Weems & Plath®

INNOVATION ROOTED IN TRADITION

ELECTRONIC MARINE BAROMETER

2 Year Warranty

08/2021

#4003

Weems & Plath®

INSTRUCTION MANUAL

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THE WEEMS & PLATH COMPANY STORY

In May of 1919, eight years before Lindbergh's famous solo flight, three small planes set out from Naval Air Station Rockaway, NY headed for Plymouth, England in an attempt to make the first trans-Atlantic flight. Only one of them made it. Twenty-five hundred feet below on board a station tracking ship, a young navigator, Lt. Cdr. Philip Van Horn Weems, U.S. Navy, gazed up and thought there must be a safer and simpler way than using a small armada of ships as beacons for the flight.

For centuries, man had relied on the heavens, circling planets and the constant horizon to guide him in his travels. An accurate clock, compass, sextant and charts were the necessary tools for plotting a course. But these tools required time for computations and a place to spread out and study the charts which meant celestial navigation was ill suited for the cockpit. Lt. Cdr. Weems, a brilliant, inventive and determined young man knew as he tracked that first flight that modern navigation needed to change, and he went on to revolutionize the field with his ideas, writings and inventions.

The challenge he undertook was complex and involved the invention of new methods and tools. Weems went on to develop a new kind of sextant and the Second Setting Watch with its inner rotating dial. He also produced the famous Weems Plotter, a more precise and easier to use plotting tool, which is still one of our most popular plotters.

Weems continued to improve the instruments and broaden the applications of his methods, including radio astronomy, polar exploration and space navigation. He published numerous articles, taught navigation at the U.S. Naval Academy, and established his own school in Annapolis to teach The Weems System of Navigation. Charles Lindbergh studied with Weems before attempting his trans-Atlantic flight and Admiral Byrd, a classmate of Weems at the Naval Academy, came to Weems for instruction before setting out for the North Pole.

A century earlier, Carl Plath's company in Hamburg, Germany - C. Plath, had been manufacturing the finest commercial sextants and magnetic compasses available, including the first gyrocompass installed on a commercial vessel in 1913. It was a natural development for Weems' company to become the North American source for C. Plath's fine instruments; hence the alliance of two distinguished names - Weems & Plath. The exceptional workmanship that both Philip Van Horn Weems and Carl Plath required in developing the manufacturing of precision navigation tools remains at the heart of all our products.

Weems & Plath is still located in the Chesapeake Bay town of Annapolis where it began over 90 years ago. We are committed to supplying the world with the finest nautical products available while maintaining the high standards of service that have distinguished Weems & Plath from its inception.

GETTING STARTED

Thank you for purchasing the Electronic Marine Barometer #4003. This instrument is designed specifically for the mariner. It is a professional quality air pressure detector that not only shows current pressure on a large display, but also shows historical information on an expanded scale giving the viewer the capability to see pressure changes that have occurred over the last 48 hours in 30 minute increments.

The following pages contain important information to familiarize you with this multi-function device. Please read fully before using your Electronic Marine Barometer.

BOX CONTENTS

- 1 Electronic Barometer (#4003)
- 1 wall mount bracket
- 2 screws (to attach wall bracket to device)
- 4 batteries (AA)
- 1 instruction manual
- 1 12V DC connector

Available Separately:
AC adapter (#4002A)

CARE INSTRUCTIONS

Do not open the barometer to access the electronic circuits inside; this will void the warranty. Do not insert a blade, rod, screwdriver or other object into the air vents; doing so could damage the device and void the warranty.

Handle the batteries carefully:

- Use only premium grade AA batteries.
- Please respect the polarity when inserting batteries.
- Do not place the batteries near a flame or source of heat.
- Batteries may leak when they have been completely discharged. To avoid damaging the device, please replace the batteries before they die. Any battery corrosion will void the warranty.
- When the LCD battery indicator shows a low battery level, replace the batteries. All stored data will be lost if the batteries are fully discharged and the screen is blank. Data will remain while batteries are changed. Keep device away from children.

