

DATA LOGGER 3630 Series

Data Logger



Data Loggers for All Types of Measurements



For Recording Temperature/Humidity, Instrumentation Readings, Load Current, Leak Current, Voltage, Pulse Counts, Illumination



ISO 9001
JMI-0216



ISO 14001
JQA-E-90091



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The **DATA LOGGER 3630 Series** are compact sata loggers that are not much larger than a business card and weigh a mere 70 to 130 grams. Easy to operate, these handy instruments can record up to 16,000 or 32,000 data elements, and store data in nonvolatile memory that retains information even if the batteries are dead. The **DATA LOGGER Series** includes models that can read temperature/humidity, instrumentation readings, voltage, current and other special types of data, and can be used in a broad range of measurements, including HACCP and ESCO applications. Data recorded in a **DATA LOGGER** can transferred to a personal computer through the **COMMUNICATION BASE 3911-20** or the **3912-20**. Once the data is loaded into a personal computer, it can be processed, graphically displayed and managed on the PC.

* The 3911-20/3912-20 (sold separately) and a connecting cable are both required in order to analyze measurement data on a PC. See page 3 for details.

For HACCP-related Temperature and Humidity Recording

- HACCP ● ESCO applications ●Temperature and humidity management in transport ●Temperature and humidity management in food processing facilities ●Temperature and humidity management in ware-houses or cold storage ●Energy conservation ●Temperature management in cooling processes ●Temperature and humidity management and recording for air conditioning systems

HUMIDITY LOGGER



3641-20
Can alternately record temperature and humidity on two channels for temperature and humidity measurement
-40.0°C~85.0°C
0.0%rh~100.0%rh

TEMPERATURE LOGGERS



3632-20
Waterproof with built-in sensor for temperature measurement
-20.0°C~70.0°C



3633-20
External sensor for temperature measurement
-40.0°C~180.0°C

For Recording Load Current and Monitoring Leak Current

- Recording current of instrumentation signals ●Monitoring abnormal load current ●Management of plant operation status ●Monitoring leak current

INSTRUMENTATION LOGGER



3634-20
For measuring typical instrumentation signals
Range:20.00mA DC

CLAMP LOGGER



3636-20
For measuring alternating current on two channels
Range:50.00/500.0A AC (Clamp sensor sold separately)

LEAK LOGGER



3638-20
For measuring alternating current on two channels
Range:100.0mA/1000mA AC (Clamp sensors sold separately)

For Recording Voltage

- Recording analog output from a variety of sensors ●Monitoring fluctuation in the power supply at a plant or office

VOLTAGE LOGGERS



3635-24 to 26
For measuring DC voltage
-24:±500.0 mV DC
-25:±5.000 V DC
-26: ±50.00 V DC

VOLTAGE LOGGER



3645-20
With preheat function For measuring DC voltage
Range: ±50.00 mV to ±50.00V DC

AC VOLTAGE LOGGER



3637-20
For measuring AC voltage
Range : 600.0 V AC

For Recording Precipitation or Illumination

- Count recording for precipitation gauges, water level gauges, etc. ●Measuring illumination in a plant or office

PULSE LOGGER



3639-20
For cumulative pulse measurement for precipitation gauges, flow gauges, etc.

ILLUMINATION LOGGER



3640-20
For illumination measurement
Range: 2,000 lux to 200,000 lux

Space-saving, Ultra-compact Temperature Logger

- Temperature recording during transport ●Temperature management in refrigerator and freezers ●Recording temperatures in food processing plants ●Recording core temperatures when processing food

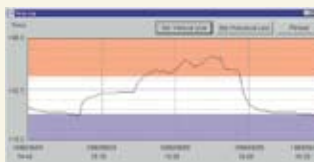
BUTTON-TYPE TEMPERATURE LOGGER and DATA READER



3650
Ultra-compact button-type temperature logger with built-in memory
-40°C to 85°C



DATA READER 3920-10
(with dedicated analysis software)



Example of temperature graph produced by using the dedicated analysis software

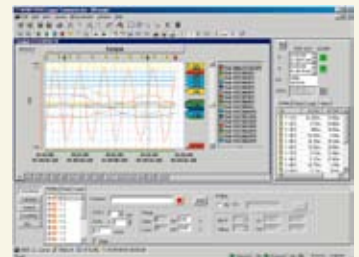
Multichannel Recording of Temperature, Humidity and Voltage

- Multipoint simultaneous temperature recording ●Correlated recording of various signals and temperature data ●Management of real-time data collection over a LAN

MULTICHANNEL DATA LOGGER / MEMORY HILOGGER



8420-51/8421-51/8422-51
Multichannel data loggers for measuring temperature, humidity and voltage on up to 8, 16, 32 channels, respectively



Main Screen

Data on a maximum of 256 channels can be collected in real-time through a LAN when using the optional **LOGGER COMMUNICATOR 9334**.

