

Columbia Boat Alarms, Inc.

Model 411 Installation Manual



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Forward

Thank you for purchasing our Model 411 Columbia Boat Alarm!

DO NOT BEGIN INSTALLATION UNTIL YOU HAVE READ AND STUDIED THIS MANUAL.

Be sure to read and follow the recommended wiring procedure for the Model 411 alarm. Following these procedures will identify and eliminate most wiring problems as they occur.

The Model 411 wired boat alarm is simple to install and operate. The boat alarm draws its power from the boat's 12vDC battery or from a separate 12 volt battery. The alarm is suitable for use in a marine environment since it is enclosed in a NEMA 4 enclosure. All the wires exiting the control enclosure are marine grade "ANCOR" brand. These wires exit through cable glands to seal out water.

The Model 411 alarm uses an external toggle switch in the power supply which must be on for the alarm to be activated. This switch is used to turn ON or OFF all power to the alarm system. The alarm is started and stopped with a remote control. One minute after starting the alarm is active. The alarm control has two buttons. The lock button starts the alarm and the unlock button stops the alarm. The unlock button will immediately stop the siren. The red LED begins flashing as soon as the alarm is started. **The alarm is not active for one minute** after the alarm is turned on. The flashing LED should be located so it is clearly visible from outside the boat and near an alarm warning label.

The flashing LED has two purposes.

1. It informs the boat owner that the alarm is on.
2. It is a perimeter protection device. It warns an intruder that this boat is protected by an alarm system. The intent is to discourage the intruder before he enters you boat. Let's make him look for an easier boat to burglarize.

THE COLUMBIA BOAT INTRUSION ALARM CANNOT STOP OR PREVENT A BURGLARY. HOWEVER, A PROPERLY INSTALLED SYSTEM WHEN ARMED WILL CAUSE A LOUD SIREN TO SOUND IF ANY OF THE ALARM SENSORS IS TRIPPED. THE INTENT IS TO DISCOURAGE A WOULD BE BURGULAR. AN ADEQUATELY CHARGED BATTERY IS ESSENTIAL TO THE OPERATION OF THE SYSTEM.

COLUMBIA BOAT ALARMS WILL NOT BE RESPONSIBLE FOR THE FAILURE OF THE ALARM IN PREVENTING A BURGLARY OR ANY RESULTING DAMAGE OR LOSS.

INCLUDED PARTS

- Model 411 alarm control
- Two key-fob remote controls
- A flashing LED
- Four alarm control mounting brackets
- A toggle switch
- A siren
- Two alarm warning labels

If a standard package was purchased the following items are also included.

- Forty feet of 20/2 marine cable
- Fifteen feet of 18/2 marine cable
- Eighteen heat shrink wire connectors
- Ten plastic tie wraps
- Three siren mounting screws
- Two canvas snap sensors and magnets
- One hatch sensor and magnet

