BJ2943 MOVEMENT INSTRUCTION

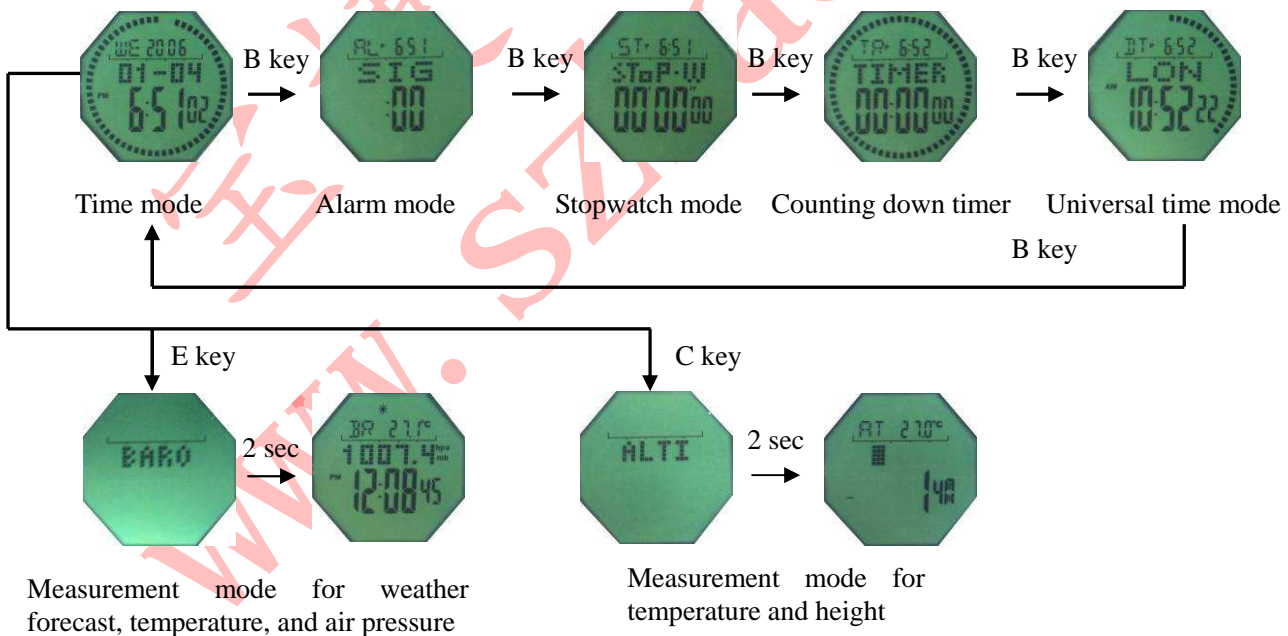SET /LIGHT（**A key**） —————   ————— （**E key**） UP/BARO

MODE（**B key**） —————   ————— （**C key**） DOWN/ALTI

A. Features

- Hour, minute, second, year, month, date and week day display, year range is 2000 ~ 2099.
- 5 groups of alarm functions: one with snooze feature, four ring on specified date.
- Chime on every hour
- Stopwatch, 99 groups of stopwatch record checking, maximum time-keeping is 23 hours, 59 minutes, 59 seconds.
- Counting down, maximum 99: 59: 59
- Compass, height, air pressure, temperature, weather forecast, as well as the correction of compass, air pressure, height and temperature.
- 12/24 hours format
- Universal time, time of 28 cities in the world and daylight saving time (DST) may be displayed.
- Contrast of LCD may be set
- 3 seconds EL backlight
- Low voltage prompt

B . Product function modes

Time mode —[B key]→ Alarm mode —[B key]→ Stopwatch mode —[B key]→ Counting down timer —[B key]→ Universal time mode

[B key]

[E key]

[C key]

Measurement mode for weather forecast, temperature, and air pressure —[2 sec]→

Measurement mode for temperature and height —[2 sec]→

1. **Press A key once, EL illuminates for 3 seconds, except for setting mode.**
2. **Time mode**

- Press B key to enter alarm clock mode.
- Press A key once, EL illuminates for 3 seconds; press and hold A key for 2 seconds to enter time setting mode.

