

Water Activity Analyzer

AW-1s

Operation Manual

Thank you for purchasing this product.

Be sure to carefully read this operation manual before using the product.

Operate this product in accordance with the instructions on the following pages.

After reading this manual, keep it carefully stored together with the warranty.

For more information, contact your Sibata representative.



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Using this Product Safely and Correctly

Read this operation manual thoroughly before operating this product, and use it correctly. In addition, keep this manual in an easily accessible location.

Before Use (Be sure to read the following and be very careful during handling.)

- △ This product is not designed to be explosion-proof, so do not use it near combustible or flammable materials.
- △ Do not modify or repair: Never disassemble or modify this product, as doing so will void the Sibata warranty. It could also result in an unforeseen failure or accident.
- △ Have any product failures repaired promptly. Never operate the product with an unrepaired failure or attempt to repair it yourself. Doing so could result in an unforeseen accident.
- △ To clean dirty surfaces, wipe with a soft dry cloth (moistened with a neutral detergent for stubborn dirt).
- △ If this product starts to emit smoke, becomes abnormally hot, or makes a strange noise, immediately stop using it, and switch OFF the power.

■ **Package Contents**

- AW-1s main unit 1 pc
- USB cable, A-micro B 1 pc

■ **Items Purchased Separately**

- Electrostatic sensor-equipped sample container for AW 1 pc
(Item Code 060990-011)
 - The older part name “sensor-equipped sample container for AW-1” may also be used.
- or
- Electrical resistance sensor-equipped sample container for AW 1 pc
(Item Code 060990-031)

Using the Special Software

Caution

This software may be used only when you agree to all terms of this User Acceptance Agreement. Read this User Acceptance Agreement carefully before using this software for the first time. If you do not accept the terms of this User Acceptance Agreement, you may not use this software.

Precautions

You need to perform the initial operating procedures and setup your personal computer for this software by yourself. Sibata Scientific Technology Ltd. and our sales distributors are forbidden from directly operating your personal computer in regards to this software.

(Because of the large storage capacity of personal computers, warranty-related issues regarding the content stored would lead to litigation if a problem occurred after staff from Sibata or a Sibata distributor configured or performed other operations. In order to prevent such problems, settings changes are entirely the responsibility of the user.)

If you are unsure of the procedures, refer to the appropriate sections of the operation manuals for the personal computer or this software.

License Agreement and Warranty

Authorization

- This software and a set of related files may be used on a personal computer.

Prohibited

- You may not copy or distribute the written materials included with this software, such as the operation manual.
- Re-establishing these usage rights for this software in whole or in part.
- Investigating the source code for this software, reverse engineering, decompiling, disassembling, revising, or translating for the purpose of creating a product similar to this software.
- Using a previous version of this software or a copy of it after receiving the latest version either as an upgrade or replacement to this software.

Warranty

- The functions of this software have been thoroughly investigated for defects. At the development stage of this software, it was examined by several major personal computer manufacturers in Japan. It is not however guaranteed to operate with personal computers and peripheral equipment worldwide. We at Sibata Scientific Technology Ltd. will do our utmost in such cases, but operation might not be possible depending on the individual characteristics of the personal computer, other installed software, or the environmental status of connected peripherals. In this event, no manufacturer's liability shall be assumed by Sibata Scientific Technology Ltd. with respect to operational difficulties when used with personal computers and internal environments that have not been verified by Sibata Scientific Technology Ltd.
- This document does not guarantee that the user must be satisfied with this software. In addition, it does not guarantee that there will be absolutely no errors in the content of this software.

Indemnity

- Regardless of this License Agreement and Warranty items, in no event shall Sibata Scientific Technology Ltd. be liable for any damages whatsoever for any special or indirect damages, or damages caused by the installation or use of this software. Specific damages include any loss of profit to the user due to the use of this software, or inadvertent data loss, or the inability to use this software. Sibata Scientific Technology Ltd. assumes absolutely no responsibility for damages even if Sibata Scientific Technology Ltd. had warned in advance of the possibility of such damages occurring.
- The above-mentioned limits on responsibility and exemption provisions apply regardless of whether the user disposes of this software.

1 Overview

The AW-1s water activity analyzer indicates the water activity of samples in a container equipped with a precision humidity element. Water activity is a measure of the steam pressure of the moisture at the sample surface, and indicates the free water ratio. The sample moisture is divided into free water and bound water. The free water component is not bound to the sample, so it can have an impact on the proliferation of microorganisms. (Bound water is moisture that does not have an impact on the proliferation of microorganisms.) Accordingly, in determining the ease of storage of samples, measuring water activity rather than moisture content is important, and can be useful in a variety of fields including food products, pharmaceuticals, and cosmetics. The measurement values are stored in the internal memory, and can be processed by a personal computer (hereinafter PC) after the measurement work.

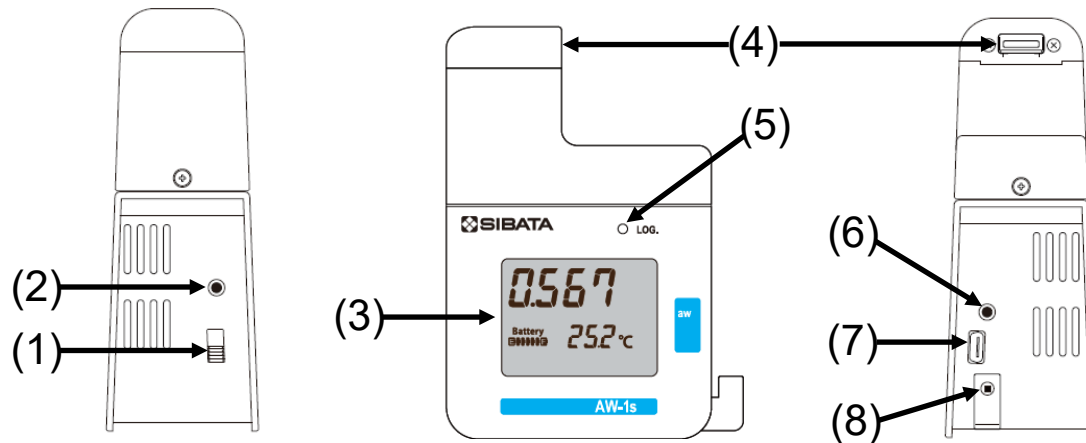
2 Functions

- Built-in data logging function.
- Data can be processed by a PC.
- Operates on general-purpose mobile batteries.
- The sensor can be calibrated, and the calibration value is stored with the sensor-equipped sample container.
- Electrostatic sensors and electrical resistance sensors are automatically distinguished.

3 Precautions

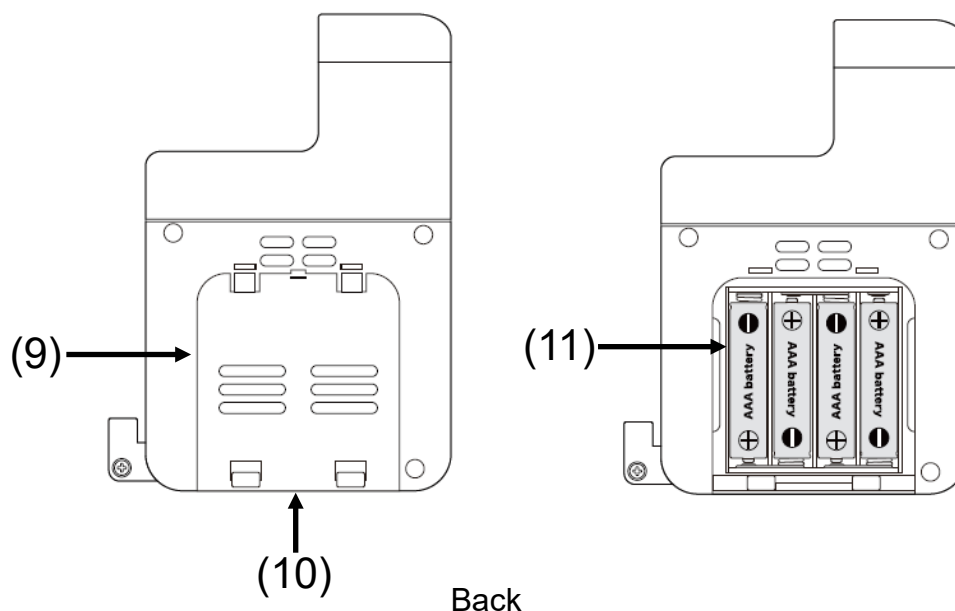
- Do not use at sites where the product could be splashed with water, or where there is a high concentration of dust. It is not water and dust proof.
- Measure samples under conditions in which the sample temperature and humidity change only slightly. During water activity measurements, the measurements cannot be performed correctly if the sample temperature and humidity are changing. The measurements will be more accurate if the temperature is the same as for the standard sample used during calibration.
- If samples with a high degree of water activity are measured, this could affect the subsequent measurement. If samples with a high degree of water activity are measured, it is recommended that you leave the sensor-equipped sample container in an environment where the humidity is about 50 % for at least 10 minutes.
- Sensor calibration offset could occur if the AW-1s is exposed for an extended time to samples with volatile substances or water activity values in the vicinity of 1.00. To prevent offset, after the measurements are finished, remove the sample immediately so that it will have no impact on the sensor.
- This is a precision measurement device. It will malfunction if dropped or subjected to strong impacts. Be careful with it.
- Do not use this product under conditions that exceed the measurement range noted in the specifications. Doing so could damage the internal detection sensor.
- After turning OFF the power switch, wait 30 seconds and then turn the switch ON again. Do not turn the power switch ON and OFF again repeatedly within a short time. Doing so could damage this product.
- This product does not include dry cells, a mobile battery for operation, a general-purpose charger (5 V output), or a connection cable. Purchase these separately.
- Some mobile batteries have an automatic shutdown function that operates under low-load conditions. Check the specifications of the mobile battery before purchasing it.
- Never insert a USB flash drive into the insertion port for the sensor-equipped sample container. Doing so could damage the USB flash drive or the main unit.

4 Names of Parts



Front, Left and Right Sides

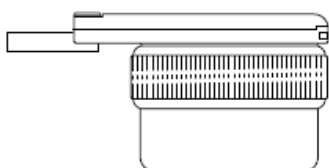
Name		Description		
(1)	Power switch	This sliding switch turns the power ON/OFF. When the protrusion is at the top, it is ON. When it is at the bottom, it is OFF.		
(2)	Display toggle switch	This switches the display between ambient temperature and humidity. The display switches between them each time it is pressed. This is only enabled when the sensor-equipped sample container is not inserted.		
(3)	Measurement value display area	Display during Standby “---” is displayed in the top area. (It flashes during aging.) In the bottom area, the remaining battery charge is shown to the left. The ambient temperature or humidity is shown to the right, and this can be switched as per step (2).		
		Display during Measurements The water activity value is displayed in the top area. (The value flashes until it stabilizes.) In the bottom area, the remaining battery charge is shown to the left. The temperature of the sensor-equipped sample container is shown to the right.		
(4)	Insertion port for the sensor-equipped sample container	This is the insertion port for the sensor-equipped sample container.		
(5)	Data logging indicator	Stability mode	During aging	Flashing
			During measurements	Steady illumination
		Quick mode	During aging	Steady illumination
			During measurements	Steady illumination
(6)	-	Unused		
(7)	USB interface connector	This is used for the mobile battery connection and for the connection to the PC. It is a micro B type connection.		
(8)	Temperature/humidity detection element	This element detects the ambient temperature and humidity.		



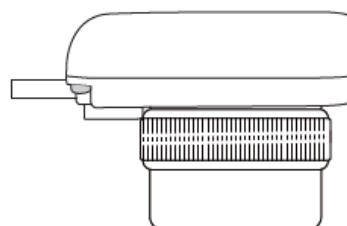
Name		Description
(9)	Dry cell storage cover	This covers the storage container for the dry cells that power the product. The dry cells are placed inside.
(10)	Bottom	The nameplate is affixed to the bottom of the main unit. This is inscribed with the serial number.
(11)	Dry cell storage area	This is where the dry cells that power the product are placed. This product uses four AAA batteries.

■ Items Sold Separately

- The sample containers are common to both. The sensor protection filters are different.



**Electrostatic Sensor-Equipped
Sample Container for AW**



**Electrical Resistance Sensor-
Equipped Sample Container for AW**

5 Preparations for Measurement

5-1 Inserting Dry Cells

Confirm that the power switch on the AW-1s is in the OFF position.