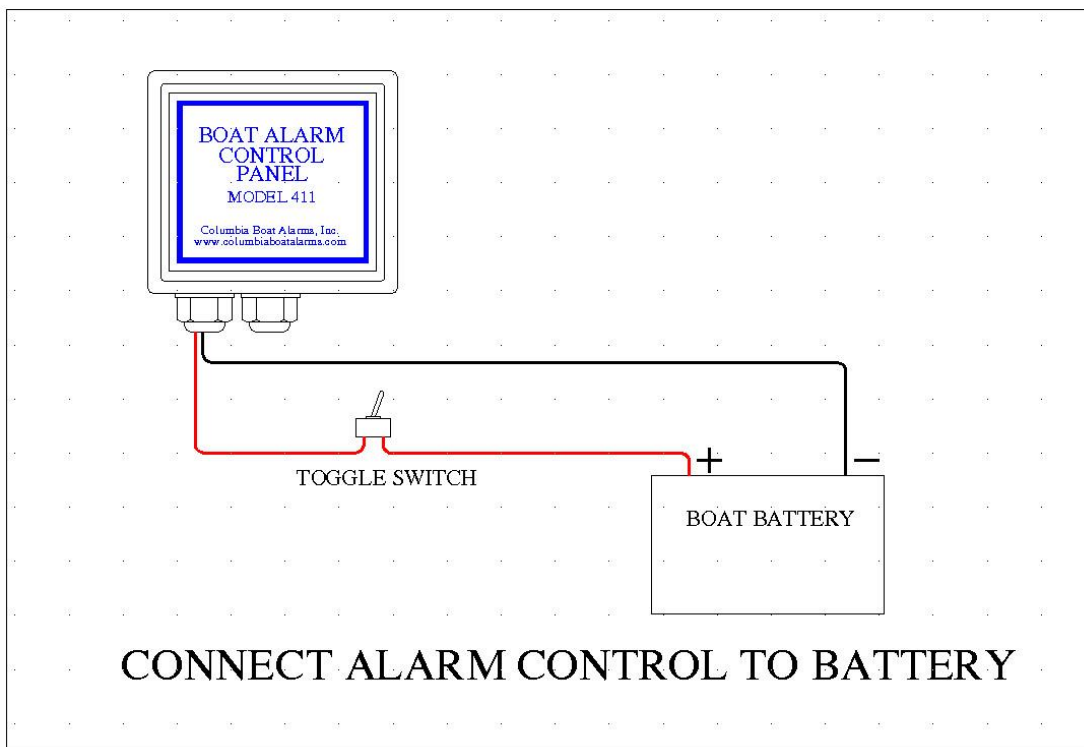
BEGIN WIRING

Recommended Wiring Procedure

The following procedure for the Model 411 Columbia Boat Alarm is suggested because it will reveal wiring problems as they occur during the wiring process.

First mount the alarm control, the siren and the flashing LED on the boat in the locations you have selected. (Note the four mounting brackets and screws for the alarm control.)

Begin by wiring the alarm control to the boat's house battery.

