

# PULSAR

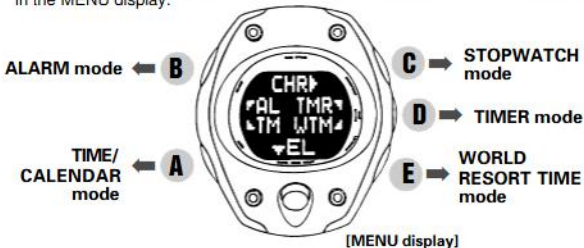
## CAL. W854 DIGITAL QUARTZ

- Full-panel dot-matrix liquid crystal panel
- Time/calendar
- 5-channel regular alarm
- 10-hour stopwatch with memory recall function
- Countdown timer  
with preset and adjustable timer functions
- World resort time
- Button operation confirmation light
- Illuminating light (electroluminescent panel)
- Changeover between normal and enlarged displays

ENGLISH

## MODE CHANGE

- Selection of a desired mode can be made by pressing the corresponding button in the MENU display.



\* When the desired mode is selected, the opening graphic display is shown before the selected mode appears.

- To change over a mode to another, press button A to return to the MENU display, and then press the corresponding button to select the desired mode.

## CHANGEOVER BETWEEN NORMAL AND ENLARGED DISPLAYS

- In all modes except the WORLD RESORT TIME, the display can be selected between the normal display that shows all the data with characters of a normal size and the enlarged display that shows the main data with characters of an enlarged size.
- **D** With each press, the normal and enlarged displays alternately appear.

[Ex. : In TIME/CALENDAR mode]



**Normal display**

*(Data is shown in four rows)*



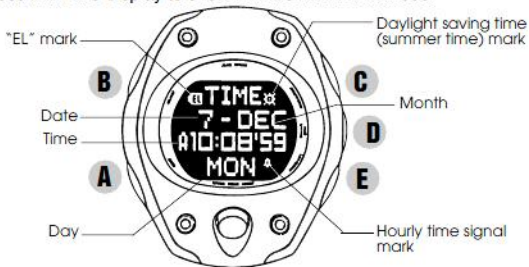
**Enlarged display**

*(Data is shown in three rows)*

## TIME/CALENDAR MODE

- Once the time/calendar of your area is set in the TIME/CALENDAR mode, the times of the 38 cities covered in the WORLD RESORT TIME mode will be set automatically.
- Changeover between the standard time and daylight saving time can be made.

**A** Press in MENU display to show TIME/CALENDAR mode.



## TIME/CALENDAR SETTING

**B** Press for 2 to 3 seconds to show TIME/CALENDAR SETTING display.

**D** Press to select the digits to be adjusted.

### Selection of the digits

City → Standard time/  
daylight saving time → Seconds → Minutes → Hour  
↑ ↓  
12-/24-hour indication ← Year ← Month ← Date

**C** Set the flashing digits. (Increasing digits)

or

**E** Set the flashing digits. (Decreasing digits)

**B** Return to TIME/CALENDAR mode.

English

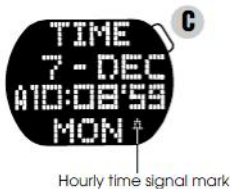
## SHOWING THE SELECTED CITY

**E** Press to show the city selected for TIME/CALENDAR mode.

\* *The name of the selected city is displayed in place of the day, scrolls from right to left, and then the day is displayed again.*

## TURNING ON/OFF OF HOURLY TIME SIGNAL AND BUTTON OPERATION CONFIRMATION SOUND

English



**C** With each press, the hourly time signal and sound for button operation confirmation are alternately switched on and off.

\* *When the hourly time signal mark is displayed, the hourly time signal rings every hour on the hour and the confirmation sound beeps with each press of the buttons.*

## DEMONSTRATION FUNCTION

- Provided with a demonstration function, the watch shows the displays in each mode.