Keep the Electronic Barometer in a clean and dry location. If the device becomes wet or damp, immediately dry it with a soft dry cloth. To remove salt, sand, dust and dirt, do not use chemical cleaners or detergents. Instead, wipe with a soft, slightly dampened cloth. Do not press on the screen or touch the screen with your fingers or other objects.

Avoid sudden temperature changes. Use and keep your electronic barometer at normal temperatures (between 14˚F and +122˚F). Rapid temperature changes (which can occur when you enter or exit a heated area on a cold day), may result in the creation of condensation inside the device. To avoid this, place the device in a bag before exposing it to such temperature changes.

Damage may occur if dropped. Keep device away from strong magnetic fields. Do not store your Electronic Barometer near equipment which generate magnetic fields, such as radios, televisions, microwave ovens, computers or cell phones as these may affect the display or damage the data stored in the device's memory or the circuits inside.

TECHNICAL SPECIFICATIONS

Air Pressure:
Accuracy: +/- 0.5 mb
Resolution: 0.1 mb
Linearity: +/- 0.2 mb

Temperature:
Accuracy: +/- 0.5˚ to 25˚C - /Resolution : 0.1˚C

Humidity:
Accuracy: 5% - Resolution: 1%

Clock:

Time Display	Hour, Minutes in 12 or 24 hour Mode
Accuracy	+/- 30s per Month
Date Display	Month, Day

Dimensions:
6.5" x 4.06" x 1.18" (165mm x 103mm x 30mm)

Weight:
215g (7.58oz) without batteries
280g (9.88oz) with batteries

Multiple Function Displays Include:
- Audible gale warning alarm
- 2 to 48 hour history display (2, 4, 6, 12, 24, & 48 hour increments)
- Temperature (˚F & ˚C) /Relative % Humidity
- Dual time zones

OPERATING INSTRUCTIONS

Ports:

1. Top - Speaker Out *(non-functioning)*
2. Mini USB - For power only
3. DC 12V 0.3A External Power
4. ON/OFF Switch

POWER METHODS

There are three ways to power the Electronic Barometer:

1. **Mini USB Connection** - for power only
2. **12 Volt DC Connection** - the white striped wire connects to positive (+) port on power supply
3. **Battery Operation** - 4 AA batteries (included); battery life is up to 5 months with standard use

AC adapter is available separately (item #4002A). This adapter converts DC power to AC without using a mini-USB connection.

NOTE: *Frequent use of backlighting function will diminish battery life.*

NOTE: *If connected to USB or 12 volt DC power source, you can leave batteries inside as a backup if the power is distrubted. If the battery power is low, the Low Battery icon will display even if the power supply is plugged in.*

NAVIGATION BUTTON OVERVIEW

M (orange) Button
- **Pressure Alarm** - hold 1 second
- **Alarm Clock** – hold 1 sec
- **Settings** – hold 1 sec
- Exit

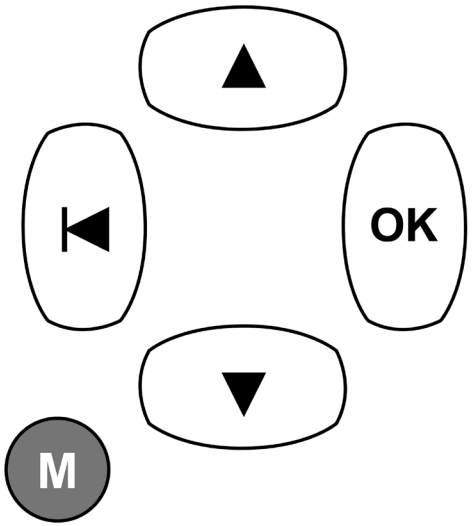
⏮ ("Return")Button
- Allows viewer to review specific data points in pressure chart history
- Return or step backwards

▲ Button
- Allows viewer to increase the time scale on the pressure chart history
- Increase values during initial set up