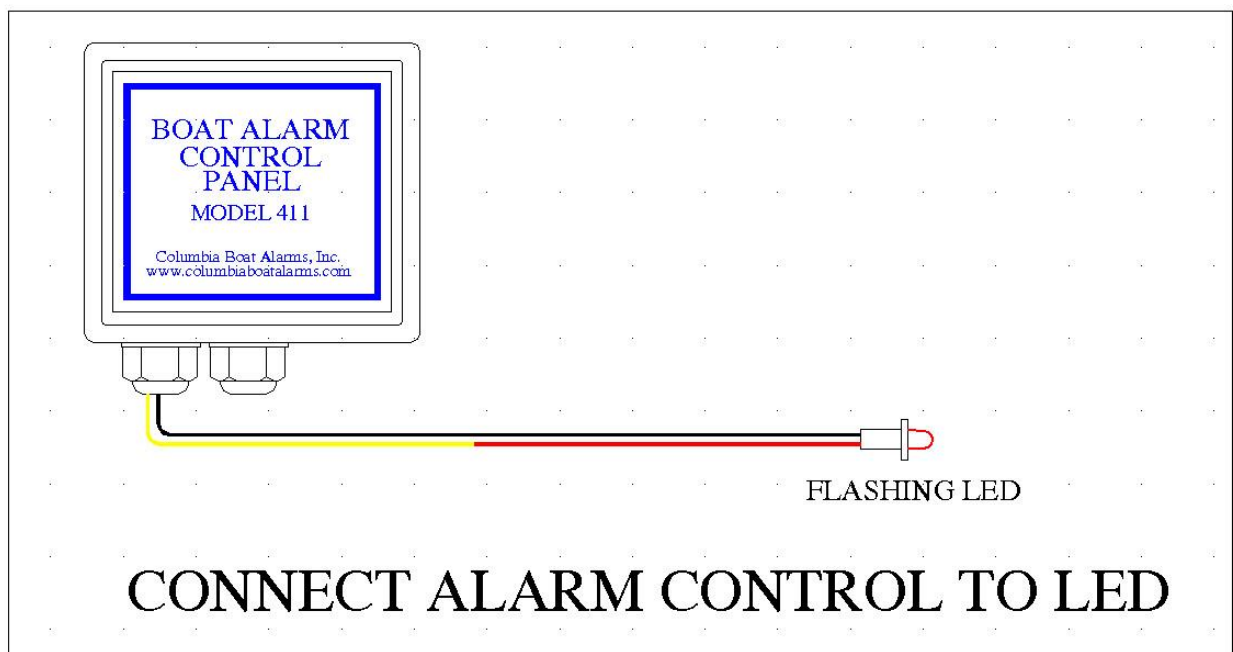


The alarm control is fused at 3 amps. As the wire from the battery to the alarm control is usually short, 18 AWG is sufficient. The red wire on the alarm control is connected to the toggle switch. Continue wire on from the toggle switch to the battery positive. Connect one of the black wires on the alarm control to the battery negative. Any black wire on the alarm control is ok.

Before continuing be certain the power toggle switch is off.

Next connect the alarm control to the flashing LED.

When it can be observed from outside the boat, the flashing LED has two purposes. First, it tells the operator that that boat alarm is on. Second it indicates to a would-be intruder that this boat is protected by an alarm system. We want to discourage an intruder before he attempts to board your boat.



The yellow wire on the alarm control is connected to red wire on the LED. The black wire on the alarm control is connected to the black wire on the LED. Use care to connect the yellow alarm control wire to the red LED wire.

Now test the flashing LED.

1. Move the toggle switch to the ON position.
2. Use the key-fob remote control lock button to start the Model 411 alarm control.

The LED will start flashing.

IF THE LED DOES NOT START FLASHING

1. Is the battery charged?
2. Is the toggle switch on?

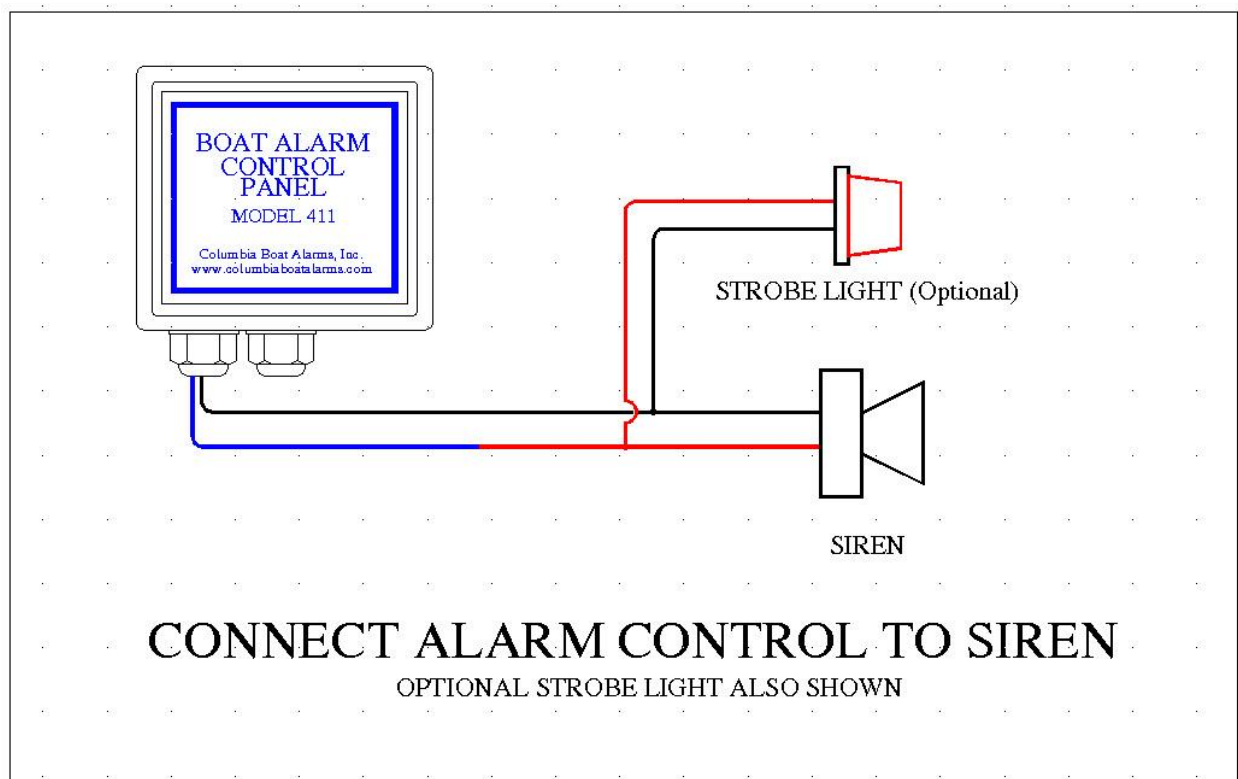
DID THE LED BEGIN FLASHING WHEN THE TOGGLE SWITCH WAS SWITCHED ON? (This is not common.)

