

# LR5031 INSTRUMENTATION LOGGER

## Operation Manual

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LR5031B981-03 16-04H



Thank you for purchasing the HIOKI LR5031 Instrumentation Logger.

This guide introduces the logger's basic measurement procedure to first-time users.

Before using the instrument, be sure to read the Instruction Manual carefully.

# HIOKI

Read First

## 1 Confirmation

Confirm package contents, and prepare needed items.

### Logger and Accessories

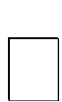
LR5031



LR6 alkaline battery  
(Pre-installed in the logger.)

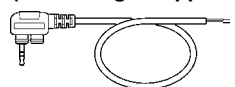


Instruction Manual



Refer to this manual for operating procedure details, or when problems occur.

LR9801 Connection Cable  
(Cable length: Approx. 1 m)

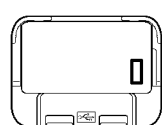


Stand



This is the logger stand. See the Instruction Manual for details.

### Option



LR5091 Communication Adapter  
(Includes LR5000 Utility Program\* CD [PC application software] and USB Cable)

Importing data to a computer requires the optional LR5091 Communication Adapter or LR5092-20 Data Collector

## 3 Settings

Display Example: Setting the recording interval to 10 minutes.

1 **SET** → Display the settings, and select the setting item.



2 **+** **-** → Configure the setting as needed.



3 **SET** → Apply the new setting contents.  
(The setting items are displayed as shown under Setting Display on page 2.)

**Stop** **REC STOP** → Hold the **REC STOP** button for two seconds while recording (while **REC** is displayed).



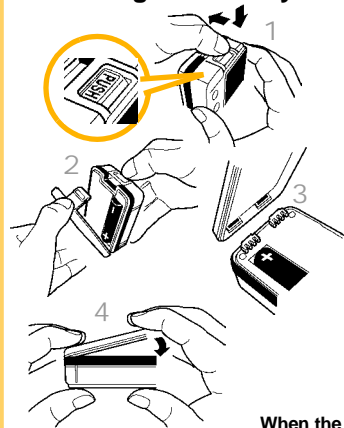
Note: Continue pressing the button until the **REC** indicator changes from a blinking to off state.

**REC** disappears when recording stops. If the stop method is set to **[OFF]**, recording stops automatically when memory becomes full.

## 2 Preparations

Install the battery and connect the cable to the logger.

### Installing the Battery



1 Press the **PUSH** tab as shown, and pull the battery cover back.

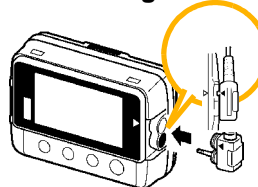
2 Install the battery as shown.

3 Align the holes in the battery cover with the projections on the back of the logger.

4 While confirming that there are no gaps, press with your fingers to close the battery cover.

When the battery is installed, the logger turns on (there is no power switch).

### Connecting a Connection Cable



Align the triangles on the plug body and in front of the cable jacks, and insert the plug securely. (Insert the protruded parts of the connecting cable into the holes of the device.)  
Correct values are not displayed unless the plug is inserted all the way in.

A fuse is built into the device to protect the internal circuit from excess input. Do not connect the device to a voltage of more than 2.5 V. The fuse will melt and the device will not be able to take measurements.  
See the instruction manual for details about connecting the cable to an object to be measured.

## 4 Recording

Before recording, install the logger and perform pre-measurement inspection.

(See the Instruction manual for details.)

### Start

From the Measurement display, hold the **REC STOP** button for two seconds.



Note: Continue pressing the button until the **REC** indicator changes from a blinking to on state.



When the blinking stops and the data count is zeroed, recording starts.

