Alc Smart

Breath Alcohol Tester

AT8100 Operation Manual

Content

1. Summary

AT8100 is an advanced portable Breath Alcohol Tester. Its core component adopts new Electrochemical Sensor which can measure accurately concentration of the breath alcohol, with strong anti-interface ability. AT8100 has compact keyboard and menu operation. The admirable human-device interface makes operation more concise and convenient, the color LCD makes interface more clear and beautiful. It also has bluetooth printing function, one-off anti-return mouthpiece ensures the health and safety of users

Main functions and futures:

 ➢ Adopt advanced 16 bit low power consumption MCU
 ➢ Electrochemical sensor, good reliability and accuracy
 ➢ Color LCD indication
 ➢ Passive test function
 ➢ Wireless printing function
 ➢ Real time and temperature indication
 ➢ Two level audible and visible alarm indication
 ➢ Low battery automatic power off function
 ➢ Blowing interruption and testing rejection function
 ➢ Unit and alarming level adjustable
 ➢ History record checking
 ➢ 2000 memory records, including test time, result and types of result
 ➢ Testing data upload to PC function
 ➢ Password management, important operation requires verification of password
 ➢ Short warm-up time, fast response and resume
 ➢ Adopt anti-return mouthpiece for health and safe

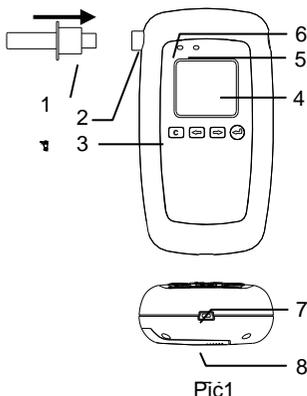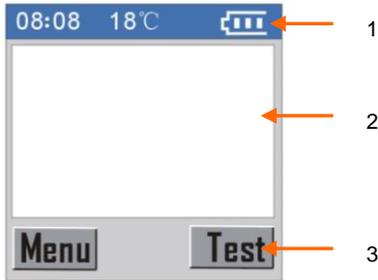# 2. Indication of configuration and function

2.1 Configuration

Pic1

1	Mouthpiece	4	Display	7	Communication port
2	Mouthpiece hole	5	Alarm　indicator	8	Battery cover
3	Keyboard	6	Operation indicator		

2.2 Display

Pic 2

1. Time, temperature and indication of battery
2. Information indication
3. key-press indication, indicate currently function of 【C】 button, ⌨ button

3 Technical specifications:

Sensor type: Electrochemical sensor

Test Range: 0.000～2.000mg/l (0.40%B.A.C, 4.0‰B.A.C, 4.0g/l)

Pass level: 0.090mg/L (could be modified)

Fail level: 0.250 mg/L (could be modified)

Work temperature: 0℃～50℃

Work humidity: ＜95%RH （No Dews）

Battery: 2×AA NiMH batteries, rating capacity: 2.1AH

Dimension l×b×h: 122×67×31mm

Weight：about 120g（excluding battery）

Table 1　　Allowable error

Alcohol gas concentration range C（mg/L）	Error
C＜0.400	±0.032 mg/L
0.400≤C＜1.000	±8%
C≥1.000	±30%

Table 1 the allowable error in the process of detecting

4. Operation instruction

4.1 Power on

Press the ⌨ button, the tester is powered on, and it will make the self-check automatically, with a buzzer ringing, the red and green indicator light will on and off in turn, the screen shows product type and version number. After self checking, tester enters into the main interface. (Table 2)

4.2 Power off

4.2.1 Manual power off

- In the power on mode, press ⏎ button at least 1s, the tester will be powered off.
- Choose Exit with Menu interface, then press "↵" button to confirm power off.

4.2.2 Power saving off

The tester will be powered off if without any operation for more than 3 minutes at main interface.

4.2.3 Low battery power off

The tester will be powered off if the battery is too low, please take out the battery and recharge or store them.

Indication of battery icon

🔋	Full battery capacity	🔋	Low battery capacity
🔋	Partial battery capacity	🔋	Short of battery capacity, recharge it timely

4.3 Test

As indicated in picture 1, put on a clean one-off mouthpiece. As picture 2, press ⏎ button in the main interface, the screen will show Waiting, take a deep breath till the screen indicates "Blow Now", blow equaly to the mouthpiece in the uniform continuity way till when hearing a ring.

The screen will display "Processing" when blowing finished, remind that the tester is analyzing the breath gas sample. Do not blow at that moment, otherwise the result will be influenced. After the analysis, the screen displays concentration value and the follow several test types:

（1） Normal: After testing finished, if the testing result is under the pass level, concentration value will indicate "Clean".

（2） Pass: After testing finished, if the testing result reaches the pass level, concentration value will indicate "Pass", and buzzing at the same time.

（3） Fail: After testing finished, if the testing result reaches the fail level, concentration value will indicate "Fail", and buzzing at the same time.

（4） Passive test: If tester didn't fit test or have ability to test, being taken a passive test. When the screen indicates "Blow Now", take the mouthpiece off and the hole of blowing aim to the tester's nostril. After 2s, press ⏎ button to enter into passive test status. The screen indicates "Passive" and the result after analysis.

（5） Test rejection: the tester will buzz and indicate "Rejected？" without blowing after indicating "Blow Now" for 30s, meanwhile, press 【C】 button to return to "Blow Now" mode, press ⏎ button enter into display for result, and indicate "Rejected".