**E** Press for 3 seconds in TIME/CALENDAR mode to start the demonstration.

*\* The name of the selected city appears in place of the day, and then the demonstration display will start, showing the display of each mode repeatedly.*

*\* To stop the demonstration, press any of the buttons.*

## ADJUSTING THE CONTRAST ON THE DISPLAY

**C** Press for 5 to 6 seconds in TIME/CALENDAR mode to show CONTRAST ADJUSTMENT display.



**C** or **E** Press repeatedly to adjust the contrast.

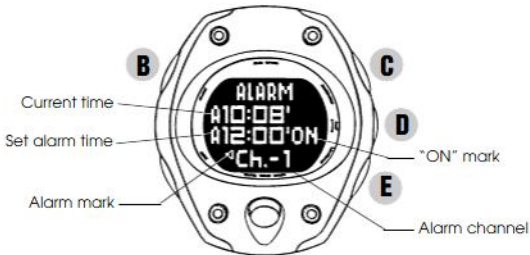


**B** Return to TIME/CALENDAR mode.

## ALARM MODE

- The alarm can be set to ring daily at five different times a day.
- The alarms can be engaged and disengaged independently of one another.

**B** Press in MENU display to show ALARM mode.



## ALARM TIME SETTING

**E** Press to select the desired alarm channel (Ch.-1 – Ch.-5).



**B** Press for 2 to 3 seconds to show ALARM SETTING display.



**D** Press to select the digits to be adjusted (hour/minutes).



**C** Set the flashing digits. (Increasing digits)

or

**E** Set the flashing digits. (Decreasing digits)

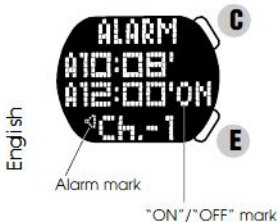


**B** Return to ALARM mode.

\* "ON" and the alarm marks appear and the alarm is automatically engaged.

## ALARM ENGAGEMENT/DISENGAGEMENT

- The alarms can be engaged and disengaged independently of one another.



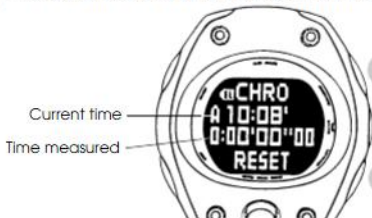
- E** Press to select the desired alarm channel (Ch.-1 – Ch.-5).
- ▼
- C** With each press, the selected alarm is engaged and disengaged alternately.

\* At the designated time, the alarm rings for 20 seconds. To stop it manually, press any of the buttons.

## STOPWATCH MODE

- The stopwatch measures up to 10 hours in 1/100 second increments.

**C** Press in MENU display to show STOPWATCH mode.



**C** Start / Stop / Restart

**E** Measure lap & split time / Reset

### Lap time and split time measurement



## MEMORY RECALL FUNCTION

- The first 199 lap and split times are automatically stored in memory.
- The stored data can be recalled either during or after the measurement.



**B** Press to activate the memory recall function.\*



**C** With each press, stored data are recalled from the oldest to the newest.

or

**E** With each press, stored data are recalled from the newest to the oldest.



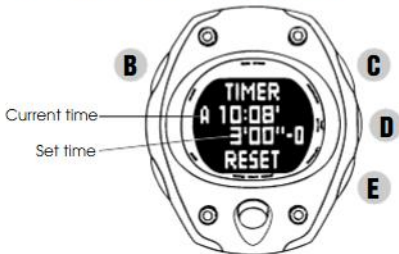
**B** Return to STOPWATCH mode.

\* In memory recall after measurement, the oldest measurement in memory is displayed. In memory recall during measurement, the newest measurement in memory is displayed.

## TIMER MODE

- Two types of timer are available: 10-channel preset timer and adjustable timer.
- The adjustable timer can be set up to 9 hours and 59 minutes in minute increments.

**D** Press in MENU display to show TIMER mode.



## PRESET TIMER SETTING

- E** Press to select the desired preset time.

