

Idaho ALCO-SENSOR III Reference Manual



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History Page

Revision #	Effective date	History
	8/1/1999	New Manual (original issue)
0	8/20/2010	New formatting and procedural language

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Scope:

Idaho State Police (ISP) has authority and responsibility in the state of Idaho for the calibration and certification of instruments, maintenance of instrumentation, quality control guidelines, and analytical methods pertaining to the evidentiary collection of breath alcohol samples. Idaho State Police Forensic Services (ISPFS) is the functional unit within ISP that is authorized to administer the Breath Alcohol Testing Program.

Analytical Methods (AM), also known as Standard Operating Procedures (SOP), shall supersede and take legal precedent over any and all other forms of documentation (e.g. reference manuals, training manuals, and training materials) produced or maintained by the Idaho State Police as it pertains to the Breath Alcohol Testing Program in the state of Idaho. If discrepancies exist between differing forms of procedural documentation, the Analytical Method shall be the binding document.

The reference manuals produced and maintained by ISPFS are for reference only as it pertains to the form and function of the different breath alcohol testing instruments used within the state of Idaho. If questions arise as to the functionality of the instrument, the reference manual may be used to help answer those questions. The reference manual is a reference tool used by the end user agency to help the Breath Testing Specialists and Operators maintain knowledge as to the functionality of the instrument and to refresh their memories as to the different functions and options within the different instruments.

Breath Testing Specialists Responsibilities:

The Breath Testing Specialist (BTS) should have a good knowledge of the Breath Alcohol Program and the operation of the Alco Sensor-III. It will be the responsibility of the BTS to oversee the Breath Alcohol Program within his/her agency.

The BTS will be responsible for:

- a) Record management and retention
- b) Maintenance and functioning of the instrument
- c) Maintenance and functioning of the simulator
- d) Teaching and certifying operators in the proper use of the Alco Sensor-III
- e) Testifying in court to your responsibilities and duties

This reference manual is designed to assist the BTS in their duties. However, if at any time questions arise, call the lab that has jurisdiction over your area (see [ISPFS Website](#)).

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Safety:

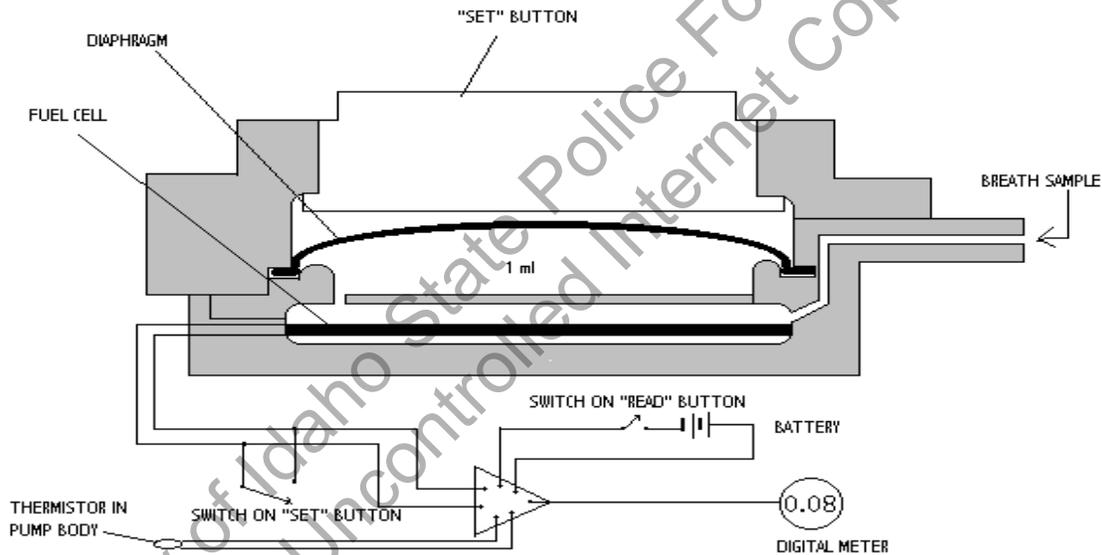
Chemicals, reagents, and solutions used within the scope of the breath testing program should be handled with caution to avoid loss, spillage, contamination, and damage of the instrumentation. When any electrical instrument is used around and in conjunction with liquid solutions and reagents, extreme caution should be taken to avoid damage due to short circuits and injury due to electrical shock.

Officers should be aware that pertinent safety information may exist in an instrument operation manual or in the Material Safety Data Sheet (MSDS) for a chemical, reagent, or solution.

