REED
INSTRUMENTS

pH/mV Meter with Temperature

WARRANTY
1 YEAR
WARRANTY

Instruction Manual

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Introduction

Thank you for purchasing your REED R3525 pH/mV Meter with Temperature. Please read the following instructions carefully before using your instrument. By following the steps outlined in this manual your meter will provide years of reliable service.

Product Quality

This product has been calibrated during the manufacturing process to meet stated product specifications. If a certificate of calibration is required please contact the nearest authorized REED distributor or authorized Service Center. Please note an additional fee for this service will apply.

Safety

Never attempt to repair or modify your instrument. Dismantling your product, other than for the purpose of replacing batteries, may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized service center.

Features

- Measures pH and mV levels in liquids
- Measures ORP (mV) levels in water with R3525-ELECTRODE2 (optional)
- Microprocessor provides automatic buffer solution recognition
- Dual LCD displays pH or mV and Temperature simultaneously
- Automatic Temperature Compensation (ATC)
- User selectable °F or °C
- Designed for handheld or wall mount applications
- Replaceable electrode module
- Low battery indicator and auto shut off

Included

- pH/mV Meter
- pH Electrode
- Protective Holster
- 4 and 7pH Buffer Solution
- Mounting Suction Cup
- Battery

Specifications

pH

Measuring Range:	0.00 to 14.00pH
	-1999 to 2000mV
Accuracy:	±(0.01pH +1 dgt.)
	±(2mV +1 dgt.)
Resolution:	0.01pH
	0.1/1mV

ORP (Optional R3525-ELECTRODE2 required)

|	
Measuring Range:	-1999 to 2000mV
Accuracy:	±(2mV +1 dgt.)
Resolution:	0.1/1mV

Temperature

Measuring Range:	32 to 230°F (0 to 110°C)
Accuracy:	±0.4°F (0.2°C) +1 dgt
Resolution:	0.1°F (0.1°C)

General Specifications

Display:	Dual Display, LCD
Auto Shut-off:	Yes (after 10 minutes/off)
Low Battery Indicator:	Yes
Power Supply:	9V Battery or AC Adapter (optional)
Product Certifications:	CE
Operating Temperature:	32 to 122°F (0 to 50°C)
Storage Temperature:	14 to 140°F (-10 to 60°C)
Operating Humidity Range:	10 to 80%
Dimensions:	4.3 x 3.0 x 1.2" (108 x 75 x 30mm)
Weight:	0.3lb (135g)

Instrument Description

1. LCD Display
2. POWER/Calibration Button
3. Up Button
4. Temperature Input Jack
5. Electrode Input (BNC) Jack
6. Power Adapter Input Jack
7. Down Button
8. pH/mV Function Button
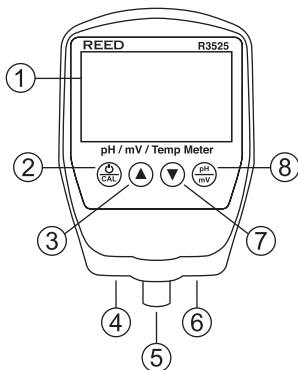
Display Description
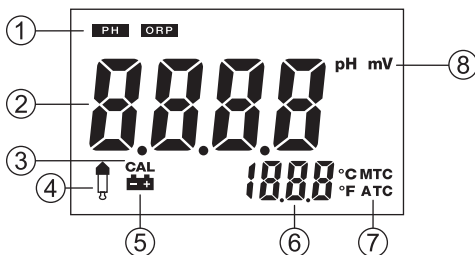
1. Measurement Mode Indicator
2. pH/ORP (mV) Measurement Reading
3. Calibration Mode Indicator
4. Calibration Error Indicator
5. Low Battery Indicator
6. Temperature Measurement Reading
7. Auto/Manual Temperature Compensation Indicator
8. Unit of Measure Indicator

Operating Instructions

Prior to first use with the meter, the pH electrode should be calibrated. Refer to the *pH Calibration* section of this manual for further instructions.

Power ON/OFF

Turn the meter on or off by pressing the ⏻/CAL button.

