HIOKI

2000

New

3631-3635 LOGGER SERIES

Environmental Measuring Instrument

- **Temperature**
- **Humidity**
- **Instrumentation (4-20mA)**
- **Various types of analog data**

Records up to 16,000 data points

The 3631 to 3635 are compact business card size loggers weighing only 70g each. Though small, these loggers allow easy recording of up to 16,000 data points and use non-volatile memory to prevent data from being lost when batteries are exhausted. Ten logger models are provided for recording temperature, humidity, instrumentation, and voltage in a wide variety of applications. Data recorded with the logger can be managed on a computer through the 3910-20 Communication Base, and can then be displayed as either a graph or as a list.

ISO14001
JQA-E-90091

INTERNET HIOKI Website

http://www.hioki.co.jp/

HIOKI company overview, new products, environmental considerations and other information are available on our website.

Compact size with easy recording of up to 16,000 data points

Data is not lost when the batteries are exhausted

In order to protect valuable data, these new loggers use non-volatile memory, so data is not lost when batteries are exhausted or replaced.

667 day data recording

The new loggers can record up to 16,000 data points. At a recording interval of 60 minutes, this corresponds to approximately 667 days of data.
(With the 3631, 8000 data points × 2ch = approx. 333 days)

Battery life of 2 years

Except for the 3631 (which has a battery life of approximately one year), two LR03 (AAA) alkaline dry cell batteries will power the new loggers for approximately two years.
(At a temperature of 20˚C with a recording interval of 1 minute.)

Battery status display

The battery condition is indicated in four stages as a yardstick for battery replacement.

Waterproof construction

The 3632 is completely waterproof* and is particularly well-suited for temperature management in environments such as refrigerated trucks. Other models are water resistant.
* The unit is not designed for continuous immersion.

Simple operation

The unit is easy to use. Just set the recording interval and start recording. With the special 3910-20 software, you can make various settings, including the current time, recording interval, recording start, recording method, and comments. Recording simple comments onto the logger can help you keep track of input data.

Managing data on the computer

Data recorded on the loggers can be managed on a computer through the 3910-20 Communication Base (optional). With the 3910-20, data can be read from multiple devices and up to 16,000 points of data × 16 ch can be collected and managed.

■ A full line-up to suit a variety of applications

3631-20
HUMIDITY LOGGER

Temperature:
-20.0 to 70.0˚C
(when using the internal temperature sensor)
-40.0 to 180.0˚C
(when using the external temperature sensor)
0.0 to 50.0˚C
(when using the 9630 temperature and humidity sensor)
Humidity:
20.0 to 95.0% rh
(when using the 9630 temperature and humidity sensor)

*When using Models 9631-01 to 9631-05 Temperature Sensors, humidity cannot be measured.

3632-20
TEMPERATURE LOGGER
(INTERNAL SENSOR)
Temperature:
-20.0 to 70.0˚C

3633-20
TEMPERATURE LOGGER
(EXTERNAL SENSOR)
Temperature:
Same as for the 3631-20
* However, cannot be used with the 9630.

3634-20
INSTRUMENTATION LOGGER
DC A: 0.00 to 20.00 mA

3635
VOLTAGE LOGGER
(DC V)

Model	Measurement range	Input impedance
3635-21	0.000 to 1.000V	Approx. 2.4MΩ
3635-22	0.0 to 200.0mV	Approx. 7.1MΩ
3635-23	0.000 to 3.500V	Approx. 460kΩ
3635-24	±500.0mV	Approx. 1.5MΩ
3635-25	±5.000V	Approx. 5.4MΩ
3635-26	±50.00V	Approx. 5.1MΩ

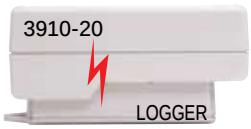
Large volumes of data can be analyzed and managed by a computer

Use the **3910 Communication Base** to transfer data to the computer. The **3910** can read 16 channels of logger data. It captures data from multiple loggers, then transfers data to the computer where it can be analyzed and managed.

