

# TrimSync Race Edition Installation & Operating Instructions

## Mounting the Device

The unit should be mounted in a dry area away from sources of heat. Mounting the unit near the trim pumps will reduce wiring complications. A paper template is included to assist in drilling the mounting holes.

The unit should be mounted with the wires facing either down or to the side. Mounting the enclosure with the wiring facing up could lead to water intrusion and will void the warranty. Any attempt to open the enclosure will also void the warranty.

## Power & Ground Connections

- Connect the RED wire to a 12 Volt power source that can support at least 10 Amps. TrimSync will automatically power down after being idle for one hour and can be connected to a constant 12 Volt power source. Always use the supplied fuse holder and do not connect the unit directly to the battery. **Remove the inline fuse until step one of the calibration procedure has been performed.**
- Connect the BLACK to the engine block or other suitable source of ground. Do not connect to a green bond wire.

## Trim Connections – (Sterndrives & Outboards with External Trim Pumps)

Each tab/outboard has a separate trim pump that has two solenoids (figure 1), one for UP and one for DOWN. TrimSync will be configured from the factory for either twin tabs/engines or triple engines. It is important to identify the appropriate UP & DOWN solenoids for each drive. TrimSync must be connected to positive (+) side of the solenoid activation terminal. This would be one of the two smaller terminals at the bottom of the solenoid. Use a test light to locate which solenoid terminal has 12 volts when the trim button is pressed and make note of the direction (UP / DOWN) and position (PORT, STARBOARD or MIDDLE) for each solenoid. TrimSync must only be connected to the solenoid terminal that has + 12 Volts when the trim pump is activated and 0 Volts when at rest. Typically, the solenoid will have a blue wire for up and a green wire for down.



Figure 1 – Trim Pump Solenoid

- PORT Trim Pump Solenoid Connections
  - Locate the PORT trim pump UP solenoid and connect the PURPLE from the TrimSync harness to the solenoid activation terminal.



- Locate the PORT trim pump DOWN solenoid and connect the ORANGE from the TrimSync harness to the solenoid activation terminal.
- STARBOARD Trim Pump Solenoid Connections
  - Locate the STARBOARD trim pump UP solenoid and connect the WHITE from the TrimSync harness to the solenoid activation terminal.
  - Locate the STARBOARD trim pump DOWN solenoid and connect the BLUE from the TrimSync harness to the solenoid activation terminal.

## Trim Connections – (Outboards with Integrated Trim Pumps)

Route the trim connection wires from TrimSync to the individual trim buttons at the helm. Depending on where the controller was mounted, extended wiring may be required. Each trim rocker switch will have three wires connected, UP / DOWN & 12 Volts. Leaving the factory wires connected, add the following TrimSync wires to each terminal, keeping in mind that when looking at the backside of the rocker switch the top terminal is DOWN and the lower terminal is UP:

- PORT Trim Switch
  - Purple is UP and should be connected to the lower terminal
  - Orange is DOWN and should be connected to the upper terminal
- STARBOARD Trim Switch
  - White is UP and should be connected to the lower terminal
  - Blue is DOWN and should be connected to the upper terminal

## Trim Sender Wiring

### Boats with Three-Wire Senders

For boats with three-wire trim senders TrimSync is supplied with factory connectors for each drive. TrimSync will be connected in line with the trim sensors and the factory display/indicator (if equipped) functionality will be retained.

#### *Sterndrives*

- Locate the trim wires inside the engine compartment where they pass through the transom assembly.
- Unplug the connector at the end of this wire and plug in the appropriately colored TrimSync wire/connector. The colors below reference the middle wire on each of the wiring harnesses.
  - PORT – Brown
  - STARBOARD – Grey

#### *Outboards*

- Under the engine's cowling near the front on the starboard side locate the trim wire connectors where they plug into the engine's wiring harness. There will be three insulated bullet connectors.
- Unplug each connector and identify the three wires that lead to the engine harness. Only one will have a female bullet connector. Use electrical tape to cover the ends of the black wire that has a male terminal and the wire with the female terminal. These are the power and ground for the trim sender and we will be using TrimSync as the power source.
- For the PORT engine route, the supplied harness with the RED/BROWN/BLACK wires and bullet connectors through the wiring duct, and into the cowling.



