



# MODEL INT1200W

## INSTALLATION AND OPERATING GUIDE



Never lose your Boarding Ladder again!

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Model INT1200W Manual Revision A042015



## Features

- Wireless Interface Ladder Position Sensor
- Do it yourself installation, easy to set up
- Control Module and Remote Sensor are installed with sturdy, environment resistant 3M VHB tape
- Additional installation protection with a tie wrap for the remote sensor
- User friendly wireless control module to remote pairing
- User selectable location for the console and remote sensor on the step ladder
- Does NOT interfere with other on-board electronics
- Does NOT interrupt or shut the engine off
- Compact water resistant electronics
- Conformal Coated to protect against humidity and moisture harsh environments
- Audio and visual alarms
- Red, Green, Yellow Status lights
- Notification alarm & snooze button acknowledgement
- Set up only once during initial installation or when replacing the remote battery
- Battery operated ladder remote sensor, 3+ months battery life
- Ladder remote "hibernates" when not in use
- 12V ignition powered console module

## Specifications

- RF Frequency 2.4 GHZ
- Humidity and Moisture protected
- Control Module Size 2.6" x 1.8" x 0.6"
- Operational Voltage 12V-15V
- Remote Sensor Size 0.8" x 2.4" x 1.8"
- Remote Sensor rating IP67 (water resistance)
- Operational Voltage 2.4V-3.3V
- Operating Temperature -40C to +85C
- Warranty (1) one year

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Package Contents

- (1) Control Module Model: **INT100S**
- (1) Remote Sensor Model: **INT200R**
- (1) CR2450 3V Battery Panasonic or Duracell

- (1) Remote Sensor Tie Wrap and 3M VHB Tape
  - (1) Remote Sensor Gasket
  - (3) Remote Sensor 18-8 SS Round Head Phillips Machine Screw, 4-40, 3/8"L
- (1) Installation and operating guide



## Caution

- To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended.
- The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- When drilling or cutting, always check what is on the opposite side of the surface to avoid damaging your boat or wires.
- Always wear safety glasses when drilling or cutting.
- Do not open the remote sensor housing while the step ladder is deployed in the water.
- Never attempt to stow a boat ladder while underway.
- **Intended Use:** Intelliboat Wireless Sensors are intended as aid to safety and ladder down reminders on leisure vessels

## Getting Started

### Basic Operations:

1. Install Console
2. Install Remote after installing battery
3. Program in stowed position
4. Program in deployed position
5. Control Module and remote sensor are active when the ignition key is on. The Remote Sensor is dormant when the control module is OFF

Your new Intelliboat wireless ladder sensor operates with your 12V ignition switch to power the control module. The remote sensor uses a 3V CR2450 coin battery. Once the control module and remote sensor have been installed, the remote is wirelessly programmed to the control module. A second step is to program the remote sensor in its ladder stowed position. The remote sensor will remember this position. Each time the ignition key is turned on and the remote sensor senses vibration from movement or other trigger, it will communicate with the control module and provide its location every 8 seconds. When the boat ladder is deployed for over 8 seconds, the control module will sound an alarm and will provide a RED light to indicate fault. The user can acknowledge and SNOOZE the alarm for 60 seconds. The alarm will continue until the step ladder is stowed again. In the event the remote sensor battery is low or the unit stops communicating a YELLOW light will indicate loss of communications.

## Control Module Installation

NOTE: The control module has to be connected to a 12Vdc power source, ignition or switched only not the constant on accessory source. Use a test light or a voltmeter to determine the control module power source is only powered when the key is switched.

1. Determine the best place to install the module, ideally on the helm near gages and your ignition source. You must be able to see the lights and hear the alarm. Ensure the location can be drilled so the power cable can be routed thru to an ignition only power source. Adequate clearance is needed to route the cable. The control module power cable is 20" long.

Example of a control module installation



2. Use an alcohol swab to clean the area before drilling and installing the control module.
3. Use a 1/4" drill bit to drill the pass-thru hole to the center of the module. The module dimension is L 2.6" x W 1.8" so it is recommended to use the center at L 1.30" x W .90". Remove the two 3M VHB adhesive backers from the module and route the cable thru the drilled hole and position the control module centered in the location. Press firmly to adhere the module to its location.
4. Use a test light or a voltmeter to determine the control module power source is only powered when the key is switched.

NOTE: Various boat manufacturers have available an ignition ON or accessory only power cable/fuse/terminals. Please refer to your boat manual for the proper power source (Reference the chart below for standard engine ignition "On 12VDC color code reference). If it is necessary to extend the power and ground cables, use 16AWG wire.

Ignition "On" 12VDC Reference Guide	
Engine / Motor	Wire Color
Yamaha	Yellow
Suzuki / Honda	Black/Yellow
Johnson/ Mercury/ Evinrude	Purple

5. Connect the positive/red (+) wire to the positive voltage terminal of the control module to your identified Ignition "ON" 12vdc source.
6. Connect the negative/black (-) wire to the negative voltage terminal.
7. Verify the control module has power by turning your ignition key to the ON position. The control module will power ON and blink YELLOW.
8. Turn ignition off.

