Operation Manual

Model: 98181

Portable Ammonia, Temperature, and Humidity Meter

This portable ammonia meter is a 3-in-1 device capable of simultaneously measuring ammonia concentration, temperature, and relative humidity, with simple and user-friendly operation.

The instrument is powered by four AAA batteries and is equipped with a built-in tripod mounting hole, allowing it to be used with a tripod for long-term environmental monitoring.

Product Features:

- Measures ammonia concentration up to 50 ppm with high resolution.
- Triple-display design with a large LCD screen for clear and easy reading.
- Alternating display of temperature, relative humidity, and ammonia concentration.
- HOLD function to freeze the current reading on the display.
- Adjustable high-concentration ammonia alarm threshold with audible buzzer warning.
- Maximum value tracking function since power-on.
- Auto power-off after approximately 15 minutes of inactivity.
- Rapid calculation of dew point temperature and wet-bulb temperature.
- Tripod mounting hole design for long-term environmental monitoring.
- All sensors are factory-calibrated before shipment.
- Two-year product warranty, with one-year warranty for sensors.

Standard Accessories:

1. Main unit ×1
2. AAA batteries ×4
3. User manual ×1
4. Black carrying pouch ×1
5. White packaging box ×1

Specifications:

Model	98181
Parameters	Ammonia, Temperature, Humidity
Ammonia Range	0.0~50.0 ppm
Ammonia Accuracy	±5% F.S
Temperature Range	0.0~50.0℃ (32~122℉)
Temperature Accuracy	±0.6 ℃
Humidity Range	0.0~99.9%
Humidity Accuracy	±3% (at 25℃, 10~70%RH) , others ±5%
Backlight Function	YES
Dew Point / Wet Bulb Temperature	YES
Instrument Dimensions	210 x 60 x 40mm
Power Supply	4 × AAA batteries / 9V adapter (optional)

Key Functions / Button Description:

Buttons	說明
PWR	Power ON (press for approx. 1 second) / Power OFF (press for more than 2 seconds) The HOLD key can be used to disable the auto power-off function. Short press to enable/disable alarm (a bell icon will appear on the display).
HOLD	Freeze the current reading. Increase value (in setting mode). Long press to clear the recorded maximum value.
MAX/MIN	Short press to view the maximum ammonia value. Move digit to the right (in setting mode).
MODE	Short press to switch between dew point and wet bulb temperature. Move digit to the left (in setting mode).
SET	Long press for more than 2 seconds to enter high alarm threshold setting mode; long press again to save the setting value, and “SAVE” will appear at the bottom of the LCD.
Unit	Switch temperature unit between °C and °F.
BKLT	Decrease value (in setting mode). Short press to turn backlight ON/OFF.

Operation:

Failure to follow the precautions will void the warranty.

(Note: Remove the batteries if the device will not be used for an extended period.)

Before each operation, ensure that new batteries are used, and that all batteries are of the same brand and have the same charge level. Otherwise, the device may produce abnormal readings or battery leakage may occur.

Measurement Instructions

In normal measurement mode, after powering on the device, the screen will display “ooooo” during the warm-up period. Once ready, it will show 0.0 ppm. Temperature and humidity readings will be displayed alternately on the second line of the screen.

Note: Do not touch or blow on the sensor (this is an incorrect measurement method). Temperature, humidity, and airflow may cause temporary interference in the sensor output. It is important to avoid these factors to ensure accurate measurements.

Power On/Off Instructions:

Short press the **PWR** button to turn on the device; long press the **PWR** button to turn it off.

This device supports two power supply methods:

(a) 4 × AAA batteries, or

(b) AC/DC adapter (optional).

If the battery icon  appears on the screen, it indicates low battery power. The displayed readings on the LCD may become inaccurate. Please replace the batteries immediately.

Selecting Temperature Unit (℃ / ℉):

Short press the **UNIT** button to switch between Celsius (℃) and Fahrenheit (℉).

Selecting Dew Point (DP) / Wet Bulb Temperature (WB):
Short press the **MODE** button to switch to Dew Point (DP) or Wet Bulb (WB) mode.

Backlight function:
Press the **BKLT** button briefly to activate the backlight, making it easier to operate in low-light environments. Press the **BKLT** button again to turn off the backlight.

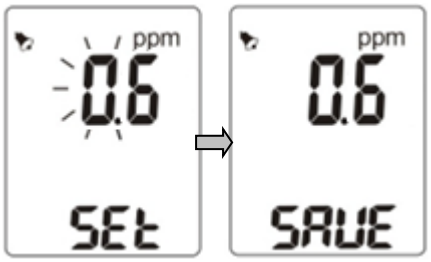
Maximum value:
Press the **MAX/MIN** button to view the maximum value recorded since the device was powered on. When the ammonia concentration exceeds the current maximum value, the display will update automatically. In this mode, long-press the **HOLD** button to clear the maximum value record. The screen will show “CLr” for about 2 seconds, then automatically return to normal measurement mode. The device will restart recording maximum values from this point onward.

Data hold function:
In normal measurement mode, press the **HOLD** button to freeze the current readings of ammonia, temperature, and humidity on the display.
In HOLD mode, mode switching, unit selection, and backlight functions remain available.

