

CODE 060990-008
060990-016

Multiple Water Activity Meter
AW-Multi 8CH/16CH

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.



Contents

 Using this Product Safely and Correctly	3
1 Overview	5
2 Functions	5
3 Operating Environment	5
4 Precautions	6
5 Names of Parts	7
6 Preparations for Measurement	9
6-1 Downloading the Special Software and USB Drivers	9
6-2 Method of Connecting the AC Adapter and USB Cable	9
6-3 Setting the Date and Time	10
6-4 Displaying Each CH (Channel)	10
6-5 Changing the Measurement Conditions	11
6-5-1 Selecting the Measurement Mode	11
6-5-2 Selecting the Measurement Start Method	13
6-5-3 Setting the Sound and WAV File when Measurement is Completed	13
6-5-4 Selecting the Number of Digits in the Water Activity Display	14
6-6 File Settings	14
6-7 Graph Display Switching	16
6-8 Switching the Language	16
7 Measurements	17
7-1 Measurements in Stability Mode	17
7-2 Measurements in Quick (Prediction) Mode	18
7-3 Error Window	19
8 Calibration	20
8-1 Water Activity Calibration	20
8-2 Response Time Calibration	24
8-3 Cell Management (Management of the Sensor-Equipped Sample Containers)	26
9 Data Logging	28
10 Repairs and Maintenance	29
11 Warranty	29
12 Specifications	30



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 the product, and remove the power supply plug of the AC adapter from the power outlet.

■ Package Contents

- ☐ AW-Multi main unit 1 pc
- ☐ USB cable USB 2.0 type A to B, 1 m 1 pc
- ☐ AC adapter 1 pc

■ Items Purchased Separately

- ☐ Capacitive sensor-equipped sample container for AW Required quantity
(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 Required quantity
(Item Code 060990-031)
- ☐ Personal computer 1 pc

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 water activity meter 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 multiple water activity meter can simultaneously measure 8 or 16 samples using a personal computer (PC) and the special AW-Multi software, so many samples can be measured in a short amount of time. Measurements can also be performed individually. Power is supplied via the AC adapter, and the measurement values are saved on the PC.

2 Functions

- 8CH/16CH can be measured simultaneously or individually.
- The measurement values are saved on the PC.
- Data can be processed by a PC.
- The sensor can be calibrated, and the calibration value is saved with the sensor-equipped sample container. It can also be saved on the PC.
- The water activity of sensor-equipped sample containers can be calibrated simultaneously.
- It is possible to set the sound emitted when the measurements are completed.

3 Operating Environment

Operating system (hereafter referred to as OS)	Windows 10 (32 bit, 64 bit), Windows 11 (64 bit) Windows is a registered trademark of Microsoft Corporation.
PC	PC where the OS above runs CPU: Core i5 or higher Memory: 8 GB or more (measured values are saved on the PC)
Communication port	USB Type-A connector, 2 ports or more recommended (USB 2.0 or higher)
Display resolution	1280 × 1024 recommended
Internet connection	Required to download the dedicated software

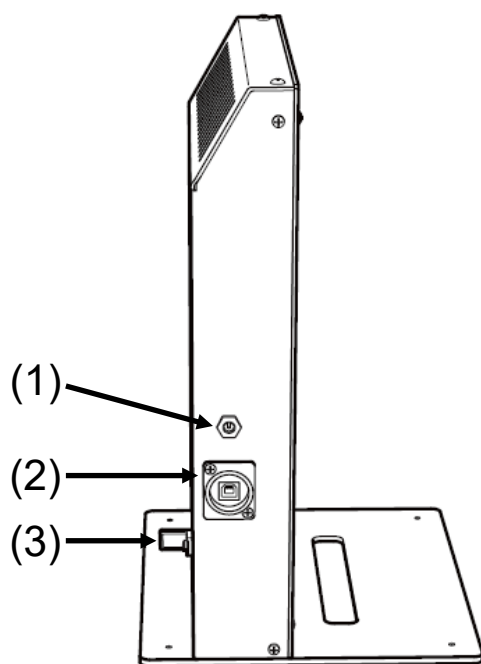
This software has been confirmed to operate on standard personal computers and peripheral equipment. However, there may be certain models where the software does not operate normally.

- **Install the USB drivers before connecting the AW-Multi to the PC.**
- **Note that these specifications are subject to change without notice to the extent that product characteristic or functions will not be impaired.**

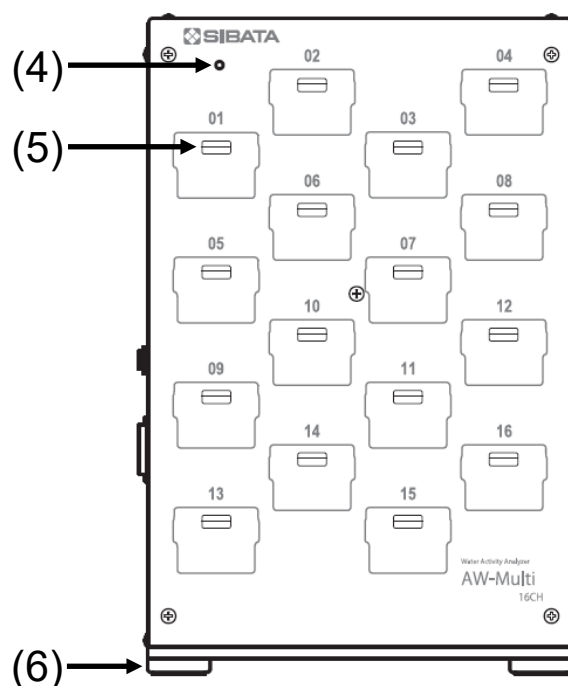
4 Precautions

- 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 saturated salt 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 sensor-equipped sample container 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 on the power with the AC adapter, wait 2 or 3 seconds, then connect the main unit to the PC with a USB cable. Do not plug and unplug the USB cable frequently within a short period of time. Doing so may damage the main unit (after connecting the USB cable, it takes 1 to 2 seconds for the PC to recognize the instrument).
- 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.

5 Names of Parts



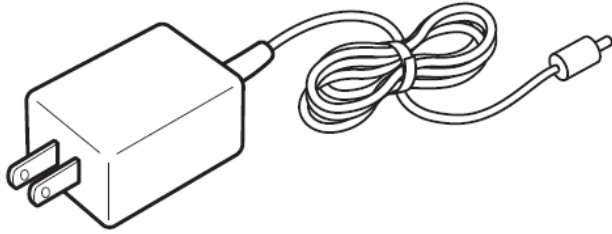
Left Side



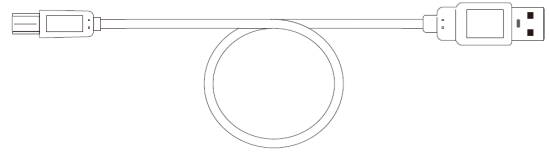
Front Side

Name		Description
(1)	DC jack (5 V DC)	This is the power supply connector for the main unit.
(2)	USB interface connector	This is used for the connection to the PC. It is a B type connection.
(3)	Temperature/humidity detection element	This element detects the ambient temperature and humidity.
(4)	Power supply indicator	This light illuminates when the PC and the AW-Multi main unit are connected with a USB cable, and power is supplied to the main unit. The light is off when they are not connected.
(5)	Insertion port for the sensor-equipped sample container	This is the insertion port for the sensor-equipped sample container. There are 8 positions for 8CH, and 16 positions for 16CH. After inserting or removing the sensor-equipped sample container, it may take some time for recognition to occur, so please wait a few seconds.
(6)	Leg	These are the legs that support the AW-Multi main unit. Legs are provided at 4 locations.

■ Accessories



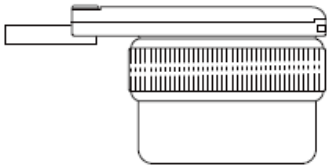
AC adapter



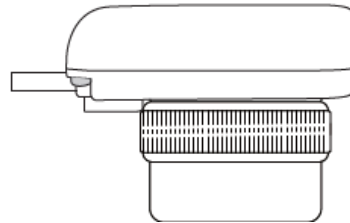
USB cable USB 2.0 type A to B, 1 m

■ Items Sold Separately

- The sample containers are common to both. The sensor protection filters are different.
- In the special AW-Multi software, they are referred to as “cells.”



