

Smart Site

HIOKI

2004

2300 REMOTE MEASUREMENT SYSTEM

Data Logger 



For quick-response handling of energy, quality, process, environmental, and fault issues

Centralized Management of Multi Point Data

There is a need for use of measurement systems that can provide from a PC centralized management of measurement data to support energy and environmental management. On the other hand, as measurement instruments are located in different measurement sites within factories and buildings, data collection and communication cable laying require extra labor and financial costs, which makes construction of measurement systems difficult.

The 2300 Smart Site system incorporates modulated measurement units to take advantage of a variety of infrastructure to collect measurement data. It can be used as a standalone logger, as well as for remote monitoring. The Smart Site will enable you to easily build a versatile and reliable measurement system.



ISO14001
JQA-E-90091




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

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

Flexible Modular System Construction


Power modules

**2362-20
DC POWER
MODULE**



INPUT 19V to 36V DC

**2361-20
AC POWER
MODULE**

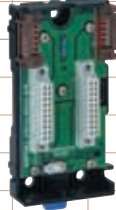


INPUT 100V to 240V AC

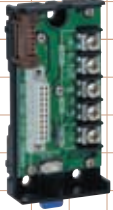
Option:
9239-20 POWER CORD (For USA)
9239-21 POWER CORD (For EU)

Module bases


**2392-02
MODULE
BASE**




**2392-01
MODULE
BASE**



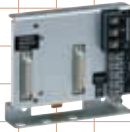
**2391-03
MODULE BASE**



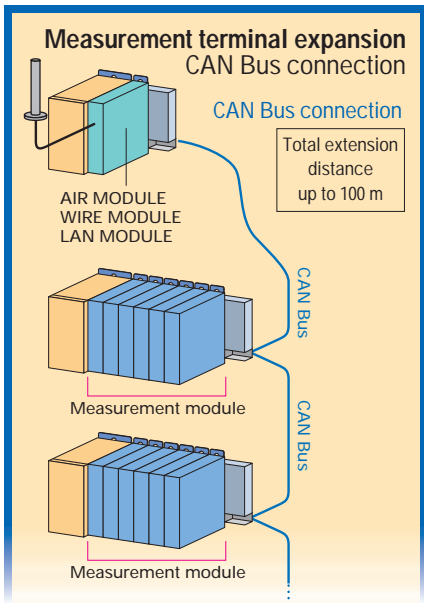
**2391-02
MODULE BASE**



**2391-01
MODULE BASE**




Used in combination



Various communication modules


**2353-20
LAN
MODULE**



10BASE-T interface


By using CAN Bus between module bases, **you can connect 63 measurement modules to one communication module.**

**2352-20
WIRE
MODULE**




RS-232C interface

**2351-20
AIR
MODULE *1**




Built-in SS 2.4GHz wireless device


**9637
RS-232C
CABLE**




**9642
LAN CABLE**



**9760-02
ANTENNA
(Pencil type)**



**9760 ANTENNA
9760-01 ANTENNA (All-weather type)**



- Spread spectrum 2.4 GHz wireless type, excellent in noise immunity and high in reliability
- License is not required, and an external antenna can be installed.
- Communication distance: 300 m outdoors or 60m indoors
- HIOKI's proprietary multi-step relay method

*1 Because standards and measurement conditions differ from country to country, please inquire with your local distributor or HIOKI for further details when purchasing.

Smart Site

Features

PC-Independent Measurement System

Regardless of the availability of a PC, each measurement module can store data to its internal memory. When a PC is removed or lapses into hang-up, loss of data can be avoided.

Built-in Software Utility

The bundled SMART SITE UTILITY is all you need to set up the system and make settings for the modules. Compared with a PLC-controlled system, labor and development costs are greatly reduced.

Synchronization of Data

The time set at each communication module are synchronized by the internal clock of the PC. This allows each measurement module to accurately capture data all at the exact same time.

Easy Expansion and Mobility

Adding or changing modules, and all system setting modifications can be accomplished using the SMART SITE UTILITY.

