ZERO OFF
GPS SPEED CONTROL
THE FUTURE OF SPEED CONTROL IS HERE

How to Connect Zero Off GPS Speed Control to 2007/2008 MasterCraft Boats without Factory Installed Harness Connections

Early MasterCraft boats were not plug and play equipped for Zero Off. On these boats, boat owners are required to make the connections manually. These instructions are guidelines to aide in making these connections.

You will need to splice the CANBUS and Power connectors from the Zero Off wire harness into the 36-pin MMDC connector on the MasterCraft boat. This arrangement lets you share the MMDC fuse for your power rather than go straight to the hot bar under the dash **(See chart and diagrams below for pin and wire color references)**.

- Be sure to solder all connections.
- Be sure to make all connections water tight.

To start this process you will need to familiarize yourself with the components that will need to be installed, as well as the process of the installation. Please read all the way through the instructions and familiarize yourself with the diagrams before starting the installation.

Tools Required:

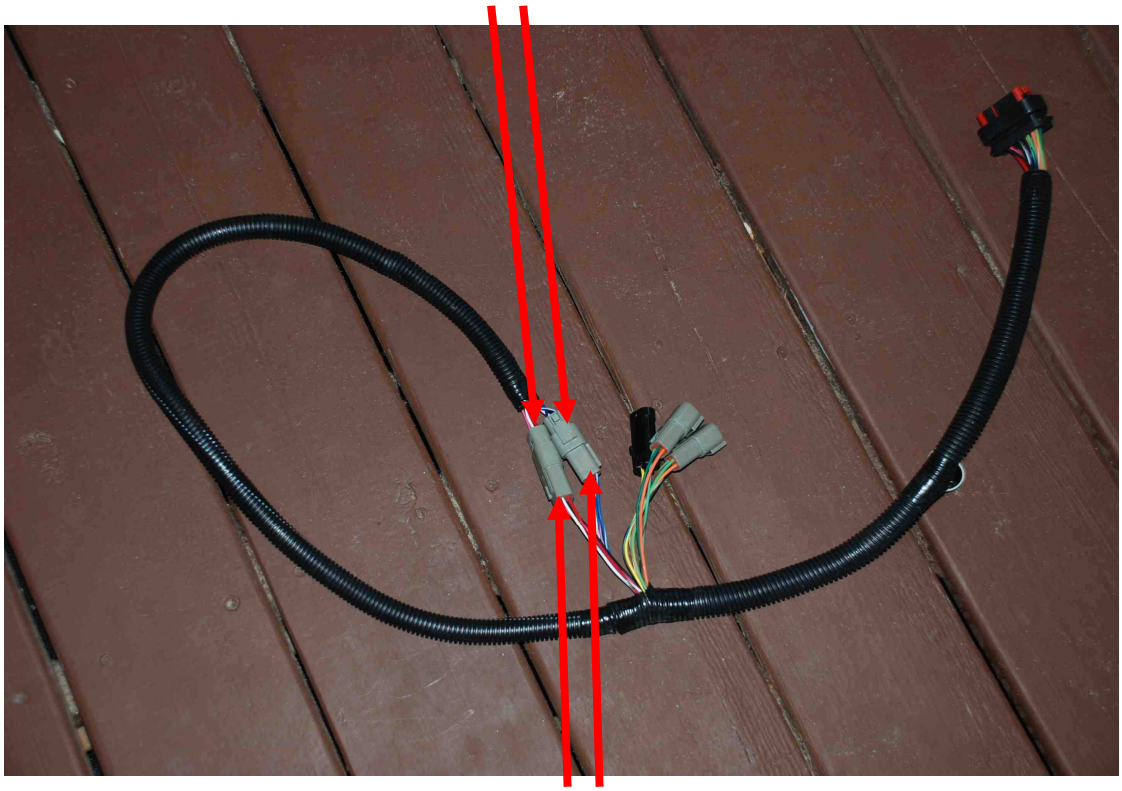
1. Wire Strippers/Crimpers
2. Butt Connectors
3. Phillips Head Screw Driver
4. ½" Wrench

To get started you should familiarize yourself with the Wiring harness that was sent along with the packet. At one end you will have a single rectangular connector that plugs into the back of the head unit that will go in the dash. In the middle of the harness you will have a white buzzer and 5 connector pins; 1 black 2 pin connector (rope switch adapter), 1 triangle shaped plug (CANBUS), 1 rectangle shaped plug (Power) and 2 square GPS sensor female plugs. At the other end of the harness you will have 1 triangle shaped male plug and 1 rectangle shaped male plug.

