SPECIFICATIONS

Salinity—
Range: 0.00 to 10.00 ppt (NaCl)
Resolution: 0.01
Range: 10.1 to 70.0 ppt (NaCl)
Resolution: 0.01
Automatic Temperature Compensation—
Range: 32.0 to 122.0 °F / 0.0 to 50.0 °C
Normalization: 25 °C (fixed)
Temperature Measurement—
Range: 32.0 to 122.0 °F / 0.0 to 50.0 °C
Resolution: 0.1°

OPERATION

This section contains basic operating instructions, to insure accurate results and for more advanced functions, refer to the additional sections that follow.

1. Remove the protective cover from the probe head.
2. Turn the meter on by pressing the ON/OFF SET button.
3. Place the probe head into the solution to be measured.
4. To insure Automatic Temperature Compensation, immerse the probe head and temperature sensor completely. For accurate Automatic Temperature Compensation, the temperature sensor must reach equilibrium with the liquid being measured, this could take several minutes.
5. Insure that there is adequate movement of the liquid around the tip of the probe head (0.2 - 0.3 meters per second minimum). This can be achieved by stirring the meter in the liquid.

The meter will automatically select the range that is the most appropriate for the value being measured. To manually select the range, press and hold the ↑ button for approximately three (3) seconds (see the "Range Mode Selection" section).

6. Take the desired measurements.
7. Press the ON/OFF SET button to turn the meter off. To preserve battery life, always turn the meter off when not in use.
8. Rinse the probe head with distilled/deionized water and replace the protective cover. Always replace the protective cover to prevent damage to the probe head.

If no button is pressed for twenty (20) minutes, the meter will turn off automatically to preserve battery life (see the "Automatic Shutoff" section).

POWER ON DISPLAY SEQUENCE

When the meter is turned on (by pressing the ON/OFF SET button), the display will cycle through showing the following items:

All Segments - Display check
TNR Normalization temperature value (see the "Selecting Temperature Normalization Value" section)
RAN Range display mode (see the "Range Mode Selection" section).

SALINITY CALIBRATION

One calibration point may be entered for each of the measurement ranges (0.00 to 10.00 ppt and 10.1 to 70.0 ppt).

To insure accuracy:
–Select a known standard with a value as close as possible to the value of the unknown sample.
–If possible, the known standard and unknown sample should be at the same temperature. The ideal temperature is 25 °C.

Previous calibration points are cleared when the meter is calibrated to a new value.

1. Remove the protective cover from the probe head.
2. Turn the meter on by pressing the ON/OFF SET button.
3. Place the probe head into the known standard.
4. To insure Automatic Temperature Compensation, immerse the probe head and temperature sensor completely. For accurate Automatic Temperature Compensation, the temperature sensor must reach equilibrium with the liquid being measured, this could take several minutes.
5. Insure that there is adequate movement of the liquid around the tip of the probe head (0.2 - 0.3 meters per second minimum). This can be achieved by stirring the meter in the liquid.
6. Press and hold the HLD/CAL button for approximately three (3) seconds, CAL will appear at the top of the display and the conductivity measurement will flash.
7. Press the ↑ and/or HLD/CAL buttons to adjust the display to the know value of the known standard. *The meter may only be adjusted by ±30% of the detected value.*
8. With the the know value of the known standard appearing and CAL no longer flashing, press the ON/OFF SET button, the meter will return to the measurement display.

VIEWING CALIBRATION DATA

1. Turn the meter on by pressing the ON/OFF SET button.
2. Press and hold the ON/OFF SET button for approximately three (3) seconds, P1.0 will appear at the bottom of the display.
3. Press the ↑ button two (2) times, P4.0 will appear at the bottom of the display.
4. Press the ON/OFF SET button, P4.1 will appear at the bottom of the display. The top of the display will show the value that the meter was calibrated to for the range of 0.00 to 10.00 ppt. (If no user calibration has been performed, "---" will appear.)
5. Press the ↑ button, P4.2 will appear at the bottom of the display. The top of the display will show the value that the meter was calibrated to for the range of 10.1 to 70.0 ppt. (If no user calibration has been performed, "---" will appear.)
6. Press the ON/OFF SET button, P4.0 will appear at the bottom of the display.
7. Press and hold the ON/OFF SET button for approximately three (3) seconds, the meter will return to the measurement display.