Store Up to 32,000 Data Elements in a Small Unit through Simple Operations

❖ Data is retained even when batteries are dead

Because nonvolatile memory is used in the **DATA LOGGER Series**, data is retained even when the batteries are dead or are being replaced, ensuring that no valuable data is lost.

❖ Large data storage capacity

A maximum of either 16,000 or 32,000 data elements can be stored in the **DATA LOGGER Series**. The **3641-20** can store 8,000 elements of temperature data and 8,000 elements of humidity data.

❖ Power saving function

The power saving function can be enabled or disabled through the dedicated software that is provided with the **3911-20, 3912-20**. When enabled, the power saving function turns off the display while the unit records data. Pressing a key causes the current measurement to be temporarily displayed on the screen. When the power saving function is disabled, the current measurement is always visible on the display.

❖ Battery power indicator

The battery status is displayed through a four-level indicator. This can be used as a guide for identifying when the battery needs to be replaced.

❖ Waterproof construction

The **3632-20** is completely waterproof*, and is ideal for applications such as temperature management in a refrigerator. The **3632-20, 3635-20** and **3641-20** are water resistant. *Not suitable for continual under water.

❖ Identify data by inputting comments

The dedicated software that is provided with the **3911-20, 3912-20** allows you to set the current time, recording interval, start of recording, and the recording method, and also to input comments. By loading simple comments into the logger, the data can then be easily identified after they are transferred to the PC.

Use a PC to Analyze and Process Large Volumes of Recorded Data

The **COMMUNICATION BASE 3911-20** and **3912-20** is used to transfer data from a **DATA LOGGER** to a PC. The **COMMUNICATION BASE 3911-20** for RS-232C and **3912-20** for USB1.1 can collect data on up to 16 channels. DATA from

multiple **DATA LOGGERS** that are installed in fixed positions can be collected by The **3911-20, 3912-20** and then transferred to a PC for analysis and processing.

COMMUNICATION BASE 3911-20 for RS-232C

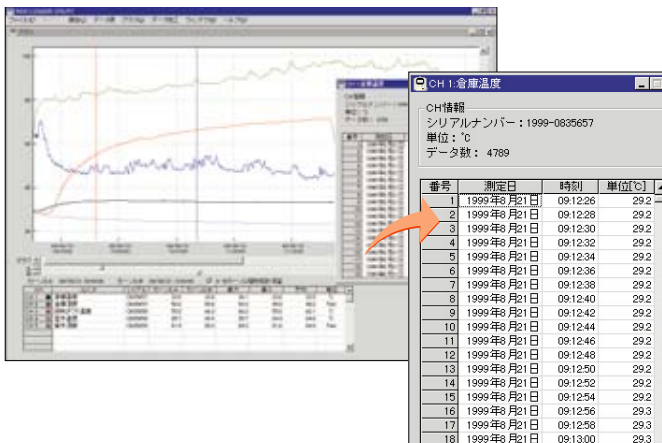


■ 3911-20 Specifications

●Communication method : **DATA LOGGER** ⇔ **3911-20** : Infrared Optical communications / **3911-20** ⇔ PC : RS-232C
 ●PC communication software, Windows 95/98/NT4.0/Me/2000/XP (for DOS/V) ●Battery life : Approx. 80 days (under non-operational conditions), Approx. 100 communications ●Dimensions and mass: 69(W) × 92(H) × 36(D) mm ; 150g ●Accessories : PC communication software, battery

■ 3911-20 • 3912-20 Common Specification

- Recording capacity : 32,000 data elements × 8 channels (**3632-20** to **3635-20** and **3641-20** : 16,000 data elements × 16 channels maximum)
- PC communication Functions : Graph display, data list, printing (data and graphs), data processing, file saving (proprietary format or text for-mat)
- File format : Original format (Binary code), text savable (in CSV format)
- Power supply : LR03(AAA) alkaline battery 1.5V × 4