Capacitive sensor-equipped sample container for AW



Electrical resistance sensor-equipped sample container for AW

6 Preparations for Measurement

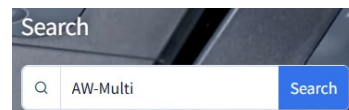
6-1 Downloading the Special Software and USB Drivers

This product is used connected to the PC. Install the special AW-Multi software and USB drivers on the PC you are using.

The special AW-Multi software and USB drivers can be downloaded from the Sibata website.

- **Install the USB drivers before connecting the AW-Multi to the PC.**
- **Be sure to finish installing the USB drivers before connecting to the AW-Multi.**

(1) Browse to <https://www.sibata.co.jp/> and in the product information search field, enter “AW-Multi” and click [Search].



(2) To download the software, click the [Multiple Water Activity Meter AW-Multi *CH]. Then click [Communication Software] in the related information area at the bottom of the page displayed.



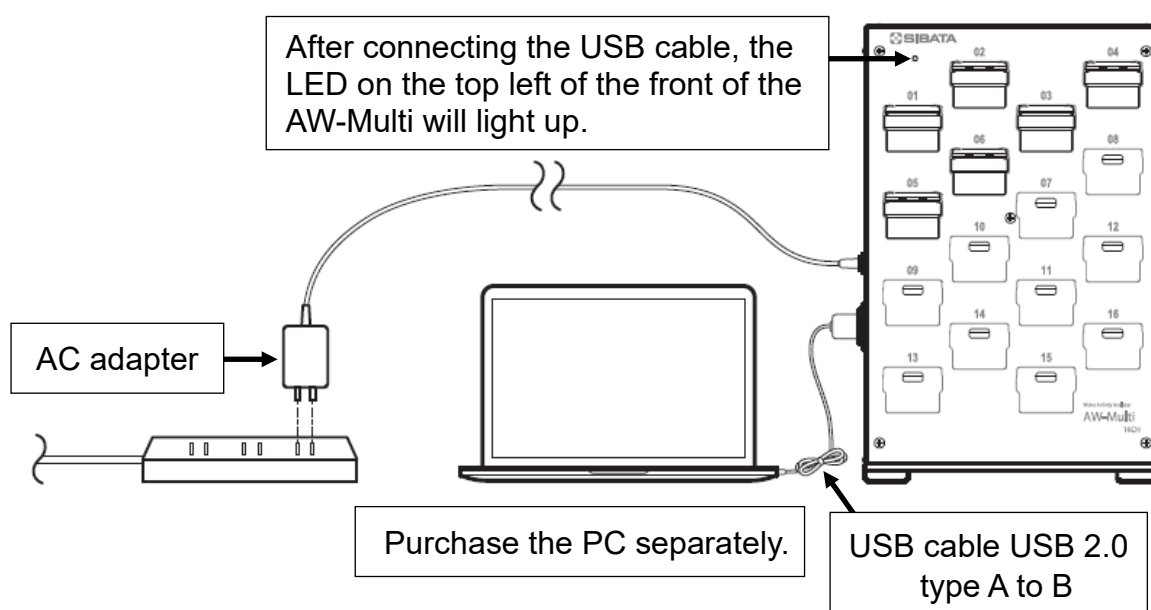
(3) The USB drivers can similarly be downloaded.

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

6-2 Method of Connecting the AC Adapter and USB Cable

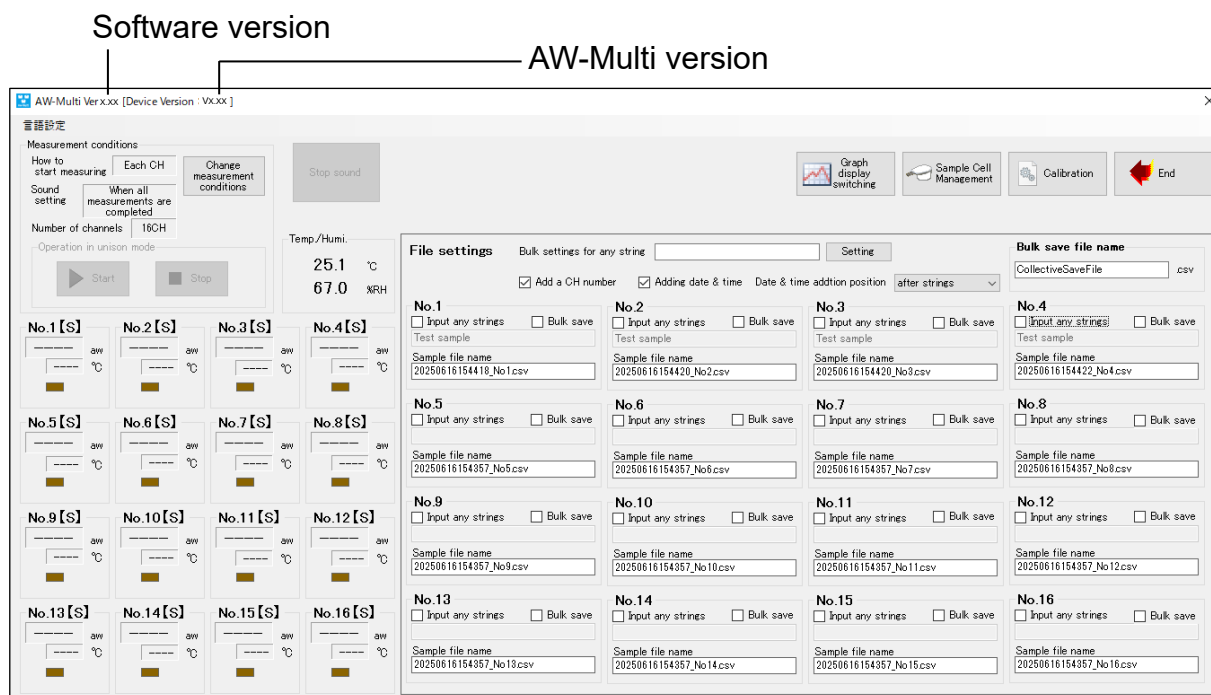
With the PC turned on, connect the AC adapter to the DC jack on the AW-Multi, and then plug the AC adapter's power plug into a power outlet.

Connect the B-type connector of the USB cable to the USB interface connector of the AW-Multi, connect the other end to the PC, then start up the special AW-Multi software.



The AW-Multi startup window is shown below.

- The window may not be displayed properly, depending on the PC settings. It is recommended that the display resolution be set to 1280 × 1024, and the text size to 100 %.



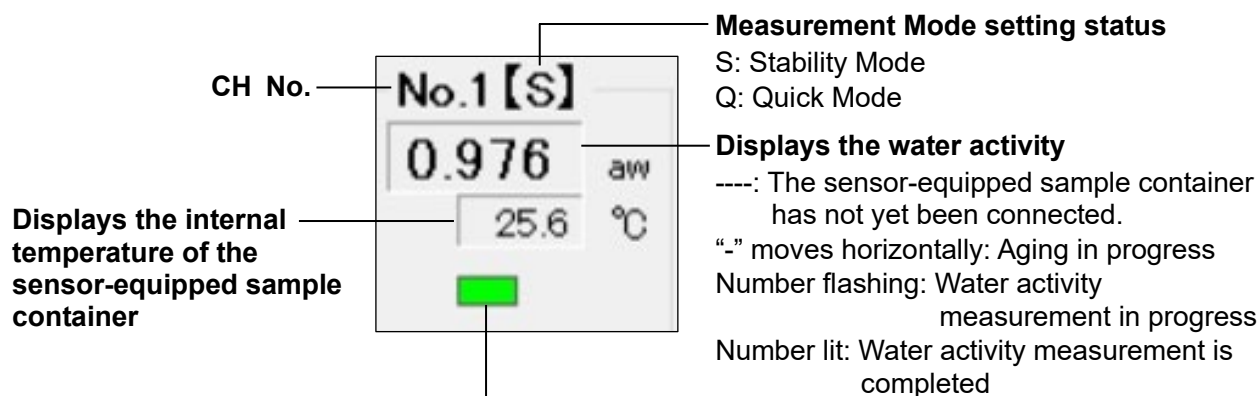
6-3 Setting the Date and Time

The AW-Multi's time is set based on the PC clock data.