******BEFORE STARTING THE PROJECT, DISCONNECT THE BATTERY SO NO POWER IS CONNECTED TO THE BOAT******

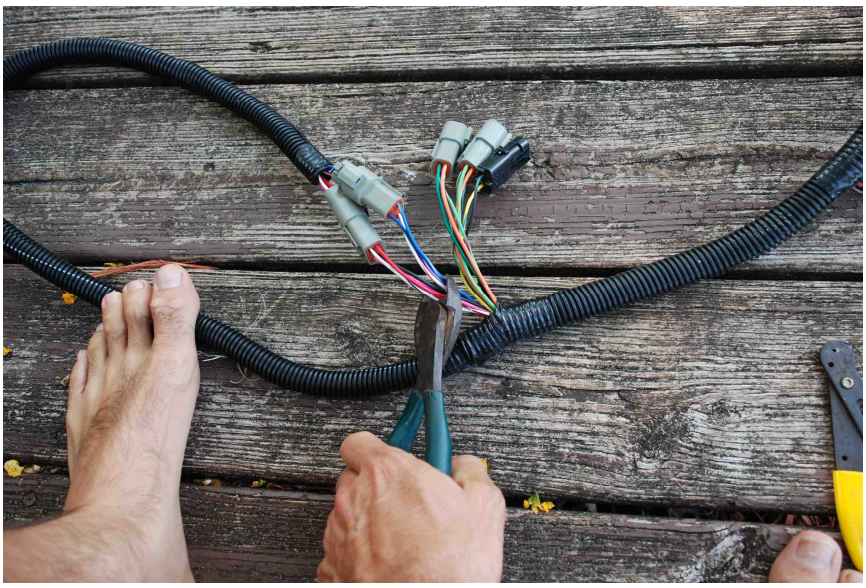
1) The first thing you want to do is to prepare the wiring harness. You are going to cut the female triangle shaped connector and the female rectangle shaped connector out of the grouping of 5. To do this take the two male connectors (one triangular shaped and one square shaped) on the end of the harness and plug them into the two mating female connectors located in the grouping of 5 connectors that have the matching wires in the middle of the harness. Please see below:

