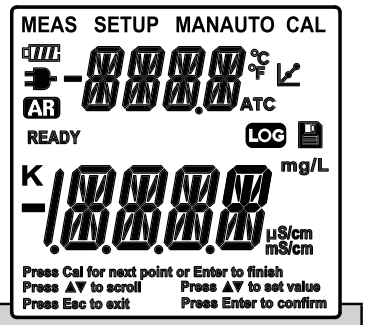
Display Information



Display Icon	Description
MEAS	Indicates that the meter is in the measurement mode.
SETUP	Indicates that the meter is in setup mode.
CAL	Indicates that the meter is the calibration mode.
MAN	Shown when a manual calibration is being done.
AUTO	Shown when automatic calibration buffers are used (100 µS/cm, 1413 µS/cm or 12.9 mS/cm).
	Shows the battery status (more bars = more power remaining). Blinks when power is low and the battery needs to be changed. (Orion Star A122 Conductivity portable meter includes factory-installed batteries.)
	Shown when the meter is running on AC power. (Orion Star A112 Conductivity benchtop meter includes adapter.)
AR	Shown when the meter is on AUTO-READ mode. Default setting. AR and unit of measurement will blink until the reading is stable. When the reading is stable it is held on the screen and AR is lit. Press **measure (esc)** to take a new reading.
READY	Unit of measure will blink until the reading is stable. When the reading is stable, READY is lit.
	Appears during calibration and after a calibration is done.
	Displayed when a reading is stored into the memory.
LOG	Displayed when viewing stored readings.
Secondary display	Upper display which shows temperature reading in measurement mode and setup menu in setup mode.
Primary display	Larger, lower display showing measured value in selected mode.
Instructions	Located below the primary display. These phrases aid in the setup menu and calibration modes.

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Water Analysis Instruments
www.thermoscientific.com/water

North America
166 Cummings Center
Beverly, MA 01915 USA
Toll Free: 1-800-225-1480
Tel: 1-978-232-6000
info.water@thermo.com

Netherlands
Tel: (31) 033-2463887
info.water.uk@thermo.com

China
Tel: (86) 21-68654588
wai.asia@thermofisher.com

India
Tel: (91) 22-4175-8800
wai.asia@thermofisher.com

Singapore
Tel: (65) 6778-6876
wai.asia@thermofisher.com

Japan
Tel: (81) 045-453-9175
wai.asia@thermofisher.com

Australia
Tel: (613) 9757-4300
in Australia (1300) 735-296
InfoWaterAU@thermofisher.com

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English

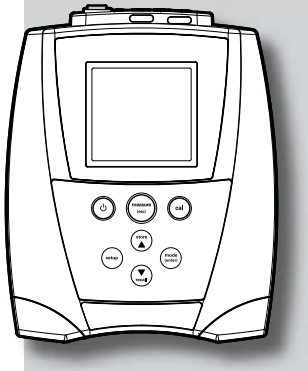
Cond

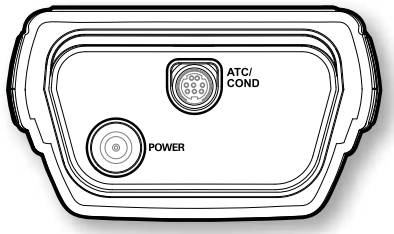
Thermo Scientific Orion Star A112
Benchtop & Star A122 Portable Conductivity Meters

Instruction Sheet

Preparation

1. Power source:
   a. Power adapter (included with Orion Star A112 benchtop conductivity meters, sold separately for Orion Star A122 portable conductivity meters) – Select the appropriate wall socket plug. Slide off the clear plastic cover, and slide on the plug plate into the groove on the back of the adapter
   b. Batteries (included and factory installed in Orion Star A122 portable conductivity meters, sold separately for Orion Star A112 benchtop conductivity meters) – Select four AA batteries. Confirm that the meter is off and remove the battery compartment cover. Insert batteries as shown in the battery compartment housing.
2. Prepare the conductivity probe according to the directions in the conductivity probe user guide. In general, this includes rinsing the cell with distilled water.
3. Connect the appropriate item as labeled on the meter and as shown below.





Overview

1. To turn on or off the meter, press ⏻.
2. To exit any meter function, press **measure (esc)** to return to the measurement mode.
3. The meter mode is shown at the top of the meter:
   MEAS – for measurement mode
   SETUP – for setup mode
   CAL – for calibration mode
4. The meter can perform a one point calibration.
5. Press **mode (enter)** to to switch between reading conductivity (µS/cm or mS/cm), total dissolved solids (mg/L) or temperature.

For additional setup menu information, refer to the reference guide.
The reference guide is on the included CD and available at
www.thermoscientific.com/water.