➢ Press E key to enter measurement mode for air pressure, temperature and weather forecast.

➢ Press D key to enter compass measurement mode.

➢ Press C key to enter measurement mode for temperature and height.

Time setting mode

➢ Press and hold A key for 2 seconds to enter time zone setting mode along with a tick sound and blink, it will exit the setting screen if without any keystroke operation within 1 minute, the current setting value will be stored.

a).Press B key to step sequentially through the following items (blink) :

Time zone→DST→second→hour→minute→year→month→date→12/24H→contrast

b).Press E key for 1 increment in the desired setting item, press and hold E key for 2 seconds to advance quickly.

c).Press C key for 1 descending in the desired setting item, press and hold C key for 2 seconds to decrease quickly.

d).In second setting, in the range of 30~59 second, press E or C key to return to zero, and add 1 in minute; in the range of 0~29 second, press E or C key to clear.

e).Daylight saving time (DST) setting, press E or C key to turn on or turn off (OFF. ON). "DST" will display when DST is activated. No "DST" will display when DST is turned off.

f). When set 12/24-hour format, press E or C key to switch between 12/24 format.

g). When set contrast, press E to increase 1 in the desired item. Press and hold E key for 2 seconds to increase quickly. Press C key to decrease 1 in the desired item. Press and hold C key for 2 seconds to decrease quickly. The contrast range is 1~16.

h). When set time zone, press E to adjust time zone up. Press C key to adjust time zone down.

I). Press A key to exit the setting mode.

3. Alarm tone setting mode

➢ In SIG（Chime on every hour） mode, press E key to turn on or off this function. 'CHIME' will display when turn on, no 'CHIME' display when turn off. Press C key to change these five alarms sequentially.

➢ In the alarm tone mode, press C key to step sequentially through the chime and five alarms: SIG（Chime on every hour） →AL→A2→A3→A4→A5

➢ In the first alarm 'AL' mode, press and hold A key for 2 seconds, the "hour" blink, press B key to change " hour ←→minute' .

➢ Press E key to increase 1 to the desired item, press and hold E key for 2 seconds to advance quickly.

➢ Press C key to decrease 1 to the desired item, press and hold C key for 2 seconds to decrease quickly.

➢ When the time goes to the alarm time you set, it will ring bell for 20 seconds along with the symbol " ❦ " blinking.

➢ Press E key to turn on or turn off this alarm, the first alarm clock is switched in the following order:

Alarm ring " ❦ " →ring plus snooze "SNZ" →all off " ❦ " "SNZ"

➢ Press A key to exit the setting mode.

➢ With the snooze function on, after the alarm ring stop, it will ring 20 seconds every 5 minutes for five times, along with the symbol " ❦ " and "SNZ" blinking. The snooze function apply for this alarm clock only, not for A2~A5.

➢ When in the snooze alarm ringing, press C key once to stop. Press C key for a second time to cancel the snooze ringing. After the bell ring stop, only "SNZ"blink, now press C key once can turn off the snooze alarm or enter into time or alarm clock setting mode. The snooze alarm can also be turned off, without "SNZ" blinking.

➢ Press C key to cycle through the 2nd~5th alarm mode (A2~A5). There are 4 combinations for each alarm mode, as below:

➢ Every day ringing:

a). Set the Hour and Minute only, the Month and Date set to "----", so that the bell will ring every day when the time goes to the set time.

➢ Timing ringing:

a). Set the Month, Date, Hour and Minute, the bell will ring when the time goes to the specified date and time.

➢ Ring within the set month:

a). Set the Month, Hour and Minute only, input "----" to the Date location, the bell will ring every day when the time goes to the specified time within the set month.

➢ Ring at the same time each month:

a). Set the Date, Hour and Minute only, input "----" to the Month location, the bell will ring when the time goes to the same specified date and time for each month.

