Measurement units

WIRELESS VOLTAGE/TEMP UNIT LR8510







Communication range: 30 m, line of sight

Number of units: Up to 7

(including mixture of measurement units and wireless loggers)

Measurement units and wireless loggers

		LR8510	LR8511	LR8512	LR8513	LR8514	LR8515
No. of input channels		15	15	2	2	2	2
Input type	Voltage	 ✓ 	~				 ✓
	Temperature	v	 ✓ 			~	v
	Humidity		 ✓ 			~	
	Resistance		 ✓ 				
	Pulse			V			
	Current				~		



Wireless data transmission for superior ease of use



The communications range between the LR8410 and measurement units/wireless loggers is 30 m (line of sight). The communications range may be reduced if there are obstructions (such as walls or metallic shielding) between the devices. In addition, radio wave intensities, which are indicated with the antenna-like indicators, vary depending on units even while these units are operating in the same environment.

1. Making the wiring process faster while minimizing costs

Have you dealt with problems like these?

Recording a large number of channels means you'll have to deal with a mess of wires. In addition to increasing the cost of connection cables and thermocouples, long wires make setup more time-consuming.



Long wires are used to connect the instrument to the measurement locations.

Resolved with wireless data transmission

The lack of wiring around the instrument makes for a clean installation. Minimal wiring means lower costs and faster setup.



Data is sent wirelessly from measurement units to the LR8410.

2. Make measurements where it would not be practical to wire equipment directly.

Have you dealt with problems like these?

Running a large number of thermocouples from a logger to the ceiling or crawlspace would mean a wiring nightmare.

Data can't be viewed during measurement, and data download is virtually impossible.

Logging for extended periods requires extra power, something traditional loggers can't support.



Monitoring the temperature near wall-mounted air-conditioners, in high places such as roof spaces, or in crawl spaces

Resolved with wireless data transmission

There's no need to connect measurement units to the Wireless Logging Station LR8410 with long wires. Instead, you can install the logging module in an attic or crawl space and check data from the LR8410's screen while measurement is ongoing.



Measurement units can operate on batteries in locations where power is not available. LR8510/LR8511: Battery pack LR8512 to LR8515: LR6 alkaline batteries





Easy wireless setup



QUICK SET easy setup screen (shown when the Wireless Logging Station is turned on) Logging modules within wireless range are automatically detected.

If no logging modules have been registered, the Quick Set screen is displayed when the LR8410 is turned on, and the instrument automatically detects any logging modules that are within communications range. Detected units are assigned to No. 1 through No. 7, and the registration process is completed. If one or more units have already been registered, the Wireless Logging Station automatically initiates a connection with the registered modules.



The LR8410 features Hioki's Quick Set function. Since measurement units can be registered simply by following the Unit

Registration Guide, even first-time users can start measurement right away. It's also easy to configure settings when adding

the LR8410 and detected units is good.

You can also assign a name to each unit for ID purposes. This feature helps you recognize where units are located when registering multiple units.

3. Make measurements of interior conditions from the outside, with the door closed.

Have you dealt with problems like these?

We can't close the windows or doors due to all the wires. As a result, there's a gap in the gasket, and the vehicle cannot be sealed.



Long wires are used to connect the instrument to the measurement locations.

4. Synchronize measurement data

Have you dealt with problems like these?

Installing individual loggers on test equipment means each set of measured data is on its on time line, making it hard to compare the data with respect to a single time axis.

Conventional data loggers are sometimes too bulky and difficult to fit into test equipment.



Traditionally, data loggers are installed on each device

Resolved with wireless data transmission

Wires do not protrude outside the vehicle, allowing the windows and doors to be closed so that the vehicle can be tested under airtight conditions.



Data is sent wirelessly from measurement units and wireless loggers to the LR8410.

Resolved with wireless data transmission

You can observe measurement results from multiple pieces of experimental equipment as part of the same time series. Logging modules are small enough to fit almost anywhere.



Applications in diverse fields

Introducing three-way power, including extended measurement on battery power!

AC adapter, battery, or DC power supply

Measurement units or wireless loggers can operate on a rechargeable battery pack or alkaline batteries, respectively, close to the measurement target, enabling their use even in locations where AC power is not available.



