AquaShock® pH/ORP Kit

850064K

AquaShock® pH Kit 850057K

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INTRODUCTION

The Sper Scientific AquaShock® pH Meter is the most waterproof, rugged and reliable pH meter on the market. It is fully waterproof, including probe connections, when used with the AquaShock® probe. As with all AquaShock® meters, the pH Meter is fully shockproof, floats, and features a double injection molded case with an integral protective soft grip outer layer, high end antishock, LED backlight display, and is powered by the latest environmentally friendly, long lasting, rechargeable Lithium Ion battery. The meter is highly accurate and stable, very intuitive and includes all of the functions required by most users. Sper Scientific guarantees you will not find any meters more rugged and reliable than AquaShock®.
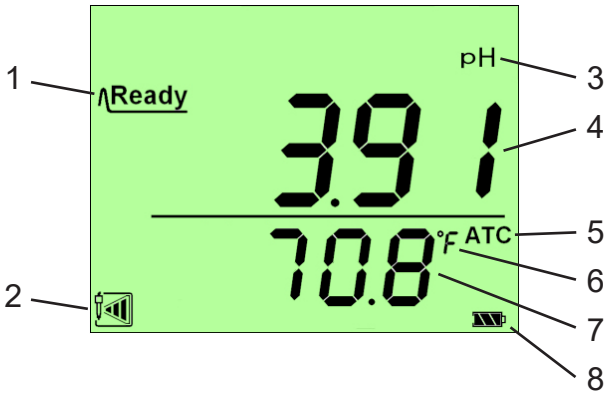
FEATURES

- Floats
- Shockproof
- IP67 Waterproof
- Protective soft grip outer layer
- Rechargeable Lithium Ion battery
- Also accepts standard BNC probes
- Multi-line display LCD screen
- Reads pH and mV (ORP)
- Automatic or manual temperature compensation
- Automatic buffer recognition
- Celsius or Fahrenheit selectable
- 99 data points for analysis
- Calibration point review
- Internal clock and calendar
- Maximum, minimum and average
- Hold function
- Low battery indicator
- Backlight

MATERIALS SUPPLIED

- Meter
- Dual pH/ATC Probe
- pH Buffers, Distilled Water
- 1 Lithium 1450 mAh 7.4 V Battery
- DC Power Adapter
- Instruction Manual
- Hard Carrying Case

LCD DISPLAY

	Name	Description
1	Ready	Displayed when measuring results are stable
2	Electrode Durability Icon	Current electrode durability
3	Scale Unit	Current measurement scale unit
4	Measuring Results	Current measurement value
5	ATC/MTC	Automatic/Manual Temperature Compensation indicator
6	Temperature Scale	Current temperature measurement unit
7	Temperature Value	Current temperature measurement value
8	Battery Icon	Current battery power level

LCD DISPLAY

Probe Life Icon:

More than 90% life remaining

More than 85−90% life remaining

More than 80-85% life remaining

Less than 80% life remaining

Battery Power Icon:

Battery voltage is more than 7.7V shows full.

Battery voltage between 7.2V and 7.7V shows 2 cells.

Battery voltage between 6.6V and 7.2V shows 1 cell.

Battery voltage less than 6.6V shows 0 cells and flashes.

Display showing battery charging from less than 6.6V to fully charged.

POWER SUPPLY

This meter is powered by one rechargeable Lithium 7.4V (1450 mAh) battery. The DC power adapter can be used to charge the battery even when the meter is turned off. This meter includes a charge protection function and will automatically stop charging when the battery is full. A complete re-charge takes approximately 8 hours.

KEYPAD

	Name	1st Function	2nd Function
1	Power/Backlight/Low Battery	Power on/off	Backlight on/off
2	Setup	Setting parameters	Confirm setting
3	MI↑	Store data	↑
4	MR↓	Recall data	↓
5	Max/Min/Ave	Max/Min/Ave	
6	Range/Temp	Switch measuring scale	Set temperature value
7	Hold/Exit	Hold	Exit
8	CAL	Calibration	

SETUP MODE

The Setup Mode allows you to customize the following meter preferences and defaults:

- Temperature Units
- Clock Setting
- Restore Factory Defaults
- View Calibration Data
- View Probe Parameters

1. Press **POWER** for 1 second to turn the meter on before performing any setup function.

Temperature Units

1. Press **SETUP** to enter the Setup Mode.
2. Press **SETUP** to enter the Set Temperature screen.
3. The unit °C or °F will flash on the LCD.
4. Press ↑ or ↓ to select the °C or °F temperature unit.
5. Press **SETUP** to save and return to Normal Mode.
6. Press **EXIT** to return to Normal Mode without saving the selection.