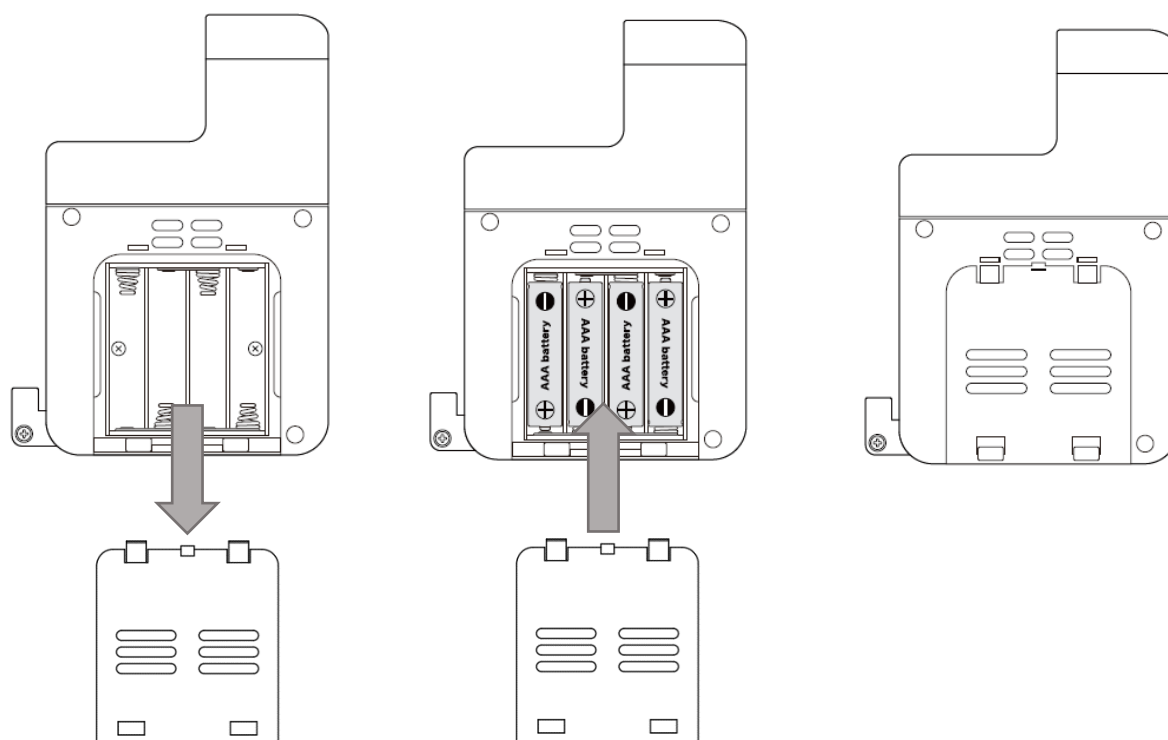
Remove the dry cell storage cover (9) on the back of the main unit.

- Slide the cover down and separate the mating parts. Then remove the entire cover.

Insert four new AAA batteries of the same type, being careful to orient the positive and negative ends of the batteries correctly.

Then reattach the dry cell storage cover.

- Dry cells are not included. When using the product, purchase them separately.



5-2 Replacing the Dry Cells

When the dry cells are depleted, the bar graph in the display area showing the remaining battery life (see figure at right) will completely disappear.

For continuous use, replace the dry cells as indicated above.

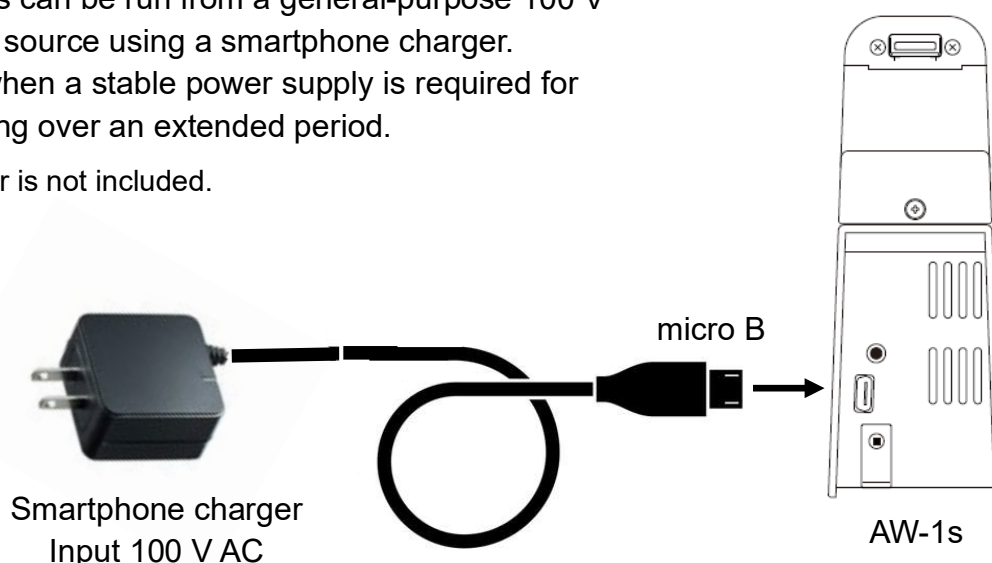


- Replace all four depleted dry cells at once with four new ones, paying attention to their orientation.

5-3 Using 100 V AC

The AW-1s can be run from a general-purpose 100 V AC power source using a smartphone charger. Use this when a stable power supply is required for data logging over an extended period.

- A charger is not included.



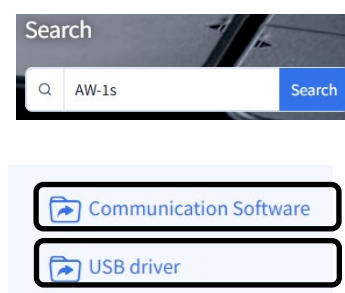
5-4 Downloading the Special Software and USB Drivers

The time and date on this product, as well as various settings, and logging data extraction are performed from the PC using special software. Install the special AWS-DSP software and USB drivers on the PC you are using.

The special AWS-DSP software and USB drivers can be downloaded from the Sibata website.

- Install the USB drivers before connecting the AW-1s to the PC.
- Be sure to finish installing the USB drivers before connecting to the AW-1s.

- (1) Browse to <https://www.sibata.co.jp/> and in the product information search field, enter "AW-1s" and click [Search].
- (2) To download the software, click the AW-1s water activity analyzer. Then click [Communication Software] in the related information area at the bottom of the page displayed.
- (3) The USB drivers can similarly be downloaded.

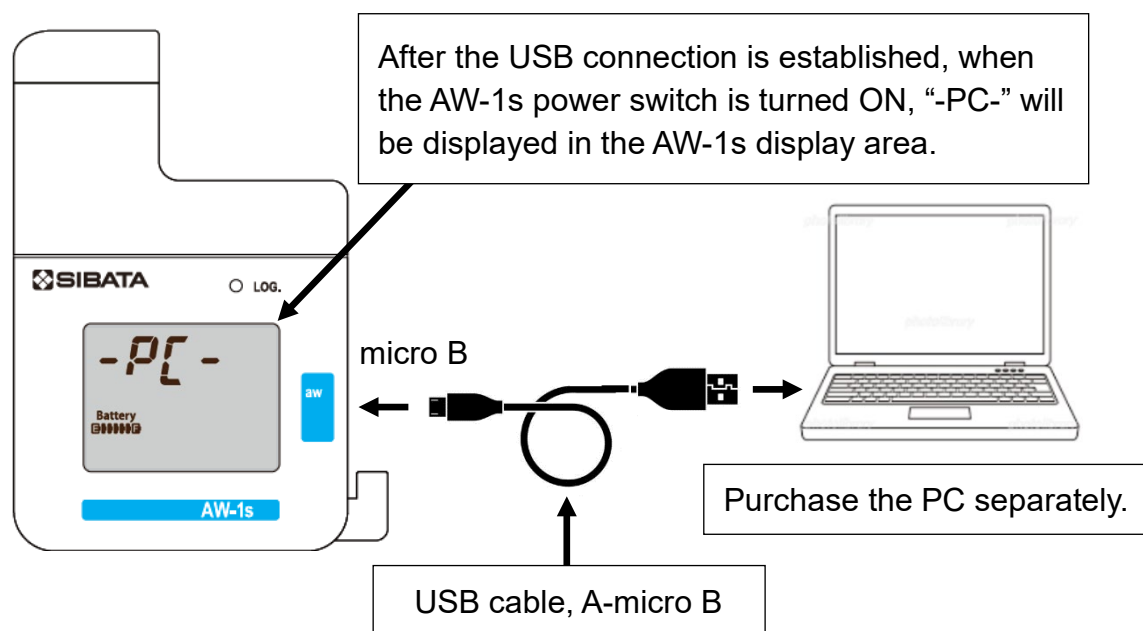


Download the special AWS-DSP software and USB drivers from the Sibata website, and then install them.

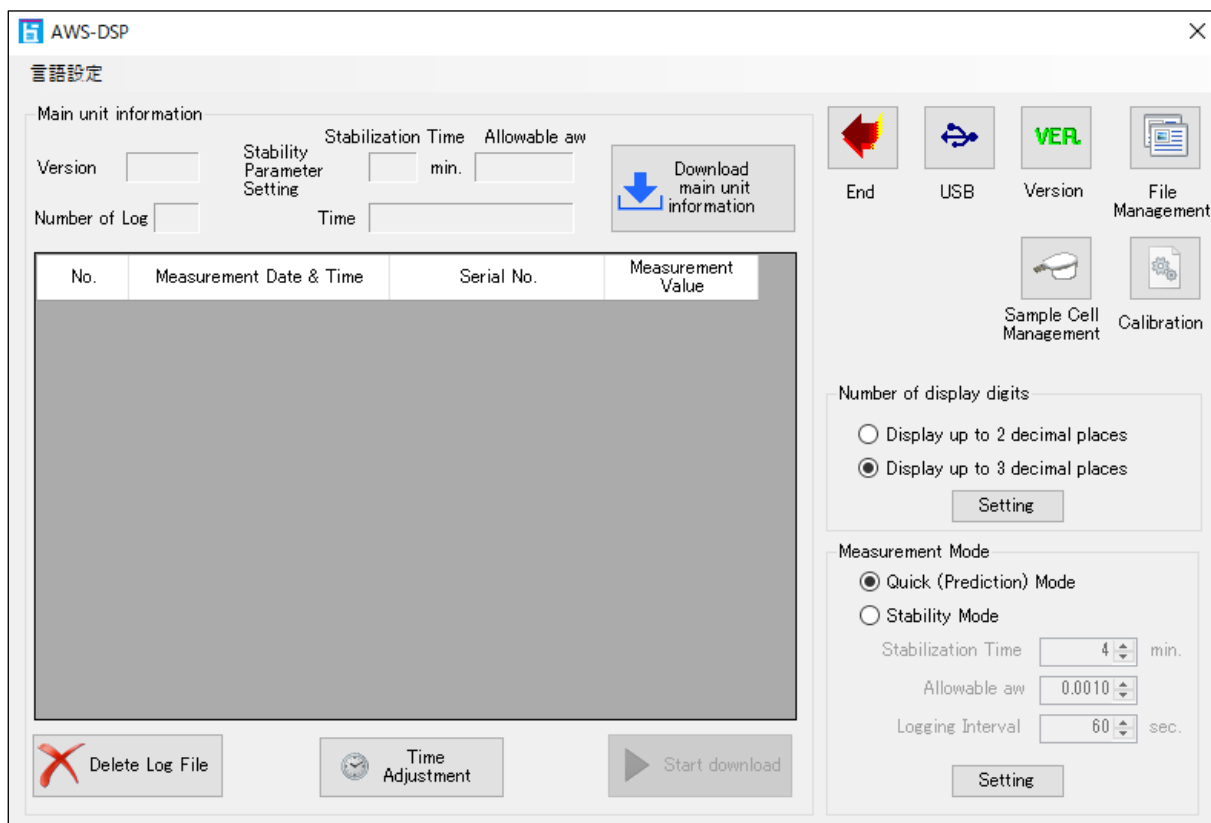
5-5 Connecting with the PC

Check that the AW-1s power switch is OFF. Connect the micro B terminal of the USB cable to the USB interface connector on the AW-1s. Connect the other end to the PC running AWS-DSP.

