

ALTITUDE METER


Model : SP-82AC



Your purchase of this ALTITUDE METER marks a step forward for you into the field of precision measurement. Although this METER is a complex and delicate instrument, its durable structure will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

OPERATION MANUAL

TABLE OF CONTENTS

| | |
|--|----|
| 1. FEATURES..... | 1 |
| 2. SPECIFICATIONS..... | 1 |
| 2-1 General Specifications | 1 |
| 2-2 Electrical Specification..... | 2 |
| 3. FRONT PANEL DESCRIPTION..... | 3 |
| 3-1 Hold button..... | 3 |
| 3-2  button (Power button)..... | 3 |
| 3-3 REC button..... | 3 |
| 3-4 LCD display..... | 3 |
| 3-5 Wristlet..... | 3 |
| 3-6 Compass..... | 3 |
| 3-7 Barometer sensor..... | 3 |
| 3-8 Battery Compartment / Cover..... | 3 |
| 3-9 Button operation label..... | 3 |
| 4. MEASURING PROCEDURES..... | 4 |
| 4-1 Power on/off..... | 4 |
| 4-2 LCD backlight on/off..... | 4 |
| 4-3 Function selection..... | 4 |
| 4-4 Unit selection..... | 5 |
| 4-5 Barometric pressure measurement..... | 5 |
| 4-6 Altitude measurement..... | 7 |
| 4-7 Hold Function..... | 8 |
| 4-8 REC (Record) function | 9 |
| 4-9 Auto power off disable..... | 9 |
| 5. BATTERY REPLACEMENT..... | 10 |

1. FEATURES

- * 3 in 1 , Precision Altitude meter + Barometer and Compass.
- * Built in precision baro sensor for the atmosphere value and altitude measurement.
- * Built in the compass.
- * Tiny bone shape with lightweight and small size case design are suitable for handling with one hand.
- * Wristlet design provides extra protection to the instrument especially for user one hand operation.
- * Built- in microprocessor circuit assures excellent performance and accuracy.
- * Concise and compact buttons arrangement, easy operation.
- * Memorize the maximum and minimum value with recall.
- * Hold function to freeze the current reading value.

2. SPECIFICATIONS

2-1 General Specifications

| | |
|-----------------------|---|
| Display | 8 mm LCD display |
| Measurement | 1. Altitude 2. Barometer 3. Compass |
| Operating Humidity | Max. 80% RH. |
| Operating Temperature | 0 to 50° C (32 to 122° F) |
| Over Input Display | Indication of "- - - - " |

| | |
|--------------------|--|
| Power Supply | CR 2032 DC 3V battery |
| Power Consumption | Approx. DC 5 mA |
| Weight | 160g (battery included) |
| Dimension | HWD 120 x 45 x 20 mm (4.7 x 1.8 x 1.2 inch). |
| Standard Accessory | Instruction Manual |

2-2 Electrical Specification (23 ± 5°C)

Altitude

| <i>Unit</i> | <i>Range</i> | <i>Resolution</i> | <i>Accuracy</i> |
|-------------|-------------------|-------------------|-----------------|
| m | -2000 to 9000 m | 1 m | ± 15 m |
| ft | -6000 to 30000 ft | 1 ft | ± 50 ft |

Barometric pressure (Barometer)

| <i>Unit</i> | <i>Range</i> | <i>Resolution</i> | <i>Accuracy</i> |
|-------------|---------------|-------------------|-----------------|
| hPa | 10.0 to 999.9 | 0.1 hpa | ± 1.5 hPa |
| | 1000 to 1100 | 1 hpa | ± 2 hPa |
| mmHg | 7.5 to 825.0 | 0.1 mmHg | ± 1.2 mmHg |
| inHg | 0.29 to 32.48 | 0.01 inHg | ± 0.05 inHg |