Measurement and Power Modules to Meet Your Needs

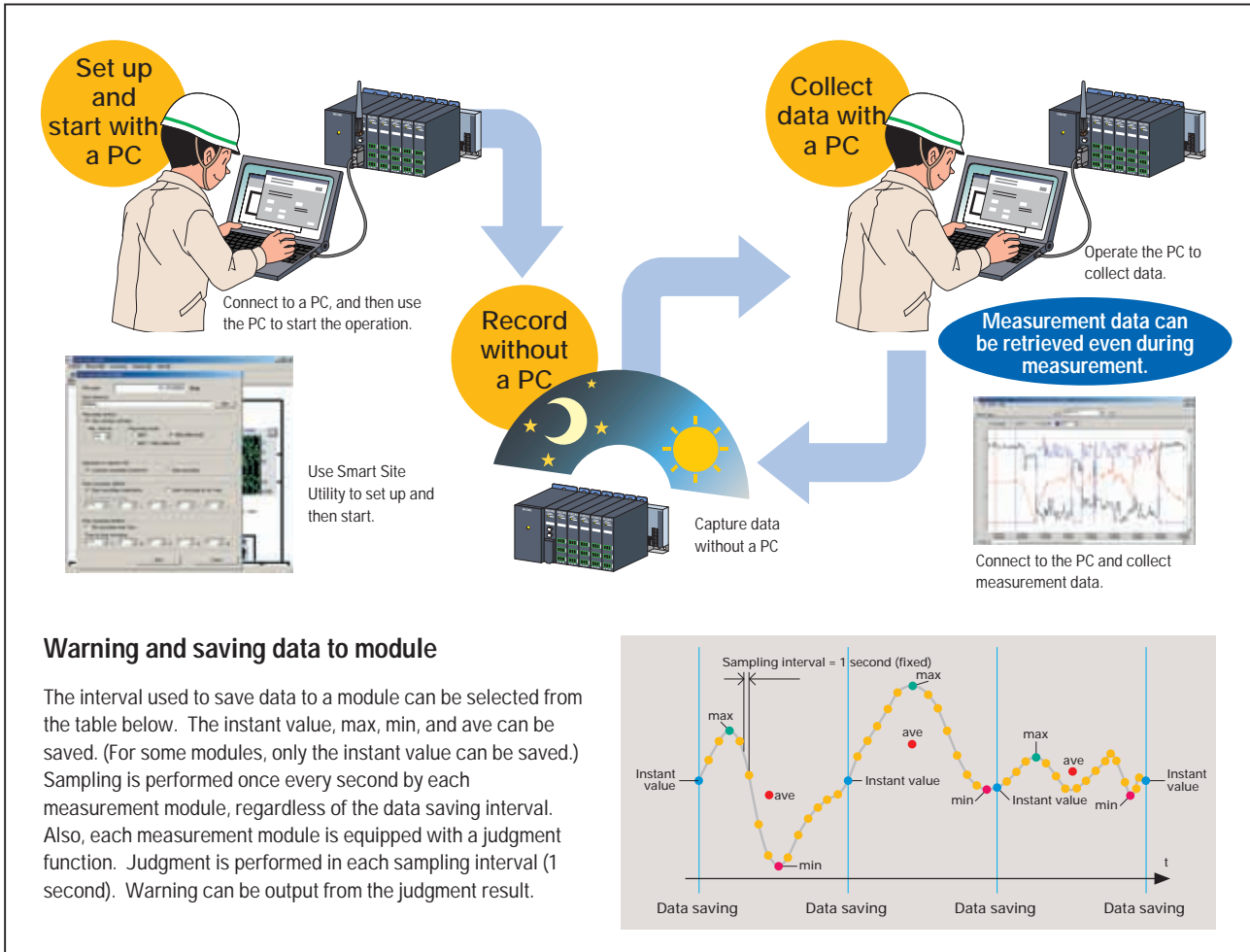
<p>2301-20 HUMIDITY MODULE</p>  <p>Built with Dedicated Sensors Temperature 1ch Humidity 1ch</p>	<p>2302-20 Pt MODULE</p>  <p>Pt100 input 2ch</p>	<p>2303-20 TC MODULE</p>  <p>K,E,J,T input 2ch</p>	<p>2304-21 PULSE MODULE</p>  <p>Voltage and contact pulse input (Current pulse input type also available. 2304-20)</p>	<p>2305-20 INSTRUMENTATION MODULE</p>  <p>DC voltage and current input 2ch</p>	<p>2341-20 INPUT MODULE</p>  <p>Logic signal (contact / voltage) input 8ch</p>	<p>2342-20 OUTPUT MODULE</p>  <p>Open collector output 8ch</p>	<p>2343-20 RS LINK MODULE</p>  <p>Used in data collection and control of devices equipped with RS-232C interface (such as certain HIOKI instruments or sequencers). For a list of compatible HIOKI instruments, please inquire with your local distributor or HIOKI.</p>
<p>9764 HUMIDITY SENSOR</p> 	<p>2331-20 POWER METER MODULE</p>  <p>1 ϕ 2W, 1 ϕ 3W, 3 ϕ 3W, 3 ϕ 4W</p>	<p>2332-20 POWER METER MODULE</p>  <p>Multi-channel power recording 1 ϕ 2W: 6 circuitries or 1 ϕ 3W, 3 ϕ 3W: 3 circuitries</p>	<p>9019-03 VOLTAGE CORD (Red/black/yellow. Cable length: 3 m)</p> <p>9695-02 CLAMP ON SENSOR Rating: 50 A</p> <p>9695-03 CLAMP ON SENSOR Rating: 100 A</p> <p>9238 CLAMP SENSOR CABLE For 9695-02/-03</p> <p>9765 CLAMP ON SENSOR * Rating: 5 A</p> <p>9661-01 CLAMP SENSOR CABLE Rating: 500 A</p> 				

* Not CE mark compliant.

