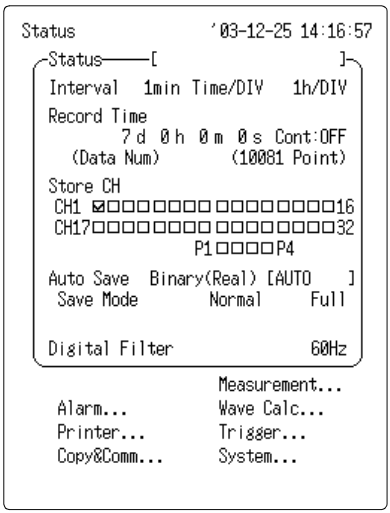
In the explanation below, we measure AC voltage fluctuations for a one-week period using an AC transducer (0~10 VDC rms value output for 0~150 VAC) as an example. Monitor voltage fluctuations for a one-week period by measuring the output voltage every minute.

Settings:
Voltage is input to Channel 1.
Recording interval: 1 min., Time axis: 1 hour, Recording period: 7 days
Data will be saved onto a PC card in real time.



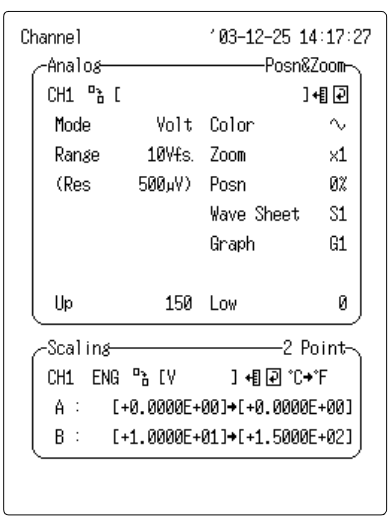
Instrument and Accessories Required for Measurement
- Memory HiLogger
- AC adapter
- PC card
- Input cables
- Flat blade screwdriver

Settings



<Status Screen>

Interval	**: 1min**
Time/DIV	**: 1h/DIV**
Record Time	**: 7 d**
Store CH	**: CH1**
Auto Save	**: Binary (Real)**
File Name	**: AUTO (default)**
Save Mode	**: Normal Full**
Digital Filter	**: 60 Hz**



<Analog Channel Screen>

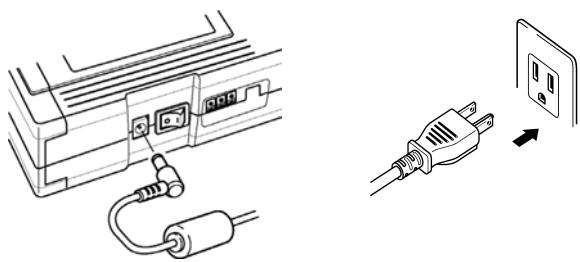
Display Area	**: Posn&Zoom**
Mode	**: Voltage**
Range	**: 10Vf.s.**
Posn	**: 0%**
Scaling	**: 2 point**
Display Format	**: ENG**
Unit	**: V**

A: +0.0000E+00 → +0.0000E+00
B: +1.0000E+01 → +1.5000+02

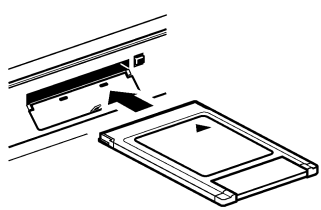
DANGER

- **To avoid the danger of electric shock, never connect the power line to which the measurement cable is connected to this unit while the power line is live.**
- **Never apply more than 30 Vrms AC or 60 VDC between analog inputs, or between analog inputs and chassis ground.**

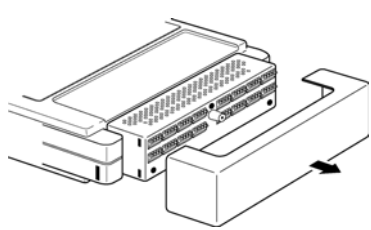
1. Make sure the instrument is OFF.
2. Connect the AC adapter to the instrument.
3. Plug the AC adapter into the power outlet.
❖See Section 2.1 "Connecting Power" (page 21) of Instruction Manual.



4. Insert the PC card.
❖See Section 7 "Saving Measurement Data" (page 113) of Instruction Manual.

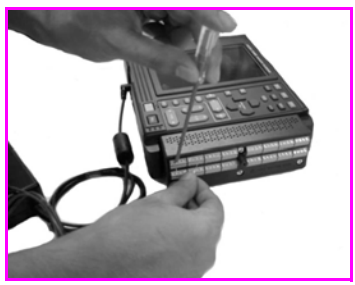


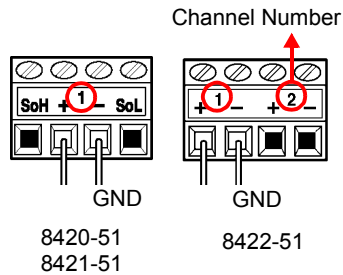
5. Remove the terminal board cover.



6. Using the supplied flat blade screwdriver, connect the measurement cables to channel 1 on the terminal board.
Be sure that the polarity of the cable connection is correct.

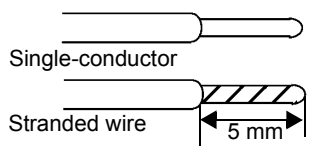
❖See Section 2.2 "Connecting Measurement Cables" (page 25) of Instruction Manual.





Recommended Lead Wire

Single-conductor: 0.14 to 1.5 mm^2
Stranded wire: 0.14 to 1 mm^2
AWG : AWG26-AWG16



When connecting the input cable to a transducer, refer to the instruction manual of the transducer and be sure to connect the cable correctly.

7. Replace the terminal board cover to protect the terminal board, and for safety.

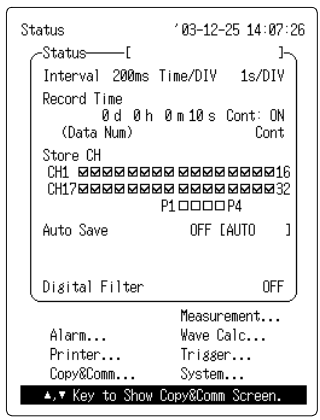
8. Turns on the power switch.

