



# DDS-ALV-100 User Handbook

Revision 1.7



**pacific data systems**  
Australia



**A:** 27 Hi-tech Court, Eight Mile Plains QLD 4113 **P:** +617 3361 2000  
**E:** [sales@pacdatasys.com.au](mailto:sales@pacdatasys.com.au) **W:** [www.pacdatasys.com.au](http://www.pacdatasys.com.au)

# TABLE OF CONTENTS

|                                 |    |
|---------------------------------|----|
| Instrument Overview.....        | 4  |
| Instrument Features.....        | 5  |
| Icon Description.....           | 6  |
| Touch Screen Calibration.....   | 6  |
| Introduction.....               | 7  |
| Calibration Period.....         | 8  |
| Operating Instructions.....     | 8  |
| Interpreting the Result.....    | 11 |
| Adjust Settings.....            | 12 |
| Bluetooth® Thermal Printer..... | 13 |
| Appendix A.....                 | 14 |

# INSTRUMENT OVERVIEW



Please ensure the operator has read the User Handbook and is familiar with the instrument prior to use. Please retain the manual for future reference.

# INSTRUMENT FEATURES

## PLEASE REFER TO DIAGRAM ON PAGE 1

### 1. DISPOSABLE MOUTHPIECE

For sanitary reasons, each mouthpiece is individually packed and sealed. A new mouthpiece should be attached to the sample port for each test to prevent any contamination from the previous sample.

### 2. SAMPLING CUP

The Sampling Cup is reusable. Attach sampling cup to the sample port. Do not touch the sampling cup with the mouth while providing a breath sample. Remove the sampling cup after use and clean it with alcohol free sanitary wipes for next use.

### 3. MOUTHPIECE INSERT INDICATOR (BLUE LED)

Provides visibility for mouthpiece/sample cup insertion in low-lit environments.

### 4. BUTTON TO REMOVE MOUTHPIECE

For sanitary reasons, the mouthpiece can be removed by pushing the button underneath the mouthpiece.

### 5. TOUCH SCREEN DISPLAY

A touch screen display that will display corresponding instructions and alcohol concentration of the subject being tested. Select the icons and buttons on the screen by using either your finger or the stylus pen provided.

### 6. USB CONNECTOR FOR DATA DOWNLOAD/FIRMWARE UPGRADE

Dual-purpose USB port enabling connection to download stored test records/firmware

### 7. ON/OFF AND FUNCTION SELECT BUTTON

Press and hold the On/Off button to turn on or turn off the instrument. This button is also used to select any currently highlighted icon (refer #8 below)

### 8. FUNCTION SCROLL BUTTON

Used in place of the stylus (or your finger). Press once to bring up the red highlight/selection box. Continue pressing to scroll through the menu icons (pressing FUNCTION SELECT BUTTON to enter highlighted selection).

## ICON DESCRIPTION



|   |                            |   |                            |
|---|----------------------------|---|----------------------------|
| 1 | Weekday Indicator          | 5 | Quantitative (direct) test |
| 2 | Time Indicator             | 6 | Test Records               |
| 3 | Battery Indicator          | 7 | Setting                    |
| 4 | Qualitative (passive) test | 8 | Date Indicator             |



Previous Screen/Cancel



Next Screen/Confirm



Main Screen



Print



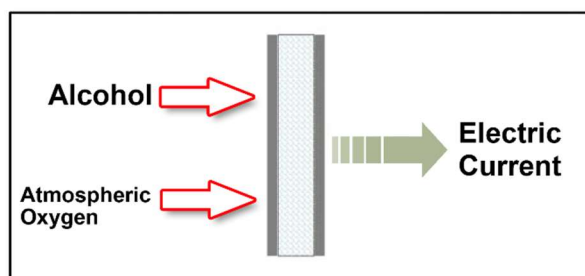
Repeat Test

## TOUCH SCREEN CALIBRATION

If the touch screen is not sensitive enough, please calibrate the screen. First, ensure the unit is turned off, then press and hold the On/Off button (right button) and then press the Function button (left button) immediately. Follow the instructions on the screen to calibrate the screen.

