

Altimeter . Barometer . Compass . Hygrometer. Thermometer
Weather forecast. LED torch. Alarm clock. Time/date

Multifunction Digital Altimeter



USER MANUAL

AL-7010

HTC[®]
INSTRUMENTS

Where your Search for Measurement Ends !

1. FEATURES:

Altimeter

- Altimeter Range(-700 to 9000meter/-2296 to 29500feet).
- Resolution of 1 meter / feet.
- Max. / Min. memory for Altitude
- Altitude History and Graphical display of the last 24hour altitude readings.
- Altitude total gain or loss 44999 meter / feet.

Barometer

- Pressure Range 300hpa to 1100hpa(8.84 inHg to 32.44 inHg).
- Resolution of 0.1hpa (0.01inHg).
- 24 hours pressure History and Graphical display
- Electronic Pressure Weather forecast
(Sunny, Slightly cloudy, Cloudy, Rainy)
- Pressure trend indicators

Thermometer

- Thermometer (-20°C to 60°C)
- °C / °F selectable
- Max. / Min. memory for thermometer

Hygrometer

- Relative Humidity (20%-95%)
- Max. / Min. memory for relative humidity

Time Keeping

-Time: Hr, Min, Sec.

-Calendar: year, day of week, month,date,automatic calendar


-Alarm: 1 daily alarm

2.Getting Started


2.1 Parts List

QTY	Item
1	Unit Dimensions: 100 x 66 x20mm
1	Battery charger
1	String


2.2 Precautions


 **Caution:** This unit is water resistant but not water proof. Do not submerge in water. When installing the battery, make sure the gasket is properly seated (see battery installation instructions). Avoid leaving out in the rain.

 **Caution:** Keep away from strong magnetic forces, which can destroy the compass.

 **Caution:** Do not drop or apply excessive force to the LCD display. When replacing the battery, apply force to the outer ring.

 **Caution:** Do not operate outside of the specified temperature range (-10 to 60 °C). Use your body warmth to keep within the low temperature range.

 **Note:** Do not use a magnetized battery, which can corrupt the compass measurement.

 **Note:** Do not use near strong magnetic or EMI forces (TVs, computers, electronics) which can corrupt the compass measurement.

3. LCD display and controls



Button:

- Ⓐ **History / set:** Record temperature, humidity, altitude data and setting time etc.
- Ⓑ **Compass / view:** Compass function and switch functions
- Ⓒ **Alti / up:** Altimeter function and increase data
- Ⓓ **Baro / down:** Barometer function and decrease data
- Ⓔ **Flash light / back light:** Turn on / off flash light and back light

Icon:



Battery remind



Air pressure trend indicator



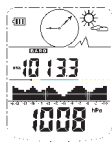
Weather forecast



Altitude / barometric trend chart

4. Function mode

Barometer mode



Press Ⓚ

Press Ⓚ

Press Ⓚ

Press Ⓚ

Press Ⓚ

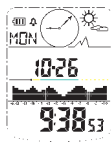
Press Ⓚ

Press Ⓚ

Press Ⓚ

Press Ⓚ

Time / date mode

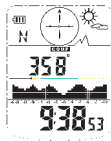


Long press Ⓚ

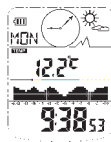
Press Ⓚ

Press Ⓚ

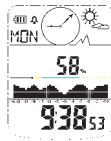
Long press Ⓚ



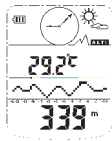
Temperature mode



Long press Ⓚ



Altimeter mode



Compass mode

Hygrometer mode

5. Set Mode

When first using or changing a new battery, basic data requests to be set. Under time mode, long press button A to enter setting mode.

LCD display:

- Upper: Week
Weather forecast
- Middle: Date
- Below: Time

Button function:

- Press **B** switch setting items: weather forecast, hour, minute, second, year, month, date, alarm clock(hour, minute, turn on/off), 12/24H, temperature unit, air pressure unit and altitude unit. Selected item will be flashed.
- Long press **A** to save and exit setting. If there is no operation in 30 seconds, it will save and exit setting mode automatically.
- Press **C** to decrease data, long press it to decrease data quickly
- Press **D** to increase data, long press it to increase data quickly



5.1 Weather forecast

Under time mode, long press button A to enter setting mode. The current forecast will begin flashing. Press button C or button D to set the forecast icon to the current weather conditions, as defined below:

Press button B to continue to the next step.