- Make the following connections
  - Connect the RED wire with the female bullet to the BLUE wire that leads to the sender.
  - Connect the BLACK wire with the male bullet to the BLACK wire leading to the sender.
  - Connect one BROWN wire to the YELLOW trim sender wire and the other BROWN wire to the engine harness wire that was connected to the yellow wire.
- For the STARBOARD engine route, the supplied harness with the RED/GRAY/BLACK wires and bullet connectors through the wiring duct, and into the cowling.
  - Make the following connections
    - Connect the RED wire with the female bullet to the BLUE wire that leads to the sender.
    - Connect the BLACK wire with the male bullet to the BLACK wire leading to the sender.
    - Connect one GRAY wire to the YELLOW trim s sender wire and the other GRAY wire to the engine harness wire that was connected to the yellow wire.

### *Boats with Two-Wire Senders*

- Locate the trim wires inside the engine compartment, or under the cowling for outboards.
  - Connect the appropriately colored DriveSync wires to the sender. The colors below will indicate port or starboard. It does not matter which sender wire is connected to black, as long as the gray or brown wires are on the correct drive.
  - PORT – Brown & Black
  - STARBOARD – Grey & Black

## Recall Button Wiring

Locate a suitable place in the helm to mount the recall switches (not supplied). TrimSync supports having either one, or two recall presets. For a single recall preset we recommend a SPST normally open momentary push button. For two recall presets you can either use two of the push buttons or one SPDT rocker switch. The recall switches should support at least 1 amp and will require a 12-volt source.

Route the recall switch wires to the TrimSync harness containing the connector for the calibrate button. You will find two black wires in the harness and it doesn't matter which one a particular switch is connected to.

## Calibration

### **WARNING - DO NOT OPERATE THE BOAT UNTIL THE CALIBRATION IS COMPLETE**

**Do not press the BOTH button for the engines / tabs until the following procedure is followed in its entirety. A red LED indicates that there is a fault, or the calibration procedure was not properly performed.**

The calibration process must be followed in the exact order below. In order to record the full range of the senders the engines / drives need to be moved to their full up positions and not moving when the BOTH UP button is pressed. If this is not possible due to interference issues, then they should be moved as far up as possible with care to make them as even as possible. And then temporarily disable the trim pumps before holding the BOTH UP button for the calibration. Please contact us with any questions on methods for disabling the pumps.

### **Sterndrives & Trim Tabs**

1. Move the drives / tabs to their full DOWN position. **Make sure the inline fuse is removed**
2. Following the manufacturers procedure - remove each trim sender and align marks on the housing with the index on the center hex drive.



3. Reinstall the senders but do not tighten the mounting screws.
4. Install the inline fuse for TrimSync. When powered up for the first time the green LED will be flashing to indicate that the unit is connected correctly but has not been calibrated. Please see the troubleshooting section if the green LED is not flashing.
5. To ensure accurate positioning of the tabs connect a digital volt meter to the single gray (starboard) or Brown (port) wire on the capped connector of the trim sender wiring harness. Adjust the trim sender so that the voltage for both tabs is between 0.500 and 0.600 volts. Once completed replace the protective caps on the connectors.
6. With the drives / tabs in their full DOWN position press the BOTH-DOWN button for at least two seconds but not more than five. The green LED will stop flashing for 20 seconds and then begin flashing again to indicate the position was recorded.
7. Move each drive / tab to the full UP position one at a time. Do **not** use the BOTH button but you can move them each a little at a time to keep them from being too far out of alignment and risk binding. Pause at least one second in-between each move.
8. Once both drives / tabs are in the full UP position press the BOTH-UP button for at least two seconds, but not more than five. The LED will change to solid green to indicate the calibration is complete.

## Outboards

1. Move the engines to their full DOWN position. **Make sure the inline fuse is removed**
2. Install the inline fuse for TrimSync. When powered up for the first time the green LED will be flashing to indicate that the unit is connected correctly but has not been calibrated. Please see the troubleshooting section if the green LED is not flashing.
3. With both engines in the full DOWN position press the BOTH-DOWN button for at least two seconds. The LED will change to solid green to indicate the calibration is complete.
4. Move each engine to the full UP position one at a time. Do **not** use the BOTH button but you can move them each a little at a time to keep them from being too far out of alignment and risk binding. Pause at least one second in-between each move.
9. Once both engines are in the full UP position press the BOTH-UP button for at least two seconds, but not more than five. The LED will change to solid green to indicate the calibration is complete.

Once the calibration is complete it will not need to be repeated unless the boat experiences a mechanical or electrical issue that impacts the trim system. In the event of a such a repair (i.e. removing/replacing a trim sender) then the operator can force a calibration by holding the BOTH/ALL UP button for four seconds after the tabs reach their full UP position. The LED will turn from solid green to flashing green and the unit will not attempt any corrections until the calibration process is performed again.