# INTRODUCTION

The *AlcoVUE*® is a state of the art instrument used to detect Ethyl Alcohol from a valid breath sample. It uses an electrochemical fuel cell to measure the concentration of alcohol from the sample of the expired breath from a human subject. If alcohol is present, a corresponding voltage is generated from the fuel cell, which is proportional to the alcohol content of the sample provided by the subject. This voltage is then sent to the CPU and converted to a subject's BrAC which is then displayed.



## Instrument Features:

1. Test record storage is more than 10,000 entries depending on the length of the records being stored. The test records can be downloaded via the supplied USB cable.
2. Use disposable mouthpieces or sampling cups to prevent foreign matter from entering the sampling port.
3. Ability to run as often as needed. Recovery time between tests will vary and is dependent on the last test value.
4. Powered by 4 AA alkaline batteries. Batteries are located behind the sliding cover on the back of the instrument. The level of power available in the batteries is indicated on the screen.

## Storage:

1. A plastic case is included for storing the device and accessories for easy transport. When not in use, the device and accessories should be stored in this plastic case to prevent damage. For long storage periods, it is recommended the batteries are removed from the instrument.

2. Storage temperature range is -25°C to 70°C, storage humidity is 15% to 90%. Incorrect storage of the device will shorten the lifespan of the fuel cell sensor.

## CALIBRATION PERIOD

As per Manufacturer Recommendations, calibration is required every 12 months to ensure the electrochemical fuel cell is reading accurately. This calibration requirement is time-based, not usage-based. This means that even if the device has only had infrequent use during the 12 month period, calibration is still necessary. Refer pg.12, section 4:i *Calibration*.

To ensure accuracy of your instrument is maintained, please send your *AlcoVUE®* to:

Pacific Data Systems 27 Hi-tech Court, Eight Mile Plains QLD 4113

## OPERATING INSTRUCTIONS

### Pre-test Conditions

1. Operating temperature range is 0°C to 50°C. Use within this temperature range will limit condensation from a subject's breath and ensure an accurate reading from a breath sample.
2. **"MOUTH ALCOHOL SHOULD NOT BE CONSUMED FOR AT LEAST 15 MINUTES PRIOR TO USING THE DEVICE"**
3. Mouth alcohol generally takes 10 – 12 minutes to disperse, so it is recommended the operator observes the subject for at least 20 minutes before administering the breath test to ensure nothing is consumed or expelled from the mouth of the subject. This includes smoking, which should be avoided for at least 5 minutes prior to testing.
4. Breath alcohol concentration can continue to rise for up to 2 hours after the cessation of drinking. A subsequent test may be required if alcohol is detected or the result is close to the designated threshold.
5. It can take 10 hours or more for the breath alcohol level to return to zero after a high breath alcohol level has been reached. In such cases further testing should be carried out later in the day or the following morning.
6. When supplying a breath sample, flow rate should be in the range 10-30L/min
7. Some foods and 'non-alcoholic' drinks may contain small traces of alcohol. The subject should also avoid drinking water as water will cool the mouth and dilute saliva, which may temporarily reduce breath alcohol levels. Following these procedures will eliminate mouth alcohol from giving incorrect readings.



