LR5011
TEMPERATURE LOGGER
Operation Manual

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HIOKI

Read First

Thank you for purchasing the HIOKI LR5011 Temperature 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.

1 Confirmation

Confirm package contents, and prepare needed items.

Logger and Accessories

LR5011
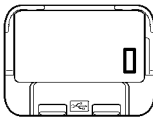
LR6 alkaline battery
(Pre-installed in the logger.)

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

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

Option

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

Temperature Sensor
(Please use Hioki-brand options. See the Instruction Manual.)

Example: LR9604

■ 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.

INTV **00:01**

1 SET ➡
Display the settings, and select the setting item.

2 (+) (−) ➡
Configure the setting as needed.

INTV **10:00**

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

Stop

REC **23.0℃**
DATA **50000** ➡ **23.0℃**
DATA **50000**

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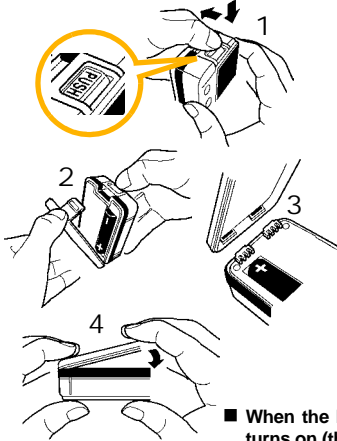
1 Press the PUSH tab as shown, and pull the battery cover back.

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 Temperature Sensor
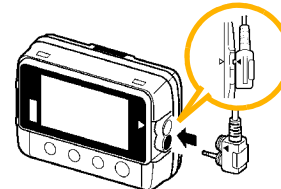
Align the triangles on the plug body and in front of the sensor jacks, and insert the plug securely. (Insert the protruded parts of the connecting cable into the holes of the device.)

■ Temperature sensors are available as options. Select according to your application.

4 Recording

Before recording, install the logger and perform pre-measurement inspection.
(See the Instruction manual for details.)

Start

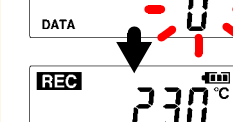REC **23.0℃**
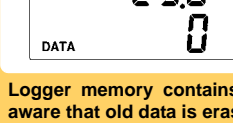DATA **0**

REC **0**
DATA

REC **23.0℃**
DATA **0**

From the Measurement display, hold the REC/STOP button for two seconds.
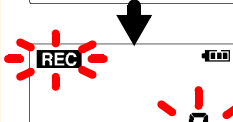
Note: Continue pressing the button until the [REC] indicator changes from a blinking to on state.
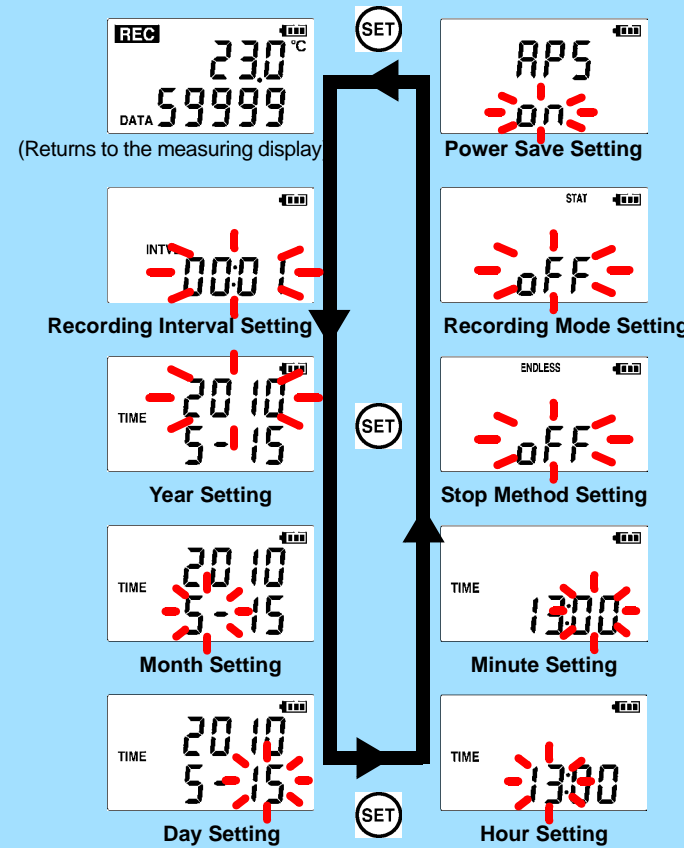
When the blinking stops and the data count is zeroed, recording starts.
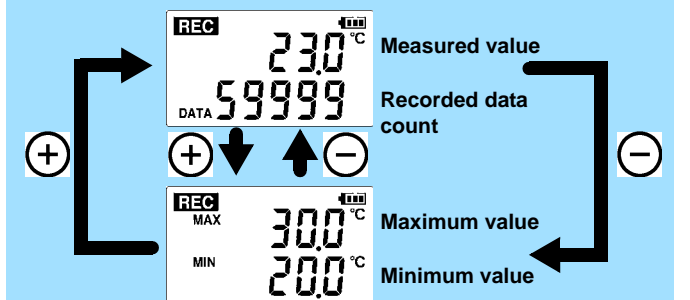
After one second, the measurement display reappears.