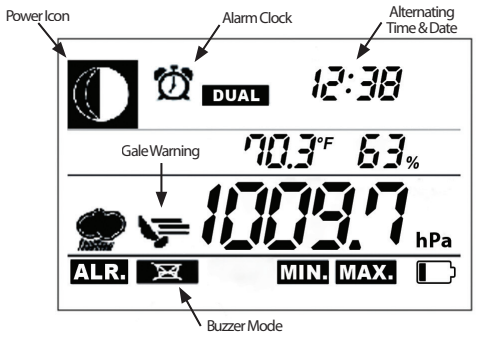
OK Button
- Used to activate the alarm
- Validates set up information

▼ Button
- Allows viewer to decrease the time scale on the pressure chart history
- Decrease values during initial setup

Backlighting – one brief touch of any button



UPPER SCREEN *Upper Screen ICON Descriptions*



POWER – animated phasing moon; pauses for 25 seconds to display the current phase of the moon. When the icon is animated, it indicates the unit is powered on and working.

ALARM CLOCK – displays only if alarm clock function is enabled.

DUAL – displays when the clock is set to monitor two time zones. The icon will appear each time the second time zone is displaying.

TEMPERATURE – shows temperature in ˚F or ˚C as per initial set up.

HYGROMETER – shows relative humidity in percentage.

GALE WARNING – appears when a drop in air pressure of 3 hPa (millibars) or greater over a period of 3 hours or less is detected. An audio alarm will sound when the air pressure drops unless the buzzer is turned off. NOTE: *This alarm is always on. It cannot be switched off.*

AIR PRESSURE – shows air pressure in hPa (millibars) or in Hg as per initial set up.

ALR. – is displayed when the preset target alarm goes off. NOTE: *This is unrelated to the gale warning alarm.*

BUZZER MODE – the X over the top of the speaker icon indicates that the buzzer is switched off. In this case, all alarms are sound-free and will only be indicated by the text in the lower screen.

MIN. – displays when HISTORY function is in use, if a data point is the minimum value during that period.

MAX. – displays when HISTORY function is in use, if a data point is the maximum value during that period.

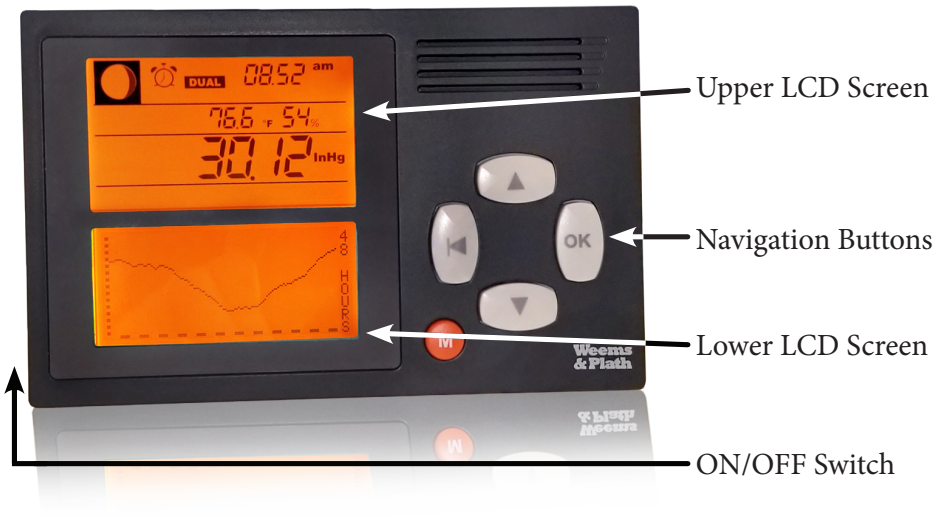
LOW BATTERY – displays only when remaining energy in batteries is low. Batteries should be replaced within a few days to prevent data loss and battery leakage. This icon will show even when the USB or 12 volt power supply is in use.

LOWER SCREEN *Lower Screen Description* *(see image on p. 7)*

A chart (barograph) displays the most recent air pressure in 2, 4, 6, 12, 24 or 48 hour increments. Use the ▲ and ▼ buttons to adjust the chart scale.

After initial set up is complete you can begin to configure various advanced functions with your preferences.