1. The alarm control is not set for key-fob remote control. Open the alarm control enclosure and move the slide switch to the other position to enable key-fob remote control.

Next connect the alarm control to the Siren.

Before continuing check to be certain the toggle switch is off.

The following schematic shows an optional strobe light wired in parallel with the siren. The strobe will flash while the siren is sounding.



Connect the blue alarm control wire to red wire on the siren. Then connect the remaining black wire on the alarm control to the black wire on the siren.

(For the optional strobe light connect the red strobe wire to the red siren wire. Then connect the black strobe wire to the black siren wire.)

Siren wiring is complete.

Test the Siren.

Move the toggle switch to the ON position to apply power to the alarm control. Check the Zone 1 white wires and the Zone 2 green wires. If these wires are connected or touching each other separate them. Start the alarm using the key-fob remote control lock button. The flashing LED will begin. Wait for one minute for the alarm to become active. As soon as the alarm becomes active the siren will howl for two minutes. The optional strobe will flash while the siren is on. There is no need to allow the siren to sound for two minutes so use the unlock button on the key-fob to stop the siren.

Model 411 alarm zones.

The Model 411 alarm control has 3 zones, zones 1 and 2 use normally closed sensors. Zone 3 uses normally open sensors, primarily the pressure mat sensor.

1. Zone 1 (The two white wires on the alarm control.) will sound the siren on alert one time for two minutes. Then zone 1 becomes inactive.
2. Zone 2 (The two green wires on the alarm control.) will the first time sound the siren on alert for two minutes. Then it will pause one minute and reset. Zone 2 is again active. Then if a zone 2 sensor is opened the siren will again sound for two minutes. The alarm control will reset and provide protection a third time. After the siren has howled the third time zone 2 will become inactive.
3. Zone 3 (The two purple wires on the alarm control.) is similar to zone 2 except it uses normally open sensors. Then like Zone 2 it will first sound the siren on alert for two minutes. Then the alarm will pause one minute before it resets. Zone 3 will reset two times. After the siren has howled the third time zone 3 will become inactive.

Verify that all three zones are working correctly.

First temporarily connect the two green wires on the alarm control. The white wires and the purple wires are not connected. Then start the alarm with the key-fob. After one minute the siren will howl for two minutes and the alarm will be quiet. This indicates Zone 1 is working correctly.

Disconnect the two green wires and connect the two white wires. The green wires and the purple wires are not connected. Start the alarm. After one minute the siren will howl for two minutes. After the siren quits, allow the alarm to remain on for another minute. The alarm will reset and the siren will sound again. The alarm will reset twice. This is normal operation for Zone 2.

Connect the two purple wires. The two white wires and the two green wires are connected. Start the alarm. After one minute the siren will sound. The siren behavior for Zone three is the same as Zone 2.

The zones are independent. If Zone 1 becomes inactive Zones 2 and 3 are still active. The siren can be only be stopped by shutting off the alarm.