## Quantitative (direct) Testing

1. With the unit turned on, attach a disposable mouthpiece onto the sample port and use your finger, function buttons or stylus to select the icon for quantitative testing.  
**NOTE:** To avoid potential contamination, be careful not to touch the lipped end of the mouthpiece tube.
2. The message 'Air Blank Processing' will be displayed which is a 'blank' (zero) test to ensure no residual alcohol is present within the instrument. If alcohol is present at this point, attach a new mouthpiece tube and repeat Step 1.  
Once the 'blank' test result displays 0.000 g/210L, continue with step 3.
3. If required, input subject's information using the stylus pen or function buttons.  
**NOTE:** Maximum 16 characters for each input.
4. When the touch screen displays 'Please Blow', instruct the subject to take a deep breath, place / seal their lips around the mouthpiece tube and blow steadily and constantly (not forcefully). The instrument will automatically sample once the required volume of Air has been received.  
**NOTE:** the subject should not hold the instrument during testing.
5. The test result will be shown on the LED touch screen as g/210L (Breath Alcohol Content).
6. If printer is being used, select  to print the test result.
7. Select  to start another test.
8. If the subject did not blow within 30 seconds, the tester can select 'Refuse' to confirm the subject refused to conduct the test; or select 'Test Again' to allow subject to do the test again.
9. If the subject failed to give a valid breath sample the tester can select "Discontinue" to confirm; or select 'Test Again' to allow the subject to repeat the test.
10. A passive test can be performed by pressing 'Manual' on the display when the subject is blowing.
11. Push the button underneath the mouthpiece to remove the mouthpiece.
12. Discard the mouthpiece in a hygienic manner, in accordance with biohazardous material handling procedures.

**NOTE:** a new mouthpiece tube should be used for each new breath test. However, it is acceptable to use the same mouthpiece tube for repeated attempts at blowing a sample.



## Qualitative (passive) Testing

1. Attach a sampling cup onto the sample port.
2. When the touch screen displays 'Please Blow', instruct the subject to take a deep breath and blow steadily and constantly (not forcefully) into the sampling cup. If the subject is blowing hard enough, a BEEP tone will sound and this will continue until a successful sample has been taken. The subject should then stop blowing.

**NOTE:** the subject should not hold the mouthpiece during testing.

3. 'Alcohol Detected' or 'No Alcohol' displays on the display.
4. A passive test can be performed by pressing 'Manual' on the display when the subject is blowing.
5. Select  to start another test.
6. If 'Alcohol Present', use a mouthpiece to perform a standard test to obtain an accurate test result with a quantitative reading.

**NOTE:** Screening Test is only used for screening tests and is used to determine if alcohol is present in the sample. An accurate test result can only be obtained by a standard test.

**NOTE:** Test records of the screen tests cannot be printed or stored.

# INTERPRETING THE RESULT

When in quantitative testing mode, the result will be displayed in BrAC (Breath Alcohol Content).

When in qualitative testing mode, a simple 'No Alcohol Detected / Alcohol Detected' will display on the screen.

Consult your State / Territory legislation, or your workplace policy, for acceptable, and / or required, results.

## **Alert Functions**

### **BrAC Levels:**

The *AlcoVUE*® can be set to provide an alert for the following BrAC levels:

0.020, 0.030, 0.040, 0.050, 0.060, 0.070, 0.080, 0.090, 0.100

**NOTE:** Please contact your supplier for more information on this function.

### **Maximum BrAC Level:**

The maximum reading the *AlcoVUE*® can provide is 0.300 g/210L BrAC.

If this limit should be exceeded, the message '*Maximum Accurate Detection Level Exceeded*' will display on screen.



## **Test Record**

1. Over 10,000 standard test records can be stored, depending on the length of the records.
2. Individual test records can be printed by selecting .
3. Use  or  to move to the previous or next record.

# ADJUST SETTINGS



## Setting

### 1. Date & Time

- i. Set correct Date and Time.
- ii. Select 'Update' to confirm.

### 2. Auto Off

- i. Select time limit to turn off the instrument automatically.
- ii. Select  to confirm

### 3. Print

- i. Select 'Auto Print' to print the result automatically after each test without selecting 'Print'.
- ii. Select number of printout copies needed for test result equal to 0 ( =0 ) and exceed 0 ( >0 ).
- iii. Select  to confirm.

**NOTE:** If no printout needed for a test result equal to 0, select '0' for '=0'.

### 4. Calibration

- i. When a 12 month period has lapsed since the instrument was last calibrated, a 'Calibration Required' message will appear on the screen when the unit is turned on. You can temporarily bypass this message and continue normal operation by touching the screen. This message will continue to occur each time the unit is switched on until it is returned to your nearest service centre for recalibration.