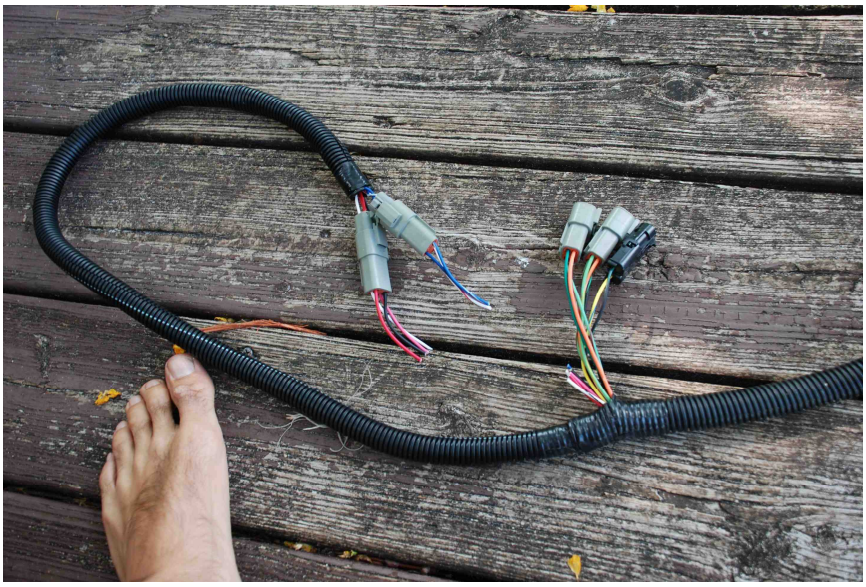
Male Connectors on end of harness

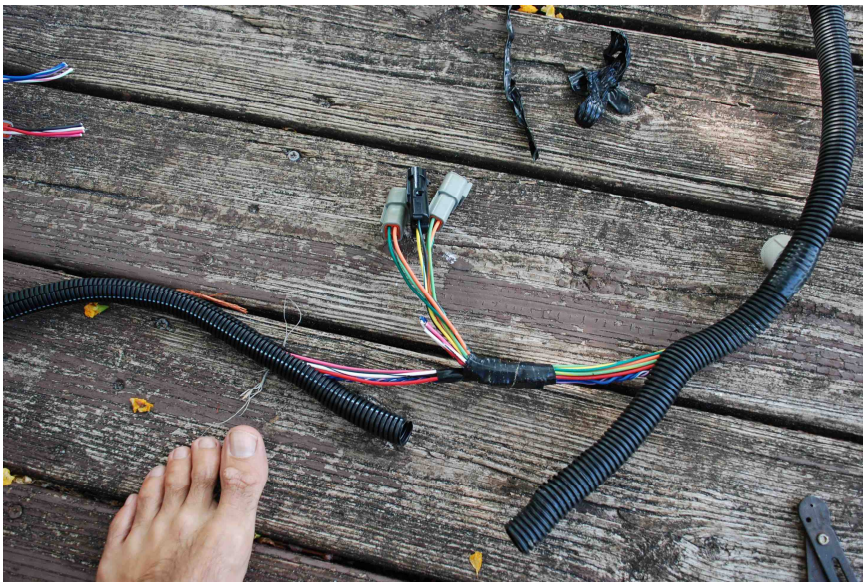


Female Connectors in the middle of harness.

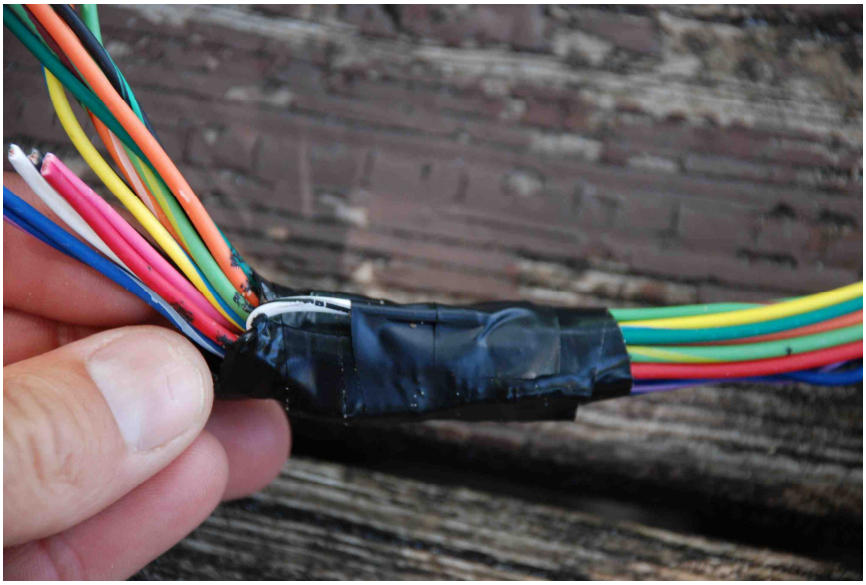
You may need to unravel the black protector around the grouping of 5 plugs to get good access to these connectors. Using your wire cutters cut the wires on the triangle shaped female plug and the female rectangle plug that are located in the grouping of 5 so that you may now layout the wiring harness with the single head unit connector at one end and the 2 triangle shaped connectors, and 2 rectangle shaped connectors (connected) at the other. (See Series of photos below).

