Troubleshooting Guide for Magnetic Field Generator System (PDS)

[DDAC-PDS-SYS-2 and DDAC-PDS-C-SYS-2]

Always Review the Installation Guide for Additional System Information this is a quick trouble shooting guide and is NOT to replace the Full Installation Guide.

Section 1; Magnetic Field Generators

- Failure Alerts (Fault Codes) Warning Module Double Beeps every 2 Seconds
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- Issue #3 Collision Avoidance (Truck to Truck) Alarm is NOT working on a CAM-Installed Generator. (Part # will have a -C and a Yellow Sticker Showing CAM-installed).
- Issue #4 Collision Avoidance has Stopped Alerting after a few seconds.
- Issue #5 Collision Avoidance Only Alerts in One Zone.
- Issue #6 When does the PAD Output Activate?
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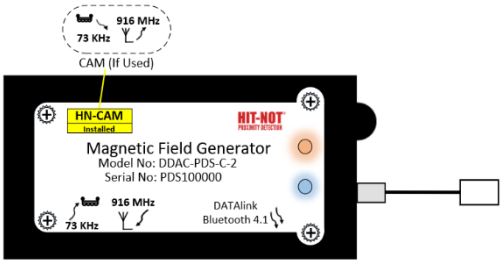
- Issue #12 Cab Silencer is NOT Fully Silencing Operators PAD when inside the Operators Cab or the Silent Zone is extending Outside the Operators Cab.



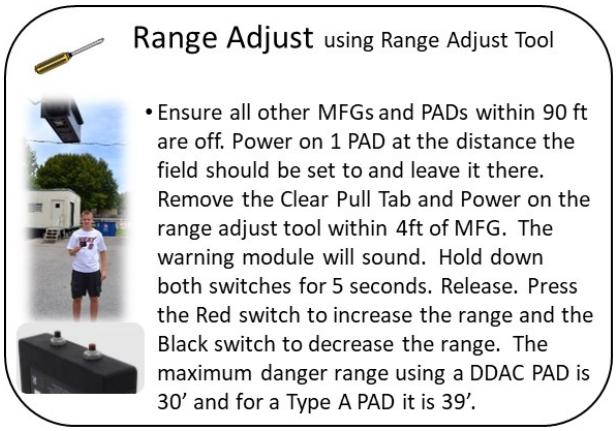
Section 1; Magnetic Field Generators Failure Alerts (Fault Codes)

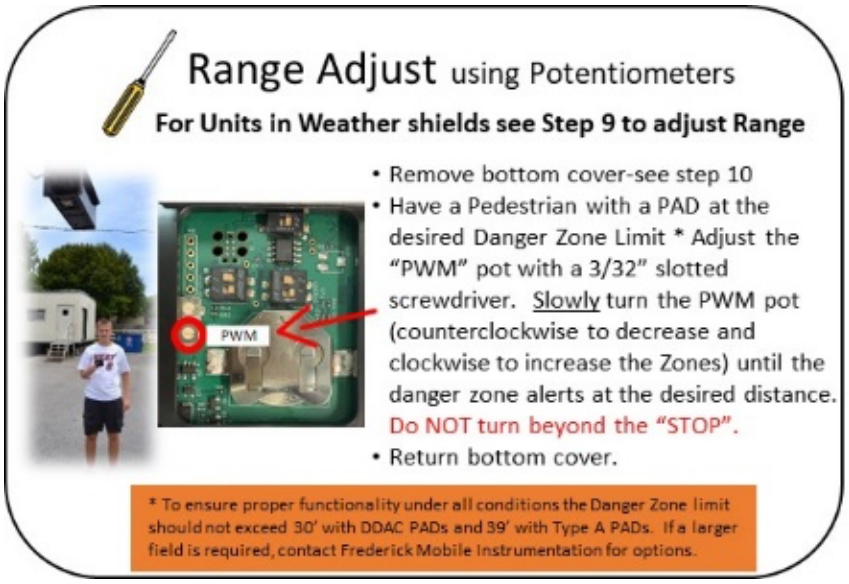
Code 1 – CAM Communication Failure

Problem	Warning Module Double beeps every 2 seconds. No Orange LED Blinking on the MFG
Cause	CAM Communication failure (if equipped)
Solution	Return unit to factory for repair.