Real Time Clock

1. Press **SETUP** to enter the Setup Mode.
2. Press ↑ or ↓ to select the Set Clock screen.
3. Press **SETUP** to set the year. The value will flash on the LCD.
4. Press ↑ to increase the value by 1. Hold down ↑ to continually increase the value.

   Press ↓ to decrease the value by 1. Hold down ↓ to continually decrease the value.

   Press **SETUP** to save and the meter automatically moves to the month setting.
5. Repeat step 4 to adjust the month, day, hour, and minute.
6. Press **EXIT** to return to Normal Mode without saving.

Note...

This procedure adjusts the meter's internal clock. The internal clock will function when the meter is turned off but only when the battery is installed.
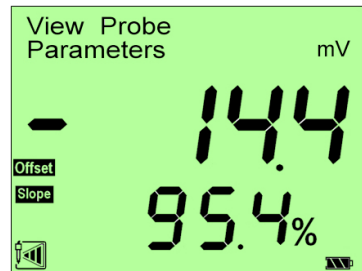
Restore Factory Settings

1. Press **SETUP** to enter the Setup Mode.
2. Press ↑ or ↓ to select the Restore Factory Settings screen.
3. Press **SETUP** to confirm selection. "NO" will flash on the LCD.
4. Press ↑ or ↓ to select "YES" or "NO."
5. When "YES" is displayed, press **SETUP** to confirm and all parameters will restore to factory settings (except the clock) and the meter returns to Normal Mode.
6. Press **EXIT** to return to Normal Mode without saving.

View Calibration Data

1. Press **SETUP** to enter the Setup Mode.
2. Press ↑ or ↓ to select the View CAL Data screen.
3. Press **SETUP** to enter the mode.
4. Press ↓ to view the previous calibration point. Press ↑ to view the next calibration point. The date and time is on cyclical display.
5. Press **EXIT** to return to Normal Mode.

View Probe Parameters

1. Press **SETUP** to enter the Setup Mode.
2. Press ↑ or ↓ to select the View Probe Parameters screen.

Note...

If the meter is not calibrated, the screen will show:

Press **SETUP** or **EXIT** to return to Normal Mode.

CALIBRATION

Calibration should be performed whenever the probe has been out of use for 48 hours or longer. To prepare for calibration:

1. Immerse the pH probe in standard buffer solution and wait for stabilization.

Calibrate With Temperature Sensor/ATC pH Probe

1. Press **CAL** for 2 seconds to enter Calibration Mode.
2. The meter will automatically recognize the calibration buffer. The value and "Finished" will display on the LCD when the procedure is complete.
3. Press **EXIT** to return to Normal Mode.
4. Repeat Steps 1-2 to calibrate other points.

Note...
All other keys will be inoperable while using the calibration function.

Calibrate Without Temperature Sensor/MTC pH Probe

1. Press **CAL** for 2 seconds to enter Temperature Setup Mode. The temperature value will flash on the LCD.
2. Press ↑ to increase the value. Hold down ↑ to continually increase the value.

   Press ↓ to decrease the value. Hold down ↓ to continually decrease the value.

   For °C, the range is 0 to 60.0°C; for °F, the range is 32 to 140.0°F.

   Press **SETUP** and the meter will automatically recognize the calibration buffer. The value and "Finished" will display on the LCD when the procedure is complete.