INITIAL SETUP

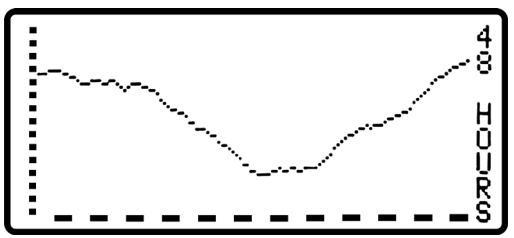


1. Loosen 2 screws on back and remove mounting bracket to expose battery compartment.
2. Remove battery compartment cover and install the 4 provided AA batteries (as indicated in housing cutouts). Replace battery cover.
3. To begin setup, turn on the device using the ON/OFF switch on the lower left side. NOTE: *When the Electronic Barometer is turned off or the batteries are changed, your pressure chart history will remain when it powers back on but you will need to reconfirm the language, year, month and date settings.*

   The setup is carried out by pressing the navigation buttons. ▲ and ▼ are used to increase or decrease the values displayed on the screen.

   Pressing the ⏮ ("Return") button allows you to return to the previous step. The **OK** button validates the information and takes you to the next step.
4. Follow the manual step by step. You may return to a previous step by pressing the ⏮ button. All data must be entered before leaving the setup mode. The lower LCD screen will display the steps that need to be taken.

NOTE: *If no button is pushed within 28 seconds, the display returns to the chart history.*



The lower screen of the Electronic Barometer

CONFIGURING SETTINGS

To access the system settings, press and hold the orange **M** button until the main menu appears on the lower screen. Then use the ▼ button to move the cursor to "settings" and press **OK**.

LANGUAGE:

The Electronic Barometer can be used in the following languages: English, Dutch, French, German, Italian, Scandinavian, Spanish and Swedish.

English is the default language, however to select a different language follow the steps below.

Within the SETTINGS menu, the cursor will be pointing at "language." Press the **OK** button to select. The next screen will show a list all the available languages. Use the ▲ and ▼ buttons to move the cursor to the desired language and press **OK** to select.

TIME & DATE:

Format

Press the ⏮ button to return to the "SETTINGS" menu, then use the ▼ button to move the cursor to "time date" and press **OK** to select. The cursor will now be pointing at "format." Press the **OK** button. Select "12/24 hours" to configure how you would like the time to be displayed and "date format" to configure how you would like the month and date to be displayed.

NOTE: *On the "12/24 HOURS" screen, select "am/pm" if you want the time to be shown in a 12-hour format.*

Time

After configuring the format of the time and date, the screen will return to the "FORMAT" menu. Press the ⏮ button to return to the "TIME DATE" menu. Then use the ▼ button to move the cursor to "time" and press **OK**.

Now set the time by pressing the ▲ button to increase the value or ▼ button to decrease the value for the hour and then minute. Press **OK** each time you have arrived at the correct value. The arrow cursor will automatically move to the next task when you push the **OK** button.

Date & Year

Follow the same procedure as above for the date and year: Press ▲ or ▼ to increase or decrease the value for the month and then day. Then repeat this process to set the correct year.

MEASUREMENT UNITS:

Units of air pressure, altitude and temperature are adjustable. Press the ⏮ button to return to the "SETTINGS" menu and then use the ▼ button to move the cursor to "units." Press **OK** and you will see a screen with the following 3 choices: pressure unit, altitude unit and temperature unit.

Pressure	Altitude	Temperature
Mb	Meter	°C
InHg	Feet	°F

• Pressure Unit:

The cursor should now be pointing at "pressure unit." Press the **OK** button. Now choose the unit of measure for atmospheric pressure. Your choices are: "hpa" (NOTE: *Hectopascal, a metric (SI) measurement unit of pressure. The hectopascal is equivalent to millibar and commonly used to measure atmospheric pressure*) or "InHg"(inches of mercury). Click **OK** once you have made your choice using the ▲ or ▼ buttons.

• Altitude Unit:

The altitude screen offers meters and feet. Use the ▲ and ▼ buttons to select preference. Press **OK**.

• Temperature Unit:

Select °C (Celsius) or °F (Fahrenheit) with the ▲ and ▼ buttons. Press **OK**.

