PULSAR

CAL. W855
DIGITAL QUARTZ

- Full-panel dot-matrix liquid crystal panel
- Time/calendar
- 5-channel regular alarm
- 10-hour stopwatch with memory recall function
- Metronome
- World time
- Button operation confirmation light
- Illuminating light (electroluminescent panel)
- Changeover between normal and enlarged displays
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.
In all modes except the METRONOME, 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.

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

Press in MENU display to show TIME/CALENDAR mode.
TIME/CALENDAR SETTING

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

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

Set the flashing digits. (Increasing digits)

Set the flashing digits. (Decreasing digits)

Return to TIME/CALENDAR mode.
SHOWING THE SELECTED CITY

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

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.
- 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 button A, B, C, D or E.

**ADJUSTING THE CONTRAST ON THE DISPLAY**

- Press for 5 to 6 seconds in TIME/CALENDAR mode to show CONTRAST ADJUSTMENT display.
- Press repeatedly to adjust the contrast.
- 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.

![Diagram of alarm mode with labels for current time, set alarm time, alarm mark, "ON" mark, and alarm channel.]
**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)
  - **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.

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

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 one-SMPTE (= 1/30 seconds) increments.

SMPTE: The Society of Motion Picture and Television Engineers
It also refers to a unit of time measurement used in editing video-recorded data, etc. One SMPTE corresponds to 1/30 seconds.

Press in MENU display to show STOPWATCH mode.

- Current time
- Time measured
- 1/30 seconds
- Measure lap & split times / Reset
- Start / Stop / Restart
Lap time and split time measurement

C ➤ E ➤ E ➤ C ➤ E
START   LAP/SPLIT 1   LAP/SPLIT 2   STOP   RESET

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.

Press to activate the memory recall function.*

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

With each press, stored data are recalled from the newest to the oldest.
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.
The tempo can be set from 30 up to 250 beats per minute.
Seven types of beats are available for the metronome.
While the metronome is giving out the tempo sound, the metronome setting can be made.

Press in MENU display to show METRONOME mode.
**METRONOME SETTING**

- Press to select the digits to be adjusted (beat/tempo).

- Set the flashing digits. (Increasing digits)

- or

- Set the flashing digits. (Decreasing digits)

**METRONOME OPERATION**

Start / Stop B
The time of 38 cities in different time zones throughout the world can be displayed together with their respective country code for overseas telephone call.

Press in MENU display to show WORLD TIME mode.
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 BETWEEN STANDARD TIME AND DAYLIGHT SAVING TIME**

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 alternately shown.