Set the time on the PC before use.

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

6-4 Displaying Each CH (Channel)



The measurement status is indicated using color and status

Brown: When the sensor-equipped sample container has not yet been connected.

Green: Aging is in progress, measurement is on standby, measurement is in progress

Red: Measurement is completed, measurement timeout

Flashing in red: Error

6-5 Changing the Measurement Conditions

The measurement mode, measurement start method, sound when measurement is completed, and the number of digits to display the water activity can be selected. At the end, click [Setting].

6-5-1 Selecting the Measurement Mode

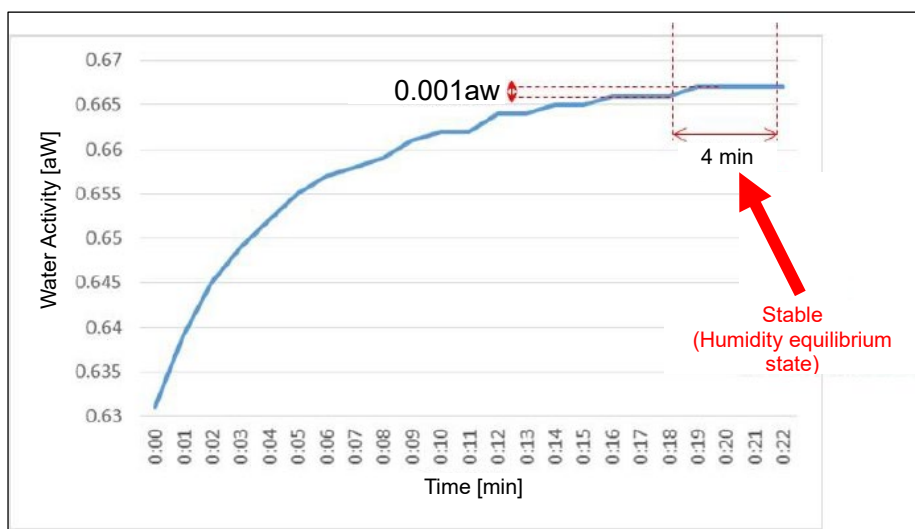
The multiple water activity meter is equipped with two measurement modes.

■ 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 [Stability Time] and [Allowable aw] settings.

Also, it is possible to save data at a set logging interval.



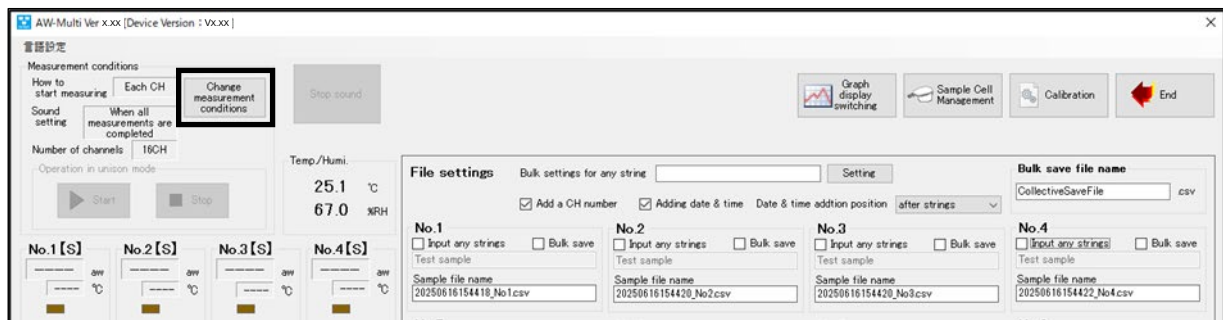
■ Quick (Prediction) Mode

This mode includes an aging time of 1 minute, and a measurement time of 5 minutes (capacitive type) or 9 minutes (electrical resistance type) before measurement is completed.

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.**

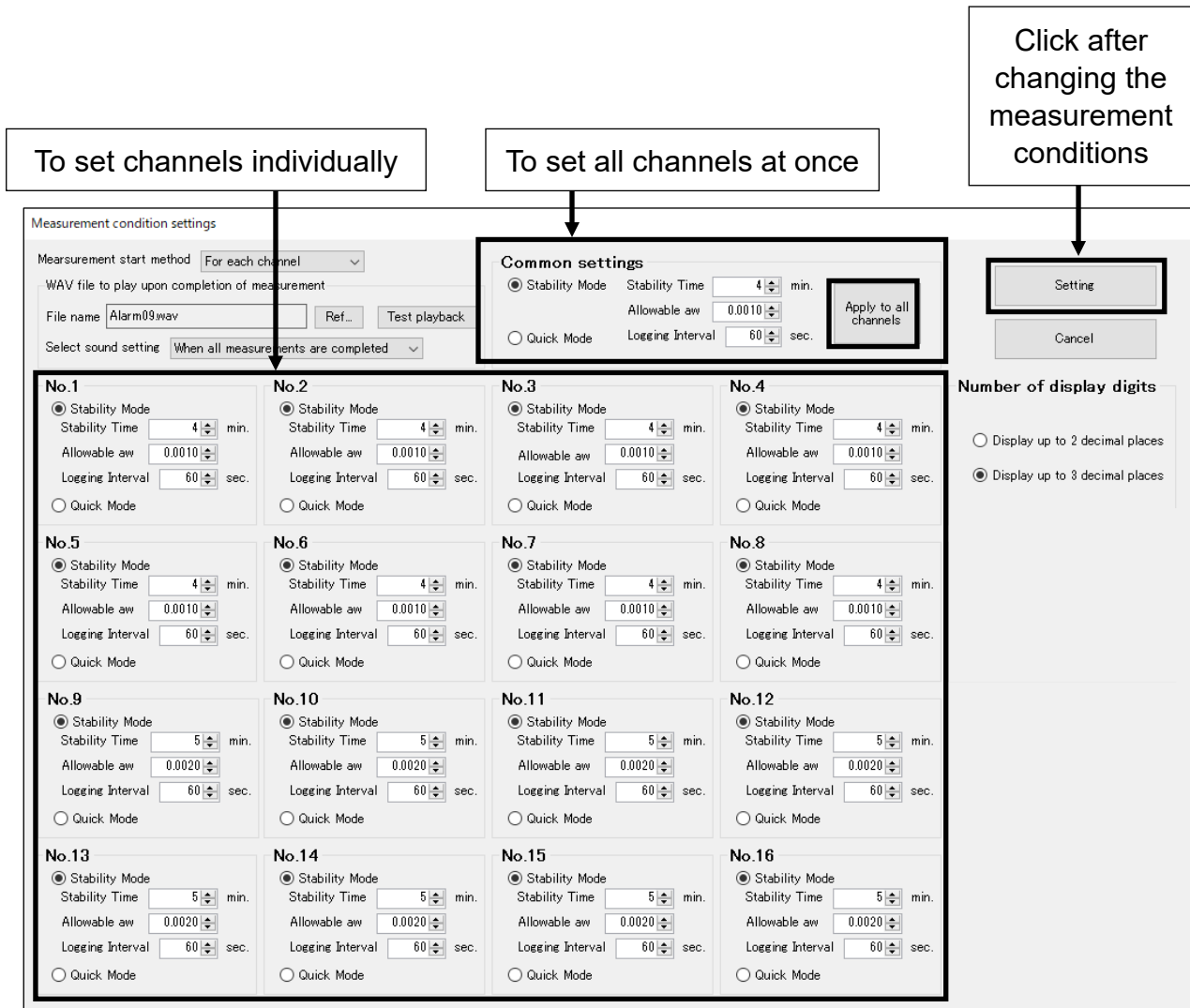
Click [Change measurement conditions] in the startup window.



To configure each setting individually, select the measurement mode for each No. 1 to No. 16.