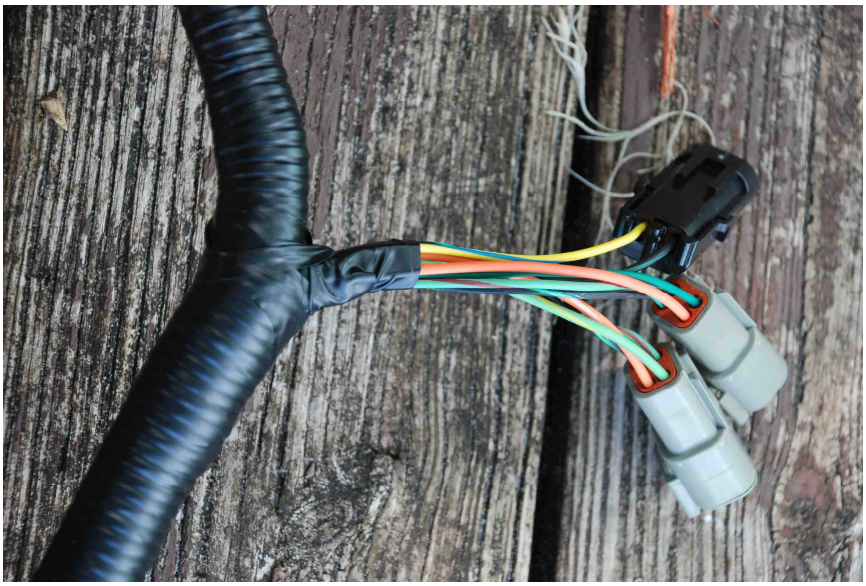




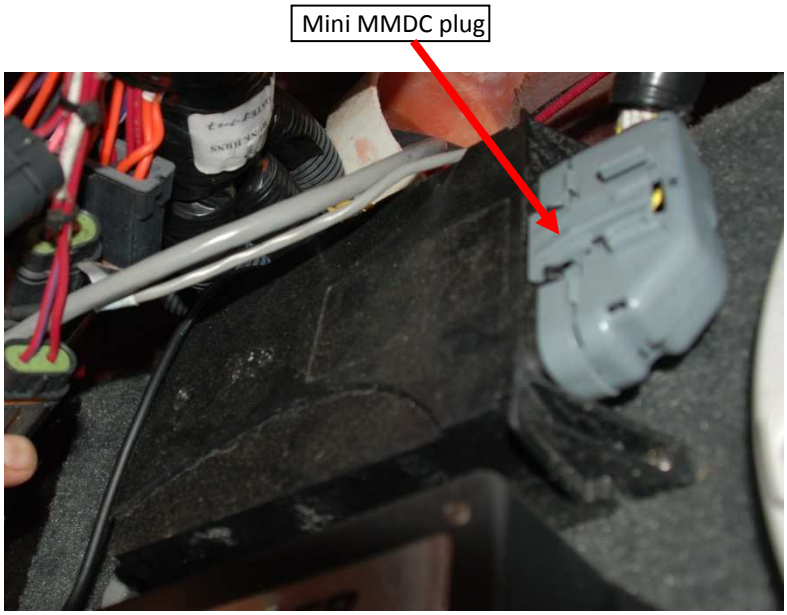


2) Using your wire cutters cut the wires on the female plugs that are located in the grouping of 5 so that you may now layout the wiring harness with the single head unit connector at one end and the 4 triangle shaped connectors (connected) at the other. Take the wires that you have cut and cover and tape each wire individually to the grouping of wires so that no bare ends can make contact. Once this is done put all the wires back in the black plastic cover and tape shut to tuck them away.

