

Thermo Scientific LD-5681

Thermo Scientific Orion Star™ A111 Benchtop pH Meter

User Instruction Manual

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Thermo Scientific Orion Star™ A111 Benchtop pH Meter. Please read this manual thoroughly before operating the instrument to ensure proper usage and to prevent damage.

The Orion Star™ A111 is designed for accurate and reliable pH measurements in laboratory settings, offering user-friendly operation and robust performance for various applications.

2. SAFETY INFORMATION

Always observe the following safety precautions when using the pH meter:

- Use the instrument only as described in this manual.
- Ensure the power supply matches the instrument's requirements.
- Do not operate the instrument in wet or damp conditions.
- Avoid spilling liquids on the instrument. In case of spillage, disconnect power immediately and clean thoroughly.
- Handle electrodes with care. Some electrodes may contain hazardous materials.
- Keep the instrument away from strong magnetic fields or sources of electrical interference.
- Only qualified personnel should perform maintenance or repairs.

3. PACKAGE CONTENTS

Upon unpacking, verify that all components are present and undamaged. The standard package for the Thermo Scientific Orion Star™ A111 Benchtop pH Meter typically includes:

- Orion Star™ A111 Benchtop pH Meter unit
- Universal power adapter
- Electrode stand
- pH electrode (specific type may vary by kit)
- Temperature probe (if included with kit)
- Calibration buffers (pH 4, 7, 10)
- Instruction manual (this document)

If any items are missing or damaged, please contact your supplier immediately.

4. PRODUCT OVERVIEW

The Thermo Scientific Orion Star™ A111 Benchtop pH Meter is a robust and intuitive instrument designed for precise pH measurements. Below is an overview of its main components and controls.



Figure 4.1: Front view of the Thermo Scientific Orion Star A111 Benchtop pH Meter. This black pH meter features a large, clear digital display showing measurement values (e.g., 25.0°C and 10.01 pH). The control panel below the screen includes circular buttons for power, measure, and calibrate, along with directional arrows (up/down) and function buttons for setup, mode, and recall. The "ORION STAR A111" model name is visible at the bottom front.

4.1. Display and Indicators

- **Main Display:** Shows pH or mV readings, temperature, and measurement status.
- **Temperature Indicator:** Displays the current temperature.
- **Stability Indicator:** Indicates when the reading is stable.

- **Calibration Status:** Shows successful calibration points.

4.2. Control Buttons

- **Power Button ():** Turns the instrument on or off.
- **Measure Button:** Initiates a measurement or returns to measurement mode.
- **Calibrate Button:** Enters calibration mode.
- **Setup Button:** Accesses system settings and parameters.
- **Mode Button:** Switches between pH, mV, or relative mV modes.
- **Up/Down Arrows:** Navigate menus and adjust values.
- **Recall Button:** Views stored data.

5. SETUP

5.1. Unpacking and Placement

1. Carefully remove the pH meter and all accessories from the packaging.
2. Place the instrument on a stable, level surface, away from direct sunlight, heat sources, and excessive vibrations.
3. Ensure adequate ventilation around the instrument.

5.2. Connecting the Power Supply

1. Connect the universal power adapter to the power input port on the back of the pH meter.
2. Plug the power adapter into a grounded electrical outlet.
3. Press the Power button () to turn on the instrument.

5.3. Connecting Electrodes and Probes

1. Connect the pH electrode to the BNC connector on the back of the meter. Twist clockwise until secure.
2. If using a separate temperature probe, connect it to the appropriate jack (usually RCA or mini-DIN) on the back of the meter.
3. Mount the electrode and temperature probe in the electrode stand for convenient use.

6. OPERATING INSTRUCTIONS

6.1. Initial Power On and Self-Test

After connecting power, press the Power button. The meter will perform a brief self-test and display the current measurement mode.

6.2. pH Calibration

Regular calibration is crucial for accurate pH measurements. It is recommended to calibrate daily or before each measurement session.

1. Prepare fresh pH buffer solutions (e.g., pH 4.01, 7.00, 10.01).
2. Rinse the electrode thoroughly with distilled water and blot dry.
3. Press the **Calibrate** button to enter calibration mode.
4. Place the electrode into the first buffer solution (e.g., pH 7.00). Wait for the reading to stabilize. The meter will automatically recognize the buffer.
5. Once stable, the meter will prompt for the next buffer. Rinse the electrode and place it into the second buffer (e.g., pH 4.01 or 10.01).

6. Repeat for additional buffer points as needed.
7. Press the **Measure** button to exit calibration and return to measurement mode.

6.3. Taking a pH Measurement

1. Ensure the meter is calibrated.
2. Rinse the electrode with distilled water and blot dry.
3. Immerse the electrode into the sample solution, ensuring the sensing bulb and reference junction are fully submerged.
4. Wait for the reading on the display to stabilize. The stability indicator will confirm when the reading is ready.
5. Record the pH and temperature readings.
6. After measurement, rinse the electrode and store it properly (e.g., in storage solution).

7. MAINTENANCE

7.1. Cleaning the Instrument

Wipe the exterior of the pH meter with a damp, lint-free cloth. Do not use abrasive cleaners or solvents. Ensure no liquid enters the instrument.

7.2. Electrode Care and Storage

- **Cleaning:** Regularly clean the electrode to remove sample residue. For general cleaning, soak in a mild detergent solution, then rinse thoroughly with distilled water. For stubborn deposits, refer to the electrode's specific cleaning instructions.
- **Storage:** Always store the pH electrode in its recommended storage solution or a pH 4 buffer solution. Never store dry or in distilled water, as this can dehydrate the sensing membrane.
- **Rehydration:** If the electrode has dried out, soak it in electrode storage solution for several hours or overnight before use.

8. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with your Orion Star™ A111 pH Meter.

Problem	Possible Cause	Solution
Meter does not power on.	No power supply; faulty adapter; instrument fault.	Check power cable connection; try a different outlet; contact technical support.
Unstable readings.	Dirty electrode; air bubbles on electrode; temperature fluctuations; sample interference.	Clean electrode; gently tap electrode to remove bubbles; ensure stable sample temperature; use appropriate sample preparation.
Calibration errors.	Expired or contaminated buffers; dirty electrode; faulty electrode.	Use fresh buffers; clean electrode; replace electrode if necessary.
Inaccurate readings.	Improper calibration; electrode not conditioned; faulty electrode.	Recalibrate meter; recondition electrode by soaking in storage solution; replace electrode.

If the problem persists after attempting these solutions, please contact Thermo Scientific technical support.

9. SPECIFICATIONS

Key technical specifications for the Thermo Scientific Orion Star™ A111 Benchtop pH Meter (Model LD-5681):

- **Model:** Orion Star™ A111
- **Manufacturer Model Number:** LD-5681
- **Dimensions (Package):** 40 x 30 x 10 cm
- **Weight (Package):** 2 kilograms
- **Country of Origin:** Germany
- **ASIN:** B0CCSL8RK7
- **First Available Date:** July 25, 2023
- **Spare Parts Availability:** Information unavailable

Note: Specifications are subject to change without notice. Refer to the official product datasheet for the most current information.

10. WARRANTY AND SUPPORT

For detailed warranty information, please refer to the warranty card included with your product or visit the official Thermo Scientific website. Warranty terms and conditions may vary by region and product.

For technical assistance, troubleshooting, or to order replacement parts and accessories, please contact Thermo Scientific customer support or your authorized distributor. Have your instrument's model number (LD-5681) and serial number ready when contacting support.

Thermo Scientific Official Website: www.thermofisher.com

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question