

ENDURANCE II



Instruction Manual

Weems & Plath[®]

Manufacturer of Fine Nautical & Weather Instruments

Congratulations! You have purchased an instrument that will provide many years of enjoyment. The Endurance II combines state-of-the-art construction with traditional design in a wide range of products. Guaranteed not to tarnish or scratch, the ultra hard protective coating on your instrument allows it to be maintenance free.

Light, strong and durable, your instrument is weather (water) resistant and features a traditional nautical porthole front opening bezel with easy access for calibration and adjustments.

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Please read these instructions carefully so that you will receive maximum performance from this fine marine instrument.

I. Weems & Plath Limited Lifetime Warranty

Your Weems & Plath instrument is warranted against defects in material and workmanship for as long as you own the instrument. Any defect caused by misuse, accident, tampering or negligence of the user is not covered by this warranty. NOTE: If your instrument is battery operated, movement damage caused by battery leakage is not covered under warranty.

Hardware included:

4 or 5 stainless steel screws

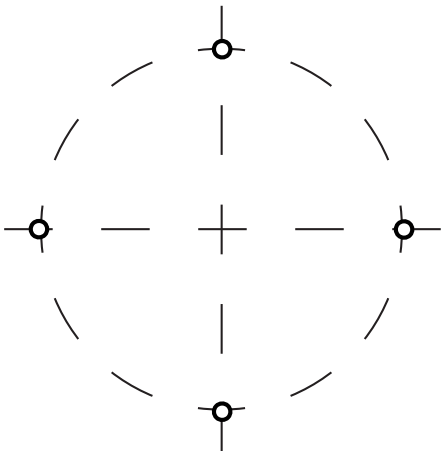


1 AA Battery (if required)

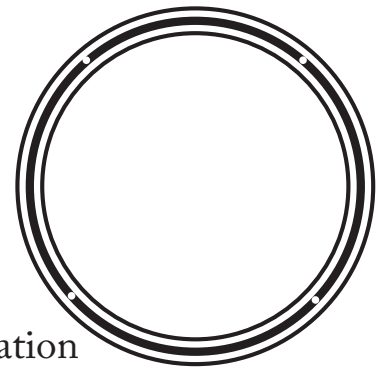


(Endurance II 105 & 115 series includes 4 screws, 135 series includes 5 screws)

1 Paper mounting template



1 Black rubber vibration isolation mounting gasket



II. Installation Instructions

All instruments can be mounted in one of two ways:

- 1) Instruments can be screwed in place on a wall or boat bulkhead using the enclosed screws and mounting template.
 - a. Poke holes in the indicated drill holes on the paper template diagram.
 - b. Place the template on the wall or bulkhead in the place you want to install the instrument. Tape it to wall if helpful.
 - c. Use a bubble level along the horizontal dotted line or hang a plumb line along the vertical dotted line to be sure placement is level.
 - d. Once correctly positioned, mark the wall through the template holes with a pencil or screwdriver.
 - e. Remove the paper from wall and drill pilot holes with a 1/8 inch or 3.5mm drill bit.
 - f. Place the black rubber vibration isolation gasket between the back of the instrument and the boat bulkhead to absorb vibrations. This mounting gasket also ensures that the wall/bulkhead is protected from marks.
 - g. Secure the instrument using a philips head screwdriver and the stainless steel screws provided.

- 2) Instrument can be mounted on a wall using the keyhole slot located on the backside of the instrument. Secure one of the provided screws partially into the wall in desired location. Place keyhole slot over screw to hang. (Not recommended for boat mounting.)



III. Care of Instrument Case

The Endurance finish is an ultra hard protective coating that is maintenance free. It is guaranteed not to tarnish or scratch. Wipe the case with a soft, absorbent cloth periodically to remove dust and marks. Do not use polishing compounds. Use Weems & Plath Sure Shine to remove stubborn marks.