■ 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

REC **23.0℃**
DATA **59999**
(Returns to the measuring display)

INTV **00:01**
Recording Interval Setting

TIME **20:10** **5-15**
Year Setting

TIME **20:10** **5-15**
Month Setting

TIME **20:10** **5-15**
Day Setting

APS on
Power Save Setting

STAT **oFF**
Recording Mode Setting

ENDLESS **oFF**
Stop Method Setting

TIME **13:00**
Minute Setting

TIME **13:00**
Hour Setting

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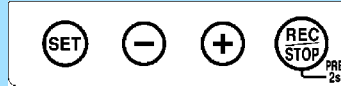Default is on.

■ **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.

Measuring Display

REC **23.0℃**   Measured value
DATA **59999**   Recorded data count

REC MAX **30.0℃**   Maximum value
MIN **20.0℃**   Minimum value

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
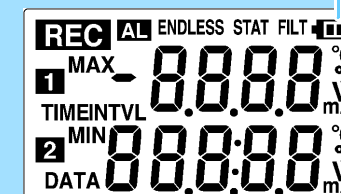
STAT
Recording mode enabled

MAX, MIN
Maximum and minimum values

DATA
Recorded data count

Battery Status Indicator

REC AL ENDLESS STAT FILT
1 MAX **-8.8.8.8** ℃%mA
TIMEINTVL
2 MIN **8.8:8.8** ℃%mA
DATA

Troubleshooting

■ **No measured value is displayed.**
Is the sensor plug inserted all the way in?
Verify the correct plug orientation, and insert it as far as possible.
If the values are not displayed despite these measures, the sensor 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.

- - - ℃
DATA **0**
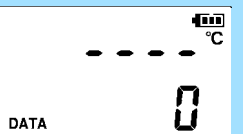
■ **The display is blank.**
Is auto power saving enabled (set to ON)?
When enabled, the display blanks after 30 seconds of operator inactivity.
Press any button or send a communication signal to turn on the display.

