



Compact, 2-channel logging modules

For the Wireless Logging Station LR8410-20

# WIRELESS MINI LOGGER SERIES

Data Loggers



LR8410-20

Pulse	Load/leakage current
Humidity	Voltage/ temp

Scheduled for release in Spring 2015

*Measure more than ever with our expanding lineup!*

## Effortless Data Logging

- Clutter-free wireless connection
- Compact, 2-channel modules
- Full lineup supports a wide variety of applications

*Scheduled for release in Spring 2015*

### Collect data on your tablet!

Use your tablet\*, smartphone\*, or PC via Bluetooth® to collect data from Wireless Mini Loggers. (\*Android™ only)  
 Transfer data even during recording, or check data and fluctuating waveforms on the spot.



Countries and regions where wireless operation is currently supported: Japan, U.S.A., Canada, EU, Norway, Switzerland, Turkey, Russia, Vietnam, and India

Countries and regions where wireless operation will be supported soon: Singapore, Thailand and Indonesia

## Clutter-free Wireless Connection

Install the Wireless Mini Logger near the measurement target. Send the measurement data to the LR8410-20 via Bluetooth® wireless technology. Only minimal wiring is required, making installation simple and keeping the area neat and organized.

Note: LR8410-20 required for data collection.

### Control up to 7 logging modules

Mix-and-match up to 7 logging modules to measure various data on the same time axis. You can also integrate the 15-channel Hioki LR8510 or LR8511 wireless modules.

### Communications range: line-of-sight up to 30 m

Since data can be sent over line-of-sight distances of up to 30 m, the LR8410-20 can play a useful role collecting measurement data in locations where it would be difficult to run wiring.

### Simple operation

Use the LR8410-20's built-in "Quick Set Function" to configure wireless settings.

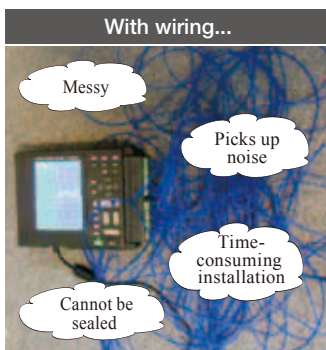


### Data collection with the LR8410-20

Acquire data via wireless communication with the Wireless Logging Station LR8410-20.

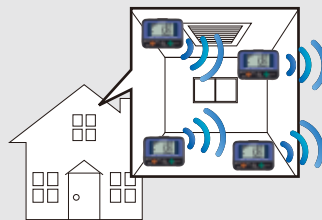
### Communication drop? No problem

If communications are interrupted, measurement data for that period of time is stored in the logging modules. This data is resent once communications are restored, allowing the measurement data to be safe and secure.



## Solve these problems with wireless technology

Easy to install in difficult-to-reach places such as the ceiling or under the floor.



Because wiring is minimal,

- the area is neat and organized
- less noise is picked up

Exterior wiring is not necessary, so you can close windows and doors to maintain airtightness.



Attach onto moving objects (vehicles, machines, etc.).

## Compact 2-channel Modules

1/4th the volume of the Multi-channel Logging Modules LR8510/ LR8511\*. Smaller and thinner, it can be installed in narrow spaces that couldn't be reached before. Plus, with 2 channels per module, it's a breeze to perform measurements on both channels in multiple locations. (\*The LR8513, LR8515 is 1/3 the size compared to the LR8510/ LR8511.)