### Selection of the preset time/adjustable timer

1 min. ↔ 2 min. ↔ 3 min. ↔ 4 min. ↔ 5 min. ↔ 10 min.  
↕  
Adjustable timer ↔ 1 hour ↔ 45 min. ↔ 30 min. ↔ 15 min. ↕

## ADJUSTABLE TIMER SETTING

- E** Press to select the adjustable timer. (See above)

- ▼  
**B** Press for 2 to 3 seconds to show ADJUSTABLE TIMER SETTING display.

- ▼  
▶ **D** Press to select the digits to be adjusted (hour/minutes).  
▼

**C** Set the flashing digits. (Increasing digits)

or

**E** Set the flashing digits. (Decreasing digits)



**B** Return to TIMER mode.

## TIMER OPERATION

Time measured



**C** Start / Stop / Restart

No. of times  
the countdown  
is repeated

**E** Reset

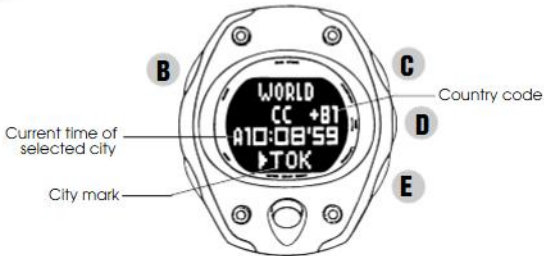
\* When the set time is up, a warning sound beeps for 5 seconds. To stop it manually, press any of the buttons.

## WORLD RESORT TIME MODE

- The time of 38 places throughout the world can be displayed together with their respective country code for overseas telephone call. The places include major cities of the world, famous resorts and spots good for surfing.

**E** Press in MENU display to show WORLD RESORT TIME mode.

English

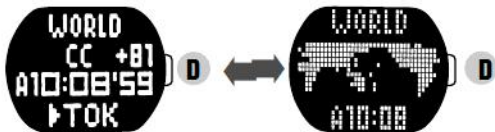


- C** or **E** Press to select the desired city.

\* The name of the selected city scrolls from right to left.  
\* In the normal display, the daylight saving time (summer time) mark, country code, time and city name are shown.

### CHANGEOVER OF DISPLAYS

- D** With each press, the following displays alternately appear.



\* When the map is displayed, the selected city/resort on the map flashes.  
\* In the enlarged display, "DST" (Daylight saving time) is not displayed.

## CHANGEOVER BETWEEN STANDARD TIME AND DAYLIGHT SAVING TIME

- B** If the daylight saving time is effective in the selected city, press to show the daylight saving time.

*\* With each press of button B, the standard time and daylight saving time of the city are alternatively shown.*

## TIME DIFFERENCES AND COUNTRY CODES

GMT = Greenwich Mean Time

(As of April 1999)

| GMT<br>± (hours) | Name of city/resort | Name of country/area | Country code |
|------------------|---------------------|----------------------|--------------|
| 0                | London*             | United Kingdom       | 44           |
| + 1              | Hossegor*           | France               | 33           |
| + 1              | Paris*              | France               | 33           |
| + 1              | Rome*               | Italy                | 39           |
| + 1              | Berlin*             | Germany              | 49           |
| + 2              | Athens*             | Greece               | 30           |
| + 2              | Jeffreys Bay        | South Africa         | 27           |

| <b>± GMT (hours)</b> | <b>Name of city/resort</b> | <b>Name of country/area</b> | <b>Country code</b> |
|----------------------|----------------------------|-----------------------------|---------------------|
| + 4                  | Réunion                    | France                      | 262                 |
| + 4                  | Dubai                      | United Arab Emirates        | 971                 |
| + 4                  | Mauritius Island           | Mauritius                   | 230                 |
| + 5                  | Maldivé Islands            | Maldives                    | 960                 |
| + 7                  | Bangkok                    | Thailand                    | 66                  |
| + 7                  | Java Island                | Indonesia                   | 62                  |
| + 8                  | Hong Kong                  | China                       | 852                 |
| + 8                  | Bali Island                | Indonesia                   | 62                  |
| + 8                  | Cebú Island                | The Philippines             | 63                  |
| + 8                  | Singapore                  | Singapore                   | 65                  |
| + 9                  | Tokyo                      | Japan                       | 81                  |
| + 9                  | Torami                     | Japan                       | 81                  |
| + 10                 | Bells Beach*               | Australia                   | 61                  |
| + 10                 | Sydney*                    | Australia                   | 61                  |
| + 10                 | Gold Coast                 | Australia                   | 61                  |
| + 10                 | Guam Island                | U.S.A.                      | 1                   |
| + 10                 | Saipan Island              | U.S.A.                      | 1                   |
| + 11                 | New Caledonia Island       | New Caledonia               | 687                 |

