The
SecuriTrim System

BY
OMNI CONTROL SYSTEMS

OWNERS MANUAL

Designed And Built In The United States Of America
U.S. Patent Number 5,725,402

INTRODUCTION

The SecuriTrim system is a patented wireless control system designed to control the movement of a boat's engine, trim tabs, jack plate, or jet pump diverter. The SecuriTrim system provides a theft prevention feature that can disable the boat's starter and/or ignition system, electrical system, alarm system, or electrically powered engine hatch, by remote control. The SecuriTrim system also provides fingertip control of tilt/trim functions, or jack plate height from the steering wheel of the boat without the inconvenience of wires. The SecuriTrim system allows the boat's engine to be tilted from outside the boat, (from up to 80 feet away, even while the boat is covered) so the position of the engine can be observed while raising and lowering for trailering, launching, and maintenance.

The SecuriTrim system consists of three main components:

- The Electronic Control Module (ECM) - an environmentaly sealed enclosure containing the RF receiver, digital control logic, interface relays, fuses, and wiring harness.
- The Key Chain Transmitter (TR1) - a waterproof 2-button transmitter used to enable/disable the boat, or enable/disable any 12 volt electrical device (up to 20 amps) onboard the boat, and tilt/trim the engine from outside the boat.
- The Steering Wheel Transmitter (TR2) - a waterproof rocker switch transmitter pod that is attached to the spoke of the steering wheel. It provides fingertip wireless control of tilt/trim, or trim tabs, or jackplate, or jet diverter.

If the SecuriTrim system is installed on boats with multiple engines, a diode kit is available to allow all engine trim tilt/trim systems to be coupled together and controlled simultaneously. The ECM contains enough relay contacts to enable/disable the starters for two engines

INSTALLATION

Please read the installation instructions completely and assemble the required tools and test equipment before attempting this installation. This installation is not difficult but if you would feel uncomfortable installing a car stereo or a car alarm system, you might consider having the SecuriTrim system installed by an experienced person. The only tools required are a normal collection of hand tools, a meter or 12 volt test lamp, a drill motor and 1/8 inch bit. Some additional 18 awg and 16 awg wire and lugs/inline splices may be required depending on the size of the boat and the mounting location of the ECM.

(Refer to figure-1 for schematic wiring information)

1. Install the ECM in a dry location under or near the helm using the four (4) number-8 self tapping stainless steel screws and the four (4) washers.

2. Connect the RED wire from the ECM to a non-switched +12 volt source. This can be obtained from the ignition switch as indicated in fig-1 (usually a large red wire) or from the boat's fuse block.

3. Connect the BLACK wire from the ECM to a ground point (usually on the fuse block).

4. Identify the wire connected to the boat's ignition switch that controls the boat's starter. This can be accomplished two ways; with a test lamp or meter (voltage present between the switch's terminal and ground only when the key is moved to "start") or by removing one wire at a time (other than the main 12 volt source wire) and noting when the starter fails to operate. After the wire is identified, remove it from the ignition switch and connect it to one of the GREEN wires from the ECM. Connect the other GREEN wire from the ECM to the ignition switch where the boat's starter wire was removed previously. This step interlocks the boat's starter through the SecuriTrim system and prevents the engine from starting when the system is disabled with the Key Chain Transmitter (TR1).

5. Locate the boat's tilt/trim switch and get access to the wires leading to the switch. Connect the WHITE wire from the ECM to the wire connected to the center post on the boat's tilt/trim switch.

6. Locate the wire connected to the UP side of the boat's tilt/trim switch. To do this, use either a test lamp or a meter and connect between one of the outer terminals of the switch and ground. Operate the switch in the UP and DOWN direction and observe the test device and the engine. The engine should move UP or DOWN as commanded and a reading on the test device will indicate which side of the switch you are operating. If the engine moves but you don't get an indication on the test device, remove the test device lead from ground and connect it to +12 volts instead. Repeat the test and you should get an indication this time. If the wires will disconnect easily from the switch, you can also remove one wire (other than the center wire), operate the switch, and observe which direction the engine will move. The wire that remains connected to the switch controls the engine in the direction that it is moving.

7. After you have located the correct wire leading to the UP side of the boat's tilt/trim switch (step-6), connect the YELLOW wire from the ECM to the wire leading to the UP side of the tilt/trim switch.

8. Referring back to step-6, repeat the test but this time verify that the remaining wire on the boat's tilt/trim switch controls the DOWN movement of the engine. Connect the VIOLET wire from the ECM to the wire that connects to the DOWN side to the tilt/trim switch.

3. If the Steering Wheel mounted transmitter (TR2) is used, mount it to the steering wheel. A drill template is included for precise hole alignment. Mount the TR2 to the wheel using the two (2) number-6 bolts, washers and captive nuts supplied. The drill template is figure-2 The length of the case mounting leg can be custom fit to a specific steering wheel if desired. The plastic is solid and can be milled or sawed to any desired length.

OPERATION

1. Enable the SecuriTrim system by pressing both buttons on the Key Chain Transmitter (TR1) at the same time for 1 second. The Electronic Control Module (ECM) will emit a series of beeps. This indicates the ECM is enabled.

2. To raise or lower the engine, tabs, etc. press the desired button on the TR1. Movement will continue in the selected direction as long as the button is pressed.

3. Start the boat. The ECM will allow the starter to operate (if it was wired through the ECM). If any other devices were wired through the ECM, test them at this time.