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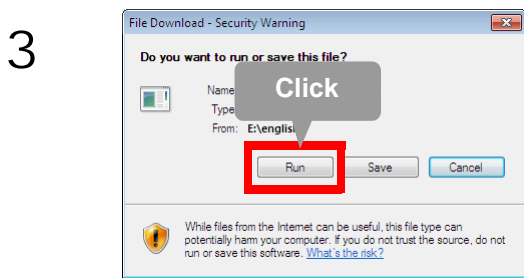
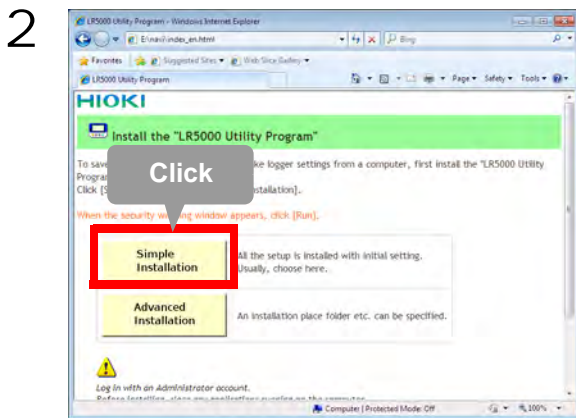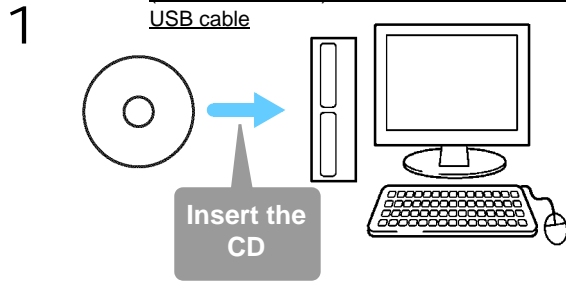■ **The battery is depleted too quickly.**
Are you using the battery originally supplied with the logger?
Are you using a zinc-manganese battery?
Install a new AA-size (LR6) alkaline battery.

5 Importing and Displaying Data on a Computer

1 Installing the PC Application Program

Required Items: Supplied CD
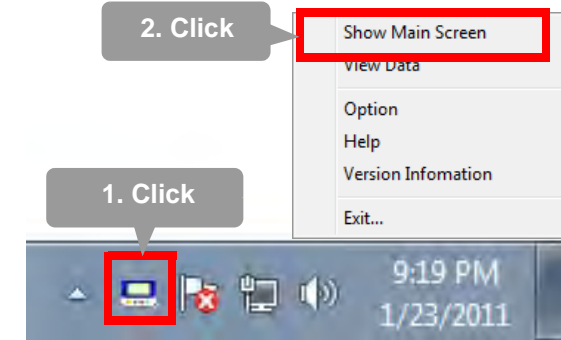(for Windows XP) LR5091 Communication Adapter, USB cable

1

Insert the CD

2

HIOKI

Install the "LR5000 Utility Program"

Simple Installation — All the setup is installed with initial setting. Usually, choose here.

Advanced Installation — An installation place folder etc. can be specified.

Click

Log in with an Administrator account.

3

File Download - Security Warning

Do you want to run or save this file?

Click

Run   Save   Cancel

While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the risk?

■ 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 × 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.

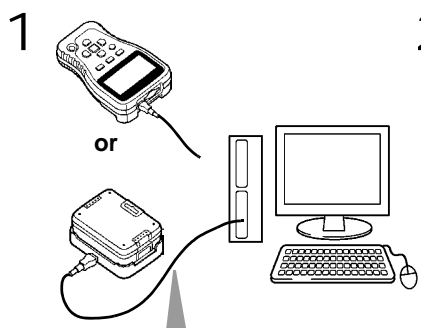## 2 Starting the PC Utility Program

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).
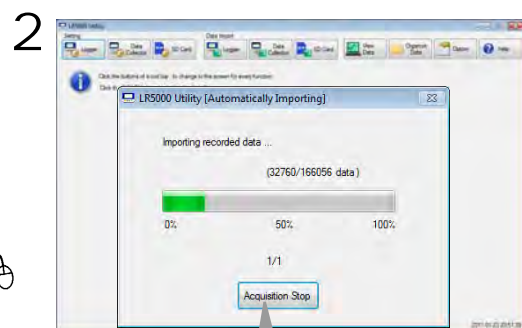
2. Click → Show Main Screen

View Data
Option
Help
Version Infomation
Exit...

