

# **Detergents SAM**

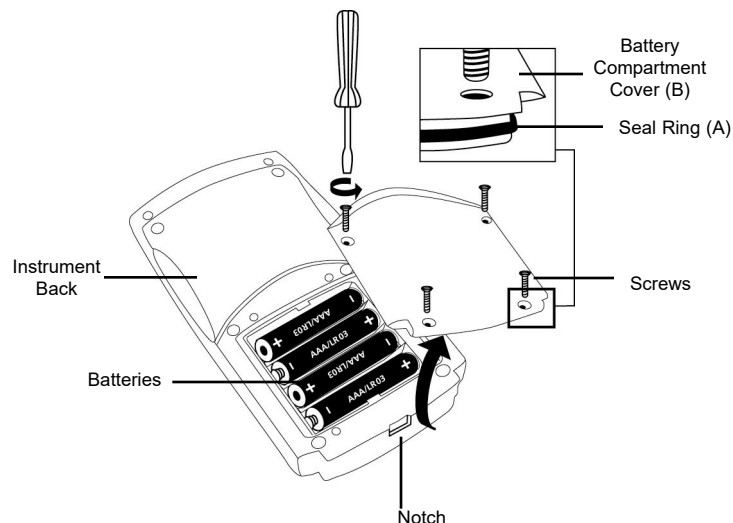
**I-2017**

**0 to 2.50  
PPM (mg/Liter)**



Simplicity in Water Analysis

## Battery Replacement



To ensure that the instrument is waterproof:

- seal ring (A) must be in position
- battery compartment cover (B) must be fixed with the four screws

### To Set Zero

1. Press the Power key.
2. The display will show “**det**”.
3. Insert the ZERO test tube (supplied in detergents test kit) filled with distilled or deionized water into the sample cell compartment (with mild downward pressure), making sure that it is fully seated.
4. Place the light shield over the ZERO test tube.
5. Press the Zero/Test key. The “**det**” symbol will flash for approximately 8 seconds, then the display will show “0.0.0”.

### To Make a Measurement

1. Follow the Test Procedure in the Instrumental Detergents Test (Cat. # R-9423).
2. Insert the resulting Detergents test tube into the sample cell compartment (with mild downward pressure), making sure that it is fully seated.
3. Place the light shield over the test tube.
4. Press the Zero/Test key. The “**det**” symbol will flash for approximately 3 seconds, then the sample test result will appear in the display as ppm (mg/Liter).

## Operating Tips

- Upon startup, the photometer automatically proceeds to the zeroing process. Every time the photometer powers on, it must be re-zeroed.
- To re-zero the photometer, it must be turned off and back on again.
- The test tube contains chloroform which will easily destroy the photometer sample chamber. Use care to ensure that there is no chloroform residual on the exterior of the test tube before placing it in the photometer. Also use care not to spill the contents of the test tube into the photometer.
- A series of readings can be taken without re-zeroing, as long as the photometer stays on during the series.
- Protect photometer from extreme humidity, corrosive fumes and dusty areas. Store in a cool, dry place.
- Remove the batteries when photometer is not in use.
- Press the ! key to turn the display back light on or off.
- When moving the photometer from one temperature extreme to another, wait at least 10 minutes before use to allow photometer to come to temperature equilibrium.
- Contamination of the optics in the sample chamber will result in incorrect measurements. The windows in the sample chamber should be checked at regular intervals and cleaned as necessary. Use a soft moist cloth or cotton swab for cleaning purposes.
- If the sample cell adapter has been removed, it must be replaced with proper orientation, aligning the triangle on the adapter with the triangle on the photometer.

## Displays and Troubleshooting

**E01:** Light absorption too great (dirty optics)

**E20/E21:** Too much light reaching detector

**E22 or Battery Icon:** Battery should be replaced

**E27/E28/E29:** Instrument zeroed incorrectly, misaligned adapter, test tube not properly seated, dirty optics or failing light source.

**Hi/E03:** Measuring range exceeded or excessive turbidity

**Lo:** Test result has a negative value (less than 0 ppm)

## Specifications

**Auto Shutoff:** After 15 minutes of non-use

**Optics:** 660 nm LED/interference filter and photosensor in transparent sample chamber

**Operating Temp.:** 5 to 40°C (41 to 104°F)

**Battery:** 4 AAA batteries (approx. 5,000 tests or 17 hours)

**Waterproof:** Floating, IP68 (1 hour at 0.1 meter)

**Wavelength Accuracy:** ± 1 nm

**Photometric Accuracy:** 3% full scale (T = 20 - 25° C / 68 - 77° F)

**Photometric Resolution:** 0.01 A

**Ambient Conditions:** Temperature 5 - 40° C / 41 - 104° F

Rel. humidity 30 - 90 % (non-condensing)

**CE:** Certificate of Declaration of CE-Conformity available upon request.

## Menu Selection

### Setting Date and Time

Upon initial start-up, the SAM will display "Set", "dAtE", and "YYYY", then a 4 digit number. Proceed to Step 4 in the procedure below to set the date and time, or power the instrument off and on again to bypass this process. At any time that the time and/or data need to be reset, follow steps 1-6 of the procedure below.

1. Press the Mode key and hold. Turn the instrument on by pressing and releasing the Power key. Once three decimal points appear in the display, release the Mode key. The display will show "di 5".
2. Press and release the ! key until the display shows arrows in the upper right and lower left corners of the display, pointing to "Time" and "Date".
3. Press the Mode key. "Set", "dAtE" will briefly appear in the display.
4. Date and time settings are displayed in the following order: Year ("YYYY"), Month ("MM"), Day ("dd"), Hour ("hh"), Minutes ("mm"). Increase the displayed value for each setting by pressing the Mode key or decrease the value by pressing the Zero/Test key until the desired value is displayed.
5. Press the ! key to save the displayed value and to proceed to the next setting.
6. After setting the minutes, press the ! key. The display will flash "iS" "SEt" and then will return to the measurement mode.

### Recall of Stored Data

The SAM photometer automatically stores the last 15 data sets. To recall stored data:

1. Press the Mode key and hold. Turn the instrument on by pressing and releasing the Power key. Once three decimal points appear in the display, release the Mode key. The display will show "di 5".  
**Note:** If the instrument is already on, press and hold the ! key for at least 4 seconds and release to access the stored data.
2. Press the Mode key. The photometer will display the stored data sets in the following format:
  - a. Sample Number: nXX (e.g. n15, n14, ... n1)
  - b. Year: XXXX (e.g. 2017)
  - c. Date: mm.dd (e.g. 03.15)
  - d. Time: hh.mm (e.g. 12:05)
  - e. Analyte
  - f. Result
3. Press the Zero/Test key to repeat the current data set.
4. Press the Mode key to proceed to the next data set.
5. Press the ! key to return to the measurement mode.

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