➢ A2~A5 Alarm setting:

➢ In alarm clock (A2~A5) mode, press E key to turn on or turn off the alarm symbol " ❤ " , press and hold A key for 2 seconds to enter alarm clock setting mode. Press B key to change between the following:

Month→Date→Hour→Minute

➢ Press E key to increase 1 in the desired item, press and hold E key for 2 seconds to advance quickly.

➢ Press C key to decrease 1 in the desired item, press and hold C key for 2 seconds to decrease quickly.

➢ Press A key to exit the setting mode.

➢ **Note:** The setting methods for the 2nd to 5th alarm clock (A2~A5) are similar.

4. Stopwatch mode

➢ The maximum timing range of the stopwatch is 23 hours 59 minutes and 59 seconds. When reach the maximum timing and stop, press C key to reset.

➢ In stopwatch mode, press E key to start or stop the second going. Press C key to reset after the stopwatch stop.

➢ During stopwatch running, press C key to choose 01~99 groups of LAP.

➢ The record inquiry range is 01~99 groups of LAP.

➢ In LAP mode, press and hold A key for 2 seconds to enter LAP inquiry mode. It will be invalid if without LAP chosen.

➢ Press E key to check up LAP, press and hold E for 2 seconds to check up quickly.

➢ Press C key to check down LAP, press and hold C for 2 seconds to check down quickly.

➢ Press and hold A key for 2 seconds to exit stopwatch LAP inquiry mode, or pressing B key has the same function.

5. Counting down function

➢ The maximum counting down range is: 99 hours, 59 minutes and 59 seconds.

➢ When count down to 0:00 00, the bell will ring for 30 seconds.

This product has circle counting down function. If the circle counting down switch is turned on, when the counting down is finished, it will return to the original value to count down again. If the circle counting down switch is turned off, it will change to counting up mode after the counting down is finished.

➢ Set the counting down timer

a) In the counting down mode, press and hold A key for 2 seconds to enter counting down setting mode.

b) Press B key to select the following items for setting sequentially:
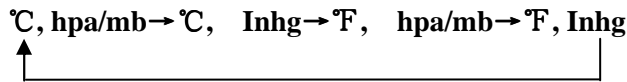
Hour➔Minute➔Second➔Circle setting

c) Press E key to increase 1 in the desired item. Press and hold E key for 2 seconds to advance quickly.

d) Press C key to decrease 1 in the desired item. Press and hold C key for 2 seconds to decrease quickly.

e) Press E or C key to turn on or off the circle counting down function. '↺' will display when turned on, no '↺' will display when turned off.

f）Press A key to exit.

➢ The use of counting down function

a). Press E key to start counting down.

b).During counting down process, press E key to pause. Press E key again to resume the counting down.

c).To stop counting down completely, press E key to pause, then press C key to return to the initial set value.

➢ The use of circle counting down

a).Press E key to start counting down.

b).During the counting down process, press E key to pause it. Press E key again to resume the counting down function.

c).To stop the counting down completely, press E key to pause it, press C key to return to the initial set value.

d).When count down to zero, it will return to the initial set value automatically and continue with counting down.