**TIME DIFFERENCES AND COUNTRY CODES**

<table>
<thead>
<tr>
<th>GMT ± (hours)</th>
<th>City mark</th>
<th>City name</th>
<th>Country name</th>
<th>Country code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>GMT</td>
<td>Greenwich</td>
<td>United Kingdom</td>
<td>44</td>
</tr>
<tr>
<td>0</td>
<td>L O N</td>
<td>London*</td>
<td>United Kingdom</td>
<td>44</td>
</tr>
<tr>
<td>GMT (hours)</td>
<td>City mark</td>
<td>City name</td>
<td>Country name</td>
<td>Country code</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>-----------------</td>
<td>------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>+ 1</td>
<td>PAR</td>
<td>Paris*</td>
<td>France</td>
<td>33</td>
</tr>
<tr>
<td>+ 1</td>
<td>ROM</td>
<td>Rome*</td>
<td>Italy</td>
<td>39</td>
</tr>
<tr>
<td>+ 1</td>
<td>BER</td>
<td>Berlin*</td>
<td>Germany</td>
<td>49</td>
</tr>
<tr>
<td>+ 2</td>
<td>ATH</td>
<td>Athens*</td>
<td>Greece</td>
<td>30</td>
</tr>
<tr>
<td>+ 2</td>
<td>CAI</td>
<td>Cairo*</td>
<td>Egypt</td>
<td>20</td>
</tr>
<tr>
<td>+ 2</td>
<td>JRS</td>
<td>Jerusalem*</td>
<td>Israel</td>
<td>972</td>
</tr>
<tr>
<td>+ 3</td>
<td>MOW</td>
<td>Moscow*</td>
<td>Russia</td>
<td>7</td>
</tr>
<tr>
<td>+ 3</td>
<td>JED</td>
<td>Jeddah</td>
<td>Saudi Arabia</td>
<td>966</td>
</tr>
<tr>
<td>+ 3</td>
<td>RUI</td>
<td>Riyadh</td>
<td>Saudi Arabia</td>
<td>966</td>
</tr>
<tr>
<td>+ 3.5</td>
<td>THR</td>
<td>Tehran*</td>
<td>Iran</td>
<td>98</td>
</tr>
<tr>
<td>+ 4</td>
<td>DXB</td>
<td>Dubai</td>
<td>United Arab Emirates</td>
<td>971</td>
</tr>
<tr>
<td>+ 4.5</td>
<td>KBL</td>
<td>Kabul</td>
<td>Afghanistan</td>
<td>93</td>
</tr>
<tr>
<td>+ 5</td>
<td>KHI</td>
<td>Karachi</td>
<td>Pakistan</td>
<td>92</td>
</tr>
<tr>
<td>+ 5.5</td>
<td>DEL</td>
<td>Delhi</td>
<td>India</td>
<td>91</td>
</tr>
<tr>
<td>+ 6</td>
<td>DAC</td>
<td>Dhaka</td>
<td>Bangladesh</td>
<td>880</td>
</tr>
<tr>
<td>+ 6.5</td>
<td>RGN</td>
<td>Yangon</td>
<td>Myanmar</td>
<td>95</td>
</tr>
<tr>
<td>+ 7</td>
<td>BKK</td>
<td>Bangkok</td>
<td>Thailand</td>
<td>66</td>
</tr>
<tr>
<td>+ 8</td>
<td>HKG</td>
<td>Hong Kong</td>
<td>China</td>
<td>852</td>
</tr>
<tr>
<td>+ 8</td>
<td>BJS</td>
<td>Beijing</td>
<td>China</td>
<td>86</td>
</tr>
<tr>
<td>+ 9</td>
<td>TYO</td>
<td>Tokyo</td>
<td>Japan</td>
<td>81</td>
</tr>
<tr>
<td>GMT (hours)</td>
<td>City mark</td>
<td>City name</td>
<td>Country name</td>
<td>Country code</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>-----------------</td>
<td>---------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>+ 9.5</td>
<td>A D L</td>
<td>Adelaide*</td>
<td>Australia</td>
<td>61</td>
</tr>
<tr>
<td>+ 10</td>
<td>S Y D</td>
<td>Sydney*</td>
<td>Australia</td>
<td>61</td>
</tr>
<tr>
<td>+ 11</td>
<td>N O U</td>
<td>Noumea</td>
<td>New Caledonia</td>
<td>687</td>
</tr>
<tr>
<td>+ 12</td>
<td>W L G</td>
<td>Wellington*</td>
<td>New Zealand</td>
<td>64</td>
</tr>
<tr>
<td>- 10</td>
<td>H N L</td>
<td>Honolulu</td>
<td>U.S.A.</td>
<td>1</td>
</tr>
<tr>
<td>- 9</td>
<td>A N C</td>
<td>Anchorage*</td>
<td>U.S.A.</td>
<td>1</td>
</tr>
<tr>
<td>- 8</td>
<td>Y V R</td>
<td>Vancouver*</td>
<td>Canada</td>
<td>1</td>
</tr>
<tr>
<td>- 8</td>
<td>L A X</td>
<td>Los Angeles*</td>
<td>U.S.A.</td>
<td>1</td>
</tr>
<tr>
<td>- 7</td>
<td>D E N</td>
<td>Denver*</td>
<td>U.S.A.</td>
<td>1</td>
</tr>
<tr>
<td>- 6</td>
<td>C H I</td>
<td>Chicago*</td>
<td>U.S.A.</td>
<td>1</td>
</tr>
<tr>
<td>- 5</td>
<td>N Y C</td>
<td>New York*</td>
<td>U.S.A.</td>
<td>1</td>
</tr>
<tr>
<td>- 5</td>
<td>Y M Q</td>
<td>Montreal*</td>
<td>Canada</td>
<td>1</td>
</tr>
<tr>
<td>- 4</td>
<td>C C S</td>
<td>Caracas</td>
<td>Venezuela</td>
<td>58</td>
</tr>
<tr>
<td>- 3</td>
<td>B U E</td>
<td>Buenos Aires</td>
<td>Argentina</td>
<td>54</td>
</tr>
<tr>
<td>- 3</td>
<td>R I O</td>
<td>Rio de Janeiro*</td>
<td>Brazil</td>
<td>55</td>
</tr>
<tr>
<td>- 1</td>
<td>P D L</td>
<td>Azores Is.*</td>
<td>Portugal</td>
<td>351</td>
</tr>
</tbody>
</table>

* The cities marked with "*" use daylight saving time (summer time).
ILLUMINATING LIGHT (Electroluminescent panel)

- 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.

TURNING ON/OFF OF BUTTON OPERATION CONFIRMATION LIGHT

- Turn on the illuminating light.
  * The display panel is evenly illuminated for 3 seconds.

- 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

MODE CHANGE

● The flashing “SMPT” in the MENU display indicates that the stopwatch is counting.

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.
METRONOME MODE

[METRONOME SETTING]
● The flashing digits move quickly if button C or E is kept pressed.

[METRONOME OPERATION]
● If the illuminating light is turned on while the metronome is in use, the metronome sound stops and then resumes in 3 seconds.

WORLD TIME MODE
● In the enlarged display, “DST” (daylight saving time mark) is not displayed.
● 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

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.
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.

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).