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› Bante A120 Laboratory pH/ORP Meter User Manual

Bante Instruments A120

Bante A120 Laboratory pH/ORP Meter User Manual

1. INTRODUCTION

The Bante A120 is a high-precision laboratory pH/ORP meter designed for accurate and reliable measurements in various scientific and industrial applications. This benchtop meter offers advanced features such as 1 to 5 points calibration, automatic temperature compensation, and selectable ORP measurement modes, ensuring optimal performance and ease of use.



Figure 1: The Bante A120 Laboratory pH/ORP Meter with electrode arm.

2. KEY FEATURES

The Bante A120 meter incorporates several features to enhance measurement accuracy and user convenience:

- 1 to 5 points calibration with automatic buffer recognition.
- Automatic electrode diagnosis displays zero point offset and pH slope.
- Automatic temperature compensation ensures accurate pH measurement.
- Selectable ORP measurement, including relative and absolute modes.
- Automatic Read function detects and locks the measurement endpoint.
- Password protection prevents unauthorized calibration and adjustments.
- The setup menu contains 16 options, including pH buffer group, number of calibration points, resolution, solution temperature coefficient, calibration due alarm, upper/lower limit alarm, stability criteria, interval readings, auto-power off, factory reset, etc.

METER FEATURES



Multi-point calibration



Automatic buffer recognition



Automatic electrode diagnosis



Calibration due reminder



Automatic temperature compensation



Auto-lock measurement endpoint



Selectable high/low alarm



Selectable relative mV measurement



Interval readings



Password protection



1000 sets data storage



USB communication interface



On-screen operation guide



Auto-power off

Figure 2: Visual representation of the Bante A120's key features.

3. COMPONENTS AND ACCESSORIES

The Bante A120 meter typically includes the following components:

- Bante A120 pH/ORP Meter unit
- E201-BNC pH Electrode
- TP-10K Temperature Probe
- pH Buffer Solutions (4.01, 7.00, 10.01)
- Electrode Arm and Base Plate
- DC 12V Power Adapter

Bante A120

ACCESSORIES



1
E201-BNC
pH electrode



2
TP-10K
Temperature probe



3
pH buffer solutions



Electrode arm



Base plate



Power adapter

Figure 3: Included accessories for the Bante A120 meter.

I METER INCLUDES

pH electrode, temperature probe, pH 4.01, 7.00, 10.01 buffer solutions (30 ml each bottle), electrode holder, power adapter (ORP electrode is sold separately).

