PAS Sentry IIa

Alcohol Screening System

with Auto-Start Port

INSTRUCTION MANUAL

PAS Systems International, Inc.

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INTRODUCTION

The PAS Sentry Alcohol Screening System is a portable breath alcohol tester (PBT). This wall mounted or hand-held analyzer provides color coded LED's, audible alarm, and numeric readout. This product is recommended for use by individuals who have been trained in the administration of alcohol screening devices.

The PAS Sentry is used to check a subject's breath alcohol level. To use, the subject blows directly toward the sensor intake port. The Sentry collects and analyzes the breath sample for alcohol. The PAS Sentry can also be used to detect open containers of alcoholic beverages, or to detect low levels of alcohol in enclosed spaces.

The operator controlled sampling system with visual prompts guarantees a precise and tamper proof measurement of the breath sample. No mouthpieces or other attachments are required. The PAS Sentry is especially suited for quick subsequent measurements.

The PAS Sentry is designed specifically for use by law enforcement, correctional officers, counselors, and security personnel. It is operated by one of 2 methods: Manual Start (pressing a single control button) or Auto-Start (blowing or speaking towards the intake port). The instrument is easy to use, and has been designed to withstand the physical conditions experienced in operational situations. It is resistant to adverse conditions and mechanical shocks.

Further guidance and training, or questions regarding this precision instrument system, or its use in screening subjects for the presence of breath alcohol can be obtained by calling 800-660-SNIF.

HOW THE PAS SENTRY WORKS

When you use the PAS Sentry, a small pump draws a breath sample through an electrochemical fuel cell sensor that generates a small electrical current in the presence of alcohol vapor. This current is amplified electronically and used to drive a multicolored **bar-graph, audible alarm, and numeric display.** The number of bars lit in the display indicates the alcohol concentration in the breath sample**.** The proprietary sensor provides high precision, short analysis time, and long-term stability**.** Only true alcohol content is recorded even when exposed to other breath interfering substances, for example, acetone.

The PAS Sentry may be operated by two (2) methods:

1) The AUTO-START - Simply blow directly toward the screened port from a distance of 6 – 8 inches. (Do Not blow from close distances such as 4 inches or less from the port.)

2) The MANUAL CONTROL START - Press and release the manual control button on the instrument and blow toward the port from a distance of 6 – 8 inches.

The instruments' solid-state electronics activate the motor/pump in the sampling system**.** This sampling system has the effect of drawing a preset minimum volume of breath and ambient air directly into the fuel cell. The five (5) second sampling time ensures that the reading will include a deep lung sample, which reflects the approximate breath alcohol level.

The Sentry is very easy to operate and may be used as often as required, provided that a suitable delay is allowed between successive tests**.** This delay, which is automatically enforced by the electronic timer, cannot be bypassed and ensures the fuel cell is clear of alcohol from the previous test. This prevents the possibility of additive readings**.** At low or zero alcohol levels this delay will be very short**.** However, at higher alcohol levels it may take up to two (2) minutes before the instrument's electronics will permit a second or a subsequent breath test to be performed.

The PAS Sentry is powered by standard AC (110v) electrical current**.** No mouthpieces or other attachments are required.

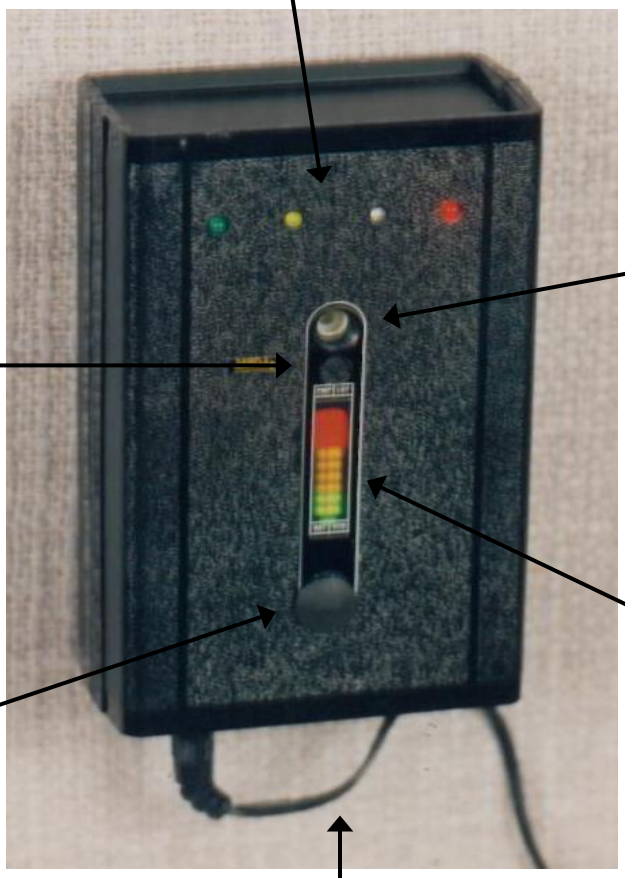
We want you to get the best possible results from your PAS Sentry**.** Please take time to study this manual and to practice using the instrument before using it in your agency's Zero Alcohol Tolerance Program.