| <b>± GMT (hours)</b> | <b>Name of city/resort</b> | <b>Name of country/area</b> | <b>Country code</b> |
|----------------------|----------------------------|-----------------------------|---------------------|
| + 12                 | New Zealand Islands*       | New Zealand                 | 64                  |
| - 10                 | Hawaii Islands             | U.S.A.                      | 1                   |
| - 10                 | Tahiti Island              | French Polynesia            | 689                 |
| - 8                  | San Francisco*             | U.S.A.                      | 1                   |
| - 8                  | Los Angeles*               | U.S.A.                      | 1                   |
| - 8                  | Huntington Beach*          | U.S.A.                      | 1                   |
| - 7                  | Cabo San Lucas*            | Mexico                      | 52                  |
| - 6                  | Chicago*                   | U.S.A.                      | 1                   |
| - 6                  | Cancún*                    | Mexico                      | 52                  |
| - 5                  | Cocoa Beach*               | U.S.A.                      | 1                   |
| - 5                  | New York*                  | U.S.A.                      | 1                   |
| - 5                  | Miami*                     | U.S.A.                      | 1                   |
| - 3                  | Rio de Janeiro*            | Brazil                      | 55                  |

\* The cities and resorts marked with "\*" use daylight saving time (summer time).

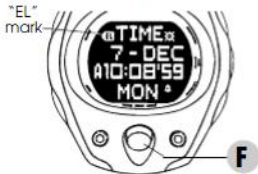
## ILLUMINATING LIGHT (Electroluminescent panel)



**F** Turn on the illuminating light.

*\* The display panel is evenly illuminated for 3 seconds.*

## TURNING ON/OFF OF BUTTON OPERATION CONFIRMATION LIGHT



**F** With each continuous press for 2 to 3 seconds, the button operation confirmation light is alternately turned on and off.

*\* When the "EL" mark is turned on, the display is illuminated for 2 seconds with each press of a button to operate the watch.*

## NOTES ON USING THE WATCH

### TIME/CALENDAR MODE

#### [TIME/CALENDAR SETTING]

- The calendar automatically adjusts for odd and even months including February of leap years from 1999 to 2048.
- Once the year, month and date have been set, the day of the week is automatically set.
- **Setting the seconds:**
  - With the second digits flashing, press button C or E in accordance with a time signal. The second digits are reset to "00".
  - When the seconds count any number from "30" to "59" and button C or E is pressed, one minute is added and the seconds are reset to "00".
- The flashing digits except the seconds, standard time/daylight saving time and 12-/24-hour indication move quickly if button C or E is kept pressed.
- If the watch is left untouched with the digits flashing, it will automatically return to the TIME/CALENDAR mode in 2 to 3 minutes.

#### ● **Note on unusual display:**

While setting the time/calendar, all the segments of the display will light up if both buttons C and D are pressed at the same time. This is not a malfunction. Press any one of the buttons to return to the TIME/CALENDAR mode, and then set the time/calendar again.

#### [ADJUSTING THE CONTRAST ON THE DISPLAY]

- The contrast on the liquid crystal display can be adjusted in 16 steps from level "0" to "15". The contrast becomes higher as the digits indicating the contrast level increase

- and becomes lower as they decrease.
- The contrast level has been initially set at "10" at the factory.
  - When the contrast level is set to "0", the digits on the display will be unable to read.
  - With each press of buttons C and E, the contrast level increases and decreases by one, respectively.