4. If the Steering Wheel Transmitter (TR2) is used, test it by pushing the rocker switch in either direction and verify that the corresponding device, trim/tilt, tabs, etc. moves correctly.

5. Disable the ECM by pressing both buttons on the TR1 at the same time for 1 second. The ECM will emit a long beep and the engine, tabs etc. will not move. Subsequent pressing of any button on the TR1 and the rocker switch on the TR2 will cause the ECM to emit a beep. This facilitates checking the range of the transmitters and verifying the ECM is disabled.

6. Try to start the boat. If the starter was wired through the ECM, it will not start. All devices wired through the ECM will be off.

TROUBLESHOOTING

1. **The engine won't tilt using the SecuriTrim system**. Verify that the engine moves with the boat's existing tilt/trim switch. If it doesn't, check all connections to the switch. If it does, recheck the connections of the WHITE, YELLOW, and VIOLET wires between the ECM and the tilt/trim switch. Also make sure the SecuriTrim system in enabled by listening for the series of beeps. Place you ear next to the ECM and operate TR1 and listen for the UP and DOWN relays inside the ECM activating. If these relays click and the engine still won't move, there must be a wiring problem or a blown fuse inside the ECM. Recheck the wiring and refer to the "FUSE" section for fuse identification and information.
2. **The engine moves in the wrong direction when using the SecuriTrim system**. Reverse the connections of the YELLOW and VIOLET wires.
3. **The starter will not operate**. Verify the SecuriTrim system is enabled by listening for the series of beeps. Recheck the GREEN wires from the ECM. One GREEN wire should be connected to the START position on the boat's ignition switch. The other GREEN wire should be connected to the wire that was originally connected to the START position of the ignition switch. Refer to the "FUSE" section for information on the fuse controlling the START interlock.
4. **TR1 or TR2 transmitter range is decreased**. Open the transmitter case with a screwdriver and replaced the battery with a fresh 23A. Retest range. If range is still poor, check that there are no metal objects shielding the receiver.

FUSE INFORMATION

F1	3 amp	Controls input power to the ECM
F2	20 amp	Controls tilt/trim UP
F3	20 amp	Controls tilt/trim DOWN
F4	20 amp	Controls STARTER INTERLOCK-1 (relay normally open contact)
F5	20 amp	Controls ACCESSORY-1 (relay normally open contact)
F6	20 amp	Controls ACCESSORY-2 (relay normally closed contact)

All of these fuses are located inside the ECM and are accessible by removing the front cover of the ECM. If fuse F1 is blown, it probably means there was a major component failure inside the ECM. In this case, contact Omni Control Systems for instructions. If any other fuses are blown, it is most likely due to a wiring error during installation. The 20 amp fuses are more than adequate to handle any load posed by normal operation of the SecuriTrim system and the devices it controls. Recheck all the wiring and then replace the fuse with the EXACT SAME SIZE fuse. If the second fuse blows, there is most definitely a wiring error or a short in the electrical wiring of the boat. Remedy the problem before replacing any more fuses.

PRECAUTIONS

1. Do not install the ECM where it is subjected to continuous water spray.
2. Do not install the ECM in a location that is shielded from radio waves such inside a metal box, onto, or behind a metal panel.
3. ALWAYS replace the fuses with the EXACT SAME AMPERE rating.
4. Do not adjust any components or bend any coils inside the ECM. Doing so will damage the receiver and void the product warranty.
5. Do not adjust any components or bend any coils inside TR1 or TR2. Doing so will damage the transmitter and void the product warranty.
6. Disable the SecuriTrim system using TR1 if the boat is not going to be used for a 12 hours or more. Although the system only requires 115 miliamps (0.1 watts) of current when enabled, this amount (a little less than a depth finder) can, over about 1 weeks time deplete the boat's battery to the point where it might have trouble starting the engine. Once the system is disabled, the current draw is 12 miliamps (about the same as a car alarm) and will not reduce the charge on a good battery within a months time. For long term storage, disconnect the RED wire on the ECM from the +12 volt source or trickle charge the boat's battery monthly.
7. When opening the ECM, make sure not to damage or remove the tacky substance on the lid and case. This substance is a non-drying gasket material that provides sealing.

SPECIFICATIONS

1. transmitter range 50 to 80 feet reliably, up to 100 feet possible depending on terrain
2. security coded with over 1,500,000 unique codes, factory preset
3. maximum input voltage is 15 volts
4. minimum input voltage is 10 volts
5. disabled current 12 miliamps
6. enabled current 110 miliamps
7. maximun current 170 miliamps (enabled, tilt UP or DOWN)
8. maximum constant current capability of relay contacts is 20 amps (fuse protected)
9. battery type for TR1 and TR2 is 23A (12 volts)
10. maximum TR1 and TR2 transmitter current is 1.6 miliamps

THE SECURITY CODE FOR YOUR UNIT IS 0 0 1 1 0 1 1 0 0 1

WARRANTY

The SecuriTrim system is covered by a limited one year warranty for repair or replacement. The SecuriTrim system is warranted to be free or defects in material and workmanship.

Users/Customers of Omni Control Systems agree not to hold Omni Control Systems responsible for any damages incurred by improper installation or use on any Omni Control Systems product(s). Omni Control Systems will not be liable for more than the cost of original product(s) and in no event will Omni Control Systems be liable for special, indirect or consequential damages of any kind.