➢ If the counting down timer is not stopped, the timer will count down continually even the it's menu is exit.
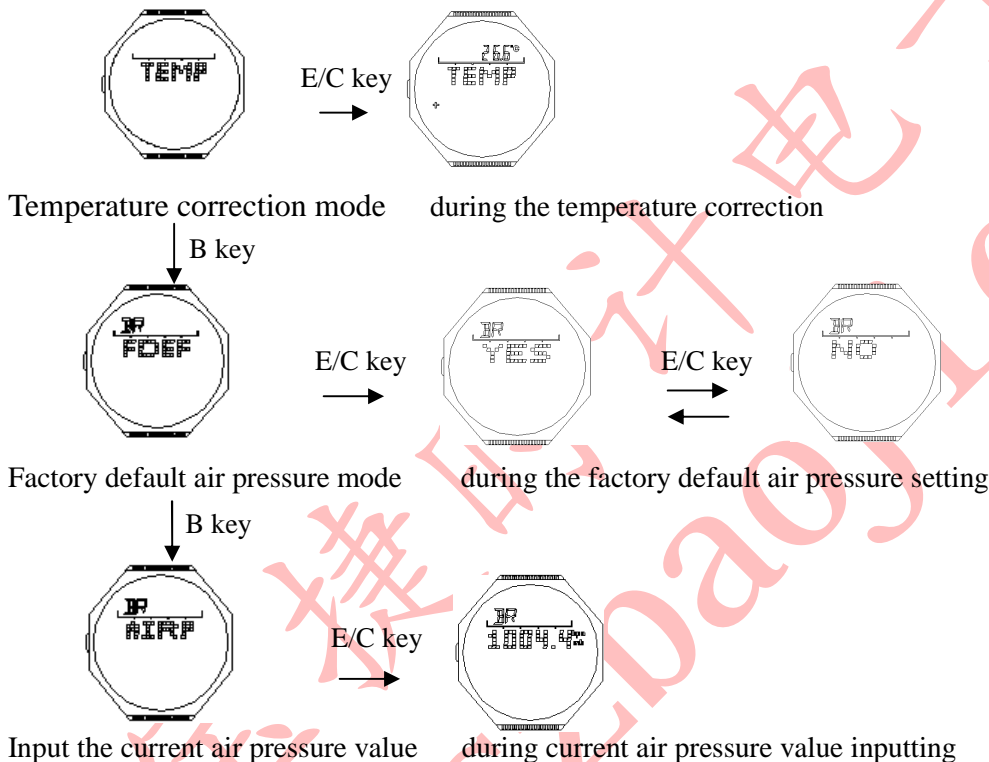
6. Universal time function

➢ In universal time mode, press A key for 2 seconds to turn on or off Daylight Saving Time. When "DST" is displayed, it indicates that the DST function is turned on. If no "DST" displayed, it indicates that the DST function is turned off.

➢ Press E key to check up the time zone and time. Press and hold E key for 2 seconds to check up quickly.

➢ Press C key to check down the time zone and time. Press and hold C key for 2 seconds to check down quickly.

7. Measurement of air pressure, temperature and weather forecast

➢ In normal time or measurement mode, press E key to enter the air pressure measurement "BARO" directly. After displayed "BARO" for about 2 seconds, it will enter the measurement mode of air pressure, temperature and weather forecast.

➢ In the measurement mode of air pressure, temperature and weather forecast, press E key for 2 seconds to switch between units of temperature and air pressure, as below:
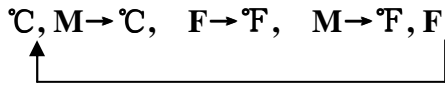
$$℃, hpa/mb → ℃, \ Inhg → ℉, \ hpa/mb → ℉, Inhg$$