3. FRONT PANEL DESCRIPTION

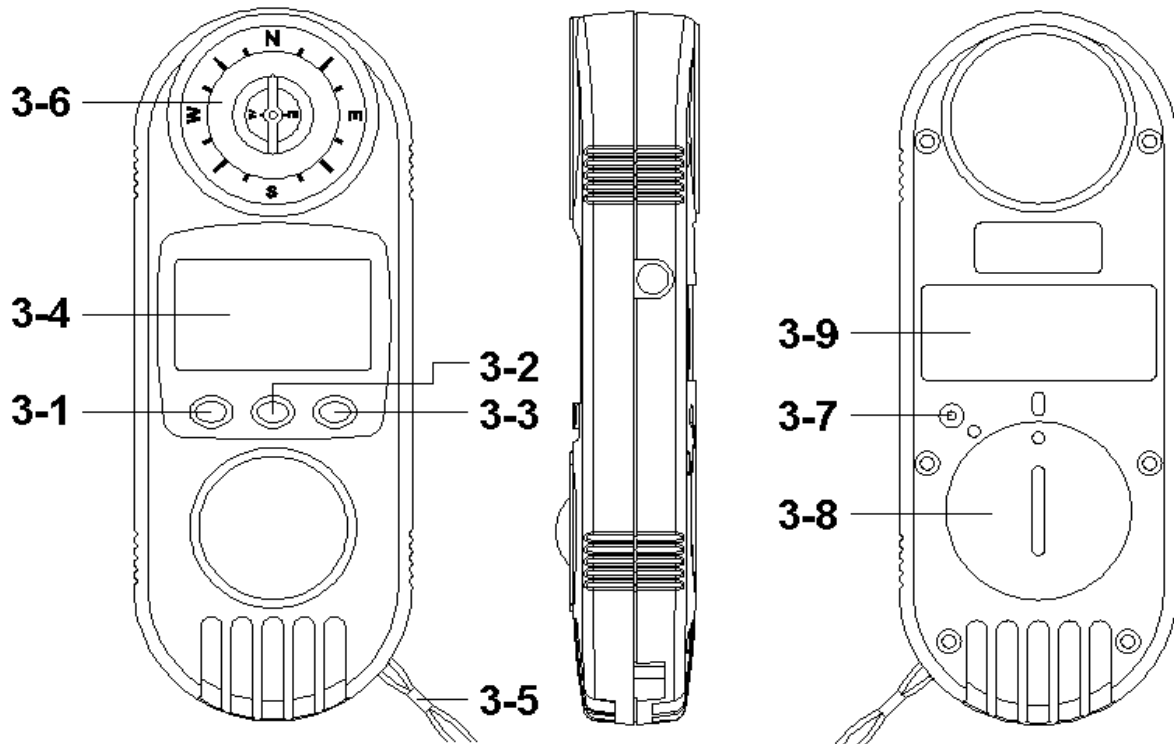




Fig. 1

- 3-1 Hold button
- 3-2  Button (Power button)
- 3-3 REC button
- 3-4 LCD display
- 3-5 Wristlet
- 3-6 Compass
- 3-7 Barometer sensor
- 3-8 Battery Compartment / Cover
- 3-9 Button operation label

4. MEASURING PROCEDURE

4-1 Power on/off

 Button = Power Button

1) *Power on* :

Press " Power Button " once.

2) *Power off* :

During power on, press " Power Button " > 3 seconds.
will power off.

4-2 LCD backlight on/off

During power on, press " Power Button " once, then the LCD backlight will be on 5 seconds then off automatically,

4-3 Function selection

The meter can select 3 kind function as :

a. Barometric pressure

b. Altitude

During power on, press the " Hold button " continuously (not release the button), the Display will show the following text in sequence :


| <i>Display text</i> | <i>Function</i> |
|---------------------|---------------------|
| bAr | Barometric pressure |
| High | Altitude |

Until the Display show the desired function, just release the " Hold button " , the meter will execute this function with default.

Remark :

When power off and on again, the meter will default to " Altitude " function automatically.

4-4 Unit selection

During power on, press the " REC button " continuously > 3 seconds, the Display will show the text " Unit " release the " REC button ", then press "  button " to select the desired unit, after the desired unit is selected, press the " REC button " to save the unit with default.

REC button = Enter button

The selection unit for all function are :

| <i>Measurement</i> | Unit |
|---------------------------|--|
| Barometric pressure | hPa, mmHg, inHg <i>* HPA = hpa, mmHg = mmHg</i> |
| Altitude | m, Ft |

4-5 The barometric pressure measurement

1) Actual air pressure (absolute air pressure) in the measurement location :

Power on, select the function to " Barometric pressure measurement " (refer to chapter 4-3, Display will show bAr text once awhile at first), now the meter is ready for the actual air pressure in the measurement location (absolute air pressure value).