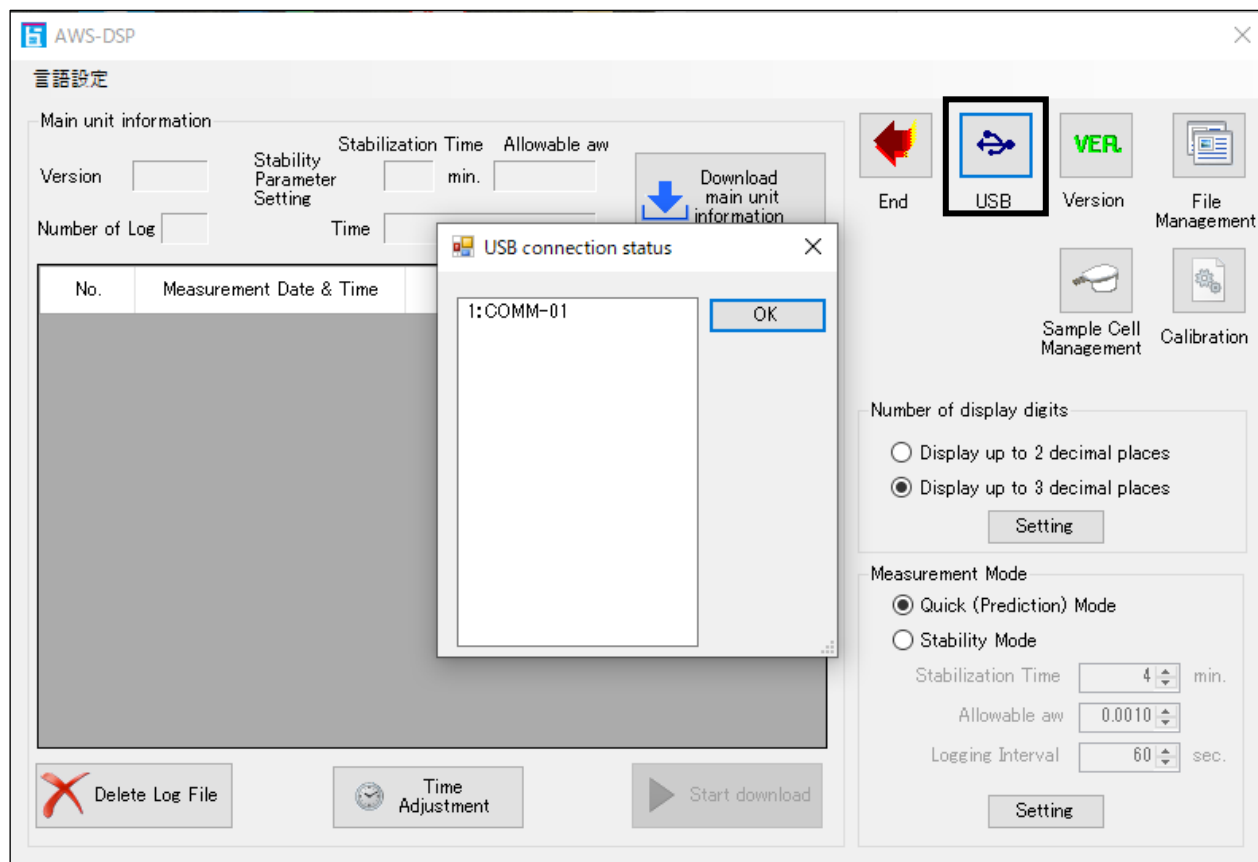
Turn ON the AW-1s power switch. If the analyzer is connected to the PC correctly, “-PC-” will be displayed in the AW-1s display area.



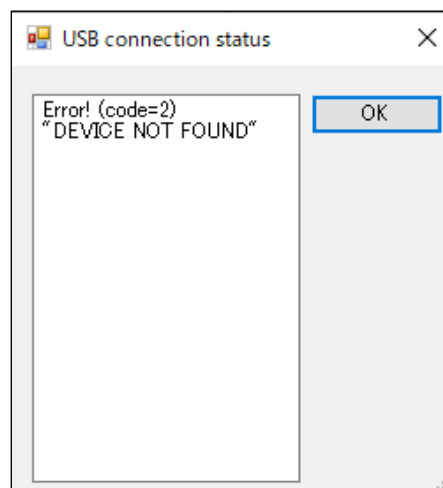
The AWS-DSP startup window is shown below.



In the window, click [USB] to display the [USB connection status] dialog box. “1:COMM-01” will be displayed in this dialog box.



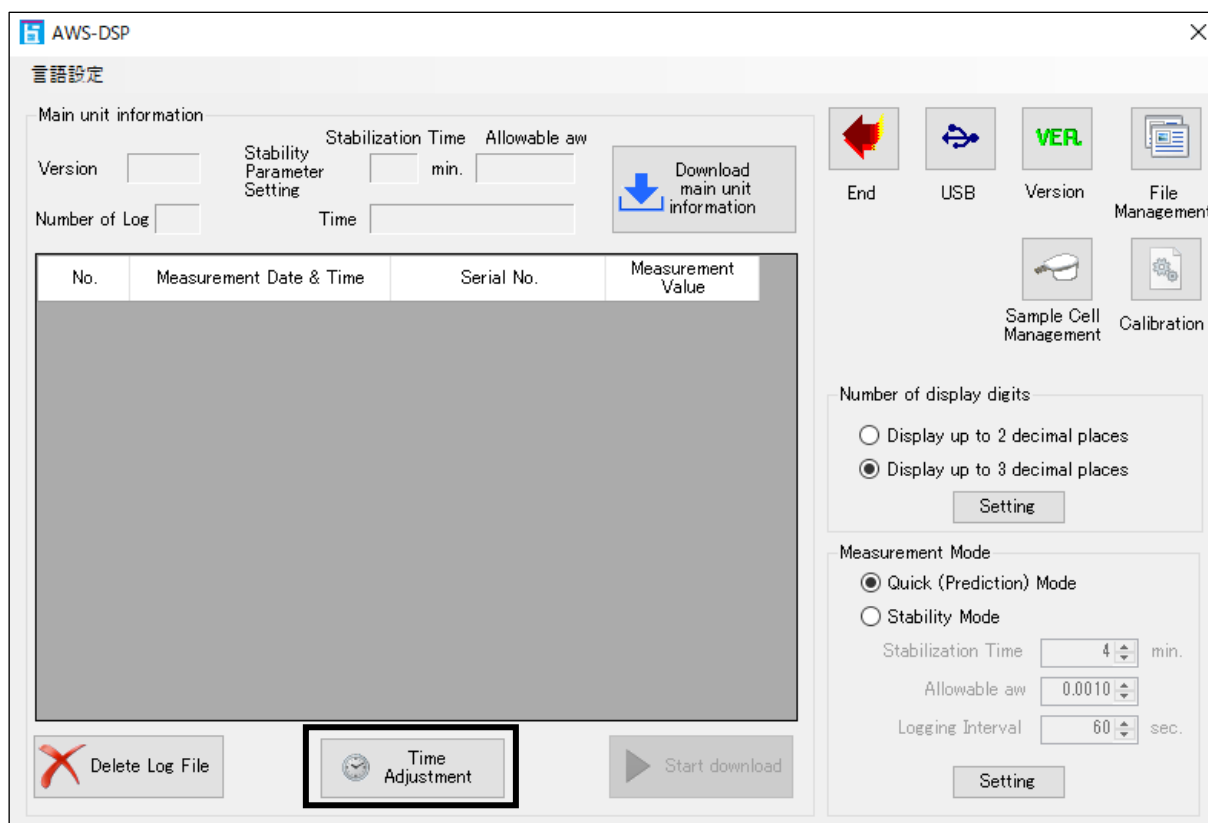
At this point, if the message shown in the figure to the right is displayed in the [USB connection status] dialog box, check the status of the USB cable and the Sibata USB drivers.



5-6 Setting the Date and Time

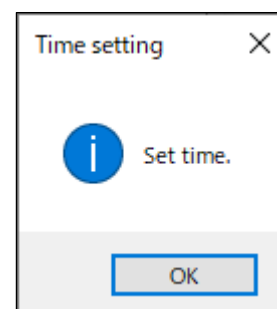
Confirm that the PC and the AW-1s are connected properly. Then click [Time Adjustment] in the window shown below. The date and time on the PC connected will be transferred to the AW-1s.

- If the date and time on the PC are incorrect, this incorrect data will be transferred as is to the AW-1s.



If the time adjustment finishes properly, the dialog box shown to the right will be displayed. Click [OK].

This completes the date and time setting.

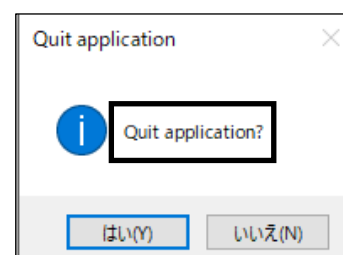


- Before closing the application, check settings 5-7, 5-9, and 5-10.

After finishing the above procedure, click [End] in the AWS-DSP window.

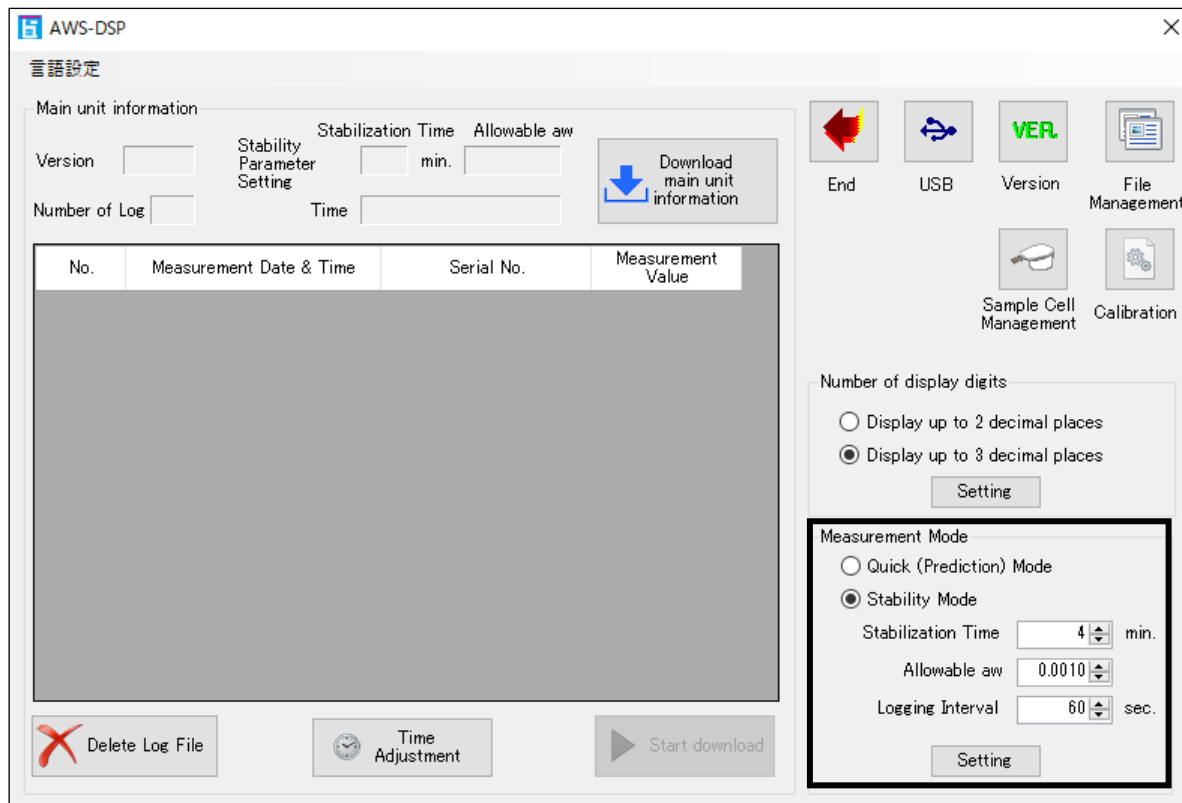
- When closing the software, an application closing dialog box is displayed in English, regardless of the language settings, and [Quit application ?] is displayed.

Click [Yes] to close the application.



5-7 Switching the Measurement Mode

The water activity analyzer is equipped with two measurement modes. This setting can only be changed from the PC. Select the measurement mode, and click [Setting].

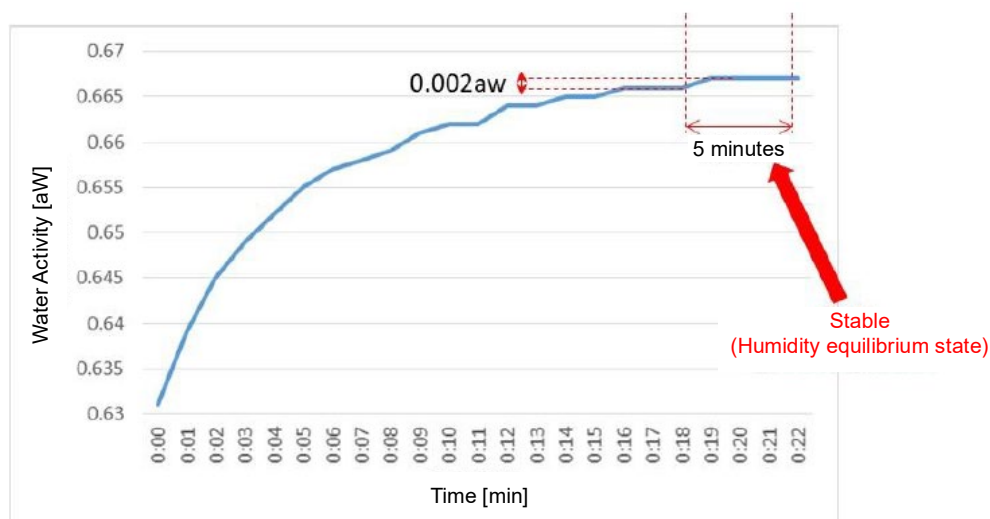


■ Stability Mode

In this mode, measurements end when, after a set time, the water activity values settle down to a set fluctuation range.

Pre-configure the [Stabilization Time] and [Allowable aw] settings.

In addition, the data saved at the configured logging interval can be checked using special software. (For details, refer to 8 Data Logging.)



■ Quick (Prediction) Mode

In this mode, aging is performed for 1 minute, and measurements for 5 minutes, so the process ends after a total of 6 minutes.

This mode is intended for quick measurements.