Operating as a standalone multi-channel logger

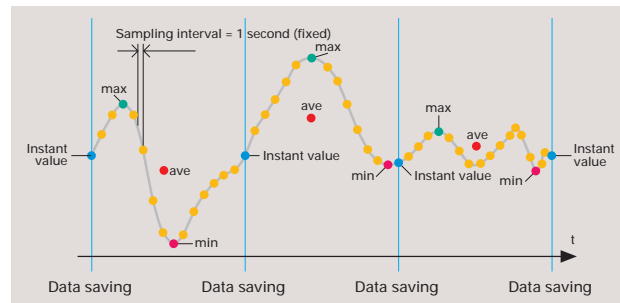
Each measurement module in the Smart Site comes with memory and a clock, and functions as a logger when measuring data. Once measurement starts, only the Smart Site is required to continue the measurement until the measurement result is obtained.

It can be used as a traditional logger, and is suitable for small-scale measurement work.



Warning and saving data to module

The interval used to save data to a module can be selected from the table below. The instant value, max, min, and ave can be saved. (For some modules, only the instant value can be saved.) Sampling is performed once every second by each measurement module, regardless of the data saving interval. Also, each measurement module is equipped with a judgment function. Judgment is performed in each sampling interval (1 second). Warning can be output from the judgment result.



Standard quantity of data of module and number of days (time) that data can be stored (When set at memory full stop^{*3})

Modules	2301-20 to 2305-20			2331-20			
	Recording mode ^{*4}	Instant value	max/min/ave	Instant value + max/min/ave	Instant value	max/min/ave	Instant value + max/min/ave
Quantity of data stored		30000	15000	12000	12000	5100	3900
Recording interval ^{*2}		For 2301-20 to 2305-20, number of days that data can be stored ^{*3}			For 2331 (single-phase 3-wire or three-phase 3-wire, single circuit), number of days that data can be stored ^{*1, *5, *6}		
1 second		8.5 hours	4 hours	3 hours	3 hours	1 hour	1 hour
2 seconds		17 hours	8.5 hours	6.5 hours	6.5 hours	2.5 hours	2 hours
5 seconds		1.5 days	21 hours	17 hours	17 hours	7 hours	5.5 hours
10 seconds		3.5 days	1.5 days	1.5 day	1 day	14 hours	11 hours
15 seconds		5 days	2.5 days	2 days	2 days	21 hours	16.5 hours
20 seconds		7 days	3.5 days	2.5 days	2.5 days	1 day	22 hours
30 seconds		10 days	5 days	4 days	4 days	1.5 days	1 day
1 minute		21 days	10 days	8 days	8 days	3.5 days	2.5 days
2 minutes		42 days	21 days	17 days	17 days	7 days	5 days
5 minutes		106 days	53 days	42 days	42 days	17 days	13 days
10 minutes		213 days	106 days	85 days	85 days	35 days	27 days
15 minutes		319 days	159 days	127 days	127 days	53 days	41 days
20 minutes		426 days	213 days	170 days	170 days	71 days	55 days
30 minutes		639 days	319 days	255 days	255 days	106 days	82 days
60 minutes		1279 days	639 days	511 days	511 days	213 days	165 days

^{*1} When alarm recording is turned on, the more frequently an alarm occurs, the less is the available number of recording days.

^{*2} Sampling is performed once every second.

^{*3} When set at endless recording, the number of days (time) is less than that indicated on this table.

^{*4} The recording mode of the 2304-20 and 2304-21 are Instant Value only.

^{*5} Only when the measurement line is single-phase 3-wire or three-phase 3-wire.

If the measurement line is single-phase 2-wire, the number of days (time) that data can be stored is greater than that indicated in the table.