❖See Section 2.3 "Powering On/Off" (page 31) of Instruction Manual.

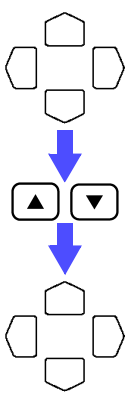
9. Set the parameters of this instrument.

Display the Status Screen.

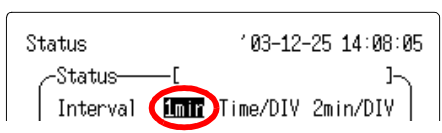
Display the Status Screen.



Set the recording interval to "1minute."



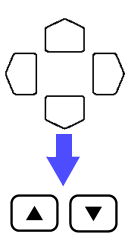
Move the blinking cursor to the position shown.



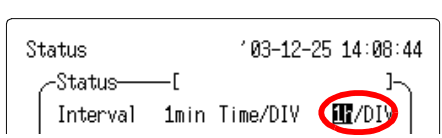
Select "**1min**."
The setting becomes effective immediately after being selected.

Close the list of settings.

Set the time axis (Time/DIV) to "1h/DIV."

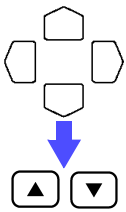


Move the blinking cursor to the position shown.

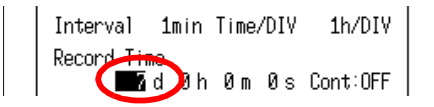


Select "**1h/DIV**."

Set the recording period (Record Time) to "7 days."



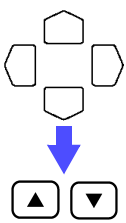
Move the blinking cursor to the position shown.



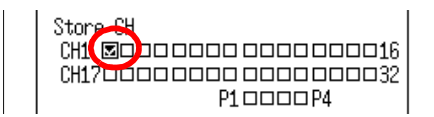
Select "**7 d**."

NOTE To set an arbitrary recording period, choose "**OFF**" for "**Continuous**" and then set the desired time.

Turn on the channel 1 (CH1) of the Store CH.



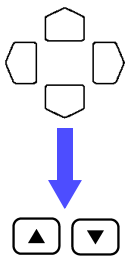
Move the blinking cursor to the position shown.



Turn on the channel 1, by putting a check mark ☑ in the CH1 box of Store CH.

NOTE Unless the Store CH setting is on, it is not possible to make input settings in the channel screen.

Set the automatic saving to "Binary (Real time)."



Move the blinking cursor to the position shown.

Select "**Binary (Real)**."

NOTE

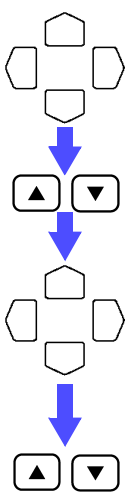
If a file name has already been entered, the file is automatically saved with that name. For continuous saving, a number is appended to the file name.

❖See Section 14 "Text Entry Procedure" (page 225) of Instruction Manual.

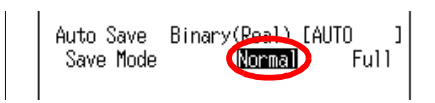
If no file name has been entered, default file naming is used ([AUTO, AUTO0001], etc.)

❖See Section 7.5 "Automatic Data Saving" (page 133) of Instruction Manual.

Set the Save Mode to "Normal" and "Full."

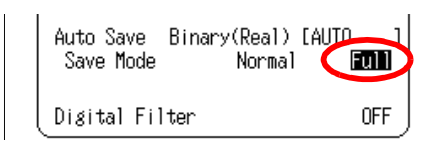


Move the blinking cursor to the position shown.



Select "**Normal**."

Move the blinking cursor to the position shown.



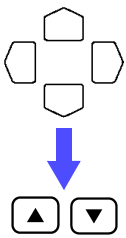
Select "**Full**."

NOTE

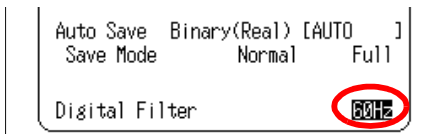
One file is created for each measurement session. When the PC card is full, saving ends.

❖See Section 7.5 "Automatic Data Saving" (page 133) of Instruction Manual.

Set the digital filter to "60 Hz."



Move the blinking cursor to the position shown.

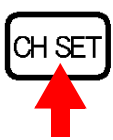


Select "**60 Hz**."

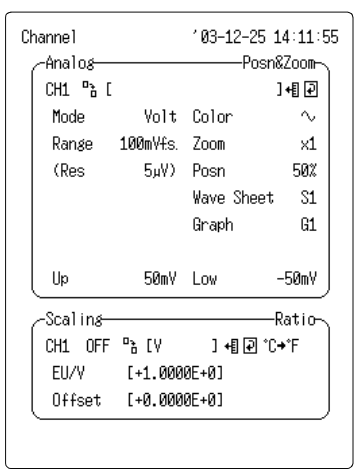
NOTE

A digital filter can be used on analog channels to remove noise in the input signals.
The longer the recording interval is, the larger the noise reduction effect becomes; this ensures highly accurate measurement with little scatter.
Set the filter to 50Hz in areas where the supply frequency is 50Hz.

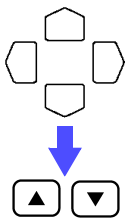
Display the Analog Channel Screen.



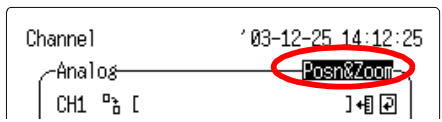
Display the Analog Channel Screen for channel 1.



Set the display area to "Posn&Zoom."

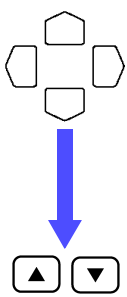


Move the blinking cursor to the position shown.

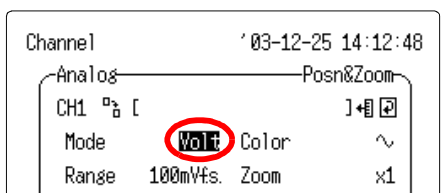


Select "**Posn&Zoom**."