Caution: When taking breath samples, use the Sentry in areas where wind drafts or strong air currents can be avoided. Do not allow the subject to forcefully blow directly in the sample port from a distance of less than 4 inches. To do so may trigger a fuel cell response indicating a false positive.

BASIC FEATURES

The key components of the PAS Sentry are:

Indicator Lamps: Provide user feedback



Auto-Start Port: A screened port provides auto-sampling option (Discussed later)

Control Button (Start): Provides a manual start option. (See page 9)

Sampling Ports: Two small holes let the air sample pass through the Sensor. The inlet port is on the front and the outlet port is on the back.

Bar-graph with Numeric Display: Nine rectangular LEDs give an indication of the alchohol level in the sample. The display is color-coded for easy reading (see page 10)

Power On: The PAS Sentry uses standard AC (110-120V) current

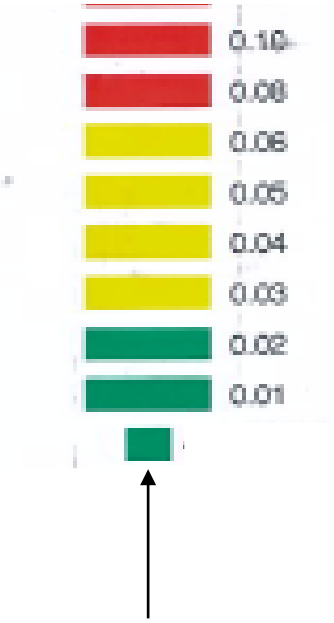
AT-A-GLANCE DISPLAY

PAS Sentry provides four indicator lamps above the sampling ports and bar-graph display. These lamps provide useful feedback when using the flashlight or sensor.

Ready/Standby: The GREEN LED indicates when the Sentry is ready to test. It is also a power on indicator.

Analyzing Indicator: The BLUE LED comes on with the pump LED and remains on during the sample analysis.

Air Pump & Sampling Indicator: The YELLOW LED indicates when the PAS Sentry pump is taking an air sample. It comes on for a few seconds at the beginning of each alcohol measurement cycle.



Wait/Reset: The RED LED comes on during initialization and anytime a positive sample has been identified.

Sensor Indicator

The GREEN BAR located at the bottom of the bar-graph display indicates the sensor is on. It lights by pushing the black control/start button or by blowing toward the auto-start port.

INITIALIZING

After receiving your PAS Sentry it is important to follow these steps.

[1] Setup Instructions
Unpack the PAS Sentry unit and transformer. Proceed as follows:
Simply loop the cord from the transformer through the cord tie to secure and plug the receptacle into the bottom of the unit. Then plug the wall mount transformer into any standard electrical outlet (110-120 volts). Wait two (2) minutes for an initialization stage to complete; red and green lamps flash on and off. When the red lamp goes off and the green lamp remains on the unit is ready for testing. Remove the Velcro strips for wall mounting on the back of the Sentry and position on the wall where appropriate for your testing needs.

[2] Turn System On
Plug the wall mount transformer into any standard electrical outlet (110 -120 volts). The red lamp should appear at the top right front of the instrument, a green lamp will also appear and both lamps will alternate on and off. ***Wait*** until the red lamp goes out. You may leave the unit on at all times or simply unplug when not in use for long periods, e.g., weekends, holidays, etc.