➢ In the measurement mode of air pressure, temperature and weather forecast, press A key for 2 seconds to enter the correction mode of air pressure and temperature. Press B key to switch the correction items:
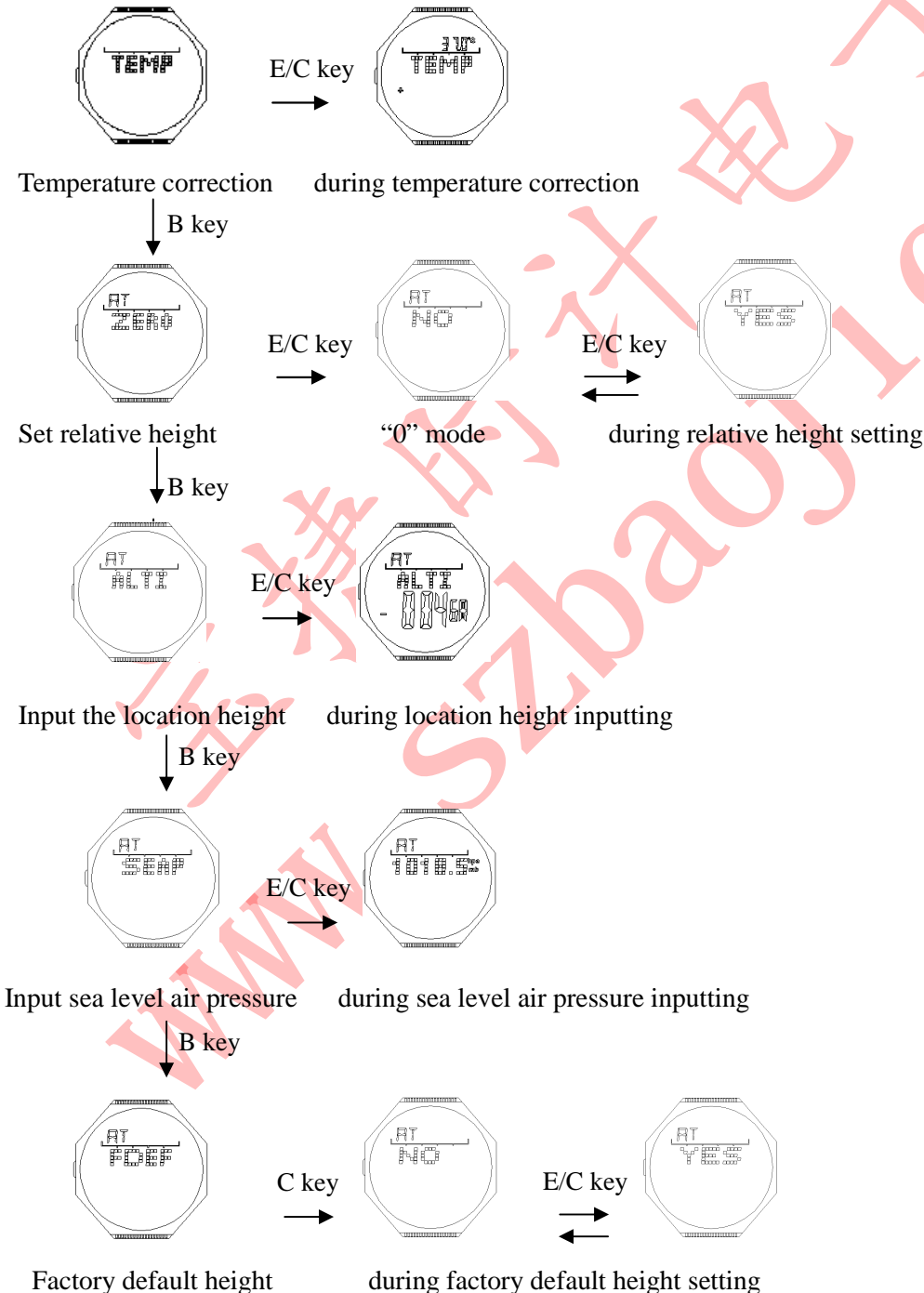

Temperature correction mode   during the temperature correction

Factory default air pressure mode   during the factory default air pressure setting

Input the current air pressure value   during current air pressure value inputting

➢ During the setting process, press B key to change.
➢ In temperature correction mode, press E or C key to switch between "＋" and "－" temperature.
➢ In temperature correction mode, press B key to select the desired set value with blinking. Press E key to adjust the desired set item with 1 increment. Press and hold E key for 2 seconds to increase quickly.
➢ In temperature correction mode, press B key to select the desired set value with blinking. Press C key to adjust the desired set item with 1 descending. Press and hold C key for 2 seconds to decrease quickly.
➢ Factory default air pressure setting:
➢ In factory default air pressure setting mode, press E or C key to switch between "YES" and "NO" for selecting or not selecting factory default air pressure value（default is 1010.00mb）.
➢ Input the current air pressure value mode:
➢ In the current air pressure inputting mode, press E or C key to enter correction mode, press B key to switch. Press E key to adjust the desired item with 1 increment. Press and hold E key for 2 seconds to increase quickly. Press C key to adjust the desired item with 1 descending. Press C key for 2 seconds to decrease quickly.
➢ Press A key to confirm the corrected value and return to normal measurement mode.

