

PULSAR

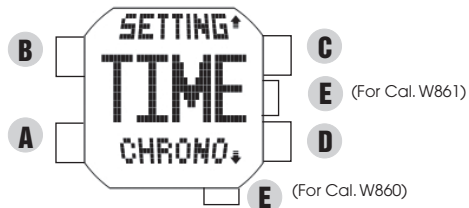
CAL. W860, W861 DIGITAL QUARTZ

- Full-panel dot-matrix liquid crystal panel
- Time/calendar
- Stopwatch with memory recall function
- Countdown timer
- 5-channel regular alarm
- World time
- 30-channel schedule alarm
- Illuminating light (LED panel)
- Changeover between normal and enlarged displays

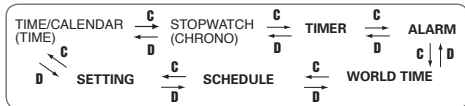
ENGLISH

MODE CHANGE

- Selection of a desired mode can be made by pressing buttons C or D in the MENU display.



- **C** or **D** With each press, the mode in the digital display changes in the following order:

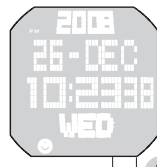


- **A** or **B** Select the desired mode.

When button B is pressed, the opening animation display is shown before the selected mode appears.

- To return to the MENU display, press button A.

ILLUMINATING LIGHT (LED panel)



- **E** Turn on the LED light.

The display panel is evenly illuminated for 3 seconds.

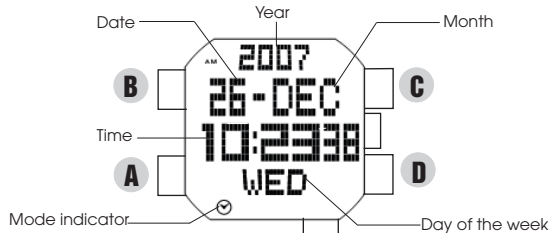
- **E** (For Cal. W861)

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TIME/CALENDAR MODE(TIME)

- Once the time/calendar of your area is set in the TIME/CALENDAR mode, the times of the 39 cities covered in the WORLD TIME mode will be set automatically.

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



TIME/CALENDAR SETTING

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

A Press to select the digits to be adjusted.

Selection of the digits

City ⇒ Second ⇒ Hour ⇒ Minute ⇒ Date
 ↑
 12-/24-hour indication ⇐ Year ⇐ Month

C Set the flashing digits. (Increasing digits)

or

D Set the flashing digits. (Decreasing digits)

B Return to TIME/CALENDAR mode.

CHANGEVER BETWEEN STANDARD TIME AND DAYLIGHT SAVING TIME

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

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

CHANGEVER BETWEEN HOME TIME AND WORLD TIME

- D** Press for 2 seconds to show WORLD TIME mode.

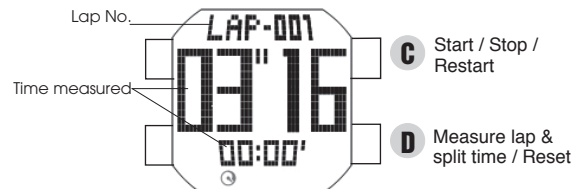
Press button D again to return to TIME/CALENDAR mode.

English

STOPWATCH MODE(CHRONO)

- The stopwatch measures up to 99 hours, 59 minutes and 59.99 seconds in 1/100 second increments.

- A** or **B** Press in MENU display to show STOPWATCH mode.



Lap time and split time measurement



English

MEMORY RECALL FUNCTION

- The first 100 lap and split times are automatically stored in memory.
- The stored data can be recalled either during or after the measurement.



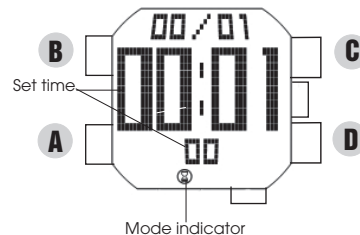
- B** Press to activate the memory recall function.*
- ▼
- C** With each press, stored data are recalled from the oldest to the newest.
- or
- D** With each press, stored data are recalled from the newest to the oldest.
- ▼
- B** Return to STOPWATCH mode.

* 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

- The timer can be set from 10 seconds up to 99 hours, 59 minutes 59 seconds in one-second increments.
- The number of times the countdown is repeated can be set from 1 to 99 times.

A or **B** Press in MENU display to show TIMER mode.

