



Remote Engine Shut-Off

RES12VLAB

INSTALLATION INSTRUCTIONS

WARNING

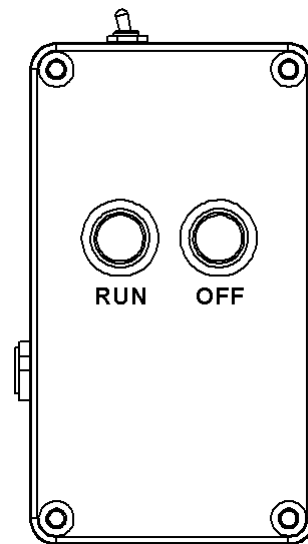
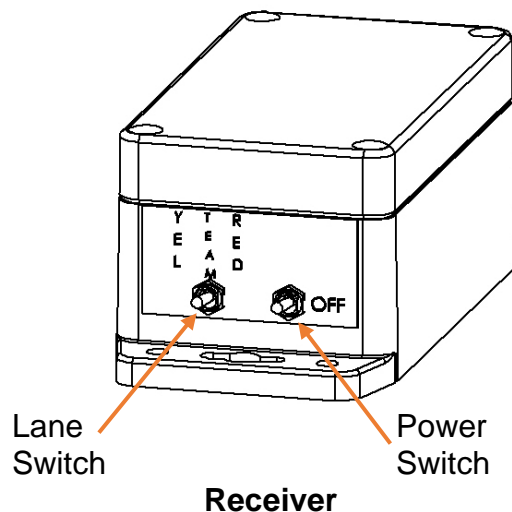
BY INSTALLING OR USING THIS PRODUCT YOU AGREE TO OUR "END USER AGREEMENT". IT IS INCLUDED WITH THESE INSTRUCTIONS AND AVAILABLE ON-LINE AT <http://www.3built.com/documents.asp>

Use of this product could result in injuries and/or property damage due to the sudden loss of engine power. Vehicles may lose stability when engine power is disabled. Control of the vehicle will also be limited after engine is disabled. This product will not stop a vehicle. It will not apply the brakes or any other mechanism to reduce speed. It is designed to disable the engine by shutting off the ignition system. It functions similarly to the vehicle's stock ignition ON/OFF switch. Use extreme caution as to when and where the vehicle is before disabling the engine. Proper judgment must be used when disabling engine power. **Performance and range is not guaranteed.** Radio frequency interference may be common in some areas and can affect this product's range and performance. Use of motor vehicles is an inherently dangerous activity. Wear proper protective gear when operating the vehicle. If any doubt of potential injury, do not use. Once installed, to understand how this product functions, test the device by disabling the vehicle's engine, first at idle and then at low speed. This product's installation and use is at your own risk. This product is intended to be installed and used by adults only.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INCLUDED PARTS

(1) Receiver (1) Transmitter (1) USB Cable (1) USB Charger



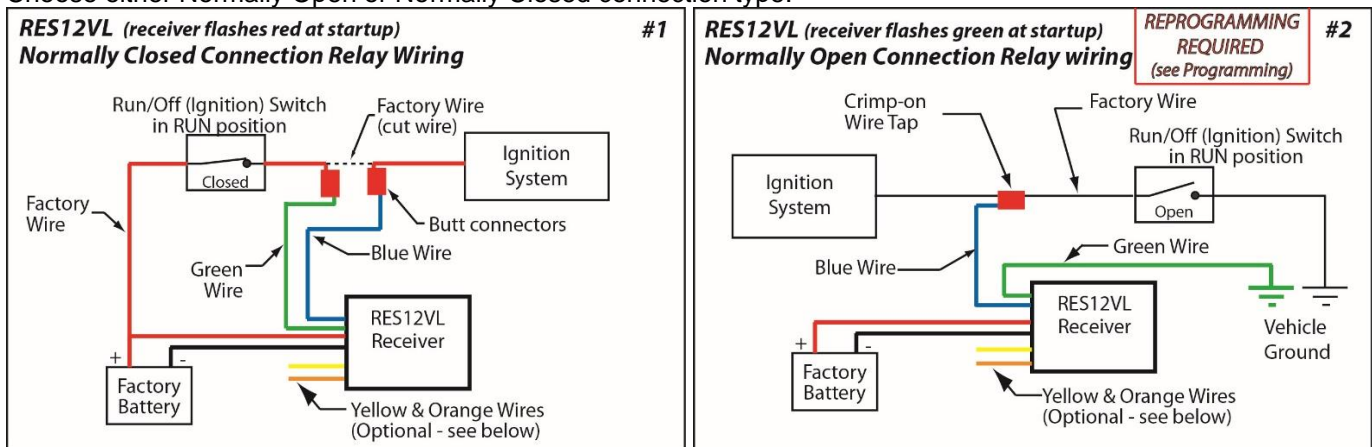
GETTING STARTED

- 1) **All radio transmissions are susceptible to interference from many sources.** Interference can cause reduced range or complete loss of communication between the *Transmitter* and *Receiver*. Resistor spark plugs and suppression type spark plug wires may reduce radio interference.
- 2) Installation of this device requires electrical and electronics knowledge.
- 3) You should have a wiring diagram for your vehicle before installation. This is available from your dealer in the Repair Manual for your vehicle. Some vehicle specific wiring instructions are available on our website at: <http://www.3built.com/pages/support>
- 4) Do not connect any RES wire to the high voltage spark plug wire.
- 5) This device is a remotely activated switch. The switch can be connected as a normally-open or normally-closed switch while the vehicle is in the RUN mode. **The internal relay is limited to switching 8 amperes, maximum.**

- 6) It is important to determine your OEM (original equipment manufacturer) RUN/STOP switch type before installation. Improper installation of this unit can damage your vehicle's electrical system and CDI. If unsure, please consult a professional.
- 7) **DEFINITIONS**
- OEM** - Original Equipment Manufacturer. This is any component that the vehicle originally came equipped with from the factory.
- RES** - 3Built's Remote Engine Shut-off kits
- Normally-open** - means that the switch is open (no connection) when the RES is in the unlocked mode. This connection type is typically used for ground type OEM RUN/STOP switches.
- Normally-closed** - means that the switch is closed (connected) when the RES is in the unlocked mode. This connection type is typically used on positive voltage type OEM Run/Stop switches.