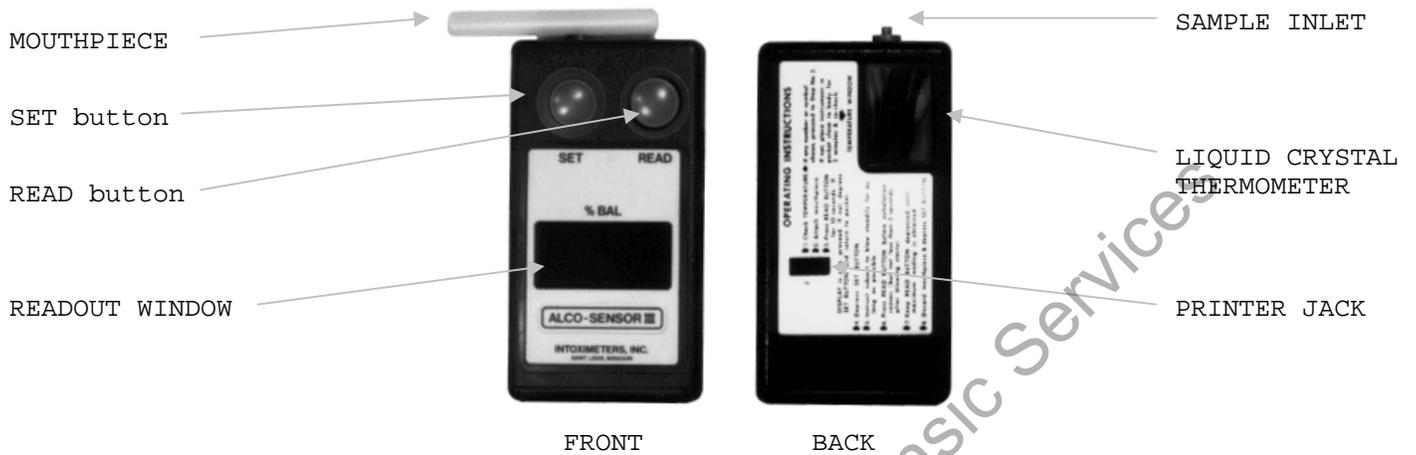
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GENERAL INFORMATION

The spring-loaded sampling valve under the SET button is released by pressing on the READ button and a breath sample is drawn into the FUEL CELL for analysis. In the FUEL CELL, any alcohol present in the breath sample immediately starts to react with the fuel cell to produce acetic acid and electrons. The electrical current formed by the electrons is measured and displayed on the READOUT WINDOW as a BrAC. When all the acetic acid is cleared out of the FUEL CELL, the instrument is ready to analyze another sample.



ALCO-SENSOR III



RBT-III A PRINTER



New Version ASIII

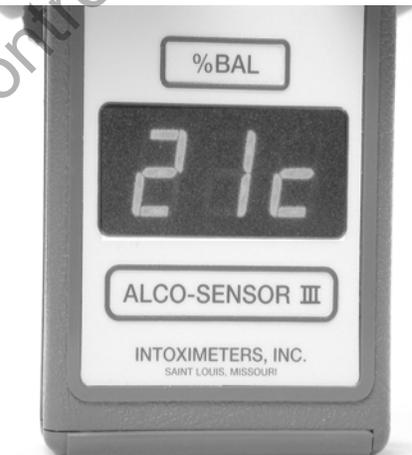
As of June 2004 a slightly modified version of the Alco-Sensor III will be the only AS III on the market. This instrument is readily identified by the red mouthpiece ejector on the left side and also by a serial number greater than 1200000.



There are no printer connections.

These instruments do not have a thermometer on the back. Instrument temperature is determined by pressing both the **Set** and **Read** buttons together. The instrument temperature is displayed in degrees Celsius. After the temperature display, the instrument displays the firmware version followed by the revision designation.

Normal operating temperature range: 59° F (15° C) to 96° F (36° C).



If the displayed temperature is below 15° C the unit may be warmed in a shirt pocket or similar manner. If the temperature is above 36° C, it will take time for the instrument interior to cool off. Keep it out of hot cars!

Set button readies the sampling system. **Store with the Set button depressed.**

Have the subject blow for at least 4 seconds, then depress the **Read** button while continuing to blow through the breath tube for an additional 1-2 seconds. Once the display appears, it is **not necessary** to hold down the **Read** button.

Don't depress the **Set** button again until after you have recorded the final, bright reading from the display. Depressing the **Set** button during analysis will abort the analysis.