Measurement data list

COMMUNICATION BASE 3912-20 for USB1.1



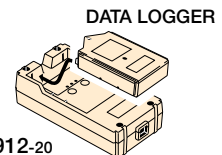
■ 3912-20 Specifications

●Display : Dot-matrix LCD (128 × 64 dots)
 ●Communication method : **DATA LOGGER** ⇔ **3912-20** : Infrared Optical communications / **3912-20** ⇔ PC : USB1.1 ●PC communication software, Windows 98 / Me/2000/XP (for DOS/V) ●Battery life : Approx. 3 months (under non-operational conditions), Approx. 100 communications ●Dimensions and mass : 69 (W) × 128 (H) × 36 (D) mm ; 180g ●Accessories : PC communication software, USB cable, battery

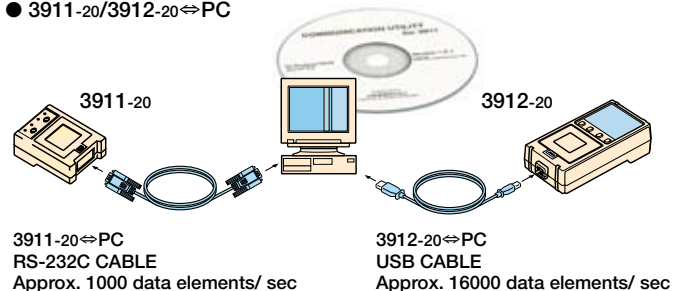
■ Communication

● 3911-20/3912-20 ⇔ DATA LOGGER

Infrared Optical communications
 Approx. 250 data elements/sec



● 3911-20/3912-20 ⇔ PC



RS-232C CABLE 9637 (9-pin to 9-pin crossed cable/1.8m)

RS-232C CABLE 9638 (9-pin to 25-pin crossed cable/1.8m)

* Select RS-232C cable appropriate for your PC

For Recording Temperature and Humidity



Model	HUMIDITY LOGGER 3641-20	TEMPERATURE LOGGER 3632-20	TEMPERATURE LOGGER 3633-20
Features	Temperature and humidity logger that can record temperature and humidity on two channels using the TEMPERATURE AND HUMIDITY SENSOR 9680-50 provided.	Waterproof temperature logger that supports only a built-in temperature sensor.	Temperature logger that supports a built-in temperature sensor or an external temperature sensor (sold separately)
Measured items	Temperature and humidity (2 channels)	Temperature (1 channel)	Temperature (1 channel)
Measurement range (resolution : 0.1°C, 0.1 % rh)	Temperature : -20.0°C to 70.0°C (using the built-in sensor) -40.0°C to 180.0°C (using an external sensor) -40.0°C to 85.0°C (using the 9680-5 sensor) Humidity : 0.0% to 100.0%rh (using the 9680-5 sensor)	-20.0°C to 70.0°C (when using the built-in temperature sensor) Only the built-in sensor may be hused. Waterproof type Conforms with IP67 (Models other than the 3632-20 conform with IP54.)	-20.0°C to 70.0°C (when using the built-in temperature sensor) -40.0°C to 180.0°C (when using an external temperature sensor)
Accuracy	Temperature : ±0.5°C (0.0 to 35.0°C) ±1.0°C (-40.0 to -0.1°C / 35.1 to 70.0°C) ±2.0°C (70.1 to 120.0°C) ±5.0°C (120.1 to 180.0°C) Humidity : See the Accuracy table at bottom right.	±0.5°C (0.0 to 35.0°C) ±1.0°C (-20.0 to -0.1°C / 35.1 to 70.0°C)	±0.5°C (0.0 to 35.0°C) ±1.0°C (-40.0 to -0.1°C / 35.1 to 70.0°C) ±2.0°C (70.1 to 120.0°C) ±5.0°C (120.1 to 180.0°C)
Accessories	TEMPERATURE AND HUMIDITY SENSOR 9680-50×1	-	-

*The 3911-20/3912-20 (sold separately) and a connecting cable are both required in order to analyze measurement data on a PC. See page 3 for details.