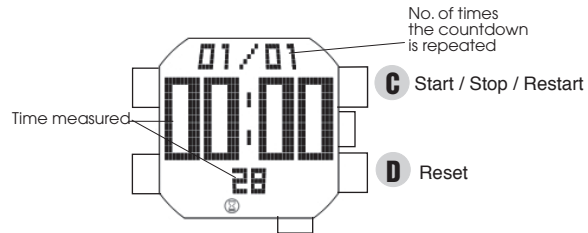


TIMER SETTING

- B** Press for 2 seconds to show TIMER SETTING display.
- ▼
- A** Press to select the digits to be adjusted (hour / minute / second / number of times the countdown is repeated).
- ▼
- C** Set the flashing digits. (Increasing digits)
- or
- D** Set the flashing digits. (Decreasing digits)
- ▼
- B** Return to TIMER mode.

English

TIMER OPERATION



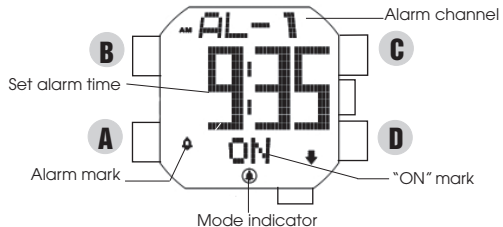
When the set time is up, a warning sound beeps for 5 seconds. To stop it manually, press any of the buttons.

English

ALARM MODE

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

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



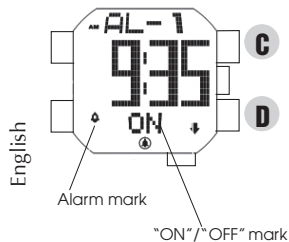
ALARM TIME SETTING

- D** Press to select the desired alarm channel (AL-1 – AL-5).
- B** Press for 2 seconds to show ALARM SETTING display.
- A** Press to select the digits to be adjusted (hour/minute).
- C** Set the flashing digits. (Increasing digits)
- or
- D** 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.



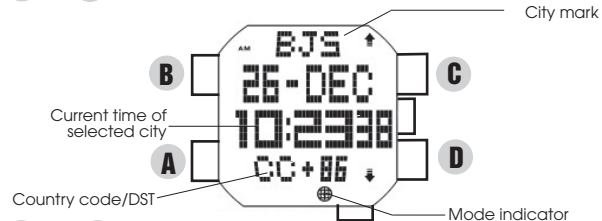
- D** Press to select the desired alarm channel (AL-1 – AL-5).
- C** With each press, the selected alarm is engaged and disengaged alternately.

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

WORLD TIME MODE

- The time of 39 cities in different time zones throughout the world can be displayed together with their respective country code for overseas telephone call.

- A** or **B** Press in MENU display to show WORLD TIME mode.



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

The country code ("CC") and daylight saving time marks ("DST") are alternately displayed in one-second increments.

CHANGEOVER BETWEEN STANDARD TIME AND DAYLIGHT SAVING TIME

B If the daylight saving time is effective in the selected city, press for 2 seconds to show the daylight saving time.

Press button B for 2 seconds to return to the standard time.

TIME DIFFERENCES AND COUNTRY CODES

GMT = Greenwich Mean Time

(As of April 2013)

GMT± (hours)	City mark	City name	Country name	Country code
0	G M T	Greenwich	United Kingdom	44
0	L O N	London*	United Kingdom	44
+ 1	P A R	Paris*	France	33
+ 1	R O M	Rome*	Italy	39
+ 1	B E R	Berlin*	Germany	49
+ 2	A T H	Athens*	Greece	30
+ 2	C A I	Cairo	Egypt	20
+ 2	J R S	Jerusalem*	Israel	972
+ 3	M O W	Moscow**	Russia	7
+ 3	R U H	Riyadh	Saudi Arabia	966
+ 3.5	T H R	Tehran*	Iran	98

GMT± (hours)	City mark	City name	Country name	Country code
+ 4	D X B	Dubai	United Arab Emirates	971
+ 4.5	K B L	Kabul	Afghanistan	93
+ 5	K H I	Karachi	Pakistan	92
+ 5.5	D E L	Delhi	India	91
+ 6	D A C	Dhaka	Bangladesh	880
+ 6.5	R G N	Yangon	Myanmar	95
+ 7	B K K	Bangkok	Thailand	66
+ 8	H K G	Hong Kong	China	852
+ 8	B J S	Beijing	China	86
+ 8	T P E	Taipei	Taiwan	886
+ 9	S E L	Seoul	Republic of Korea	82
+ 9	T Y O	Tokyo	Japan	81
+ 9.5	A D L	Adelaide*	Australia	61
+ 10	S Y D	Sydney*	Australia	61
+ 11	N O U	Noumea	New Caledonia	687
+ 12	W L G	Wellington*	New Zealand	64
- 10	H N L	Honolulu	U.S.A.	1
- 9	A N C	Anchorage*	U.S.A.	1
- 8	Y V R	Vancouver*	Canada	1
- 8	L A X	Los Angeles*	U.S.A.	1
- 7	D E N	Denver*	U.S.A.	1

GMT± (hours)	City mark	City name	Country name	Country code
- 6	C H I	Chicago*	U.S.A.	1
- 5	N Y C	New York*	U.S.A.	1
- 5	Y M Q	Montreal*	Canada	1
- 4	C C S	Caracas	Venezuela	58
- 3	B U E	Buenos Aires	Argentina	54
- 3	R I O	Rio de Janeiro*	Brazil	55
- 1	P D L	Azores Is.*	Azores Islands	351

- The cities marked with "*" use daylight saving time (summer time).
- The cities marked with "***" use daylight saving time all year round.