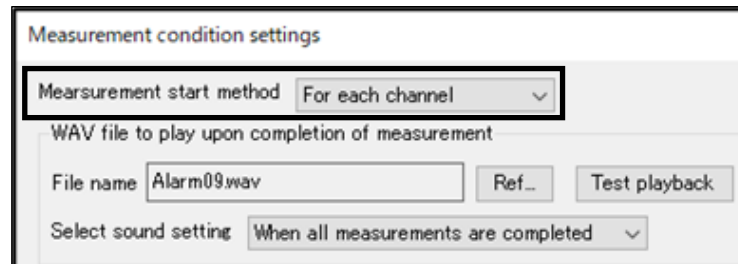
To set all channels at once, select the measurement mode in the [Common Settings] field, and click [Apply to all channels].

At the end, click [Setting].



6-5-2 Selecting the Measurement Start Method

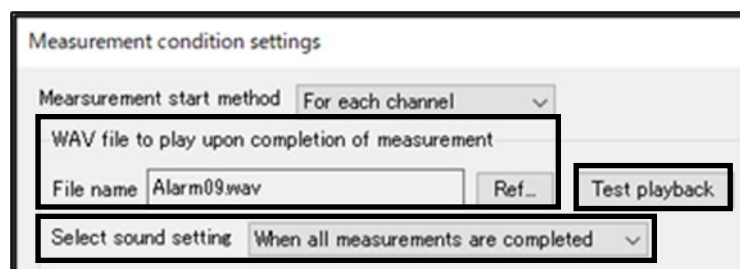
Select the measurement start method from the [Measurement condition settings] window.



For each channel	This is the setting for starting measurement in each channel unit. Measurement starts when a sensor-equipped sample container is inserted into each channel. Measurement can be started in each channel at any preferred time.
Simultaneous start	This is the setting for starting measurement in all channels simultaneously. By inserting sensor-equipped sample containers in advance for the required number of samples and clicking [►Start] on the PC window, measurement can be started on multiple samples simultaneously.

6-5-3 Setting the Sound and WAV File when Measurement is Completed

This product allows you to set a sound to be emitted after measurement is complete and to change the sound.



At end of each CH measurement	A sound is emitted when at least one measurement is completed in each channel. The sound continues until [Stop sound] is clicked.
When all measurements are completed	A sound is emitted when measurement is completed in all channels. The sound continues until [Stop sound] is clicked.
Don't play	No sound is emitted when measurement is completed.

■ To Change the Sound

The sound can be changed by clicking [Ref] and specifying the file.

By clicking [Test playback], the sound can be checked.

6-5-4 Selecting the Number of Digits in the Water Activity Display

The water activity can be selected to be displayed with either two or three digits after the decimal point.

The third digit is truncated when two digits are displayed after the decimal point.

At the end, click [Setting].

Measurement condition settings

Measurement start method: For each channel

WAV file to play upon completion of measurement: File name: Alarm09.wav, Ref..., Test playback

Select sound setting: When all measurements are completed

Common settings

- ☒ Stability Mode: Stability Time: 4 min, Allowable aw: 0.0010, Logging Interval: 60 sec, Apply to all channels
- ☐ Quick Mode

Number of display digits

- ☐ Display up to 2 decimal places
- ☒ Display up to 3 decimal places

Setting

Cancel

6-6 File Settings

By clicking [Graph display switching] on the main window (startup window), it is possible to switch between displaying [File settings] and [Graph display].

When [File settings] is displayed on the window, the file name to save the measured values can be specified in advance.

Also, it is possible to select whether to save the measurement values for each channel, or to save the results for all channels in a single file only.

AW-Multi Ver xxx [Device Version : Vxxx]

Measurement conditions

How to start measuring: Each CH, Change measurement conditions

Sound setting: When all measurements are completed

Number of channels: 16CH

Operation in unison mode

Temp/Humi: 25.1 °C, 67.0 %RH

File settings

Bulk settings for any string: Setting

- ☒ Add a CH number
- ☒ Adding date & time
- Date & time addition position: after strings

Bulk save file name: CollectiveSaveFile, csv

No.1 [S], No.2 [S], No.3 [S], No.4 [S], No.5 [S], No.6 [S], No.7 [S], No.8 [S], No.9 [S], No.10 [S], No.11 [S], No.12 [S], No.13 [S], No.14 [S], No.15 [S], No.16 [S]

Sample file name: 20250616154357_No1.csv, 20250616154420_No2.csv, 20250616154420_No3.csv, 20250616154422_No4.csv, 20250616154357_No5.csv, 20250616154357_No6.csv, 20250616154357_No7.csv, 20250616154357_No8.csv, 20250616154357_No9.csv, 20250616154357_No10.csv, 20250616154357_No11.csv, 20250616154357_No12.csv, 20250616154357_No13.csv, 20250616154357_No14.csv, 20250616154357_No15.csv, 20250616154357_No16.csv

Graph display switching

Sample Cell Management

Calibration

End

■ For Bulk Setting of Arbitrary Character Strings (Filenames)

- (1) Enter the filename on the right side of [Bulk settings for any string].
- (2) To add the channel number and date & time to the filename, select the respective boxes.
- (3) Select whether to add the date & time before or after the character string (filename).
- (4) At the end, click [Setting].

File settings (1) Bulk settings for any string Test sample (4) Setting

(2) ☒ Add a CH number ☒ Adding date & time Date & time addition position after strings (3)

■ To Set the Filename for Each Channel

- (1) Select [Input any strings] for each number (channel number).

No.1 ☒ Input any strings ☐ Bulk save Test Sample Sample file name Test Sample_20250616165227_No1.csv

No.2 ☐ Input any strings ☐ Bulk save Test sample Sample file name 20250616154420_No2.csv

No.3 ☒ Input any strings ☐ Bulk save Test Sample Sample file name Test Sample_20250616165227_No3.csv

No.4 ☒ Input any strings ☐ Bulk save Test Sample Sample file name Test Sample_20250616165227_No4.csv

- (2) To add the channel number and date & time to the filename, select the respective boxes.
- (3) Select whether to add the date & time before or after the character string (filename).
- (4) At the end, click [Setting].

File settings Bulk settings for any string Test sample (4) Setting

(2) ☒ Add a CH number ☒ Adding date & time Date & time addition position after strings (3)

■ To Save the Results for all CH Numbers Only in a Single File

- (1) Select [Bulk save] for the numbers that are to be saved in a single file.

No.1 ☐ Input any strings ☒ Bulk save Test Sample Sample file name Test Sample_20250616165227_No1.csv

No.2 ☐ Input any strings ☒ Bulk save Test sample Sample file name 20250616154420_No2.csv

No.3 ☒ Input any strings ☐ Bulk save Test Sample Sample file name Test Sample_20250616165227_No3.csv

No.4 ☐ Input any strings ☒ Bulk save Test Sample Sample file name Test Sample_20250616165227_No4.csv

- (2) Input the name of the file in which the results are to be saved.

File settings Bulk settings for any string Test Sample (4) Setting

☒ Add a CH number ☒ Adding date & time Date & time addition position after strings

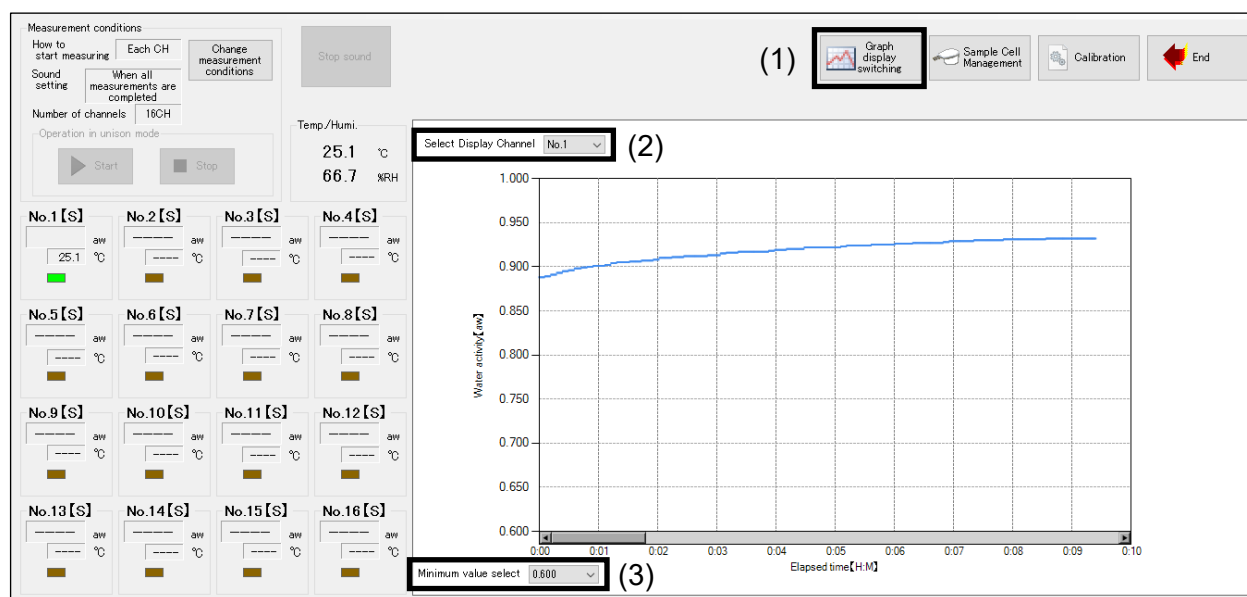
Bulk save file name CollectiveSaveFile.csv