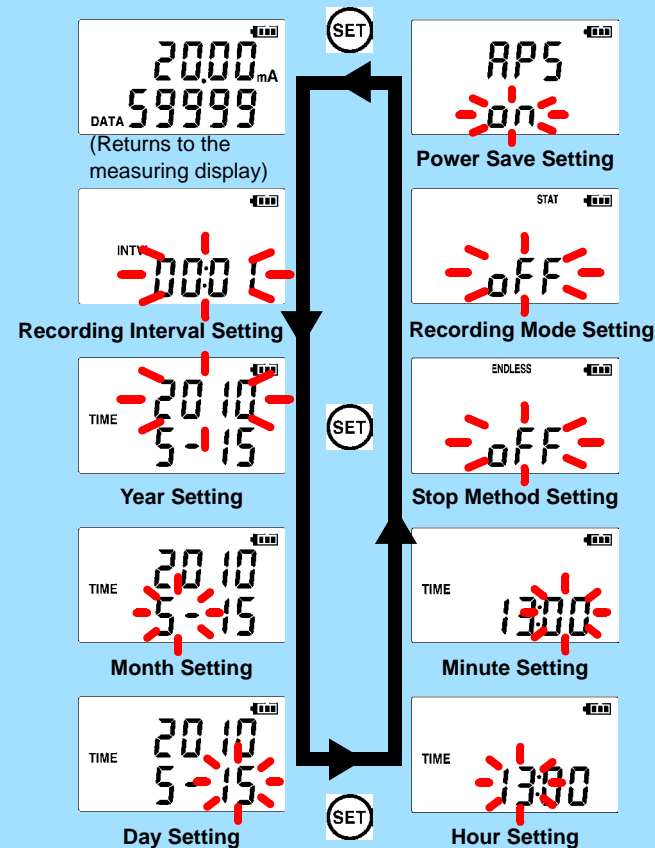


After one second, the measurement display reappears.

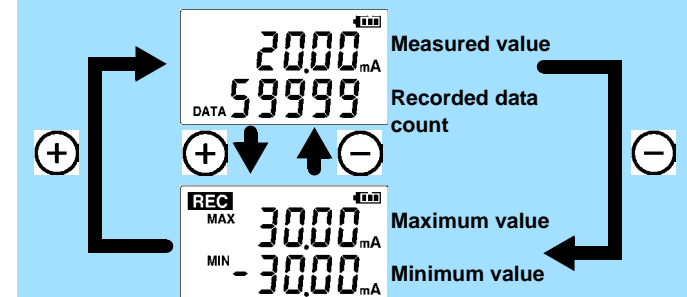


Logger memory contains the data for two recording sessions. (Be aware that old data is erased when starting recording after two recording sessions.)  
Data can be imported to a computer without stopping recording.

## Setting Display



## Measuring Display



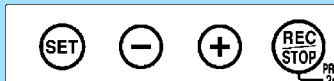
**Power Save**  
Battery life is extended when on (enabled).  
Default is on.

**Recording Mode**  
When on (statistical recording), instantaneous, maximum, minimum, and average values are recorded at each interval. (Record statistical values) Battery life is shorter.  
Default is off.

**Stop Method**  
Select what happens when memory becomes full. When on, the oldest data is overwritten (Endless Recording), and when off, recording stops (One-Time Recording).  
Default is on.

## Operating Buttons

**SET**  
Displays settings.



**(-), (+)**  
Changes Measurement display contents.  
Changes setting values on the Settings display.

**REC/STOP**  
Hold for two seconds to start/stop recording.  
From a setting display, switches to measurement display.

**Setting Display:** Displays settings (recording interval, date and time, etc.)  
**Measuring Display:** Displays recorded data (measured values, recorded data count, etc.)

## Indicators

**REC**  
Recording in progress

**AL**  
Upper/lower threshold exceeded

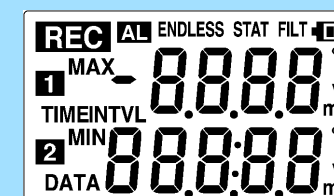
**ENDLESS**  
Stop method enabled

**STAT**  
Recording mode enabled

**MAX, MIN**  
Maximum and minimum values

**DATA**  
Recorded data count

Battery Status Indicator



## Troubleshooting

**No measured value is displayed. Displays polarity conflicting with actual current value.**  
Is the cable plug inserted all the way in?  
The measurement cable may be connected incorrectly.



Verify the correct plug orientation, and insert it as far as possible.  
If the values are not displayed despite these measures, the connection cable and logger need to be inspected and repaired.  
Please contact your dealer or Hioki representative.  
Note: The maximum and minimum values are not displayed when the recorded data count is 0.

**The display is blank.**  
Is auto power saving enabled (set to ON)?

When enabled, the display blanks after 30 seconds of operator inactivity. Press any button or send a communication signal to turn on the display.

**The [REC] indicator disappears even though recording has not been stopped.**  
Is the stop method disabled (set to OFF)?

With disabled, recording stops automatically when memory becomes full. To record continuously until stopped by the REC/STOP button, enable the stop method.  
(In this case, old data is overwritten when the memory becomes full.)

**Recorded data has disappeared.**  
Does recording restart after stopping?

Note that if recording is accidentally restarted after stopping, data recorded prior to the last recording is automatically erased.  
(The logger retains the data from both current and most recent prior recording operations.)