Selecting the Temperature Unit of Measure

When the meter is first powered ON, the default scale setting is set to Celsius (°C). Press and hold the pH/mV button to switch the temperature unit of measure.

Note: The meter will automatically save the selected unit of measure as the new default when powered off.

pH or ORP Modes

This meter offers pH and ORP modes of measurement capable of measuring 0.00 to 14.00pH and -1999 to 2000mV (ORP) (Optional R3525-ELECTRODE2 required).

pH measurements achieve better results when the temperature of the solution being tested is known and a temperature compensation factor is applied. This can be attained using manual or automatic temperature compensation. The electrode included with the R3525 automatically compensates for solution temperature changes with the electrode's built-in thermometer. The temperature compensation is active when the solution temperature deviates from room temperature. The temperature of a solution is displayed on the lower LCD line. For manual temperature compensation, an external temperature probe is not connected to the meter and the temperature of the solution under test is manually entered.

pH Measurement Mode
(Automatic Temperature Compensation)

> **Note:** Electrodes should always be rinsed before and between samples with distilled or DI (de-ionized) water to remove all traces of previous test solution or storage solution.

1. Connect the included pH Electrode into the Input (BNC) Jack and temperature input jack.
2. Press the $\binom{pH}{mV}$ button to select pH mode.
3. Place the pH electrode into the measured solution, so that the tip of the electrode and junction are fully immersed and stir at a moderate, uniform rate. The top of the LCD will display the pH value while the bottom part of the LCD will display the automatic temperature compensation value.

Note: When measurements have been completed, be sure to store the pH electrode in its protective cap.

pH Measurement Mode
(Manual Temperature Compensation)

1. Connect the included pH Electrode into the Input (BNC) Jack only.
2. Press the $\binom{pH}{mV}$ button to select pH mode.
3. Press the $\blacktriangle$ and $\blacktriangledown$ buttons to set the temperature of the solution being tested in °C or °F.

Note: By default, the meters temperature compensation factor is set to 25°C or 77°F.

4. Place the pH electrode into the measured solution, so that the tip of the electrode and junction are fully immersed and stir at a moderate, uniform rate. The top of the LCD will display the pH value while the bottom part of the LCD will display the setting for the manual temperature compensation value.

Note: When measurements have been completed, be sure to store the pH electrode in its protective cap.

mV Output Measurement Mode (pH Electrode)

> **Note:** The millivolt capability of pH meters can be used to determine the actual slope of pH electrodes but it is mostly used to measure the voltage potential difference.

1. Connect the included pH Electrode into the Input (BNC) Jack.
2. Press the ⓟⱨ/mV button to select ORP mode.
3. Place the electrode into the measured solution, so that the tip of the electrode and junction are fully immersed and stir at a moderate, uniform rate.
4. The LCD will display the pH electrode output in mV.

ORP Measurement Mode
(Optional R3525-ELECTRODE2 required)

1. Connect the ORP Electrode into the Input (BNC) Jack.
2. Press the ⓟⱨ/mV button to select mV (ORP) mode.
3. Place the electrode into the measured solution, so that the tip of the electrode and junction are fully immersed and stir at a moderate, uniform rate.
4. The LCD will display the mV.

Over Range

When the pH value is under or over the meter's measuring range, the LCD display will indicate "- - - -". If the electrode is not placed in any solution or connected to the meter, the LCD display will also indicate "- - - -".

pH Calibration Procedure

> In order to obtain the most accurate results possible, a pH meter should be calibrated at least once a day.

If the pH meter is stored for an extended period of time, prior to calibration, condition your electrode in pH 4 buffer solution or distilled water for a minimum of 1 hour.

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1. Prepare buffer solutions for calibration. It is recommended to start with pH 7.00 buffer solution, followed by either pH 4.00 or pH 10.00 (whichever is nearest to the expected sample value). Use the pH 4.00 and pH 7.00 buffer solutions when measurements are expected to be on the lower side of the pH scale. Use the pH 7.00 and pH 10.00 buffer solutions when measurements are expected to be on the higher side of the pH scale.