[3] Ready
The green lamp will remain "on" indicating the unit is ready for testing.

[4] Activate Sensor (2 methods)
1) Blow directly at the Auto-Start Port from 6-8 inches.

OR

2) Press, or tap, the black switch button and release immediately.
The small green lamp goes out and a yellow pump light will appear along with a blue light. After 4-5 seconds, the yellow pump light will automatically turn off, the blue lamp remains on and a beep signal will sound. After 15-20 seconds the blue analyzing light goes out and the green ready lamp reappears and double beeps.

The system check is now complete and you are now ready to practice the procedures explained in this manual using either method.

SAMPLING

The PAS Sentry is a wall mounted or hand held breath alcohol measuring instrument intended to be used as a non-invasive alcohol screening instrument to detect alcohol in human breath.

Although the PAS Sentry is simple to operate, it is important that these procedures are accurately followed each time a breath test is run, and in the order as given.

Subject Instructions

Ask the subject when he last took anything by mouth or smoked tobacco or a tobacco substitute.

Some foods and even non-alcoholic drinks may actually contain traces of alcohol, which the subject may later claim affected the result of the test through a mouth alcohol effect. To prevent this, wherever possible ensure that a delay of about **twenty minutes** has elapsed since the subject took anything by mouth (even some foods and medicines contain alcohol).

Although most, if not all, mouth alcohol is generally dispersed (by salivation) within 10 or 12 minutes from the time of the last drink, minute traces may still be present in persons with mouth dentures for up to 20 minutes. Therefore, allowing 20 minutes from the last drink in each case ensures the complete dispersal of all mouth alcohol and should minimize the possibility of a subsequent, successful challenge to the breath test reading.

A delay of at least **two minutes** should have elapsed, prior to breath sampling, since the subject last smoked.

Do not even allow the subject a glass of water prior to the test, as this will cool the mouth and dilute the saliva thereby temporarily **reducing** the amount of alcohol in the breath, and hence the instrument reading.

Finally, instruct the subject as to exactly what he or she is required to do in order to provide a suitable sample of breath for analysis…" Please stand so your mouth is about 6 - 8 inches away from the instrument. Take a deep breath and exhale in a sustained manner directly toward the sample intake port. Continue to blow as the YELLOW Lamp initially comes on and continue to blow until the YELLOW Lamp goes off and a beep sounds". (Approximately five seconds).

Breath Sampling

Step 1: **Power On** (Initialize)

For best performance, plug the Sentry and wall adapter in two minutes or so before you plan to test. When the red lamp goes out, tap the black control (start) button to activate the sensor.

Step 2: **Zero Check**

If you are unsure if the fuel cell has recovered from the previous sample, check a sample of alcohol-free air and verify that no bars light up in the display by simply activating the sensor - press the black button and release. If bars do light up, wait until the unit resets (green light is on) then try again. Always perform a zero check after a positive sample.

Step 3: **Into Position**

For optimum results, position the subject about 6 - 8 inches in front of sample intake port. Observe the indicator lamps. Only the green lamp should be lit.

Step 4: **Subject Sampling**

Have subject take a deep breath and blow in a sustained manner toward the Auto-sampling port.

Caution! Subjects will have a tendency to get too close to the sampling port when blowing. Remind subject to keep the proper distance.

As subject begins to blow, the green lamp will go off and the yellow and blue lights will turn on**.** Have subject continue to blow until the yellow light goes off and a beep tone sounds**.** Subject may move away after the yellow light goes off and beep sounds.

Step 5: Results

- The blue light will continue on until the analysis is complete**.** If no alcohol is found in the sample, the blue light goes off and the green lamp comes on with a double beep. If alcohol is detected (above 0.02%), a steady beeping will sound and the numeric bar graph will display results.
- Observe the bar graph to determine the approximate level of alcohol present in the subject's breath**.** The display will hold the results for about 30 seconds before clearing.
- When analysis is complete the blue light will go off and the red light will come on until the sensor has cleared itself of all residual alcohol.
- When the red light goes off the green light stays on and a beep sounds to indicate the PAS Sentry is ready for the next test or subject**.**

When a positive result has been recorded, conduct a **ZERO CHECK** prior to testing the next subject by pressing and releasing the black control button at the bottom of the bar-graph**.** The Sentry will cycle through the analysis and reset itself for the next test**.** No bars should be displayed when the green test lamp is on**.**

Step 4: Power Off

Unplug unit either at the unit or from the wall outlet.