Note: it is NOT recommended the power source to the control module be constant ON or when accessories are on as this will maintain the control module and remote sensor powered and it will shorten the battery life on the remote sensor.

## Remote Sensor Installation

NOTE: The remote sensor is waterproof rated at IP67 but **will not operate properly while completely submerged in water**. This will cause a loss of communication notification in the Control Module.

Example of an installed remote sensor on the top ladder rung. This location doesn't interfere with boarding of the step ladder and when deployed it is mainly above the waterline.

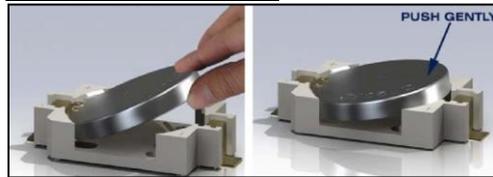


Please note there are **many** types of step ladders and multiple variations of how they are stowed and deployed. Careful consideration to location is important in order to obtain the optimum performance from your remote sensor.

1. Determine the best place to install the remote sensor by placing and holding it in various locations on your step ladder. When the ladder is stowed the remote sensor should not interfere with the mechanism of the ladder, lid or platform. When the ladder is in the deployed position, the remote sensor location should be above the waterline. Reference [www.intelliboat.com](http://www.intelliboat.com) for additional mounting location preferences.
2. Remove the two screws from the remote sensor.
3. Carefully remove the cap, gasket and the electronics assembly from the plastic housing.

NOTE: Pay close attention to the orientation of the cap and gasket assembly to ensure proper re-installation.

4. Insert the supplied CR2450 battery on the assembly as shown below. Insert the battery underneath the two connector pins and push gently. **THIS WILL TURN THE REMOTE ON AND PLACE IT IN BONDING MODE – THIS ACTION WILL BE COMPLETED IN THE OPERATING SECTION**

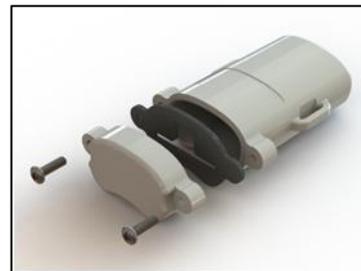


NOTE: The remote sensor will not operate at voltage less than 2.4Vdc. Recommended replacement battery: Panasonic, Duracell

NOTE: Removal and replacement of the battery will be shown in the operating instructions. DONOT attempt to remove unless you've referenced the instructions

5. Re-install the assembly board into the plastic housing.
6. Re-install the custom gasket and ensure it is over the board assembly.
7. Carefully install the cap over the gasket and onto the remote sensor housing.
8. Install the two SS 3/8" supplied screws using a Phillips screwdriver. Torque until snug/tighten. Do NOT over tighten screws or damage may occur to the remote sensor housing.

Observe the board, gasket and cap orientation on the image below





## Caution

NOTE: Ensure the gasket is NOT pinched, or damaged as this will cause water to leak and damage the sensor.

NOTE: When tightening the screws make sure not to over tighten as this can crack the plastic housing

9. Clean the area where the remote sensor will be installed.
10. Remove the 3M VHB adhesive backer and place the remote in the identified location on the step ladder.
11. Install the supplied tie wrap into the plastic wings and secure around the ladder.

Reference the examples of deployed and stowed ladders

NOTE: If your step ladder diameter is larger it might be necessary to use a longer tie wrap.

## Operating Instructions

IMPORTANT: Before proceeding, the Control Module must be installed and have the 12Vdc power verified. The Remote Sensor must be installed on the selected ladder location and the new battery must be installed.

### Initializing the Control Module and Remote Sensor

1. Turn ignition key to "ON".
2. Control Module will power up and provide a YELLOW Blinking light. The module is in BONDING MODE

NOTE: Within 45 seconds this bond to the remote must be completed or you will have to restart the process.

3. Proceed to move the step ladder – this will wake up the remote sensor and place it in BONDING MODE
4. When the remote sensor has awakened the Control Module will "BEEP TWICE" and an alternating YELLOW/GREEN LIGHT will occur for 45 seconds. This means it has found the remote sensor and is ready to acknowledge the STOWED POSITION of the REMOTE SENSOR



5. Press once the "CONTROL/SNOOZE" Button once more and wait a few seconds.
6. The Control Module will BEEP TWICE and the GREEN LIGHT will turn solid indicating the remote sensor position has been learned in its stowed position

Example of a stowed step ladder and the control module notification light GREEN.



7. The Control Module and Remote Sensor have been bonded and the stowed position has been stored in the memory.

### Testing the Control Module and Remote Sensor

1. Test the control module and remote sensor by deploying your step ladder. Within seconds the RED light and ALARM will sound.