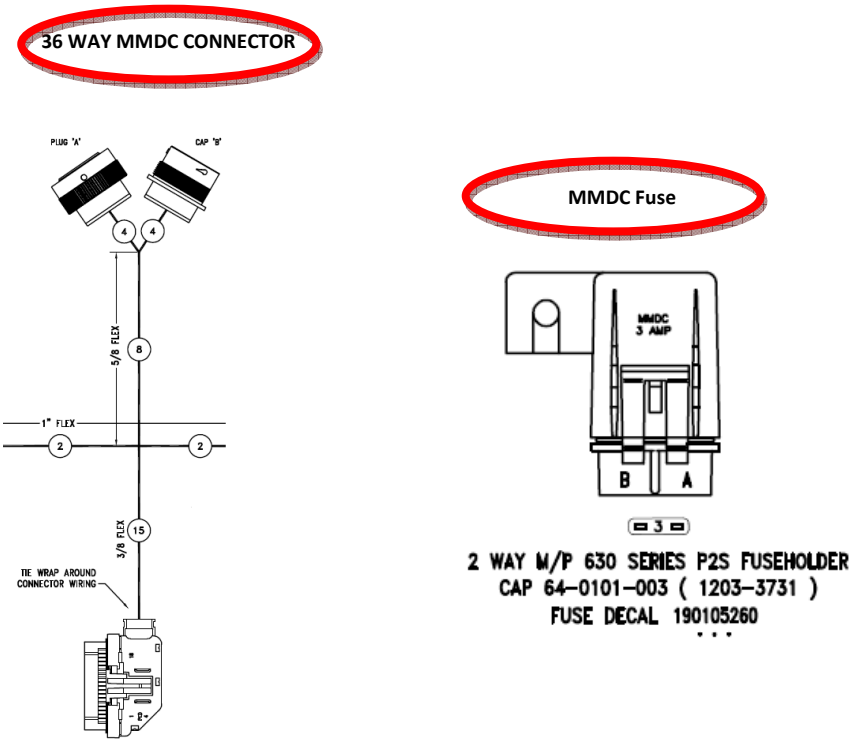




We are now ready to start cutting and splicing the wiring harness into place. We must first locate the Mini MMDC plug under the dash shown below:



MMDC Connector Diagram with Fuse:



MMDC Connector Pin Layout:

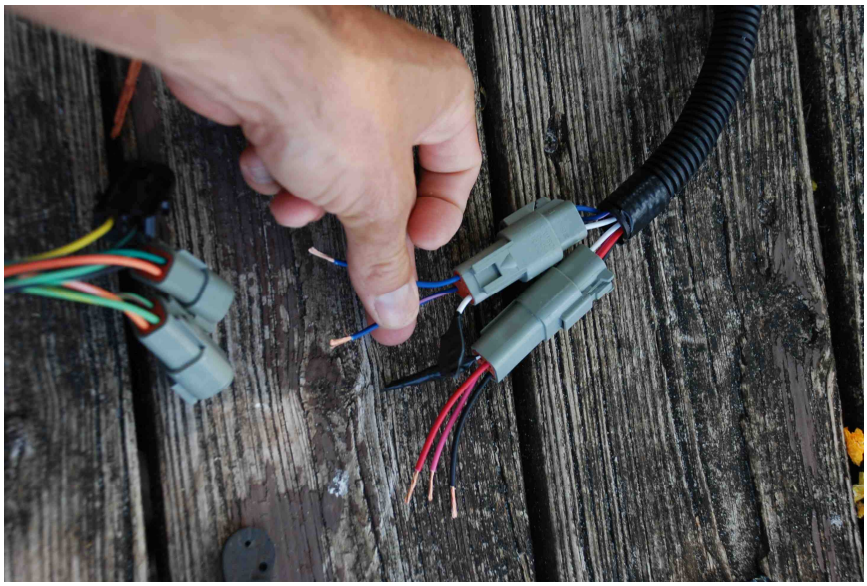
MINI MMDC - J1

18 BLK/YEL #J1-19 - GAUGE GND (SPLICE 3K)	(19	1)	CAVITY PLUG
18/2 BLACK - CAN - (H-27)	(20	2)	18/2 WHITE - CAN + (H-26)
CAVITY PLUG	(21	3)	CAVITY PLUG
CAVITY PLUG	(22	4)	CAVITY PLUG
CAVITY PLUG	(23	5)	18 ORN/BLU #J1-5 - MTS (HANGING)
CAVITY PLUG	(24	6)	CAVITY PLUG
18/2 SHEILD WIRE DOUBLED TOGETHER AT PIN 35 w/SHRINK TUBING — CAVITY PLUG	(25	7)	CAVITY PLUG
CAVITY PLUG	(26	8)	CAVITY PLUG (B)
CAVITY PLUG	(27	9)	CAVITY PLUG (B)
18 BLK/WHT #J1-28 - PP OVRSHT (J8)	(28	10)	18 YELLOW - AIR TEMP
18 BLACK #J1-29 - ALARM (RLY 85)	(29	11)	18 BROWN #J1-11 - PDLWHL TMP (H-9)
CAVITY PLUG	(30	12)	CAVITY PLUG
18 BLK/WHT #J1-31 - DSPY SELECT (A-R)	(31	13)	CAVITY PLUG (B)
18 BRN/WHT #J1-32 - PRIMARY SPD CAL (A-S)	(32	14)	18 BROWN #J1-14 - SEC. SPD. CAL (A-Q)
18/2 WHITE - DIB DATA LINK + (DEPTH B)	(33	15)	18/2 BLACK - DIB DATA LINK - (DEPTH E)
18 BLACK #J1-34 - MAIN GND (BUSS)	(34	16)	18 PURPLE #J1-16 - IGNITION (SPLICE 2C)
18/2 SHIELD - (H6)	(35	17)	18 RED/WHT #J1-17 - GAUGE PWR (SPLICE 3C)
18 RED #J1-36 - MAIN PWR (MMDC FUSE B)	(36	18)	18 YELLOW #J1-18 - GAUGE DATA (A-O)