2. Connect the included pH Electrode into the Input (BNC) Jack and temperature input jack.

3. Turn the meter on by pressing the $\bigodot$ button.

4. Place the electrode into the pH buffer solution, so that the tip of the electrode is fully immersed in the buffer solution, and stir at a moderate, uniform rate.

5. Press and hold the $\bigodot$ button for approx. 3 seconds to enter calibration mode.

6. The LCD will display "CAL" indicating the calibration process has begun.

7. The instrument automatically recognizes the solution and calibrates to that value.

Note: If the solution is inaccurate by more than 1pH from either the 4, 7, or 10pH buffer, or if the electrode slope is low or too high, the meter will abort the calibration ("End" will be displayed).

8. During calibration, the pH reading flashes on the main display.

9. When calibration is complete, the meter will display "SA", followed by "End" and resumes normal operation.

10. Repeat steps 4 through 8 for pH 4.00 and pH 10.00 buffer solutions.

11. When the 2- or 3- point calibration is complete, the meter will display the percentage of slope (PTS), followed by "SA", then by "End" and resumes normal operation.

Note: If the PTS is below 70% or above 130%, the electrode must be replaced while a slope of 100% is ideal.

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ORP Calibration
(Optional R3525-ELECTRODE2 ORP Electrode required)

Calibration is not required for ORP mode, however, you can spot check ORP measurements with the use of a specific ORP standard solution to ensure the electrode is still within specifications.

Battery Replacement

When the low battery icon appears on the LCD, the battery must be replaced.

1. Disconnect the electrode.
2. Remove the instrument's protective holster by pulling it over the top of the meter (make sure that the electrode is disconnected).
3. Remove the battery cover on the back.
4. Replace the 9V battery.
5. Slide the battery cover back into place following the correct orientation.
6. Replace the protective holster.

Applications

- Water conditioning
- General purpose pH measurement
- Aquariums
- Wastewater monitoring
- Beverage production

Accessories and Replacement Parts

- **R3525-ELECTRODE** Replacement pH Electrode
- **R3525-ELECTRODE2** Optional ORP Electrode
- **R3525-ADP** Power Adapter
- **R1404** pH Buffer Solution, 4.01, 500ml
- **R1407** pH Buffer Solution, 7.0, 500ml
- **R1410** pH Buffer Solution, 10.0, 500ml
- **R1420** Electrode Storage Solution, 500ml
- **R1425** Electrode Cleaning Solution, 500ml
- **CA-05A** Soft Carrying Case

Don't see your part listed here? For a complete list of all accessories and replacement parts visit your product page on www.REEDInstruments.com.

Product Care

To keep your instrument in good working order we recommend the following:

- Store your product in a clean, dry place.
- Change the battery as needed.
- If your instrument isn't being used for a period of one month or longer please remove the battery.
- Clean your product and accessories with biodegradable cleaner. Do not spray the cleaner directly on the instrument. Use on external parts only.

Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of one (1) year from date of shipment. During the warranty period, REED Instruments will repair or replace, at no charge, products or parts of a product that proves to be defective because of improper material or workmanship, under normal use and maintenance. REED Instruments total liability is limited to repair or replacement of the product. REED Instruments shall not be liable for damages to goods, property, or persons due to improper use or through attempts to utilize the instrument under conditions which exceed the designed capabilities. In order to begin the warranty service process, please contact us by phone at 1-877-849-2127 or by email at info@reedinstruments.com to discuss the claim and determine the appropriate steps to process the warranty.

Product Disposal and Recycling

Please follow local laws and regulations when disposing or recycling your instrument. Your product contains electronic components and must be disposed of separately from standard waste products.

Product Support

If you have any questions on your product, please contact your authorized REED distributor or REED Instruments Customer Service by phone at 1-877-849-2127 or by email at info@reedinstruments.com.

Please visit **www.REEDInstruments.com** for the most up-to-date manuals, datasheets, product guides and software.

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REED
INSTRUMENTS

TEMPERATURE & HUMIDITY

SOUND

MOISTURE

AIR VELOCITY

ELECTRICAL