- Quick (Prediction) mode is a short-interval mode intended for users who are knowledgeable about water activity measurements, and who have experience with measurements of water activity in stability mode. Users who are inexperienced with water activity measurements are advised to initially use Stability mode.

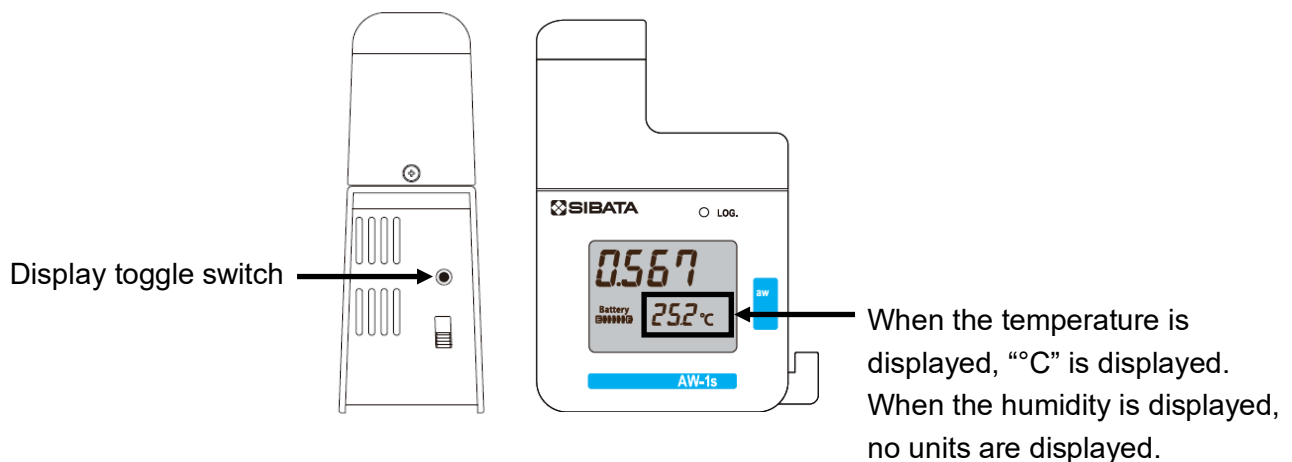
5-8 Switching the Display

■ When the Sensor-Equipped Sample Container is Not Inserted

The ambient temperature and humidity can be checked with the AW-1s.

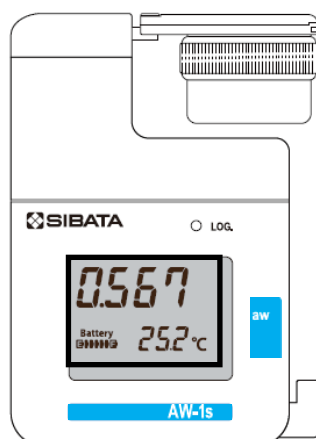
To switch between the temperature display and the humidity display, press the display toggle switch (2).

This switches the display.



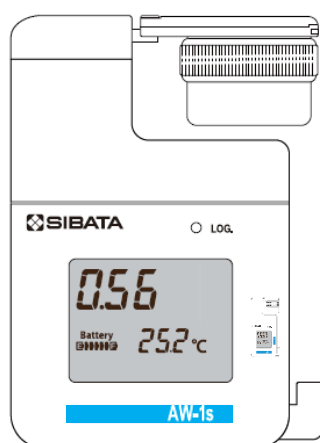
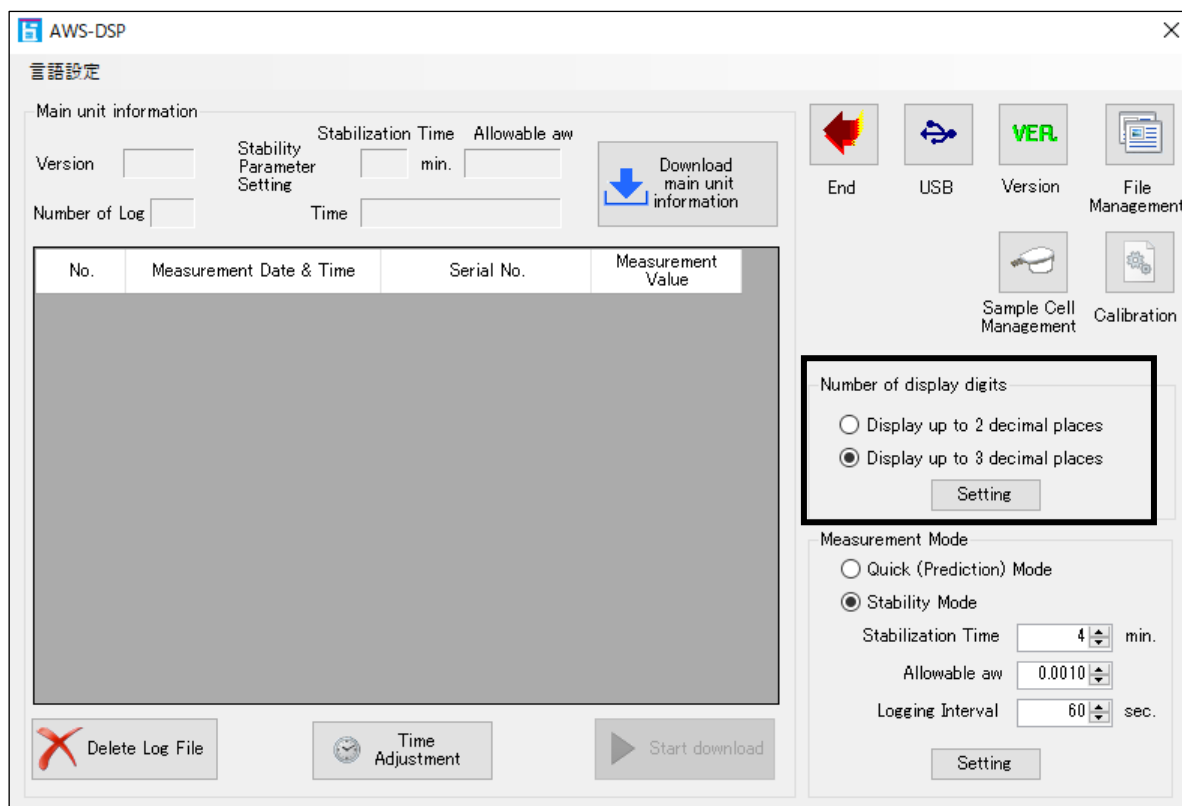
■ When the Sensor-Equipped Sample Container is Inserted

The water activity is displayed in the top of the display area. In the bottom area, the remaining dry cell life is shown to the left. The temperature inside the sensor-equipped sample container is shown to the right. The display cannot be switched.

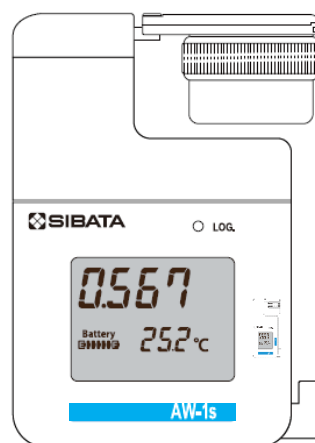


5-9 Switching the Number of Digits in the Water Activity Display

With this unit, the water activity display can be changed to either 2 or 3 digits after the decimal point.



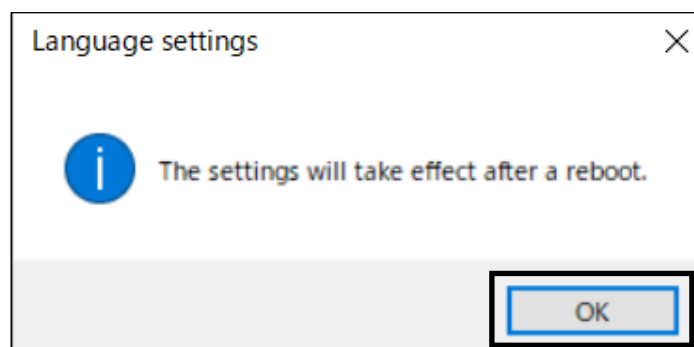
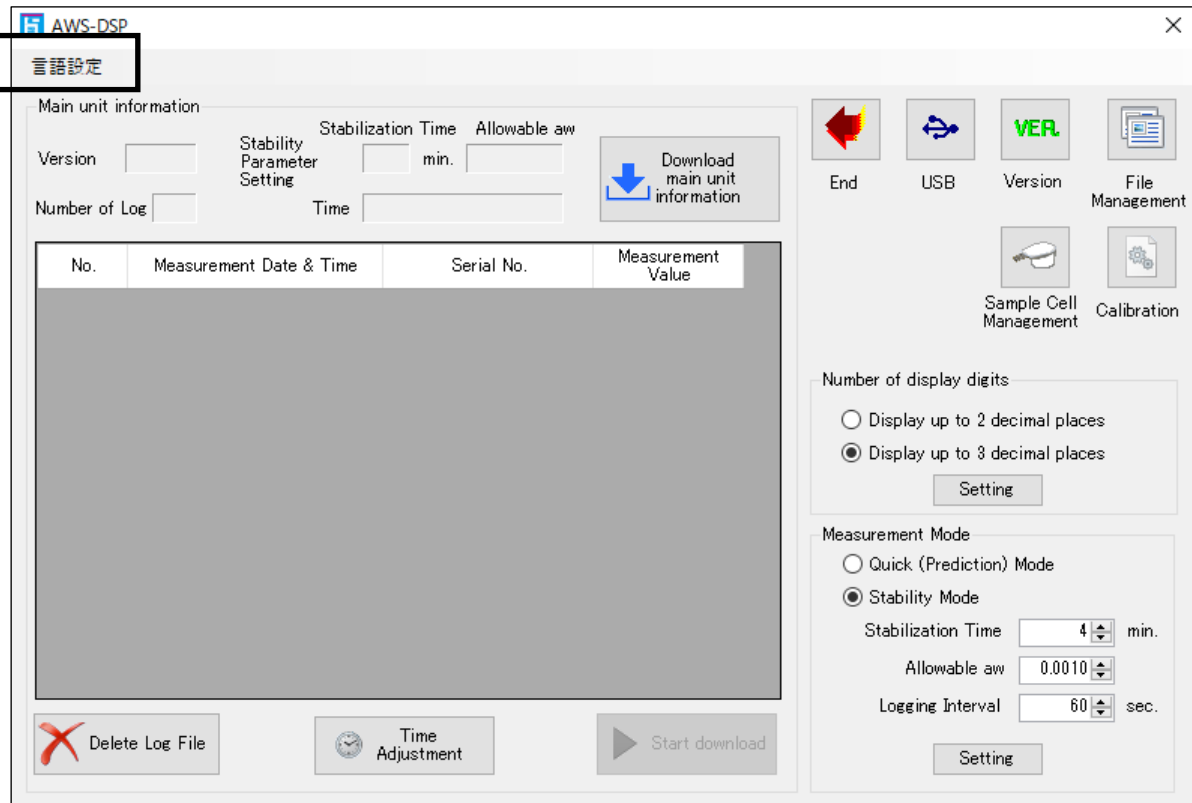
Display with 2 Digits after the Decimal Point
(The 3rd digit is truncated.)



Display with 3 Digits after the Decimal Point

5-10 Switching the Language

The communication software notices can be switched between Japanese and English. After changing the language, close and then restart the communication software.



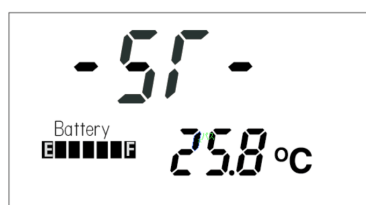
6 Measurements

When calibrating before measurement, refer to 7 Calibration.

Also, to check the precision before measurement, measure a standard sample.

6-1 Measurements in Stability Mode

- (1) Place a sample in the sensor-equipped sample container or the sample container, and put the lid on the sensor-equipped sample container. The sample should fill between 70 and 80 % of the container.
 - “-ST-” is displayed before the sensor-equipped sample container is inserted.
- (2) Insert the sensor-equipped sample container into the AW-1s.
- (3) During aging (for 1 minute), “-” is displayed in the display area. During measurement, the water activity value will flash.
- (4) The measurements are finished when the water activity value changes from flashing to steady.
 - To abort a measurement, remove the sensor-equipped sample container from the AW-1s.



When the AW-1s is ON



Directly after the sensor-equipped sample container is inserted (during aging)



During the water activity measurements



Water activity measurements are finished

Displayed only in Stability mode

AWS-DSP

言語設定

Main unit information

Version

Number of Log 40

Time 2024/12/12 16:47:06

Stability Parameter Setting

Stabilization Time 4 min.