   Repeat Step 2 to calibrate other points.
3. Press **EXIT** to return to Normal Mode.

mV Calibration with ORP Probe

1. Press **RANGE** to select the mV scale.
2. Immerse ORP probe into standard ORP solution and wait for stabilization.
3. Press **CAL** for 2 seconds to enter calibration mode.
4. Press ↑ to increase the value. Press and hold ↑ to increase the value continuously. Press ↓ to increase the value. Press and hold ↓ to increase the value continuously.
   The measured value range is -1999.9 to 1999.9 mV.
5. Press **SETUP** to confirm setting.
6. Press **EXIT** to return to normal mode

MEASUREMENT PROCEDURES

Turning the Unit On/Off

1. Press **POWER** to turn the meter on.
2. Press and hold **POWER** for 2 seconds to turn the meter off.

Backlight

1. With the meter on press **POWER** to turn the backlight on/off.

Scale Selection

1. Press **RANGE** to switch between the pH and mV scales.

Setting the MTC Temperature

Do **NOT** connect the temperature sensor or non-ATC probe while setting the temperature.

1. From Normal Mode, press **RANGE** for 2 seconds to enter Set Temperature Mode. The temperature value will flash on the LCD.
2. Press ↑ to increase the value. Press and hold ↑ to increase the value continuously.

   Press ↓ to decrease the value. Press and hold ↓ to decrease the value continuously.

   For °C, the range is 0 to 60.0°C; for °F, the range is 32 to 140.0°F.
3. Press **SETUP** to save and the meter returns to Normal Mode.

4. Press **EXIT** to return to Normal Mode without saving.

Saving to Memory

1. Press **MI** to save the current value and view the data point number. There are 99 data points available.

Recall Memory

1. Press **RANGE** to select the scale (pH or mV) for recall.
2. Press **MR** to enter Recall Mode and view the last measured value. The date and time are on cyclical display.
3. Press ↑ or ↓ to scroll saved data points.
4. Press **EXIT** to return to Normal Mode.

Clear Memory

1. Press **MI** and **MR** simultaneously for 2 seconds to clear all memory. The meter will return to Normal Mode.

Maximum, Minimum, and Average

1. Press **RANGE** to select the scale.
2. Press **MAX/MIN/AVE**, the maximum recorded value will appear on the LCD. The date and time is on cyclical display.
3. Press **MAX/MIN/AVE**, the minimum recorded value will appear on the LCD. The date and time is on cyclical display.
4. Press **MAX/MIN/AVE**, the average recorded value will appear on the LCD. The date and time is on cyclical display.
5. Press **MAX/MIN/AVE** to return to Normal Mode.

Hold

1. Press **HOLD** to hold the value.
2. Press **HOLD** to release the hold value.

Note...

When in Hold Mode, all other functions will be disabled except turning the meter off, backlight function, saving, and exiting Hold Mode.

OPTIONAL ACCESSORIES

840016	Standard pH Probe (non-ATC)
840049	Spear Tip pH Probe (non-ATC)
840093	Field Tripod
850057P	AquaShock® ATC pH Probe
850064P	AquaShock® ORP Probe
850088	ORP Probe (non-ATC)
860008	pH 4 Buffer Solution - 3 bottles of 40ml each
860009	pH 7 Buffer Solution - 3 bottles of 40ml each
860010	pH 10 Buffer Solution - 3 bottles of 40ml each
860011	Deionized Water - 3 bottles of 40ml each
860012	pH Buffer Set - 1 each pH 4, 7, 10

SPECIFICATIONS

Mode	pH	Temperature	mV
Range	0 to 14 pH	32 to 140°F (0 to 60°C)	-1999 to 1999 mV
Resolution	0.01 pH	0.1°F (0.1°C)	0.1 mV
Accuracy	±0.01 pH	±0.9°F (±0.5°C)	±0.3 mV
Input	BNC Connector	Temperature Probe Connector	BNC Connector
Calibration	Up to 5 points		
Memory	Up to 99 data points		
pH Slope Range	75% to 110%		
Temp Compensation	Automatic (ATC) or manual (MTC) from 32 to 140°F or 0 to 60°C		
Operating Temp	32 to 122°F (0 to 50°C)		
Battery	Lithium battery 7.4 V (1450 mA/h)		
Battery Life	> 200 hours		

Power Button Indicator Light

Power Off	Light off
Power On	Green light for 5 seconds, then light off
Low Battery	Red light flashes every 5 seconds
Charging Battery	Blue light on

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **five (5) years** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover probes, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will break the waterproof seal and void the warranty.

To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
8281 East Evans Road, Suite #103
Scottsdale, AZ 85260

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days of purchase.