## Recall Calibration (Race Edition)

Once the TrimSync calibration is completed the recall positions can be programmed using the following procedure. The recall presets can be changed at any time without having to re-calibrate TrimSync. Do NOT leave the learn button connected while operating the boat. Remove the switch and re-install the protective cover on the harness.



1. Move the drives/tabs/engines to their desired recall positions. Using the BOTH button to move them to the recall position will ensure they are even.
2. Remove the protective cap from the TrimSync wiring harness and plug in the supplied learn button.
3. Press and hold the recall learn button and the LED will begin flashing..
4. While the green LED is flashing, press the helm mounted recall button that you want for this recall position for at least one second and then release both buttons. The LED will momentarily flash more rapidly to indicate the button was pushed and then you can release both buttons. If the LED stopped flashing before you pressed a recall button, then the preset was not stored.
5. Repeat this process for the second recall position & remove the learn button before operating the boat.

## Operation

Once calibrated and the green LED is illuminated TrimSync will monitor the position of each tab/outboard and determine if a correction is required after the BOTH button is pressed and released. TrimSync will always correct the slowest moving side to match the position of the fastest one. For example, if the operator pressed the BOTH DOWN button and the port side stops lower than the starboard one, TrimSync will lower the starboard side to match it.

- TrimSync will not attempt a correction near the upper or lower limit of its travel.
- If the operator moves a single tab/drive/engine, then no corrections will be made until the next time the BOTH button is pressed.
- In the case of any fault the LED will turn red and TrimSync will stop making any corrections. Manual trim function will continue to operate with no impact.
- Keep in mind that the mechanical indicators are not as accurate as TrimSync, so it is highly likely that the indicators will not be perfectly matched every time you hit the BOTH button. TrimSync does not rely on the mechanical indicators and is more accurate so verify the physical position before assuming there is a fault.
- To activate the recall feature press and release the recall button and the tabs/outboards will move to their pre-programmed position.
- Digital indicators, if installed will most likely need to be re-calibrated after installation of TrimSync. Please follow the manufacturer's directions.

## Troubleshooting

### Sterndrives / Trim Tabs

If the unit will not calibrate then it is likely that the sterndrive/tab trim senders are not properly indexed. Manually indexing the senders will be required using the following procedure:

1. Move the drives / tabs to their full DOWN position
2. For the Port tab/engine, locate the capped off connector that has a single brown wire where TrimSync is connected to the trim sender. If the boat is equipped with SmartCraft then there will be a harness connected instead of the cap. Remove the harness.
3. Install a digital VOM meter with the positive side on the brown wire and the negative to a suitable ground. Set the meter to read 0-5 volts.
4. Remove the trim sender.



5. Supply power to TrimSync. It will not matter if the LED is red.
6. With the grey hex facing you, slowly rotate the trim sender counter-clockwise until you see a voltage reading of 0.5-0.6.
7. Continue turning counter-clockwise until the reading reaches greater than 2.0 volts.
8. If the voltage does not rise steadily between your two readings, then keep rotating the hex until you find another spot that will give you the 0.5-0.6 volts. The sender does not have windings 360 degrees, so we are looking for the section that is wired. The total sweep will be approximately 40 degrees.
9. Once the proper sweep is found move the hex back to the 0.5-0.6-volt position and re-install it.
10. Repeat the above process using the grey wire on the starboard side.
11. With the tabs in their full UP position press and hold the both UP button until the green light begins flashing. The full UP position will be recorded.
12. Move both tabs one at a time to the full DOWN position. Press the BOTH-DOWN button for at least one second. The LED will change to solid green to indicate the calibration is complete.