Allowable aw 0.0010

Download main unit information

No.	Measurement Date & Time	Serial No.	Measurement Value
7	2024/07/11 15:51:39	000000	0.579
8	2024/07/11 18:12:37	000000	0.213
9	2024/07/17 16:36:29	000501	0.569
10	2024/07/23 12:22:58	000000	0.236
11	2024/07/23 13:24:47	000000	0.518
12	2024/07/23 14:06:57	000000	0.260
13	2024/07/23 16:19:43	000000	0.218
14	2024/07/23 16:47:16	000000	0.511
15	2024/07/23 17:54:21	000000	0.835
16	2024/07/23 18:22:59	000503	0.437
17	2024/07/23 18:42:34	000503	0.242
18	2024/07/23 19:14:10	000503	0.369
19	2024/07/26 11:16:09	000503	0.439

Delete Log File

Time Adjustment

Start download

End

USB

Version

File Management

Sample Cell Management

Calibration

Number of display digits

☐ Display up to 2 decimal places

☒ Display up to 3 decimal places

Setting

Measurement Mode

☐ Quick (Prediction) Mode

☒ Stability Mode

Stabilization Time 4 min.

Allowable aw 0.0010

Logging Interval 60 sec.

Setting

6-2 Measurements in Quick (Prediction) Mode

- (1) Place a sample in the sensor-equipped sample container or the sample container, and put the lid on the sensor-equipped sample container. The sample should fill between 70 and 80 % of the container.
 - “-qc-” is displayed before the sensor-equipped sample container is inserted.
- (2) Insert the sensor-equipped sample container into the AW-1s.
- (3) During aging (for 1 minute), “-” is displayed in the display area. During measurement, the water activity value will flash.
- (4) The measurements are finished when the water activity value changes from flashing to steady.
 - To abort a measurement, remove the sensor-equipped sample container from the AW-1s.



When the AW-1s is ON



Directly after the sensor-equipped sample container is inserted (during aging)



During the water activity measurements



Water activity measurements are finished

Not displayed in Quick (Prediction) mode

The screenshot shows the AWS-DSP software interface. On the left, there is a table of measurement data. On the right, there are various settings and controls. A red box highlights the 'Main unit information' section, which is noted as 'Not displayed in Quick (Prediction) mode'.

No.	Measurement Date & Time	Serial No.	Measurement Value
13	2024/07/23 16:19:43	000000	0.218
14	2024/07/23 16:47:16	000000	0.511
15	2024/07/23 17:54:21	000000	0.835
16	2024/07/23 18:22:59	000503	0.437
17	2024/07/23 18:42:34	000503	0.242
18	2024/07/23 19:14:10	000503	0.369
19	2024/07/26 11:16:09	000503	0.439
20	2024/09/14 07:07:13	000000	0.633
21	2024/09/17 13:50:04	000000	0.628
22	2024/10/29 17:30:10	000000	6.553
23	2024/11/07 09:45:35	000000	6.553
24	2024/11/08 13:04:42	000000	6.553
25	2024/11/08 14:13:30	000000	0.565

Buttons and settings visible in the interface include: End, USB, Version, File Management, Sample Cell Management, Calibration, Number of display digits (Display up to 2 decimal places, Display up to 3 decimal places), Measurement Mode (Quick (Prediction) Mode, Stability Mode), Stabilization Time (4 min), Allowable aw (0.0010), Logging Interval (60 sec), Delete Log File, Time Adjustment, and Start download.

6-3 Error Window

Display	Problem	Corrective Measures
Err 1 Err 2 Err 3 Err 9	The AW-1s and the sensor-equipped sample container are not connected properly.	Turn OFF the power, and check that the sensor-equipped sample container has been inserted properly into the AW-1s. If you repeat the procedure several times but the error persists, there may be a fault with either the sensor-equipped sample container or the AW-1s. Contact the distributor where you purchased the product or your Sibata representative.
"CELL" is displayed once every 5 seconds during the water activity measurements.	End of operating life of the sensor-equipped sample container (sensor deterioration)	Purchase a new sensor-equipped sample container. It is not possible to repair just the sensor-equipped sample container.

7 Calibration

7-1 Water Activity Calibration

Measure a standard sample. Configure a calibration factor to adjust the water activity value for the sensitivity of the sensor. This must be done separately for each sensor-equipped sample container.

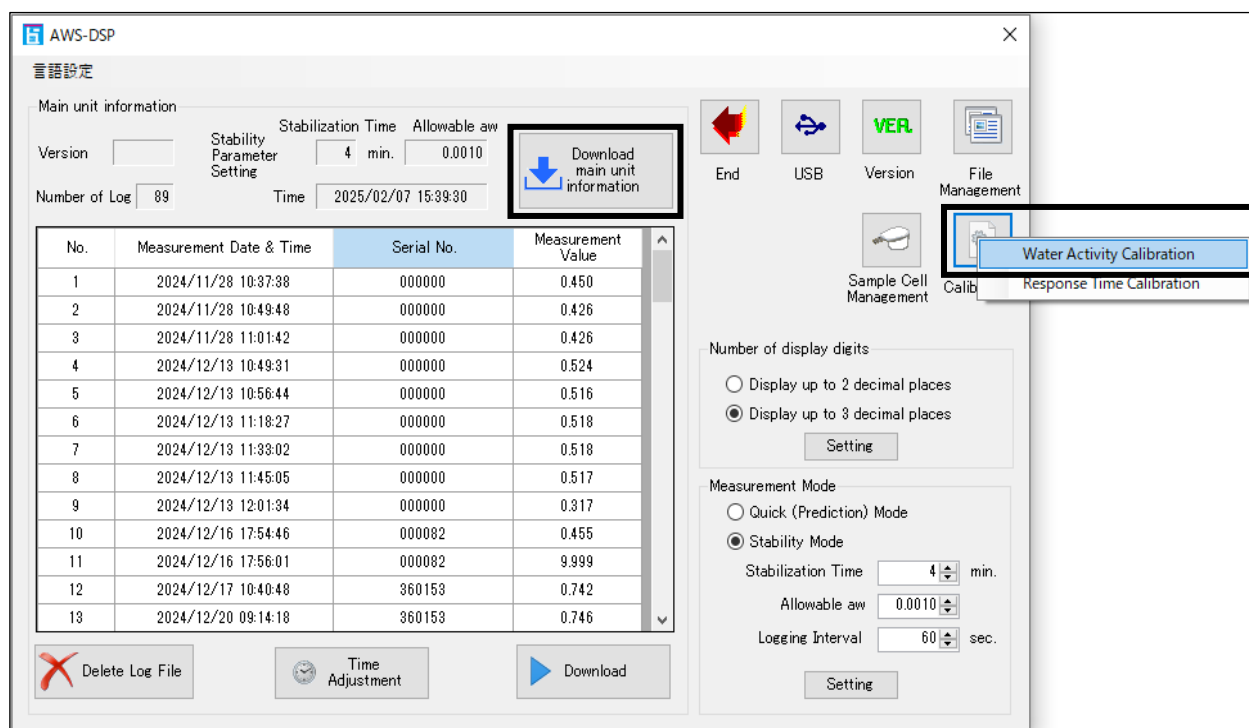
■ Preparations

PC, standard sample (saturated salt, etc.)

- Before measurement, remove the sensor-equipped sample container.

■ Calibration Method

- (1) Connect the PC and the AW-1s using the USB cable.
- (2) Run the special software, and click [Download main unit information]. This must be implemented.
- (3) Click [Calibration]-[Water Activity Calibration].



- (4) Select one of the options in the [Mode of calibrate] area. Enter the values for the standard water activity and enter a measurement time per point. In the [Calibration points] area, select a value between 1 and 3. In the [Measurement end conditions in Stability mode] area, select either [Measurement Time] or [Stabilization Time].

Measurement end conditions in Stability mode

Measurement Time	The measurement time per point
Stabilization Time	As with stability mode, determined by the stability time and the permitted aw value (Refer to page 14.)

- The calibration factors for stability mode and quick mode are different. If using both modes, calibrate each respectively.
- To initialize the calibration factors, do so from cell management. (Refer to 7-3 Cell Management.)

What follows is for 2 calibration points

- (5) Enter the saturated salt for the 1st point in the sensor-equipped sample container, and insert it into the AW-1s.
- (6) Click [Start measurement] to start the measurement.

Water Activity Calibration

Calibration measurement setting

Mode of calibrate

☒ Stability Mode

☐ Quick Mode

Points	Standard Water Activity [aw]	Measurement Value [aw]
1	0.753	
2	0.843	
3	0.930	

Sample setting

Calibration points: 2 points

Measurement Time: 30 min

Measurement end conditions in Stability mode

☒ Measurement Time

☐ Stabilization Time

Stabilization Time: 4 min.

Allowable aw: 0.0010

Start measurement

unsampled

Calibration Factor

Display result

Calculation

Save file

Calibration Information

Date: 2024/12/20

Operator's name: Sibata

Serial No.: 000082

Comments:

Get Cell Data

OK

Cancel

To abort the 1st point measurement, click [Stop Measurement].

Stop Measurement

Now sampling

Calibration Information

Date: 2024/12/20

Operator's name: Sibata

Serial No.: 000082

Comments:

Get Cell Data

OK

Cancel

- (7) When the window shown below is displayed, remove the sensor-equipped sample container. Replace the contents with the saturated salt for the 2nd point, and insert it into the AW-1s again. Click [OK] in the window shown below.

Water Activity Calibration

Calibration measurement setting

Mode of calibrate

☒ Stability Mode

☐ Quick Mode

Points	Standard Water Activity [aw]	Measurement Value [aw]
1	0.753	0.739
2	0.843	
3	0.930	

Sample setting

Calibration points: 2 points

Measurement Time: 30 min

Measurement end conditions in Stability mode

☒ Start measurement

☐ Start

Start measurement

Start measuring point 2.

OK

Sampling completed

Calibration Factor

Display result

Calculation

Save file

Information

2024/12/20

Get Cell Data

Operator's name: Sibata

Serial No.: 000082

Comments

OK

Cancel

- (8) When the measurement for the 2nd point is finished, the window shown below is displayed. Click [OK].

Water Activity Calibration

Calibration measurement setting

Mode of calibrate

☒ Stability Mode

☐ Quick Mode

Points	Standard Water Activity [aw]	Measurement Value [aw]
1	0.753	0.739
2	0.843	0.838
3	0.930	

Sample setting

Calibration points: 2 points

Measurement Time: 30 min

Measurement end conditions in Stability mode

☒ Start measurement

☐ Start

Measurement completed

Measurement of all points measured.

OK

Sampling completed

Calibration Factor

Display result

Calculation

Save file

Information

2024/12/20

Get Cell Data

Operator's name: Sibata

Serial No.: 000082

Comments

OK

Cancel

- (9) After the measurements are finished, enter the calibration information, and click [Save file].
Check the calibration information and the calibration factor displayed in the [Display result] area.
- Enter the calibration information as needed. In the [Comments] field, enter single-byte alphanumeric characters only.

Water Activity Calibration

Calibration measurement setting

Mode of calibrate

☒ Stability Mode

☐ Quick Mode

Points	Standard Water Activity [aw]	Measurement Value [aw]
1	0.753	0.739
2	0.843	0.838
3	0.930	

Sample setting

Calibration points: 2 points

Measurement Time: 30 min

Measurement end conditions in Stability mode

☒ Measurement Time

☐ Stabilization Time

Stabilization Time: 4 min.

Allowable aw: 0.0010

Start Measurement

Factor calculation completed

Calibration Factor

Display result

Calculation

Calibration Date, 2024/12/20
Operator's name, Sibata
Serial No, 000082
Comments,
Calibration points, 2 points
Correction coefficient
= 1.00000

Save file

Calibration Information

Date: 2024/12/20

Operator's name: Sibata

Serial No.: 000082

Comments:

Get Cell Data

OK

Cancel

- (10) Input the name of the file, and click [Save].
The storage location is the “Windows(C:) → AWS_DSP → Data” folder.

保存先ファイルを指定して下さい

PC > ローカル ディスク (C:) > AWS_DSP > Data

Dataの検索

整理 > 新しいフォルダー

名前

更新日時

種類

サイズ

検索条件に一致する項目はありません。

ファイル名(N): AwCal_20240925062733.csv

ファイルの種類(T): csvファイル(*.csv)

フォルダーの非表示

保存(S)

キャンセル

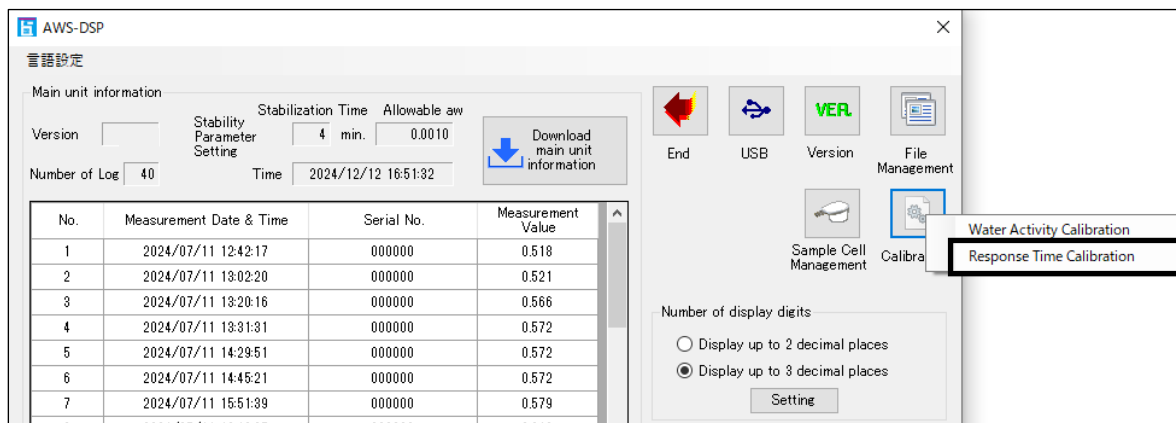
- (11) To finish the calibration, click [OK] at the bottom right of the window displayed at (9).
- Be careful, as the calibration values are not read in unless [OK] is clicked.
 - Ultimately, when [OK] is clicked, the calibration factor is saved to the sensor-equipped sample container even if it is not saved to a file.
 - Click [Cancel] to return to the startup window without reading in the calibration value.