Continuous operating time (LR6 Alkaline battery)

Recording intervals	LR8512	LR8513	LR8514	LR8515
0.1 sec *1	Approx.	Approx.	Approx.	Approx.
	5 day	5 day	5 day	2 day
1 sec	Approx.	Approx.	Approx.	Approx.
	7 days	7 days	7 days	4 days
1 min	Approx.	Approx.	Approx.	Approx.
	10 days	10 days	10 days	10 days

*1LR8513, LR8514: 0.5 sec

Continuous operating time (BATTERY PACK Z1007)

Recording intervals	LR8510/LR8511
100 ms	Approx. 24 hours
1 min	Approx. 120 hours

*Use of the AC adapter is recommended when recording data over an extended period of time. (The Wireless Logging Station LR8410 operates using an AC adapter.)

Measurement units and wireless loggers have an operating temperature range of -20°C to 60°C.

Measurement units and wireless loggers can be used with confidence and peace of mind in hot environments such as the interior of a car during the summer as well as in coldweather testing in the subzero temperatures of winter.



*The temperature range for recharging the Z1007 Battery Pack is 5°C to 35°C. For the operating temperature of the battery pack, batteries or current sensors, please refer to the specifications of each respective device.

Ensuring a safe measuring environment by closing doors

Distribution panels and control panels can be measured and data recorded safely by placing a measurement unit inside the enclosure, closing the door, and placing the LR8410 outside the enclosure.

Protect

important data



Inside the distribution panel



Measurement unit

loses power Wireless communica-

tions are interrupted

Wireless Logging Station

loses power

Outside the distribution panel

Ensure peace of mind even in the event of a power outage or signal disruption.

Data is protected by a battery and backup function!

If the power goes out during measurement

If the Wireless Logging Station loses power

If the start backup setting is enabled, the instrument will resume measurement automatically when power is restored. If data is saved in real time to the SD memory card, the instrument's built-in high-capacity capacitor will maintain power until all data has been downloaded, making it extremely unlikely that data will be lost or the file system corrupted. Additionally, if a battery is installed while operating with the AC adapter, the logging station will automatically switch to battery power in the event of an outage.

If the measurement unit or wireless logger loses power

When power is restored, measurement will pick up where it left off. (Data for the outage period is assumed to have been lost.) The device will automatically switch power supplies if you install a battery pack (LR8510/LR8511) or LR6 alkaline batteries (LR8512 to LR8515) while using an AC adapter.

If communication is temporarily interrupted

Measurement units and wireless loggers have built-in buffer memory so that measurement data can be saved if communication is temporarily disrupted. This data is resent once communication is restored, allowing the measurement data to be stored in the Wireless Logging Station. For example, if 15 channels of data are measured at a recording interval of 1 second, data integrity can be preserved throughout a communication outage of up to about 72 minutes. Additionally, alarms can be output and emails sent to notify the operator in the event that communication is interrupted or the logging module's remaining battery life is low.

*Number of data points that can be stored in the internal memory: When recording n channels, (65,536/n) data points *Data collected using the logger utility is not restored during measurement. Load restored data that has been saved to an SD memory card or other media with the instrument.

Remote control from a computer via the HTTP/FTP server function



LAN network



Download and automatically send data files and control instrument operation remotely without the need to install special application software on the computer.

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Data acquisition via FTP	Download data files from the instrument's internal buffer memory, SD memory card, and USB memory stick to a computer. Note: Waveform data cannot be downloaded from internal memory while measuring.
Data transfer via FTP	Data files stored on the Wireless Logging Station's SD memory card or USB memory stick are automatically sent to an FTP server regularly while measurement is in progress or after measurement is complete.
Get notifications via E-mail	The Wireless Logging Station can send an e-mail message to a network-connected computer or mobile phone when a communica- tions error occurs, when the any of the device's remaining battery life runs low, when the media or the internal memory is full, when a stop trigger occurs, and when an alarm occurs. E-mail messages can also be sent on a regular basis.
Remote control through HTTP server function	Using a Web browser, you can monitor screens and operate the in- strument remotely, including to configure settings and download data. You can also perform configuration and measurement tasks using communications commands. Note: Waveform data cannot be downloaded from internal memory while measuring.

Recording data in real time on a computer Data collection software "Logger Utility"

By connecting a computer to the LR8410 using the instrument's USB or LAN interface, you can observe data in real time as it is recorded and scroll backwards through past waveform data.

Recording data in real time on an SD memory card

Waveform data collected wirelessly from measurement units and wireless loggers is recorded by the LR8410 on an SD memory card or USB flash drive at an interval of about 1 minute. (If the recording interval is longer than 1 minute, data is saved at the recording interval.)