No.1 ☒ Input any strings ☒ Bulk save No.2 ☐ Input any strings ☒ Bulk save No.3 ☒ Input any strings ☐ Bulk save No.4 ☐ Input any strings ☒ Bulk save

- When saving in bulk, data is not saved at the set logging interval.
It is also possible to set it up so that everything is saved in bulk, and some are saved individually.

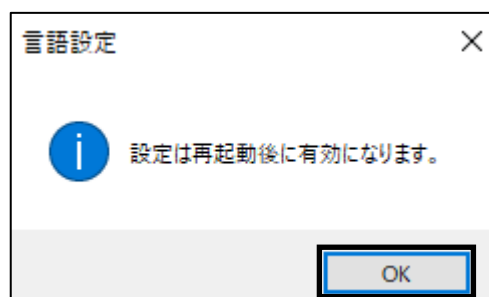
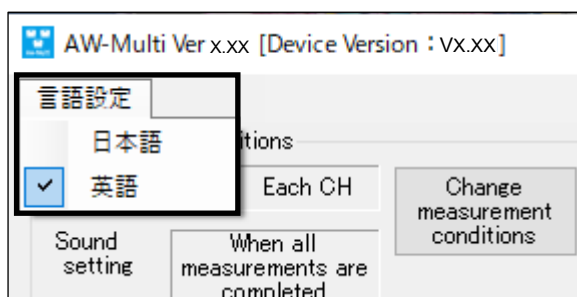
6-7 Graph Display Switching

- (1) By clicking [Graph display switching] on the main window (startup window), graphs are displayed.
- (2) By selecting the channel number to be displayed in [Select Display Channel], the graph is displayed in real time during measurement.
- (3) The graph Y-axis range can be changed using [Minimum value select] while the graph is being displayed.



6-8 Switching the Language

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



7 Measurements

When calibrating before measurement, refer to 8 Calibration.

Also, to check the precision before measurement, perform the measurement using saturated salt.

7-1 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.
 - **When stability Mode is set, [S] is displayed beside the No.**
- (2) Insert the sensor-equipped sample container into the AW-Multi. If the measurement start method is set to [For each channel], measurement starts. If the measurement start method is [Simultaneous start], after inserting sensor-equipped sample containers for the required number of samples into the AW-Multi, click [▶Start] in the Simultaneous Mode operation field to start the measurement.
- (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-Multi.**

The screenshot displays the AW-Multi interface with the following components:

- Header:** AW-Multi Ver X.xx [Device Version :VX.xx]
- Language Setting (言語設定):** Includes buttons for 'How to start measuring' (Each CH), 'Sound setting' (When all measurements are completed), 'Number of channels' (16CH), and 'Operation in unison mode' (Start, Stop). A 'Change measurement conditions' button is also present.
- Temp/Humi.:** Displays 25.2 °C and 65.0 %RH.
- Measurement Data (16 Channels):**

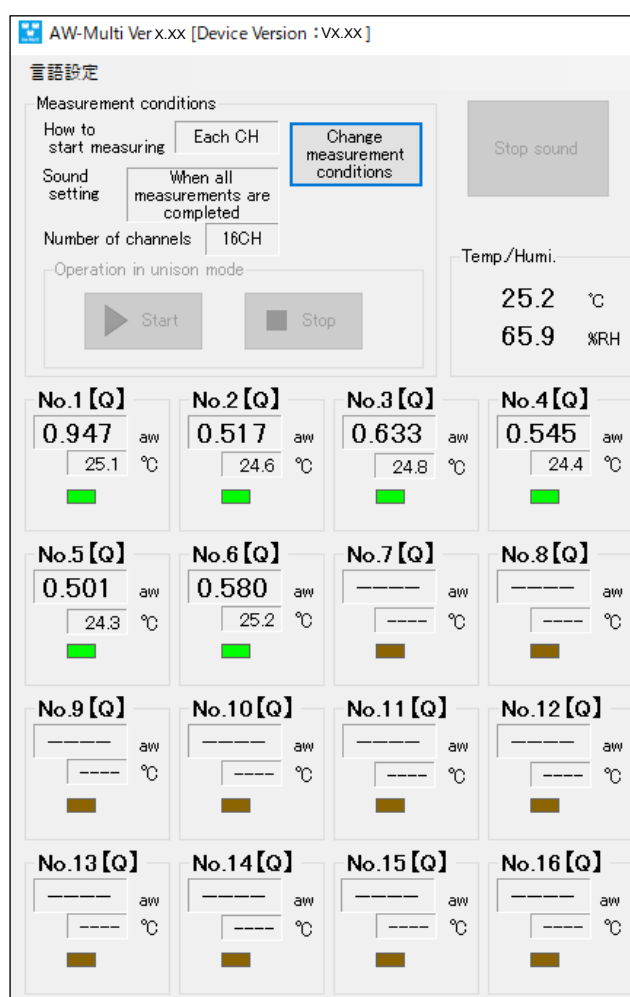
No.	Water Activity (aw)	Temperature (°C)
No.1 [S]	0.945	25.1
No.2 [S]	0.519	24.4
No.3 [S]	0.633	24.8
No.4 [S]	0.318	24.0
No.5 [S]	0.480	23.9
No.6 [S]	-	25.1
No.7 [S]	-	-
No.8 [S]	-	-
No.9 [S]	-	-
No.10 [S]	-	-
No.11 [S]	-	-
No.12 [S]	-	-
No.13 [S]	-	-
No.14 [S]	-	-
No.15 [S]	-	-
No.16 [S]	-	-

16CH Stability Mode Setting

7-2 Measurements in Quick (Prediction) Mode

Quick Mode is a mode for quickly checking trends for known water activity.

- (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.
 - **When Quick Mode is set, [Q] is displayed beside the No.**
- (2) Insert the sensor-equipped sample container into the AW-Multi. If the measurement start method is set to [For each channel], measurement starts. If the measurement start method is [Simultaneous start], after inserting sensor-equipped sample containers for the required number of samples into the AW-Multi, click [▶ Start] in the Simultaneous Mode operation field to start the measurement.
- (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-Multi.**



16CH Quick Mode Measurements

- It is also possible to change between Quick Mode and Stability Mode for each channel. (For the setting method, refer to 6-5-1 Selecting the Measurement Mode.)

7-3 Error Window

Display *1	Problem	Corrective Measures
The measurement status display flashes in red	The AW-Multi and the sensor-equipped sample container are not connected properly.	Disconnect the USB cable's A connector from the PC, remove the AC adapter's power plug from the power outlet, and check that the sensor-equipped sample container is correctly inserted into the AW-Multi. 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-Multi. 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.
	The calibration has not been performed properly.	Initialize the calibration value in 8-3 Cell Management. Check that the "CELL" display does not appear, and perform the calibration again. *2 If there is no improvement, purchase a new sensor-equipped sample container.

*1 PC window after starting the special AW-Multi software

*2 Checking the Calibration Coefficients

The calibration status can be checked in the saved calibration data CSV file (refer to P23 (12)). If calibration is not performed correctly, when contacting us, please provide us with the following coefficient.