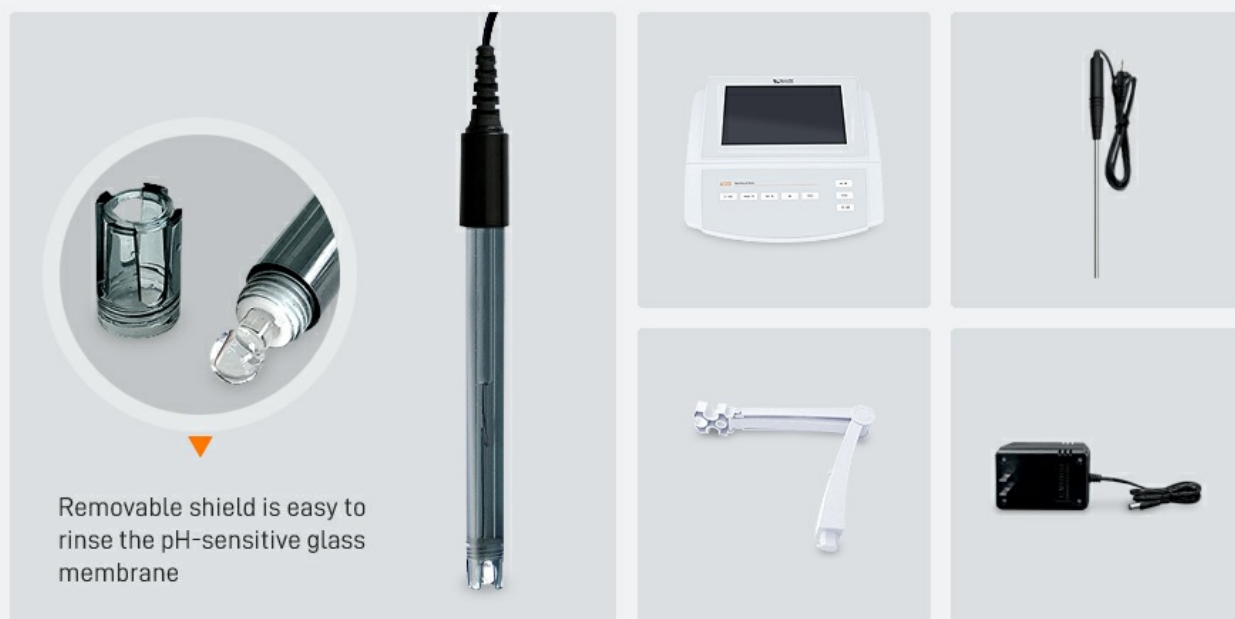


Figure 4: Detailed view of the components included with the Bante A120, including the pH electrode with a removable shield for easy rinsing.

4. SETUP

4.1 Physical Connections

Before operating the meter, ensure all necessary components are properly connected:

1. **pH/ORP Electrode:** Connect the BNC connector of the pH or ORP electrode to the BNC socket on the rear panel of the meter.
2. **Temperature Probe:** Insert the jack connector of the temperature probe (TP-10K) into the dedicated jack socket.
3. **Power Adapter:** Connect the DC 12V power adapter to the power socket and then plug it into a suitable power outlet.
4. **USB Interface:** For data transfer or printer connection, use the USB interface.

Bante A120

CONNECTORS

BNC socket

for pH/ORP electrode connection



Jack socket

for temperature probe connection



USB interface

for data transfer and printer connection



Power socket

for DC power adapter connection



Figure 5: Rear panel connectors for the Bante A120, including BNC, Jack, USB, and Power sockets.

4.2 Initial Power On

After connecting all components, press the power button to turn on the meter. The 7-inch TFT LCD screen will display the startup sequence and then enter the measurement interface.

5. OPERATION

5.1 Display Overview

The Bante A120 features a 7-inch TFT LCD screen that clearly shows measurement values, status icons, setup menu, and operation guides. The display provides real-time data and intuitive navigation.

Bante A120

DISPLAY SCREEN

7-inch TFT LCD screen clearly shows the measurement values, status icons, setup menu and operation guides

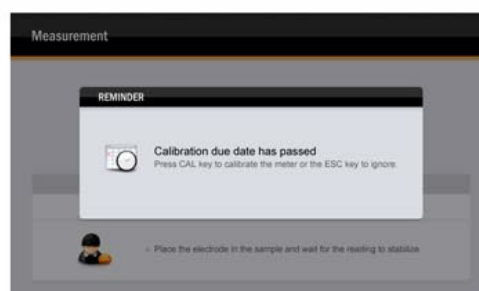
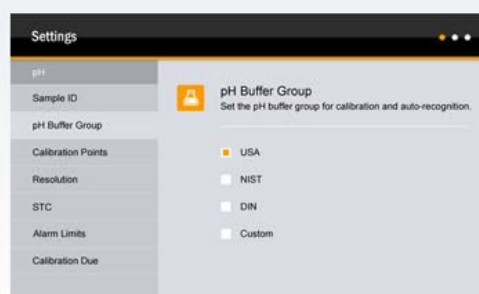
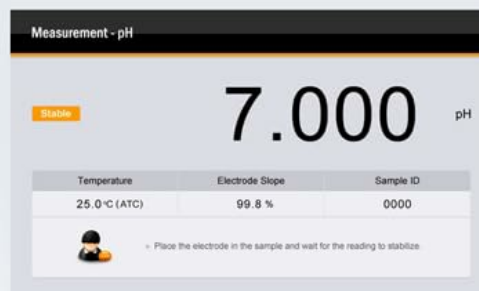


Figure 6: The Bante A120 display screen showing measurement, settings, and calibration reminder interfaces.