7-2 Response Time Calibration

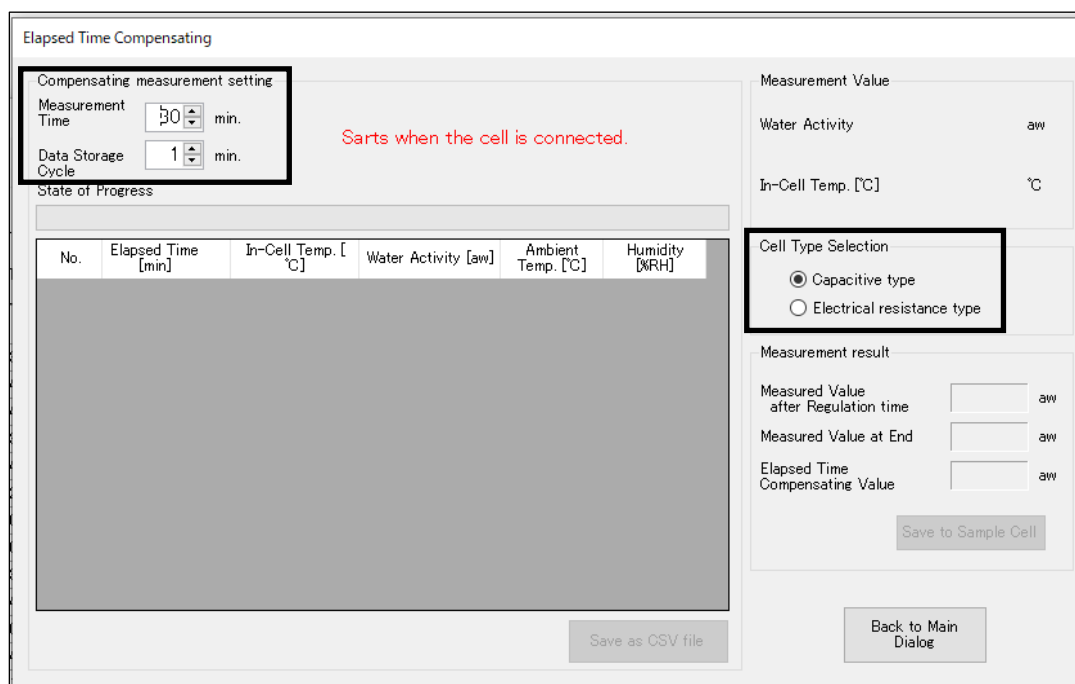
This function calibrates the time in Quick (Prediction) mode and when it takes time (5 minutes or longer for electrostatic and 9 minutes or longer for electrical resistance) until the sample's water activity stabilizes. Response time calibration only supports 1-point calibration.

- Before measurement, remove the sensor-equipped sample container.

- (1) Connect the PC and the AW-1s using the USB cable.
- (2) Click [Calibration]-[Response Time Calibration].



- (3) Set the measurement time until stabilization as well as the data storage cycle. Next, select the cell type. Then put a sample in the sensor-equipped sample container, insert the container into the AW-1s, and start the measurement.
- The regulation time differs with the cell type (5 minutes for electrostatic and 9 minutes for electrical resistance), so be careful not to choose the wrong cell type.



(4) The first minute of measurement time is always for aging.

Elapsed Time Compensating

Compensating measurement setting

Measurement Time: 30 min.

Data Storage Cycle: 1 min.

State of Progress: Ageing...

No.	Elapsed Time [min]	In-Cell Temp. [°C]	Water Activity [aw]	Ambient Temp. [°C]	Humidity [%RH]
-----	--------------------	--------------------	---------------------	--------------------	----------------

Measurement Value

Water Activity: — — — — aw

In-Cell Temp. [°C]: **24.0** °C

Cell Type Selection

☒ Capacitive type

☐ Electrical resistance type

Measurement result

Measured Value after Regulation time: aw

Measured Value at End: aw

Elapsed Time Compensating Value: aw

Save to Sample Cell

Save as CSV file

Back to Main Dialog

(5) The temperature inside the sensor-equipped sample container (internal cell temperature) as well as the ambient temperature and humidity are displayed each data storage cycle.

Elapsed Time Compensating

Compensating measurement setting

Measurement Time: 30 min.

Data Storage Cycle: 1 min.

State of Progress: Measuring...

No.	Elapsed Time [min]	In-Cell Temp. [°C]	Water Activity [aw]	Ambient Temp. [°C]	Humidity [%RH]
1	1	24.3	0.783	24.2	18.5
2	2	24.4	0.791	24.2	18.0
3	3	24.4	0.796	24.1	18.1
4	4	24.4	0.799	24.2	18.1

Measurement Value

Water Activity: **0.799** aw

In-Cell Temp. [°C]: **24.4** °C

Cell Type Selection

☒ Capacitive type

☐ Electrical resistance type

Measurement result

Measured Value after Regulation time: aw

Measured Value at End: aw

Elapsed Time Compensating Value: aw

Save to Sample Cell

Save as CSV file

Back to Main Dialog

(6) When the regulation time has elapsed (5 minutes for electrostatic or 9 minutes for electrical resistance), the measurement value at that time is displayed in the [Measurement result] area.

Elapsed Time Compensating

Compensating measurement setting

Measurement Time: 30 min.

Data Storage Cycle: 1 min.

State of Progress: Measuring...

No.	Elapsed Time [min]	In-Cell Temp. [°C]	Water Activity [aw]	Ambient Temp. [°C]	Humidity [%RH]
1	1	24.3	0.783	24.2	18.5
2	2	24.4	0.791	24.2	18.0
3	3	24.4	0.796	24.1	18.1
4	4	24.4	0.799	24.2	18.1
5	5	24.4	0.802	24.2	21.4

Measurement Value

Water Activity: **0.802** aw

In-Cell Temp. [°C]: **24.4** °C

Cell Type Selection

☒ Capacitive type

☐ Electrical resistance type

Measurement result

Measured Value after Regulation time: **0.802** aw

Measured Value at End: aw

Elapsed Time Compensating Value: aw

Save to Sample Cell

Save as CSV file

Back to Main Dialog

- (7) When the measurement time has finished, the measurement value when the measurement time has elapsed and the response time calibration value are displayed.

Click [Save to Sample Cell] to save the results to the sensor-equipped sample container. To save the results to the PC, click [Save as CSV file].

To finish, click [Back to Main Dialog].

Elapsed Time Compensating

Compensating measurement setting

Measurement Time: 30 min. Measurement completed. save the data.

Data Storage Cycle: 1 min.

State of Progress

No.	Elapsed Time [min]	In-Cell Temp. [°C]	Water Activity [aw]	Ambient Temp. [°C]	Humidity [%RH]
19	19	24.4	0.817	24.1	17.6
20	20	24.4	0.818	24.1	17.5
21	21	24.3	0.819	24.0	19.4
22	22	24.3	0.820	24.0	18.0
23	23	24.3	0.821	24.0	18.0
24	24	24.2	0.822	24.0	17.9
25	25	24.2	0.824	24.0	17.6
26	26	24.1	0.825	24.0	17.7
27	27	24.1	0.826	24.0	18.2
28	28	24.1	0.827	24.1	17.7
29	29	24.1	0.827	24.1	17.8
30	30	24.1	0.828	24.1	17.6

Measurement Value

Water Activity: **0.828** aw

In-Cell Temp. [°C]: **24.1** °C

Cell Type Selection

☒ Capacitive type
☐ Electrical resistance type

Measurement result

Measured Value after Regulation time: 0.802 aw

Measured Value at End: **0.828** aw

Elapsed Time Compensating Value: 0.026 aw

Save to Sample Cell

Save as CSV file

Back to Main Dialog

The default setting for the CSV file storage location is the “Windows(C:) → AWS_DSP → Data” folder.

Select file to save

PC > Windows (C:) > AWS_DSP > Data

Dataの検索

整理 > 新しいフォルダー

名前	更新日時	種類	サイズ
AwCal_20241111122905.csv	2024/11/11 12:29	Microsoft Excel CS...	1 KB
AwCal_20241111122922.csv	2024/11/11 12:29	Microsoft Excel CS...	1 KB
AwCal_20241111131303.csv	2024/11/11 13:13	Microsoft Excel CS...	1 KB
AwCal_20241204111708.csv	2024/12/04 11:17	Microsoft Excel CS...	1 KB
ResponseTime_20241022142046.csv	2024/10/22 14:20	Microsoft Excel CS...	1 KB
ResponseTime_20241022164345.csv	2024/10/22 16:43	Microsoft Excel CS...	1 KB
test1.csv	2024/11/11 16:58	Microsoft Excel CS...	1 KB
test2.csv	2024/11/11 16:59	Microsoft Excel CS...	1 KB

ファイル名(N): ResponseTime_2024120540.csv

ファイルの種類(T): csv file(*.csv)

保存(S) キャンセル

7-3 Cell Management (Management of the Sensor-Equipped Sample Containers)

- Pre-calibrated data can be read out or read in.
- Data can be read in from the calibration data file or saved to a file.
- Calibration data for the sensor-equipped sample container can be initialized.

Click [Sample Cell Management] to display the [Sample Cell Management] window.

言語設定

Main unit information

Version Stability Parameter Setting Stabilization Time 4 min. Allowable aw 0.0010

Number of Log 21 Time 2024/12/13 13:06:49

Download main unit information

No.	Measurement Date & Time	Serial No.	Measurement Value
1	2024/11/06 17:28:23	000000	0.224
2	2024/11/15 14:03:22	000000	0.527
3	2024/11/15 14:15:54	000000	0.529
4	2024/11/15 14:30:16	000000	0.501
5	2024/11/15 14:45:34	000000	0.977
6	2024/11/15 15:14:58	000000	0.985
7	2024/11/15 15:37:32	000000	0.845
8	2024/11/15 16:09:53	000000	0.586
9	2024/11/15 16:13:03	000000	0.676
10	2024/11/15 16:34:09	000000	0.662
11	2024/11/15 16:45:33	000000	0.540
12	2024/11/15 16:59:36	000000	0.353
13	2024/11/20 13:17:42	000000	0.524

End USB Version File Management

Sample Cell Management Calibration

Number of display digits

☐ Display up to 2 decimal places

☒ Display up to 3 decimal places

Setting

Measurement Mode

☐ Quick (Prediction) Mode

☒ Stability Mode

Stabilization Time 4 min.

Allowable aw 0.0010

Logging Interval 60 sec.

Setting

Delete Log File Time Adjustment Start download

Click [Download from Sample Cell] to acquire information from a sensor-equipped sample container.

Sample Cell management


Read from file


Save to file


Download from Sample Cell


Save to Sample Cell


Back

Cell Data Information

Serial No.

Stability Mode Calibration Factor

calibration points

Points	Standard Water Activity [aw]	Correction Factor [aw]
1		
2		
3		

Quick Mode Calibration Factor

calibration points

Points	Standard Water Activity [aw]	Correction Factor [aw]
1		
2		
3		

Measured Value after Regulation time aw

Measured Value at End aw

Elapsed time Compensating Value aw

Comments

Operator's name

Sample Cell Initialization

☐ Initialize Stability Mode Calibration Value

☐ Initialize Quick Mode Calibration Value

☐ Initialize the Elapsed time Compensating Value

In the [Comments] field, a note consisting of up to 16 single-byte alphanumerical characters can be stored with the sensor-equipped sample container. In the [Cell Data Information] area, the water activity calibration values for each mode, as well as the measured values during response time calibration and the calibration value (elapsed time compensating value) can be checked.

Sample Cell management


Read from file


Save to file


Download from Sample Cell


Save to Sample Cell


Back

Cell Data Information

Serial No.

Stability Mode Calibration Factor

calibration points

Points	Standard Water Activity [aw]	Correction Factor [aw]
1	0.753	-0.004
2	0.843	-0.016
3		

Quick Mode Calibration Factor

calibration points

Points	Standard Water Activity [aw]	Correction Factor [aw]
1	1.000	0.000
2		
3		

Measured Value after Regulation time aw

Measured Value at End aw

Elapsed time Compensating Value aw

Comments

Operator's name

Sample Cell Initialization

☐ Initialize Stability Mode Calibration Value

☐ Initialize Quick Mode Calibration Value

☐ Initialize the Elapsed time Compensating Value

To initialize a calibration value, select the checkbox for the item to initialize, and click [Enter].