In the display of result mode, Press ⏎ button to save result and enter into printing interface, press 【C】 button to cancel saving and return to the main interface.

4.4 Print

Press ⏎ button to enter into the printing interface in the display of result mode. The screen

indicates "Print?", press ⌨ button to print result when there is the workable wireless printer, press 【C】 button to cancel printing and return to the main interface.

5 Test Record

Press 【C】 button to enter into Menu interface. Choose 【Record】 by pressing and 【→】button, and press ⌨ button to enter into the records interface. Press 【←】 or 【→】button look over, and press ⌨ button to print the present result record, press 【C】 button to return to the main interface.

6 Setup

Press【C】button to enter into menu interface, choose【Setup】by pressing 【←】 or 【→】 button, and then press ⌨ button to enter the submenu. The submenu involves Time、Unit、Print、Pass、Fail、Operator、Password、Delete、Tem. Scale、Next Cal, choose the option you want to setup by pressing 【←】 or 【→】button, press ⌨ button to enter into relative option operation or password input interface. All the options should input password to have operational authorization except "Time"、"Unit"、"Tem. Scale"、"Next Cal"

Input method of password: press 【→】 button to regulate the size of value in the password input mode, change the numbers by press it every time till indicating the number you need, press ⌨ button to start the next number input. During the process, press【←】button to cancel the number you choose, press ⌨ button to enter into option operational interface. The original password of the tester is 000000.

6.1 Time

Press【←】 button to shift and choose the input location in the time setup mode. The chosen input location indicates in the opposite color. Adjust the chosen value by【←】button, after adjustment, press ⌨ button to save it, the system will accept the new time.

6.2 Unit

Press【←】 or 【→】button to choose the appropriate unit in the unit option mode, and press ⌨ to save it. The Pass value and Fail value will update in the new and past unit conversion relation after modification of unit.

6.3 Print

Input correct password in the password input mode, and press ⌨ button to enter into the printing page setup interface, adjust the page numbers by pressing 【←】 or 【→】 button, and then press ⌨ button to save it. The printing page range is 1~3 pages.

6.4 Pass

Input correct password in the password input mode, then press ⬚ button to enter into the "Pass Value" setup interface. Press 【←】 or 【→】 button to adjust the pass value, and press ⬚ button to save it.

6.5 Fail

The setup method is the same as "6.4 Pass".

6.6 Operator

Input correct password in the password input mode, then press ⬚ button to enter into the interface of register personnel number, the specific input method is the same as the above "password input method". After the input is over, press ⬚ button to save it.

6.7 Password

Input accurately the former password in the password input mode, then press ⬚ button to enter into New Password input interface. After input the new password as the above "Password input method", press ⬚ button to save it. Please clearly remember the new password after modification.

6.8 Delete

Input correct password in the password input mode, press ⬚ button and the screen indicates "Delete all？", meanwhile, press ⬚ button to delete all the history records, press 【C】 button to give up the deleting. The screen will indicate "No records" and return to the main interface without history record.

> **Notice:** As "Delete" operation will delete all the history records entirely and can not revert, please be cautious to operate.

6.9 Tem. Scale

This tester possesses "℃"and"℉", the function of two temperature unit switch. Press 【←】 or 【→】 button to switch the temperature unit after entering the "Tem. Scale" interface. When switching the appropriate unit, press ⬚ button to save it, and the temperature value in the main interface will transfer to the new unit at this moment.

6.10 Next Cal.

Enter into this option to look over the date of calibration last time and the days for the next calibration.

7. Record upload

This function is able to upload the test data to the computer for preparation management with software. The upload step as follows:

Connect the port of tester communication data with computer by the USB data cable, open the computer and operate the coordinate data management software.

（1） Turn on the tester, operate the data management software in the stand-by mode. Notice: data upload must operate in the stand-by mode, do not operate the tester during the process in case of mistakes of uploading.

（2） Confirm the data backup to the computer, then turn off the tester.

8. Battery change

When the tester reminds low battery, or it can not work properly because of low power, please change batteries in time.

9．Faults and solutions

Fault Description	Possible Reason	Solutions
Unable to turn on the tester	Low battery	Change batteries in time
	Circuit fault	Contact with dealers or manufacturer
Wrong Display	Expired sensor	Contact with manufacturer to replace the battery
	Over the specified working conditions	Please be used in specified conditions
	Long time no calibration	Calibrate the tester
Wrong Time Display	Wrong time setup	Reset the time
Electromagnet misoperation	No calibration for pressure sensors	Calibrate pressure sensors again

10 Precaution

➢ Please read the manual carefully and follow the instruction before your testing.
➢ To ensure the real testing result, please wait 15 min to take the testing after drinking.
➢ The calibration of the tester should not be longer than 6 months for ensuring the accuracy of tester.
➢ Please do not blow smoke to the tester directly, otherwise the tester will be damaged.
➢ After storing for long time, the first test of tester may have errors.
➢ Avoid using the tester when environmental temperature exceeds its specified range.
➢ Avoid any high crash or strenuous vibration.
➢ Any application or fault beyond this manual, please contact with manufacturer or dealer for solutions.

11 Product accessories

Tester accessories include following:
1pc tester,   1pc printer（optional）, 1pc charger of printer（optional）,
1pc manual,   1pc inspection report,   1pc communication CD,
1pc data communication cable,   10pcs mouthpieces.