**To erase logger memory**  
Erase using the PC Utility program. See the Instruction manual for details.

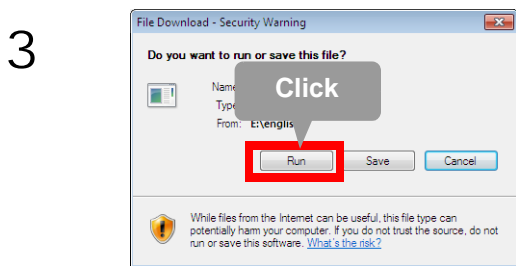
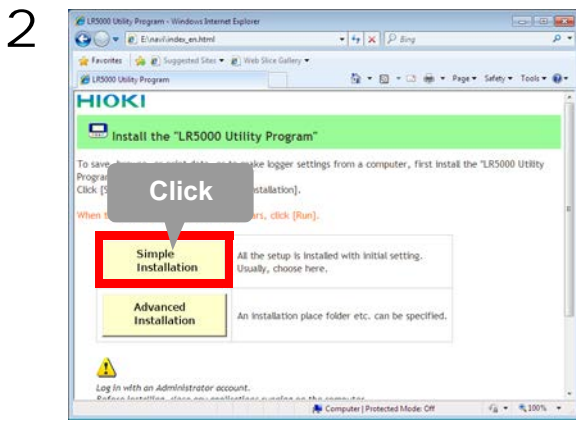
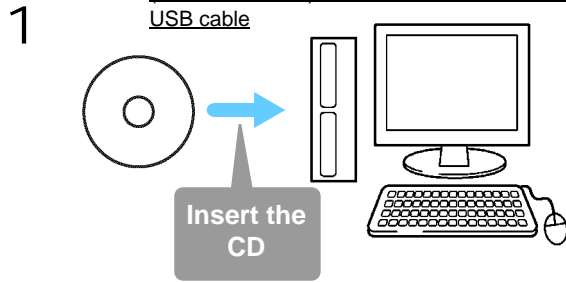
**The battery is depleted too quickly.**  
Are you using the battery originally supplied with the logger?  
Are you using a zinc-manganese battery?  
Install a new LR6 alkaline battery.

# 5 Importing and Displaying Data on a Computer

## 1 Installing the PC Application Program

Required Items: Supplied CD

(for Windows XP) LR5091 Communication Adapter, USB cable



### LR5000 Utility Program Operating Requirements

- CPU 1 GHz or faster processor clock
- RAM At least 512 MB
- OS Windows XP SP2 or later  
Windows Vista SP1 or later  
Windows 7
- Library .NET Framework 2.0/3.5
- Interface USB
- Monitor Resolution 1024 x 768 or higher
- Hard Disk At least 30 MB free space  
(Additional space is required for storing recorded data. Another 500 MB may be required if .NET Framework 2.0 or 3.5 is not yet installed.)

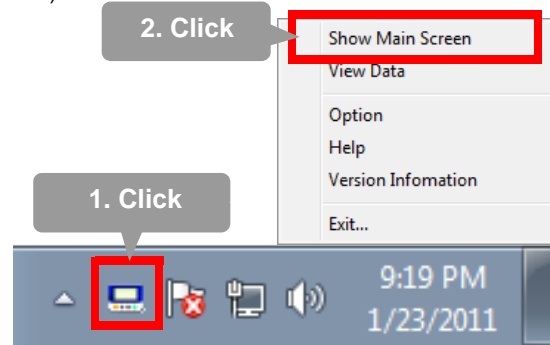
### What if the PC Utility program cannot be installed?

- Be sure that the computer meets the above operating requirements.
- Carefully read "Installing the PC Application Program" in the Instruction manual, and reinstall. Pay special attention to the following items.
  1. Be sure to log in using an Administrator account.
  2. Before installing, be sure to close any programs running on the computer.

## 2 Starting the PC Utility Program

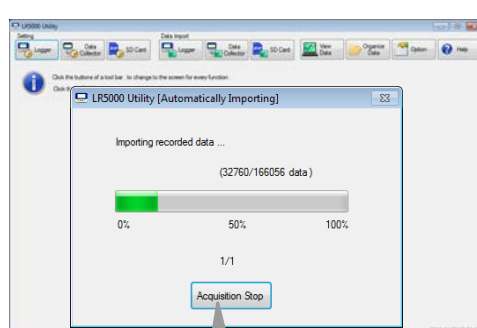
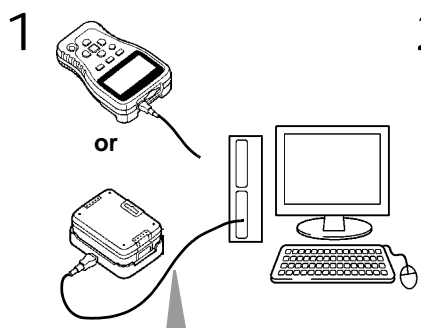
From the Windows [Start] menu, select [All Programs]-[HIOKI]-[LR5000 Utility Software]-[LR5000 Utility] to start the program.