IV. Quartz Clock Instructions

- 1) Turn the fastener of the hinged bezel counter-clockwise to release and open.
- 2) Insert AA alkaline or lithium battery in back of the clock movement. Follow the diagram on battery housing to make certain the battery is not put in backwards. Lithium batteries have longer life and are less prone to leak and perform better than other batteries in hot and cold environments.*
- 3) To set the time, advance hour and minute hands by turning the knob on the back of the movement counter-clockwise. To reverse, turn clockwise. If the clock is left unattended for long periods of time, the battery should be removed. Otherwise, it could stop working, become corroded and leak acid which causes damage to the movement and voids the warranty.*

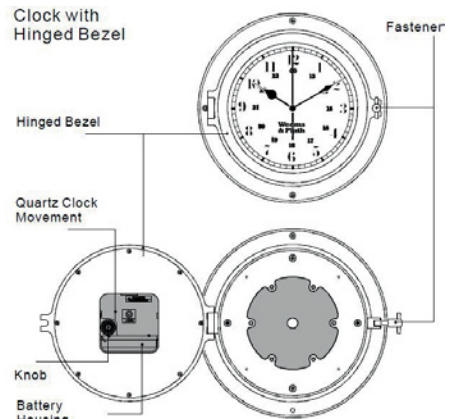
* *Movement damage caused by battery leakage will void the warranty.*

Technical specifications:

Operating temperature range: -10 degrees and 60 degrees celsius, 14 to 140 degrees F.

Operating Voltage: 1.3v - 1.7v

Accuracy: +/- 30 sec/month(1.5 vDC. 25 degrees C)



Quartz Clock Troubleshooting

Clock has stopped or will not keep proper time:

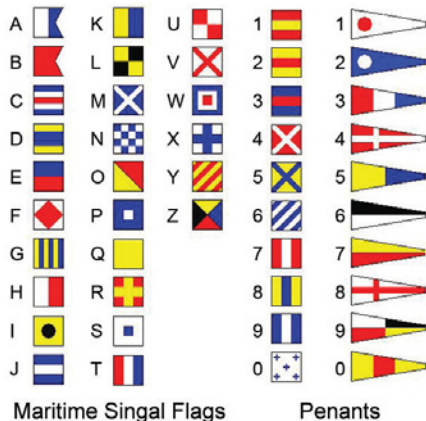
- A. Install fresh alkaline or lithium battery.
- B. Inspect battery contact points, remove corrosion if present.

Signal Flag Dial Clock

Signal flag meanings can differ depending on usage. For example, in sailboat racing the letter P(Papa) flag is used as the Preparatory flag to indicate an imminent start, but in other instances, the P flag or “the Blue Peter” has one message when a ship is in harbor: “All persons should report on board as the vessel is about to proceed to sea,” and at sea, it may be used by fishing vessels to mean, “My nets have come fast upon an obstruction.”

Strung end to end and hung bow to stern from the rigging, these colorful flags are used to dress the ship for ceremonial and festive occasions.

The following flags are international signals used by ships worldwide:



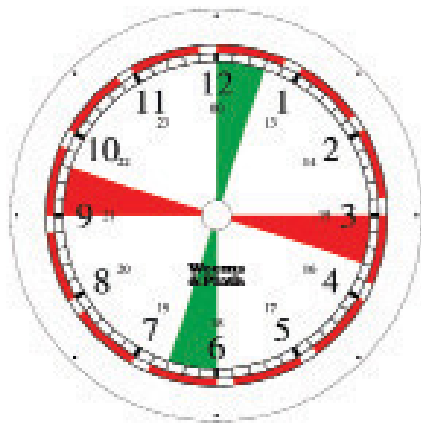
24 Hour/Radio Room Clock - A Brief History:

We have combined two clocks in one. This innovative clock incorporates the dial of a radio room clock with a 24 hour clock movement.

In most regions of the world, the time of day is customarily given using the 12-hour clock method which counts the hours of the day from 1 to 12 twice daily. These two sequences of twelve hours are differentiated with the use of the suffixes a.m and p.m. These suffixes are abbreviations for the Latin terms, Ante Meridian and Post Meridian, meaning before midday and after midday. For clarity, to distinguish the time at 12 a.m. or p.m., it is suggested to specify 12 noon or 12 midnight instead. Even this designation can be confusing for legal contracts and time schedules. To resolve the confusion sometimes caused by the 12-hour clock notation, the 24-hour clock is a method of timekeeping in which the day runs from midnight to midnight and is divided into 24 hour increments, indicating the hours from 0 (midnight) to 23. This 24 hour format is sometimes referred to as military time or astronomical time. It has also been called railway time and continental time and is the standard used by the International Organization of Standards (ISO 8601) to avoid misinterpretation of numeric representations between countries with different conventions for writing numeric times. This method of telling time also prevents ambiguity in specific avocations that require accuracy such as aviation, navigation, meteorology, astronomy, computing, logistics and emergency services.