INSTALLATION

- 1) Charge the *Transmitter* by plugging it in to a USB charger (5 volts). The cable is a USB to mini-USB. With the power switch off, you will see a small red or blue light towards the bottom of the *Transmitter* (small window) while charging. The included lithium battery is designed for hundreds of charge cycles. It can be replaced, if necessary, with another lithium-ion 18500 size battery.
Blue LED = fully charged ; Red LED = charging
- 2) Find a suitable place to mount the *Receiver*. Position it so that it will stay dry and will not be damaged in case of an accident.
- 3) Attach the Red Wire on the *Receiver* to 12-24 volts DC power supply. We recommend that you use a fuse if connecting directly to a battery or un-fused power wire. Improperly mounted wires can become damaged and short to the frame causing damage to the vehicle and/or driver. Damage may include high heat and/or fire.
- 4) Attach the Black Wire to ground.
- 5) Choose either Normally Open or Normally Closed connection type.



a) **Normally Closed Connection for Relay (8-amp max.) [diagram #1] (Default state)**

- Typical for MSD 6, MSD 7, and MSD Pro Mag 44

- This is used typically when an ignition system needs to be powered from the battery. It is very important to cut the correct wire for proper operation. Incorrect wiring can damage the CDI or other electrical component. Use caution and consult a professional if unsure.
- Blue Wire** – Identify the power wire from the OEM Run/Stop switch to the CDI. Cut the wire and attach the **Blue Wire** to one end of the cut wire
- Green Wire** – Attach the **Green Wire** to the other end of the previously cut wire. It does not matter which wire is attached to which side of the cut wire.

b) **Normally Open Connection for Relay (8-amp max.) [diagram #1]**

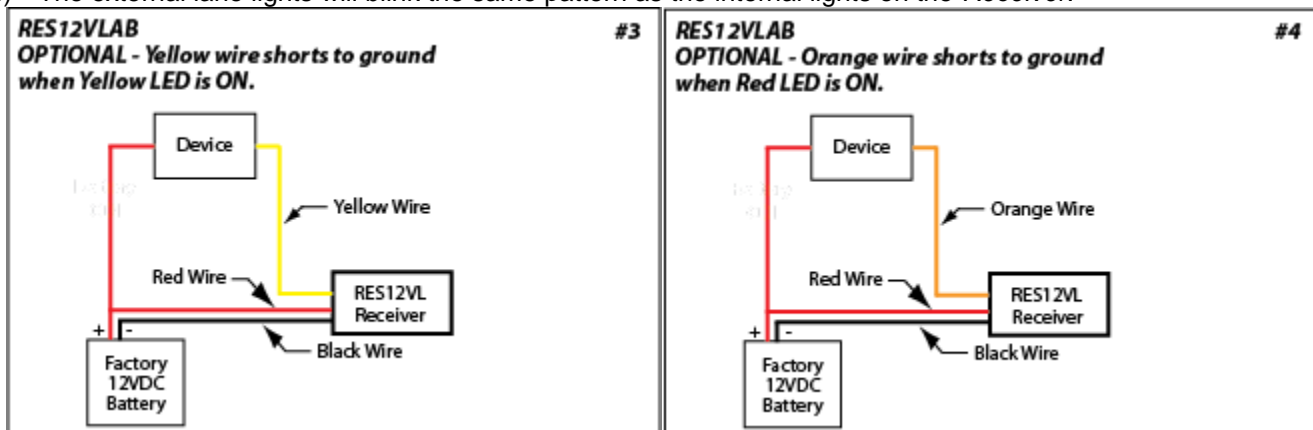
- Typical for MSD Pro Mag 12, MSD Pro Mag 20

*****Must perform "NORMALLY-OPEN MODE" steps in PROGRAMMING section. *****

- This is typically used when an ignition system must be grounded to shut off the vehicle.
- Blue Wire** – The wire will be attached to the vehicle's electrical system. The OEM RUN/STOP switch has two wires. One comes from the CDI and the other goes to the vehicle's ground. Splice the **Blue Wire** between the CDI and the OEM Run/Stop switch. Attaching the **Blue Wire** to an incorrect wire may damage the CDI or other electrical component. Use caution and consult a professional if unsure.
- Green Wire** – Attach the **Green Wire** to the vehicle's ground.

RECEIVER

- 1) Mount the receiver in location that will:
 - a) Minimize shock & vibration to less than 15g. Optional vibration dampers are available.
 - b) Minimize water exposure. The transmitter and receiver are water resistant.
 - c) Minimize metallic objects around the receiver. Metal blocks radio signals.
- 2) Flip the POWER switch on the side of the *Receiver*.
 - a) The Yellow LED will illuminate and the Red or Green LED will blink three time rapidly.
 - i) Red blinks indicate *Receiver* is in Normally Closed operation (default)
 - ii) Green blinks indicate *Receiver* is in Normally Open operation
- 3) **Lane Indicator** - After the startup blinks, the system will settle on one of three colors
 - i) **Blue** – System is in Team mode. Only *Team Transmitters* will activate the *Receiver*.
 - ii) **Yellow** – System is in Left/Yellow lane mode. *Receiver* will respond to *Team Transmitter* and Yellow button on *Master Transmitter*.
 - iii) **Red** – System is in Right/Red lane mode. *Receiver* will respond to *Team Transmitter* and Red button on *Master Transmitter*.
- 4) **Blink Codes for Lights** (regardless of color)
 - a) **Solid light** - indicates *Receiver* is in **RUN** mode.
 - b) **Blinking light, SLOW** – (2 flashes per second) indicates *Receiver* is in **OFF** mode set by Team Transmitter.
 - c) **Double Blinking light** – (2 quick flashes then a pause) indicates *Receiver* is in OFF mode set by Master Transmitter.
 - d) **Blinking light, FAST** – (10 flashes per second) indicates an error between the received command and the relay status. Contact factory for assistance.
 - e) All lights flash for a quick moment – Receiver has received a signal from a Transmitter
- 5) The *Receiver* consumes a small amount of power from the battery. (This is normal for all radio frequency receivers.) We recommend shutting the *Receiver* off with the toggle switch when not in use.
- 6) **OPTIONAL Solid State Switch** – The RES12VLAB has two secondary solid state switches that can be used to activate external lane lights or other devices.
 - a) Left/Yellow lane **[diagram #3]** - When the *Receiver's* Yellow LED is on, the yellow wire is shorted to ground.
 - b) Right/Red lane **[diagram #4]** - When the *Receiver's* Red LED is on, the orange wire is shorted to ground.
 - c) The external lane lights will blink the same pattern as the internal lights on the *Receiver*.