Disable auto power-off function:：
The device will automatically power off after 15 minutes of inactivity. To disable the auto power-off function, press and hold both **HOLD + PWR** buttons while the device is turned off to power it on. The screen will display “n”, then enter normal measurement mode. Auto power-off is enabled by default. For long-term recording, please ensure the auto power-off function is disabled.

Alarm function ON/OFF
After setting the threshold value, briefly press the **PWR** (Power) button. A bell icon will appear on the screen, indicating that the alarm function is enabled. Press the **Power** button again to turn off the alarm function.

Ammonia audible alarm and threshold setting
(Default ammonia alarm value: 0.6 ppm)
a) Long-press the **SET** button to enter the alarm threshold setting mode.
b) Press the **HOLD** button to increase the value.
c) Press the **BKLT** button to decrease the value.
d) Press the **MAX/MIN** button to move to the digit on the right; press the **MODE** button to move to the digit on the left.
e) Long-press the **SET** button to save the setting. The screen will display “SAVE”.
When setting the alarm, the screen will show “SET”. After the setting is completed, a bell icon will appear in the upper-right corner of the display. Once the reading exceeds the threshold value, the device will emit a beeping alarm sound.



Note: The adjustable range is 0.1 ppm to 50.0 ppm.

Ammonia zero-point calibration (If there are any issues, please contact the distributor or manufacturer):

Note: To avoid affecting accuracy, please perform calibration in an ammonia-free environment. For technical support, please contact your local agent.

Long-press the **SET** and **UNIT** buttons simultaneously to enter the self-calibration mode (must be in an ammonia-free environment). The screen will display “CAL”.

Press the **SET** and **UNIT** buttons again to start calibration. The device will perform a 10-second countdown to complete the calibration process.

After calibration is completed, the screen will display “End”, and then return to normal measurement mode.

Temperature/Humidity Compensation Function:

This instrument uses a precision, maintenance-free capacitive humidity sensor and a thermistor temperature sensor. For long-term use or applications requiring higher accuracy, users can adjust temperature and humidity via the offset function based on standard reference values. Please ensure comparison is made with a certified reference instrument; otherwise, measurement accuracy may be affected.

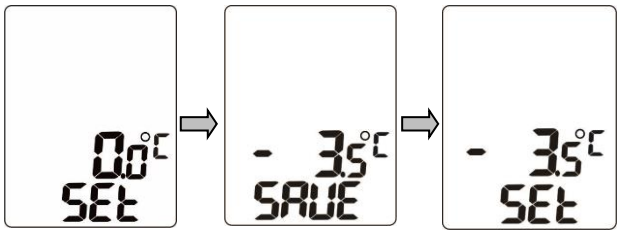
a) While the device is powered off, simultaneously long-press **MODE** and **BKLT** on the left hand, and **MAX** and **PWR** on the right hand. The LCD will display “0.0°C” and “SET”, then release all buttons.

b) Press the **HOLD** button to increase the value, and press the **BKLT** button to decrease the value. Long-pressing **HOLD** or **BKLT** allows for faster adjustment.

c) Briefly press the **SET** button to exit temperature adjustment and enter relative humidity (RH%) adjustment. The same operation steps as in b) apply.

d) Long-press the **SET** button to save the settings. The LCD will display “SAVE” for 2 seconds, then the device will power off, completing the offset setting.

Note: Adjustment range is limited to ±9.9°C, ±9.9°F, and ±9.9%.



Cross Interference Table

交叉干擾表

氣體	分子式	通氣濃度	氣體響應
二氧化硫	SO_2	50ppm	0ppm
一氧化碳	CO	50ppm	0ppm
二氧化碳	CO_2	1000ppm	0ppm
氯气	Cl_2	10ppm	-1ppm
碳氢化合物（不饱和）	/	/	n.a
氢气	H_2	100ppm	0ppm
氰化氢	HCN	10ppm	< -5ppm
异丙醇	C_3H_7OH	1000ppm	n.a
一氧化氮	NO	25ppm	< -3ppm
二氧化氮	NO_2	10ppm	-10ppm
硫化氢	H_2S	50ppm	20ppm

Common Errors

Q1: Unstable readings?

A1: Please replace the batteries with new ones (AAA × 4) and check again.

Q2: Sensor failure error codes?

A2: Er1 indicates a temperature or humidity sensor failure, or abnormal sensor communication.
oL2 indicates that the measured value is out of range for ammonia, temperature, or humidity (exceeding the measurement range).
rEg indicates the sensor signal regeneration process.

Warranty Information:

Any return must first obtain a Return Authorization Letter.

This instrument is covered by a two-year warranty from the date of purchase (with a one-year limited warranty for the sensor).

This warranty does not cover failures caused by user-related actions, including misuse, abuse, modification, negligence, improper wiring, improper maintenance or repair, unauthorized alterations, battery leakage damage, or damage resulting from operation beyond specified conditions.

During the warranty period, the manufacturer reserves the right to determine whether the product will be repaired or replaced.

When returning the instrument, please ensure it is properly packaged to protect it from damage during transportation, and insure the shipment against loss or damage.

The two-year warranty does not apply to the following items:

- Accessories and batteries (not covered under warranty)
- Damage caused by improper use, including use not in accordance with the user manual, use with incompatible accessories or equipment, or repairs performed by unqualified or unauthorized personnel
- Sensor damage caused by improper handling by the user, such as water exposure, burning, or condensation, etc.