

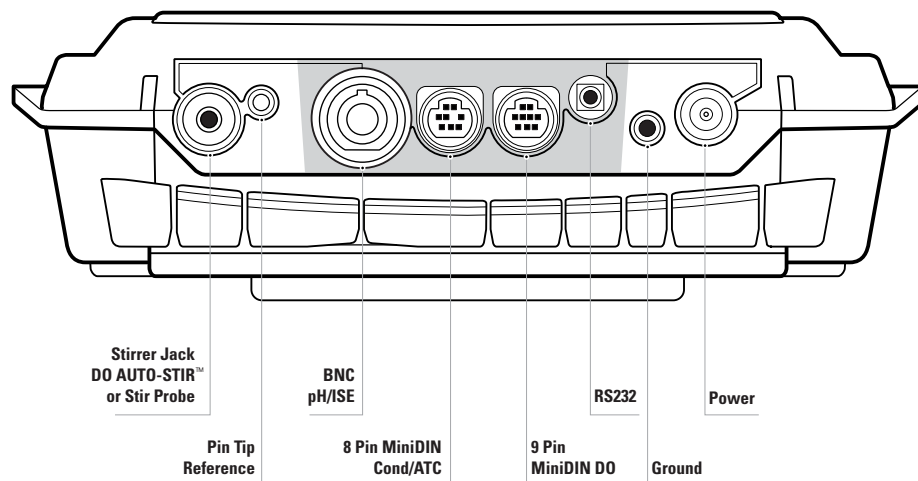
Key Description

	power		up arrow		line select		view log
	calibrate		down arrow		setup		stir
	measure		digits				

All connectors on the 5-Star benchtop meter are depicted below. All connectors on the 5-Star portable meter are highlighted in gray.

The 3-Star and 4-Star meters will have fewer connectors. For example, the 3-Star portable pH meter will only have BNC, 8 pin miniDIN (ATC), and RS232 connectors.

Meter Connections



For the complete Orion Star™ Series User's Guide visit www.thermo.com/water

Preparation

1. Power adapter (benchtop models only) - Select the appropriate wall socket plug and slide the plug plate into the groove on the back of the adapter. **See A.**

Batteries - Select four AA Alkaline batteries. Confirm that the meter is off and remove the battery cover. Orient and insert the batteries as depicted in the battery compartment housing. Replace the cover. **See B & C.**

2. Prepare the electrode according to the directions in the electrode instruction manual. In general, these steps include:

- Gently remove the protective cap/sleeve from the sensing element and save for storage.
- If the electrode is refillable, remove the fill hole cover and fill the electrode with the appropriate fill solution.
- Soak the electrode in pH electrode storage solution, Cat. No. 910001, or ROSS® pH electrode storage solution, Cat. No. 810001. **See D.**

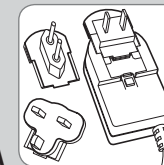
3. Meter connections - Connect the power adapter to the meter and then to the wall socket (benchtop meters only). **See E.** Connect the pH electrode to the BNC input on the meter. **See F.** Connect the ATC probe to the 8 pin miniDIN input on the meter. **See G.** Connect the stir probe to the stir jack input on the meter (benchtop meters only). **See H.**

NOTE: Make sure that all unused inputs on the meter are covered with the black caps. ▲

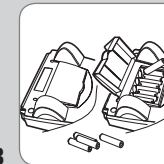
Meter Overview

1. To power on the meter press the **power** key.
2. Press the **line select** key to choose the top, middle, or bottom display line. The ► icon will point to the selected line.
3. In the measurement screen press the **up arrow** key to change the value on the top display line to pH, RmV, mV, or a blank line.
4. To escape out of any meter function, press and hold the **measure** key until the meter returns to the measurement mode.
5. The 3, 4 and 5-Star pH meters can be calibrated using up to five pH buffers.

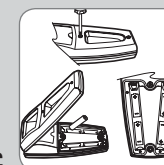
A



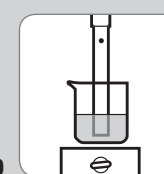
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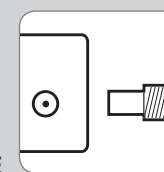
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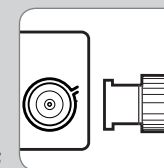
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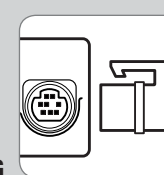
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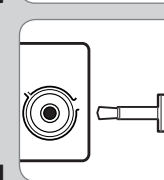
F