Step 5: Record Results

Record the number of bars or numeric value from the bar graph into a suitable log**.** If no bars on the graph light up record "Negative for Detectable Levels of Breath Alcohol".

Manual Breath Sampling

Using the PAS Sentry in the **hand-held** mode for reliable confirmation of the absence of alcohol (no alcohol) may best be obtained by:

Step 1: Instruct the subject to talk or take in a deep breath and exhale slowly for about 5-8 seconds.

Step 2: As the subject is talking or exhaling place the sample port approximately 6 – 8 inches from the subject's mouth and manually activate the sensor sampling pump or simply allow the subject to blow directly at the Auto-Sampling port from 6-8 inches.

Step 3: Hold the PAS Sentry directly in the breath stream until the yellow sampling pump goes out and a beep sounds.

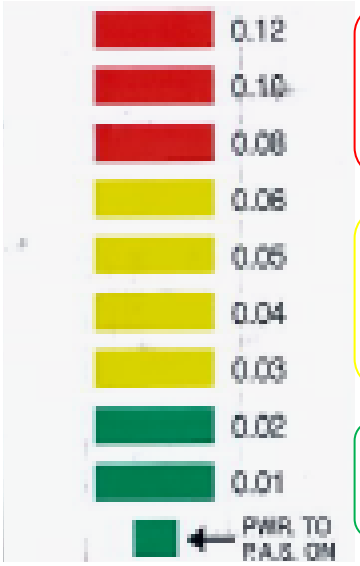
Step 4: Observe the bar-graph display until it goes off and record the number of bars that light up indicating the approximate concentration of breath alcohol (BrAC).

Step 5: If no bars light up the subject is likely free of breath/lung alcohol

Interpreting the Display

The PAS Sentry is intended for use as a rapid **screening device** to detect alcohol in human breath or airborne alcohol in the environment. Legally binding BAC measurements can only be obtained with evidential quality instruments. The purpose of the PAS Sentry is to help you quickly screen for breath alcohol and decide whether to use an evidential breath tester (EBT) in individual cases.

If the PAS Sentry is used according to manufacturers' instructions, the chart below will give you an **approximate** indication of the subject's blood alcohol concentration (BAC). Roughly speaking, the readings can be interpreted as follows:



RED bars lit	Subject ***MAY*** exceed the 0.08 or 0.10% BrAC legal limit for drivers of private vehicles
YELLOW bars lit	Subject ***MAY*** exceed the 0.04% BrAC legal limit for certain commercial vehicles and aircraft
GREEN bars lit	Alcohol is present

Clearing Overloads

If your PAS Sentry is overloaded, it will take a few minutes to recover. This is the procedure for rapid fuel cell recovery.

1: With only the green lamp on, press the black control button to activate the sensor pump.
2: Allow the system to completely cycle until the green lamp reappears.
3: If **no bars** light up during cycling/flushing, the overload has cleared. Should bars continue to appear, re-cycle again after waiting at least 5 minutes.
If you continue to see bars displayed call **1-800-660-SNIF** for help!

OTHER APPLICATIONS

Alcohol in Enclosed Spaces

The PAS Sentry is sensitive enough to detect background levels of alcohol in enclosed spaces such as rooms, jail cells, etc. This is useful for detecting drinking by minors without sampling each individual's breath at social gatherings, or in correctional facilities and treatment centers.

To detect alcohol vapor in an enclosed space, simply run the PAS Sentry to sample still air drawn from anywhere in the space. Just make sure you don't sample fresh air from an open door or window.

Under suitable conditions, the PAS Sentry will detect alcohol in open containers in enclosed spaces. Containers will be easier to detect as you get closer to them, if the alcohol content is high, and if you prevent the space from getting flushed with fresh air.

Open Beverage Containers/Spiked

With open container laws and the problems of alcohol in our schools, the PAS Sentry is invaluable for determining whether a beverage contains alcohol. This is easily done by sampling the air above the container.