At first the display will be dim. This means the instrument is analyzing the sample. When the analysis is complete the display brightens, showing the final result. This result will hold for about 10 seconds. If the **Set** button is not depressed, the reading disappears and the display flashes **SEt** 10 times, then goes dark.

Result Recall: After the test result disappears and **SEt** begins flashing, **and before the set button is depressed**, the read button may be depressed again to recall the last test result. The display will show **rcL** and then display the most recent test result. The result will be available for recall for approximately 15 minutes following the breath test. Once the **Set** button is depressed the last reading is erased from memory and recall will not work.

Other messages that may appear:

bAT: replace the battery.

bLn: run a blank. Don't wait for this to appear during the testing sequence, go ahead and run the blanks at the appropriate time.

bAd: instrument is unable to perform a successful blank. Depress the **Set** button and try again.

SUGGESTED PROCEDURE FOR TESTING A SUBJECT WITHOUT THE PRINTER

1. Observe a proper monitoring period.
2. Check the temperature of the Alco-Sensor III. The temperature of the older instruments should be at least 20° C, but not over 38°C, while the new version operates between 15° and 36° C.
3. Make sure the SET button is locked in.
4. BLANK: Press READ button for BLANK reading. A proper blank will read 0.003 or less.
5. SAMPLE 1: Attach a fresh mouthpiece and ask the subject to blow through the tube for as long as possible. For best results press the READ button when the officer estimates that deep lung air is being provided. Older units: Hold the READ button until the display stops climbing. Note the maximum reading and reset the instrument by pressing the SET button. New instrument: Press and release the READ button, observe the display; when it goes from dim to bright, the maximum reading has been reached. Reset the instrument by pressing the SET button.
6. WAIT: Wait approximately two minutes.
7. BLANK: Recheck the BLANK. If not .003 or less, reset and wait another minute. Recheck BLANK, making sure that it is .003 or less.
8. SAMPLE 2: obtain a second sample as described in part 5, above. Note the maximum reading and reset the instrument by pressing the SET button. The officer may choose to use the same mouthpiece or a new mouthpiece for the second sample.

NOTE: If the first two sample results differ by more than .020 BrAC, another (third) sample should be obtained.
9. Record all results on the instrument log sheet.

USE OF THE RBT III-A PRINTER WITH ALCO-SENSOR III

The printer has a set program that provides the sequence of testing, the number of copies that are printed out, and the number of digits in the result (.## or .###). The program is controlled by a series of internal switches that are set at the Forensic Services Laboratory, or by a certified BTS.

TESTING A SUBJECT:

1. Observe a proper monitoring period.
2. Plug connector cord into the back of the ALCO-SENSOR III. Make sure you have enough paper to obtain the necessary number of printouts.
3. Check the temperature on the back of the Alco-Sensor III. The temperature of the instrument should be at least 20° C, but not over 38°C.
4. Make sure SET button is locked in.
5. Press the ON button (power indicator light should glow red):
 - A. If display shows LOW BATTERY, unit needs recharging. Turn off POWER button, plug printer in with adapter, and wait about 30 minutes before trying again.
 - B. If no display, proceed to Step 6.
6. Check calendar accuracy:

Push TIME button and observe for correct data.

 1. month
 2. day
 3. year
 4. hour
 5. minute

If any area of the calendar is not correct, follow CLOCK SETTING on page 7.

If data is correct, proceed to Step 7.

7. Push START button and respond to directions on display.
 - A. "RUN BLANK" - hold READ button down until displayed instruction disappears, then press SET button.
 - B. "TEST SUBJECT" - instruct subject on how to give a proper sample and push READ button when the officer estimates that deep lung air is being provided. Keep READ button pressed down until "TEST SUBJECT" display disappears (note peak reading on Alco-Sensor III) and press SET button.
 - C. "WAIT" - display will clear after an approximate two minute wait.
 - D. "RUN BLANK" - hold READ button down until instruction disappears then press SET button.
 - E. "TEST SUBJECT" - SAMPLE 2: Using the same mouthpiece, obtain a second sample by pressing the READ button. After obtaining a sample, follow instructions on the printer by pressing down the SET button.
 - F. "WAIT" - approximate two minute waiting period.
 - G. "RUN BLANK" - hold READ button down until instruction disappears then press SET button.
8. Printout will automatically appear unless the results of the two samples are more than .020 BrAC apart. The printer program automatically monitors the results, and will ask for a third sample if needed.

NOTE: It is essential that the ALCO-SENSOR READ button be held down continuously during "TEST SUBJECT" steps otherwise the test will be rejected and a "START TEST OVER" printout will be obtained.
9. Fill in the information on the printouts and enter the results in the instrument log.