**NOTE:** Readings will reduce slightly according to altitude – see the list of correction factors relating to altitude in appendix A.

### 5. Advanced Setting

- i. Only authorised persons are allowed access to advanced settings.

### 6. Brightness

- i. Adjust the brightness of the display screen.

### 7. Bluetooth

- i. Pair your instrument with the Bluetooth® Thermal Printer (available separately). See 'Pairing the Bluetooth®' section (page 13).

### 8. Keyboard

- i. Deselect 'Keyboard' to turn off the touchscreen display keyboard.

# BLUETOOTH® THERMAL PRINTER

A Bluetooth® thermal printer (Item code: DDS-TP) can be used with this instrument.



## PRINT

If a printout of results is required, press the ON/OFF button on printer, and the indicating LED should turn on. To turn off the printer, press and hold the ON/OFF button on printer until the indicating LED flashes and then turns off.

## INSERT PAPER

Pull the handle. When inserting a new roll of paper, make sure the glossy side of the paper is kept close to dentation.

**NOTE:** If nothing can be printed, change the side of the paper and try again.

## BATTERY

A lithium battery with capacity of 1800 mAh is supplied, along with a battery charger. The charger can be powered by the car battery using the 12V adapter provided.

## STANDARD THERMAL PAPER SIZE

6cm x 630cm

## PAIRING THE BLUETOOTH®

If you have purchased the *AlcoVUE*® instrument and Bluetooth® thermal printer together as a kit, the two devices will already be paired for immediate use.

If you are purchasing a printer as a standalone item, you will need to manually pair the device to your existing *AlcoVUE*® instrument.

To do this, power on the Bluetooth® thermal printer, then turn on your *AlcoVUE*® instrument, and select the 'Settings' icon from the menu. Press the 'Bluetooth' icon and click 'Match'. Return to the main menu where the Bluetooth® icon should now be visible in the top right-hand corner.

## Effects of Atmospheric Pressure

At lower atmospheric pressures, such as those found in high altitudes, the concentration of alcohol in vapour can be affected.

It is important to note that sensitivity of the *AlcoVUE*® instrument to alcohol is NOT affected, only the concentration of alcohol in the vapour.

In light of this, suitable corrections should be performed to compensate for this when calibrating in areas of reduced atmospheric pressure.

### APPENDIX A.

| Elevation from Sea Level (Ft.) | Correction Factor |
|--------------------------------|-------------------|
| 0                              | 1.0               |
| 500                            | 0.981             |
| 1000                           | 0.962             |
| 1500                           | 0.943             |
| 2000                           | 0.925             |
| 2500                           | 0.907             |
| 3000                           | 0.889             |
| 3500                           | 0.872             |
| 4000                           | 0.854             |
| 4500                           | 0.837             |
| 5000                           | 0.820             |
| 5500                           | 0.804             |
| 6000                           | 0.787             |
| 6500                           | 0.771             |
| 7000                           | 0.755             |
| 7500                           | 0.740             |
| 8000                           | 0.724             |

#### Example: test conducted at 500 (ft)

An *AlcoVUE*® test result of 0.100 BrAC conducted at an elevation height of 500ft. above sea level would have a Correction Factor (multiplier) of 0.981.

i.e.  $0.100 \text{ BrAC} \times 0.981 = 0.0981 \text{ BrAC}$

Should you require any further information, please contact your nearest distributor, or send an email to [sales@pacdatasys.com.au](mailto:sales@pacdatasys.com.au)  
Visit [www.pacdatasys.com.au](http://www.pacdatasys.com.au) to view product brochures, videos, whitepapers, and more products available from the Pacific Data Systems Australia range.

pacific data systems  
Australia

A: 27 Hi-tech Court, Eight Mile Plains QLD 4113 P: +617 3361 2000  
E: [sales@pacdatasys.com.au](mailto:sales@pacdatasys.com.au) W: [www.pacdatasys.com.au](http://www.pacdatasys.com.au)