Condition	Icon
Sunny	
Partly cloudy	
Cloudy	
Rainy	

5.2 Time

The hour will begin flashing. Press button C or button D to set hour.

 Note that in the 12 hour mode, P icon will be displayed on LCD if it is afternoon.

Press button B to set the minute. The minute will begin flashing. Press button C or button D to set minute. Press button B to set the second. The second will begin flashing. Press button C or button D to set second. Press button B to continue to the next step.

5.3 Date

The year will begin flashing. Press button C or button D to advance the month. Press button B to set the month.

The month will begin flashing. Press button C or button D to advance the month. Press button B to set the day.

The day of the month will begin flashing. Press button C or button D to advance the date. Press button B to continue to the next step.

5.4 Alarm clock

The hour will begin flashing. Press button C or button D to advance the month. Press button B to set the minute.

The minute will begin flashing. Press button C or button D to advance the month. Press button B to set the alarm clock turn on or off.

The OFF/ON will begin flashing. Press button C or button D to advance the date. Press button B to continue to the next step.

5.5 12Hr/ 24Hr Format

The hour format will begin flashing. Press button C or button D to toggle between 12 Hour (AM/PM) and 24 Hour format. Press button B to continue to the next step.

5.6 Units of measure

The units of measure icon (Unit) will be displayed and the temperature units of measure will begin flashing. Press button C or button D to toggle between °C and °F. Press button B to

set barometric pressure units of measure.

The BARO icon will be displayed and the barometric pressure units of measure will begin flashing. Press button C or button D to toggle between inHg and hPa. Press button B to set altimeter units of measure.

The ALTI icon will be displayed and the altitude units of measure will begin flashing.

Press button C or button D to toggle between meters (m) and feet (ft). Press button B to continue to the next step.

6. Time mode

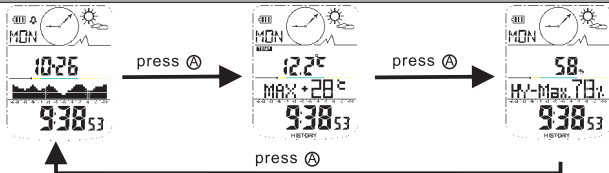
LCD display:

- Upper: Week
Air pressure trend arrow
Weather forecast
- Middle: Date
- Chart: 24 hours air pressure trend chart
- Below: Time



Button function:

- Press **A** to check history data including temperature, humidity. Long press it to enter setting mode.
- Press **B** to enter compass mode, long press it to enter temperature mode and hygrometer in turn.
- Press **C** to enter altimeter mode
- Press **D** to enter barometer mode
- Press **E** to turn on backlight. Long press it to turn on/off flashlight.



7. Temperature mode

Under time mode, long press button B to enter temperature mode.

LCD display:

- Upper: week
Air pressure trend arrow
Weather forecast
- Middle: Temperature
- Chart: 24 hours air pressure trend chart
- Below: Time

Button function:

- Press (A) to check history data including temperature, humidity. Long press it to enter setting mode.
- Press (B) to enter compass mode, long press it to enter hygrometer mode and time mode in turn.
- Press (C) to enter altimeter mode
- Press (D) to enter barometer mode
- Press (E) to turn on backlight. Long press it to turn on/off flashlight.



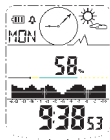
Under history data of temperature, press button C to check maximum temperature, press button D to check minimum temperature.

8. Hygrometer mode

Under time mode, long press button B two times to enter hygrometer mode.

LCD display:

- Upper: week
Air pressure trend arrow
Weather forecast
- Middle: Humidity
- Chart: 24 hours air pressure trend chart
- Below: Time



Button function:

- Press **A** to check history data including temperature, humidity. Long press it to enter setting mode.
- Press **B** to enter compass mode, long press it to enter time mode and temperature mode in turn.
- Press **C** to enter altimeter mode
- Press **D** to enter barometer mode
- Press **E** to turn on backlight. Long press it to turn on/off flashlight.

Under history data of humidity, press button C to check maximum humidity, press button D to check minimum humidity.

9. Compass mode

Under time mode, press button B to enter compass mode.

LCD display:

- Upper: Bearing code (such as N,S,W,E etc.)