THE RBT III-A PRINTER

CHANGING PAPER

The printer paper is loaded in the following manner:

1. Remove the cover by squeezing the sides while lifting at the rear.
2. Feed the paper into the front bottom edge of the paper tray.
3. Advance paper by depressing the paper button.
4. Tighten ink ribbon with thumb disc on the printer face in a clockwise direction.
5. Replace the printer cover by inserting the front of the cover into the base while squeezing the sides and pressing down at the rear.

CLOCK SETTING

With power ON, press the TIME button on the left side of the printer to verify the date and time. The clock display will rotate through MONTH, DAY, YEAR, HOUR and MINUTE twice for your confirmation. If any of these are incorrect perform the following:

Push the TIME SET button. The display will show 1-01.

-Push TIME button until proper MONTH is displayed.

Push the TIME SET button. The display will show 2-01.

-Push TIME button until proper DAY is displayed.

Push the TIME SET button. The display will show 3-90.

-Push TIME button until proper YEAR is displayed.

Push the TIME SET button. The display will show 4-00.

-Push TIME button until proper HOUR (military time) shows.

Push the TIME SET button. The display will show 5-00.

-Push TIME button until proper MINUTE shows.

The display will rotate through MONTH, DAY, YEAR, HOUR and MINUTE twice for your confirmation.

The clock in the RBT III-A printer has its own separate battery so it will maintain its time settings even if the printer is unplugged or the main rechargeable battery goes dead. The suggested life of the clock battery is 10 years. If the battery goes low the printer will print the message **REPLACE DS1287**.

SPECIAL SITUATIONS

1. "START TEST OVER" printout in place of usual printout is caused by:
 - A. Premature release of READ button.
 - B. RFI interference during any readout.

2. "SET AND RETEST" on the printout and a display calling for "TEST SUBJECT" is caused by a .000 to a .003 reading.
 - A. This may possibly be the result of improper sampling technique: Examples could be:
 1. Set button not being depressed prior to testing.
 2. Prematurely pushing the read button.
 3. Subject not blowing into mouthpiece.
 - B. If this occurs, the repeated sample result will be accepted automatically despite a low result and stored as the valid sample.

3. ABORT button ends test procedure.

4. If subject refuses to give a sample:
 - A. Wait until "TEST SUBJECT" is displayed then hold the TEST REFSO button until the printer beeps.
 - B. The printout will show "REFUSED" and time of refusal. Results of any samples given before the refusal will be included on the printout.

5. If ALCO-SENSOR is inoperative, any approved ALCO-SENSOR III fitted with a jack may be used in its place.

Suggested Performance Verification Check Procedure

1. Pour the correct amount of solution into the simulator, plug it in, and allow the solution to warm for approximately 15 minutes. Check the appropriate column in the log if the simulator temperature is in the proper range.
WARNING: The simulator must contain liquid when it is plugged into an electrical outlet or the simulator will burn out.
2. Check the temperature of the Alco-Sensor III to make sure it is at least 20°C, but not over 38°C.
3. Check to see that the SET button is locked in.
4. Take a BLANK by pressing READ button. The display should show .003 or less when the READ button is held down. A proper blank will read 0.003.
5. Attach a mouthpiece to the Alco-Sensor III and connect to the simulator vapor out port. The end of the mouthpiece can be softened by heating gently and forced onto the vapor out port. Sometimes the mouthpiece will split and leak vapor; if this happens use another one. If you elect to use clear tubing attached to a mouthpiece, keep the tubing **as short as possible**. Blow into the vapor in port of the simulator. While air is flowing through the mouthpiece, press the READ button as though you were testing a subject. Record the highest reading on the log sheet.



6. Lock down the SET button and wait approximately two (2) minutes. Repeat a BLANK. Repeat a second performance verification with the simulator. Record the highest reading on the log sheet.
7. If the results are outside the range for the performance verification solution and the simulator was within the proper temperature range, refer to the troubleshooting guide in the Standard Operating Procedure.

8. **For agencies with printers:**

Attach the Alco-Sensor III to the printer and do the performance verification procedure with the TEST SUBJECT program. Record all results on the instrument log and fill out the printed copies. Attach a copy of the printout to the log sheet and file them according to established guidelines as set forth by the SOP.

9. Each agency will be responsible for ordering new performance verification check solutions directly from a vendor as needed. The target value and correct range for each lot will be issued by the Idaho State Police Forensic Services (ISPFS) each time a new batch is produced. It is the responsibility of the operator or BTS performing the performance verification to see that the results obtained are valid and fall within the appropriate range for each lot that is produced.

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