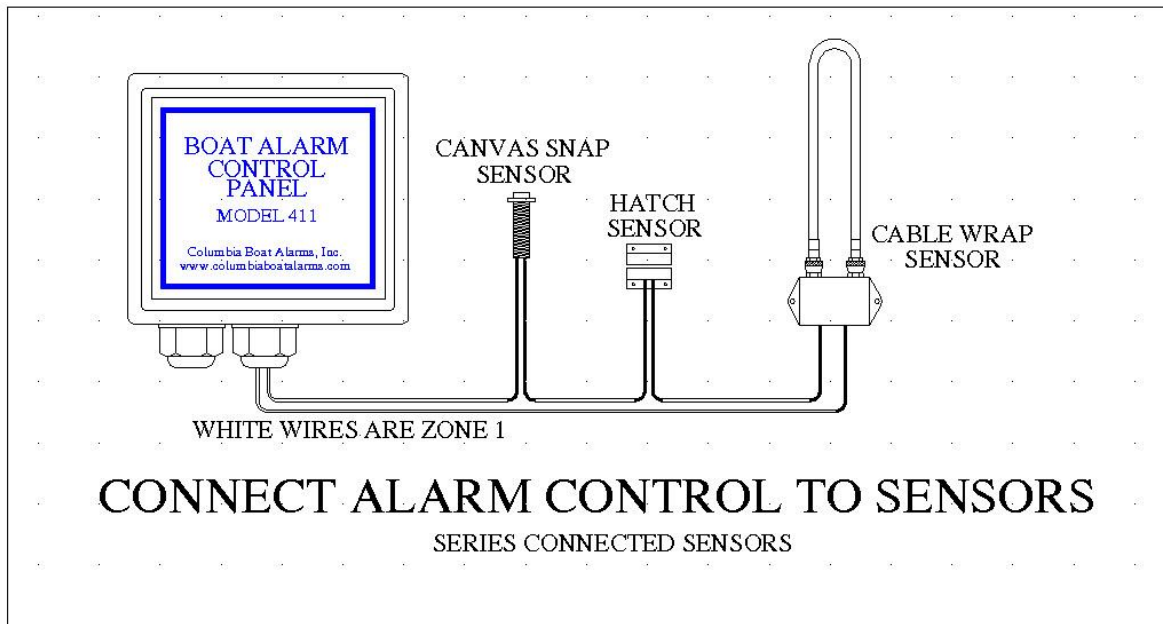
Adding Sensors to Zone 1

An intruder will not re-snap the canvas, reconnect the cable wrap or close the hatch lid when the siren sounds. He will most likely leave the area. If any of the sensors remain open the alarm control will continue to sense an intrusion. Alarm zone 1 will not reset after the siren has been triggered. Zones 2 and 3 are still active.

Connect the following alarm sensors to zone 1.

- Canvas snap sensors
- Cable wrap sensors
- Hatch/door sensors on hatch covers or doors that do not close when released.

