PAI -SAI T Instruction Manual

Cat.No.4250

In just-a-minute

From 1 year to -vears Free Extended Warranty

- 1. It requires only 1 minute! Simply by answering questions, warranty period is extended from 1 year to 2 years.
- 2. ATAGO Logger NFC can also be downloaded at the same time.



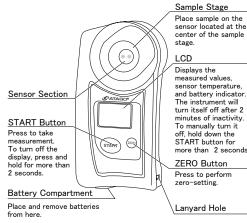


(The registration page can be accessed from ATAGO website)



Read and follow all safety instructions before operating the instrument

Parts



Contents

•Main unit ••••••1 •Instruction Manual (this book) •••••1 ·Calibration Report · · · · · · · · · 1

·AAA batteries ······2

XAAA alkaline batteries are included. Remove the tape from the battery compartment before inserting the batteries.

Replacing the Batteries

1)Insert a coin in the groove on the battery compartment cover. Turn the coin counterclockwise to remove the cover.



2)Insert batteries, observing the correct polarity.



3 Align the cover and push it down.



4 Close the battery compartment cover by pushing the cover in with a coin in the groove and turning it clockwise until it stops. *Turning excessively may cause



malfunction. compartment cover is dirty or damaged, the

water resistance may be compromised.



Automatic Temperature Compensation

The Automatic Temperature Compensation (ATC) feature is based on temperature detected by the thermo sensor located near the sensor area. ATC may not work correctly when the temperature of the sensor area is not the same as the actual temperature of the sample. When measuring a hot or cold sample, let it sit on the sensor for approximately 30 seconds and measure. or take multiple readings until measurements become stable.

Error Messages

The sensor was not empty when zero-setting was attempted. Calibration was attempted with something other than the calibration solution The sensor is dirty. Reference "Cleaning



temperature is below the temperature range The sensor



temperature is above the temperature range

The sensor



The battery is low Replace both batteries with two brand new alkaline batteries

Quick Tips

When measured values are off

म्ब टि.५°े The sample's measured

measurement range.

(Try diluting the sample

See "Making Dilutions.")

value is out of the

(1)Clean the sensor, Reference "Cleaning 2Check the offset function. Reference "Offset Function"

Other than (1) or $(2) \Rightarrow$ Calibrate the instrument.

For samples that need adjustment to achieve stable readings High or low temperature samples ⇒ Wait 30 seconds after placing sample onto the sample stage, then measure.

Oily or fatty sample \Rightarrow Stir the sample with the end of a chopstick, then measure.

Samples that require dilution

Salt concentration is outside measurement range ⇒ Dilute sample and measure.

Contains ingredients other than salt (such as sugar) ⇒ Dilute sample and measure

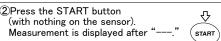
Low concentration (like miso soup) ⇒ Measure without dilution Notes about the sensor

Make sure there are no scratches or sample residue.

Zero-setting

*Recommended on a daily basis.

- ①Clean the sensor and sample stage thoroughly.
- 1) Clean with a mild soap, and rinse well with
- 2) Dry the area with tissues thoroughly.







zero-set correctly.

The instrument is

Measurement: not 0.00% Zero-setting is required.



②Zero-setting is complete when "000" blinks 2 times and then stops.



*Handle the sensor with care so as not Proceed to measurement.

to scratch it.

Measurement

1) Make sure that the sensor is clean.

*Clean the sensor area if soiled. Reference "Cleaning"



2 Apply the sample to be measured.

3Press the START button.



START

4) Measurement is displayed after



Cleaning

Clean the sensor and sample stage thoroughly.

1) Clean with a mild soap, and rinse well with water.

2) Dry the area with tissues thoroughly.



Measurement: $2.50\% (\pm 0.13)$

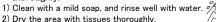


The instrument is calibrated correctly

Checking with Standard Solution

*Recommended on a regular basis.

(1)Clean the sensor and sample stage thoroughly.



2)Press the START button to turn on the instrument.



3)Press the ZERO button (with nothing on the sensor) to zero-set. "000" blinks 2 times and then stops.



Apply a 2.50% standard solution. Approx.

*Standard solution: 2.50g/100g salt water



⑤ Press the START button. Measurement is displayed after "---



Measurement: not 2.50% (± 0.13)

Calibration is required

Calibration

1) Apply a 2.50% standard solution. Turn on the instrument. Press the START and ZERO buttons simultaneously.



2 Calibration is complete when "CCC" blinks 2 times and then stops.



● Contact ATAGO to purchase 2.50% standard solution. [Parts No.]RE-120250 2.50% NaCl Solution AB250 Approx. 5mL $(2.50\pm0.05g/100g)$

● How to make 2.50% standard solution.