Set the input type (Mode) to "Voltage."

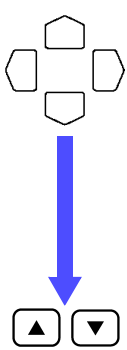


Move the blinking cursor to the position shown.

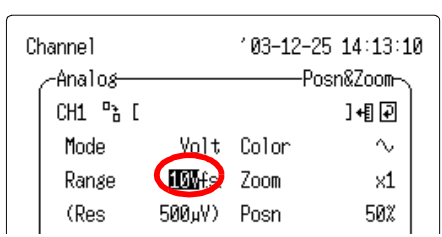


Select "**Volt**."

Set the range to "10Vf.s.."

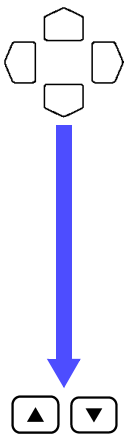


Move the blinking cursor to the position shown.

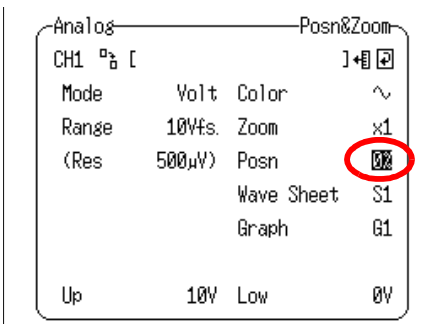


Select "**10Vf.s.**."

Set the display position to "0%."

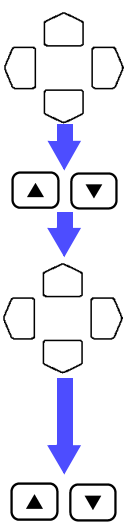


Move the blinking cursor to the position shown.

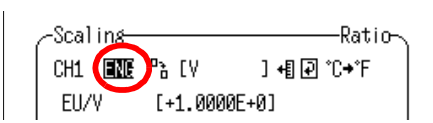


Select "**0%**."

Set the scaling.

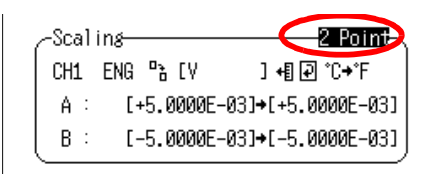


Move the blinking cursor to the position shown.

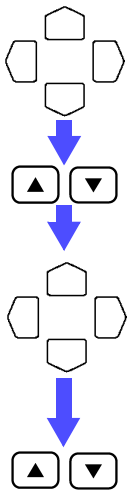


Set the display format to "**ENG**."

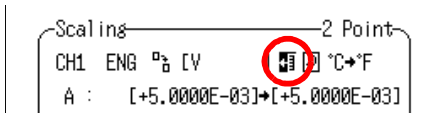
Move the blinking cursor to the position shown.



Set the scaling method to "**2 Point**."

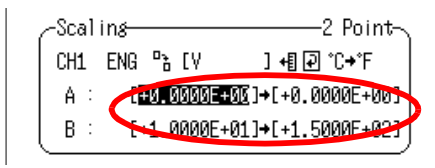


Move the blinking cursor to the position shown.



Set the scaling unit to "**V**."

Move the blinking cursor to the position shown.



Enter the following:
A: +0.0000E+00 → +0.0000E+00
B: +1.0000E+01 → +1.5000E+02

❖ See Section 5.4 "Setting Scaling" (page 86) of Instruction Manual.

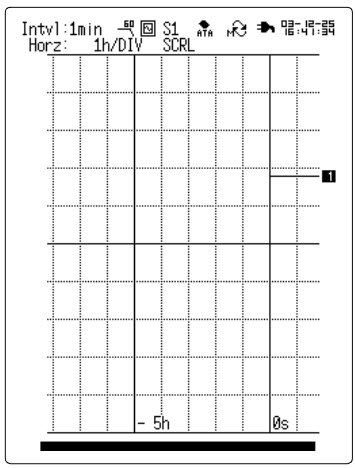
Upper limit value: 150 V, Lower limit value: 0 V

NOTE

- Setting the scaling to correspond to the transducer conversion ratio allows the measurement values to be read off directly.
- With the origin Posn setting at "0%" the range from 0 to 150 V is displayed.

10. Press the START /MARK key to start measurement.

The Waveform Screen is displayed.



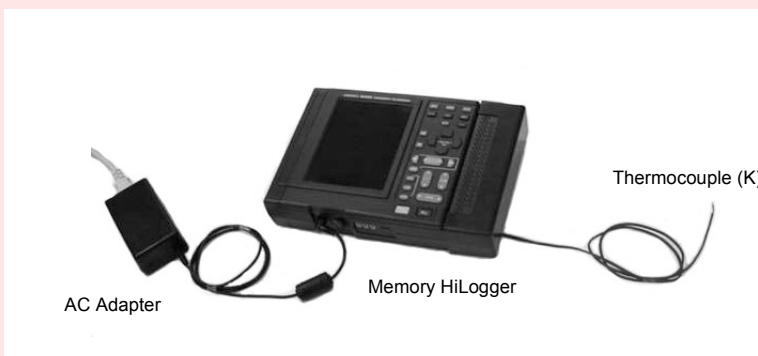
Press the STOP key twice to abandon measurement while it is in progress.

11. Measurement ends when seven days has elapsed.

3.2 Temperature Measurement Using a Thermocouple (K)

Measure indoor temperature changes using a thermocouple. Observe temperature changes by measuring the temperature every second.

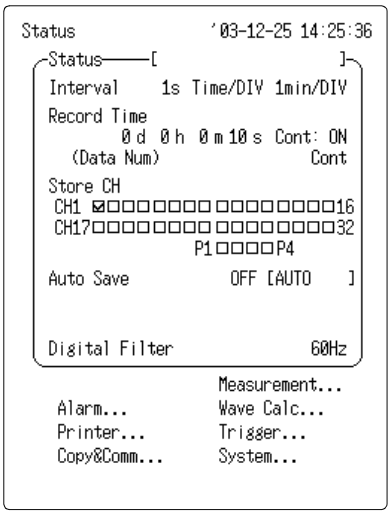
Settings:
Temperature is input to Channel 1.
Recording interval: 1 sec., Time axis: 1 min., Recording period: Continuous
Data is viewed on the screen of the Memory HiLogger after measurement is complete.