AW-Multi				
ファイル名	20260305141753_No2.csv			
測定日時	2026年03月05日 14時17分53秒			
シリアル番号	0			
スタビリティモード校正係数	0	1	0	1 0 0 0
校正係数警報	無し			
水分活性表示桁数	3桁			
測定モード	スタビリティモード			
安定時間[分]	6			
許容値aw	0.001			
記録間隔[秒]	60			
日時	水分活性[aw]	CELL内温度[°C]	温度[°C]	湿度[%RH]
	2026/3/5 14:19	0.453	24.1	25.5
				25.6

Example of Saved Calibration Data

8 Calibration

8-1 Water Activity Calibration

Measure saturated salt. 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.

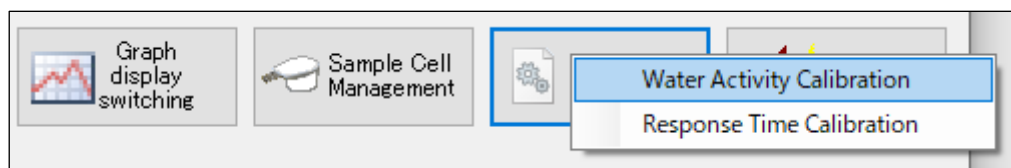
■ Preparations

Saturated salt (Optional item)

- Before measurement, remove the sensor-equipped sample container.
- Before measurement, click [Change measurement conditions] in the special software, select [For each channel] for the measurement start method, and click [Setting]. When re-calibrating a sensor-equipped sample container that was calibrated once, it is recommended that the calibration value is initialized in [Sample Cell Management] before calibration. (Refer to 8-3 Cell Management.)

■ Calibration Method

- (1) Start up the special software, and click [Calibration]-[Water Activity Calibration].



- (2) Select the No. into which the sensor-equipped sample container is to be inserted, and select [Mode of calibrate (Stability Mode/Quick Mode)]. 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 11.)

- The calibration factors for stability mode and quick mode are different. If using both modes, calibrate each respectively.

- (3) To perform the settings individually, enter the conditions for [Number of calibration points] (1 to 3 points can be selected), [Standard Water Activity], [Stabilization Time], and [Allowable aw] on the left side of the window.
To set all channels at once, enter in the [Common Settings]. Finally, click [Reflected in all channels], and the [Setting calibration value] field and the [Setting sampling parameters] fields on the left side of the window will be updated.
- (4) Select whether a sound is to be emitted or not emitted when measurement is complete.

To set all channels at once

(2) Setting calibration value

Points	Standard Water Activity [aw]	Measurement Value [aw]
1	0.843	
2	0.930	
3	0.973	

(3) Setting sampling parameters

Number of calibration points	Measurement Time	Stabilization Time	Allowable aw
2 points	30 min	4 min	0.0010

(2) Mode of calibrate

Stability Mode (selected)

Quick Mode

Measurement end conditions in Stability mode

Measurement Time

Stabilization Time (selected)

(4) Calibration Information

Calibration: 2025年 6月19日

Operator's:

WAV performance at the end of measurement

Yes (selected) No

Back to Main Dialog

To set channels individually

For Stability Mode with 3 Calibration Points

- (5) Place a saturated salt container in the sensor-equipped sample container, and close the lid of the sensor-equipped sample container. Insert the sensor-equipped sample container into the AW-Multi insertion opening selected in (2).
- (6) By clicking [Get Cell Data], it is possible to retrieve the serial number and remarks stored in the sensor-equipped sample container (only possible if data is stored).
- (7) When [Start measurement] is clicked, a window that says [Starting measurement for Point 1.] is displayed, so click [OK] to begin measurement.

Can also be changed after start of measurement

(6) Get Cell Data

(7) Start measurement

Common Settings

Calibration: 3 points

Measurement Time: 30 min

Stabilization Time: 4 min

Allowable aw: 0.0010

Reflected in all channels

Mode of calibrate

Stability Mode (selected)

Quick Mode

Measurement end conditions in Stability mode

Measurement Time

Stabilization Time (selected)

Calibration Information

Calibration: 2025年 6月19日

Operator's:

WAV performance at the end of measurement

Yes (selected) No

Back to Main Dialog

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

Water Activity Calibration

Setting calibration value

Points	Standard Water Activity [aw]	Measurement Value [aw]
1	0.843	0.825
2	0.930	
3	0.973	

Setting sampling parameters

Number of calibration points: 3 points

Measurement Time: 30 min.

Stabilization Time: 4 min.

Allowable aw: 0.0010

Stop Measurement

Water Activity During Measurement

- (8) When the measurement for the 1st point is finished, the window shown below is displayed.

When the window 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-Multi again. After waiting for a few seconds, click [OK] and the second measurement will start.

- After inserting or removing a sensor-equipped sample container, it may take some time for recognition to occur, so wait a few seconds.

Start a measurement

Start measuring point 2.

OK

- (9) After the second measurement is completed, replace the salt with the third saturated salt, and perform the measurement at the third point, with the same procedure as above.
- (10) When the measurement for the 3rd point is finished, the [Measurement of all points has been completed.] window is displayed. Click [OK]. The result is automatically displayed in the [Result] field. Then, click [Setting] to write the water activity calibration coefficient to the sensor-equipped sample container.

Water Activity Calibration

Setting calibration value

Points	Standard Water Activity [aw]	Measurement Value [aw]
1	0.843	0.842
2	0.930	0.927
3	0.973	0.977

Setting sampling parameters

Number of calibration points: 3 points

Measurement Time: 30 min.

Stabilization Time: 4 min.

Allowable aw: 0.0010

Start Measurement

Calibration Factor

Result

SerialNo.000116

Comments:

Calibration mode,3 points

Calibration coefficient

a1,1.02353

b1,-0.01881

Aw1,0.927

a2,0.86000

Setting

Cell Information

Serial No. 000116

Comments

Common Settings

Calibration: 3 points

Measurement Time: 30 min.

Stabilization Time: 4 min.

Allowable aw: 0.0010

Reflected in all channels

Mode of calibrate

Stability Mode

Measurement end conditions in Stability mode

Measurement Time

Stabilization Time

Calibration Information

Calibration: 2025年 6月19日

Operator's: sibataj

WAV performance at the end of measurement

Yes

Back to Main Dialog

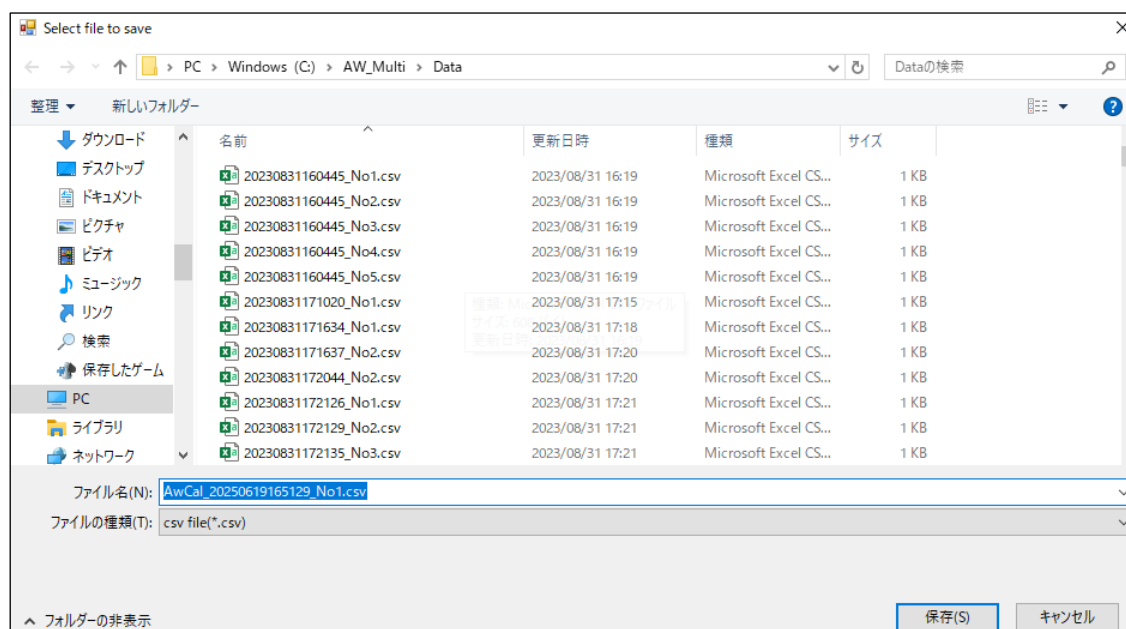
(11) To save the calibration data to the PC, enter the cell information and the calibration information (calibration date, operator's name), and click [Save file].