Common specifications

●Response time : Built in sensor: Approximately 25 minutes ; External temperature sensor : Depends on response time of sensor (Refer to chart below.)
 ●Storage capacity : 16,000 data elements (3641-20 : 8,000 data elements×2 channels)
 ●Recording start : Manual start or timer start
 ●Recording interval : 2/5/10/15/20/30 seconds, 1/2/5/10/15/20/30/60 minutes
 ●Interface : Infrared optical communications (Communication between **DATA LOGGER** and the **3911-20/3912-20**. Between the **3911-20** and a PC are RS-232C. Between the **3912-20** and a PC are USB1.1)
 ●Settings that can be made

through the main unit: Recording interval, recording start/stop ●Settings that can be made through the **3911-20/3912-20**: Current time, recording interval, recording start time, recording method, comment
 ●Power supply: LR03(AAA) alkaline battery×2; Maximum rated power:0.1VA; Battery life : Approximately 2 years (**3641-20** : Approximately 3 months) when recording interval is set at one minute
 ●Dimensions and mass: Approximately 57(W)×74(H)×19.5(D) mm; 70g
 ●Operating environment: Indoors, at an altitude of 2,000m or less, -20.0°C to 70.0 °C with no condensation

Temperature and Humidity Sensors



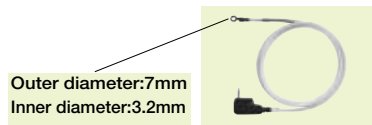
TEMPERATURE SENSOR (Molded plastic type)
9631-01/9631-11/9631-21
 Temperature range : -40.0°C to 180.0°C
 Response time : Approximately 100 seconds
 Sensor dimensions : 5 mm diameter×28 mm
 Cord length : 9631-01 : Approx. 1 m
 9631-11 : Approx. 5 m
 9631-21 : Approx. 10 m



TEMPERATURE SENSOR (Needle type)
9631-02
 Temperature range : -40.0°C to 120.0°C
 Response time : Approximately 20 seconds
 Dimensions of metallic portion : 1.3 mm diameter ×25 mm
 Cord length : Approx. 1 m



TEMPERATURE SENSOR (Sheathed type)
9631-03
 Temperature range : -40.0°C to 120.0°C
 Response time : Approximately 90 seconds
 Dimensions of metallic portion : 4 mm diameter ×180 mm
 Cord length : Approx. 1 m

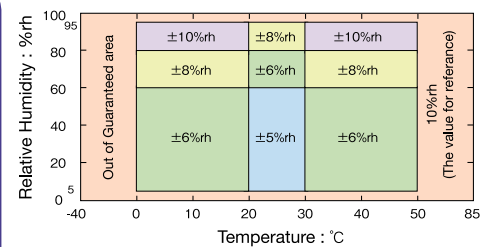


TEMPERATURE SENSOR (Lug type)
9631-04/9631-14/9631-24
 Temperature range : -30.0°C to 180°C
 Response time : Approximately 45 seconds
 Dimensions of metallic portion : 16.5 mm
 Cord length : 9631-04 : Approx. 1 m
 9631-14 : Approx. 5 m
 9631-24 : Approx. 10 m



TEMPERATURE SENSOR (Molded plastic type)
9631-05
 Temperature range : -40.0°C to 180°C
 Response time : Approximately 100 seconds
 Sensor dimensions : 5 mm diameter×28 mm
 Cord length : Approx. 30 mm

●HUMIDITY SENSOR 9680-50 ACCURACY



NOTE : The response times indicated are reference values for the time until 90% of the value is indicated for a given change in temperature or humidity. The temperature sensors are all thermistors, and the **9680-50** humidity sensor has a polymer structure (capacity type).



HUMIDITY SENSOR 9680-50/9680-51/9680-52
 Temperature range : -40.0°C to 85.0°C
 Humidity range : 0.0% rh to 100.0% rh
 Response time : Temperature : Approximately 100 seconds
 Humidity : Approximately 300 seconds
 Sensor dimensions : 30(W)×13(H)×8(D) mm
 Code length : 9680-50 : Approx. 1 m
 9680-51 : Approx. 5 m
 9680-52 : Approx. 10 m