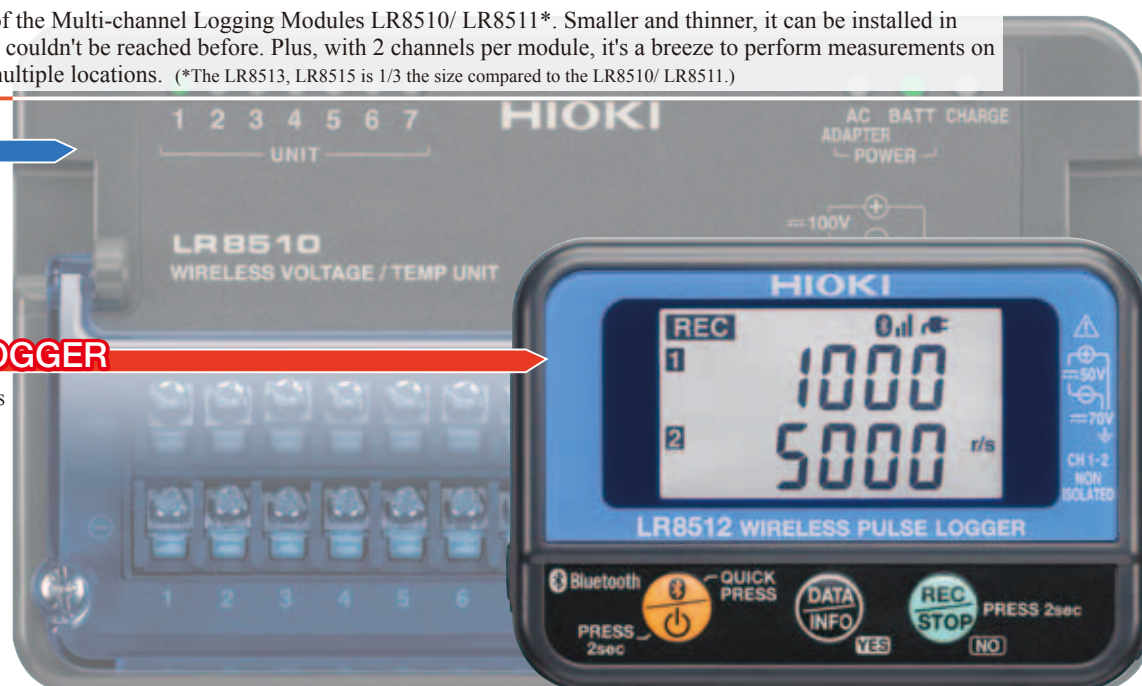
### LR8510/LR8511

For more extensive jobs  
150W×90H×56D mm  
(5.91W×3.54H×2.20D inches)  
No. of channels: 15 ch

### WIRELESS MINI LOGGER

For simple, 1- or 2-channel applications  
85W×61H×31D\* mm  
(3.35W×2.40H×1.22D inches)  
No. of channels: 2 ch  
\*LR8513/ LR8515: 85W×75H×38D (mm).

<Comparison of actual sizes>



# Full Lineup Supports a Wide Variety of Applications

Now also available - pulse and current loggers in addition to voltage and temperature modules. Measure multiple channels of voltage and temperature fluctuations, flow, or electric power on the same time axis with ease.

## WIRELESS PULSE LOGGER LR8512

Air conditioning (flow rate), automobiles (flow rate, vehicle speed), cogeneration (flow rate)



For pulse totalization and measuring logical ON/OFF signals or revolutions

No. of input channels	2 channels (common GND)
Measurement modes	Pulse (Totalization/Instant), no. of revolutions, logic (Records an 1/0 for each recording interval)
Measurement ranges (Resolution)	Totalization: 1000M pulse f.s. (1 pulse) No. of revolutions: 5000/n[r/s]f.s. (1/n[r/s]) *n is the number of pulses, 1 to 1000, per revolution.

Supported input format	Non-voltage "a" contact (always-open contact point), open collector, or voltage input (0 to 50 V)
Recording intervals	0.1 to 30 sec, 1 to 60 min, 16 selections
Recording modes	Instantaneous value
Dimensions	85W×61H×31D mm (3.35W×2.40H×1.22D in)
Weight	95 g (Not including the battery)



## WIRELESS CLAMP LOGGER LR8513

PV maintenance, automobile tests, forklifts, railroads, equipment maintenance



For simple power measurement using voltage and power factor data as well as AC and DC load current and AC leak current measurement

No. of input channels	2 channels (common GND)
Measurement items	AC load current, DC load current AC leak current (using current sensor)
Effective value calculation	Software calculates the true RMS value
Measurement ranges	AC500.0 mA to 2000 A (By current sensor) DC10.00 A to 2000 A (By current sensor) *Current and leak current that occur intermittently cannot be measured.