9. Temperature and height measurement mode

➢ In temperature and height measurement mode, press C key for 2 seconds to change the units of temperature and height sequentially, as below::

$$℃, M → ℃, \quad F → ℉, \quad M → ℉, F$$

➢ In time or measurement mode, press C key to enter（ALTI）high temperature measurement. After "ALTI" displayed for 2 seconds, it will enter temperature or height measurement mode.

➢ In temperature or height measurement mode, it will not exit this mode until you exit it by hand.

➢ In temperature or height measurement mode, press A key for 2 seconds to enter temperature or height correction mode. Press B key to select setting:

E/C key

Temperature correction   during temperature correction

B key

E/C key   E/C key

Set relative height   "0" mode   during relative height setting

B key

E/C key

Input the location height   during location height inputting

B key

E/C key

Input sea level air pressure   during sea level air pressure inputting

B key

C key   E/C key

Factory default height   during factory default height setting

- During the setting process, press B key to switch.
  ### Temperature correction mode
- In temperature correction mode, press E or C key to switch between "＋" and "－" temperature.
- In temperature correction mode, press B key to select the desired item with blinking. Press E key to adjust the desired item with 1 increment. Press and hold E key for 2 seconds to increase quickly.
- In temperature correction mode, press B key to select the desired item with blinking. Press C key to adjust the desired value with 1 descending. Press and hold C key for 2 seconds to decrease quickly.
- Press A key to confirm the corrected value and return to normal measurement mode.
  ### Set relative height
- Relative height setting (ZERO) mode, press E or C key to switch between "YES" and "NO" for selecting or not selecting relative height as "0".
- Press A key to confirm the corrected value and return back to normal measurement mode.
  ### Input location height
- In location height inputting mode (ALTI), press C or E key to switch between "＋" and "－" height.
- Press B key to select the desired item with blinking.
- Press E key to adjust the value with 1 increment. Press and hold E key for 2 seconds to increase quickly.
- Press C key to adjust the value with 1 descending. Press and hold C key for 2 seconds to decrease quickly.
- Press A key to confirm the corrected value and return back to normal measurement mode.
  ### Input sea level air pressure mode (height above sea level)
- In sea level air pressure inputting mode (SEAP), press C or E key to enter sea level air pressure inputting status, press B key to change the set value with blinking.
- Press E key to adjust the value with 1 increment. Press and hold E key for 2 seconds to increase quickly.
- Press C key to adjust the value with 1 descending. Press and hold C key for 2 seconds to decrease quickly.
- Press A key to confirm the corrected value and return back to normal measurement mode.
  ### Factory default height mode
- In factory default value status（FDEF）, press E or C key to switch between "YES" and "NO", indicates selecting or not selecting factory default height. It is the height value which is calculated according to the default sea level air pressure (1013.25mb).

10. Low voltage detection
- In all modes, low voltage detection is done once every hour. When the voltage is less than 2.5 volts, the low voltage reminding symbol " 🔋 " will be displayed on the screen and blink.

C. Description
- After entering the compass measurement mode, the measurement will stop after 30 seconds. In the last 30 seconds, it will lock up and exit this mode, and then return back to time mode.
- After entering air pressure, temperature and weather forecasting measurement mode, it will measure once every second. And it will return back to time mode if without keystroke operation for 1 minute.
- After entering height and temperature measurement mode, it will measure data once every 5 seconds within first 3 minutes, and measure once every 2 minutes after the first 3 minutes. It will not exit this mode.
- In correction mode, press B key to exit. If displaying "ERROR", which means correction error. If displaying "DONE", which means that the correction is correct.
- In setting mode, the set item will blink every 1HZ. It will exit the setting mode if no keystroke operation within 1 minute.