TRANSMITTER

- 1) The transmitter's buttons will be automatically disabled if a button is continuously pressed for more than 7 seconds. Release the button and press button again to reactivate.
- 2) Turn on the *Transmitter* by flipping the toggle switch. It will communicate with the *Receiver* and display a status:
 - a) **Green LED** = *Receiver* in RUN position
 - b) **Red LED** = *Receiver* in OFF position
 - c) **Yellow LED** = *Transmitter* CANNOT CONNECT to the *Receiver*.
 - i) **Either the receiver is turned off** (Check on/off switch on *Receiver* or check the connection and ensure black and red wire are connected to the 12 volt battery)
 - ii) **or the receiver is out of range** (Move closer and press either the Run button or Off button until you receive a solid Green or Red light. Once the light turns from yellow to either solid red or green you are now at the maximum range. Make a note of this distance.).
 - iii) **Blinking** - *Transmitter* is sending command to *Receiver*
- 3) Press & hold the Red button on the *Transmitter* for 1 second. Once the OFF signal has been received by the *Receiver*, the Red LED on the *Transmitter* will illuminate. The engine should now be disabled.

- 4) Press the Green button on the *Transmitter*. Once the RUN signal has been received by the *Receiver*, the Green LED on the *Transmitter* will illuminate. The ignition should now be enabled.
- 5) Test the system again at low speed to understand how the system operates. The Engine will be disabled when the Red button is pressed within range of the vehicle. **The RES12VLAB will not slow down or stop the vehicle. The RES only disables the engine's ignition system.**

PROGRAMMING

- **NORMALLY-OPEN MODE. (Image #2)**

This step must be performed if connecting as normally open.

When the *Receiver* is powered on, the relay is in a closed state (normally-closed) by default. Some ignition systems like the MSD Pro Mag 12 need a normally-open relay operation. This method allows you to change the operation of the *Receiver* so that when the *Receiver* is powered on, the relay is in an open state and does not allow electricity to flow.

- 1) Turn *Receiver* off and then back on to determine its current state. Check the *Receiver* LEDs immediately after power up.
 - a) The yellow LED will illuminate and the Red LED will flash to indicate normally-closed mode.
 - b) The yellow LED will illuminate and the Green LED will flash to indicate normally-open mode.
- 2) Set to *Receiver* TEAM mode. Blue LED must be illuminated. (Receiver will only program in TEAM mode.)
- 3) Turn *Receiver* and *Transmitter* off.
- 4) Turn *Receiver* ON and proceed to the next step within 30 seconds. Blue LED must be illuminated.
- 5) Press and hold the RED button on the *Transmitter*.
- 6) Turn the *Transmitter* ON via the toggle switch while still holding the Red button.
- 7) Continue to hold the RED *Transmitter* button for at least 15 seconds.
- 8) The *Receiver*'s LEDs will blink to indicate mode change.
- 9) Release the red button on the *Transmitter*
- 10) Perform Step #1 in this section to confirm desired mode.

- STATUS CHECK MODIFICATION

Transmitter asks the receiver if it is in off or run mode every 30 seconds. This can be disabled, if desired.

- 1) Turn *Receiver* and *Transmitter* off.
- 2) Press and hold the green button on the *Transmitter*.
- 3) Turn the *Transmitter* on via the toggle switch.
- 4) Continue to hold the green button for at least 15 seconds.
- 5) The *Transmitter*'s LEDs will blink:
 - a) If the green LED blinks, the *Receiver* is in Status Check Every 30 Seconds mode.
 - b) If the red LED blinks, the *Receiver* will not check status every 30 seconds.

ADDITIONAL FEATURES

- Coding: The receiver and transmitter have a paired code system. Receivers can also respond to Master transmitters in the Red or Yellow lane mode. All codes can be reprogrammed, if necessary. Contact techsupport@3built.com.
- The *Transmitter* queries the *Receiver* on power-up, during every button press, and every 30 seconds. 30-second check is optional; see Programming section.
- The *Transmitter* will automatically power off after 6 hours of inactivity to conserve the battery. Turn off and on again to reset.
- Press the Green button to check range status without shutting off the vehicle
- Different blink patterns if the Team or Master Transmitter disabled the ignition system. See step #4 in RECEIVER section.
- The receiver and transmitter are both water resistant but should not be submerged.

These instructions are subject to change without notice.