Bearing arrow indication

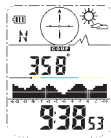
Weather forecast

- Middle: Degree (This degree is measured degree between north to current position)
- Chart: 24 hours air pressure trend chart
- Below: Time

Button function:

- Long press **A** to set magnetic declination
- Press **B** to enter time mode, long press it to enter compass calibration.
- Press **C** to enter altimeter mode
- Press **D** to enter barometer mode
- Press **E** to turn on backlight. Long press it to turn on/off flashlight.

PS: If there is no operation in 30 seconds under compass mode, compass will go back to time mode automatically.



Compass calibration :

A. When should we calibrate compass?

Using first time or after replacing battery, press button B to enter compass mode. It requests calibrate compass first.

To let compass working more accuracy, we should calibrate compass regularly.

When compass decline degree too much, we should calibrate compass

B. How to enter into compass calibration?

Under compass mode, long press button B, it will enter into compass calibration.

C. How to calibrate compass?

When enter into calibration, circle on LCD display will rotate, letters of "Keep Level" will display on the LCD. Keep watch level, rotate it clockwise with equal speed and slowly till it exits calibration automatically and enter into compass mode.

If there is no operation in 30 seconds, it will go back to compass mode.

Magnetic Declination

Under compass mode, long press button A to enter into magnetic declination. Magnetic declination is defined as the angle between magnetic north (the direction the north end of a compass needle points) and true north. Only a GPS can determine true north by knowing your exact orientation on the earth. All digital compasses measure magnetic north. The declination is positive when the magnetic north is east of true north. The declination is negative when the magnetic north is west of true north. To determine the declination for your location, visit:

<http://www.ngdc.noaa.gov/geomagmodels/Declination.jsp>

10. Altimeter mode

Under time mode, press button C to enter altimeter mode.

LCD display:

- Upper: Air pressure trend arrow
Weather forecast
- Middle: Temperature
- Chart: 24 hours altitude trend chart
- Below: Sea level altitude

Button function:

- Press **A** to check history data including max/min altitude, altitude every 30 minutes.

Long press it to clear climb altitude to zero or set sea level altitude.

- Press **B** to enter compass mode, long press it to switch between climb altitude and sea level altitude.

- Press **C** to go back to time mode.

- Press **D** to enter barometer mode.

- Press **E** to turn on backlight. Long press it to turn on/ off flashlight.



Total altitude displacement and history altitude record

Under altimeter mode, press button A to check total up/down altitude and max/min altitude , press button A again to check sea level altitude data every 30 minutes.

Press button C to check maximum altitude or check altitude data clockwise.

Press button D to check minimum altitude or check altitude data anticlockwise.

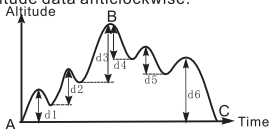
Altitude gain and loss calculation:

From A to B,

The total altitude gain= $d1+d2+d3$;

From B to C,

The total altitude loss= $d4+d5+d6$



Altimeter setting mode

Under altitude mode, long press button A to enter altimeter setting mode.

LCD display:

- Upper: Air pressure trend chart
Weather forecast
- Middle: Temperature
- Below: Altitude

Button function:

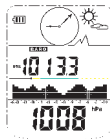
- Press **(A)** to switch setting items: Clear zero for climb altitude, sea level altitude. Long press **(A)** to save and exit setting mode.
- Press **(C)** to increase data or clear climb altitude zero, long press it to increase data quickly
- Press **(D)** to decrease data or clear climb altitude zero, long press it to decrease data quickly
- If there is no operation in 30 seconds. It will save and exit setting mode.

11. Barometer mode

Under time mode, press button D to enter barometer mode.

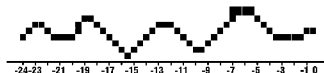
LCD display:

- Upper: Air pressure trend arrow
Weather forecast
- Middle: Sea level air pressure
- Chart: 24 hours air pressure trend chart
- Below: Current air pressure

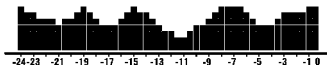


Button function:

- Long press Ⓐ to enter sea level air pressure calibration. Press button B to switch setting data. Press button C or D to increase or decrease data. Press button A to save and exit setting.
- Press Ⓑ to enter compass mode
- Press Ⓒ to enter altimeter mode
- Press Ⓓ to enter time mode
- Press Ⓔ to turn on backlight. Long press it to turn on/off flashlight.



Altitude trend chart



Air pressure trend chart

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