For Recording Instrumentation Readings, Load Current, and Leak Current



Model	INSTRUMENTATION LOGGER 3434-20	CLAMP LOGGER 3636-20	LEAK LOGGER 3638-20
Features	Can measure signals up to 20 mA DC, ideal for measuring instrumentation signals.	Can record load current through two channels using clamp sensors (sold separately)	Can record leak current through two channels using clamp sensors (sold separately)
Measured items	For instrumentation/0 to 20 mA DC (1 channel)	Load current (2 channels)	Leak current (2 channels)
Compatible clamps	-	9650, 9651	9657, 9658, 9659
Measuring range	DC 0.00 to 20.00 mA	0.00 to 500.0 A rms AC (sine wave) (Two ranges : 50.00 A/500.0 A)	0.0 to 1000 mA rms AC (sine wave) (Two ranges : 100.0 mA/1000 mA)
Accuracy Range in which accuracy is guaranteed: 23°C ± 5°C	±0.8%rdg.±5dgt. Temperature coefficient : 0.08%/°C	±1%rdg.±5dgt. (main unit only) ±2.5%rdg.±8dgt. (main unit + sensor)* (*When range is 50A/500A if using the 9650 ; when range is 500A if using the 9651)	±1%rdg.±5dgt. (main unit only) ±2%rdg.±10dgt. (main unit + sensor)*1 ±2%rdg.±6dgt. (main unit + sensor)*2 (*1 When range is 100 mA/*2 When range is 1000 mA)
Rectification method	-	True RMS	With 50/60 Hz filter/True RMS
Storage capacity	16,000 data elements	32,000 data elements (1 channel) , 16,000 data elements (2 channels)	
Recording mode	-	Instantaneous value recording/Average value recording (average value during the recording interval)	Maximum value recording/Average value recording (average value during the recording interval)
Continuous operating time (when power saving function is enabled)	Approximately two years with a recording interval of one minute	Approximately one year with a recording interval of one minute. (when using instantaneous value recording) Approximately one month (when using average value recording)	Approximately one month with a recording interval of one second. Approximately ten days with a recording interval of 0.2 seconds .
Dimensions and mass	Approx. 57(W)×74(H)×19.5(D) mm ; 70 g	Approx. 57.5(W)×86.5(H)×30.0(D) mm ; 130 g	

* The 3911-20/3912-20 (sold separately) and a connecting cable are both required in order to analyze measurement data on a PC. See page 3 for details.

Common specifications

●Alarm output (**3636-20, 3638-20** only) : ON when measured value is outside range set by specified upper and lower limit values (open collector output) ●Recording start: Manual start or timer start ●Recording interval:1*/2/5/10/15/20/30seconds,1/2/5/10/15/20/30/60minutes (*1 second setting is supported only by the **3636-20** and the **3638-20**) ●Interface: Infrared optical communications (Communication between **DATA LOGGER** and the **3911-20/3912-20**. Between the **3911-20** and a PC are RS-232C. Between the **3912-20** and a PC are USB1.1) ●Settings that can be made through the main unit: Recording interval, recording start/stop. ●Settings that can be made through the **3911-20/3912-20**: Current time, recording interval, recording start time, recording method, comment ●Power supply: LR03(AAA) alkaline battery ×2 (×4 for the **3636-20** and the **3638-20**); Maximum rated power: 0.1VA ●Operating environment:Indoors, at an altitude of 2,000m or less, -20.0°C to 70.0°C, 0 to 50°C for the **3636-20** and the **3638-20**, 80%rh or less (with no condensation) ●Accessories: **CONNECTION CABLE 9632**×1

CONNECTION CABLE 9632






Cord length: Approx. 1m



Used for input or for alarm output

(Included with the **3634-20, 3635-24 to -26, 3636-20, 3638-20** and **3639-20**; used for alarm signal output by the **3636-20, 3638-20**, and **3639-20**)

CLAMP ON SENSOR Specifications (Cord length: Approximately 3 m)

	For load current measurement (for 3636-20)		For leak current measurement (for 3638-20)		
					
Model	9650	9651	9657	9658	9659
Rated primary current/output	AC 100 A/AC 100 mA	AC 500 A/AC 500 mA	AC 1 A/AC 25 mV		
Accuracy	±1.5%rdg.±0.03%f.s. (f.s. is rated primary current value)		±1.0%rdg.±12μV	±3.5%rdg.±12μV	±1.0%rdg.±12μV
Lag current	-	-	5 mA (When 100 AAC is input)	1 mA (When 100 AAC is input)	30 mA (When 500 AAC is input)
External magnetic field effect	-		Equivalent to 5 mA at 400A AC/m; 7.5 mA max.		
Frequency characteristics	40 Hz to 1 kHz (within ±8%)		45Hz to 66 Hz		
Maximum allowable input	130A continuous (45 to 66Hz)	600A continuous (45 to 66Hz)	60A continuous (45 to 66Hz)	10A continuous (45 to 66Hz)	100A continuous (45 to 66Hz)
Maximum circuit voltage	300Vrms AC (insulated conductor)	600Vrms AC (insulated conductor)	300Vrms AC (insulated conductor)	150Vrms AC (insulated conductor)	460Vrms AC (insulated conductor)
Measurable conductor diameter	Up to ∅ 15 mm	Up to ∅ 46 mm	Up to ∅ 40 mm	Up to 12×30 mm	Up to 30×150 mm
Dimensions and mass	Approx. 46(W)×135(H)×21(D)mm 200g	Approx. 77(W)×151(H)×42(D)mm 340g	Approx. 74(W)×145(H)×42(D)mm 340g	Approx. 65(W)×52(H)×18(D)mm 50g	Approx. 358(W)×108(H)×48(D)mm 2.5 kg