Instrument and Accessories Required for Measurement
- Memory HiLogger
- AC adapter
- Thermocouple (K)
- Flat blade screwdriver

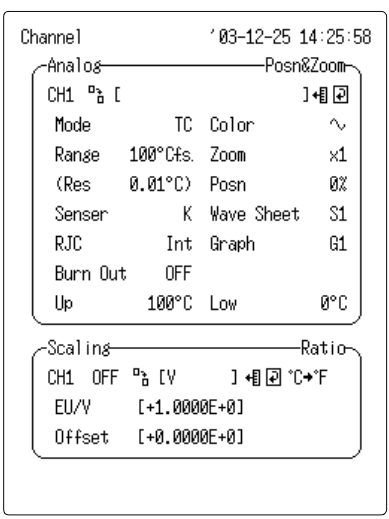
NOTE Because data is saved to the internal memory, a PC card is not used. When the measurement extends over a long period, we recommend you save data to a PC card in real time to avoid data being lost in the event of a power outage.

Settings



<Status Screen>

Interval	**: 1s**
Time/DIV	**: 1min/DIV**
Record Time	**: Continuous**
Store CH	**: CH1**
Auto Save	**: OFF**
Digital Filter	**: 60 Hz**

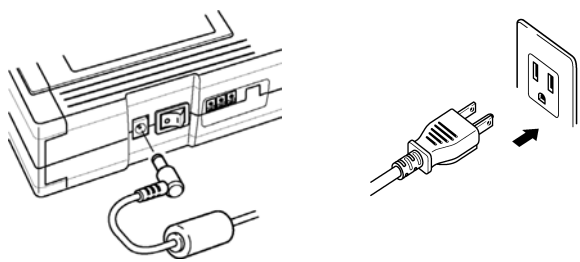


<Analog Channel Screen>

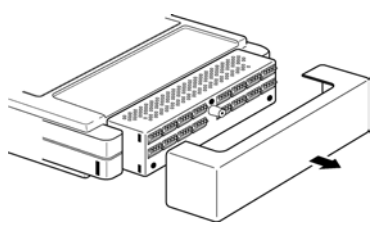
Display Area	**: Posn&Zoom**
Mode	**: Thermocouple**
Range	**: 100°Cf.s.**
Posn	**: 0%**

⚠WARNING **To avoid the danger of electric shock, never connect the power line to which the thermocouple is connected to this unit while the power line is live.**

1. Make sure the instrument is OFF.
2. Connect the AC adapter to the instrument.
3. Plug the AC adapter into the power outlet.
❖See Section 2.1 "Connecting Power" (page 21) of Instruction Manual.

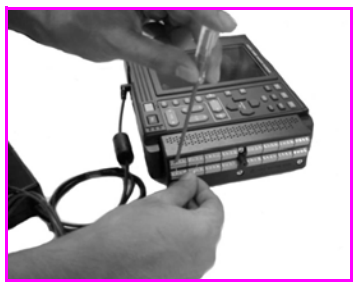


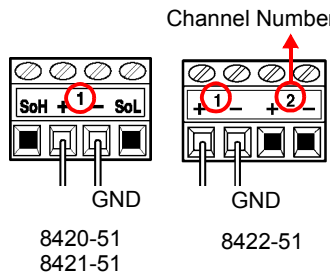
4. Remove the terminal board cover.



5. Using the supplied flat blade screwdriver, connect the thermocouple (K) to channel 1 on the terminal board.
Be sure that the polarity of the cable connection is correct.

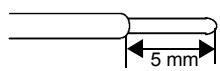
❖See Section 2.2 "Connecting Measurement Cables" (page 25) of Instruction Manual.





Recommended Lead Wire

Wire diameter : 0.32 mm
Wire stripping length : 5 mm



6. Replace the terminal board cover, to protect the terminal board, and for safety. If the input terminals are exposed to a strong wind, this can upset the thermal balance of the input unit, and cause incorrect readings.

7. Attach the thermocouple (K) to the object whose temperature is to be measured.

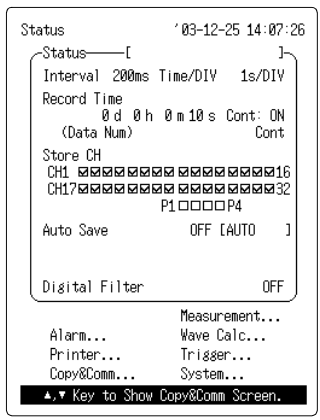
8. Turns on the power switch.

❖See Section 2.3 "Powering On/Off" (page 31) of Instruction Manual.

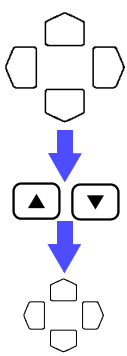
9. Set the parameters of this instrument.

Display the Status Screen.

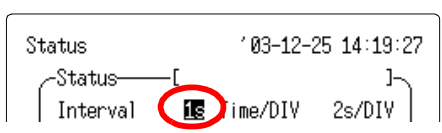
Display the Status Screen.



Set the recording interval to "1s."



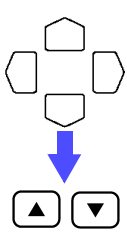
Move the blinking cursor to the position shown.



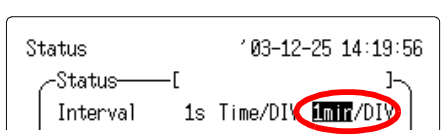
Select "**1s**."
The setting becomes effective immediately after being selected.

Close the list of settings.

Set the time axis (Time/DIV) to "1min/DIV."

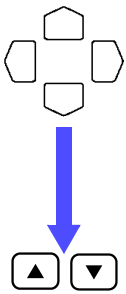


Move the blinking cursor to the position shown.