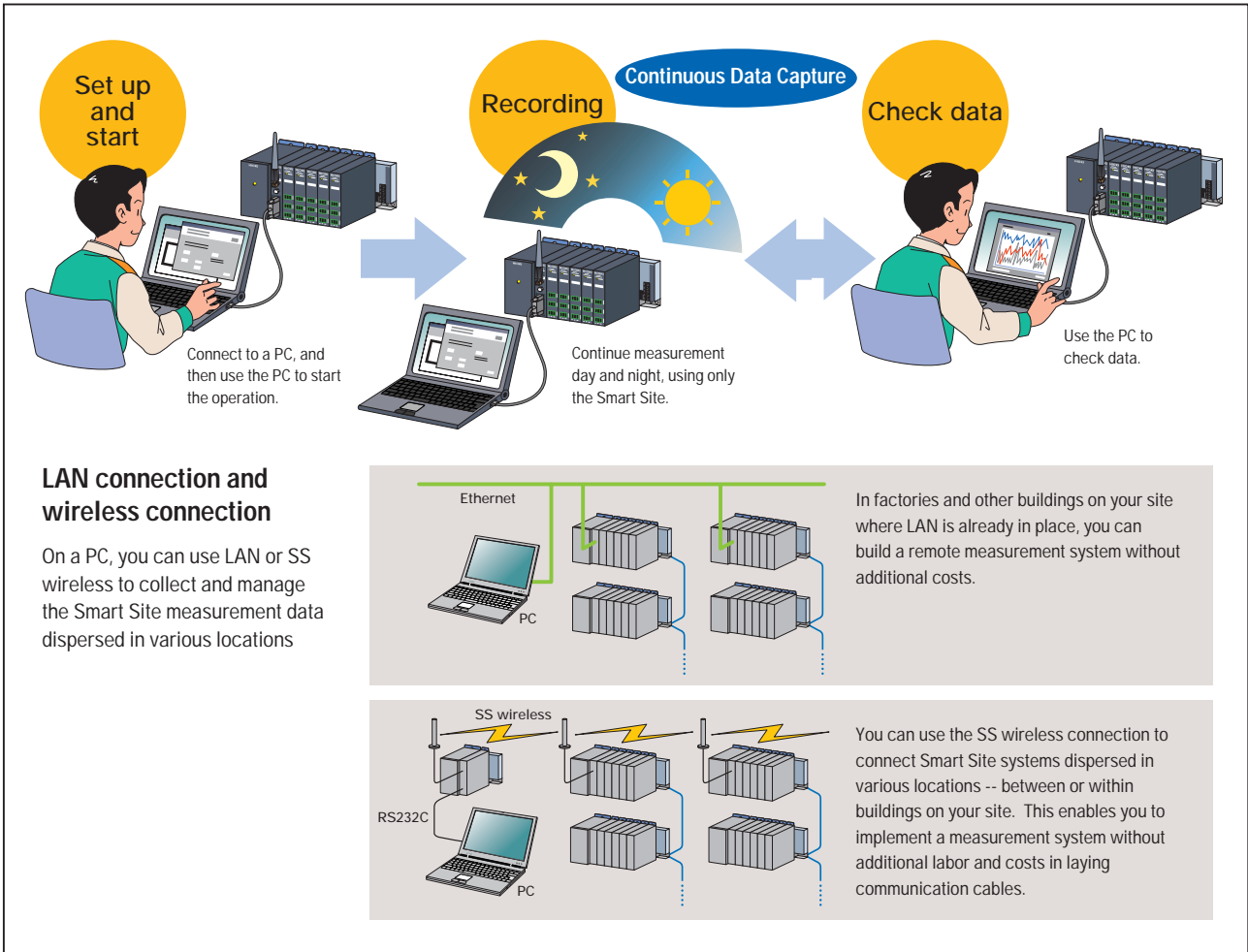
If the measurement line is three-phase 4-wire, the number of days (time) that data can be stored is smaller than that indicated in the table.

^{*6} For the 2332-20, depending on the measurement circuit, the number of recordable days (time) may change.

For reference, [(the recordable days (or hours) x 0.8)/circuits] will be the same as the 2331-20 shown in the table if set at the same conditions.

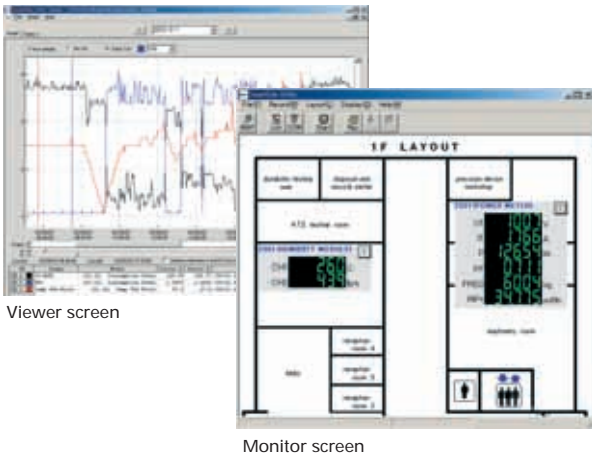
PC measurement

The Smart Site can be used as a PC measurement logger. By leaving the Smart Site connected to a PC, you can use the Smart Site to keep on measuring and continuously save the measurement data to the PC. Because each measurement module comes with memory and a clock, even if the PC stops or hangs the measurement data is saved in the measurement module itself so that measurement can still continue. Data saved in the measurement module can later be transferred to the PC.