For Recording DC and AC Voltage



Model	VOLTAGE LOGGER 3635-24 to -26	VOLTAGE LOGGER 3645-20	AC VOLTAGE LOGGER 3637-20
Features	Can measure current DC voltage, ideal for measuring instrumentation signals or for measuring analog signals from sensor or other devices	Voltage logger that permits control of preheating time and is compatible with various sensor that have different response times	AC voltage measurement logger that can measure up to 600 V AC
Measured items	DC voltage	DC voltage + preheat function	AC voltage
Measuring range	DC ± 500.0 mV (-24)/ ± 5.000 V (-25)/ ± 50.00 V (-26)	DC ± 50.00 mV/ ± 500.0 mV/ ± 5.000 V/ ± 50.00 V	0.0 to 600 Vrms AC (sine wave)
Accuracy Range in which accuracy is guaranteed: $23^{\circ}\text{C}\pm 5^{\circ}\text{C}$	$\pm 0.8\%$ rdg. ± 5 dgt. Temperature coefficient : 0.08% / $^{\circ}\text{C}$	$\pm 0.5\%$ rdg. ± 5 dgt. Temperature coefficient : $(0.02\%$ rdg ± 1.5 dgt)/ $^{\circ}\text{C}$	$\pm 1\%$ rdg. ± 5 dgt.
Rectification method	-	-	True RMS
Storage capacity	16,000 data elements	32,000 data elements	
Recording mode	-	-	Instantaneous value recording/Average value recording (average value during the recording interval)
Recording function	-	Open drain output (30V,20 mA max.) Time : 0.5/1/2/5/10/30/60 seconds	-
Continuous operating time (when power saving function is enabled)	Approximately two years with a recording interval of one minute	Approximately one year with a recording interval of one minute (when not using preheat function)	Approximately one year with a recording interval of one minute (when using instantaneous value recording) Approximately one month (when using average value recording)
Dimensions and mass	57(W) \times 74(H) \times 19.5(D) mm; 70g	57.5(W) \times 86.5(H) \times 30.0(D) mm ; 130g	
Accessories	CONNECTION CABLE 9632 \times 1	CONNECTION CABLE 9632/9639 \times 1	CONNECTION CABLE 9639 \times 1

* The 3911-20/3912-20 (sold separately) and a connecting cable are both required in order to analyze measurement data on a PC. See page 3 for details.

Common specifications

●Recording start: Manual start or timer start ●Recording interval: 1*/2/5/10/15/20/30 seconds, 1/2/5/10/15/20/30/60 minutes (*1second setting is not supported by the 3635-24 to -26) ●Interface: Infrared communications (Communication between DATA LOGGER and the 3911-20/3912-20. Between the 3911-20/3912-20 and a PC are RS-232C. Between the 3912-20 and a PC are USB1.1) ●Settings that can be made through the main unit: Recording interval, recording start/stop ●Settings that can be made through the 3911-20/3912-20: Current time, recording interval, recording start time, recording method, comment ●Power supply: LR03(AAA)alkaline battery \times 2 (\times 4 for the 3645-20 and the 3637-20); Maximum rated power: 0.1VA ●Operating environment: Indoors, at an altitude of 2000m or less, -20.0°C to 70.0°C (0°C to 50°C for the 3645-20 and the 3737-20), 80%rh or less (with no condensation)

Voltage logger applications

Recording output from sensors that require preheating (3645-20)

The 3645-20 can be used to record output from various sensor that require preheating, such as water level sensors and soil sensors. When the 3645-20 is used in combination with the TEMPERATURE AND HUMIDITY LOGGER 3641-20, the PULSE LOGGER 3639-20 or the ILLUMINATION LOGGER 3640-20, the DATA LOGGER Series simplifies the construction of databases that can be useful for agricultural civil engineering.