➢ **The city name order for universal time as below:**

LON→PAR→CAI→JRS→JED→THR→DXB→KBL→KHI→DEL→DAC→RGN→BKK→HKG→ TYO→ADL→SYD→NOU→WLG→PPG→HNL→ANC→LAX→DEN→CH**I**→NYC→CCS→RIO →

➢ **Please see the universal time comparison table for detailed city description for universal time, as below:**

Universal time comparison table:

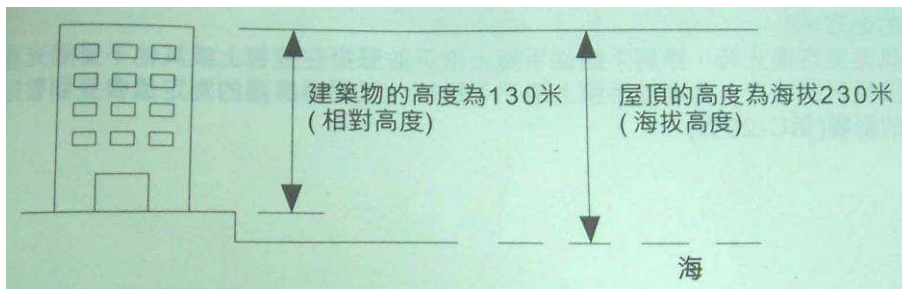| City code	City	GMT Differential	Other major cities in same time zone
LON	London	+00. 0	Dublin,Lisbon 伦敦 Casablanca,Dakar,Abidjan
PAR	Paris	+01. 0	巴黎 Milan Rome,Madrid,Amsterdam,Algiers.Hamburg, Frankfurt,Vienna,Stockhoim,Berlin.
CAI	Cairo 开罗(	+02. 0	Athens Helsinki,Istanbul,Beirut Damascus Cape town
JRS	Jerusalem 耶路撒冷		
JED	Jeddah 吉达	+03. 0	Kuwait Riyad,Aden Addis Ababa Nairobi Moscow Shiraz
THR	Tehran 德黑兰	+03. 5	Shiraz
DXB	Dubai 迪拜(	+04. 0	Abu Dhabi Muscat
KBL	Kabul 喀布尔	+04. 5	
KHI	Karachi 卡拉奇	+05. 0	Male
DEL	Delhi 德里	+05. 5	Mumbai Kolkata
DAC	Dhaka 达卡	+06. 0	Colombo
RGN	Yangon	+06. 5	Yangon 仰光
BKK	Bangkok	+07. 0	Jakarta,Phnom Penh,Hanoi Vientiane 曼谷
HKG	HongKong	+08. 0	Singapore Kuala Lumpur Beijing Taipei Manlla Perth Ulaanbaatar 香港
TYO	Tokyo	+09. 0	Seoul Pyongyang 东京（SEL 汉城）
ADL	Adelaide	+09. 5	Darwin 阿德莱德
SYD	Sydney	+10. 0	Melboume Guam Rabaul 悉尼
NOU	Noumea	+11. 0	Pt Vila 努美阿
WLG	Wellington	+12. 0	Christchrch Nadi Nauru Is 惠灵顿
PPG	Pago Pago	−11. 0	帕果 帕果 Pago Pago
HNL	Honolulu	−10. 0	檀香山 Papeete
ANC	Anchorage	−09. 0	安克雷奇 Nome
LAX	Los Angeles	−08. 0	洛杉矶 San Francisco,Las Vegas,Vancouver,Seattle/Tacoma,Dawson City
DEN	Denver	−07. 0	丹佛 El Paso,Edmonton
CHI	Chicago	−06. 0	芝加哥 Houston,Dallas/Ft,worth,New Orleans,Mexico City,Winnipeg
NYC	New York	−05. 0	Montreal,Detroit,Miami,Boston,Panam 纽约 a City,Havana,Lima,Bogota
CCS	Caracas	−04. 0	加拉加斯 La Paz,Santiago,Pt Of Spain
RIO	Rio De Janeiro	−03. 0	里约热内卢 Sao Paulo, Buenos Aires,Brasilia,Montevideo

➢ 60 points cartoon change with the change of seconds in Time mode, counting down, Stopwatch, and Universal time mode.