PC application

SMART SITE UTILITY*



The application requires that you connect the 2351-20 AIR MODULE, the 2352-20 WIRE MODULE using the RS-232C interface, or the 2353-20 LAN MODULE. It can be used for relatively small-scale measurement work. The application comes with functions necessary for the Smart Site to operate as a logger without using any FA server. You can use the application to perform the following tasks:

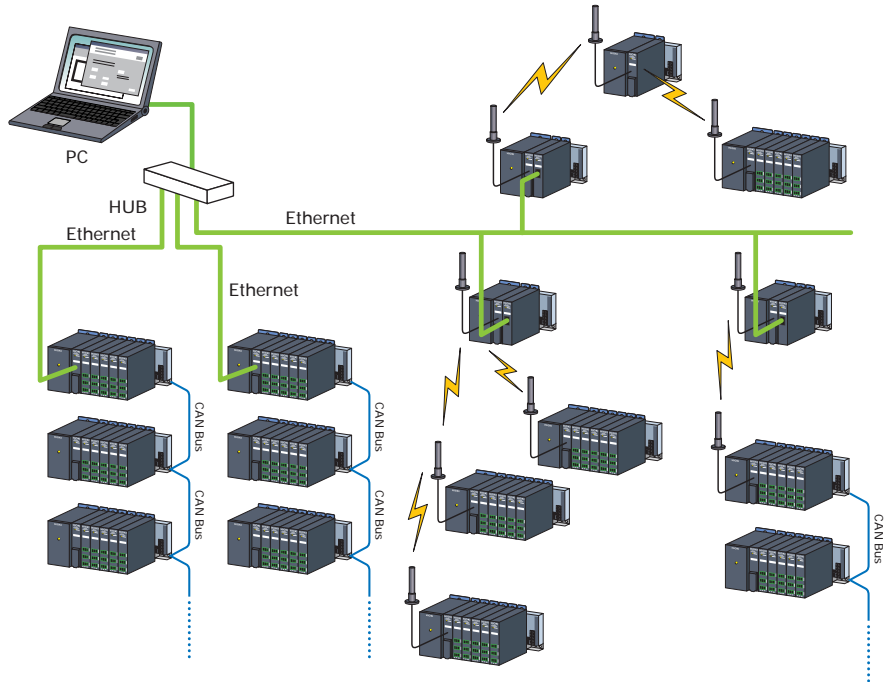
- set up the initial communication conditions and communication routes
- check the communication state
- set up the measurement conditions
- monitor the measurement values
- start data recording, collect data, and stop recording
- display the collected data in lists or graphs

* Please contact your nearest HIOKI distributor on how to obtain a copy of the SMART SITE UTILITY.

Implementing a measurement system using Ethernet and SS wireless

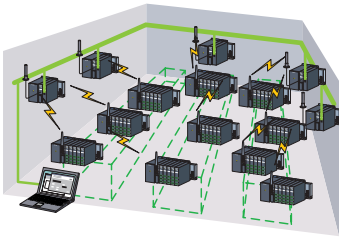
Connection diagram

By combining a local LAN with wireless communication, you can build a measurement system with wide coverage, from monitoring of indoors measurement points to remote monitoring of outdoors equipment.

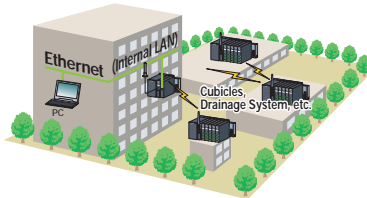


Internal LAN + wireless

By using wireless communication, you can reduce time required in laying communication cables when manufacturing lines in factories are moved.

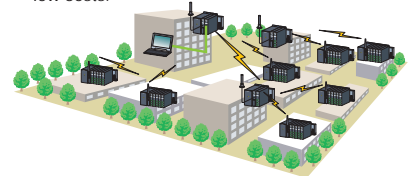


Internal LAN can be used to construct a wireless system. Remote monitoring of outdoors equipment can be implemented at low costs by combining a wireless system with the existing infrastructure.



Local

Use wireless communication to implement a communication system when laying cables between buildings is difficult. You can centralize management of measurement points dispersed in various outdoors locations at low costs.



How Smart Site can be Installed...



To Manage Temperature and Humidity



For Monitoring Facilities



For Energy Management



For Monitoring Power Consumption

Module Specifications and Options

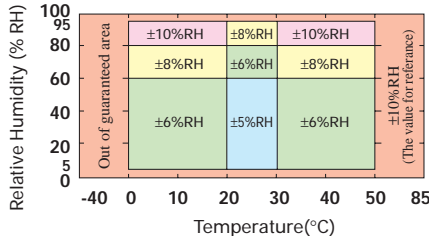
2301-20 HUMIDITY MODULE

Special Characteristic: Utilizes a temperature and humidity sensor that features long term reliability to measure temperature and relative humidity 1 channel each of:
Measurement Range: Temperature -40.0 to 85.0 °C (0.1 °C resolution)
 Humidity 0.0 to 100.0%RH (0.1%RH resolution)
 (Displayable Range: -10.0 to 110.0%RH)

Sensor Accuracy:
Temperature

-40.0 to -0.1 °C ±1.0 °C
 0.0 to 35.0 °C ±0.5 °C
 35.1 to 70.0 °C ±1.0 °C
 70.1 to 85.0 °C ±2.0 °C

Humidity



Main Unit Measurement Accuracy:

Temperature ±0.2 °C, Humidity ±0.2%RH

2302-20 Pt MODULE

Special Characteristic: Platinum temperature measurement resistance input (Pt100)
Sensor Type: Pt100 (3-wire method)
Measurement Range: 2 temperature channels, -100.0 to 300.0 °C (0.1 °C resolution)
Main Unit Measurement Accuracy: ±0.1%rdg. ±0.4 °C

2303-20 TC MODULE

Special Characteristic: Thermo couple input (K, E, J, T)
Sensor Type: Thermocouple (K, E, J, T)
Measurement Range: 2 temperature channels, -100.0 to 1000 °C (T: 400 °C) (0.1 °C resolution)

Main Unit Measurement Accuracy:

±0.1% f.s. ±2.0 °C (incl. reference contact compensation)
 (When connecting an external reference contact compensation sensor between No.2 pin and No.3 pin on Channel 1)

Reference Contact Compensation Accuracy:

±2.0 °C
 (Reference Contact Compensation Range: 0 to 50 °C)
 (Including Pt1000 Tolerance: ±0.2%rdg. ±0.15 °C)

Temperature Coefficient: Add "±0.05 °C per °C" to the "Main Unit Accuracy" (0 to 18 °C, 28 to 50 °C)

Range of Guaranteed Accuracy:

23 °C ±5 °C (Temperature on Main Unit)

2304-20 PULSE MODULE

Special Characteristic: Measures pulse and supports pulse output from power meters and flux gauges.

Measurement Range – 1 channel each of:

Current Pulse: Detectable Current Range 10mA_{p-p} to 30mA_{p-p}
 Pulse Width: More than 12.5msec.
 Pulse Interval: More than 25msec. (40Hz max.)
 Rise/Fall Speed: Less than 2msec.

(When using Model 9766 Clamp ON Sensor in a less than AC50A/m magnetic field)

Voltage/Contact (non-voltage) Pulse: 4kHz max.

• Voltage Pulse:

Counted when voltage level changes from L to H (L: +0.0 to +0.2V, H: +1.5V to +45V)
 (Logic is not defined between +0.2V and +1.5V.)

• Contact (non-voltage) Pulse:

Counted when changed from "Short" to "Open" between two terminals

Filter:

Effective on "Contact (non-voltage) Pulse" input (Can be set by commands)

• For Mechanical Contact:

Pulse Width: More than 20msec.
 Pulse Interval: More than 40msec. (Less than 25Hz Frequency)
 (No filter available on Current Pulse Input)

Measurement Accuracy: ±100ppm rdg. ±1dgt.

Measurement Interval Accuracy:

±2msec.

Display Range:

Integrated value on each channel at each interval (16,000,000 max.)

9766 CLAMP ON SENSOR

Pulse Detection Current Range: 10mA_{p-p} to 20mA_{p-p}

Pulse width: 12.5ms minimum
 Pulse interval: 25ms minimum, 40Hz max.
 Rise and fall speed: 0.8ms maximum

*When used with 2304-20 PULSE MODULE, maximum electromagnetic field allowed is AC50A/m

Maximum Allowable Input: AC/DC50mA_{p-p} cont.

Output protection: ±7.5V with clamp element

2304-21 PULSE MODULE

Special Characteristic: Provides two channels for measuring and inputting pulse (voltage/contact).

Measurement Range: Voltage/Contact (non-voltage) Pulse (2 channels): 4kHz max.

• Voltage Pulse:

Counted when voltage level changes from L to H (L: +0.0 to +0.2V, H: +1.5V to +45V)
 (Logic is not defined between +0.2V and +1.5V.)

• Contact (non-voltage) Pulse:

Counted when changed from "Short" to "Open" between two terminals

Filter:

Effective on "Contact (non-voltage) Pulse" input (Can be set by commands.)

• For Mechanical Contact:

Pulse Width: More than 20msec.
 Pulse Interval: More than 40msec. (Less than 25Hz Frequency)
 (No filter available on Current Pulse Input)

Measurement Accuracy: ±100ppm rdg. ±1dgt.

Measurement Interval Accuracy:

±2msec.

Display Range:

Integrated value on each channel at each interval (16,000,000 max.)

2305-20 INSTRUMENTATION MODULE

Special Characteristic: Compatible with 1 to 5V DC and 4 mA to 20 mA DC signals of user's own measuring systems, and inputs of up to ±50V DC, 100 mA DC

Measurement Range:

2 channels of either:
 (Voltage) ±50mV / ±500mV / ±5V / ±50V
 (Current) -2mA to 110mA

(3¹/₂-digit resolution: Measurement functions (incl. Range) settings have to be set before recording.)

Measurement Accuracy: ±0.8%rdg. ±8dgt. (50mV range)
 ±0.8%rdg. ±5dgt. (Other ranges)

2331-20 POWER METER MODULE

Special Characteristic: Clamp-on power meter for single-phase to three-phase 4-wire 100/200V AC installations. Demand measurement is possible.