Sample Cell management

Read from file Save to file Download from Sample Cell Save to Sample Cell Back

Cell Data Information

Serial No.

Stability Mode Calibration Factor

calibration points

Points	Standard Water Activity [aw]	Correction Factor [aw]
1	0.753	-0.004
2	0.843	-0.016
3		

Quick Mode Calibration Factor

calibration points

Points	Standard Water Activity [aw]	Correction Factor [aw]
1	1.000	0.000
2		
3		

Measured Value after Regulation time aw

Measured Value at End aw

Elapsed time Compensating Value aw

Comments

Operator's name

Sample Cell Initialization

☒ Initialize Stability Mode Calibration Value

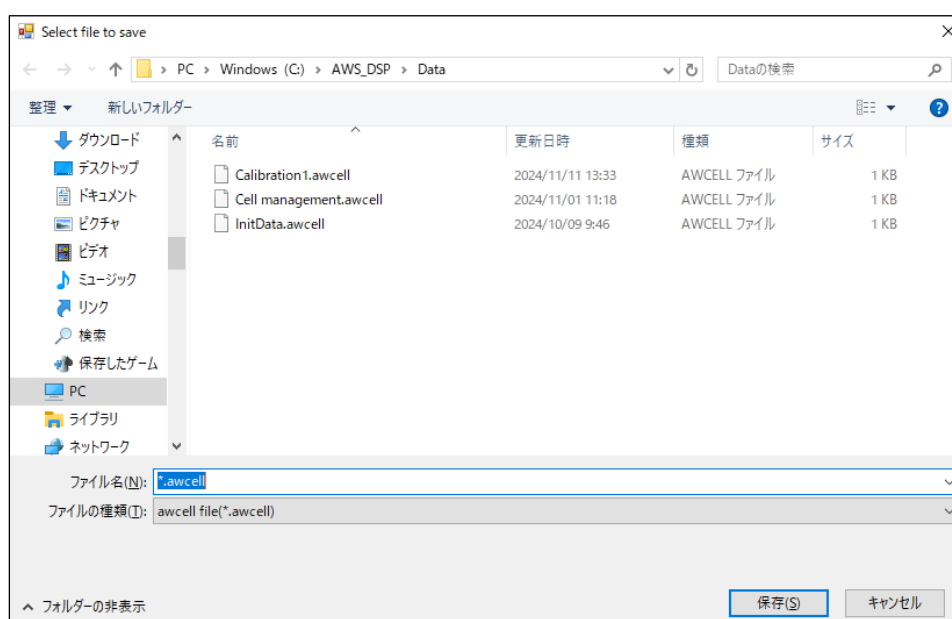
☒ Initialize Quick Mode Calibration Value

☒ Initialize the Elapsed time Compensating Value

The data file acquired from the sensor-equipped sample container can also be saved by clicking [Save to file].

The default setting for the file storage location is “Windows(C:) → AWS_DSP → Data”.

- The data is saved with the “awcell” extension.



7-4 File Management

The saved data can also be printed. Click [File Management].

The screenshot shows the AWS-DSP software interface. The 'File Management' icon in the top right toolbar is highlighted with a red box. The main window displays '言語設定' (Language Setting) and 'Main unit information'. A table lists measurement data with columns: No., Measurement Date & Time, Serial No., and Measurement Value. The table contains 13 rows of data. Below the table are buttons for 'Delete Log File', 'Time Adjustment', and 'Start download'. On the right, there are buttons for 'End', 'USB', 'Version', 'File Management', 'Sample Cell Management', and 'Calibration'. The 'File Management' button is highlighted with a red box. Below these buttons are settings for 'Number of display digits' (Display up to 2 decimal places or Display up to 3 decimal places) and 'Measurement Mode' (Quick (Prediction) Mode or Stability Mode). The 'Stability Mode' is selected, and its parameters are shown: Stabilization Time (4 min.), Allowable aw (0.0010), and Logging Interval (60 sec.).

No.	Measurement Date & Time	Serial No.	Measurement Value
1	2024/11/06 17:28:23	000000	0.224
2	2024/11/15 14:03:22	000000	0.527
3	2024/11/15 14:15:54	000000	0.529
4	2024/11/15 14:30:16	000000	0.501
5	2024/11/15 14:45:34	000000	0.977
6	2024/11/15 15:14:58	000000	0.985
7	2024/11/15 15:37:32	000000	0.845
8	2024/11/15 16:09:53	000000	0.586
9	2024/11/15 16:13:03	000000	0.676
10	2024/11/15 16:34:09	000000	0.662
11	2024/11/15 16:45:33	000000	0.540
12	2024/11/15 16:59:36	000000	0.353
13	2024/11/20 13:17:42	000000	0.524

Select the file to print, and click [Print].

To delete the files, click [Delete files].

The screenshot shows the 'File Management' dialog box. It has a 'Data File Name' list on the left containing several CSV files. The 'test2.csv' file is selected. On the right, there are buttons for 'Delete files' (with a red X icon), 'Print' (with a printer icon), and 'Back' (with a blue arrow icon). The 'Print' button is highlighted with a red box. Below these buttons is a 'File Information' section with fields for: Measurement Mode (Stability Mode), Measurement Date & Time (2024/11/06 17:01:01), Serial No. (000000), Water Activity [aw] (0.536), User Name, Stabilization Time (4 min.), Allowable aw (0.0010), Logging Interval (60 sec.), Elapsed time Compensating Value (----- aw), and Comments.

- The data to print must first be entered to "Windows(C:) → AWS_DSP → Data". Note that calibration data cannot be printed.

8 Data Logging

Each measurement value is stored in the internal memory of the main unit, and the data can be checked using the special software.

In Quick (Prediction) mode, the measurement results can be saved, and in Stability mode, water activity can be saved at data logging intervals.

Note that the data logging interval can be set using the special AWS-DSP software between 1 second and 3600 seconds (60 minutes. In essence, up to the set time).

When Measurement is Aborted

- In Quick (Prediction) mode, no record is kept.
- In Stability mode, the data up until the measurement was aborted is saved.

There are 99 internal memory data storage locations for total logged data sets.

If the memory reaches full capacity, the oldest data will be overwritten in sequence, so be careful.

- In the unlikely event some sort of problem occurs, note Sibata accepts no responsibility for providing compensation for data that could not be acquired or recorded, loss of data or other content, or for any other direct or indirect damages involved. Be sure to back up data on a regular basis in case of a malfunction.

The screenshot displays the AWS-DSP software interface. The main window is titled 'AWS-DSP' and contains several sections:

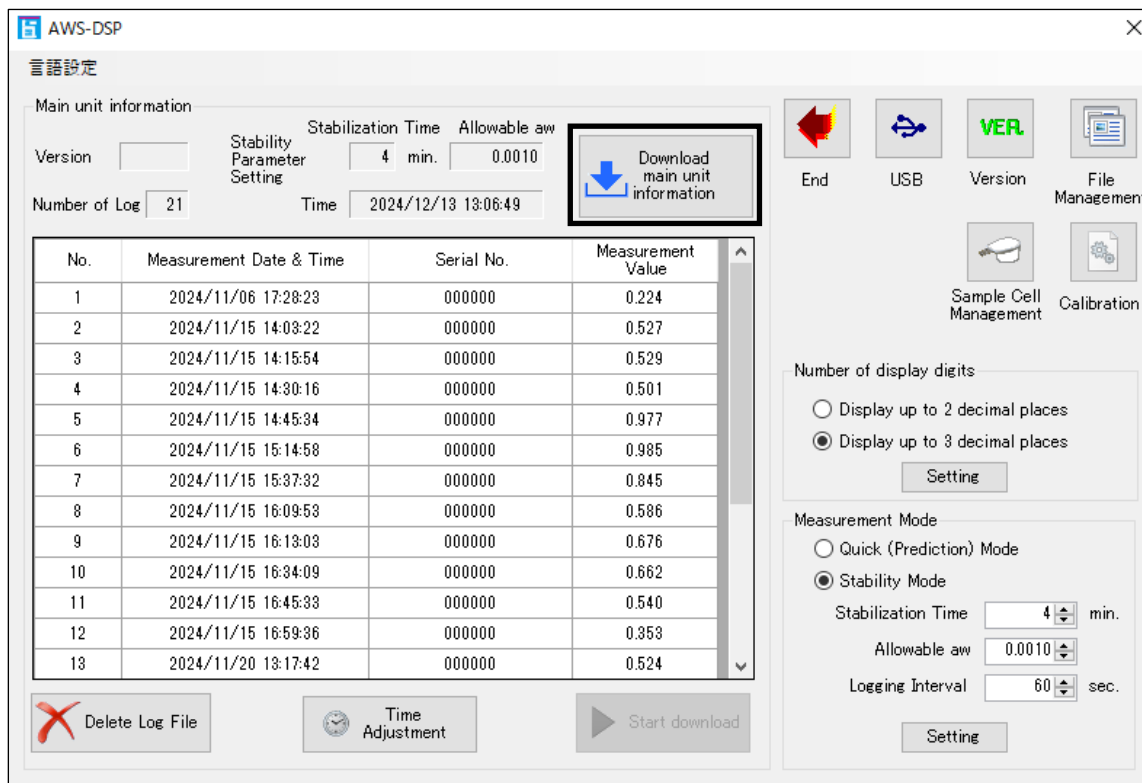
- 言語設定 (Language Setting):** Located at the top left.
- Main unit information:** Includes fields for Version, Stability Parameter Setting, Stabilization Time (4 min.), Allowable aw (0.0010), Number of Log (21), and Time (2024/12/13 13:06:49). A 'Download main unit information' button is present.
- Measurement Data Table:** A table with 4 columns: No., Measurement Date & Time, Serial No., and Measurement Value. It lists 13 measurements.
- Navigation Icons:** End, USB, Version, File Management, Sample Cell Management, and Calibration.
- Number of display digits:** Options for 'Display up to 2 decimal places' and 'Display up to 3 decimal places' (selected). A 'Setting' button is below.
- Measurement Mode:** Options for 'Quick (Prediction) Mode' and 'Stability Mode' (selected). It includes fields for Stabilization Time (4 min.), Allowable aw (0.0010), and Logging Interval (60 sec.). A 'Setting' button is below.
- Bottom Buttons:** Delete Log File, Time Adjustment, and Start download.

No.	Measurement Date & Time	Serial No.	Measurement Value
1	2024/11/06 17:28:23	000000	0.224
2	2024/11/15 14:03:22	000000	0.527
3	2024/11/15 14:15:54	000000	0.529
4	2024/11/15 14:30:16	000000	0.501
5	2024/11/15 14:45:34	000000	0.977
6	2024/11/15 15:14:58	000000	0.985
7	2024/11/15 15:37:32	000000	0.845
8	2024/11/15 16:09:53	000000	0.586
9	2024/11/15 16:13:03	000000	0.676
10	2024/11/15 16:34:09	000000	0.662
11	2024/11/15 16:45:33	000000	0.540
12	2024/11/15 16:59:36	000000	0.353
13	2024/11/20 13:17:42	000000	0.524

- When extracting logging data, if a measurement value is displayed as “9.999”, this indicates that a power supply error occurred during the measurement. Replace the batteries, or check that the power supplied via USB is correct. The measurement value will also be displayed as “9.999” if the power supply is turned OFF during the measurement.

8-1 Extracting Logging Data

- (1) Run the startup window. Click [Download main unit information] to acquire the information on the main unit.