Manages and records temperature and humidity during food processing, storage, and distribution

Records environmental conditions, such as air conditioning, illumination, and noise

Records instrumentation data, such as pressure and flow rate



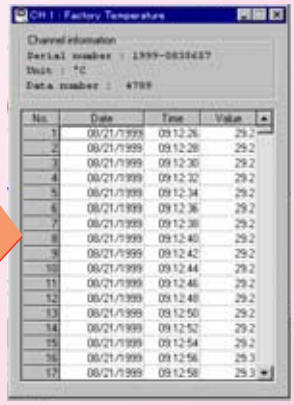
Approximately 500 data points per second can be communicated by infrared light (when the logger and 3910 are placed adjacent to each other for communication)

3910-20
COMMUNICATION
BASE

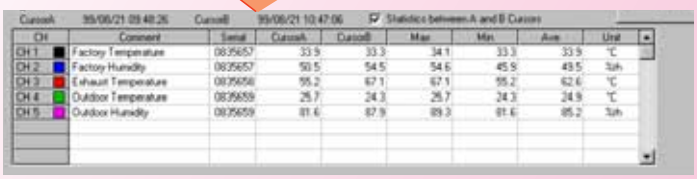
RS-232C
approximately 1000 data points per second

Graph display
Data points
Average value
Recording time
Maximum and minimum values
Measurement data listing
Scaling

Data analysis and management



List of measurement data



Maximum, minimum, and average values

Sensor and connection cables

9630 HUMIDITY SENSOR
(Built into the cable)
Operating temperature range: 0.0 to 50.0˚C
Operating humidity range: 20.0 to 95.0% rh
Response time:
Temperature: Approx. 100 seconds
Humidity: Approx. 120 seconds
Sensor dimensions: 60W × 25H × 12D mm
Cable length: 9630: Approx. 1 m
9630-01: Approx. 5 m
9630-02: Approx. 10 m

9631 TEMPERATURE SENSOR
(Molded type)
Operating temperature range: -40 to 180˚C
Response time: Approx. 100 seconds
Sensor dimensions: ø 5 × 28 mm
Cable length: 9631-01: Approx. 1 m
9631-11: Approx. 5 m
9631-21: Approx. 10 m

9631-02 TEMPERATURE SENSOR
(Needle type)
Operating temperature range: -40 to 120˚C
Response time: Approx. 20 seconds
Metallic area dimensions: ø 1.3 × 25 mm
Cable length: Approx. 1 m

9631-03 TEMPERATURE SENSOR
(Sheath type)
Operating temperature range: -40 to 120˚C
Response time: Approx. 90 seconds
Metallic area dimensions: ø 4 × 180 mm
Cable length: Approx. 1 m

9631-05 TEMPERATURE SENSOR
(Molded type)
Operating temperature range: -40 to 180˚C
Response time: Approx. 100 seconds
Sensor dimensions: ø 5 × 28 mm
Cable length: Approx. 30 mm

9631 TEMPERATURE SENSOR
(Lug terminal type)
Operating temperature range: -30 to 180˚C
Response time: Approx. 45 seconds
Metallic area dimensions: 16.5 mm
External diameter ø7 mm,
Internal diameter ø 3.2 mm
Cable length: 9631-04: Approx. 1 m
9631-14: Approx. 5 m
9631-24: Approx. 10 m

9632
CONNECTION CABLE
Cable length: Approx. 1m

Equipped with an instrumentation sensor
Supports a wide variety of sensors

9633
CONNECTION CABLE
Cable length: Approx. 1m

Supports a wide variety of sensors

9634
CONNECTION CABLE
Cable length: Approx. 1m

For
3635-21 to 3404/3444/3445
and 3635-22 to 3423
connection

Response time is the time it takes to display 90% of the degree of change in temperature or humidity