24-hour clock	12-hour clock
00:00	12:00 a.m. (start of day) "12 midnight"
01:00	1:00 a.m.
02:00	2:00 a.m.
03:00	3:00 a.m.
04:00	4:00 a.m.
05:00	5:00 a.m.
06:00	6:00 a.m.
07:00	7:00 a.m.
08:00	8:00 a.m.
09:00	9:00 a.m.
10:00	10:00 a.m.
11:00	11:00 a.m.
12:00	12:00 p.m. 12 noon.
13:00	1:00 p.m.
14:00	2:00 p.m.
15:00	3:00 p.m.
16:00	4:00 p.m.
17:00	5:00 p.m.
18:00	6:00 p.m.
19:00	7:00 p.m.
20:00	8:00 p.m.
21:00	9:00 p.m.
22:00	10:00 p.m.
23:00	11:00 p.m.
24:00	"12 midnight" (end of day)

All radio stations on ships using 2182 kHz used to be required to maintain a strictly enforced three minute silence and listening period twice each hour, starting at h+00, h+30 as shown on the dial in red and green segments. This allowed stations with distress, urgent or safety traffic information an opportunity to be heard even if they were at some distance from other stations operating on reduced battery power or reduced antenna efficiency.



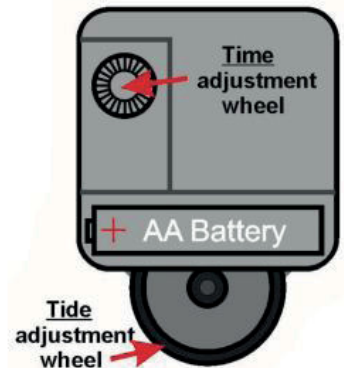
V. Time & Tide Instructions

To Set Time:

- 1) Turn the fastener of the hinged bezel counter-clockwise to release and open.
- 2) Insert AA alkaline or lithium battery in back of movement. Follow diagram on battery housing to make certain the battery is not put in backwards. Use only alkaline or lithium batteries as they have longer life and are less prone to leak.*
- 3) To advance hour and minute hands, turn the smaller of the two gear wheels on the back of the movement counter-clockwise. To reverse, turn clockwise.

To Set Tide:

Adjust the tide hand to high or low tide using the larger gear wheel which is located below the battery compartment. To adjust the gear wheel, use the tip of a ball point pen or similar blunt instrument to apply sideways pressure to one of the gear spokes. It is normal for the tide hand to have some “play” to it. This allows for proper rotation of the hand. **Note:** For best results set clock to “High Tide” at your location during a full moon or new moon phase. **PLEASE NOTE:** Tide fluctuations (high and low tide) vary from one place to another. Therefore, the tide hand will indicate high and low tide for a particular location only. Official Tide Tables - available at harbor authorities, or online, etc. - will supply the exact time of high tide. High and low tides of the Atlantic seaboard of America and Europe have a fluctuation rhythm of between 12 and 13 hours. Because of this, the tide indicator will show average values only, which for general requirements will be satisfactory. Other variables such as wind, atmospheric pressure, the relative position of the moon and the elliptical pattern of the sun will affect the tide slightly. These phenomena least affect the tide at the time of the full moon. For this reason, the best times to set your tide clock are at the time of the full moon and to a lesser extent, the new moon. Initially, you may notice some slight variations in the readings. The readings will “average out,” and by the time of the next full moon, your tide clock will accurately depict



the correct time of high and low tides. Because tides on the Pacific and Gulf Coast of Mexico coastlines do not fit into the 12 to 13 hour fluctuation rhythm, this tide clock will not accurately depict tides in these areas.

