

Student Workbook

BUI: ALCO-SENSOR III and IV



Maritime Law Enforcement Academy

Federal Law Enforcement Training Center
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References

Maritime Law Enforcement Manual, COMDTINST M16247.1(series) -
<http://cgweb.comdt.uscg.mil/g-opl/MLEM/MLEM.htm>

United States Code – <http://www.uscg.mil/hq/g-o/mlea/links.shtm>

Intoximeters – <http://www.intox.com/>

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Objective(s)

General Procedures

1. **STATE** the procedures to be followed if an individual refuses a chemical test.
2. **STATE** the importance of obtaining a Deep Lung Sample.

ALCO-SENSOR III Operation

1. **IDENTIFY** the external components of the ALCO-SENSOR III.
2. **STATE** how the fuel cell of the ALCO-SENSOR III converts a breath sample into a Blood Alcohol Concentration (BAC) reading.
3. **LIST** the factors that may affect the optimum performance of the ALCO-SENSOR III to include temperature, battery, fuel cell, Radio Frequency Interference (RFI) and the rule of .500.
4. **STATE** the procedure for obtaining a breath sample with an ALCO-SENSOR III.

ALCO-SENSOR IV Operation

1. **IDENTIFY** the external components of the ALCO-SENSOR IV.
2. **EXPLAIN** how the fuel cell of the ALCO-SENSOR IV converts a breath sample into a Blood Alcohol Concentration (BAC) reading.
3. **LIST** the factors that may affect the optimum performance of the ALCO-SENSOR IV to include temperature, battery, and fuel cell.
4. **STATE** the procedure for obtaining a breath sample with an ALCO-SENSOR IV.



ALCO-SENSOR III Calibration

1. **EXPLAIN** why the calibration of the ALCO-SENSOR III is important.
2. **IDENTIFY** when you must calibrate the ALCO-SENSOR III.
3. **IDENTIFY** when you must perform calibration checks on the ALCO-SENSOR III.
4. **IDENTIFY** when you must perform calibration verifications on the ALCO-SENSOR III.
5. **EXPLAIN** the process for returning a defective ALCO-SENSOR III.
6. **EXPLAIN** the importance of a Calibration Log.
7. **CALIBRATE** the ALCO-SENSOR III, in accordance with the manufacturer's instructions.

ALCO-SENSOR IV Calibration

1. **EXPLAIN** why the calibration of the ALCO-SENSOR IV is important.
 2. **IDENTIFY** when you must calibrate the ALCO-SENSOR IV.
 3. **IDENTIFY** when you must perform calibration checks on the ALCO-SENSOR IV.
 4. **IDENTIFY** when you must perform calibration verifications on the ALCO-SENSOR IV.
 5. **EXPLAIN** the process for returning a defective ALCO-SENSOR IV.
 6. **EXPLAIN** the importance of a Calibration Log.
 7. **CALIBRATE** the ALCO-SENSOR IV, in accordance with the manufacturer's instructions.
-



**Reading
Assignment**

| Step | Action |
|------|--|
| 1 | Read the following pages of the MLEM and BOJAK prior to attending class: <ul data-bbox="651 449 1425 558" style="list-style-type: none">• Chapter 11, Sections C.5.d.1. and C.5.d.1.b. (page 11-11)• Chapter 11, Section C.5.d.3. (page 11-12)• BOJAK Section G, pages G-2 and G-3 |
| 2 | Read the ALCO-SENSOR Supplemental Reading prior to attending class. |