Code 2 – MFG Output reduced by ≈10% or more from Factory setting (Most Common Issue)

Problem	Warning Module Double beeps every 2 seconds and the MFG Orange LED is Blinking ONLY 1 time each cycle.
Cause	Generator magnetic field output is reduced.
Solution	1) Ensure 4” separation from metal. 2) Ensure unit is placed on exterior of forklift structure i.e. not inside overhead guard, 3) Factory Set Magnetic Field (PWM) needs to be adjusted (see information below).



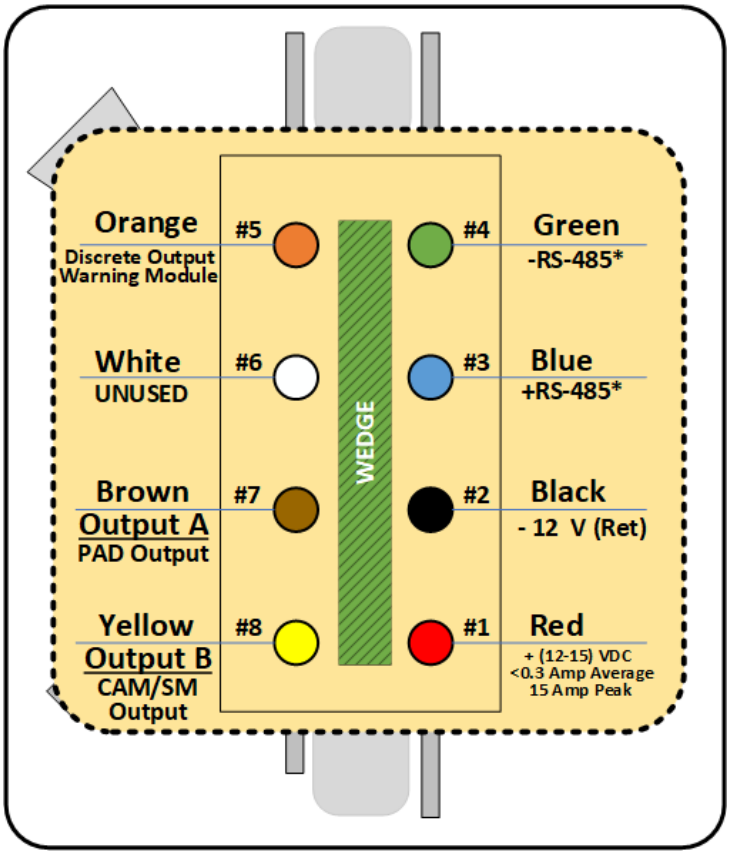


Code 3 – MFG Input Voltage is LOW

Problem	Warning Module Double beeps every 2 seconds and the MFG Orange LED is Blinking 2 times each cycle
Cause	1) Generator Input Voltage is NOT between 12-15 Vdc across the Red/Blk Wires 2) Machine Power circuit is limiting the Amperage.
Solution	1) Check Keyed Power and ensure 12 Vdc is available at Warning Module connector (Pin 1 (red) and Pin 2 (black) on Deutsch connector), Review ICD for Power requirement. 2) Ensure Keyed Power will allow 1 amp of continuous draw and a 15-amp peak power draw on startup, if NOT then select a different Power Circuit. 3) Are the Deutsch connectors FULLY Mated Together?