CAUTION: FOR THE ABOVE REASONS, IF THE EXACT TIME OF TIDE STAGES IS ESSENTIAL FOR NAVIGATION, WE SUGGEST YOU CONSULT A TIDE TABLE FOR YOUR AREA.

If the clock is left unattended for long periods, please remove the battery. Otherwise, it could stop working and leak acid which causes damage to the movement and voids the warranty.*

** Movement damage caused by battery leakage will void the warranty.*

Time & Tide Clock Troubleshooting

Clock has stopped or is not keeping proper time:

- A. Install fresh alkaline or lithium battery.
- B. Inspect battery contact points, remove corrosion if present.

Tide hand is not accurate.

Please read information above. The tide hand must be adjusted periodically due to irregularities in tide fluctuations.

VI. Barometer Instructions

When your barometer left the factory, it was set at standard sea level.

To calibrate your barometer to the atmospheric pressure in your area:

- 1) Find the current atmospheric pressure by checking local television station or weather website such as NOAA.
- 2) On back side of instrument, use standard screwdriver and turn the slot head screw to correct position. Never turn this screw in either direction more than one full rotation as it could cause movement damage. (For Endurance 135 series, turn the fastener on the porthole door of the instrument counter-clockwise to release the hinged bezel and open. Then adjust screw on back of movement as above.) For every 100 feet in altitude, an adjustment of 0.11 inch is required (1,000 ft. = 1.1 inches). The movement used in this barometer is adjustable up to an altitude of 3,500 feet.
- 3) The movable pointer (memory hand) at the center of the glass crystal should be set to the present atmospheric pressure by superimposing it upon the barometer needle. This will allow you to return to the barometer after some time has passed and determine if the atmospheric pressure has risen or fallen. PLEASE NOTE: A barometer is an instrument used to predict a change in weather by measuring variations in atmospheric pressure, or the weight of the air around us. The barometer will normally predict changes in weather 12 to 24 hours in advance. It is not an indicator of present weather conditions. Your barometer is an aneroid or holosteric type which measures atmospheric pressures mechanically without use of liquids.

Your barometer can be mounted indoors or outdoors as the pressure will be the same in either location. At sea level, the normal atmospheric pressure is about 30 inches, very rarely will the needle ever exceed 30.5 or drop below 29.5. Sometimes it is possible for the pressure to change only one or two tenths of one inch over a week. Even a storm may cause only a half inch change. The words Rain, Change, and Fair are on the barometer dial as a traditional graphic decoration, not to be used as a weather predictor.

Barometer Specifications

The barometer measures atmospheric pressure in kPa/inch Hg or hPa/mm Hg

Measurement range: 940-1060Pa

Precision: 990-1030 hPa: +/-3hPa

960-990 hPa/1030-1060 hPa: +/-5hPa

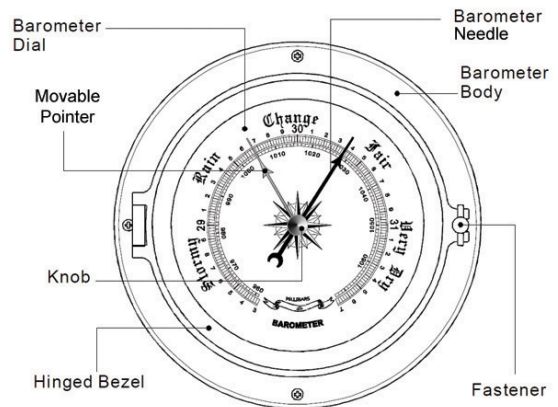
Barometer Troubleshooting

Barometer needle does not move:

A. Often barometric pressure remains steady for extended periods of time. Watch for a few days to see if any changes occur.

B. If no changes occur after one week, then do the following test: Place the barometer in a clear plastic bag. Hold the opening of the bag closed tightly to trap the air inside. Push on the bag to create air pressure which should cause the needle to move.