Replace storage media during real-time recording

Storage media can be switched without stopping measurement. When the new media is inserted, any data remaining in the instrument's internal buffer memory is saved as a separate file.

Note: Although USB memory devices enable real-time saving of data, for more reliable data protection we recommend use of Hioki SD Memory Cards, which are guaranteed to work with the instrument, for real-time saving of data.

Maximum recording time

Recording 2 units (30 analog) (no alarm output or waveform processing)

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Recording intervals	100 ms	200 ms	500 ms	1 s	2 s	5 s	10 s
LR8410 Internal memory(16 MB)	7h 46m	15h 32m	1d 14h 50m	3d5h40m	6d 11h 20m	16d4h21m	32d8h43m
SD Memory Card Z4001(2 GB)	41d 10h 12m	82d 20h 24m	207d 3h 1m	"★"	"★"	"★"	" × "

*Use only Hioki SD Memory Cards that are guaranteed to operate with the Wireless Logging Station for continuous long-term recording.

*Maximum recording time is inversely proportional to number of recording channels.

*Because the header portion of waveform files is not included in capacity calculations, expect actual maximum times to be about 90% of those in the table.
***" exceeds 1 year.

LR8410 Link

Use the Wireless Logging Station LR8410 to collect data from LR8410 Linkcompatible products in real time.

Easy scaling

The setup process is simple: just search for and pair LR8410 Link-compatible products. Since the settings on paired devices are automatically received by the LR8410, there's no need to manually configure troublesome scaling settings. And since this process occurs wirelessly, you spend less time on wiring work.

No degradation in accuracy caused by D/A output Since measured values are sent as data, there is no degradation in accuracy.

Simultaneous measurement of power, temperature, and other data

The LR8410 can be used with a broad range of modules and LR8410 Link-compatible products. Since you can pair it with up to seven devices, you can measure a large number of channels and parameters along with power meter data.



A Bluetoath serial adapter (purchased separately; recommended model: Parani-SD1000) is required.

An AC/DC power supply adapter (purchased separately; recommende model: OPA-G01) is

WIRELESS VOLTAGE/TEMP UNIT LR8510 / WIRELESS UNIVERSAL UNIT LR8511

Basic specifications

Dasic specificati	JIIS
No. of input channels	15 channels (select voltage or thermocouple for each channel) (Pt100/JPt100, resistance, and humidity are also selectable for each channel with the model LR8511)
Input terminals	[LR8510] M3 screw type terminal block (2 terminals per channel) [LR8511] Push-button terminals (4 terminals per channel)
Measurement objects	[LR8510] Voltage/ Thermocouple [LR8511] Voltage/ Thermocouple/ RTDs/ Resistance/ Humidity
Supported device	Wireless Logging Station LR8410-20
Control and communications	Bluetooth [®] 2.1+EDR (Communications range: 30 m, line of sight, security: SSP)
Backup memory	When recording n channels: (65,536/n) data points Data is maintained in the event of a communications error and resent when communications are restored.
Operating temperature and humidity	Temperature: -20°C to 60°C (-4 to 140°F) Humidity: -20°C to 40°C (-4 to 140°F) 80%RH or less (noncondensating) 40°C to 45°C (140 to 113°F) 60%RH or less (noncondensating) 45°C to 50°C (113 to 122°F) 50%RH or less (noncondensating) 50°C to 60°C (122 to 140°F) 30%RH or less (noncondensating) (temperature variation range is 5 to 35°C (41 to 95°F))
Storage temperature and humidity	Temperature: -20°C to 60°C (-4 to 140°F) Humidity: -20°C to 40°C (-4 to 140°F) 80%RH or less (noncondensating) 40°C to 45°C (140 to 113°F) 60%RH or less (noncondensating) 45°C to 50°C (113 to 122°F) 50%RH or less (noncondensating) 50°C to 60°C (122 to 140°F) 30%RH or less (noncondensating)
Input resistance	$1 M\Omega \pm 5\% \text{ (voltage and thermocouple measurement)} 2 M\Omega \pm 5\% \text{ (RTD and resistance measurement)}$
Maximum input voltage	±100 VDC
Max. inter-channel	300 VDC (Channels are not isolated during resistance bulb,
voltage Maximum rated	resistance, or humidity measurement.)
voltage to earth	300 VAC, DC
Digital filter	Select OFF/ 50 Hz/ 60 Hz (In order to remove harmonic components, during analog input the cut-off frequency is automatically set according to the sampling rate)
	Safety: EN61010
	EMC: EN61326 Class A, EN61000-3-2, EN61000-3-3
Applicable standards	Wireless certification Japan (type : Incorporates a wireless module that has been certified certification) as compliant with applicable technical standards. US(FCC) : Part 15.247 (Contains FCC ID: QOQWT11IA) Canada(IC) : RSS-210 (Contains IC: 5123A-BGTWT11IA) EU : EN 300 328 EN 301 489-1 EN 301 489-1
Vibration endurance	JIS D 1601:1995 5.3(1), Category 1: Vehicle, Condition: Category A equiv.
Dimensions and mass	Approx.150W×90H×56D mm (5.91"W × 3.54"H × 2.2"D) (including cover), [LR8510] approx. 340 g (12.0 oz.), [LR8511] approx. 320 g (11.3 oz.)
Accessories	Instruction Manual× 1, AC Adapter Z1008 × 1, Bracket × 1
Power source	
AC adapter	AC Adapter Z1008 (bundled accessory, 12 VDC) 100 to 240 VAC, 50/60 Hz
Battery	Battery Pack Z1007 (Li-ion 7.2V 2170 mAh) (Option, the AC Adapter has priority when connected) Continuous operating time: Approx. 24 hours (with a recording interval of 100 ms, @23°C, 73.4°F)
	Approx. 120 hours (with a recording interval of 1 min., @23°C, 73.4°F)