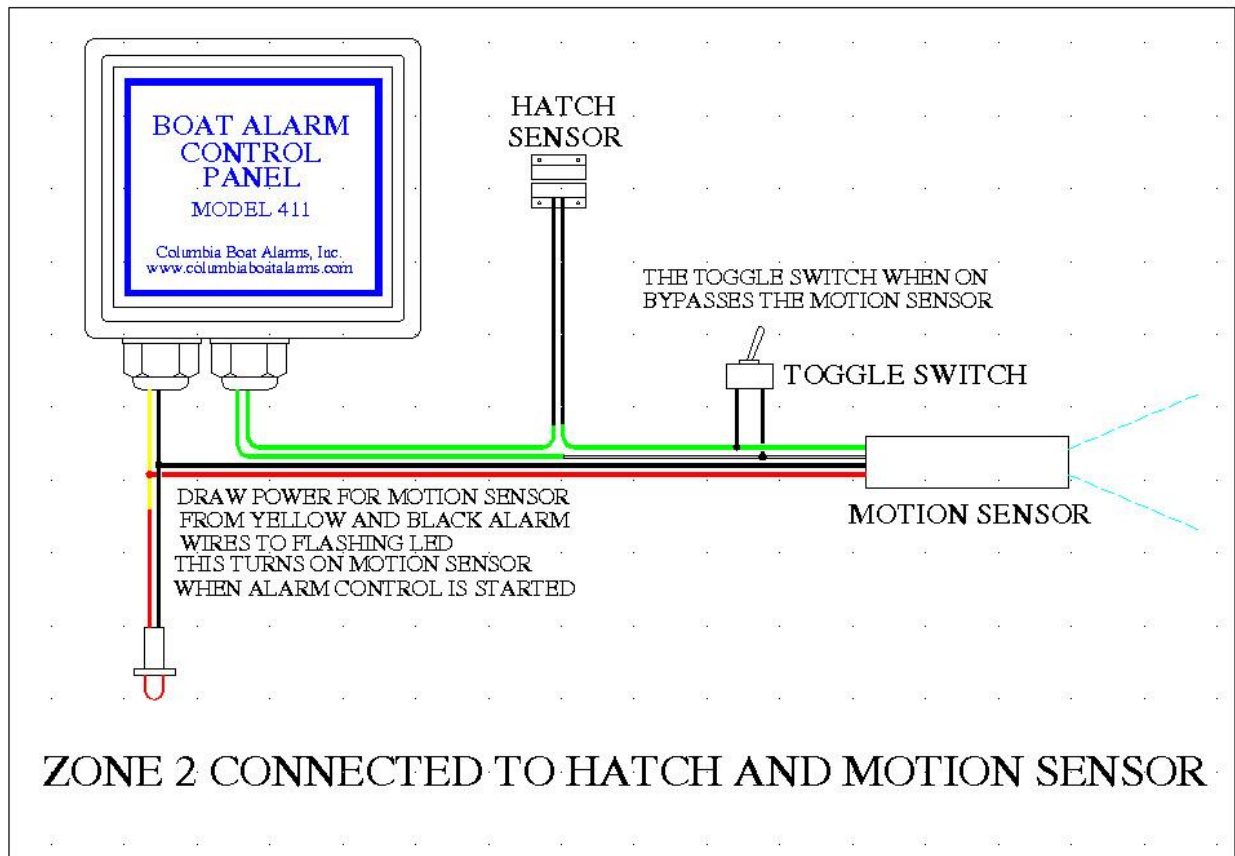
Any number of the above sensors can be wired to zone 1. They can be mixed to suit the protection plan for your boat. Note the following wire diagram.



Adding Sensors to Zone 2

Alarm sensors that are usually connected to Zone 2 are:

- Motion sensors
- Hatch sensors on hatch covers or doors that close themselves.



Note in the diagram above.

1. Power for the motion detector is taken from the yellow and black wires connected to the flashing LED. This supplies power to the motion detector immediately when the alarm is started. The alarm is not active for one minute so this wiring arrangement provides the necessary warmup time.
2. The toggle switch across the output of the motion sensor provides a bypass around the sensor. This can be valuable when