2. Press the button once and the alarm will snooze for 60 seconds or until the ladder is re-stowed. If the ladder is not stowed within 60 seconds the alarm will sound again.
3. Re-Stow the step ladder and within seconds the Control Module will BEEP TWICE and the GREEN light will be back on.
4. Turn the ignition KEY to "OFF". Wait a few minutes.
5. Turn the ignition KEY to "ON" and start the engine.
6. The Control Module will SCAN by alternating the RED-YELLOW-GREEN lights and will search for the Remote Sensor.
7. If the Control Module completes a SCAN of 40 seconds and it doesn't find the Remote Sensor, it will BEEP once and the YELLOW loss of communication light will turn on solid. Reference the troubleshooting section.

NOTE: The Remote Sensor should be awake (active) by the vibration or movement of the ladder or the platform where it's mounted. The remote will sleep (hibernate) after 40 seconds when there's no constant movement or vibration or the Control Module is turned OFF. This is the SLEEP MODE.

NOTE: If the alternating YELLOW/GREEN light and BEEP didn't occur you must Re-start the bonding process and make sure the Remote Sensor has been moved so it is awake and ready for bonding.

### Normal Operating of the Control Module and Remote Sensor

Control Module Indications		
Color	Action	Meaning
YELLOW	Continuous blinking	• Searching to bond to a New Remote Sensor
YELLOW GREEN	Continuous alternating flashes	• Remote Sensor found Press CONTROL/SNOOZE
GREEN YELLOW RED	Continuous alternating flashes When Ignition key ON	• SCAN MODE for 40 Seconds waiting for Remote Sensor
GREEN	Solid light	• Ladder stowed • Normal operations
RED	Solid light Alarm will sound	• Ladder deployed • Stow ladder or snooze 60 seconds by pressing CONTROL/SNOOZE button
YELLOW	Solid light	• LOSS of COMMUNICATION • Check the Remote Sensor is in place. • Remote sensor not awake – move ladder • Replace remote sensor battery
Unlit	No lights	• Control module OFF • No POWER

### Troubleshooting

Troubleshooting		
Color	Possible Cause	Action
RED	Solid light Alarm will sound	• Ladder deployed • Stow ladder or snooze 60 seconds by pressing CONTROL/SNOOZE button
YELLOW	Solid light	• LOSS of COMMUNICATION • Check the Remote Sensor is in place. • Remote sensor not awake – move ladder • Replace remote sensor battery • After SCAN MODE and didn't find remote – turn ignition KEY OFF and ON
Unlit	No lights	• Control module OFF • No POWER

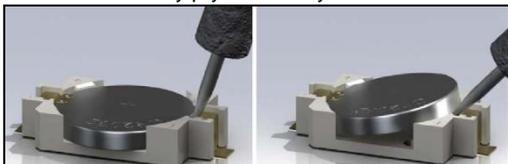
## **Replacing the Remote Sensor Battery**

NOTE: **DO NOT** attempt to remove the battery while the ladder is in the water, this WILL damage the Remote sensor circuit board. Depending on usage, the remote sensor battery should last approx 3-6 months.

1. Before removing any parts, make sure the Control Module is powered off and the area where the remote sensor is located is free of water.
2. Remove the two screws from the remote sensor.
3. Carefully remove the cap, gasket and the electronics assembly from the plastic housing.

NOTE: Pay close attention to the orientation of the cap and gasket assembly to ensure proper re-installation.

4. Remove the CR2450 battery on the assembly as shown below. Insert a SMALL flat head screwdriver in between the battery and the holder and carefully pry the battery out.



5. Follow STEPS 4-8 to reinstall the battery and closing of the assembly as shown in the **Remote Sensor Installation Section**.

**NOTE: When a battery is removed from the remote sensor, it clears the memory so an initialization and new/fresh bond is necessary.**

**NOTE: When a new battery is installed in the Remote Sensor clearing the previous memory from the Control Module is necessary.**

1. Turn ignition key to ON.
2. The Control Module will be on SCAN MODE.
3. Press and HOLD the  "CONTROL/SNOOZE" Button on the Control Module for 5 SECONDS.
4. The Control Module will RESET and the YELLOW LIGHT will blink.
5. Turn the ignition key to OFF.
6. Follow the Initializing the **Control Module and Remote Sensor Instructions**

## ***System Warranty***

**Product Warranty Registration:** Proof of purchase is necessary. It is recommended to register your product within 30 days of purchase. Please go to [www.intelliboat.com](http://www.intelliboat.com)

Intelliboat Wireless Sensors warrants the Control Module and Remote Sensor for a period of one year, to be free from defects in materials and craftsmanship.

The warranty is invalid if the product is (A) damaged (B) modified or altered, (C) improperly installed, (D) used in any conjunction with equipment or parts or as part of any system not manufactured by Raptortek, Inc. This warranty does not cover or provide for the reimbursement or payment of incidental or consequential damages.

In the event this product does not conform to this warranty at any time while this warranty is in effect, Raptortek, Inc will either, at its option, repair or replace the defective unit and return it to you without charge for parts, service, or any other cost (except shipping and handling) in conjunction with the performance of this warranty. Raptortek, Inc, at its option, may replace the unit with a new or refurbished unit.

For warranty claims and further instructions, please call customer service at 1-321-345-6202 to obtain a Return Material Authorization (RMA) Number.