- For the serial number, enter a numerical value, and in the [Comments] field, enter single-byte alphanumeric characters only.

The screenshot shows the calibration software interface. The 'Save file' button is highlighted with a red box. The 'Cell Information' section contains 'Serial No.' (000116) and 'Comments' (sibata). The 'Calibration Information' section contains 'Calibration' (2025年 6月19日) and 'Operator's' (sibata). The 'WAV performance at the end of measurement' section has 'Yes' selected.

(12) Input the name of the file, and click [Save].

The destination where the calibration data is saved is Windows (C:) → AW_Multi → Data.



- The water activity of multiple sensor-equipped sample containers can be calibrated simultaneously. For each sensor-equipped sample container, perform steps (2) through (7) consecutively. After the first measurement is complete, the number will flash red, so click on the flashing red [No.*], and perform the steps from (8) onwards.

The screenshot shows the 'Water Activity Calibration' dialog box. The 'No. 2' button is highlighted with a red box and is flashing. The 'Setting calibration value' table shows two points: 1 (Standard Water Activity: 0.843, Measurement Value: 0.853) and 2 (Standard Water Activity: 0.930, Measurement Value: 0.937). The 'Setting sampling parameters' section shows 'Number of calibration points' (2 points), 'Measurement Time' (30 min), 'Stabilization Time' (4 min), and 'Allowable av' (0.0010). The 'Calibration Factor' section has a 'Calculate' button. The 'Cell Information' section contains 'Serial No.' (000116) and 'Comments'.

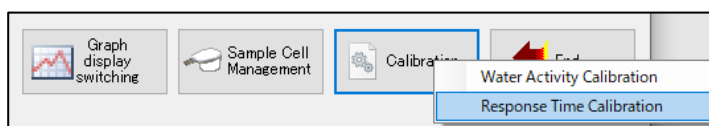
No. 1 and No. 2 are Calibrated Simultaneously, with Two Calibration Points

8-2 Response Time Calibration

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

- Before measurement, remove the sensor-equipped sample container.
- Before measurement, click [Change measurement conditions] in the special software, select [For each channel] for the measurement start method, and click [Setting]. When re-calibrating a sensor-equipped sample container that was calibrated once, it is recommended that the calibration value is initialized in [Sample Cell Management] before calibration. (Refer to 8-3 Cell Management.)

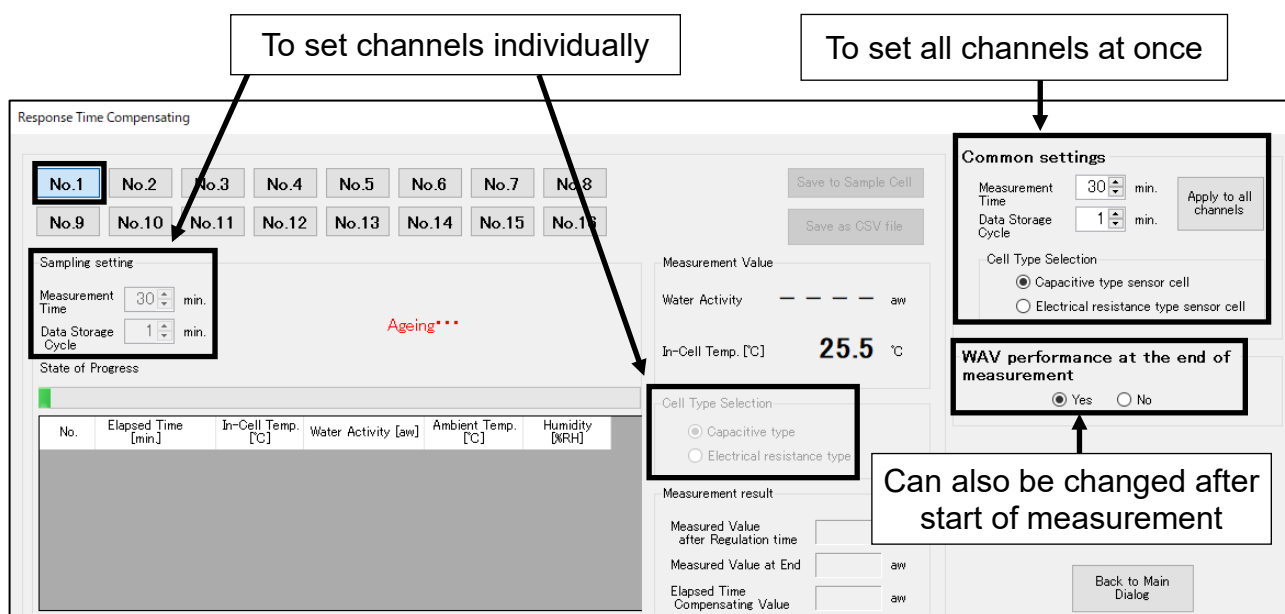
- (1) Click [Calibration]-[Response Time Calibration].



- (2) Select the number into which the sensor-equipped sample container is to be inserted, and set the time required for stabilization (measurement time), storage cycle, cell type, and whether or not to emit a sound when the measurement is completed.

To set the cells individually, set the [Sampling setting] field on the left side of the window and the [Cell Type Selection] field in the center of the window. To set all channels at once, set the [Common settings] field. Finally, click [Apply to all channels] to reflect the changes in the [Sampling setting] field on the left side of the window and the [Cell Type Selection] field in the center of the window.

- (3) Place a sample in the sensor-equipped sample container, and put the lid on the sensor-equipped sample container. Insert the sensor-equipped sample container into the AW-Multi insertion opening selected in (2), and measurement will start.
 - The regulation time differs with the cell type (5 minutes for capacitive type and 9 minutes for electrical resistance type), so be careful not to choose the wrong cell type.
- (4) The first minute of measurement time is always for aging.



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

No.	Elapsed Time [min.]	In-Cell Temp. [°C]	Water Activity [aw]	Ambient Temp. [°C]	Humidity [RH]
3	3	25.5	0.910	24.9	63.7
4	4	25.5	0.916	24.9	63.3
5	5	25.4	0.920	24.9	64.0
6	6	25.3	0.925	25.0	63.9
7	7	25.3	0.929	25.0	64.3
8	8	25.2	0.932	25.0	64.7

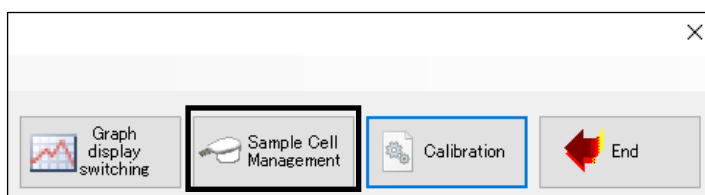
- (6) When the measurement time has finished, the measurement value when the measurement time has elapsed and the response time calibration value are displayed. Click [Save to Sample Cell] to save the results to the sensor-equipped sample container. To save the results to the PC, click [Save as CSV file]. The destination where the calibration data is saved is Windows (C:) → AW_Multi → Data.
- (7) To finish, click [Back to Main Dialog].
- If [Yes] was selected for WAV playback, then when playback is completed, [Stop playing] is displayed. Click it to stop the playback. After clicking it, [Stop playing] is grayed out.

No.	Elapsed Time [min.]	In-Cell Temp. [°C]	Water Activity [aw]	Ambient Temp. [°C]	Humidity [RH]
25	25	24.9	0.948	25.0	65.6
26	26	24.8	0.948	25.1	66.4
27	27	24.9	0.948	25.1	67.3
28	28	24.9	0.948	25.1	68.3
29	29	24.9	0.948	25.2	68.0
30	30	24.9	0.947	25.2	67.4

8-3 Cell Management (Management of the Sensor-Equipped Sample Containers)

- 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.

Insert the sensor-equipped sample container and click [Sample Cell Management] to display the [Cell Management] window.



Select the CH and click [Download from Sample Cell], and the information from the sensor-equipped sample container can be acquired.