36 WAY F MICROPACK 100W
CONN 54-3601-001 (1211-0487)
RETAINER-CLEAR 54-3601-002 (1211-0488)
STRAIGHT STRAIN RELIEF-GRY 54-3601-003 (1211-0490)
SEAL 54-3601-004 (1211-0489)
CAVITY PLUG 65-0101-021 (1212-9557)

3) Once located you must unplug the gray plug and open the plug up to see the wires inside. Please be careful not to pull on the wires as you may dislodge them from the plug. Inside the plug each wire will be numbered. The wire numbers and colors that we will need to splice are in RED boxes above and are also listed below:
   - #36 Red
   - #34 Black
   - #16 Purple
   - #2 White
   - #20 Black

4) Now, move away from the gray MMDC plug about 6 inches and cut each of the 5 wires listed above one at a time, making sure the numbers and colors are correct and strip both ends of the wires you cut about 1/4 inch. **(MAKE SURE THE BATTERY IS DISCONNECTED!).** Once all 5 wires are cut and stripped, place a butt connector on each wire that is connected to the gray MMDC plug and crimp the connector, ensuring a tight crimp. Now using the 2 connectors that you cut off the middle of the wiring harness and are attached to the end of the wiring harness to the triangle shaped male and rectangular male connectors strip the red, black, and pink wires on one connector and the blue/white and blue/pink wires on the other connector.



5) Now take the red wire from the female rectangular shaped connector on the Zero Off harness and the red wire (#36) from the MMDC wiring harness that does not have the butt connector on it and put them together in the available end of the butt connector that is connected to the red wire (#36) and crimp the wires tightly. You should now have two wires in one end of the butt connector and one wire in the other end of the butt connector that leads to the gray MMDC plug.

6) Now take the black wire from the Zero Off harness and the black wire (#34) from the MMDC wiring harness and put them together in the available end of the butt connector that is connected to the Black wire (#34) and crimp the wires tightly. You should now have two wires in one end of the butt connector and one wire in the other end of the butt connector that leads to the gray MMDC plug.

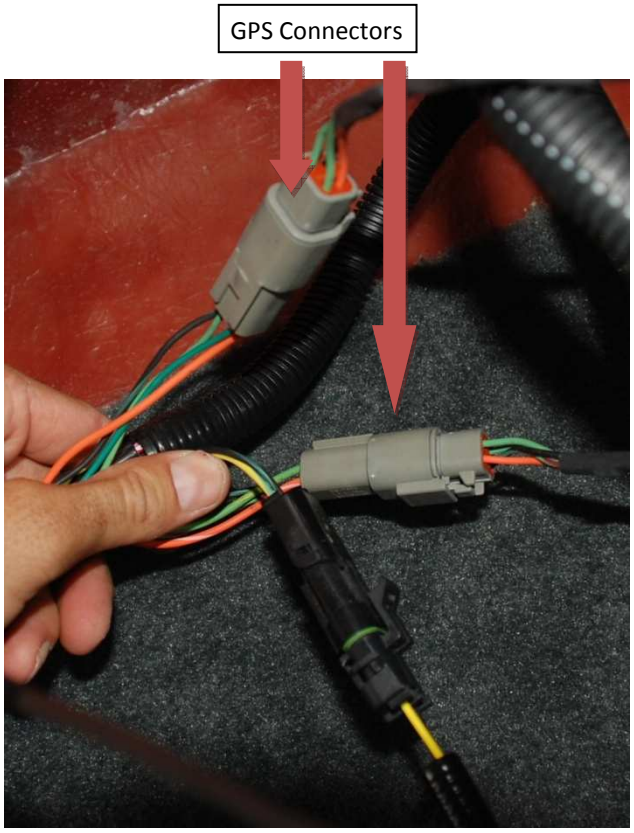
7) Now take the pink wire from the Zero Off harness and the purple (#16) wire from the MMDC wiring harness and put them together in the available end of the butt connector that is connected to the purple wire (#16) and crimp the wires tightly. You should now have two wires in one end of the butt connector and one wire in the other end of the butt connector that leads to the gray MMDC plug.