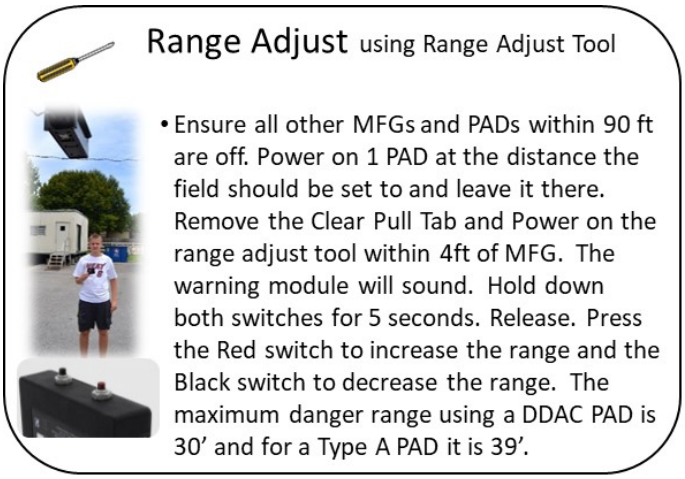
Issue #1 Blue Power Light Off on Generator

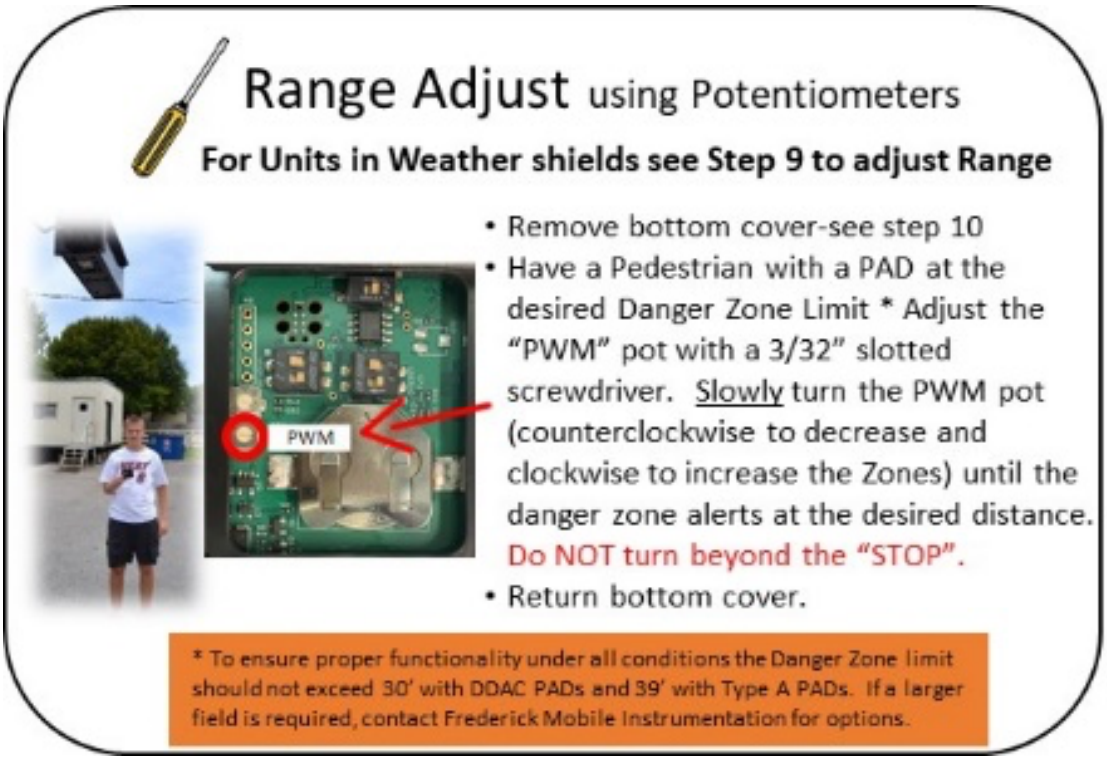
Problem	Generator does not have power
Cause	1) Deutsch Connectors are disconnected 2) Harness does not have 12-15 Vdc across Red/Blk Wires
Solution	1) Are the Deutsch connectors FULLY Mated Together? 2) Check Keyed Power and ensure 12-15 Vdc power is available at Warning Module connector (Pin 1 (red) and Pin 2 (black) on Deutsch connector). 3) If power is present, swap unit and return non-functional unit to factory for repair.