■Specifications

●3631-20 HUMIDITY LOGGER

Measurement range : Temperature: -20.0 to 70.0˚C
(when using the internal temperature sensor)
-40.0 to 180.0˚C
(when using the external temperature sensor)
0.0 to 50.0˚C
(when using the 9630 humidity sensor)
Humidity: 20.0 to 95.0% rh
(when using the 9630 humidity 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: ± 5% rh (when 25˚C)

Accessories : 9630 temperature and humidity sensor, LR03 (AAA) alkaline dry cell batteries × 2

Options : 3910 -20Communication Base, 9631-01 to 05 temperature sensors

●3632-20 TEMPERATURE LOGGER (INTERNAL SENSOR)

Measurement range : Temperature: -20.0 to 70.0˚C

Accuracy : ± 0.5˚C (0.0 to 35.0˚C)
± 1.0˚C (-20.0 to -0.1˚C) (35.1 to 70.0˚C)

Accessories : LR03 (AAA) alkaline dry cell batteries × 2

Options : 3910-20 Communication Base

●3633-20 TEMPERATURE LOGGER (EXTERNAL SENSOR)

Measurement range : Temperature: -20.0 to 70.0˚C
(when using the internal temperature sensor)
-40.0 to 180.0˚C
(when using the 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)

Accessories : LR03 (AAA) alkaline dry cell batteries × 2

Options : 3910 -20 Communication Base, 9631-01 to 05 temperature sensors

●3634-20 INSTRUMENTATION LOGGER (DC 0-20 mA)

Measurement range: 0.00 to 20.00 mA

Accuracy : ±0.8% rdg. ±5 dgt.
Assured accuracy range: 23˚C ±5˚C,
Temperature coefficient: 0.08%/˚C

Accessories : 9632 connection cable, LR03 (AAA) alkaline dry cell batteries × 2

Options : 3910-20 Communication Base, 9633 and 9634 connection cables

●3635 VOLTAGE LOGGER (DC V)

Model	Measurement range	Accessories	Options
3635-21	0.000 to 1.000V	9634, LR03×2	9632, 9633, 3910-20
3635-22	0.0 to 200.0mV		
3635-23	0.000 to 3.500V	9633, LR03×2	9632, 9634, 3910-20
3635-24	± 500.0mV	9632, LR03×2	9633, 9634, 3910-20
3635-25	± 5.000V		
3635-26	± 50.00V		

Accuracy : ±0.8% rdg. ±5 dgt.
Assured accuracy range: 23˚C ±5˚C
Temperature coefficient: 0.08%/˚C

■General specifications

Display : Measurement values, recording status, recording interval, battery condition
Memory capacity : 16000 data points (for the 3631, 8000 data points × 2ch)
Recording start : Manual start or programmed start
Recording finish : Manual stop or until memory is full
Recording interval : 2/5/10/15/20/30 seconds, 1/2/5/10/15/20/30/60 minutes
Recording method : One time: stops when the memory is full
Endless: Writes over the oldest data when the memory is full
Settings : Using the logger's keys: recording interval, manual start, manual stop
With special software: current time, recording interval, recording start, recording method, comments
Interface : Optical communications with infrared light (requires the 3910)
Power supply : 2 × 1.5 V batteries, LR03 (AAA) alkaline dry cell batteries
Maximum rated power : 0.1VA
Battery lifetime : Approx. 2 years (for the 3631-20, approx. 1 year)
* when the recording interval is one minute
Dimensions and mass : Approx. 57W × 74H × 19.5D mm, approx. 70g
Operating environment : Indoors at an altitude of no more than 2000 m
Operating temperature and humidity ranges : -20.0 to 70.0˚C, less than 80% rh (no condensation)
Storage temperature and humidity ranges : -20.0 to 70.0˚C, less than 80% rh (no condensation)
Waterproof construction : 3632-20; IP67, 3631-20 and 3633-20 to 3635; IP54
Applicable standards : EMC EN61326-1: 1997 +A1: 1998
Safety EN61010-1: 1993 +A2: 1995
Overvoltage category I
(Anticipated transient overvoltage 330 V), pollution level 2