Latest instructions available at: <https://3built.com/pages/support>

www.3Built.com

Technical Support: techsupport@3built.com

Sales: sales@3built.com or 818-574-5334

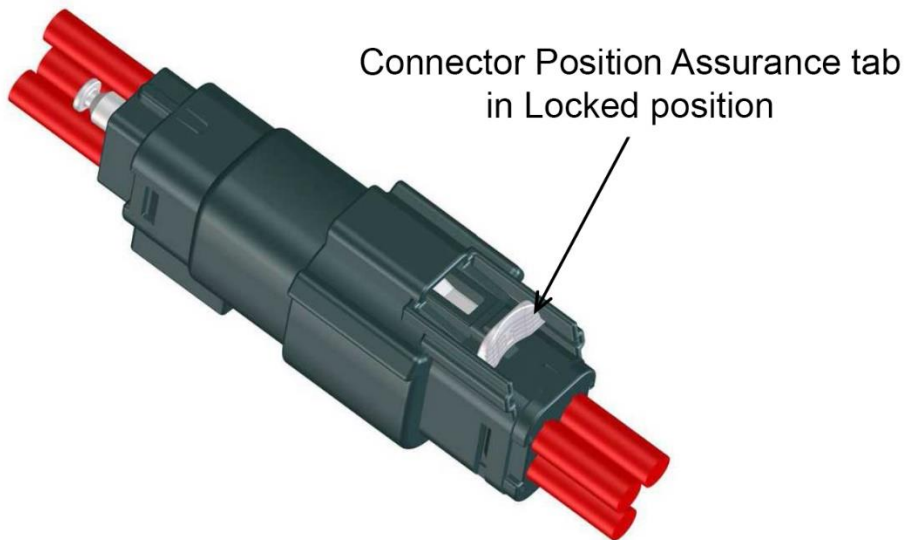


3Built LLC, West Hills, CA

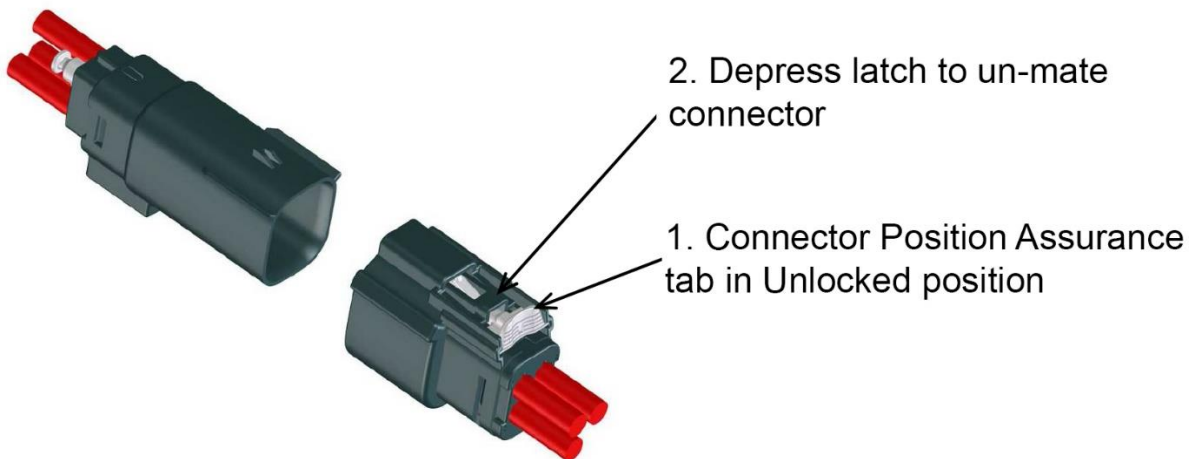
OPTIONAL: 6-PIN CONNECTOR

If you purchased your kit with the optional 6-pin connector follow these instructions to un-mate it.

- 1) The white Contact Position Assurance (CPA) tab is in the locked position. It must be slid back before the connector's latch can be depressed.

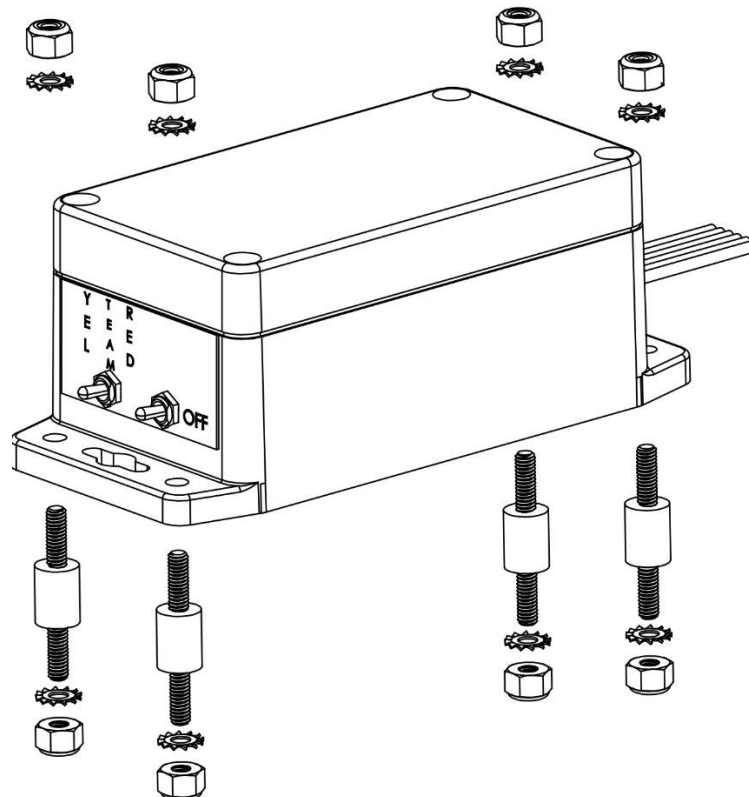
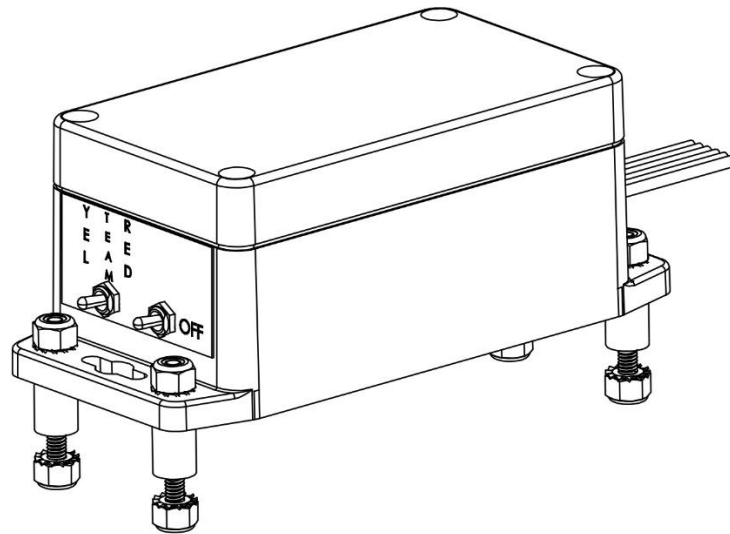


- 2) Once the CPA tab has been slid back, depress the locking latch. Push the connector slightly towards each other then away from each other.