Issue #2 Field Size too small.

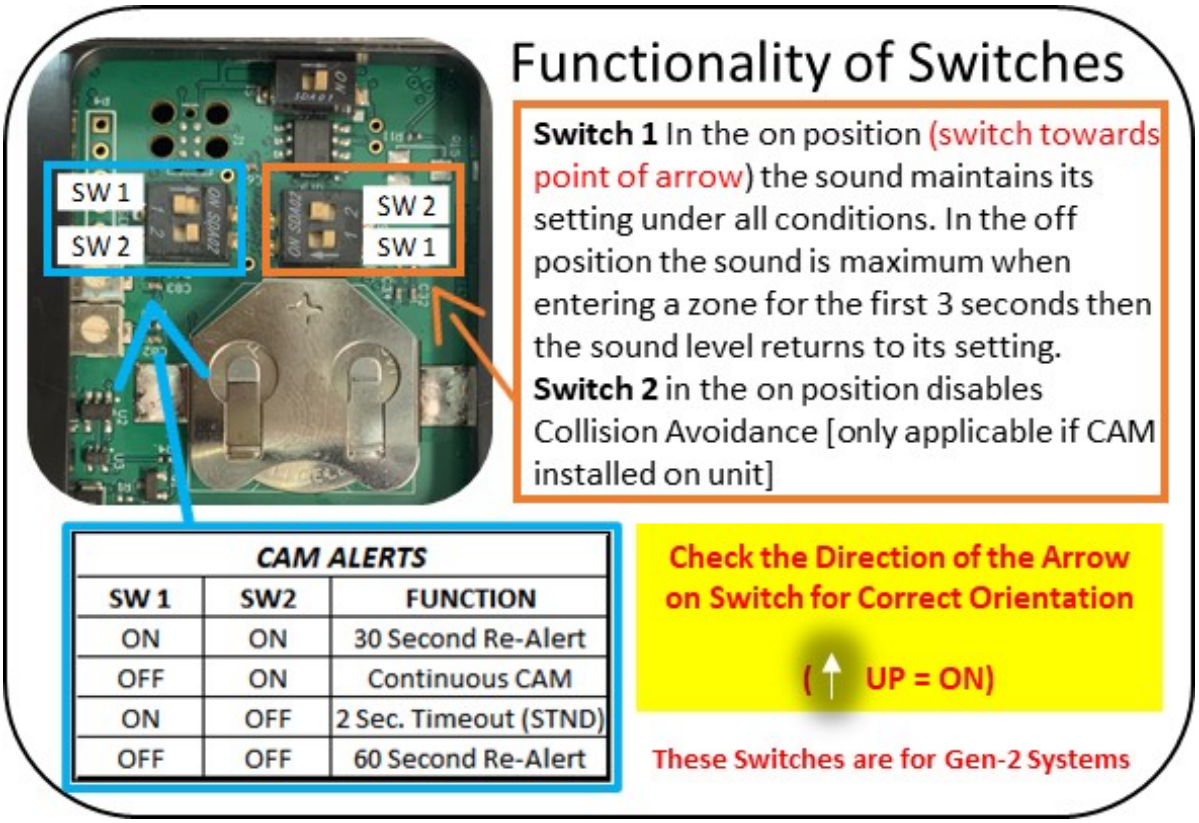
Problem	Field is not generated per factory specifications.
Cause	1) Unit does not have 4” separation from metal, 2) Unit is mounted in improper orientation, or 3) Unit is mounted inside a steel structure. 4) Field has been adjusted previously.
Solution	1) Ensure mounting per installation guide. 2) Adjust field (Shown below)