 External power
 10 to 28 VDC

 Maximum rated power: 7 VA (when battery is charged)

LR8511 input specifications

Temperature Resistance Temperature Detector (RTD): Pt 100/JPt 100; connection: 3-wire/4-wire; measurement current: 1 mA Ratings: JIS C1604-1997 and IEC 751 (Pt 100), JIS C1604-1989 (JPt 100)

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Туре	Range	Max. Resolution	Measurable Range	Measurement Accuracy
Pt 100	100 °C f.s.	0.01 °C	-100 to 100 °C	±0.6 °C
	500 °C f.s.	0.05 °C	-200 to 500 °C	±0.8 °C
	2000 °C f.s.	0.1 °C	-200 to 800 °C	±1.0 °C
JPt 100	100 °C f.s.	0.01 °C	-100 to 100 °C	±0.6 °C
	500 °C f.s.	0.05 °C	-200 to 500 °C	±0.8 °C
	2000 °C f s	0.1 °C	-200 to 500 °C	+1.0 °C

Resistance	Connection: 4-v	vire; r	neasurement current	:1 m	A	
Range	Max. Resolut	ion	Measurable Ran	ge	Measurement Accuracy	
10 Ω f.s.	0.5 mΩ	2	0 to 10 Ω		$\pm 10 \text{ m}\Omega$	
20 Ω f.s.	1 mΩ		0 to 20 Ω		$\pm 20 \text{ m}\Omega$	
100 Ω f.s.	5 mΩ		0 to 100 Ω		±100 mΩ	
200 Ω f.s.	10 m G	2	0 to 200 Ω		±200 mΩ	
Humidity						
Range	Max. Resolution	Me	asurable Range		Measurement Accuracy	
100 %rh f s	0.1 %rh		5.0 to 95.0 %rh	(See	Humidity Accuracy Table)	

Analog input section

(@ 23±5°C /73±9°F, 80% rh or less, Defined after zero-adjustment has been performed. The 50/60 Hz cut-off setting is selected)