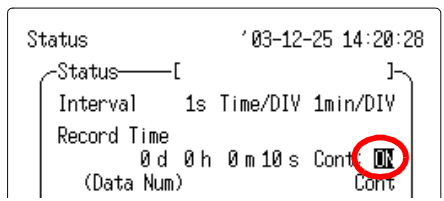


Select "**1min/DIV**."

Set the recording period (Record Time) to "Cont: ON."

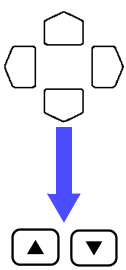


Move the blinking cursor to the position shown.

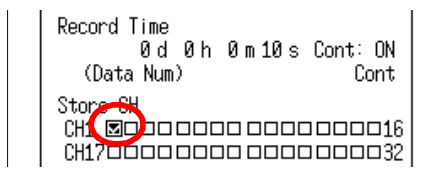


Select "**Cont: ON**."

Turn on the channel 1 (CH1) of the Store CH.



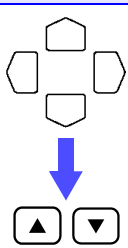
Move the blinking cursor to the position shown.



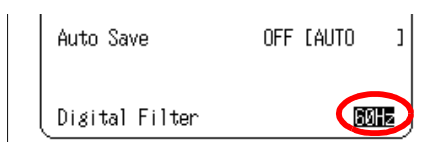
Turn on the channel 1, by putting a check mark ☑ in the CH1 box of Store CH.

NOTE Unless the Store CH setting is on, it is not possible to make input settings in the channel screen.

Set the digital filter to "60 Hz."



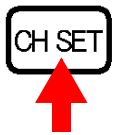
Move the blinking cursor to the position shown.



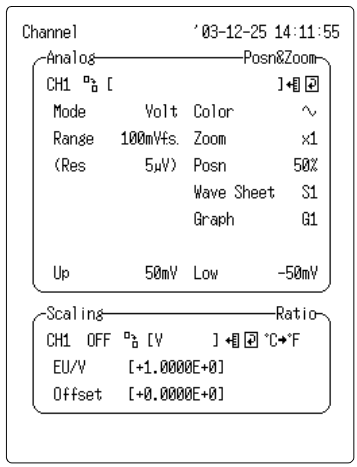
Select "**60 Hz**."

NOTE A digital filter can be used on analog channels to remove noise in the input signals.
The longer the recording interval is, the larger the noise reduction effect becomes; this ensures highly accurate measurement with little scatter.
Set the filter to 50Hz in areas where the supply frequency is 50Hz.

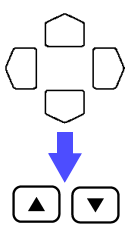
Display the Analog Channel Screen.



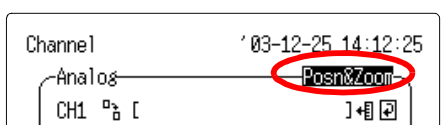
Display the Analog Channel Screen for channel 1.



Set the display area to "Posn&Zoom."

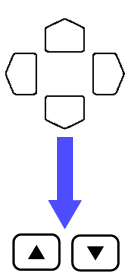


Move the blinking cursor to the position shown.

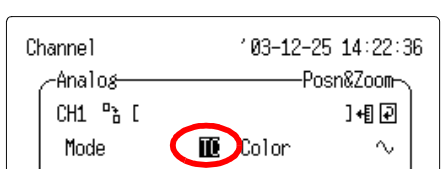


Select "**Posn&Zoom**."

Set the input type (Mode) to "TC (Thermocouple)."

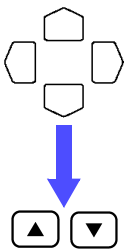


Move the blinking cursor to the position shown.

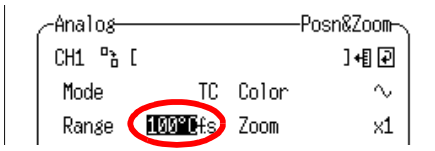


Select "**TC**."

Set the range to "100°Cf.s.."

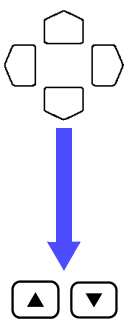


Move the blinking cursor to the position shown.

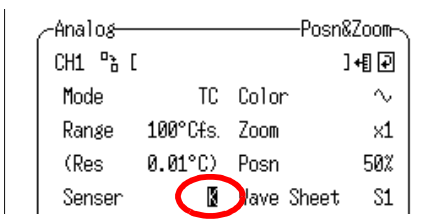


Select "**100°Cf.s.**."

Set the thermocouple type (Sensor) to "K."

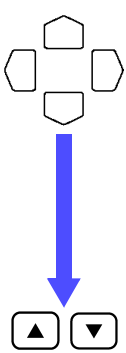


Move the blinking cursor to the position shown.

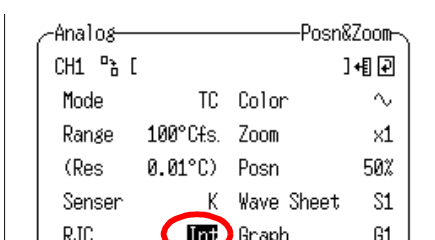


Select "**K.**"

Set the appropriate compensation (RJC) to "Int (Internal)."



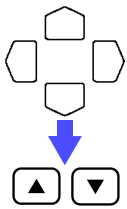
Move the blinking cursor to the position shown.



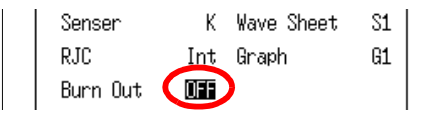
Select "**Int.**"

NOTE Reference junction compensation is performed within the Memory HiLogger. When a thermocouple is connected directly to the Memory HiLogger, choose "**Int.**"

Set the burn out detection (Burn Out) to "OFF."

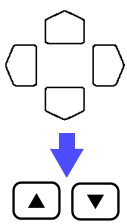


Move the blinking cursor to the position shown.

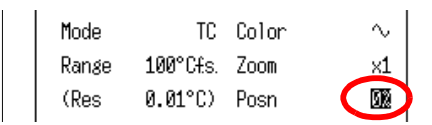


Select "**OFF**."