## ALARM MODE

### [ALARM TIME SETTING]

- The flashing digits move quickly if button C or E is kept pressed.
- If the watch is left untouched with the digits flashing, it will automatically return to the ALARM mode in 2 to 3 minutes.
- When the time function is displayed in the 24-hour indication, the alarms are also displayed in the 24-hour indication.

### [ALARM ENGAGEMENT/DISENGAGEMENT]

- When any one of the alarms is engaged, the alarm mark is displayed.
- **Alarm test:** The alarm can be tested by keeping buttons C and D pressed in the TIME/CALENDAR mode.

## STOPWATCH MODE

- After 10 hours have been measured, the stopwatch continues measuring from "00". If it is left counting for more than 100 hours, it will automatically be stopped.
- Restart and stop of the stopwatch can be repeated by pressing button C.
- Measurement of the lap time and split time can be repeated by pressing button E.
- The lap number counts up to "199". After "199", the number is displayed in two digits such as "00" for 200, "01" for 201, and so on.

- The lap time and split time measured remain displayed for 10 seconds together with the flashing lap number. Then, the display automatically returns to the measurement in progress.



- Even if the digits are reset to "00" in the stopwatch measurement, the stored data is not erased and can be recalled unless a new measurement is started.
- Even if the STOPWATCH mode is changed to another while the measurement is in progress, it continues counting properly. After the stopwatch is used, however, be sure to reset it as the battery energy is consumed enormously to shorten the battery life.

#### **[MEMORY RECALL FUNCTION]**

- In the normal display, the lap number is displayed at the bottom row.
- In the enlarged display, the split time is displayed together with the split number.
- If no measurement is made, "NO DATA" will be displayed when button B is pressed to activate the memory recall function.

#### **TIMER MODE**

- The timer counts down the set time repeatedly up to 10 times unless stopped.

#### **[ADJUSTABLE TIMER SETTING]**

- The flashing digits move quickly if button C or E is kept pressed.

- 24 ● If the watch is left untouched with the digits flashing, it will automatically return to the

TIMER mode in 2 to 3 minutes.

#### **[TIMER OPERATION]**

- Restart and stop of the timer can be repeated by pressing button C.
- Even if the TIMER mode is changed to another while the measurement is in progress, it continues counting properly. After the timer is used, however, be sure to reset it as the battery energy is consumed enormously to shorten the battery life.

#### **WORLD RESORT TIME MODE**

- The time differences and use of daylight saving time may change in some areas or countries when they are so decided by the countries concerned.

#### **ILLUMINATING LIGHT (Electroluminescent panel)**

- The electroluminescent panel loses its luminance as the battery voltage gets lowered. Also, its luminance level decreases gradually with use. After 120 hours of use, the level decreases by about half.
- When the illuminating light becomes dim, replace the battery with a new one. If the light remains dim after the battery is replaced, have the electroluminescent panel replaced with a new one by the retailer from whom the watch was purchased. It will be replaced at cost.
- While the illuminating light is used, the watch gives out a slight noise. However, this is not a malfunction.

#### **[TURNING ON/OFF OF BUTTON OPERATION CONFIRMATION LIGHT]**

- This function is deactivated automatically in 11 to 12 hours after it is activated.

## BATTERY CHANGE

**2**

**Years**

**Battery life : Approx. 2 years**

**Battery : SEIKO CR2025**

- *The battery life may be less than 2 years if the alarm is used more than once a day, the illuminating light more than 3 times a day and/or the button operation confirmation sound more than 50 times a day.*
- *As the battery is inserted at the factory to check the function and performance of the watch, its actual life once in your possession may be less than the specified period.*
- *When the battery expires, be sure to replace it as soon as possible to prevent any malfunction.*
- *We recommend that you contact an AUTHORIZED PULSAR DEALER for battery replacement.*

### ● **Battery life indicator**

When all the digits start flashing, have the battery replaced with a new one as soon as possible.