Measurement accuracy	±0.5% rdg. ±5 dgt. (DC, AC 50/60 Hz) *Add the sensor's accuracy when the current sensor is connected
Recording intervals	0.5 to 30 sec, 1 to 60 min, 14 selections
Recording modes	Instantaneous value, average value
Dimensions	85W×75H×38D mm (3.35W×2.95H×1.50D in)
Weight	130 g (Not including the battery)



## WIRELESS HUMIDITY LOGGER LR8514

Environmental testing, construction, factories, storage, agricultures



Convenient for recording the surrounding temperature and humidity when using the LR8410-20 to conduct research and experiments

No. of input channels	2 ch for temperature + 2 ch for humidity (2 sensors can be attached)
Measurement items	Temperature, humidity
Recording intervals	0.5 to 30 sec, 1 to 60 min, 14 selections

Recording modes	Instantaneous value
Dimensions	85W×61H×31D mm (3.35W×2.40H×1.22D in)
Weight	95 g (Not including the battery)



Scheduled for release in Spring 2015

## WIRELESS VOLTAGE/ TEMP LOGGER LR8515

Various tests for electronics/automobiles/transportation, PV maintenance



Supports voltage input and thermocouple types K and T

No. of input channels	2 ch (select voltage or thermocouple for each channel)
Measurement items	Voltage/Thermocouple (K, T)
Input terminals	M3 screw type terminal block (2 terminals per channel)
Measurement ranges	Voltage: 50 mV/500 mV/5 V/50 V Thermocouple: 1000°C (1832°F)

Recording intervals	0.1 to 30 sec, 1 to 60 min, 16 selections
Recording modes	Instantaneous value
Dimensions	85W×75H×38D mm (3.35W×2.95H×1.50D in)
Weight	140 g (Not including the battery)

\*Thermocouples are not included with the instrument.



Scheduled for release in Spring 2015

**Continuous operating time (Battery)** \*Use of the AC adapter is recommended when recording data over an extended period of time.

	WIRELESS PULSE LOGGER LR8512	WIRELESS CLAMP LOGGER LR8513
When measuring at the fastest recording interval, in real-time	5 day (recording interval 0.1 secs)	5 day (with instant value recording, recording interval 0.5 secs)
Recording interval of 1 sec, Bluetooth® ON	14 days	10 days (for instant value recording)
Recording interval of 1 min, Bluetooth® OFF	2 months	3 months (for instant value recording)

Shared specifications

- Accuracy guarantee: 1 year.
- Communication: Bluetooth®2.1 + EDR communication
- Communications range: 30 m, line-of-sight
- Internal memory: Nonvolatile memory (Flash memory)
- Storage capacity: 500,000 data items for each channel
- Standard compliance: Safety EN61010, EMC EN61326 class A/EN61000-3-2 /EN61000-3-3
- Countries where wireless certification has been acquired: Japan, U.S.A., Canada, EU, Norway, Switzerland, Turkey, Russia, Vietnam, and India
- Vibration endurance: JIS D 1601:1995 5.3(1), Category 1: Vehicle, Condition: Category A equiv.
- Operating temperature and humidity: Temperature: -20 to 60 °C (-4 to 140 °F), Humidity: 80%rh or less (non-condensing)  
(Depends on battery and current sensor specifications when they are in use)
- Power supplies: AC Adapter Z2003 (sold as a separate option), AA alkaline batteries × 2, 5 to 13.5 VDC external power source

## Other Characteristics

### Measure even in high-temperature environments

The operating temperature range is -20 to 60 °C (-4 to 140 °F). Even in high temperatures, you can measure with peace of mind. (Depends on the operating temperature ranges for the battery and current sensor when they are in use)

### Three-way power that can be selected to match the location

Power with the AC adapter (sold separately), AA alkaline batteries (2), and an external power supply (such as a power supply from 5 to 13.5 VDC or USB). (Power supply from USB requires a converter cable. Please inquire with your local Hioki distributor.)

### Built-in Bluetooth® wireless technology

Bluetooth® is a wireless technology standard that uses frequency hopping to avoid interference from wireless LAN or cordless telephones and also has little effect on peripherals.

### Data can be collected even inside a case

Even when you put the product in a plastic case or vinyl bag to protect it from dust or water, the wireless connection is not cut off and data can continue to be collected.