言語設定

Main unit information

Version: Stability Parameter Setting: Stabilization Time: 4 min. Allowable aw: 0.0010

Number of Log: 21 Time: 2024/12/13 13:06:49

Download main unit information

No.	Measurement Date & Time	Serial No.	Measurement Value
1	2024/11/06 17:28:23	000000	0.224
2	2024/11/15 14:03:22	000000	0.527
3	2024/11/15 14:15:54	000000	0.529
4	2024/11/15 14:30:16	000000	0.501
5	2024/11/15 14:45:34	000000	0.977
6	2024/11/15 15:14:58	000000	0.985
7	2024/11/15 15:37:32	000000	0.845
8	2024/11/15 16:09:53	000000	0.586
9	2024/11/15 16:13:03	000000	0.676
10	2024/11/15 16:34:09	000000	0.662
11	2024/11/15 16:45:33	000000	0.540
12	2024/11/15 16:59:36	000000	0.353
13	2024/11/20 13:17:42	000000	0.524

End USB Version File Management Sample Cell Management Calibration

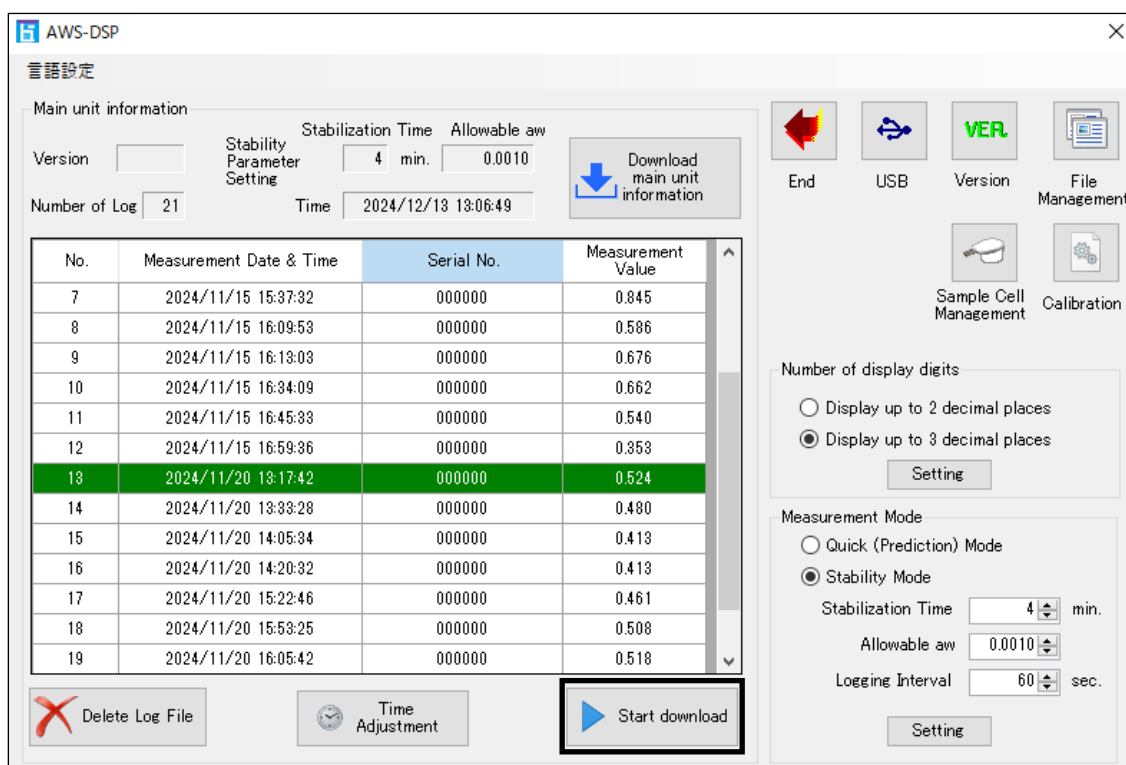
Number of display digits: ☐ Display up to 2 decimal places ☒ Display up to 3 decimal places **Setting**

Measurement Mode: ☐ Quick (Prediction) Mode ☒ Stability Mode

Stabilization Time: 4 min. Allowable aw: 0.0010 Logging Interval: 60 sec. **Setting**

Delete Log File Time Adjustment Start download

- (2) Select the information to acquire, and click [Start download].
If the row selected is highlighted in green, it is Stability mode data.
If it is highlighted in blue, it is Quick (Prediction) mode data.



言語設定

Main unit information

Version: Stability Parameter Setting: Stabilization Time: 4 min. Allowable aw: 0.0010

Number of Log: 21 Time: 2024/12/13 13:06:49

Download main unit information

No.	Measurement Date & Time	Serial No.	Measurement Value
7	2024/11/15 15:37:32	000000	0.845
8	2024/11/15 16:09:53	000000	0.586
9	2024/11/15 16:13:03	000000	0.676
10	2024/11/15 16:34:09	000000	0.662
11	2024/11/15 16:45:33	000000	0.540
12	2024/11/15 16:59:36	000000	0.353
13	2024/11/20 13:17:42	000000	0.524
14	2024/11/20 13:33:28	000000	0.480
15	2024/11/20 14:05:34	000000	0.413
16	2024/11/20 14:20:32	000000	0.413
17	2024/11/20 15:22:46	000000	0.461
18	2024/11/20 15:53:25	000000	0.508
19	2024/11/20 16:05:42	000000	0.518

End USB Version File Management Sample Cell Management Calibration

Number of display digits: ☐ Display up to 2 decimal places ☒ Display up to 3 decimal places **Setting**

Measurement Mode: ☐ Quick (Prediction) Mode ☒ Stability Mode

Stabilization Time: 4 min. Allowable aw: 0.0010 Logging Interval: 60 sec. **Setting**

Delete Log File Time Adjustment **Start download**

(3) Enter the serial no., the measurement value, and the user name in the file information area, and click [Save].

- With Quick mode, only the final measurement result will be recorded.
- The data is saved in CSV format.
- Up to 99 total data sets can be saved. Subsequent data sets will overwrite the oldest data.
- To print log data, refer to 7-4 File Management.

Display Log Data

Measurement Data

No.	Measurement Date & Time	In-Cell Temp. [°C]	Water Activity [aw]	Ambient Temp. [°C]	Humidity [%RH]
1	2025/01/22 10:33:22	25.3	0.881	24.0	29.7
2	2025/01/22 10:34:22	25.3	0.899	24.0	29.3
3	2025/01/22 10:35:22	25.3	0.909	24.0	28.9
4	2025/01/22 10:36:22	25.2	0.913	24.0	29.1
5	2025/01/22 10:37:22	25.2	0.917	24.0	28.9
6	2025/01/22 10:38:22	25.2	0.920	23.9	28.7
7	2025/01/22 10:39:22	25.2	0.922	23.9	28.8
8	2025/01/22 10:40:22	25.2	0.922	23.9	28.6
9	2025/01/22 10:41:22	25.2	0.924	23.9	28.9
10	2025/01/22 10:42:22	25.2	0.925	23.9	28.8
11	2025/01/22 10:43:22	25.2	0.926	23.9	28.8
12	2025/01/22 10:44:22	25.2	0.927	23.8	28.8
13	2025/01/22 10:45:22	25.2	0.927	23.8	28.9
14	2025/01/22 10:46:22	25.2	0.929	23.8	28.9
15	2025/01/22 10:47:22	25.2	0.929	23.8	28.9
16	2025/01/22 10:48:22	25.2	0.930	23.9	29.4
17	2025/01/22 10:49:22	25.2	0.930	23.9	29.3
18	2025/01/22 10:50:22	25.2	0.931	23.9	29.0
19	2025/01/22 10:51:22	25.1	0.931	23.9	29.1

Save

Back

File Information

Measurement Date & Time2025/01/22 10:33:22

Serial No.000000

Water Activity [aw]0.932

User Name

Stabilization Time4 min.

Allowable aw0.0010

Logging Interval60 sec.

Elapsed time Compensating Valaw

Comments

8-2 Deleting Logging Data

To delete all logging data stored on the AW-1s, click [Delete Log File].

8	2024/11/15 16:09:53	000000	0.586
9	2024/11/15 16:13:03	000000	0.676
10	2024/11/15 16:34:09	000000	0.662
11	2024/11/15 16:45:33	000000	0.540
12	2024/11/15 16:59:36	000000	0.353
13	2024/11/20 13:17:42	000000	0.524

Delete Log File

Time Adjustment

Start download

Measurement Mode

☐ Quick (Prediction) Mode

☒ Stability Mode

Stabilization Time4 Min

Allowable aw0.0010

Logging Interval60 Sec

Setting

9 Repairs and Maintenance

■ Replacing the Protective Sensor Filter

If the protective filter inside the sensor-equipped sample container becomes dirty, replace it with the protective filter provided with the sensor-equipped sample container.

- It is affixed to the sensor-equipped sample container in the same manner.

■ Calibration Frequency

If the sensor is in good condition, it does not require daily calibration.

However, the standard salt must be evaluated in order to determine whether the sample measurement results are valid. Before measuring a sample with the AW-1s, measure the standard salt. If the value is offset, performing calibration is recommended.

- If the value is significantly offset in comparison to the standard sample, the sensor-equipped sample container may have exceeded its operating life. In that case, replace the sensor-equipped sample container.

■ Storage

Before storage, place the silica B type gel provided inside the sensor-equipped sample container, and attach the lid of the sensor-equipped sample container.

10 Warranty

If a Sibata product fails within one year from date of purchase, it will be repaired free of charge.

To request repairs, be sure to directly contact the distributor where you purchased the product.

Be sure to provide the item code, product name, model number, serial No., a description of the problem, and other relevant information.

The warranty excludes consumable parts included with the product, products without the purchase date or distributor information recorded, and products for which warranty information was revised.

A repair service fee is charged in the following cases.

- (1) Failures or damage caused by usage methods
- (2) Failures or damage resulting from repairs or modifications not performed by Sibata
- (3) Failures caused by abuse or inadequate maintenance
- (4) Failures or damage resulting from fires, earthquakes, acts of nature, or other unavoidable events
- (5) Failures or damage due to transportation, relocation, falling, vibration, or other such events after purchase
- (6) Failures or damage resulting from using consumables not specified by Sibata.

11 Specifications

Item Code		060990-030	
Model		AW-1s	
Measurement Targets		Water activity of food products and cosmetics	
Measurement Mode		Two types (Stability mode, Quick mode)	
Type of Sensor		Electrostatic sensor or electrical resistance sensor	
Display Range	Water Activity	0.000 to 1.000 aw	
	Ambient Temperature	0 to 80 °C	
	Internal Temperature of the Sensor-Equipped Sample Container	0 to 80 °C	
	Relative Humidity	10 to 95 % rh	
Water Activity Measurement Range		Electrostatic	0.001 to 1.000 aw
		Electrical Resistance	0.200 to 1.000 aw
Accuracy of Water Activity Measurements *1		Electrostatic	±0.01 aw (Fluctuations within ±0.2 °C of the ambient temperature)
		Electrical Resistance	±0.02 aw (Fluctuations within ±0.2 °C of the ambient temperature)
Display Resolution	Water Activity	0.001 aw	
	Ambient Temperature, Sensor-Equipped Sample Container	0.1 °C	
	Relative Humidity	0.1 % rh	
Measurement Time	Stability Mode	Approx. 5 to 30 minutes *2	
	Quick Mode	6 minutes (electrostatic), 10 minutes (electrical resistance)	
Communications		Special PC software via a USB (micro B) connection *3	
Data Storage Function		The year (Western calendar), month, day, hour, minute, second, and the following four measurement items are kept in storage. Ambient temperature, ambient humidity, temperature inside the sensor-equipped sample container, water activity	
Data Storage Interval		1 to 3600 sec	
Number of Measurement Points Stored		99 total sets (Subsequently, the oldest sets will be overwritten.)	
Power Supply		Uses four AAA dry cells; a mobile battery can be used; power can be supplied by USB ● The USB does not function to supply power when the unit is connected to the PC. *4	
Continuous Operating Time		Approx. 60 hours (when using AAA alkaline batteries) *5	
Electrical Current Consumption		40 mA during startup; approx. 20 mA when running normally	
Main Unit Dimensions and Weight (Electrical resistance sensor-equipped sample container included)		W83 × D47 × H140 mm (excluding protrusions), approx. 270 g	
Dimensions and Weight of the Sensor-Equipped Sample Container (Sold Separately)	Electrostatic	W52 × D40 × H32 mm (excluding the connector), approx. 25 g	
	Electrical Resistance	W57 × D40 × H44 mm (excluding the connector), approx. 30 g	
Dimensions of the Sample Container (Sold Separately)		Dia. 40 × 25 mm, 20 mL capacity	

Continues on Next Page

Main Unit Ambient Temperature and Humidity	During Use	Ambient temperature: 5 to 45 °C; relative humidity: 15 to 90 % (no condensation) • A fixed temperature environment between 20 and 30 °C is recommended.
	During Storage	Ambient temperature: 0 to 50 °C; relative humidity: 5 to 95 % (No condensation) • A relative humidity of 40 to 60 % (no condensation) is recommended for the sensor in the sensor-equipped sample container.
Cautions and Preparations		Do not store the sensor-equipped sample container for an extended period under high-temperature and humidity conditions. Before storage, place the silica B type gel provided inside the sample container, and attach the lid of the sensor-equipped sample container.

*1: Electrostatic 0.113 to 0.973aw/Stability mode; ± 0.1 aw after calibration, during measurement with the same conditions.

This excludes conditions in which the sample contains alcohol.

Electrical resistance 0.230 to 0.973aw/Stability mode; ± 0.1 aw after calibration, during measurement with the same conditions.

Same accuracy, even if the sample contains alcohol.

*2: The measurement time differs depending on the sample.

*3: Download the special software from the Sibata website.

*4: A mobile battery and smartphone charger are not provided.

*5: Ambient temperature of 25 °C, relative humidity of 55 % $\pm$ 15 %

Note: Due to parts discontinuation or product improvements, the product shape, dimensions, specifications, and other product information are subject to change without notice, to the extent that the changes do not affect product applicability or functionality.

■ Items Sold Separately

Item Code	Product Name
060990-011	Electrostatic sensor-equipped sample container for AW
060990-031	Electrical resistance sensor-equipped sample container for AW

■ Spare Parts and Consumables

Item Code	Product Name
060990-012	Sample container, 20 mL, for AW, 10 pc
060990-013	Electrostatic sensor protective filter dia. 18 for AW 10 pc
060990-014	Electrical resistance sensor protective filter dia. 35 for AW 10 pc
080990-1	USB cable + dry cell set, for chicco-iino*

*The USB cable is an A-micro B type; the dry cells provided are four AAA batteries.



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