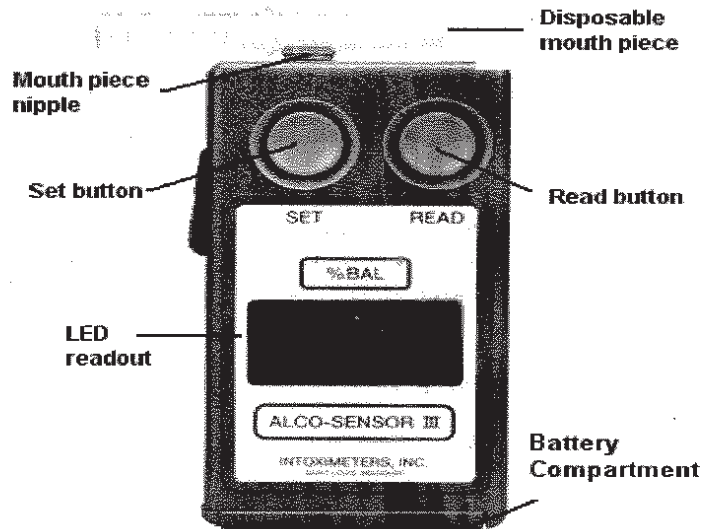


Supplemental Information

ALCO-SENSOR III

External front diagram of the ALCO-SENSOR III

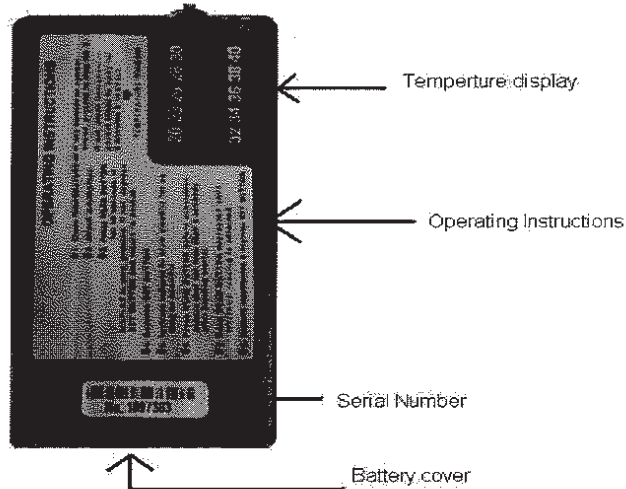
Below is a diagram of the front of an ALCO-SENSOR III, with the key components labeled.





External Rear
Diagram of ALCO-
SENSOR III

Below is a diagram of the back of an ALCO-SENSOR III with key components labeled.



Storage of the ALCO-
SENSOR III

The ALCO-SENSOR III must be stored with the SET button depressed to expedite the clean up of the fuel cell. It is best to store the unit upright at room temperature.

Authorized
Maintenance

There are three things that field units are authorized to do regarding maintenance:

- Routine calibration
- Routine calibration/accuracy check
- Change the battery

Routine Calibration

Routine calibration and calibration checks are accomplished using the manufacturer's procedures, found in the *ALCO-SENSOR III Operator's Guide* that comes with the unit. According to the manufacturer, when conducting a routine calibration check, a result of +/- .010 of the value of the ALCO Standard used is acceptable.

Note: Calibration verification must be performed as the last step when recalibrating a unit. The results of this check must be within +/- .003 of the value of the ALCO Standard used. The fuel cell must be clear of residual alcohol.



When to Calibrate

The ALCO-SENSOR III must be calibrated and checked according to the following schedule:

| | |
|---|---|
| 1 | Calibrate when the unit is received, then do a calibration check weekly for the first month of service. (If the unit does not hold calibration from week to week, it is faulty and must be returned to Intoximeters.) |
|---|---|

If the unit holds calibration, then...

| | |
|---|---|
| 2 | Do a calibration check monthly from then on, not to exceed 30 days between checks |
|---|---|

Recalibrate under the following circumstances:

| | |
|---|---|
| 3 | <ul style="list-style-type: none">• Unit fails the monthly calibration check• You have conducted a number of tests whose sum is greater than .500% within one hour. The unit must be re-calibrated or be taken out of service for at least 10 hours. |
|---|---|

Legal Considerations

Evidence received from the ALCO-SENSOR III is only admissible if a log is begun when the unit is received and maintained throughout the life of the unit.

The log must, at a minimum, contain the following:

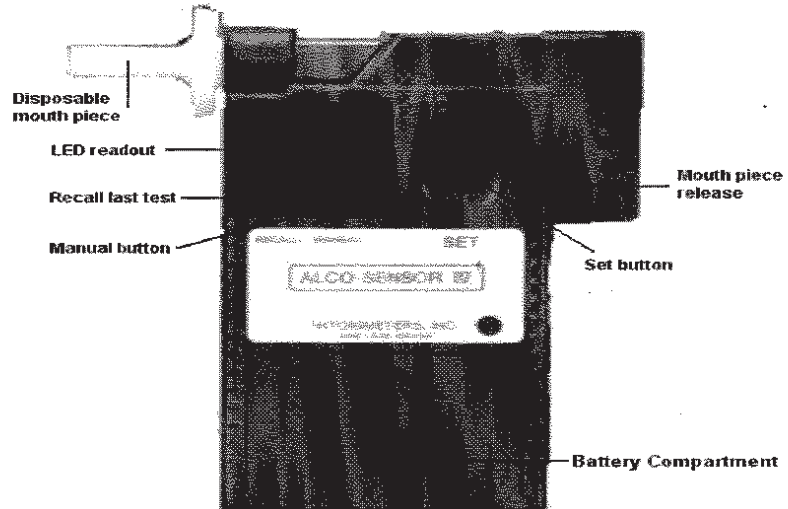
- Unit's serial number
- Testing information, including:
 - Date/time of all tests
 - Date/time of all calibrations and checks
 - Tester's name
- One of the following:
 - Name of subject
 - Serial number and BAC of the ALCO Standard used in calibration
 - Calibration check and test results