The program starts automatically from the next Windows logon, and the icon appears in the task tray (notification area).

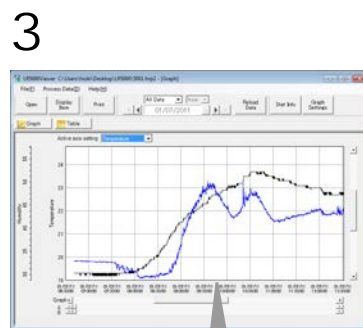


## 3 Importing (Saving) Recorded Data to a Computer, and Graph Display

Required Items: LR5091 or LR5092-20 and supplied USB cable



Data is saved to a file.



The viewer starts up automatically with a graph displayed

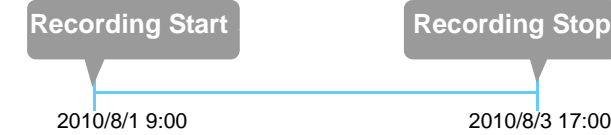
# PC Utility Program Features

## Making Detailed Settings

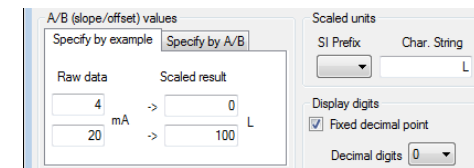
Configure settings on the LR5000 "Data Logger" series loggers, and on the LR5092-20 Data Collector. The PC utility program can access settings that cannot be accessed from the logger itself.

For example,

- Set recording start/stop method and timing to start and stop recording automatically at scheduled times (Timer Measurements).



- Measurement data can be freely scaled for display (Scaling).



- Set upper and lower thresholds so that measurements outside of the range cause [AL] (Alarm) to appear on the logger screen (Alarm Judgment).

- Add comments to measurement data.

## Processing Recorded Data

Process data imported to the computer.

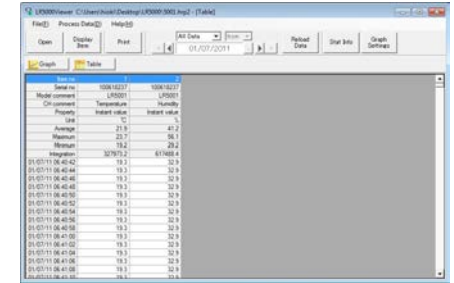
- Freely scale for display (Scaling)
- Calculate electric power easily (using clamp logger measurement values)
- Calculate energy cost easily (using clamp logger measurement values)
- Calculate operating rate
- Integration
- Calculate dew-point temperature (using temperature/humidity logger measurement values)

## Organizing Recorded Data

Sort data imported to the computer.

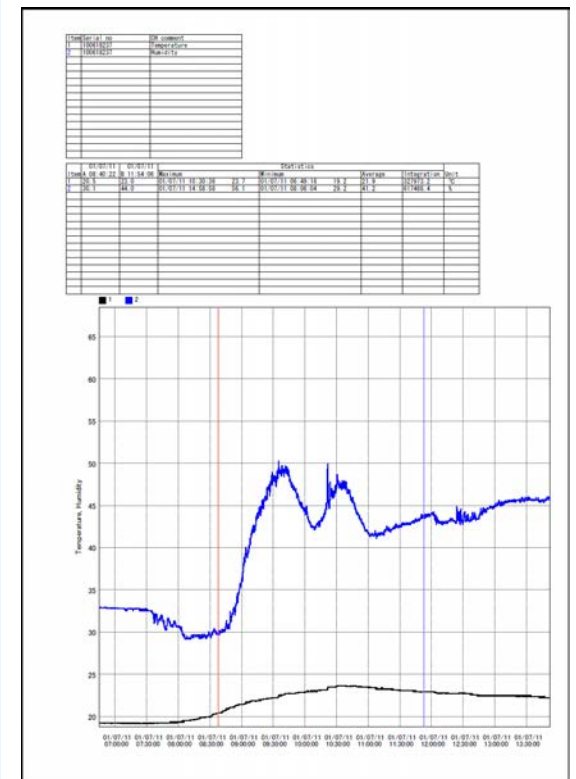
- Copy (files between folders)
- Move (selected files between folders)
- Delete (selected files)
- Combine (multiple recording files into one, and save with new file name)
- Extract (data for a specified period, and save with new file name)

## Displaying Recorded Data in a Table



## Printing Recorded Data

Example Graph Printout



See the Instruction manual for details.