Notice on change of Moscow time zone

Moscow had previously been in a time zone that was 3 hours ahead of GMT/UTC. However, since 2011, Moscow has shifted to a time zone that is 4 hours ahead of GMT/UTC. When you would like to view the time in Moscow, always set the Moscow time to summer time (DST).

Please note that, in the TIME DIFFERENCE TABLE in this instruction manual, Moscow is displayed as a city represented by a time zone which is 3 hours ahead of GMT/UTC.

SCHEDULE ALARM MODE

- The schedule alarm can be set to ring at 30 different times. Year, month, date, hour, and minute can be set for each schedule.
- A message up to 14 characters can also be set. It is displayed at the same time when the alarm sounds.
- A personalized message can be input or a message can be selected from among 10 preset messages.

A or **B** Press in MENU display to show SCHEDULE ALARM mode.



English

- Hour and minute, date and month, and year can be alternately displayed in one-second increments.
- The schedule mark is displayed if any schedule alarm has been set for the day.

SCHEDULE ALARM SETTING

English

C or **D** Press to select the desired schedule alarm channel (SAL-01 – SAL-30).

B Press for 2 seconds to show SCHEDULE ALARM SETTING display.

C or **D** Press to select the item to be edited (flashing).

[When editing TIME:]

A Press to show TIME SETTING display when TIME is flashing.

20

A Press to select the digits to be adjusted (minute/hour/date/month/year).

C Set the flashing digits. (Increasing digits)
or
D Set the flashing digits. (Decreasing digits)

B Return to SCHEDULE ALARM mode.

[When editing MESSAGE:]

A Press to show MESSAGE SETTING display when MESSAGE is flashing.

C Advance the flashing cursor in order.
or
D Move back the flashing cursor.

English

21

- ↓
A Press to show the characters to input.
 ↓
C Advance the flashing character in order.
 or
D Move back the flashing character.
 ↓
A Set the flashing character.
 ↓
B Return to SCHEDULE ALARM mode.

- Press buttons C and D simultaneously to erase the message when advancing or moving back the flashing cursor.
- If no message is set, "NO MESSAGE" is displayed. In such a case, the schedule alarm is not engaged.

Preset message setting

- For setting a preset message, select the corresponding number to the desired preset message in the table below.

'0	MEETING	'5	LUNCH
'1	BIRTHDAY	'6	APPT
'2	DATE	'7	FLT
'3	MOVIE	'8	GYM
'4	DINNER	'9	PARTY

SETTING MODE

- The setting of the following functions can be adjusted: Opening animation display, time display, eco mode, LCD contrast, LED color, key sound (confirmation sound for button operation), alarm sound, schedule alarm sound, and preset messages.

A or **B** Press in MENU display to show SETTING mode.

D Select the item to be adjusted.

Selection of items

Animation ⇒ Time mode ⇒ Eco ⇒ LCD contrast ⇒ LED color
 ↑ ↓
 Message ⇐ Schedule sound ⇐ Alarm sound ⇐ Key sound

C Adjust the item.

A Return to MENU display.

ADJUSTING EACH ITEM

[ANIMATION]

- The opening animation display can be engaged (ON) or disengaged (OFF).

[TIME MODE]

- The time display can be selected between normal and enlarged displays.

[Ex. : In Time/Calendar mode]

A: Normal display

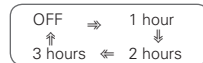


B: Enlarged display



[ECO MODE]

- The watch display automatically shuts down to reduce electricity consumption after no button operation is made for a certain period of time (ECO mode). Time until Eco mode is activated



Eco mode mark

[LCD CONTRAST]

- The contrast on the liquid crystal display can be adjusted in 7 steps from level “-3” to “+3”. 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 “0” at the factory.
- With each press of button C, the contrast level increases and decreases by one, respectively.

-3 → -2 → -1 → 0 → 1 → 2 → 3

[LED COLOR]

- The color of the LED panel can be selected between two colors.
A: Amber
B: Blue

[KEY SOUND (Confirmation sound for button operation)]

- The confirmation sound for button operation can be engaged (ON) or disengaged (OFF).



- When the key sound mark is displayed, the confirmation sound beeps with each press of the buttons.