PRESSURE:

The pressure value can be displayed either in 'actual adjusted pressure' or in 'pressure at sea level' (when the altitude is set to 0 meters/feet). You must decide if you want to see the actual pressure at the current elevation of the barometer or the pressure at sea level.

NOTE: *If you choose to show the pressure from an altitude that is above sea level, the sea level pressure will be a higher value by about 1 mb for every 27.4 feet that the barometer is above sea level.*

Altitude & Pressure Adjustment/Calibration:

To adjust the altitude and pressure, return to the "SETTINGS" menu and select "pressure" using the ▼ and **OK** buttons. Then use the ▲ and ▼ buttons to increase or decrease the value for altitude. The default value is "0" but you can set the altitude between 0 and 3995 m/13,100'. Each time you press the ▲ and ▼ buttons the value will change by 1 meter. When the desired value is displayed, press **OK**.

Repeat this process to adjust the pressure shown under "0 adjust" on the "PRESSURE" screen. Each time you press the ▲ or ▼ buttons the pressure value will increase or decrease by 0.1mb to a maximum of +/- 10 mb or by 0.01 InHg to a maximum of +/-0.3 InHg.

The initial setup of your Electronic Barometer is now complete. Press the orange **M** button to return to the chart history screen.

ADVANCED FUNCTIONS CONFIGURATION

M BUTTON:

Pressing and holding the **M** button will take you to other setup parameters displayed on the lower screen:

- **Backlighting**
- **+1 Hour or -1 Hour**
- **Dual**
- **Alarm Clock**
- **Buzzer**

Backlighting – screen backlighting can be adjusted in the "SETTINGS" menu. Press the ▼ button until the cursor points to "Backlight" and press **OK**. Choose one of 4 levels of light intensity. The lower screen will display "BACKLIGHT" and the cursor will point to "Level." Each time you press the ▲ or ▼ buttons the lighting level will increase from 0 to 1 to 2 to 3. The number 0 turns the backlight off. When you've reached the desired level, press **OK**.

Now follow the same procedure for "time out" - the length of time the backlight will stay on when no buttons are pressed.

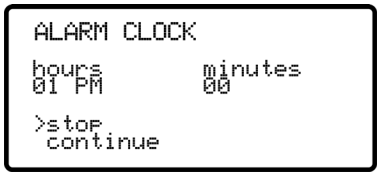
NOTE: *Backlighting requires a great deal of energy and reduces battery life.*

+1 Hour or -1 Hour – by selecting either "+1 HOUR" or "-1 HOUR" within the "TIME DATE" menu, you can manually change to and from Daylight Savings Time or set a second time zone which will show on the upper screen.

+1 hour: adds 1 hour to the displayed time

-1 hour: subtracts 1 hour from the displayed time

Dual – allows you to activate a second time zone by increasing or decreasing the hour according to the time difference. This function is found within the "TIME DATE" menu and the word "Dual" will appear next to the second time zone when it displays on the upper screen (the two times will appear alternately). To stop the Dual function, set the time difference to 0 in the menu.



Alarm Clock – to activate the alarm clock, select "alarm clock" in the main menu using the ▼ and **OK** buttons. The cursor will now point at the "hours" value. Use the ▲ and ▼ buttons to set the hour that you want the alarm to go off. Press **OK** to move to the "minutes" value. The alarm clock icon will now be displayed on the upper screen. The alarm will sound at the time you set. To quiet alarm when it sounds, press the **OK** button. Turn the alarm off by returning to "alarm clock" in the main menu. This time the cursor will be pointing to "stop." Press **OK** to confirm that you want to turn the alarm off. You will notice that the alarm icon on the upper screen is gone. If you decide not to turn the alarm off, select "continue" with the ▼ button and then press **OK** to confirm.

Buzzer – found in the "SETTINGS" menu, "buzzer" allows you to set the volume levels of the alarms and button "beeps." There are 4 settings for each – 0, 1, 2, 3. When "beep vol." is set to 0 the buzzer is turned off and you will not hear "beeps" when the buttons are pressed. The default volume for this setting is 1 – the softest.