One unit can record a variety of output

These units can record a broad range of output voltages, from several millivolts to 50V, even for high sensitivity, low output sensors.

For recording analog output from a variety of test equipment

These units can record output from test equipment that outputs analog signals, such as clamp ammeters, thermometers, and light meters.

For voltage input



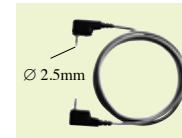
CONNECTION CORD 9639

Cord length: Approx. 3m
(provided with 3637-20 and 3645-20)

For analog signal input (for the 3635-24 to -26 and 3645-20)



CONNECTION CABLE 9632
Cord length: 1m



CONNECTION CABLE 9633
Cord length: 1m



CONNECTION CABLE 9634
Cord length: 1m



For Recording Precipitation and Illumination



For recording pulse counts from precipitation gauges, flowmeters, etc.

PULSE LOGGER 3639-20

For measuring precipitation

For collecting power data
(Compatible with power meters that have a pulse output connector)

Pulse logger for counting pulses output from precipitation gauges, flow meter, etc.

- Compact and light at only 130g, the 3639-20 is easy to install, and yet can record as much as 32,000 data elements.
- Prevents count errors through a noise filter.
- Data that is collected can be put into a time bar graph or a cumulative bar graph using the dedicated software

Basic Specifications

Input/accuracy	Pluse input: 1 channel (Maximum display; 9999)/within ± 1 dgt. <ul style="list-style-type: none"> • No voltage contact input (Count is incremented when short between terminals changes to open) • Voltage input High: +1.5V to +45V; Low: 0.0V to +0.2V (Count is incremented when voltage level goes high)
Recording interval (precision)	1/2/5/10/15/20/30 seconds, 1/2/5/10/15/20/30/60 minutes, 1 day (± 100 ppm)
Recording capacity	32,000 data elements
Interface	Infrared optical communications (Communication between DATA LOGGER and the 3911-20/3912-20. Between the 3911-20 and a PC are RS-232C. Between the 3912-20 and a PC are USB1.1)
Alarm output	Status is output each recording interval when a set value is exceeded (open drain output)
Power supply	LR03(AAA) alkaline battery $\times 4$
Battery life	Approximately three months with 10 minute measurement interval (display off, no voltage contact measurement)
Dimension and mass	58(W) \times 87(H) \times 30(D) mm ; 130g (not waterproof)
Accessories	CONNECTION CABLE 9629 $\times 1$; CONNECTION CABLE 9632 $\times 1$



CONNECTION CABLE 9629
(5m for measurement)

kThe 3911-20/3912-20 (sold separately) and a connecting cable are both required in order to analyze measurement data on a PC. See page 3 for details.

For Recording Fluctuations in Illumination

LUX LOGGER 3640-20

To quickly log fluctuations in illumination and then process the data on a PC

- Broad measurement range from 2,000 to 200,000 lux
- Light and compact illumination logger with a large memory
- In addition to measuring illumination on site, can also download collected data to a PC for processing

Basic Specifications

Optical element	Silicon phot diode
Measuring range	2,000/20,000/200,000 lx (manual range)
Display	LCD 2,000/20.00/200.0 (measured vale is display value $\times 1000$)
Accuracy	$\pm 4\%$ rdg., ± 5 dgt.
Recording interval	1/2/5/10/15/20/30 seconds, 1/2/5/10/15/20/30/60 minutes
Recording capacity	32,000 data elements
interface	Infrared optical communications (Communication between DATA LOGGER and the 3911-20/3912-20. Between the 3911-20 and a PC are RS-232C. Between the 3912-20 and a PC are USB1.1)
Power supply	LR03(AAA) alkaline battery $\times 4$
Battery life	Approximately one year with 1 minute recording interval (in power saving mode)
Dimension and mass	58(W) \times 87(H) \times 30(D) mm ; 130g
Accessories	LUX SENSOR 9662 (code length; 2 m) $\times 1$

kThe 3911-20/3912-20 (sold separately) and a connecting cable are both required in order to analyze measurement data on a PC. See page 3 for details.