· High quality sodium chloride: 500g

·Purified water: 100g

Beaker of 100mL (made of glass or plastics)

•Digital scale: Accuracy of ±0.01g min. capacity of 200g

1. Place the beaker on a digital scale and zero the scale

2. Put 2.50g of sodium chloride in the beaker.

3. Add purified water until the total weight reaches 100.00g.

4. Remove the beaker from the scale and stir the solution until the solute is completely dissolved.

*Maintain the ambient temperature at 20°C±5°C

*Purchase sodium chloride from a local reagent store.

*Make a total weight of no less than 100g to minimize relative error

XUnit of measurement: weight/weight %

Sample Preparation

Drinkable as is (less than 6% Brix) ⇒No dilution is necessary

Liquid condiments (over 6% Brix. over 10% salt and high in non-salt components) Soy sauce, Worcester sauce, etc. ⇒Please dilute.

See "Making Dilutions"

Paste

Mayonnaise, miso paste, ketchup, etc.

⇒Please dilute.

See "Making Dilutions"

Solid food

Pickles, ham, cheese, chips, etc. ⇒Please mince/grind and dilute. See "Making Dilutions"

*Wait for approx. 5 minutes for the solids to settle to the bottom and measure the clear liquid on top.

Measurement Examples

Tomato puree 1.7% Ketchup 3.0% BBQ sauce 4.8% Oyster sauce 9.4% Salmon 2.4% Salted cod roe 5.2% Potage 1.2% Miso soup 0.9% Sov sauce 13.0% Mayonnaise 1.6% Pickled radish 3 6% Pickles 1.7% Ham 1.1% Sausage 0.8% Noodle soup 1.4% Curry 1.6% Gouda 0.9% Butter 0.1%

(Test data by ATAGO)

Crackers 2.3%

Chips 1.4%

Making Dilutions

Sov sauce. Worcester sauce. etc. (approx. 30-40% Brix)

①Dissolve 10g of sample in 90.0g of water. Stir until the sample is dissolved completely.

Water 90g Sample 10g

2 Measure the dilution.



③Multiply the reading by 10 (dilution factor).

Example: A 10% dilution measures 0.90%



 \times 10 (dilution factor) = 9.0%

The actual salt concentration is 9.0%.

Offset feature use #1

Input a coefficient (a) of 10, and the value multiplied by 10 will be displayed.

Displayed value



Measurement Principles

This instrument uses the electric conductivity method to measure and display salt concentrations % (g/100g). When complex samples containing ingredients other than salt are measured, the conductivity readings may be different from readings by other methods.

Always dilute a complex sample to 10% by weight when its Brix exceeds 6%.

Brix is a measurement of the total dissolved solids (TDS) in a solution and measured by a refractometer. Check the Brix of you sample with a refractometer. For optimum results, it is recommended to dilute complex samples that are 6% Brix

Discrepancies with Mohr Method

Due to the difference in measurement principles, readings from the conductivity salt meters may not match up exactly with the readings by titration for certain samples. However, correlation between the two testing methods can be seen.

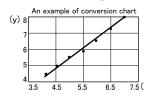
Offset feature use #2

Create a conversion chart between the two testing methods.

y = a x + b

- y: titration readings x: PAL-SALT readings a: coefficient
- (multiplication)

b: addition/subtraction number



Offset Function

1)Hold down ZERO for approx. 5 seconds while it is turned on, "b" will appear. For addition/subtraction (b) [Range: -10.00 to +10.00]

- 2)Press ZERO to select either addition (b) or subtraction (-b).
- ③Press START to confirm.
- No plus sign will (4)Enter the addition/subtraction number. be displayed. ZERO to change the number: For addition, only

0. 1.2. ···. 8. 9. 8. 0. 1. 2··· START to confirm and move to the next decimal place.

When the 1st place is confirmed with "R." the number selections for the decimal places are skipped.

5)Press START to confirm the addition/subtraction number. Next is to program a coefficient For coefficient (a) [Range: 0.01 to 10.00]

6 Enter the coefficient. ZERO to change the number

0. 1.2. 8. 9. 8. 0. 1.2... START to confirm and move to the next decimal place.

When the 1st place is confirmed with "8" the number selections for the decimal places are skipped.

7)Press START to confirm the coefficient.

seconds while setting up the Off-Set feature. Factory default value (a:1.00, b:0.00).

*The measurement range is shifted according to the offset settings. *Screen images when offset is on

STATE OF S



zero-setting



Offset "b" = addition of 0.30

"b" will appear.

"A" appears in the

1st place only, and

it means "10

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Safety Precautions

Read and follow all safety instructions before operating the instrument.