C. If the needle does not move after trying A & B, call *Customer Service*.



Barometer needle shows incorrect reading:

- A. Tap the barometer glass lightly and review the reading.
- B. Adjust the slot head screw in the back of the movement, turning either left or right to bring the needle to the correct reading. Never turn this screw more than one rotation to avoid damage to the movement.
- C. If A or B do not resolve the problem, call *Customer Service*.

VII. Barometer/Thermometer Instructions

Please see instructions above (VI) to adjust barometer.

Thermometer has been preadjusted and calibrated in a temperature controlled environment at the factory.

VIII. Thermometer Instructions

This bimetal thermometer works on the principle that different metals contract and expand to different degrees when exposed to temperature changes. This thermometer has been preadjusted and calibrated in a temperature controlled environment at the factory.

To Recalibrate:

On the back, in the center of the movement, you will see an adjustment port. Insert a small eyeglass flathead screwdriver into the slot. Hold the unit vertically as you make the adjustment. Gently turn the mechanism until the pointer indicates the correct temperature.

Thermometer Specifications:

Range: -20-50 degrees C/ -4-122 degrees F

Tolerance: +/- -2 degrees C/28.4 degrees F

Thermometer Troubleshooting

Temperature Reading is inaccurate:

- A. Make sure the thermometer is placed in a shady location away from direct sunlight.
- B. If readings continue to be inaccurate, recalibrate as shown above.
- C. If 1 and 2 above do not help, please contact *Customer Service*.

IX. Comfortmeter Instructions

(Thermometer/Hygrometer)

This Comfortmeter is a combination of both temperature and humidity indicators. Calibration and positioning of hands are designed to indicate perfect comfort conditions when both hands cross in a limited area of the dial, the C O M F O R T Zone. Both temperature and humidity indicators are accurately calibrated at the factory and normally require no adjustment.

Hygrometer

The Hygrometer will indicate the relative humidity of the atmosphere. While indoor and outdoor barometric pressure is the same, relative humidity indoors is not always the same as the relative humidity outdoors. Therefore, remember that this instrument when used indoors indicates the humidity of room atmosphere which has no relation to the outdoor humidity readings announced on weather reports.

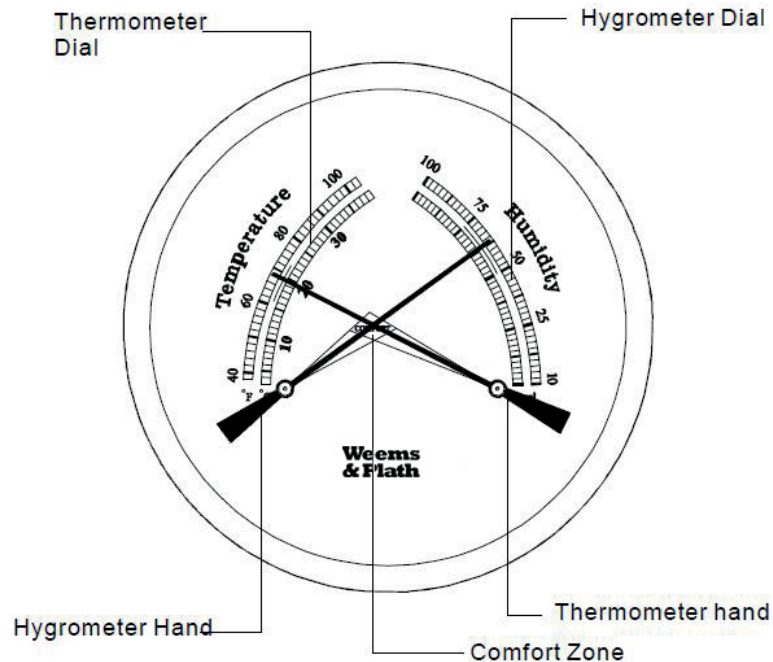
Adjustment of the Hygrometer

Initial adjustment of the hygrometer is not necessary. However, to maintain accuracy, it is recommended that hygrometers be kept in permanently low humidity areas (i.e., central heating/air conditioning, etc.) wrapped in a damp cloth for 24 hours to reactivate “lazy” dried out coils. After the 24 hour period, the scale should read approximately 95%. Repeat this procedure every three to four months for best performance.