Set the display position to "0%."

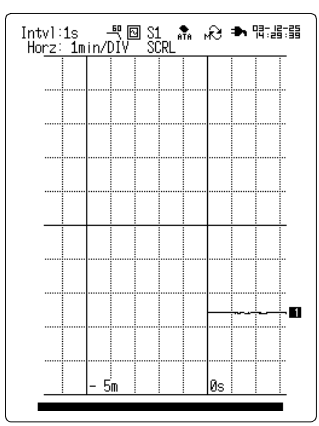


Move the blinking cursor to the position shown.



Select "**0%.**"
Upper limit value: 100°C, Lower limit value: 0°C

10. Press the START /MARK key to start measurement.



11. Press the STOP key twice to abandon measurement.

12. Monitor changes in temperature on the Waveform Screen.

❖See Section 6 "Waveform Screen" (page 99) of Instruction Manual.

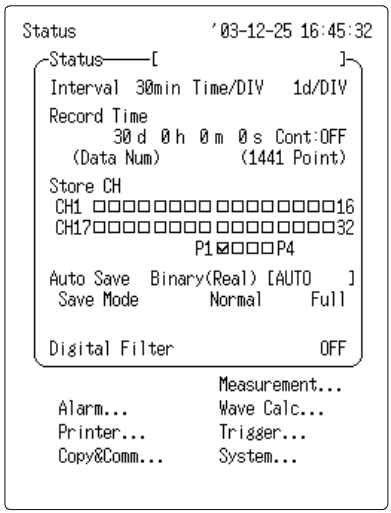
3.3 Integrating the Pulse Output from a Power Meter

Prepare a watt-hour meter capable of outputting 50,000 pulses/kWh pulse and capture pulses from the meter to measure the integrated watt-hour for a one-month (30-day) period. Observe the integrated watt-hours for a one-month period by measuring the output pulses of the watt-hour meter every 30 minutes.

Settings:
Pulse is input to Pulse Channel 1 (P1).
Recording interval: 30 min., Time axis: 1 day, Recording period: 30 days

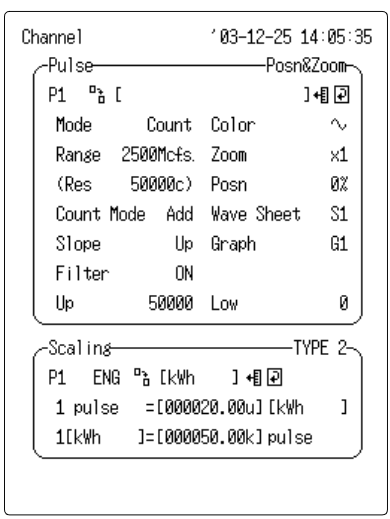
Instrument and Accessories Required for Measurement
- Memory HiLogger
- AC adapter
- PC card
- Input cables
- Flat blade screwdriver
- 9641 CONNECTION CABLE

Settings



<Status Screen>

Interval	**: 30min**
Time/DIV	**: 1d/DIV**
Record Time	**: 30 d**
Store CH	**: P1**
Auto Save	**: Binary (Real)**
File Name	**: AUTO (default)**
Save Mode	**: Normal Full**
Digital Filter	**: OFF**

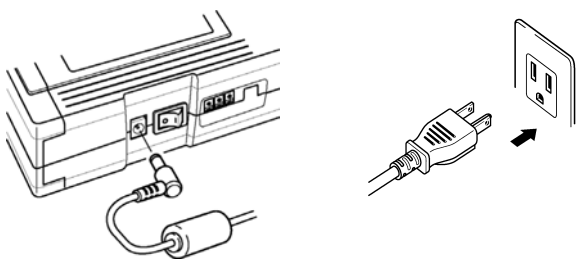


<Pulse Channel Screen>

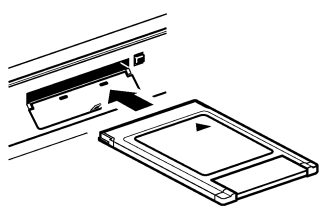
Display Area	**: Posn&Zoom**
Mode	**: Count**
Range	**: 2500Mcf.s.**
Posn	**: 0%**
Scaling	**: Type2**
Display Format	**: ENG**
Unit	**: kWh**
1kWh	**= 50.00 k pulse**

WARNING **To avoid the danger of electric shock, never connect the power line to which the measurement cable is connected to this unit while the power line is live.**

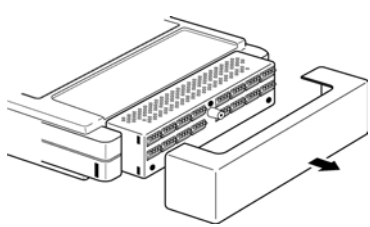
1. Make sure the instrument is OFF.
2. Connect the AC adapter to the instrument.
3. Plug the AC adapter into the power outlet.
❖See Section 2.1 "Connecting Power" (page 21) of Instruction Manual.



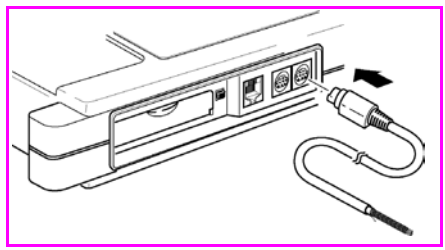
4. Insert the PC card.
❖See Section 7 "Saving Measurement Data" (page 113) of Instruction Manual.

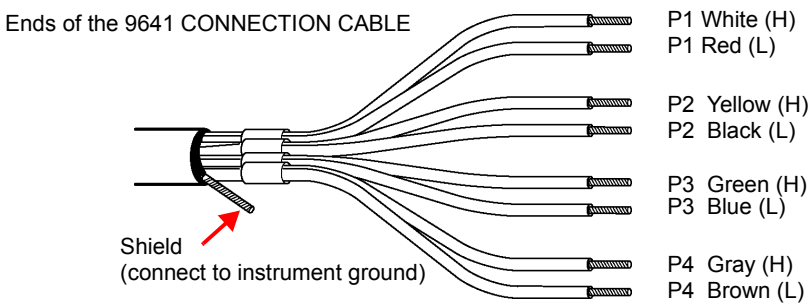


5. Remove the terminal board cover.



6. Connect the 9641 CONNECTION CABLE to this instrument.
The 9461 CONNECTION CABLE is terminated as follows.





❖See Section 2.2.3 "Connecting the 9641 CONNECTION CABLE (for pulse input)" (page 29) of Instruction Manual.