Voltage/Current Measurement

Measurement Range: 1 circuit of either 1 φ 2W/1 φ 3W/3 φ 3W/3 φ 4W

• Voltage (U1/U2/U3): 100V/200V (70 to 130V AC / 140 to 260V AC, Can be changed by switch.)

• Current (I1/I2/I3):

1A/5A/50A/100A/200A/500A/1000A (Depends on clamp-on sensor used and range setting. Please refer to "List 1".)

Measurement Method: TRMS

Measurement Accuracy:

- Voltage: ±1.0% f.s.
- Current: ±1.0% f.s. + Clamp-on Sensor Accuracy

List 1 Compatible Clamp-on Sensors and Selectable Current Ranges

Compatible Clamp-on Sensors (with respective current range)	Current Range (Selectable on PC Application Software)
9765 5A	5A
9695-02 50A	5A
	50A
9695-03 100A	100A
	100A
9661-01 500A	500A
	500A
(Custom-order Sensor: 1000A)	200A
	1000A

Effective Power Measurement

Measurement Range (P): = Voltage Range x Current Range

Measurement Accuracy: ±1.5% f.s. + Clamp-on Sensor Accuracy

Integrated Effective Power Measurement

Measurement Range (Wh+):

Integrated effective power within pre-set interval (Consumed element only)

Integration Accuracy: ±1.6% f.s. ± Clamp-on Sensor Accuracy ("f.s." = Voltage Range x Current Range)

Actual Time Management: Based on PC Application Software

Power Factor

Measurement Range (PF): 0 to 1

Measurement Accuracy: ±5%rdg. (At full scale input and power factor = 1)

Frequency Measurement

Measurement Range (FREQ): 40 to 70Hz

Measurement Method: Reciprocal Method

Measurement Accuracy: ±0.5%rdg. [At 70% to 130% f.s. (against voltage range) input]

Measurement Source: Voltage U1

2332-20 POWER METER MODULE

Special Characteristic: Clamp-on power meter for multi-circuit power measurement common to 100/200V AC voltage installations

Voltage/Current Measurement

Measurement Range: Up to 6 circuits of 1 ϕ 2W, or up to 3 circuits of 1 ϕ 3W/3 ϕ 3W
 • Voltage (U1): 200V (70 to 260V AC)
 • Current (I1 and I2)/(I3 and I4)/(I5 and I6): 1A/5A/50A/100A/200A/500A/1000A (Depends on clamp-on sensor used and range setting. Please refer to "List 1". Current range set for every two channels.)

Measurement Method: TRMS

Measurement Accuracy: • Voltage: $\pm 1.0\%$ f.s.
 • Current: $\pm 1.0\%$ f.s. + Clamp-on Sensor Accuracy

Effective Power Measurement

Measurement Range (P): = Voltage Range x Current Range
Measurement Accuracy: $\pm 1.5\%$ f.s. + Clamp-on Sensor Accuracy

Reactive Power Measurement

Measurement Range (Q): = Voltage Range x Current Range
Measurement Accuracy: $\pm 5.0\%$ f.s. + Clamp-on Sensor Accuracy

Integrated Effective Power Measurement

Measurement Range (Wh+): Integrated effective power within pre-set interval (Consumed element only)

Integration Accuracy: $\pm 1.6\%$ f.s. \pm Clamp-on Sensor Accuracy ("f.s." = Voltage Range x Current Range)

Actual Time Management: Based on PC Application Software.

Power Factor

Measurement Range (PF): 0 to 1 ("f.s." = 1)
Measurement Accuracy: $\pm 5\%$ f.s. (At full scale input and power factor = 1 to 0.5)

Frequency Measurement

Measurement Range (FREQ): 40 to 70Hz
Measurement Method: Reciprocal Method
Measurement Accuracy: $\pm 0.5\%$ rdg. (At 70% to 130% f.s. (against voltage range) input)

Measurement Source: Voltage U1

9765 CLAMP ON SENSOR* *Not CE mark compliant

Rated Primary Line Current: 5A AC f.s.
Output Voltage: 20mV AC/A
Amplitude Accuracy: 45Hz to 66Hz: $\pm 2\%$ f.s.; 66Hz to 5kHz: $\pm 5\%$ f.s. (23 °C ± 5 °C, less than 80%RH, 45 to 66Hz, at sine wave)
Phase Angle Accuracy: Within ± 3 degrees (45Hz to 66Hz at sine wave)
Maximum allowable input: 10A cont. (45 to 66Hz, 50°C ambience)
Temperature Coefficient: 0.03% f.s./°C
Influence of External Magnetic Field: Max. $\pm 3\%$ f.s. against 400Arms/m, 50/60Hz magnetic field

9695-02 CLAMP ON SENSOR

Rated Primary Line Current: 50A AC
Output Voltage: 10mV AC/A
Amplitude Accuracy: $\pm 0.3\%$ rdg. $\pm 0.02\%$ f.s. (23 °C ± 5 °C, Less than 80%RH, 45 to 66Hz, at Core Center Position)