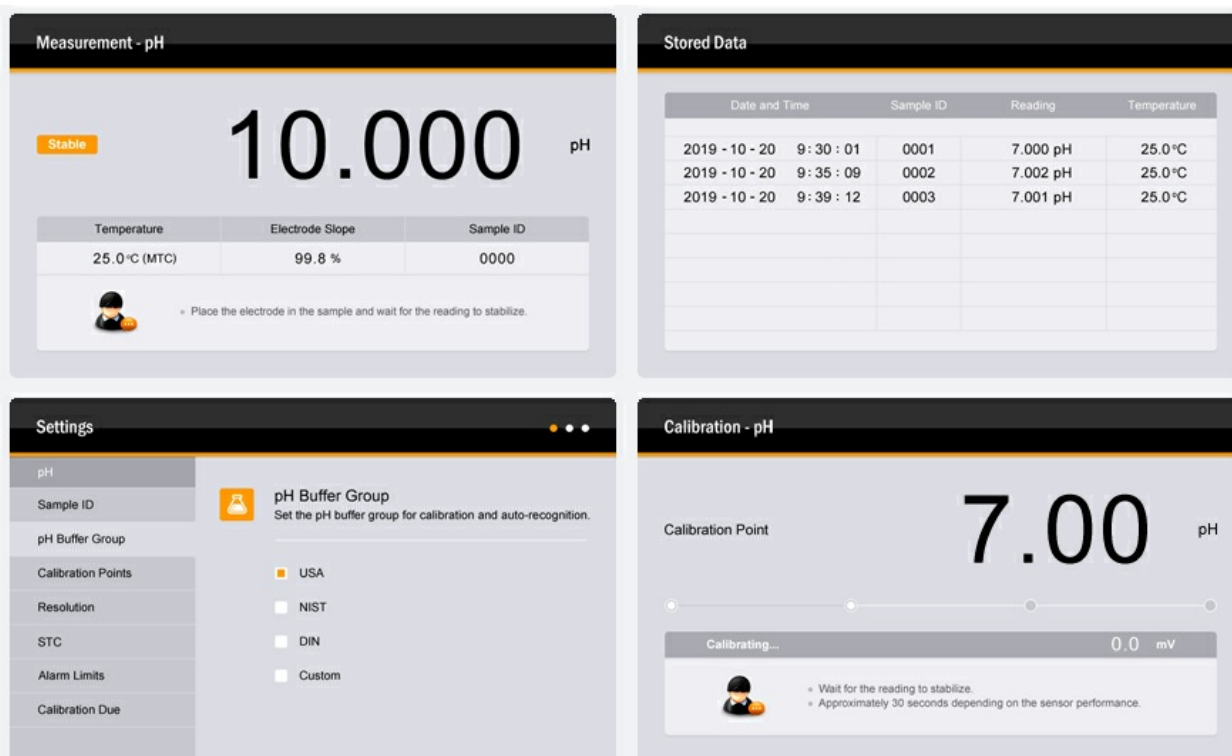


Figure 7: Detailed screenshots of the Bante A120 display, including measurement, stored data, settings, and calibration screens.

5.2 pH Calibration

The meter supports 1 to 5 points calibration with automatic buffer recognition. Refer to the on-screen guide for step-by-step instructions. Regular calibration ensures measurement accuracy.

5.3 pH Measurement

Place the pH electrode and temperature probe into the sample. The meter will automatically compensate for temperature variations. The Auto-Read function will detect and lock the stable measurement endpoint.