Voltage

vonago							
Range		Max	k. Resolution	Measurable Range	Measurement Accuracy		
10 mV f.s.		500 nV		-10 mV to 10 mV	±10 µV		
20 mV f.s.		1 µV		-20 mV to 20 mV	±20 μV		
100 mV f.s.			5 µV	-100 mV to 100 mV	±100 µV		
20	0 mV f.s.		10 µV	-200 mV to 200 mV	±200 μV		
	1 V f.s.		50 µV	-1 V to 1 V	±1 mV		
	2 V f.s.		100 µV	-2 V to 2 V	±2 mV		
	10 V f.s.		500 µV	-10 V to 10 V	±10 mV		
	20 V f.s.		1 mV	-20 V to 20 V	±20 mV		
1	00 V f.s.		5 mV	-100 V to 100 V	±100 mV		
1 -	– 5 V f.s.		500 μV	1 V to 5 V	±10 mV		
Tem	perature	(The	ermocounles	s)			
Type	Bang	<u></u>	Max Resolutio	n Measurable Bange	Measurement Accuracy		
туре	Tiange	.		-100 to 0 °C or less	±0.8 °C		
	100 °C f	.s.	0.01 °C	0 to 100 °C	±0.6 °C		
17	500 × 0 (0.05.00	-200 to -100 °C or less	±1.5 °C		
ĸ	500 C 1	.s.	0.05 C	-100 to 0 °C or less	±0.8 °C		
	2000 °C	c	0.1.°C	-200 to -100 °C or less	±1.5 °C		
	2000 C	I.S.	0.1 C	-100 to 1350 °C	±0.8 °C		
	100 °C f	.s.	0.01 °C	-100 to 0 °C or less	$\pm 0.8 \ ^{\circ}C$		
				-200 to -100 °C or less	±0.0 °C		
T	500 °C f	.s.	0.05 °C	-100 to 0 °C or less	±0.8 °C		
5				0 to 500 °C	±0.6 °C		
	2000 °C	fs	0.1 °C	-200 to -100 C or less	± 1.0 C ± 0.8 °C		
	2000 0	1.5.	0.1 C	0 to 1200 °C	±0.6 °C		
	100 °C f s		0.01 °C	-100 to 0 °C or less	±0.8 °C		
	500 °C f.s.		0.05 °C	0 to 100 °C	±0.6 °C		
-				-200 to -100 °C or less	± 1.0 °C ± 0.8 °C		
Е				0 to 500 °C	±0.6 °C		
	2000 °C 6 -		0.1.*C	-200 to -100 °C or less	±1.0 °C		
	2000 C	I.S.	0.1 C	-100 to 0 °C of less	±0.8 °C		
	100 °C f s		0.01 °C	-100 to 0 °C or less	±0.8 °C		
	100 C 1.3.		0.01 C	0 to 100 °C	±0.6 °C		
	500 °C f	s	• 0.05°C	-200 to -100 C or less	$\pm 1.5 C$ $\pm 0.8 °C$		
Т			0.00 0	0 to 400 °C	±0.6 °C		
				-200 to -100 °C or less	±1.5 °C		
	2000 °C	f.s.	0.1 °C	-100 to 0 °C or less	±0.8 °C		
	100 00 0		0.01.00	-100 to 0 °C or less	±0.0 °C		
	100 C f	.S.	0.01 C	0 to 100 °C	±1.0 °C		
	500 °C f a		500.000		0.05 °C	-200 to -100 °C or less	±2.2 °C
Ν	N 500 C I.S.	0.03 C	0 to 500 °C	±1.2 °C			
			-200 to -100 °C or less	±2.2 °C			
	2000 °C	f.s.	0.1 °C	-100 to 0 °C or less	±1.2 °C		
	100 °C f	s	0.01 °C	0 to 1300 °C	±1.0 C ±4.5 °C		
	100 01		0.01 0	100 to 300 °C or less	±4.5 °C		
	500 °C f	.s.	0.05 °C	300 to 500 °C	±3.0 °C		
R				300 to 1700 °C	±2.2 °C		
	2000 °C	f.s.	0.1 °C	100 to 300 °C or less	±4.5 °C		
	2000 C 1.5.		0.1 C	300 to 1700 °C	±2.2 °C		
	100 °C f	.s.	0.01 °C	0 to 100 °C	±4.5 °C		
	500 °C f		0.05 °C	0 to 100 °C or less	$\pm 4.5 ^{\circ}C$ +3.0 $^{\circ}C$		
S	500 01		0.05 C	300 to 500 °C	±2.2 °C		
				0 to 100 °C or less	±4.5 °C		
	2000 °C	f.s.	0.1 °C	100 to 300 °C or less	±3.0 °C		
				400 to 600 °C or less	±2.2 C ±5.5 °C		
В	2000 °C	f.s.	0.1 °C	600 to 1000 °C or less	±3.8 °C		
	100.00		0.01.00	1000 to 1800 °C	±2.5 °C		
W	500 °C f	.s. .s	0.01 C	0 to 100 °C	± 1.8 C ± 1.8 °C		
vv	2000 °C	f.s.	0.1 °C	0 to 2000 °C	±1.8 °C		

Reference junction compensation: Internal/External, at INT RJC, total accuracy = add \pm 0.5 °C Thermocouple burn-out detection: Enable/disable thermocouple burn-out detection at each recording interval. (The burnout detection setting cannot be used with a recording interval of 100 ms.)