Cell Management

Read from file Save to file **Download from Sample Cell** Save to Sample Cell Channel select No.1 Back

Cell Data Information

Serial No. 000000

Stability Mode Calibration Factor

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

Quick Mode Calibration Factor

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

Measured Value after Regulation time aw

Measured Value at End aw

Response Time Correction 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

Execute

Cell Management

Read from file Save to file Download from Sample Cell Save to Sample Cell Channel select No.1 Back

Cell Data Information

Serial No. 000116

Stability Mode Calibration Factor

Calibration 3 points

Points	Standard Water Activity [aw]	Correction Factor [aw]
1	0.843	-0.001
2	0.930	-0.003
3	0.973	0.004

Quick Mode Calibration Factor

Calibration 1 point

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

Measured Value after Regulation time 0.916 aw

Measured Value at End 0.936 aw

Response Time Correction Value 0.020 aw

Comments

Operator's name sibata

Sample Cell Initialization

☐ Initialize Stability Mode Calibration Value

☐ Initialize Quick Mode Calibration Value

☐ Initialize the Elapsed time Compensating Value

Execute

In the [Comments] field and [Operator's name], a note consisting of up to 16 single-byte alphanumerical characters can be stored with the sensor-equipped sample container. Also, from the [Cell Data Information] field, the corrected values from the water activity calibration for each mode, the measured values during response time calibration, and the corrected values can be checked.

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

The 'Cell Management' window displays various controls for sensor calibration. At the top, there are icons for 'Read from file', 'Save to file', 'Download from Sample Cell', and 'Save to Sample Cell', along with a 'Channel select' dropdown set to 'No.1' and a 'Back' button. The 'Cell Data Information' section includes a 'Serial No.' field with '000116', a 'Stability Mode Calibration Factor' table with 3 points, and a 'Quick Mode Calibration Factor' table with 1 point. Below these are fields for 'Measured Value after Regulation time' (0.916 aw), 'Measured Value at End' (0.936 aw), and 'Response Time Correction Value' (0.020 aw). A 'Comments' field and 'Operator's name' (sibata) are at the bottom. A 'Sample Cell Initialization' dialog box is open on the right, containing three checkboxes: 'Initialize Stability Mode Calibration Value' (checked), 'Initialize Quick Mode Calibration Value' (unchecked), and 'Initialize the Elapsed time Compensating Value' (unchecked). An 'Execute' button is at the bottom of this dialog.

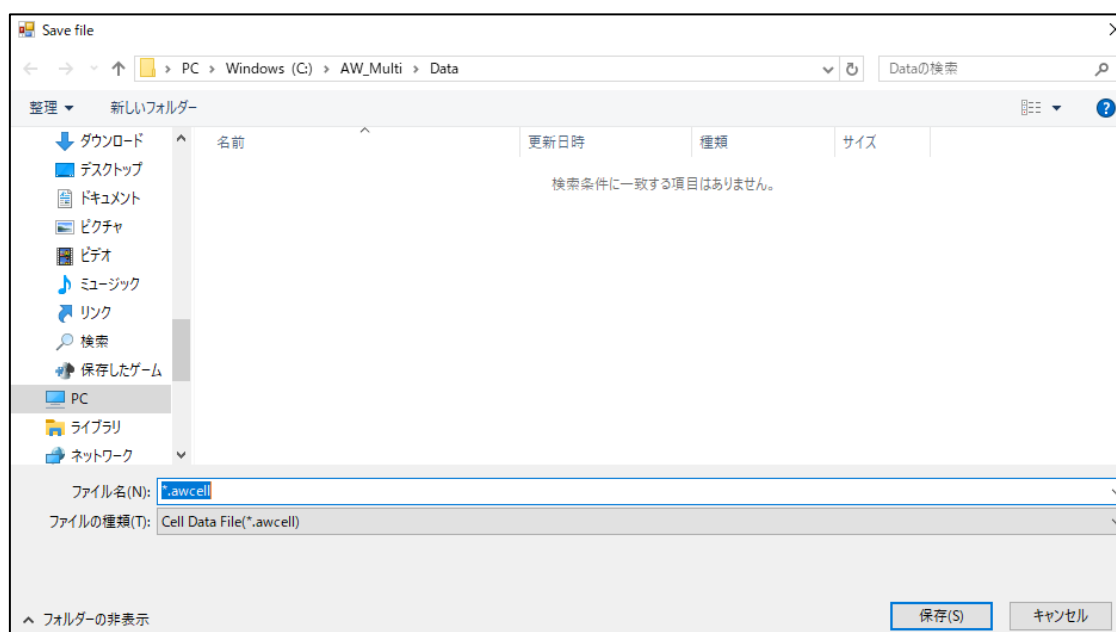
Points	Standard Water Activity [aw]	Correction Factor [aw]
1	0.843	-0.001
2	0.930	-0.003
3	0.973	0.004

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

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

The file destination is Windows (C:) → AW_Multi → Data.

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



Click [Read from file] to load data saved on the PC, and click [Save to Sample Cell] to save the data to the sensor-equipped sample container.

9 Data Logging

Each measurement value is saved to the PC, and the data is saved with a preset file name.

The Quick (Prediction) Mode saves measurement results (water activity, internal temperature of the sensor-equipped sample container, and ambient temperature and humidity), while the Stability Mode saves measurement results at a preset logging interval. (For the setting method, refer to 6-5-1 Selecting the Measurement Mode.)

The data is saved to Windows (C:) → AW_Multi → Data.

< 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.
- **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.**
- **In Quick Mode and Stability Mode, only the final measurement result will be recorded when saving all results at once.**
- The data is saved in text file format.

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

- **If the value is significantly offset in comparison to the saturated salt, 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 B-type silica gel provided with the sensor-equipped sample container into the sample container section, and close the lid of the sensor-equipped sample container.

11 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.

12 Specifications

Item Code		060990-008	060990-016
Model		AW-Multi 8CH	AW-Multi 16CH
Measurement Targets		Water activity of food products and cosmetics	
Measurement Mode		Two types (Stability mode, Quick mode)	
Type of Sensor		Capacitive 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		Capacitive Type	0.001 to 1.000 aw
		Electrical Resistance Type	0.200 to 1.000 aw
Accuracy of Water Activity Measurements *1		Capacitive Type	±0.01 aw (Fluctuations within ±0.2 °C of the ambient temperature)
		Electrical Resistance Type	±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 (capacitive type), 10 minutes (electrical resistance type)	
Communications		Special PC software via a USB (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 (The number saved depends on the storage capacity of the PC)	
Data Storage Interval		1 to 999 sec	
Power Supply		100 to 240 V AC (main unit 5 V DC input)	
Main Unit Dimensions and Weight		W210 × D180 × H315 mm (excluding protrusions), approx. 2 kg	
Dimensions and Weight of the Sensor-Equipped Sample Container (Sold Separately)	Capacitive Type	W52 × D40 × H32 mm (excluding the connector), approx. 25 g	
	Electrical Resistance Type	W57 × D40 × H44 mm (excluding the connector), approx. 30 g	
Dimensions of the Sample Container (Sold Separately)		Dia. 40 × 25 mm, 20 mL capacity	
Main Unit Ambient Temperature and Humidity	During Use	Ambient temperature: 5 to 45 °C; Relative humidity: 15 to 90 % (no condensation) ● A constant 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 sensors of the sensor-equipped sample containers.	

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

- *1: Capacitive type 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 type 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 (alcohol concentration 40 % or less).
- *2: The measurement time differs depending on the sample.
- *3: Download the special software from the Sibata website.

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	Capacitive 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	Capacitive sensor protective filter dia. 18 for AW 10 pc
060990-014	Electrical resistance sensor protective filter dia. 35 for AW 10 pc
080990-2	Communication cable USB 2.0 type A to B, 1 m (Same as the provided USB cable)

■ Options

Item Code	Product Name
060990-020	Saturated salt 0.225 aw for AW
060990-021	Saturated salt 0.328 aw for AW
060990-022	Saturated salt 0.529 aw for AW
060990-023	Saturated salt 0.753 aw for AW
060990-024	Saturated salt 0.843 aw for AW
060990-025	Saturated salt 0.930 aw for AW
060990-026	Saturated salt 0.973 aw for AW
060990-20	Small Thermostat SLC-25A



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