### Built-in average value recording mode

Record the average value for each recording interval at the maximum sampling rate. (Built-in to the LR8513)

### High speed sampling at 0.1 second

The recording interval can be as fast as 0.1 second, enabling you to clearly grasp even small variations. (LR8513/ LR8514: 0.5 sec.)

## Models and Options

### WIRELESS MINI LOGGERS

The AC adapter is not bundled.

WIRELESS PULSE LOGGER LR8512

WIRELESS CLAMP LOGGER LR8513








WIRELESS HUMIDITY LOGGER LR8514.....Scheduled for release in Spring 2015

WIRELESS VOLTAGE/TEMP LOGGER LR8515..Scheduled for release in Spring 2015

The Wireless Logging Station LR8410-20 is required to collect and forward to a PC the data recorded by the Wireless Mini Logger. One LR8410-20 can control up to 7 logging modules. Mix-and-match modules as needed.

Accessories: CD-R (Instruction Manual, Logger Utility) × 1, Measurement Guide × 1, Caution for Using Radio Waves × 1, AA alkaline batteries (LR6) × 2 Note: Only included with the LR8512: Connection Cable L1010 × 2

Shared options	LR8512 only	LR8514 only : Humidity sensors
 <p><b>AC ADAPTER Z2003</b> 100 to 240 VAC, 50/60Hz</p>  <p><b>MAGNETIC STRAP Z5004</b></p>	 <p><b>CONNECTION CABLE L1010</b> 1.5 m (4.92 ft) Bundled and also available for additional purchase</p>	<p><b>HUMIDITY SENSOR Z2010</b> 50 mm (0.16 ft) Scheduled for release in Spring 2015</p> <p><b>HUMIDITY SENSOR Z2011</b> 1.5 m (4.92 ft) Scheduled for release in Spring 2015</p>

LR8513 only : Current sensors				
<p><b>AC load current</b></p>  <p><b>CLAMP ON SENSOR CT6500</b> φ46 mm, AC 500A, cord length 3 m (9.84 ft)</p>	<p><b>AC load current</b></p>  <p><b>CLAMP ON SENSOR 9669</b> φ55 mm, AC 1000A, cord length 3 m (9.84 ft)</p>	<p><b>AC load current</b></p>  <p><b>CLAMP ON SENSOR 9695-02</b> φ15 mm, AC 50A Requires the Connection Cable 9219</p>	 <p><b>CONNECTION CABLE 9219</b> For connecting the 9695-02, cord length 3 m (9.84 ft)</p>	
<p><b>AC leak current</b></p>  <p><b>CLAMP ON LEAK SENSOR 9657-10</b> φ40 mm, AC 10A, cord length 3 m (9.84 ft)</p>	<p><b>AC leak current</b></p>  <p><b>CLAMP ON LEAK SENSOR 9675</b> φ30 mm, AC 10A, cord length 3 m (9.84 ft)</p>	<p><b>AC/DC load current</b></p>  <p><b>CLAMP ON AC/DC SENSOR CT9691-90, CT9692-90, CT9693-90</b> CT9691-90: φ35 mm, AC/DC 100A, cord length 2 m (6.56 ft) CT9692-90: φ33 mm, AC/DC 200A, cord length 2 m (6.56 ft) CT9693-90: φ55 mm, AC/DC 2000A, cord length 2 m (6.56 ft)</p>		

### Also Available : Multi-Channel Logging Modules

The Wireless Logging Station LR8410-20 is required to collect and forward to a PC the recorded data. One LR8410-20 can control up to 7 logging modules. (Can be mixed with Wireless Mini Loggers.)

- Control up to 105 channels with the LR8410-20 by connecting up to 7 modules
- Max. 100 ms sampling on all channels
- Power with the AC adapter, battery, or DC power supply (10 to 28 VDC)



**WIRELESS VOLTAGE/TEMP UNIT LR8510**  
2 terminals M-3 mm screw type, 15 ch  
For measuring voltage or temperature with thermocouples  
**AC adapter included**



**WIRELESS UNIVERSAL UNIT LR8511**  
Push-button type terminals, 15 channels  
For measuring voltage/ temperature (with thermocouples or RTDs)/ resistance/ humidity  
**AC adapter included**

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