OPTIONAL: SHOCK/VIBRATION DAMPERS

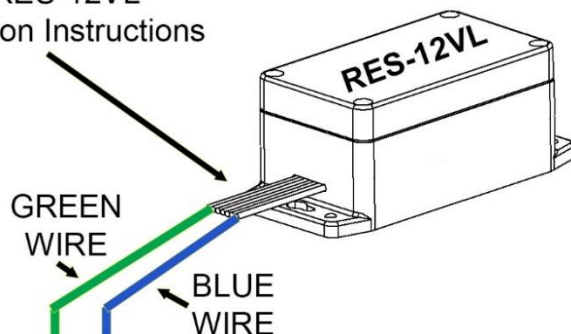
The vibration dampers are mounted to each mounting hole in the receiver. They reduce shock and vibration up to 33% and should be used if an ideal mounting location is not available. Receiver shock and vibration must be kept below 15g or the internal relay may chatter and cause ignition difficulties.



Connection to: MSD 6 series (all versions)

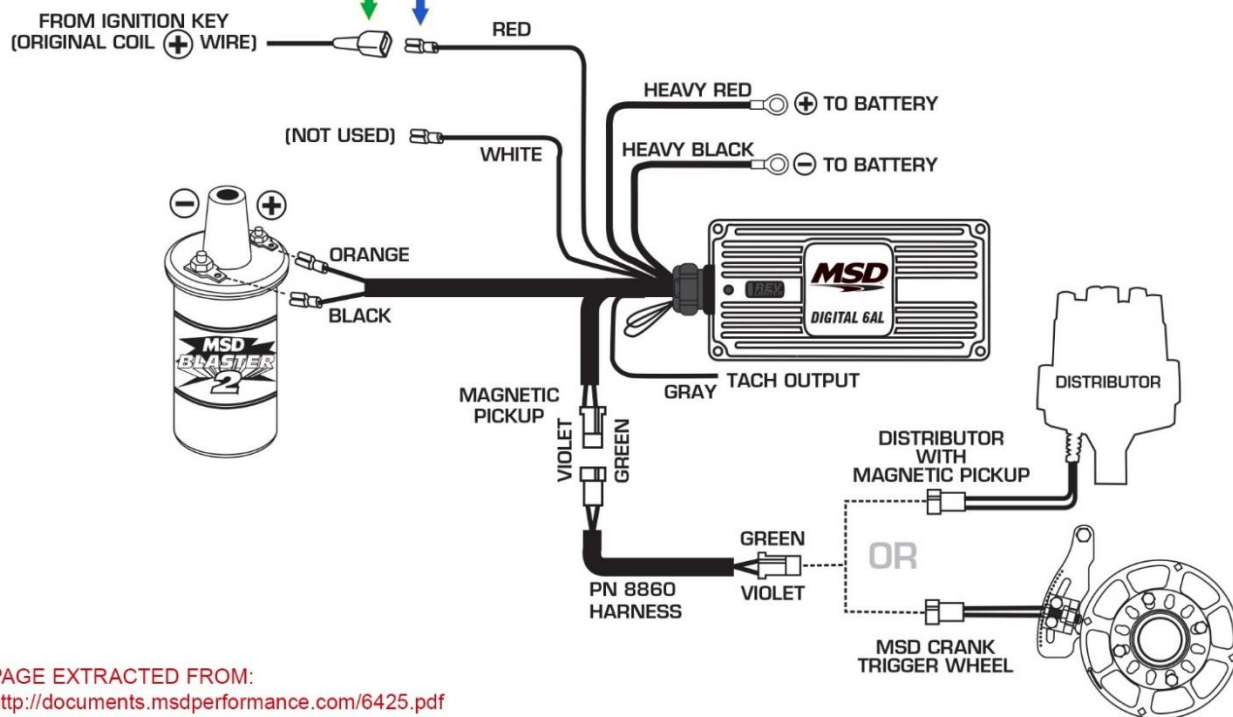
For proper operation:
Immediately after turning on the receiver
the Yellow LED will illuminate and the
Red LED will flash.

Connect other wires
per the RES-12VL
Installation Instructions



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MSD SYSTEMS Installing to an MSD Distributor/Crank Trigger.

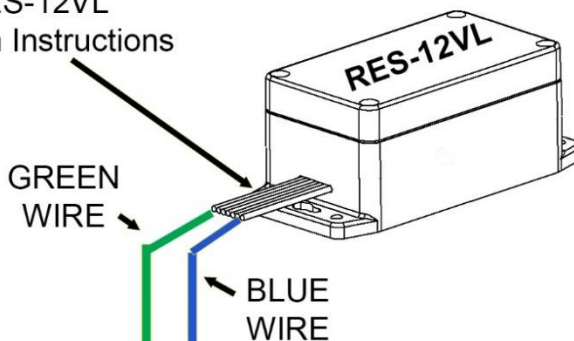


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to show connection information for the
MSD Digital 6A and 6AL Ignition Control