**All Models / Versions**

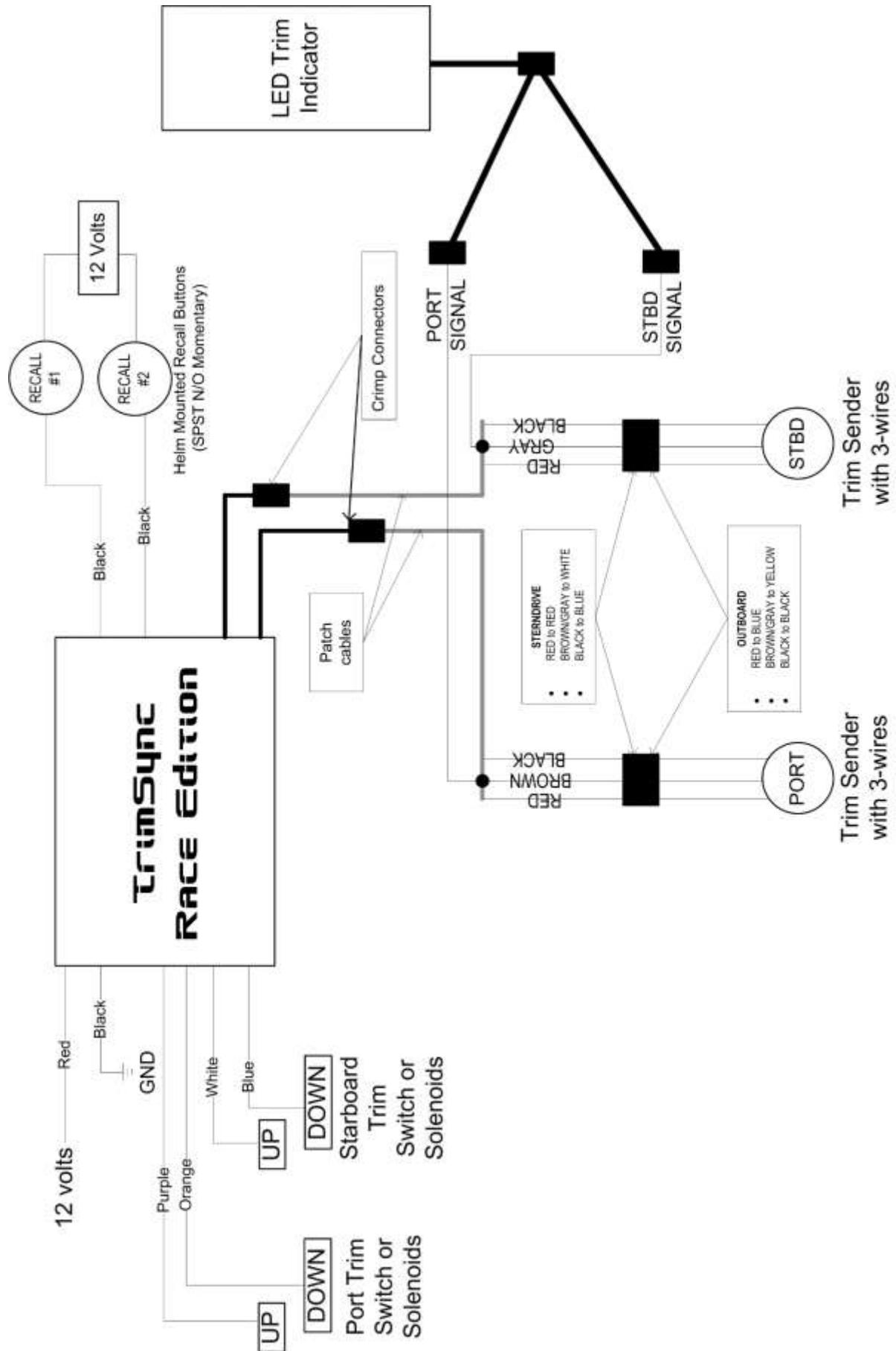
LED Indicator	Operation / Condition
Constant Green	Normal operation
Flashing Green	Calibration required
Constant Red	Drive/tab/engine did not move during a correction. Could be failed trim sender or pump. Power cycle will reset the error.
Flashing Red	Down range exceeded or no signal from both trim senders.