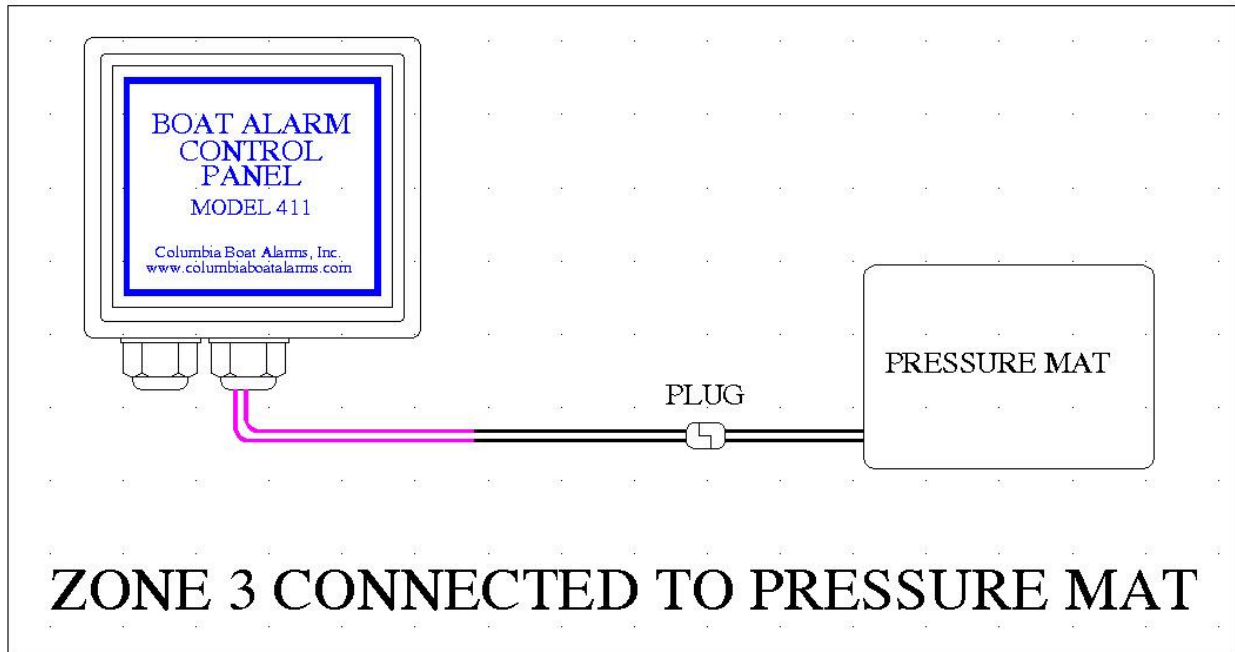
- troubleshooting, especially when more than one motion sensor is connected to zone 2.
3. Note that the power to the motion sensor is wired in parallel to the LED and the output from the motion sensor is wired in series with other sensors.

When Zone 2 senses an alert from one of the sensors it will trigger the siren which will sound for two minutes. Then it pauses for one minute before resetting. Zone 2 will reset twice before it becomes inactive. Zone 3 and Zone 1 will still be active. If Zone 1 has been previously triggered then it is inactive.

To reset all zones simply restart the alarm.

Adding Sensors to Zone 3

Connect a pressure mat sensor to zone 3.



The two purple wires are used to connect the pressure pad to Zone 3. A two wire flat plug is inserted near the pressure mat. This plug provides an easy way to disconnect and stow the pressure mat. Be certain to carefully hide wires to the pressure pad. If these wires are cut the alarm siren will not sound when the pressure mat is stepped upon.

A pressure mat placed under a rug in front of the cabin door that is protected with a hatch/door sensor is a common alarm scheme.

Some Troubleshooting Hints

The siren sounds one minute after the alarm is started.

1. Check the white, green and purple wires on the alarm control.
 - If there are no sensors connected to zone 1, are the white wires connected? If not connect them together.
 - If there are no sensors connected to zone 2, are the green wires connected? If not connect them together.
 - If there are no sensors connected to zone 3, are the purple wires connected? If disconnect and insulate the wire ends.
2. Which zone is triggering the alarm control?
 - Allow the siren to sound for two minutes, wait for another couple minutes. If the siren does not go off the second time the problem is with the zone 1 sensors. If the siren sounds a second time the problem is with the zone 2 or 3 sensors.
3. Have several sensors wired to a zone and the siren will does not sound when a sensor is opened.
 - Check to see if the sensors are parallel wired. Open all the sensors wired to the zone, if the siren then goes off then the sensor wiring is parallel.
4. Sometimes the wind will cause a protected canvas snap sensor to open and cause a false alarm. Consider adding additional canvas snaps to prevent the wind from opening the snaps.
5. If two motion detectors are installed and one is causing false alarms it can be difficult to find which sensor is the problem. A bypass toggle switch around the sensor is a valuable aid.