- Air pressure measurement range is 300~1100 mbar or 8.84~32.44 inHg

  Temperature measurement range is -10~60℃ or 14~140℉

  Height measurement range is -700~9000m or -2300~30000f

  When above the measurement range, HI will display. When under the measurement range, Lo will display.

- Weather forecast measurement method: estimate the weather every hour (estimate the weather according to the air pressure diversification within the former 4 hours). If air pressure value goes up gradually, it indicates that the weather will turn into better. If the air pressure value goes down gradually, it indicates that the weather will turn into bad. There are 4 kinds of weather status (from good to bad): Fine, Cloudy, Overcast sky, Rain.

- **The work principle of hypsometer:**

  With the height increasing, usually air pressure and temperature will reduce. This watch measure the height according to the international standard air pressure (ISA) made by International Civil Aviation Organization (ICAO). This value defines the relation between height, air pressure and temperature.

Excerpt from: International Civil Aviation Organization

- **Note that the veracity of the value measured will be affected in the following situations:**

  When air pressure changed with the weather change;

  When temperature changed extremely;

  When this watch is bumped strongly

  There are four kinds of methods to denote height: 1. relative height, 2. location height, 3. height above sea level, 4. Factory default height. The figure below introduces the relative height and height above sea level. Absolute height indicates the height above sea level. Relative height indicates the height difference between two different locations.

> **Notes when measure height and temperature at the same time:**
>
> Though the height and air temperature can be measured at the same time, please note that the condition needed in each measurement is different to get the best result. When measure air temperature, you'd better take your watch from your wrist to minimize the affection to the measurement result by your body heat. However, when measure height, you'd better wear your watch on your wrist. Because this can improve the accuracy of the measurement by keeping constant watch temperature.

> **The following actions need to be take first before measuring height or temperature:**
>
> When height measurement is priority, please wear your watch on your wrist or put it in a place where your watch temperature can be kept constant.
>
> When air temperature measurement is priority, please take your watch off from your wrist and hang it on your handbag or any place not exposed to direct sun shine. Please note that when take your watch from your wrist, the measurement value of air pressure sensor will be affected temporarily. The air pressure sensor in this watch can be used to measure the change of air pressure for your reference to forecast weather. This sensor is not a precise device for official weather forecast.
>
> The sudden change of air temperature can affect the measurement result of the sensor.
>
> Air temperature measurement can be affected by body temperature (when you wear your watch), direct sun shine and humidity. To get a more exact air temperature measurement, please take your watch from your wrist, put it in a place where does not exposed to direct sun shine and in drafty condition, and wipe the watchcase dry. It will take 20 to 30 minutes for the watchcase to reach actual environmental temperature.

> **The work principle of barometer:**
>
> The air pressure reflects the change of atmosphere. Through observing the atmosphere change, you can forecast the weather in a rational veracity range. Atmosphere pressure going up indicates fine weather, but atmosphere pressure going down indicates the weather is turning into bad.
>
> The atmosphere pressure value published in newspaper or reported in television weather forecast programme is the measurement value after being modified to the value at sea level (elevation is 0 m).

C. Specification

- ➢ Movement dimension **:** Φ37 mm
- ➢ Thickness （exclude buzzer） **:** 8.6 mm
- ➢ Work temperature **:** -10℃~60℃
- ➢ Work voltage **:** 3V
- ➢ Veracity **:** ±60 seconds/month
- ➢ Battery type **:** CR2032
- ➢ Static maximum drive current **:** ≤12 u A（T=25℃）
- ➢ Static average drive current **:** ≤10 u A（T=25℃）
- ➢ Alarm ring current **:** ≤2.5 m A
- ➢ Current for air pressure and height sensor operation **:** ≤10.0 m A
- ➢ Lighting current **:** ≤8 m A
- ➢ Battery life term **:** 18 months(Japan battery)

(using air pressure and height sensor once each month for 6 hours each time; pressing light once every day for 3 seconds each time; ringing once every day for 20 seconds each time.)

	Prepared	Audited	Approved
Signature	Feng Biyan	Zhao Xingliang	Liu Chengheng
Date	07/11/30	07/11/30	07/11/30