Warning! The air over an alcoholic drink--even a beer has much more alcohol in it than a drinker's breath. It is therefore easy to overload the PAS Sentry when checking beverage containers. Overloading should be avoided whenever possible, because it takes the fuel cell longer to recover, and its performance will gradually deteriorate.

To check a container for alcohol, angle the inlet port away from the container opening to dilute the sample. If your first reading is inconclusive, you can always take another one with less dilution.

The PAS Sentry readings should not be taken as an accurate indication of the strength of the drink. However, with a little experience you should be able to distinguish between beer, wine, and spirits. Take the time to practice on various drinks and develop an operating style which avoids overloading the instrument.

COMMON QUESTIONS

Here are the answers to questions most often asked by PAS Sentry users.

What do I do if...

Q. The unit's green sampling indicator or the yellow PMP indicator doesn't come on?

A. Check all power connections carefully. Be sure the plug to the unit is firmly seated.

Q. The PAS Sentry detects alcohol, but seems to be giving low readings?

A. Your unit might need recalibrating. The subject may be standing too far away from the sample port or may not be blowing directly toward the intake (sensor) port.

Q. The display lights up several bars with no alcohol present?

A. Improper performance of initialization may light display bars. This can also be due to background levels of alcohol vapor in the air, but it is more likely that the fuel cell has not recovered from the previous positive reading. If the problem persists when you check a sample of fresh air, follow the procedure for clearing overloads on pg 10.

Q. The PAS Sentry appears to be too sensitive?

A. You might be using the instrument improperly (standing too close), or it might require recalibration. Hard blows directly into the sample port (less than 4 inches) may trigger a fuel cell response indicating a false positive.

Q. The red LED lamp will not go out?

A. The unit has not automatically reset itself. Press the control button to reset.

Q. The red wait indicator is ALWAYS on when the PAS Sentry is on?

A. If the wait indicator fails to cycle on and off the unit may have a defective reset mode. Please return your PAS Sentry for service.

Q. I dropped my PAS Sentry on the floor?

A. The instrument is probably just fine. If it doesn't work, the power connectors might have come loose. Check for this before assuming that the PAS Sentry needs repair.

Q. There seems to be something wrong with my unit?

A. Call **PAS Systems International** for assistance. Do not attempt to repair the PAS Sentry yourself. There are no user serviceable parts inside, and you will void the warranty. (Please refer to the Service section on page 16.)

DOS AND DON'TS 

- Properly position the subject so their mouth is the correct distance (6 – 8 inches) from the sample port.
- Have subject blow steadily (demonstrate if necessary).
- Keep fingers away from the intake and sensor ports.
- Treat your PAS Sentry with the respect deserved by any precision instrument. Protect it from temperature extremes.
- Disconnect the power overnight and weekends.
- Have the calibration of your unit checked yearly, or whenever it seems to be losing sensitivity.
- Read this handbook and comply with instructions.

- Overload the fuel cell. The fuel cell takes a long time to recover, and frequent overloads will damage it.
- Sample raw cigarette smoke. This rapidly damages the fuel cell.
- Allow subject to blow fast or in short bursts.
- Allow subject to forcefully blow directly into the sample port from under four (4) inches distance.
- Allow liquids to enter the inlet or outlet ports.
- Subject the PAS Sentry to abuse such as excessive shocks.
- Attempt to dismantle the unit. This will void the warranty.
- Clean the case with chemical solvents. You might damage the fuel cell permanently.
- Deviate from the instructions given in this handbook and outlined on the accompanying procedure sheet.

TECHNICAL SPECIFICATIONS

Product Name	PAS Sentry Alcohol Screening System
Function	Combines both ***active and passive testing*** for detecting low levels of alcohol in exhaled breath or the environment.
Alcohol Sensor	Platinum electrochemical fuel cell generates an electrical current in response to alcohol vapor.
Alarm	Audible alarm sounds at 0.02% BAC or above.
Accuracy	Meets zero tolerance requirements.
Specificity	Fuel cell detects only alcohol. It is unaffected by acetone, paint and glue fumes, foods, confectionery, methane, and practically any other substance likely to be found in the breath.
Breath Sample	Pump runs for 5 seconds and draws in a 1 cu. in. (15ml) air sample (nominal figures).
Display	Color-coded 9-element LED bar-graph and numeric display of approximate alcohol level.
Peak Reading	5-20 seconds
Recovery Time	1-2 minutes after a positive reading; longer if the fuel cell is overloaded.
Power Supply	110 volt AC electrical outlet
Calibration System	Wet bath simulator; yearly calibration recommended
Environmental	Operating temperature approximately room temperature.
Dimensions	3.00" w x 5.25" h x 1.75" d
Weight	Approximately 8 oz.