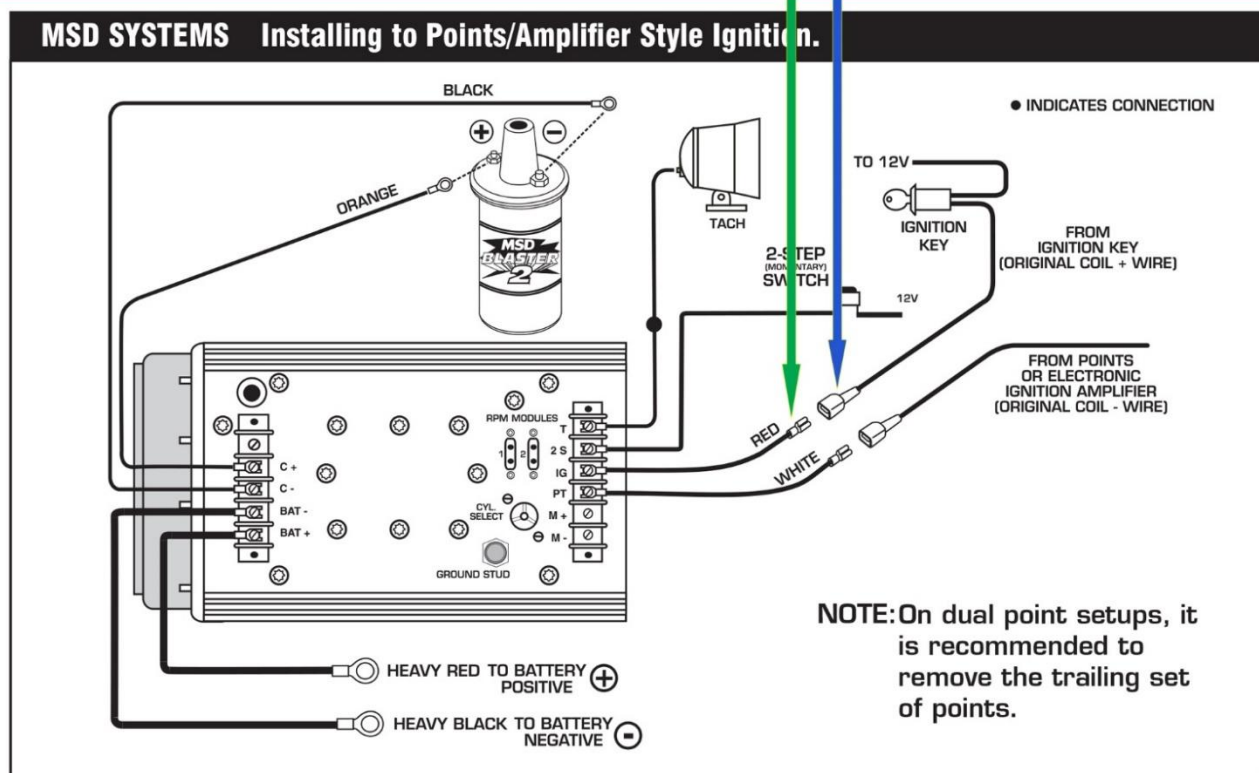
Connection to: MSD 7 & 8 series

For proper operation:
Immediately after turning on the receiver
the Yellow LED will illuminate and the
Red LED will flash.

Connect other wires
per the RES-12VL
Installation Instructions



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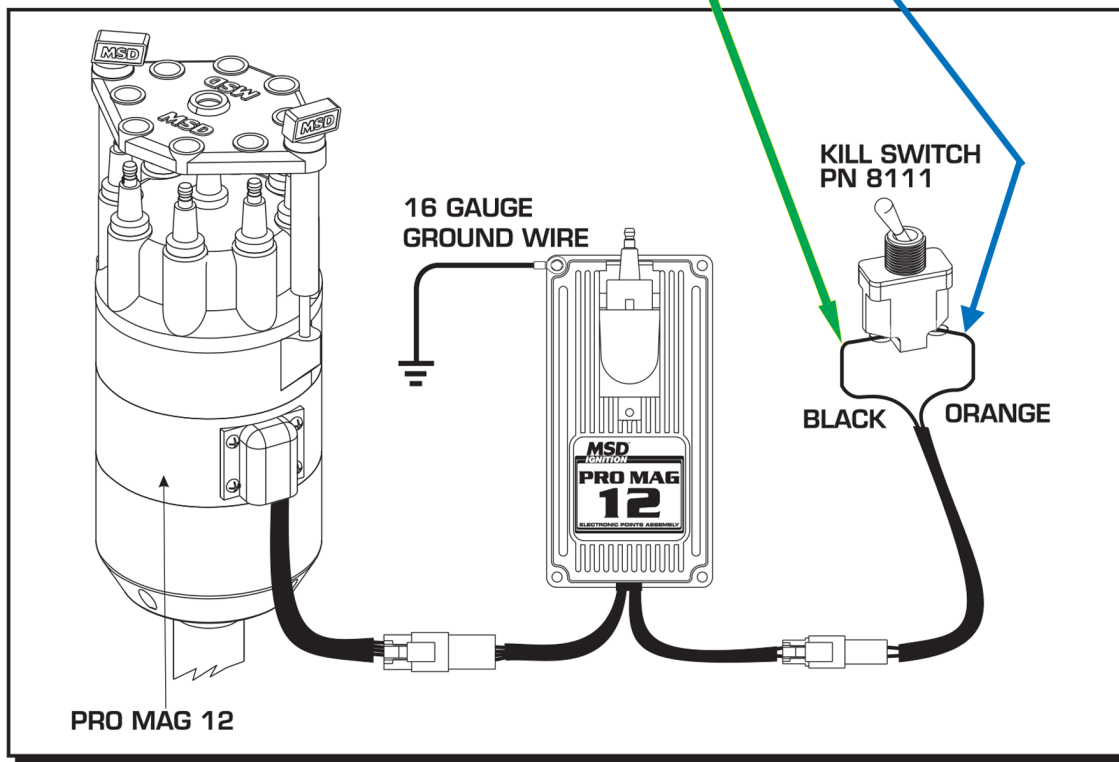
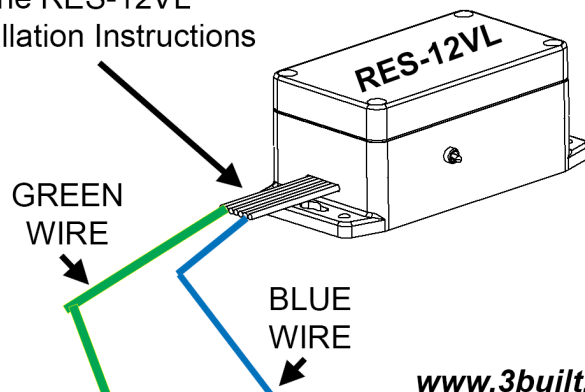
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to show connection information for the
MSD Digital 7AL Ignition Control

Connection to: MSD Pro Mag 12

For proper operation:
Immediately after turning on the receiver
the Yellow LED will illuminate and the
Green LED will flash.

NOTE:
Reprogramming is **REQUIRED**
Please see **Programming**
section on page 3.