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Entering the Nominal Cell Constant for Conductivity

1. Press ⏻ to turn on the meter.
2. Press **setup** to enter the setup mode.
3. Press mode (enter) three times to enter the 1.0 configuration menu and the submenu for cell constant.
4. Press store ▲ or ▼ recall to enter the cell constant value to use for automatic calibration.

   Note: *Holding the button down will make the value change faster.*
5. Press mode (enter) to save configuration and measure (esc) to return measurement mode.

Conductivity Automatic Calibration

For manual calibration, please refer to the user reference guide on the included CD.

1. Make sure the conductivity probe is connected to the meter.
2. Select the Thermo Scientific Orion conductivity standard (100 µS/cm, 1413 µS/cm or 12.9 mS/cm) closest to the expected sample conductivity.
3. Rinse the conductivity probe with distilled water, insert into the standard and stir gently. Press (cal)
4. "CAL" will appear in the upper right of the display. Wait for "**READY**" to appear and the standard value should be displayed.
5. Press mode (enter) to view the calculated cell constant and after 2 seconds the meter will proceed to measurement mode.

Conductivity Measurement

To measure TDS, confirm that the TDS factor is correct and adjust if necessary in the setup menu. The same steps below can be followed and the unit of measure will be mg/L.

1. Press mode (enter) to display readings in conductivity.

   Note: *The units of measure will be µS/cm or mS/cm. The meter will auto-range to select the appropriate unit).*
2. Rinse the conductivity probe with distilled water, blot dry and insert into the sample.
3. If the meter is in AUTO-READ mode (meter default), press measure (esc).
   If the meter is in continuous read mode, the meter will immediately start taking readings.

   Record the result and temperature of the sample when "READY" is displayed and the unit of measurement stops blinking.

   Note: *If in AUTO-READ mode and memory storage is enabled, the reading will automatically be stored when the "AR" appears. If in continuous read mode and memory storage is enabled, press store ▲ to store into the meter's memory.*
4. Remove the conductivity probe from the sample, rinse with distilled water and blot dry. To continue measuring, place the probe into the next sample and repeat step 3.
5. When finished measuring all samples, store probe according to the probe instructions.

Read Type Selection

1. In measurement mode, press **setup**.
2. Press store ▲ three times in setup until "4.0" is shown on the top line and "READ" is shown on the lower line. Press mode (enter).
3. Press store ▲ or ▼ recall to select the measurement mode:
   CONT = Continuous
   AUTO = AUTO-READ™
4. Press mode (enter) to save selection. Press measure (esc) to return to measurement mode.

Adjusting the Temperature Coefficient

The default value is 2.1.

1. In measurement mode, press **setup**.
2. Press mode (enter).
3. Press store ▲ or ▼ recall to enter the linear temperature coefficient value.

   Note: *Holding the button down will make the value change faster.*
4. Press mode (enter) to save configuration and measure (esc) to return measurement mode.

TDS Factor

The default value is 0.49

1. In measurement mode, press **setup**.
2. Press mode (enter) two times ("TDSF" is displayed on the top line).
3. Press store ▲ or ▼ recall to enter the TDS factor.

   Note: *Holding the button down will make the value change faster.*
4. Press mode (enter) to save configuration and measure (esc) to return measurement mode.

Memory Feature

This meter stores up to 50 readings.

To enable memory storage:

1. In measurement mode, press **setup**.
2. Press store ▲ to show "5.0" on the top line and "LOG" on the lower line. Press mode (enter).
3. Press store ▲ to show "ON" on the second line. Press mode (enter) to save selection.
4. Press measure (esc) to return to measurement mode.

In **Auto-Read** mode, readings are automatically stored into memory after each stable reading (when "AR" stops blinking and "READY" appears).

In **continuous** read mode, when the reading is stable and "READY" appears, press store ▲ to store into the meter's memory.

Viewing Stored Readings

1. In measurement mode, press ▼ recall.
2. Press store ▲ or ▼ recall to scroll through the memory points.
3. Press mode (enter) to review the reading stored at that point.
4. Press measure (esc) key to return to measurement mode or mode (enter) to view additional stored readings.

Keypad Information

measure (esc)	*In the measurement screen:* Press to take a measurement. *In the setup screen:* Press to escape the setup menu. *In the calibration screen:* Press to abort calibration.		
⏻	Press to turn the meter on or off.	mode (enter)	*In the measurement screen:* Press to switch between modes. *In the setup screen:* Press to confirm the selection.
cal	Press to enter the calibration mode.	setup	Press to enter the setup mode.
store ▲	*In the measurement screen:* Press to store the data on the screen in continuous read mode and with datalogging on. *In the setup screen:* Press to scroll up in the list of options.	▼ recall	*In the measurement screen:* Press to see the stored data. *In the setup screen:* Press to scroll down in the list of options

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