ALCO-SENSOR IV

External Front Diagram of the ALCO-SENSOR IV

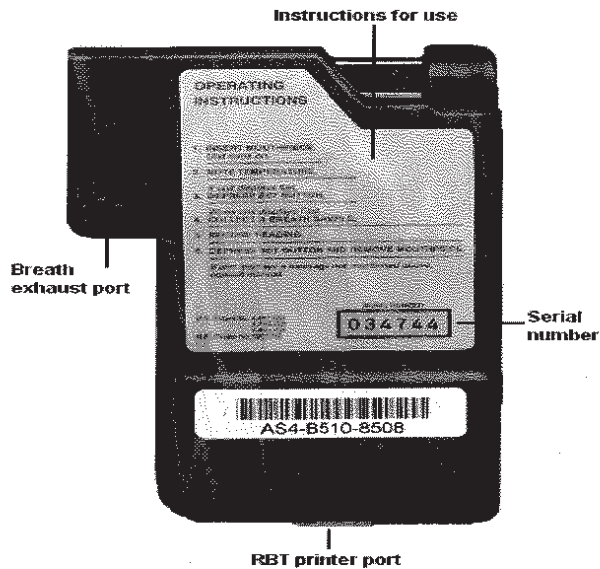
Below is a diagram of the front of an ALCO-SENSOR IV, with key components labeled.





External back diagram of the ALCO-SENSOR IV

Below is a diagram of the back of an ALCO-SENSOR IV, with key components labeled.



Storage of the ALCO-SENSOR IV

The ALCO-SENSOR IV must be stored with the SET button depressed to expedite the clean up of the fuel cell. It is best to store the unit upright at room temperature.

Authorized Maintenance

There are three things that field units are authorized to do regarding maintenance:

- Routine calibration
- Routine calibration check
- Change the battery



Routine Calibration

Routine calibration and calibration checks are accomplished using the manufacturer's procedures found in the *ALCO-SENSOR IV Operator's Guide* that comes with the unit. According to the manufacturer, when conducting a routine calibration check, a result of +/- .010 of the value of the ALCO Standard used is acceptable.

Note: Calibration verification must be performed as the last step when re-calibrating a unit. The results of this check must be within +/- .003 of the value of the ALCO Standard used. The fuel cell must be clear of residual alcohol.

When to Calibrate

The ALCO-SENSOR IV must be calibrated and checked according to the following schedule:

| | |
|---|--|
| 1 | Calibrate when the unit is received, then do a calibration/accuracy check weekly for the first month of service. (If the unit does not hold calibration from week to week, it is faulty and must be returned to Intoximeters.) |
|---|--|

If the unit holds calibration, then...

| | |
|---|---|
| 2 | Do a calibration/accuracy check monthly from then on, not to exceed 30 days between checks. |
|---|---|

Recalibrate under the following circumstances:

| | |
|---|---|
| 3 | When it fails a monthly calibration/accuracy check. |
|---|---|



Legal Considerations Evidence received from the ALCO-SENSOR IV is only admissible if a log is begun when the unit is received and maintained throughout the life of the unit.

The log must, at a minimum, contain the following:

- Unit's serial number
- Testing information, including:
 - Date/time of all tests
 - Date/time of all calibrations and checks
 - Tester's name
- One of the following:
 - Name of subject
 - Serial number and BAC of the ALCO Standard used in calibration
 - Calibration Check and Test results

**Other Maintenance
or Repairs**

The ALCO-SENSOR III and the ALCO-SENSOR IV must be returned to the company for any other maintenance or repairs. To do this, contact:

Intoximeters, Inc.
8110 Lackland Road
St. Louis, Missouri 63114
(314) 429-4000
www.intox.com



**Supplemental
Information**

Refusal of a Chemical Test

MLEM Chapter 11, C.5.d.3 page 11-12 states:

“Your refusal to submit to BAC testing is admissible as evidence in any administrative proceeding, and may result in a legal presumption that you are intoxicated; further, your refusal may result in termination of your voyage.”



**Supplemental
Information**

Calibration Guide

| Calibrate | Calibration Verification | Calibration Check |
|---|--|---|
| <ul style="list-style-type: none"> • First put into service • If the unit fails the monthly check • Unit exceeds the <u>.500 rule</u> (ALCO-SENSOR III only) | <ul style="list-style-type: none"> • Immediately after calibration • Must be within <u>+/- 0.003</u> of the <u>STANDARD</u> <p style="text-align: right;"> + .085 <u>STANDARD</u> = .082 - .079 </p> | <ul style="list-style-type: none"> • Weekly check for the first month • Every 30 days • After battery replacement • Must be within <u>+/- 0.010</u> of the <u>STANDARD</u> <p style="text-align: right;"> + .092 <u>STANDARD</u> = .082 - .072 </p> |



**Additional
Resources**

No additional resources are provided at this time.



Notes



Notes