1. Click

9:19 PM
1/23/2011

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

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

1

or

Connect to the computer via USB cable

2

LR5000 Utility [Automatically Importing]

Importing recorded data ...

(32760/166056 data)

0%   50%   100%

1/1

Acquisition Stop

Data importing begins automatically

Data is saved to a file.

3
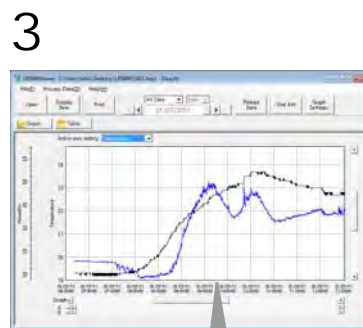
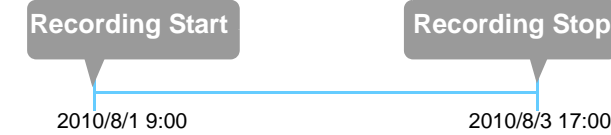The viewer starts up automatically with a graph displayed

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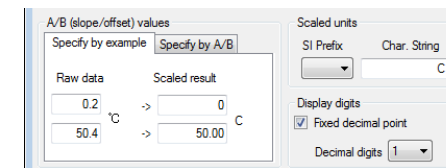# PC Utility Program Features

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).**

Recording Start	Recording Stop
2010/8/1 9:00	2010/8/3 17:00

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

A/B (slope/offset) values

Specify by example Specify by A/B

Raw data	Scaled result
0.2 ℃ →	0 C
50.4 →	50.00

Scaled units
SI Prefix   Char. String
C

Display digits
☑ Fixed decimal point
Decimal digits 1

■ **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 duty cycle**
■ **Integration**
■ **Calculate dew-point temperature (using temperature/humidity logger measurement values)**

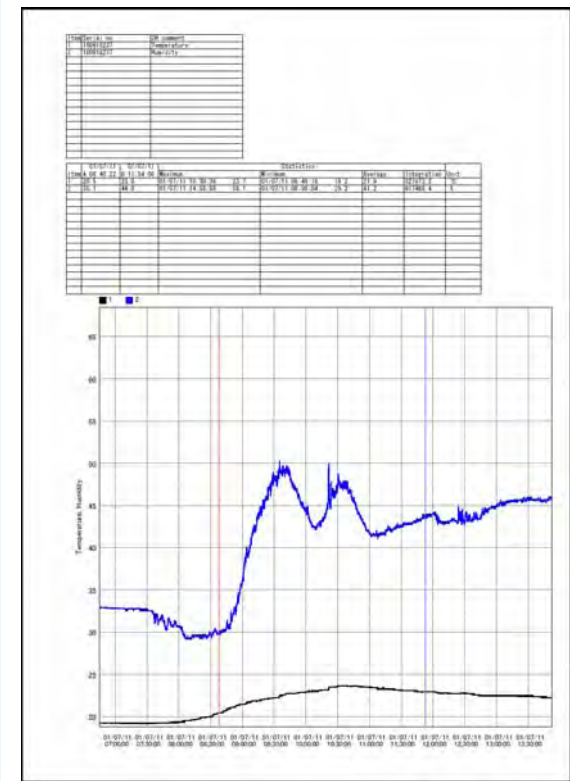## Organizing Recorded Data

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
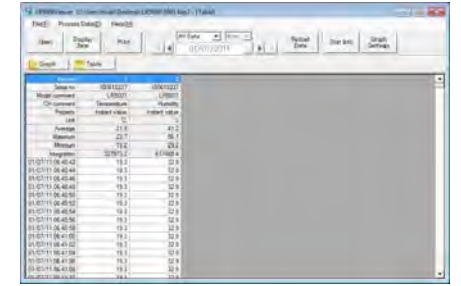
Printing Recorded Data

Example Graph Printout

■ See the Instruction manual for details.