For Recording Temperature During Transport

Compact Logger That Revolutionizes Temperature Control Systems

TEMPERATURE LOGGER 3650



Actual size

17.35 mm

Button-type logger with built-in temperature sensor

Special mount provided

Compact button-sized temperature logger

- Sensor, memory and power supply are all encased in a unit with a diameter of a mere 17.35mm
- Can easily control temperatures in HACCP processes over a range from -40°C to 85.0°C
- Can record data for up to 2048 temperature readings
- Temperature data can be collected in a special reader (sold separately), and can then be used to create graphs or for other processing on a PC
- Can be easily installed in a special (antibacterial) mount

Basic Specifications

Measuring range	Temperature -40.0°C to 85.0°C (resolution: 0.5°C), 1 channel
Recording capacity	2,048 data elements (approximately 1 year with the maximum recording interval of 4 hours and 15 minutes)
Recording interval	1 minute to 255 minutes
Recorded information	Temperature history, temperature distribution, temperature warning history, simple notes
Interface	Data collected in DATA LOGGER is transferred to a PC through an RS-232C interface
Power supply	Internal battery: can measure temperature at least 500,000 times
Battery life	Approximately 4 years of continuous use with a measuring interval of 5 minutes (Varies according to measuring conditions; battery cannot be replaced.)
Dimension and mass	Approximately 17.35 mm in diameter × 5.89 mm; 3.3 g
Accessories	Special antibacterial holder

Basic Specifications of the 3920-01 DATA READER

Communication method	RS-232C (D-sub 9 pin male)
Analysis software	For PC running Windows 95/98/ME/2000/XP
Functions	Measurement start setting/analysis, 16-channel graph display, etc.
Data storage format	Proprietary format, or CSV format
Accessories	Dedicated analysis software (one CD-R)

For Multichannel Recording of Temperature, Humidity, and Voltage

Multi-channel Logger with PC Network Connectivity, Fully isolated Channels

MEMORY HILOGGER 8420-51, 8421-51, 8422-51

LAN

RS-232C

*The optional PRINTER 8992 or the DIGITAL I/O UNIT 8993 can be mounted in this unit.

LAN-compatible Data Logger That Displays Recorded Trends

- Three types with 8 channels (8420-51), 16 channels (8421-51) or 32 channels (8422-51) of insulated analog inputs
- 5.7-inch color STN LCD and LAN functions (10BASE-T connector) included as standard features
- Simultaneous input of voltage, thermocouple, temperature resistor and humidity sensor; count is maintained of pulse input; fluctuations in RPMs can also be measured simultaneously
- With optional 8993 unit, 16 digital input channels and 16 alarm output channels are also available
- Through a LAN connection, a maximum of 256 channels of real-time data can be collected in a PC (using the optional 9334 unit)

Basic Specifications

Number of channels	8420-51 : 8 analog channels + 4 pulse channels 8421-51 : 16 analog channels + 4 pulse channels 8422-51 : 32 analog channels + 4 pulse channels (inputs and output and each channel are insulated from each other)
Input [Voltage]	100 mV to 100 V f.s. 5 ranges (maximum resolution 5μV, 100mV f.s. range)
[Thermocouple]	K, E, J, T, N, R, S, B, W (WRε5-25) (100°C to 2000°C f.s. 3 ranges, maximum resolution 0.01°C on 100°C f.s. range)
[Temperature resistor]	Pt100, JPt100 (100°C to 2000°C f.s. 3 ranges, maximum resolution 0.01°C on 100°C f.s. range)
[Humidity]	100% rh f.s. 1 range (0.1% resolution)
[Pulse]	Cumulative counter, RPM fluctuation counter; DC to 5 kHz
Recording interval	100 ms to 1 h (16 ranges)
Memory capacity	4M word DRAM
External storage	Flash ATA card (up to 528MB, saving in real time possible)
Interface	For LAN cable connection (10BASE-T connector), RS-232C
Recording section	Uses PRINTER UNIT 8992 (sold separately) to record on thermal paper roll
Power supply	BATTERY PACK 9447 (provides approximately 5 hour of continuous operation), or AC ADAPTER 9418-15
Dimensions and mass	Approx. 324(W)×170(H)×52(D) mm; 1.4kg (when 8992 and 8993 are not mounted)
Accessories	AC ADAPTER 9418-15 (12V-2.5A) × 1



OPTIONS

• RECORDING PAPER	9234 (18m, 10 rolls/1 set)	• CARRYING CASE	9648
• LOGGER COMMUNICATOR	9334	• HUMIDITY SENSOR	9653
• BATTERY PACK (Ni-MH)	9447		

HIOKI

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