8) Now take the Blue/pink wire from the Zero Off harness and the white (#2) wire from the MMDC wiring harness and put them together in the available end of the butt connector that is connected to the white wire (#2) and crimp the wires tightly. You should now have two wires in one end of the butt connector and one wire in the other end of the butt connector that leads to the gray MMDC plug.

9) Lastly, take the Blue/White wire from the Zero Off harness and the Black (#20) wire from the MMDC wiring harness and put them together in the available end of the butt connector that is connected to the Black wire (#20) and crimp the wires tightly. You should now have two wires in one end of the butt connector and one wire in the other end of the butt connector that leads to the gray MMDC plug.

This completes the wire splicing for the harness.

10) Next you will need to mount the 2 GPS sensors to the deck of the boat and run the wires back under the dash. Each GPS sensor will plug into one of the two rectangular-shaped connectors left in the middle of the wiring harness. See below:



Rope Switch Adapter Plug

11) The final plug in the middle of the wiring harness, a black 2 pin connector, is for the rope switch adapter used for the jump event.

12) Once this is done, you will mount the Zero Off Head unit into the dash being careful to keep it level in the dash. (Be sure the Zero Off Logo is perfectly horizontal because the head unit will not work properly if it is not installed level in the dash.)

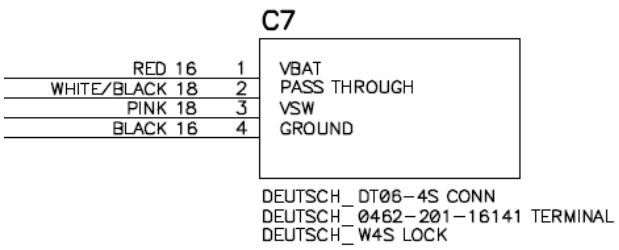
13) Once installed, plug the large 23-pin connector located on the end of the wiring harness into the back of the head unit.

14) Finally, you will hook the boat battery back up and check to see that the system is working properly. Please allow up to 10 minutes for the system to locate the satellites the first time it is powered up.

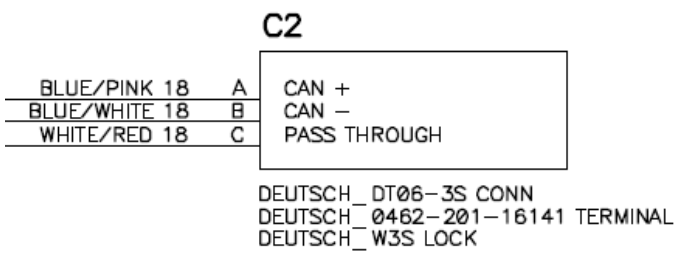
Supplemental Information:

Zero Off CANBUS and Power Connector Diagrams:

Power Connector



CANBUS Connector



Zero Off to MMDC Harness – Needed Connections:

	Connectors		
Function	**MMDC - Wire Colors and Pin Numbers**	**CANBUS - Wire Colors and Pin Numbers (C2)**	**Power - Wire Colors and Pin Numbers (C7)**
Constant Power	Pin 36 - RED		Pin 1 - RED
Switched (Ignition) Power	Pin 16 - PUR		Pin 3 - PNK
Ground	Pin 34 - BLK		Pin 4 - BLK
CAN +	Pin 2 - WHT	Pin 1 (A) - BLU/PNK	
CAN -	Pin 20 - BLK	Pin 2 (B) - BLU/WHT	