Remark :


*Actual air pressure in the measurement location changes in response with two things :
changes in altitude and changes in atmosphere.*

2) Sea level barometric pressure value measurement


Not move the location, if intend to see the sea level barometric pressure value, the procedures are :

Press the " Hold button " once, the Display will show the indicator " HOLD " then press the " REC button " continuously until the left down bottom of Display show " m " or " Ft "

m = meter F = feet

Use the " Hold button " and the "  button " adjust the location altitude vale exactly..

Until the location altitude value is set, press " REC button " will show the sea level barometric pressure value.

 button = ▲ button, Hold button = ▼ button
REC button = Enter button

Remark :

After power off and on again, if select the " Barometric pressure " function again, the meter will show actual air pressure in the measurement location (absolute air pressure value) not the sea level barometric pressure value.

4-6 Altitude measurement

Altitude measurement principal :

The higher altitude location will get less barometric pressure value that compare with the sea level.


If intend to measure your altitude value precisely,


- a. Method 1 : It should set the altitude value of your start location is known at the first.
- or** b. Method 2 : It should reset the sea level barometric pressure value at the first.

1) Method 1

To set the altitude value of your start location is known at the first.

- a. Power on the meter and under the altitude function, press the " Hold button " once, the Display will show the indicator " HOLD " then press the " REC button " once, the left down bottom of Display show " m (or Ft) " indicator with flashing.

Use the " Hold button " and the "  button " adjust the location altitude value. Until the desired start location altitude value is set, press " REC button " to save the setting value with default.

 button = ▲ button
Hold button = ▼ button
REC button = Enter button


Remark :


You can obtain your altitude value from a topographical map or local landmark. Goggle Earth is an excellent free program the provides the exact altitude for given address : www.earth.google.com. The other you also can get the reference altitude value from the reading of GPS system.

2) Method 2

To reset the current sea level barometric pressure value is known at the first.

- a. Power on the meter and under the altitude function, press the " Hold button " once, the Display will show the indicator " HOLD " then press the " REC button " > 3 seconds and continuously until the left down bottom of Display show " HTP " indicator with flashing then release the " REC button ".

Use the " Hold button " and the "  button " adjust the current sea level barometric pressure value. Until the desired sea level barometric pressure value is set, press " REC button " to save the setting value with default.

 button = ▲ button
Hold button = ▼ button
REC button = Enter button

Remark :

You can obtain your current sea level barometric pressure value by checking an internet weather site for a nearby location or contacting a local airport.

4-7 Hold Function

Whenever press the " Hold Button " will freeze the current reading value with a "HOLD" symbol on the display. To release the Hold function, just press the " Hold button " once again, the " HOLD " indicator will be disappeared.

4-8 REC (Record) function


- 1) The REC (Record) function can record and display the maximum and minimum reading values. Start the Record function by pressing the " REC Button " once. There will be a " REC " symbol on the display.
- 2) With the REC symbol on the display :
 - (a) Press the " REC button " once and the " Max " symbol along with the maximum value will appear on the display.
 - (b) Press the " REC button " again, the " MIN " symbol along with the minimum value will appear on the display.
 - (c) To exit the memory record function, press the " REC button " continuously for at least 2 seconds. The display will revert to the current reading.
 - (d) Clear the recorded MAX or MIN value by pressing the " Hold button " once. Previous recorded MAX/MIN value will be given up and then revert to the REC. function keep on recording.

4-9 Auto power off disable

In order to prolong the battery life, the instrument has "Auto Power Off " function. The meter will switch off automatically if no buttons are pressed for around 10 minutes.

However if intend disable the " Auto power off " function, just execute the " REC " function (above chapter 4-8), then the Auto power off function will be canceled.

5. BATTERY REPLACEMENT

- 1) When the LCD display shows "  " symbol, it is necessary to replace the battery. However measurement may still be made for several hours after the low battery indicator appears.
- 2) Open the " Battery Compartment / Cover " (3-8, Fig. 1) and remove the battery.
- 3) Install the battery (CR2032) and then reinstate the cover.