7. Connect the 9641 CONNECTION CABLE to the pulse output terminals of the power meter.
For details of connections, refer to the instructions supplied with the power meter, and take great care that the connections are correct.

For P1, the white lead is high, and the red lead is low.

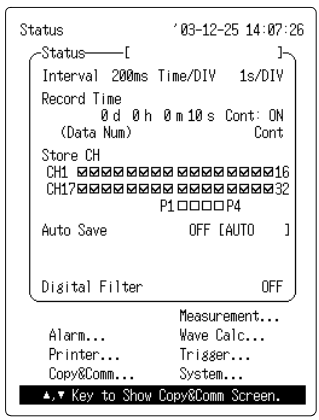
8. Turns on the power switch.

❖See Section 2.3 "Powering On/Off" (page 31) of Instruction Manual.

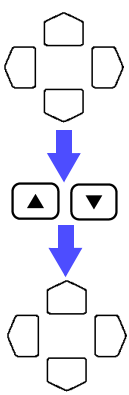
9. Set the parameters of this instrument.

Display the Status Screen.

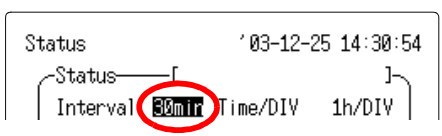
Display the Status Screen.



Set the recording interval to "30min."



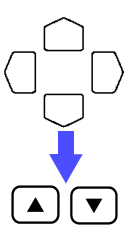
Move the blinking cursor to the position shown.



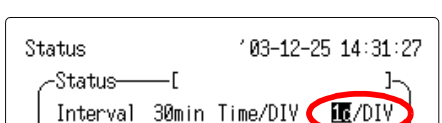
Select "**30min**.
The setting becomes effective immediately after being selected.

Close the list of settings.

Set the time axis (Time/DIV) to "1d/DIV."

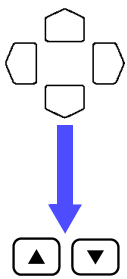


Move the blinking cursor to the position shown.

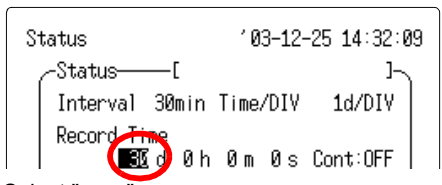


Select "**1d/DIV**."

Set the recording period (Record Time) to "30 days."

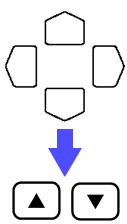


Move the blinking cursor to the position shown.



Select "**30 d**."

Turn on the pulse channel 1 (P1) of the Store CH.

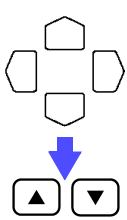


Move the blinking cursor to the position shown.

Turn on the pulse channel 1, by putting a check mark ☑ in the P1 box of Store CH.

NOTE Unless the Store CH setting is on, it is not possible to make input settings in the channel screen.

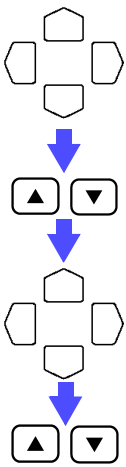
Set the automatic saving to "Binary (Real time)."



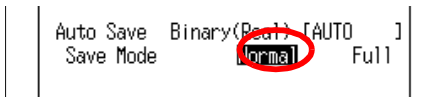
Move the blinking cursor to the position shown.

Select "**Binary (Real)**."

Set the saving mode to "Normal" and "Full."

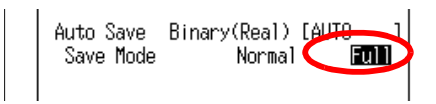


Move the blinking cursor to the position shown.



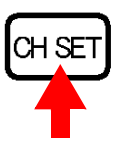
Select "**Normal**."

Move the blinking cursor to the position shown.

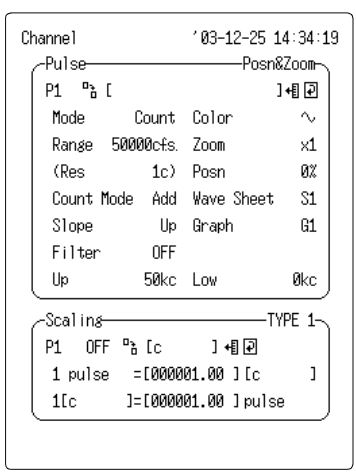


Select "**Full**."

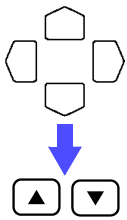
Display the Pulse Channel Screen.



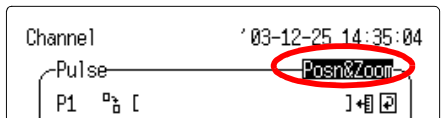
Display the Pulse Channel Screen for P1.



Set the display area to "Posn&Zoom."

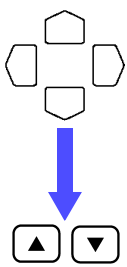


Move the blinking cursor to the position shown.

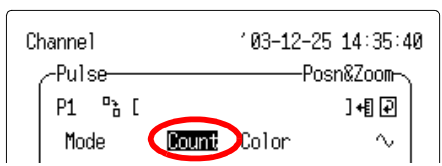


Select "**Posn&Zoom**."

Set the input type (Mode) to "Count."

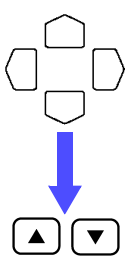


Move the blinking cursor to the position shown.

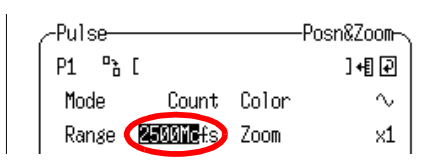


Select "**Count**."