Humidity Sensor Z2000 accuracy

Operating temperature and humidity range: 0°C to 50°C (32°F to 122°F), 100% RH or less (non-condensing)



HUMIDITY SENSOR Z2000



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Logger Utility specifications Bundled application software(CD-R)

Supported units	Model 8423, 8430, LR8431, LR8432, LR8400, LR8401, LR8402, and LR8410
Operating environment	Windows 10/8/7 (32bit/64bit), Vista (32bit/64bit), XP SP2 or later (32bit)
Real-time data acquisition	Measurements on multiple loggers connected by LAN or USB can be controlled to sequentially acquire, display and save waveform data (for recording up to 10 million samples) Number of controllable instruments: up to 5 units (This software is compatible only with the LR8410, LR8400 series, LR8431, 8423, and 8430) Display: Waveforms (time-axis divided display possible), numerical values (logging), and alarm status can be displayed at the same time Numerical value display: Can be monitored in a separate window Scroll: Waveform scroll while measuring Data saving destination: Real-time data transfer to Excel, or Real-time data acquisition file (LUW format) Event marks: Can be set while measuring
Data acquisition settings	Data acquisition settings for the logger or logging station Saving: The setting for multiple loggers or logging stations can be saved together in one file (LUS format); Instrument configuration set- tings can be sent and received
Waveform display	Processed data file: Real-time data acquisition file (LUW format), Record to internal memory data (MEM format) Display format: Simultaneously display waveform and numerical value, (time-axis divided display possible) Maximum number of channels: 675 channerls (measurement data) + 60 channels (waveform processing data) Others: Display each channel's waveform on 10 sheets, scroll, record event mark, cursor, screen hard copy, numerical value display



Data conversion	Converted sections: All data, designation section Format: CSV format (separate by comma, space, tab), transfer to Excel spreadsheet, arbitrary data thinning				
Waveform processing	Processing items: Four arithmetic operations Number of processing channels: 60 channerls				
Parameter calculations	Target data: Real-time data acquisition file (LUW format), record to internal memory data (MEM format), data acquired in real time, waveform processing data Calculation items: Average, peak, maximum values, time to maximum values, minimum values, time to minimum values, ON time, OFF time, count the number of ON time and OFF time, standard deviation, integration, area values, totalization				
Search functions	Target data: Real-time data acquisition file (LUW format), record to internal memory data (MEM format) Search mode: Event mark, time and date, maximum position, minimum position, maximum pole, minimum pole, alarm position, level, win- dow, amount of change				
Print functions	Supported printer: Printer compatible with the OS Target data: Real-time data acquisition file (LUW format), record to internal memory data (MEM format) Print format: Waveform image, report format, list print (channel set- tings, event, cursor value) Print area: The entire area, area between cursors A and B Print preview: Supported				

Target data: Real-time data acquisition file (LUW format), record to



Model : WIRELESS LOGGING STATION LR8410

Model No. (Order Code) (Note)

LR8410-20 (English model, main unit only)

Accessories: Instruction manual ×1, Measurement guide ×1, SD Memory Card (2GB) Z4001 ×1, CD-R (data collection software "Logger Utility") ×1, USB cable ×1, AC Adapter Z1008 ×1

Measurement cannot be performed using the LR8410 alone. Measurement requires an LR8510/LR8511 measurement unit or an LR8512 or other wireless logger series. (One LR8410 can control from one to seven units [different models can be mixed].)

Measurement units



Model No. (Order Code) (Note)

Model No. (Order Code) (Note)

LR8513

sold separately

LR8520



Model LR8510/ LR8511/ LR8410 Shared

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Model No. (Order Code) (Note) (For the LR8410) LR8510





For pulse count, rotation, 1/0 signal measurement, L1010 cable bundled



Model : WIRELESS VOLTAGE/TEMP LOGGER

Model No. (Order Code) (Note) LR8515 (2 ch)

Voltage / Thermocouple (K, T) measurement, sensor is sold separately

Record fungal index, growth prediction, alarm 1 channel, temperature measurement, humidity sensor is sold separately

Model : WIRELESS CLAMP LOGGER LR8513

For AC/DC load current, AC leak current measurement, sensor is

Model : WIRELESS FUNGAL LOGGER LR8520

(2 ch)

An optional AC adapter for the LR8512 to LR8520 is available for separate purchase. <u>3</u>×

Model : WIRELESS HUMIDITY LOGGER LR8514 Model No. (Order Code) (Note)

LR8514 (2 ch)

2 ch Temperature/ 2 ch Humidity measurement, sensor is sold separately



Use your tablet*, smart-phone*, 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.