SELECTING °F OR °C

1. Turn the meter on by pressing the ON/OFF SET button.
2. Press and hold the ON/OFF SET button for approximately three (3) seconds, P1.0 will appear at the bottom of the display.
3. Press the ON/OFF SET button, the temperature unit of measure will flash on the display.
4. Press the ↑ button, the temperature reading will switch to the opposite unit of measure. If the meter had been displaying °F, it will now display °C, and vice-versa. Each press of the ↑ button will switch the display to the opposite unit of measure.
5. With the desired unit of measure appearing, press the ON/OFF SET button three (3) times, P1.0 will appear at the bottom of the display.
6. Press and hold the ON/OFF SET button for approximately three (3) seconds, the meter will return to the measurement display.

The unit of measure selected will be the default unit of measure until changed.

RANGE MODE SELECTION

The meter will automatically select the range that is the most appropriate for the value being measured. To manually select the display range, press and hold the ↑ button for approximately three (3) seconds.

Each time the ↑ button for pressed and held, the range mode will cycle through the available modes:
ATO Automatic range selection
1 0.00 to 10.00 ppt
2 10.1 to 70.0 ppt

HOLD FUNCTION

The hold function allows the readings on the display to be "frozen" so that they may be recorded.

1. Press and release the HLD/CAL button to "freeze" the display at the current reading. "HOLD" will appear at the top of the display.
2. Once the reading has been recorded, press and release the HLD/CAL button to return the display to the current reading. "HOLD" will no longer appear on the display.

AUTOMATIC SHUTOFF (Disable)

If no button has been pressed for twenty (20) minutes, the Automatic Shutoff feature will turn the meter off to preserve battery life.

To disable the Automatic Shutoff feature:
1. With the meter turned off, press and hold the HLD/CAL button, then press and hold the ON/OFF SET button until "N" appears on the display.
2. Release the HLD/CAL and ON/OFF SET buttons. The meter will power on and the Automatic Shutoff feature will be disabled.

The Automatic Shutoff feature is automatically enabled when the meter is powered off and turned back on.

RESET TO FACTORY DEFAULTS

Resetting the meter will clear all calibration data and reset the temperature display to °C.

The following procedure is used to reset the meter to the factory default values.

1. Turn the meter on by pressing the ON/OFF SET button.
2. Press and hold the ON/OFF SET button for approximately three (3) seconds, P1.0 will appear at the bottom of the display.
3. Press the ↑ button one (1) time, P3.0 will appear at the bottom of the display.
4. Press the ON/OFF SET button, the N will flash on the display.
5. Press the ↑ button, the Y will flash on the display.
6. With Y appearing, press the ON/OFF SET button, P3.0 will appear at the bottom of the display and the values will have been reset to the factory defaults.
7. Press and hold the ON/OFF SET button for approximately three (3) seconds, the meter will return to the measurement display.

DISPLAY MESSAGES

Upper Display Messages:

- - - Indicates that the meter is in the manual range selection mode and the value being measured is higher than 10.00 ppt.

E 0 3 Indicates that the value of the solution being measured exceeds the measurement range of the unit.

E 0 4 Indicates that the value of the solution being measured exceeds the measurement range of the unit based on a temperature measurement error (see the "Lower Display Messages" section).

Lower Display Messages:

E 0 1 Indicates that the temperature sensor is damaged.

E 0 2 Indicates that the temperature of the solution being measured is below the measurement range of the unit.

E 0 3 Indicates that the temperature of the solution being measured is above the measurement range of the unit.

ALL OPERATION DIFFICULTIES

If this meter does not function properly for any reason, replace the batteries with a new, high quality batteries (see the "Battery Replacement" section). Low battery power can occasionally cause an number of "apparent" operational difficulties. Replacing the batteries with new fresh batteries will solve most difficulties.

BATTERY REPLACEMENT

An erratic display, faint display, no display, or a battery symbol appearing on the display are all indicators that the batteries need replacement. The battery cover is located at the top of the unit. Unscrew the battery cover by turning it counter-clockwise. Remove the exhausted batteries and replace them with four (4) new #357/LR44 size silver oxide batteries. Make certain to insert the new batteries with the proper polarity as indicated by the "+" and "–" symbols in the battery compartment. The "+" side of the silver oxide battery is the flat side with the engraving. Replace the battery cover and tighten securely.

WARRANTY, SERVICE, OR RECALIBRATION

For warranty, service, or recalibration, contact:

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