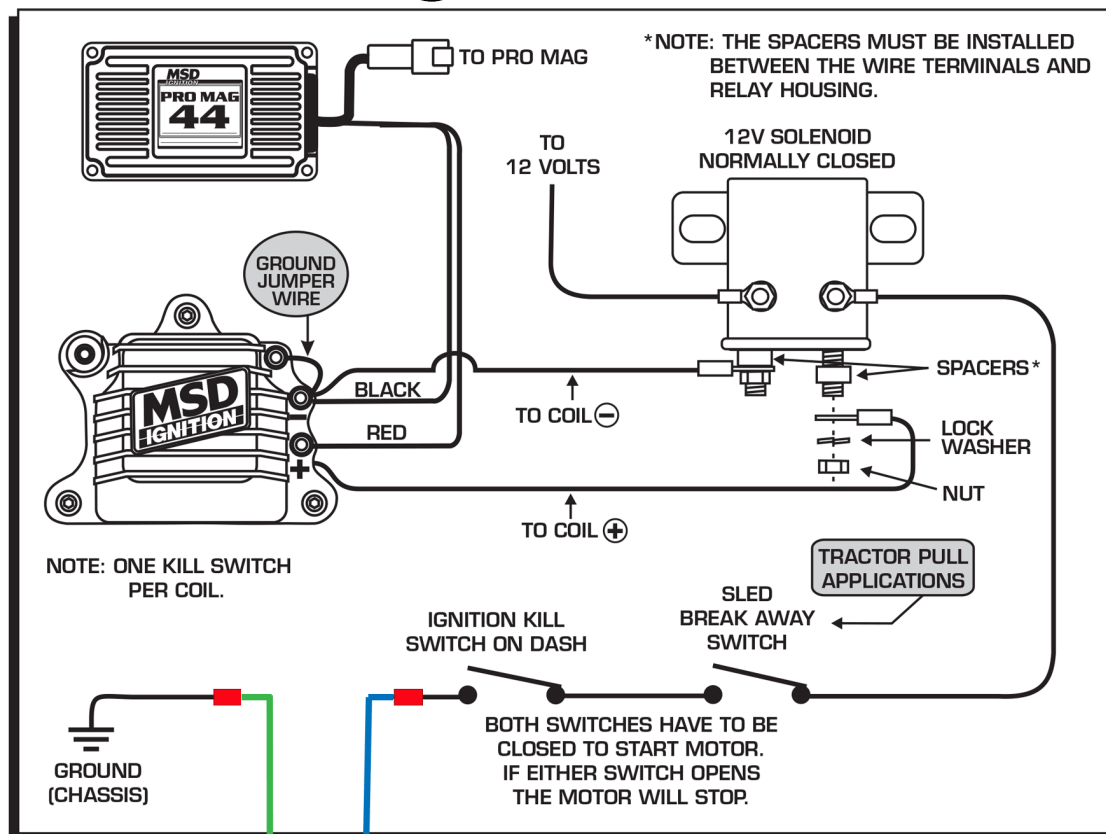
Connect other wires
per the RES-12VL
Installation Instructions



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Connection to: MSD Pro Mag 44

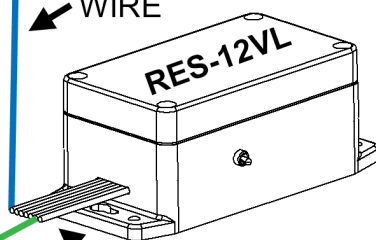
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GREEN WIRE →

← BLUE WIRE



Connect other wires
per the RES-12VL
Installation Instructions

For proper operation:
Immediately after turning on the receiver
the Yellow LED will illuminate and the
Red LED will flash.

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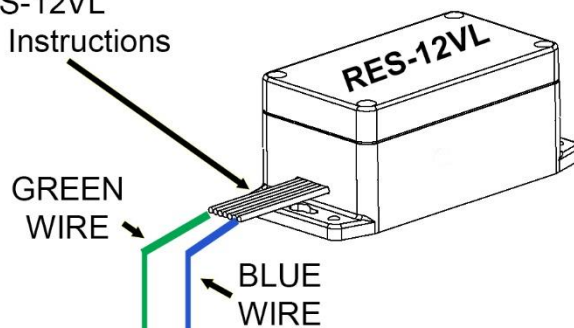
Connection to: MSD Power Grid Controller

For proper operation:
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Green LED will flash.

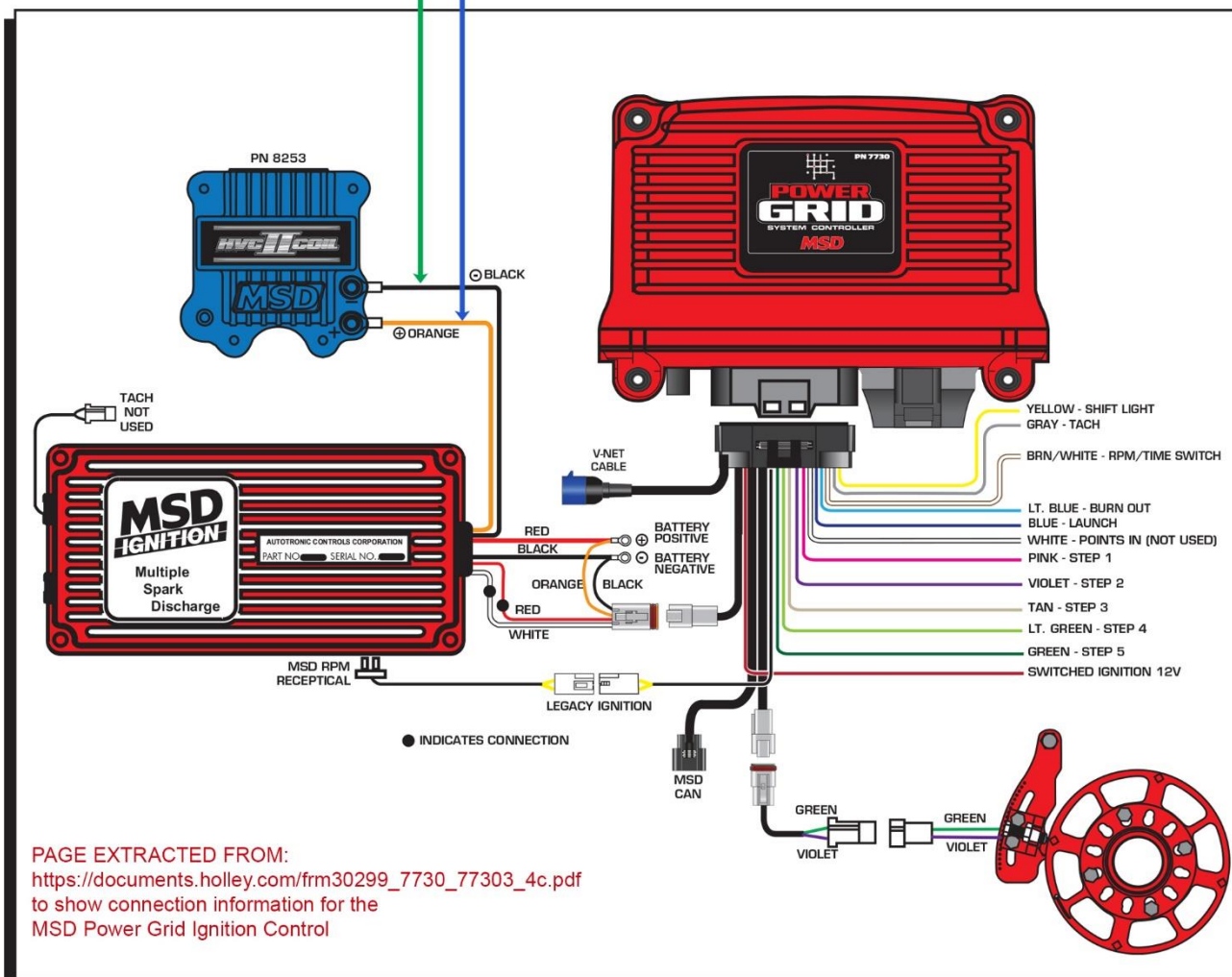
NOTE:

Reprogramming is REQUIRED
Please see Programming
section on page 3.

Connect other wires
per the RES-12VL
Installation Instructions



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to show connection information for the
MSD Power Grid Ignition Control

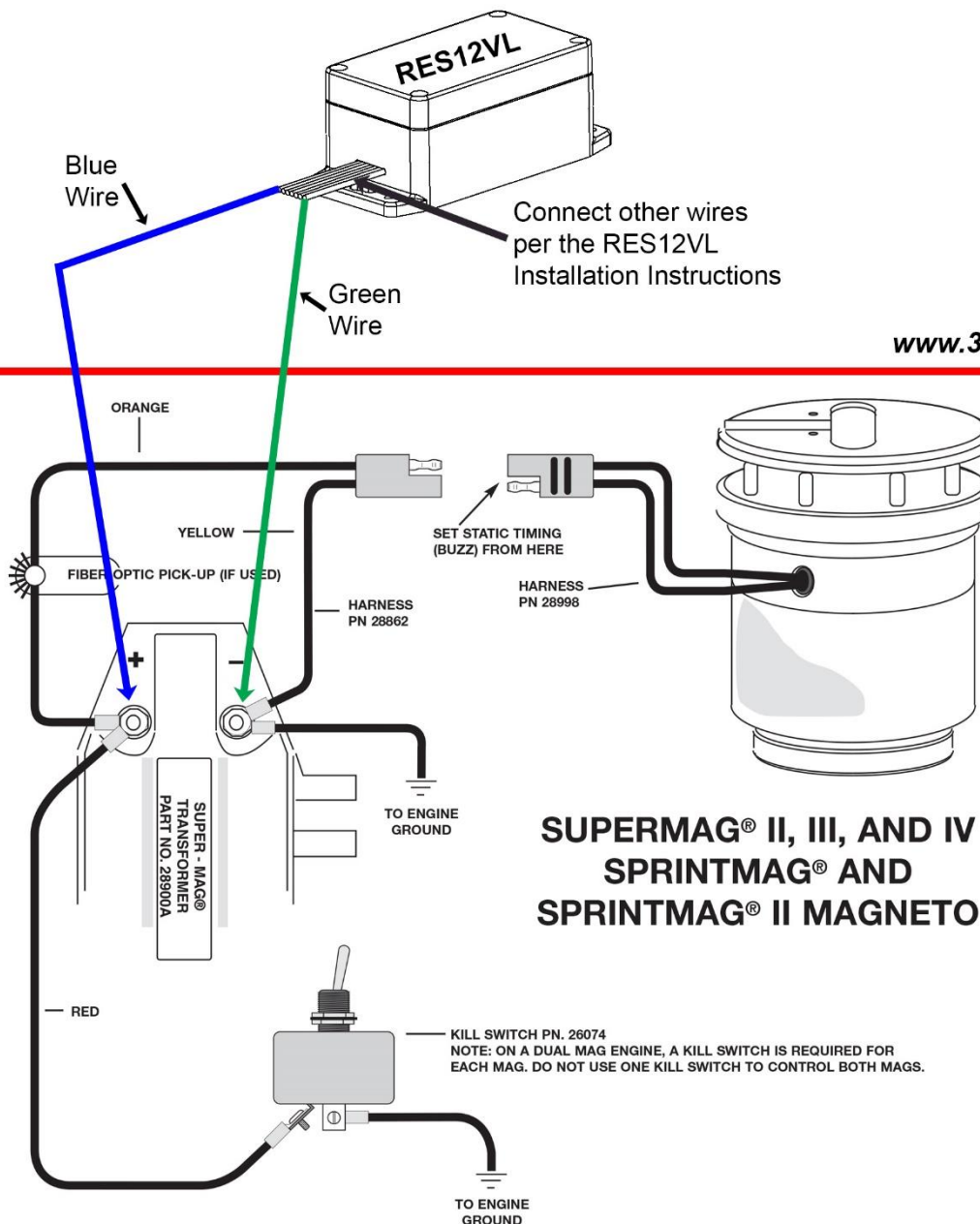
Connection to: Mallory Super-Mag

For proper operation:
Immediately after turning on the receiver
the Yellow LED will illuminate and the
Green LED will flash.

NOTE:

Reprogramming is REQUIRED
Please see **Programming**
section on page 3.

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to show connection information for the Super-Mag III