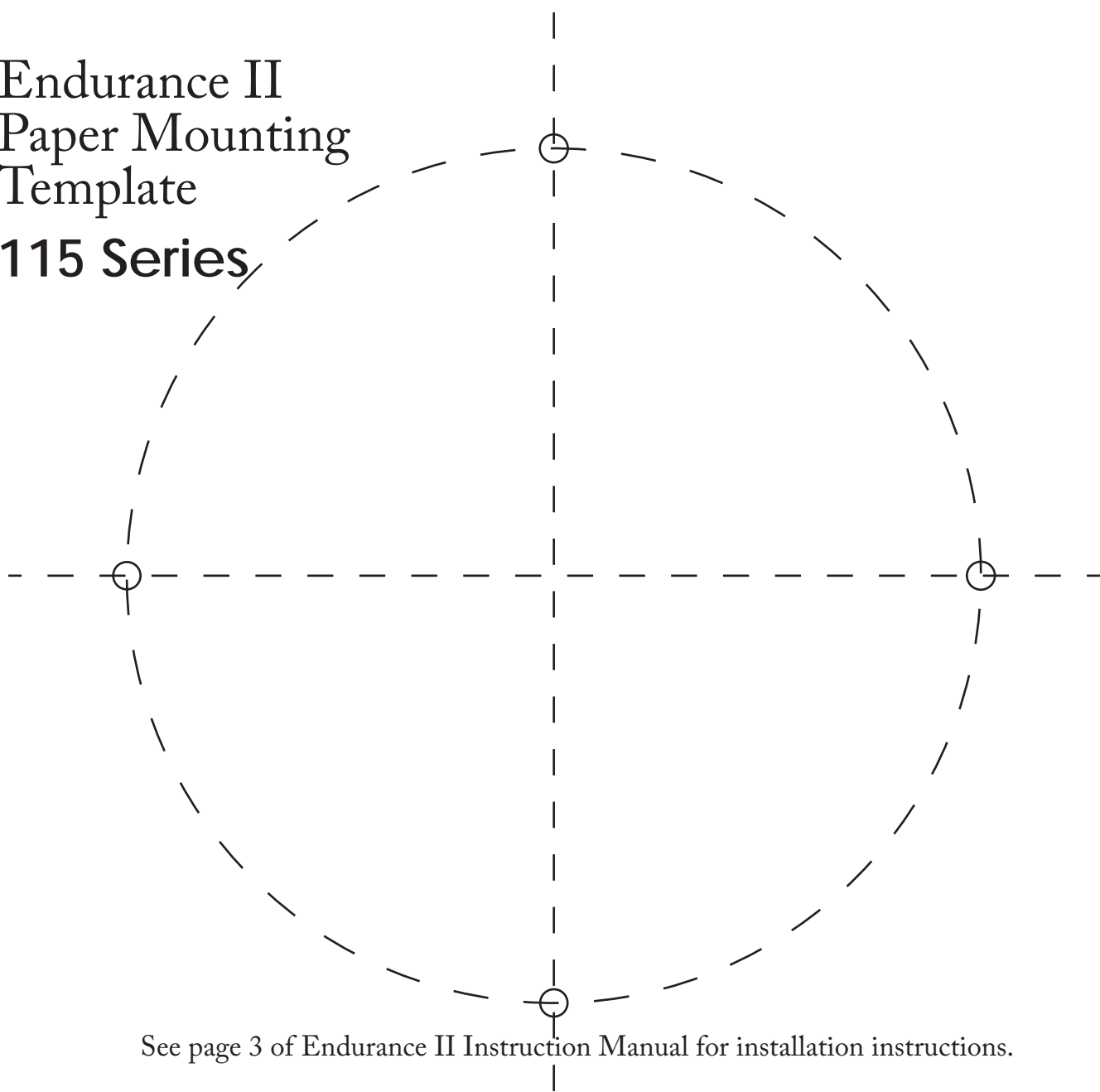
Hygrometer Specifications:

Range: 20-90% RH

Tolerance: +/- 9%



Endurance II Paper Mounting Template **115 Series**



See page 3 of Endurance II Instruction Manual for installation instructions.

Check out the collection of marine gauges we offer.