Similarly, when "alarm vol." is set to 0 the alarm sound will be turned off (NOTE: *the lower screen will flash to let you know that the alarm is going off*). The default volume for this setting is 3 – the loudest.

PRESSURE ALARM:

With this function you can set alarms for air pressure variations – either rising or falling (0.5 to 10 mb in 0.5 increments) for set periods of time ranging 1 to 6 hours or for a target air pressure value.

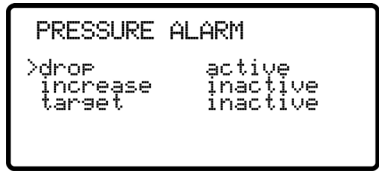
Set Pressure Alarm:

Press the **OK** button for 1 second and press **OK** again to select "pressure alarm." The dialogue box in the lower screen will read:

Drop

Increase

Target



Navigate the cursor by using the ▲, ▼ and **OK** buttons to select which alarm you want to set.

Repeat this process to set the value and duration for that alarm. You can also set a target value of a specific air pressure reading so that the alarm will sound when this value is reached.

When an alarm function is setup, the "PRESSURE ALARM" menu will show "Active" next to that alarm.

NOTE: *The alarm for pressure variations is based on real pressure changes even if the pressure is set to reduced "sea level pressure."*

Alarm OFF:

Navigate to the "PRESSURE ALARM" menu and select the alarm you want to turn off. The previously recorded data will appear in the dialogue box and the cursor will be next to "stop." Press **OK**. When an alarm function is turned off, the "PRESSURE ALARM" menu will show "Inactive" for that alarm. Press the **OK** button to return to the chart screen.

Modify Alarm:

To modify an alarm, you must first deactivate the alarm and then reset it.

Silence Alarm:

When the alarm sounds, a message is displayed in the dialogue box showing the current alarm setting. The buzzer will go off for 3 seconds and then stop; but the message will continue to display. Press **OK** to silence the alarm.

ZOOM FUNCTION:

This function allows you to zoom in on the chart history screen to see pressure movement in 2, 4, 6, 12, 24 and 48 hour increments. Adjust the zoom increments by pressing the ▲ and ▼ buttons.

Time Interval	Zoom	MB Scale
1 min	2 hours	8 mb
2 min	4 hours	10 mb
3 min	6 hours	16 mb
6 min	12 hours	20 mb
12 min	24 hours	20 mb
24 min	48 hours	30 mb

HISTORY FUNCTION:

This function allows you to review past barometric pressure readings at any time. Press the ⏮ button to initiate the History function. Then use the ⏮ button to move the vertical line toward the left or the **OK** button to move the vertical line to the right. As the line moves along each point on the graph, the upper screen will display the barometric data for that point.

INSTALLATION

We strongly recommend that you mount the Electronic Barometer to the wall using the included wall mount bracket rather than setting it on a flat surface.

NOTE: *Install batteries before installing device on wall. Be sure to leave a space above the unit to access top mounting bracket screws.*

Snap the wall mount bracket onto the rear of the barometer and reinsert the screws to keep it secure. See image below for proper positioning.

WARRANTY

Your Electronic Marine Barometer is warranted against defects for two years. Any modifications made to the barometer will void the warranty.

Weems & Plath Two (2) Year Warranty

Your Weems & Plath product is warranted against defects in material and workmanship for two (2) years from the date by original purchase. Retain a copy of receipt for proof of purchase. Any defect caused by misuse, accident, tampering or negligence of the user is not covered by this warranty.

Caution: If your product is battery operated, movement damage caused by battery leakage is not covered under warranty. A clock movement continues to pull voltage from the battery until the battery dies. Leaving a dead battery in place causes the battery to leak acid which destroys the movement. For this reason, it is important to replace the battery once a year, even if the battery is not dead at the time of replacement. If the instrument is not in use, remove the battery to reduce the possibility of costly movement damage.

Product Registration

In order to provide the best service possible, please register your product online at www.Weems-Plath.com. Your registration serves as proof of purchase and activates your warranty.

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