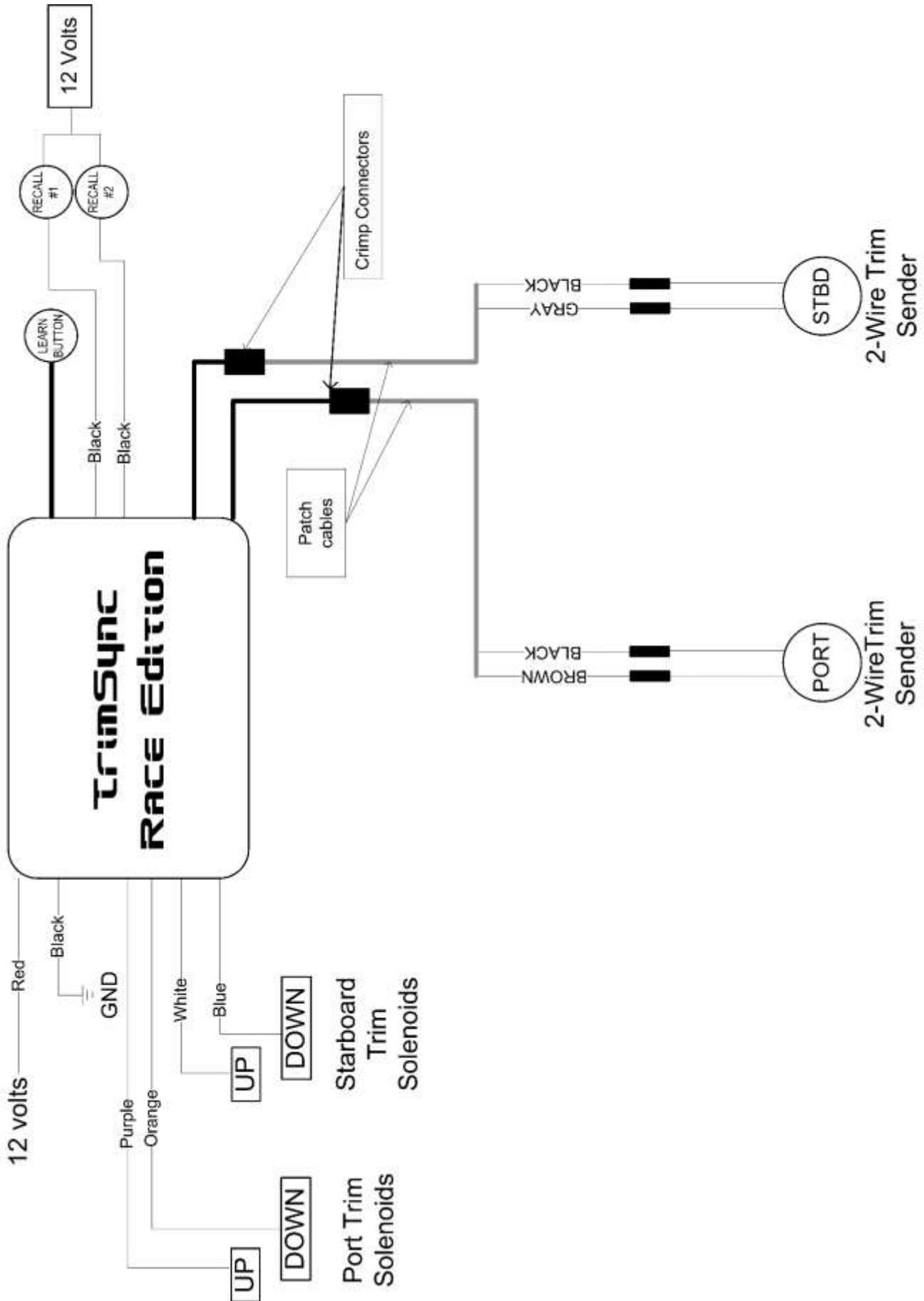


## **Manufacturer Warranty**

THE MANUFACTURER OF THIS PRODUCT HAS PROVIDED YOU, THE END USER AND BUYER WITH A ONE YEAR WARRANTY FOR PRODUCT DEFECTS NOT OTHERWISE CAUSED BY YOU. THIS WARRANTY IS IN LIEU OF ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE NOT EXPRESSLY SET FORTH HEREIN AND IS, IN FACT THE ONLY WARRANTY OFFERED BY THE MANUFACTURER. MANUFACTURER SHALL IN NO WAY BE LIABLE FOR ANY LOSSES, TIME EXPENSES, INCONVENIENCE, OR INCIDENTAL, SPECIAL, PUNITIVE AND/OR CONSEQUENTIAL DAMAGES. THE PARTY'S EXPRESSLY AGREE THAT MANUFACTURER SHALL ONLY BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE PRODUCT TO THE EXTENT IT IS FOUND TO BE DEFECTIVE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS WARRANTY. BUYER WAIVES ANY RIGHT TO CLAIM ANY OTHER LOSSES OR CLAIMS FOR DAMAGES. THIS WARRANTY DOES NOT COVER AND SPECIFICALLY EXCLUDES WATER DAMAGE AND/OR FAULTY INSTALLATION. IN ADDITION, IF THE PRODUCT IS OPENED AND/OR THE SEAL TO THE PRODUCT IS OTHERWISE BROKEN, THE WARRANTY SHALL BE VOID AND OF NO EFFECT.

THE BUYER'S PURCHASE OF THE PRODUCT, AGREEMENT, AND WARRANTY SHALL BE GOVERNED BY AND CONSTRUED UNDER THE LAWS OF THE STATE OF ILLINOIS AND ANY DISPUTES UNDER THIS AGREEMENT SHALL BE LITIGATED EXCLUSIVELY IN FEDERAL OR STATE COURTS LOCATED IN COOK COUNTY, ILLINOIS. THE SELLER SHALL BE ENTITLED TO RECOVER FROM BUYER ITS REASONABLE COSTS AND ATTORNEYS' FEES RELATED TO ANY LAWSUIT OR CLAIM BY AND/OR BETWEEN BUYER AND SELLER.







## Drive Sync Mounting Template