Amplitude Frequency Characteristics (40Hz to 5kHz):

Within $\pm 1\%$ (Deviation from accuracy)

Phase Angle Accuracy: Within ± 2 degrees (45Hz to 5kHz)

Influence of Conductor Position: Within $\pm 0.5\%$ on any position inside the core (Deviation from center)

Influence of External Magnetic Field:

Less than 0.1A equivalent against 400A/m AC magnetic field

Maximum Allowable Input: 60Arms cont. (45 to 66Hz, 50 °C ambience)

Temperature Coefficient: 0.02%rdg./°C

9695-03 CLAMP ON SENSOR

Rated Primary Current: 100A AC
Output Voltage: 1mV AC/A
Amplitude Accuracy: $\pm 0.3\%$ rdg. $\pm 0.02\%$ f.s. (23 °C ± 5 °C, Less than 80%RH, 45 to 66Hz, at Core Center Position)

Amplitude Frequency Characteristics (40Hz to 5kHz):

Within $\pm 1\%$ (Deviation from accuracy)

Phase Angle Accuracy: Within ± 2 degrees (45Hz to 5kHz)

Influence of Conductor Position: Within $\pm 0.5\%$ on any position inside the core (Deviation from center)

Influence of External Magnetic Field:

Less than 0.1A equivalent against 400A/m AC magnetic field

Maximum Allowable Input: 130Arms cont. (45 to 66Hz, 50 °C ambience)

Temperature Coefficient: 0.02%rdg./°C

9661-01 CLAMP ON SENSOR

Rated Primary Current: 500A AC
Output Voltage: 1mV AC/A
Amplitude Accuracy: $\pm 0.3\%$ rdg. $\pm 0.01\%$ f.s. (23 °C ± 5 °C, Less than 80%RH, 45 to 66Hz, at Core Center Position)

Amplitude Frequency Characteristics (40Hz to 5kHz):

Within $\pm 1\%$ (Deviation from accuracy)

Phase Angle Accuracy: Within ± 0.5 degrees (45Hz to 5kHz)

Influence of Conductor Position: Within $\pm 0.5\%$ on any position inside the core (Deviation from center)

Influence of External Magnetic Field:

Less than 0.1A equivalent against 400A/m AC magnetic field

Maximum Allowable Input: 550Arms continuous (45 to 66Hz, 50°C ambience)

Temperature Coefficient: 0.02%rdg./°C

2341-20 INPUT MODULE

Special Characteristic: Capture contact/voltage signals from external device for monitoring

Measurement Range: 8 channels of Voltage/Contact (non-voltage):
 • Voltage Level:
 HIGH: VIN - 1.0 (V) to VIN (V)
 LOW: 0 to 1.0 V

2342-20 OUTPUT MODULE

Special Characteristic: Outputs control signal, according to commands from above or based on measurement module data.

Output channel: Open collector output: 8ch

2343-20 RS LINK MODULE

Special Characteristic: Remote monitoring and control of existing devices equipped with RS-232C. Connectable with Models 3331 and 3332 Power HiTESTERS, and compatibility with other HIOKI instruments planned.

External communication interface: RS-232C (57.6 kbps maximum communication speed)

2351-20 AIR MODULE*

Special Characteristic: Communication module based on SS wireless technologies
Communication protocol: 2.4 GHz range SS wireless type, with RS-232C

*NOTE: Requires modification according to regional or national standards. Please contact HIOKI for further information.

2352-20 WIRE MODULE

Special Characteristic: Embed into existing user devices or use in small-scale systems

Communication protocol: RS-232C

2353-20 LAN MODULE

Special Characteristic: Communication module for direct connection to LAN
Communication protocol: LAN (Ethernet, 10BASE-T)

2361-20 AC POWER MODULE

Special Characteristic: AC power supply for measurement and communication modules

Power voltage: 100 to 240 V AC

Output: 5V DC, 2.4A (supports up to 10 measurement modules)

2362-20 DC POWER MODULE

Special Characteristic: DC power supply for measurement and communication modules

Power voltage: 19 to 36 V DC

Output: 5V DC, 2.4A (supports up to 10 measurement modules)

2391 MODULE BASE

Special Characteristic: Module connection board with three dedicated slots for power and communication modules

Number of slots: For 2391-01: 3 (for relay and master station)
 For 2391-02: 8 (5 measurement module slots)
 For 2391-03: 13 (10 measurement module slots)

2392 MODULE BASE

Special Characteristic: For connecting modules (also connects with additional MODULE BASES for increased measurement capabilities)

Number of slots: For 2392-01: 1 slot; includes power and internal bus connection terminal
 For 2392-02*: 2 slots; connect with 2392-01 for additional measurement modules

*NOTE: POWER MODULE not compatible; must use with Model 2392-01 to access POWER MODULE

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