!\WARNING

- ·When measuring hazardous materials, use proper safety procedures, materials, and clothing to avoid personal injury. Anyone handling hazardous materials should understand its properties and its safety requirements
- If the instrument is dropped or subjected to a strong impact, contact your supplier for inspection.
- •Do not attempt to repair, modify, or disassemble the instrument.

∴CAUTION

- ·Before use, carefully read the instruction manual and fully understand the function and operation for each part of the instrument.
- If this instrument is used to measure highly acidic samples, the sensor section and sample stage may be damaged, resulting in inaccurate measurements.
- Do not use any metal tools when applying sample to the sensor section. The metal can damage the sensor section. If the sensor
- section is scratched or damaged, inaccurate measurements will occur. When the unit needs to be washed, use water at a temperature not exceeding 50°C.
- Only use the specified battery type. Observe proper polarities, properly aligning the anodes and cathodes. ·Do not leave the instrument in a location exposed to direct sunlight or
- near a heat source for any extended period of time.? Do not change the ambient temperature of the instrument suddenly. •Do not place the instrument where it will be subject to strong
- vibrations. •Do not use the instrument where there are excessive amounts of dust. Do not store the instrument in an extremely cool area.
- ·Do not set or drop heavy objects on top of the instrument.
- ·Have the batteries and battery compartment cover removed during air transport.
- •The instrument is water-resistant, not waterproof, and should not be submerged.

Storage and Maintenance



Store the instrument in a dry place away from direct sunlight. Exposure to humidity may cause condensation inside, and exposure to direct sunlight may cause the plastic to warp.



Cleaning

Clean the sensor and sample stage thoroughly.

- 1) Clean with a mild soap, and rinse well with
- 2) Dry the area with tissues thoroughly.
- · Storage

Store the instrument away from direct sunlight at a stable temperature with as little fluctuation as possible.

Repair and Warranty

The instrument is warranted for one year from the date of purchase. This warranty is void if the instrument shows evidence of the following. Send the included batteries as well if they are

- *Having been disassembled by unauthorized personnel
- Damages to the sensor section and/or sample stage
- •Water damage or having been dropped
- *Having been misused and/or operated outside the environmental specifications
- *Leakage from batteries other than those included with the unit Repair services are available for a fee after the warranty expires. Contact an ATAGO authorized service center for service and support

Specifications

Measurement range	0.00 to 10.0% (g/100g) of salt concentration 5.0 to 100°C
Resolution	0.01% for salt concentration of 0.00 to 2.99% 0.1% for salt concentration of 3.0 to 10.0% ,0.1°C
Measurement accuracy	Displayed value ±0.05% (for salt concentration of 0.00 to 0.99%)
	Relative precision ±5% (for salt concentration of 1.00 to 10.0%) ,±1°C
Sample temperature	5 to 100°C
Ambient temperature range	10 to 40°C
Sample volume	At least 0.6mL
Measurement time	Approx. 3 seconds
Backlight	The backlight stays on for 30 seconds after any button is pressed.
Maximum number of data history	100
Output	NFC Forum Type 4 Tag ISO/IEC 14443 Type A
	Output category :Date ,Salt [g/100g],Temp [degC] (e.g.) 2021/03/17 09:30:45, 2.53, 20.4
Power supply	Two (2) AAA alkaline batteries
International Protection class	IP65
Dimensions and weight	55(W) × 31(D) × 109(H)mm,100g (main unit only)

ATAGO's instruments are rigorously inspected to ensure each unit meets the highest standards of quality assurance.

ATAGO CO.,LTD.

Headquarters: The Front Tower Shiba Koen, 23rd Floor 2-6-3 Shiba-koen, Minato-ku, Tokyo 105-0011, Japan TEL: 81-3-3431-1943 overseas@atago.net http://www.atago.net/

ATAGO U.S.A., Inc.

TEL: 1-425-637-2107 customerservice@atago-usa.com

ATAGO INDIA Instruments Pvt.Ltd.

TEL: 91-22-28544915 / 40713232 customerservice@atago-india.com

ATAGO THAILAND Co.,Ltd.

TEL: 66-21948727-9 .66-21171549 customerservice@atago-thailand.com

(C) ATAGO BRASIL Ltda.

TEL: 55 16 3913-8400 customerservice@atago-brasil.com

(C)ATAGO ITALIA s.r.l.

TEL: 39 02 36557267 customerservice@atago-italia.com

ATAGO CHINA Guangzhou Co., Ltd. TEL: 86-20-38108256 info@atago-china.com

(C) ATAGO RUSSIA Ltd.

TEL: 7-812-777-96-96 info@atago-russia.com ATAGO NIGERIA Scientific Co., Ltd.



TEL: 7-727-257-08-95 info@atago-kazakhstan.com

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