5.4 ORP Measurement

The Bante A120 allows for selectable ORP measurement modes, including relative and absolute ORP. Ensure the correct ORP electrode is connected and calibrated as per the instructions.

5.5 Settings Menu

Access the settings menu to configure various parameters such as pH buffer group, resolution, alarm limits, interval readings, and auto-power off. Password protection is available to prevent unauthorized changes.

6. MAINTENANCE

6.1 Electrode Care

To maintain electrode performance and extend its lifespan:

- Always keep the pH electrode bulb hydrated by storing it in a suitable storage solution or buffer.
- Rinse the electrode with distilled water after each use.
- The pH electrode features a removable shield for easy rinsing of the pH-sensitive glass membrane.

Bante A120

PROTECTION CAP



Rubber cap provides protection against ingress of water and dust



Figure 8: The rubber protection cap provides protection against ingress of water and dust for the meter.

6.2 Meter Cleaning

Wipe the meter's exterior with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure no liquids enter the meter's connectors or internal components.

7. TROUBLESHOOTING

This section addresses common issues you might encounter:

- **"Calibration Due" Reminder:** This indicates that the last calibration has expired. Perform a new calibration to ensure accuracy.
- **Unstable Readings:** Check the electrode for damage or contamination. Ensure the sample is well-mixed and the temperature probe is correctly placed. Verify that the electrode is properly connected.
- **Electrode Error Message:** The automatic electrode diagnosis feature will indicate issues such as zero point offset or slope problems. Clean or replace the electrode if necessary.

- **No Power:** Ensure the power adapter is securely connected to both the meter and the power outlet. Check the power source.

8. SPECIFICATIONS

I SPECIFICATIONS		
pH	Range	-2.000 to 20.000 pH
	Resolution	0.001 / 0.01 pH, selectable
	Accuracy	±0.002 pH
	Calibration	1 to 5 points
	pH Buffer Options	USA / NIST / DIN / 5 custom buffers
	Temperature Compensation	0 to 100°C / 32 to 212°F, manual or automatic
ORP	Range	-2000.0 to 2000.0 mV
	Resolution	0.1 mV
	Accuracy	±0.2 mV
	Calibration	1 point
Temperature	Range	0 to 105°C / 32 to 221°F
	Resolution	0.1°C/°F
	Accuracy	±0.5°C / ±0.9°F
	Calibration	1 point
Other Specifications	Power Supply	12V DC power adapter
	Dimensions	240 × 220 × 80 mm / 9.4 × 8.6 × 3.1 in.
	Weight	1.7 kg / 3.7 lb

Figure 9: Detailed technical specifications for the Bante A120 meter.

Parameter	Specification
pH Range	-2.000 to 20.000 pH
pH Resolution	0.001 / 0.01, selectable
pH Accuracy	±0.002 pH
pH Calibration	1 to 5 points
pH Buffer Options	USA / NIST / DIN / 5 custom buffers
ORP Range	-2000.0 to 2000.0 mV
ORP Resolution	0.1 mV
ORP Accuracy	±0.2 mV
ORP Calibration	1 point
Temperature Range	0 to 105°C / 32 to 221°F
Temperature Resolution	0.1°C / °F
Temperature Accuracy	±0.5°C / ±0.9°F

Parameter	Specification
Temperature Compensation	0 to 100°C / 32 to 212°F, manual or automatic
Data Storage	1000 sets
Power Supply	DC 12V power adapter
Product Dimensions	240 × 220 × 80 mm / 9.4 × 8.6 × 3.1 in
Product Weight	1.7 kg / 3.7 lb

9. WARRANTY AND SUPPORT

The Bante A120 Laboratory pH/ORP Meter comes with a standard manufacturer's warranty against defects in materials and workmanship. Please refer to the warranty card included with your product for specific terms and conditions. For technical support, service, or inquiries, please contact Bante Instruments customer service through their official website or the contact information provided in your product packaging. When contacting support, please have your model number (A120) and purchase details ready.

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