[ALARM SOUND]

- The alarm sounds can be selected between three types of sounds.

[SCHEDULE ALARM SOUND]

- The schedule alarm sounds can be selected between three types of sounds.

[ADJUSTMENT OF THE PRESET MESSAGES]

- The preset messages can be adjusted. After selecting the message to be edited by pressing button C, press button B for 2 seconds to show the MESSAGE setting mode, and follow the procedure for editing messages in SCHEDULE ALARM SETTING display.

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 2007 to 2099.
- 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 D 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 D is pressed, one minute is added and the seconds are reset to "00".
- The flashing digits except the seconds and 12-/24-hour indication move quickly if button C or D 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.

STOPWATCH MODE

- After 99 hours, 59 minutes and 59.99 seconds have been measured, the stopwatch stops. Press button D to reset the stopwatch.
- 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 D.
- The lap number counts up to "999." After "999", the number is displayed in three digits such as "000" for 1,000, "001" for 1,001, and so on.
- The lap time and split time measured remain displayed for 5 seconds together with the flashing lap and split numbers. 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 using the stopwatch function, be sure to stop the stopwatch to avoid unnecessary battery usage.

[MEMORY RECALL FUNCTION]

- If no measurement is made, “ - - - ” mark will be displayed when button B is pressed to activate the memory recall function.

TIMER MODE**[TIMER SETTING]**

- The flashing digits move quickly if button C or D is remains pressed.
- 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.

ALARM MODE**[ALARM TIME SETTING]**

- The flashing digits move quickly if button C or D is remains 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.

WORLD TIME MODE

- In the enlarged display, month, date and second are not displayed.
- The time differences and use of daylight saving time may change in some areas or countries.

SCHEDULE ALARM MODE

- At the designated time, the schedule is displayed while the alarm rings for 20 seconds. The schedule mark flashes for 1 hour.

ILLUMINATING LIGHT (LED panel)

- The LED (light emitting diode) panel loses its luminance as the battery voltage gets lowered. Also, its luminance level decreases gradually with use.
- The luminance level of LED may decrease if it is left in low temperature.
- If the watch is exposed to low temperatures while the battery is nearing the end of its life, the LED illumination time may become shorter than normal. This shorter LED illumination will allow the watch to maintain timekeeping functionality prior to battery replacement.

BATTERY CHANGE

**2
Years**

Battery life : Approx. 2 years

Battery : CR2025

- *The battery life may be less than 2 years if the alarm is used more than once a day and/or the illuminating light more than 3 times a day when eco mode is activated for 12 hours 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 the battery voltage becomes low, the battery mark starts flashing on the display. In such a case, 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 D at the same time for 2 to 3 seconds. The display will become blank. When the buttons are released, time/calendar display will appear and "2007 1-JAN 12:00'00" MON" will be displayed.

- *Before using the watch, set the time/calendar and 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 "WATER RESISTANT" is not inscribed on the case back, your watch is not water resistant, and care should be taken not to get it wet as water may damage the movement. If the watch becomes wet, we suggest that you have it checked by an AUTHORIZED PULSAR DEALER or SERVICE CENTER.

● Water resistance (3 bar)



If "WATER RESISTANT" is inscribed on the case back, your watch is designed and manufactured to withstand up to 3 bar, such as accidental contact with splashes of water or rain, but it is not designed for swimming or diving.

● Water resistance (5 bar)*



If "WATER RESISTANT 5 BAR" is inscribed on the case back, your watch is designed and manufactured to withstand up to 5 bar and is suitable for swimming, yachting and taking a shower.

● Water resistance (10 bar/15 bar/20 bar)*



If "WATER RESISTANT 10 BAR", "WATER RESISTANT 15 BAR" or "WATER RESISTANT 20 BAR" is inscribed on the case back, your watch is designed and manufactured to withstand up to 10 bar/15 bar/20 bar and is suitable for taking a bath, shallow diving, but not for scuba diving. We recommend that you wear a PULSAR Diver's watch for scuba diving.

- * Before using the water resistance 5, 10, 15 or 20 bar watch in water, be sure the crown is pushed in completely. Do not operate the crown 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 resistance 5 bar watch, or taking a bath with the water resistance 10, 15 or 20 bar watch, be sure to observe the following:
 - Do not operate the crown when the watch is wet.
 - 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.

NOTE:

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.

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.

TEMPERATURES

Operational temperature range: Between -5°C ($+23^{\circ}\text{F}$) and 50°C (122°F)



Display temperature range: Between 0°C ($+32^{\circ}\text{F}$) and 40°C ($+104^{\circ}\text{F}$)



Functional temperature range of alarm and LED light: Between 5°C ($+41^{\circ}\text{F}$) and 50°C ($+122^{\circ}\text{F}$)

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.