■Response time for the 3631-20, 3632-20, and 3633-20

(Response time is the time it takes to display 90% of the degree of change in temperature or humidity)

Temperature : Internal sensor: Approx. 25 minutes (3631-20, 3632-20, 3633-20)
When using an external temperature sensor:
Depends on the sensor's response time ..... (3631-20, 3633-20)
Humidity : 9630: Approx. 120 seconds ..... (3631-20)

■3910-20 COMMUNICATION BASE specifications

Recording capacity : Maximum 16000 × 16 ch data points
Communication method : Logger <=> 3910-20, infrared optical communication
3910-20 <=> computer, RS-232C
Power supply : LR03 (AAA) alkaline dry cell batteries × 4
Maximum rated power : 0.2VA
Dimensions and mass : Approx. 69W × 92H × 36D mm, approx. 150g
Operating temperature and humidity ranges : 0 to 40.0˚C, less than 80% rh (no condensation)
Storage temperature and humidity ranges : -10.0 to 50.0˚C, less than 80% rh (no condensation)
Accessories : Communication software for the PC,
Compatible OS: Windows 95/98/NT4.0 (for DOS/V and PC98)
Functions: Graph display, measurement data listing, printing (data, graphs), measurement data processing, storing files (dedicated format or text format)

3631-20 HUMIDITY LOGGER
(TEMPERATURE • HUMIDITY)
3632-20 TEMPERATURE LOGGER
(INTERNAL SENSOR)
3633-20 TEMPERATURE LOGGER
(EXTERNAL SENSOR)
3634-20 INSTRUMENTATION LOGGER
(DC 0-20 mA)
3635-21 VOLTAGE LOGGER (0-1V)
3635-22 VOLTAGE LOGGER (0-0.2V)
3635-23 VOLTAGE LOGGER (0-3.5V)
3635-24 VOLTAGE LOGGER (±0.5V)
3635-25 VOLTAGE LOGGER (±5V)
3635-26 VOLTAGE LOGGER (±50V)
(The optional temperature sensor is necessary when using the 3631-20 and 3633-20 with the external sensor.)

■Options

3910-20 COMMUNICATION BASE
9630 HUMIDITY SENSOR (1 m)
(provided with the 3631-20)
9630-01 HUMIDITY SENSOR (5 m)
9630-02 HUMIDITY SENSOR (10 m)
9631-01 TEMPERATURE SENSOR (1 m)
(molded resin type)
9631-11 TEMPERATURE SENSOR (5 m)
(molded resin type)
9631-21 TEMPERATURE SENSOR (10 m)
(molded resin type)
9631-02 TEMPERATURE SENSOR (1 m)
(needle type)
9631-03 TEMPERATURE SENSOR (1 m)
(sheath type)
9631-04 TEMPERATURE SENSOR (1 m)
(lug terminal type)
9631-14 TEMPERATURE SENSOR (5 m)
(lug terminal type)
9631-24 TEMPERATURE SENSOR (10 m)
(lug terminal type)
9631-05 TEMPERATURE SENSOR
(molded resin type)
9632 CONNECTION CABLE (1 m)
(for the 3634-20 and 3635; included with the 3634 and 3635-24 to -26)
9633 CONNECTION CABLE (1 m)
(for the 3634-20 and 3635; included with the 3635-23)
9634 CONNECTION CABLE (1 m)
(for the 3634-20 and 3635; included with the 3635-21 and 3635-22)
9637 RS-232C CABLE (1.8 m)
(9pin-9pin/Cross)
9638 RS-232C CABLE (1.8 m)
(9pin-25pin/Cross)

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■Internet HIOKI website http://www.hioki.co.jp/
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