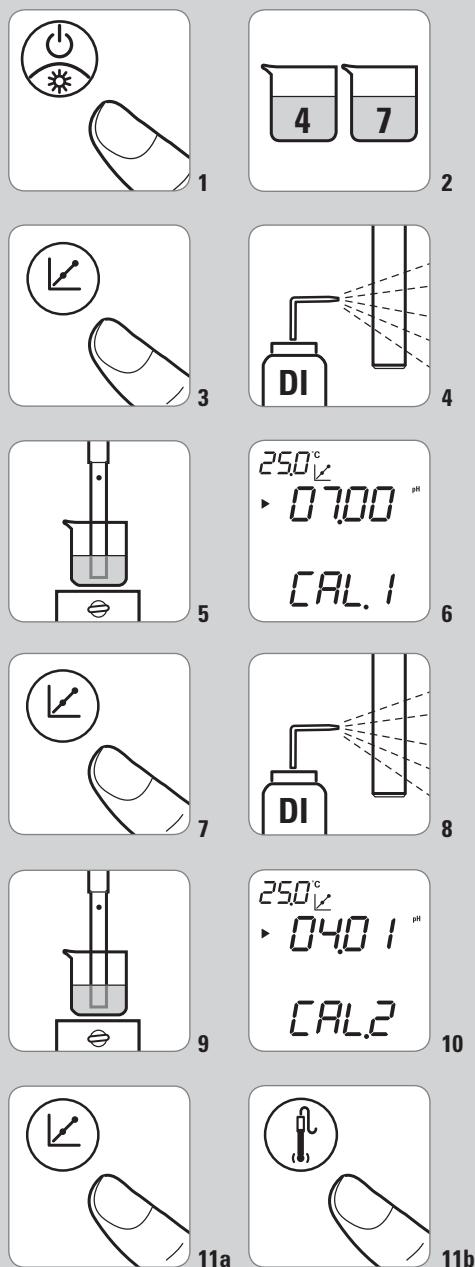


G



H





pH Autocalibration with Two Buffers

1. Press the **power** key to turn on the meter. **See 1.**
2. Select two buffers that bracket the expected sample pH and are one to four pH units apart. **See 2.** See **Autocalibration Buffer Selection** section.
3. Press the **calibrate** key. **See 3.**
4. Rinse the electrode with deionized water and blot dry with a lint-free tissue. **See 4.**

NOTE: Do not wipe or rub the electrode, as static buildup will occur.

5. Insert the electrode into the first buffer and gently stir – if a stir probe is being used press the **stir** key to start and stop stirring (benchtop models only). **See 5.**
6. Wait for the **pH** icon to stop flashing and the ► icon to start flashing. The meter should display the temperature corrected pH buffer value. **See 6.**

If the displayed buffer value is incorrect or a customer buffer is being used manually enter the value by pressing the **up/down arrow** keys to adjust each digit and the **digits** key to move to the next digit.

7. Press the **calibrate** key. **See 7.**
8. Rinse the electrode with deionized water and blot dry with a lint-free tissue. **See 8.**

NOTE: Do not wipe or rub the electrode, as static buildup will occur.

9. Insert the electrode into the second buffer and gently stir – if a stir probe is being used press the **stir** key to start and stop stirring (benchtop models only). **See 9.**
10. Wait for the **pH** icon to stop flashing and the ► icon to start flashing. The meter should display the temperature corrected pH buffer value. **See 10.**
11. Press the **calibrate** key and then press the **measure** key to save and end the calibration. The slope will be displayed and then the meter will proceed to the measurement mode. **See 11a & 11b.**

Autocalibration Buffer Selection

1. Press the **setup** key.
 2. Press the **up arrow** key until PH is displayed on the top line.
 3. Press the **line select** key to move the ► icon to the middle line. Press the **up arrow** key until BUF is displayed.
 4. Press the **line select** key to move the ► icon to the bottom line. Press the **up arrow** key to select the buffer set. USA is default setting.
- USA = 1.68, 4.01, 7.00, 10.01, and 12.46
EUr0 = 1.68, 4.01, 6.86, and 9.18
5. Press the **line select** key to move the ► icon to the top line. Press the **measure** key to return to the measurement mode.

Measurement Mode Selection

1. Press the **setup** key.
 2. Press the **up arrow** key until rEAd is displayed on the top line.
 3. Press the **line select** key to move the ► icon to the middle line. Press the **up arrow** key until tYPE is displayed.
 4. Press the **line select** key to move the ► icon to the bottom line. Press the **up arrow** key to select the measurement mode. AUt0 is default setting.
- C0nt = Continuous measurement mode
AUt0 = AUTO-READ™ measurement mode
tImE = Timed measurement mode
5. Press the **line select** key to move the ► icon to the top line. Press the **measure** key to return to the measurement mode.

pH Measurements

1. Rinse the electrode with deionized water, blot dry with a lint-free tissue, and insert the electrode into the sample.
2. If the meter is in AUTO-READ mode, press the **measure** key to take a measurement. Once the reading stabilizes the **AR** icon will stop flashing and the display will freeze. Press the **measure** key again to take a new measurement.

If a stir probe is connected it will start stirring when the **measure** key is pressed and stop stirring when the **AR** icon stops flashing (benchtop meters only).

3. If the meter is in the continuous or timed measurement modes, the meter will continuously take measurements and update the display. Once the reading stabilizes the **pH** icon will stop flashing.

If a stir probe is connected press the **stir** key to start stirring and press the **stir** key again to stop stirring (benchtop meters only).

Printing Data

In the AUTO-READ and continuous measurement modes, every time the **measure** key is pressed the meter logs the data on the display. In the timed measurement mode, the meter logs the data at the predetermined time interval.

1. Press the **view log** key.
2. Use the **up arrow** key to scroll between CAL0 (print the calibration log) and SEnd (print the measurement log).
3. Press the **line select** key to print the data.