### ● **Necessary procedure after battery change**

After the battery is replaced with a new one or if an abnormal display (broken digits, etc.) appears, follow the procedure below to reset the IC.

Press and hold buttons A, B, C and E at the same time for 2 to 3 seconds. The display will become blank, and the MENU display will appear when the buttons are released. Then, press button A. "TIME 1-JAN A12:00'00" FRI" will be displayed.

\* Before using the watch, set the time/calendar and then, the alarm.



## WARNING

- Do not remove the battery from the watch.
- If it is necessary to take out the battery, keep it out of the reach of children. If a child swallows it, consult a doctor immediately.
- Never short-circuit, tamper with or heat the battery, and never expose it to fire. The battery may burst, become very hot or catch fire.



## CAUTION

- The battery is not rechargeable. Never attempt to recharge it, as this may cause battery leakage or damage to the battery.

# TO PRESERVE THE QUALITY OF YOUR WATCH

## WATER RESISTANCE

### ● Non-water resistant



- If the watch becomes wet, have it checked by an **AUTHORIZED PULSAR DEALER** or **SERVICE CENTER**.

### ● Water resistant 5/10/15/20 bar



- Do not operate the buttons when the watch is wet or in water. If used in sea water, rinse the watch in fresh water and dry it completely.
- When taking a shower with the water resistant 5 bar watch, or taking a bath with the water resistant 10, 15 or 20 bar watch, be sure to observe the following:
  - \* Do not operate the buttons when the watch is wet with soapy water or shampoo.
  - \* If the watch is left in warm water, a slight time loss or gain may be caused. This condition, however, will be corrected when the watch returns to normal temperature.

- \* *Pressure in bar is a test pressure and should not be considered as corresponding to actual diving depth since swimming movement tends to increase the pressure at a given depth. Care should also be taken on diving into water.*
- \*\* *We recommend that you wear a PULSAR Diver's Watch for scuba diving.*

## TEMPERATURES



Your watch works with stable accuracy within a temperature range of 5° C and 35° C (41° F and 95° F).

Temperatures over 50° C (122° F) or below -10° C (+14° F) may cause a slight time loss or gain or battery leakage or shorten the battery life. Also, the liquid crystal panel may decrease in contrast, and the electroluminescent light may illuminate for a shorter period of time.

However, the above conditions will be corrected when the watch returns to normal temperature.

## MAGNETISM



Your watch will not be affected by magnetism.

## CARE OF CASE AND BRACELET



To prevent possible rusting of the case and bracelet caused by dust, moisture and perspiration, wipe them periodically with a soft dry cloth.

## SHOCKS & VIBRATION



Light activities will not affect your watch, but be careful not to drop your watch or hit it against hard surfaces, as this may cause damage.

## CHEMICALS



Be careful not to expose the watch to solvents, mercury, cosmetic spray, detergents, adhesives or paints. Otherwise, the case, bracelet, etc. may become discolored, deteriorated or damaged.

## PERIODIC CHECK



It is recommended that the watch be checked once every 2 to 3 years. Have your watch checked by an **AUTHORIZED PULSAR DEALER** or **SERVICE CENTER** to ensure that the case, buttons, gasket and crystal seal remain intact.

## PRECAUTION REGARDING CASE BACK PROTECTIVE FILM



If your watch has a protective film and/or a sticker on the case back, be sure to peel them off before using your watch.

## STATIC ELECTRICITY



The IC (Integrated Circuit) used in your watch will be affected by static electricity which may disturb the

display. Keep the watch away from close contact with objects such as TV screens which emit strong static electricity.

## LIQUID CRYSTAL PANEL



The normal life expectancy for the liquid crystal panel of the watch is approximately 5 years. After that it may decrease in contrast, becoming difficult to

read. Please contact your **AUTHORIZED PULSAR DEALER** or **SERVICE CENTER** if you wish to have a new panel fitted (guaranteed one year).