QUALITY ASSURANCE PLAN

The following section describes the Quality Assurance Plan recommended by the manufacturer of the PAS Sentry Alcohol Screening System.

The manufacturer recommends the PAS Sentry System's sensitivity be checked monthly, or more frequently if the operator feels it is necessary because of large volume testing schedules. In the experience of the manufacturer a monthly check of sensitivity using a known source of alcohol (instructions below) is adequate to assure the instrument is functioning under normal operating conditions (see product specifications). Additionally, regular visual inspection of the system to confirm the intake port or exit port is not blocked, and each lamp (LED) checked to be sure they display properly when activated. Note all inspections and testing in the logbook by serial number. In the event of an observed malfunction or failure of the PAS Sentry to test accurately call 1-800-660-SNIF (7643) for instructions or guidance.

Compliance with the following procedures will assure reliable testing, calibration, and operation of the PAS Sentry System.

1. Equipment/Methods/Testing Description
2. Minimum Intervals for Testing System Performance
3. Tolerance (See Product Specifications)
4. Inspection, maintenance and calibration
5. Record Keeping - Logs

QUALITY CONTROL CHECK: The manufacturer suggests a daily QC or functional check be performed. This check may be made by simply selecting a solution containing ethanol alcohol (e.g., vodka, certain alcohol-based mouthwashes, etc.), dipping a finger into the solution and blowing across the wet finger toward the Sentry intake port from a distance of about 6-8 inches. While blowing, activate the sample pump by pressing and releasing the start switch. Continue to blow until the yellow sampling light goes out or until you begin to see indications of alcohol readings as the display begins to light.

Also, you may simply open the container and blow across the top of the open container toward the intake port from 6-8 inches. Activate the sampling pump by pressing the black control button, and blow until the sample light goes out. Observe for the presence of alcohol as the display begins to light.

If alcohol is detected, the functional test is complete and you can assume the device will work well with subject testing. If alcohol is not detected, repeat the procedure. If alcohol is still not detected contact PAS Systems.

FOR TECHNICAL SERVICE & INFORMATION CALL 1-800-660-SNIF!

RETURN POLICY

If you receive an order that appears to be defective or damaged, please contact PAS Systems at 800-660-7643 within 10 days of receipt of the shipment. PAS Systems will replace the equipment, file any necessary claims, and correct any shipping errors.

To return an order for any other reason, contact PAS Systems at 800-660-7643 within 10 days of receipt of the order and explain the reason for the return. A 20% restocking fee will be assessed and freight charges are non-refundable.

SERVICE

Your PAS Sentry is a self-contained unit. There are no user-serviceable parts inside. If you conclude that your PAS Sentry is not functioning correctly, it must be returned to PAS Systems International for service.

Carefully package the unit. Place the package in a suitable shipping box and send to the address below. We suggest shipping UPS or Federal Express, etc., rather than parcel post for tracking purposes. It would be wise to insure the package for the original purchase price.

If your unit is out of warranty, you will be notified of a nominal service charge before repairs begin.

Ship units requiring service to:

PAS Systems International
Attn: Service Dept.
215 Southport Dr. Suite 400
Morrisville, NC 27560

Tel: (540) 372-3431
(800) 660-**SNIF**

WARRANTY

PAS Systems International, provides a one (1) year WARRANTY from the date of purchase of the instrument should the product exhibit a manufacturing defect, or defect in workmanship. Products showing unusual wear, abuse, alteration, items dropped, or accidentally broken, will not be covered under the WARRANTY. In addition the warranty does not cover the replacement of batteries. The Company will provide one (1) free calibration service during the WARRANTY period should such re-calibration be necessary.

Please call **1-800-660-SNIF** anytime you have any questions. Your satisfaction is very important to us. Thank you!

Extended Warranty Information Available

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NOTES

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