Set the range to "2500Mcf.s.."



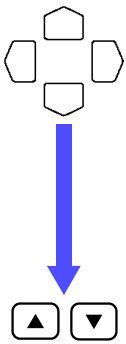
Move the blinking cursor to the position shown.



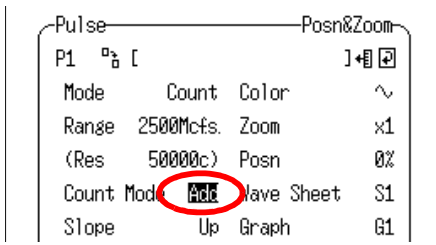
Select "**2500Mcf.s.**."

NOTE As 1 kWh is 50,000 pulses, the Memory HiLogger can measure up to a monthly total power level of 50,000 kW.

Set the count mode to "Add."

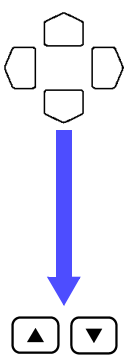


Move the blinking cursor to the position shown.

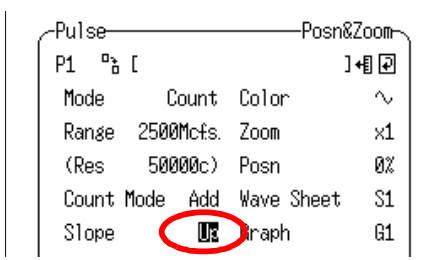


Select "**Add**."

Set the slope type to "Up."

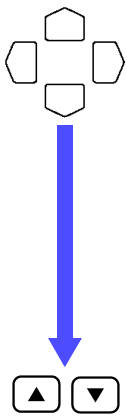


Move the blinking cursor to the position shown.

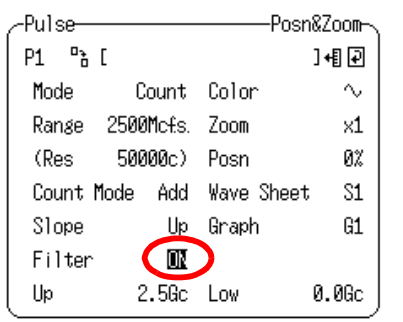


Select "**Up**."

Set the filter to "ON."



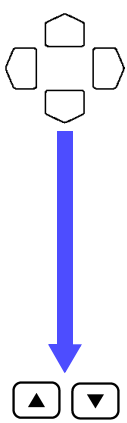
Move the blinking cursor to the position shown.



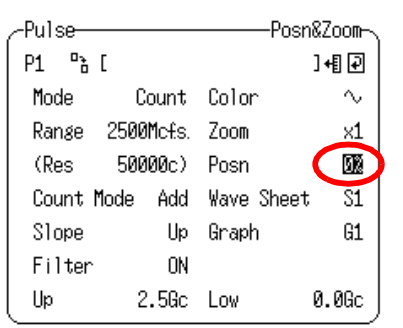
Select "**ON**."

NOTE When a mechanical contact output device is connected to the Memory HiLogger, turn the filter to "**ON**."

Set the display position to "0%."

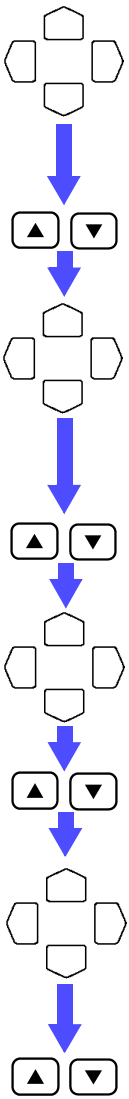


Move the blinking cursor to the position shown.

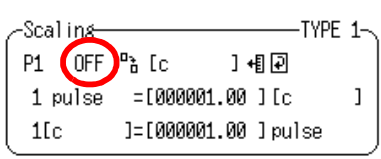


Select "**0%**."

Set the scaling.

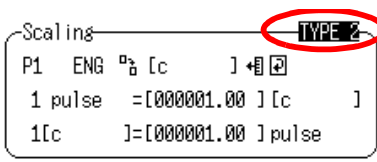


Move the blinking cursor to the position shown.



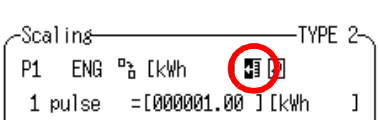
Set the display format to "**ENG**."

Move the blinking cursor to the position shown.



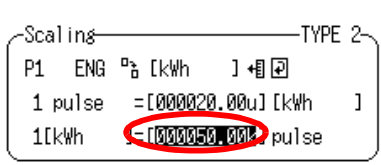
Set the scaling method to "**TYPE 2**."

Move the blinking cursor to the position shown.



Set the scaling unit to "**kWh**."

Move the blinking cursor to the position shown.



Enter the following:
1 [kWh] = [50000.00] pulse

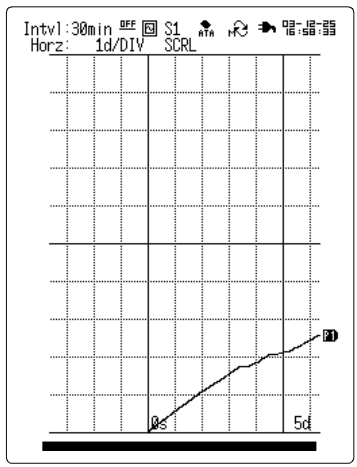
❖ See Section 5.4 "Setting Scaling" (page 86) of Instruction Manual.

Upper limit value: 50,000 kWh, Lower limit value: 0

NOTE

When scaling is selected, measurements will be read directly in kWh units.

10. Press the START /MARK key to start measurement.



Press the STOP key twice to abandon measurement while it is in progress.

11. Measurement ends when a month has elapsed.

HIOKI 8420-51, 8421-51, 8422-51 MEMORY HiLOGGER
Quick Start Manual

Publication date: February 2004 Edition 1

Edited and published by HIOKI E.E. CORPORATION
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Printed in Japan 8420E983-00

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8420E983-00 04-02H

Printed on recycled paper