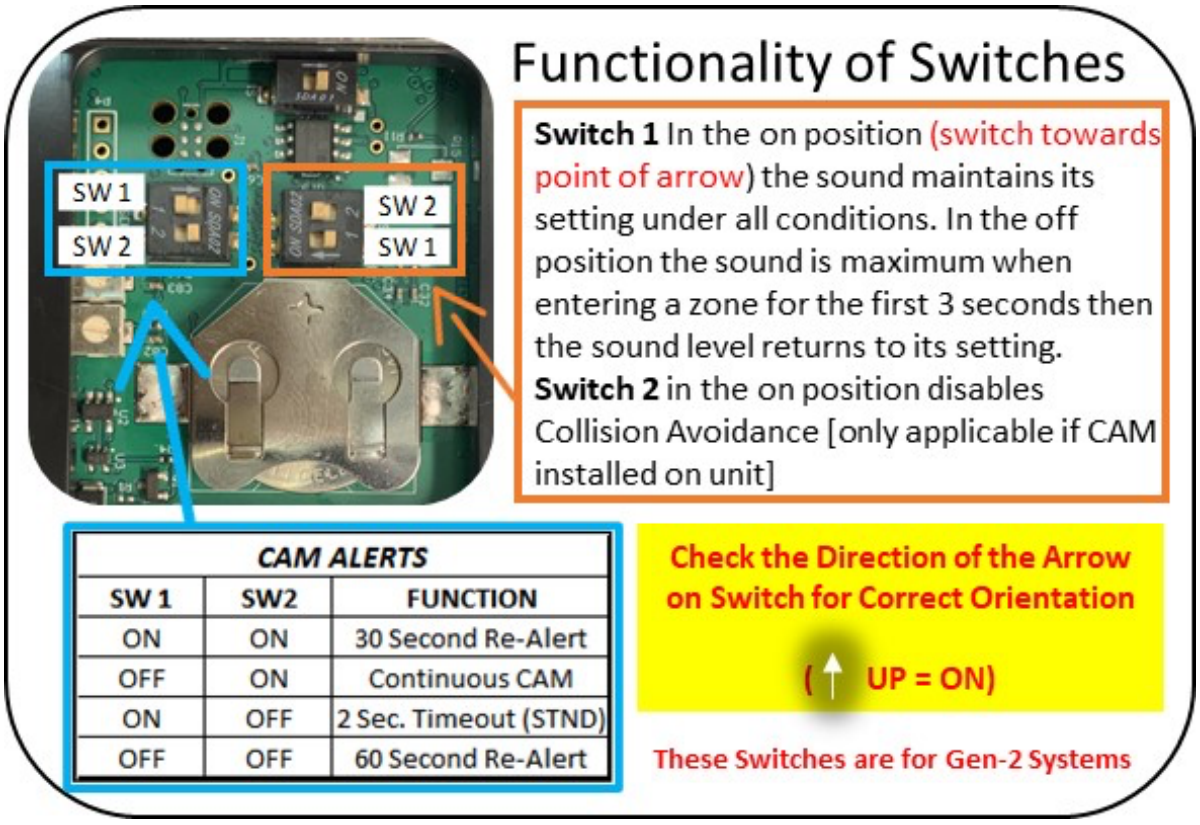
Issue #3 Collision Avoidance (Truck to Truck) Alarm is NOT working on a CAM-Installed Generator. (Part # will have a -C and a Yellow Sticker Showing CAM-installed)

Problem	Other Truck does not receive alert from CAM on this Truck but this Truck receives alert from other truck (Other trucks DO NOT see you but you see the other trucks).
Cause	1) Both trucks DO NOT have the same size field adjustment 2) Both trucks are NOT within the range of the magnetic fields. 3) Less than 2' separation of Generator/CAM from A/C, cab silencer, strobe lights, etc. 4) The CAM Disable switch is in the activated position "ON".
Solution	1) Ensure both trucks have same field adjustment 2) Ensure both trucks are within the range of the magnetic fields. 3) Ensure 2' separation of Generator/CAM from A/C, cab silencer, strobe lights, etc. 4) Ensure the CAM Disable switch is in the "OFF" position (See Orange Box Switch 2 below).



Issue #4 Collision Avoidance Alerts have Stopped Alerting on the Warning Module after a few seconds.

Problem	The Collision Avoidance Alerts have Stopped Alerting on the Warning Module after a few seconds.
Cause	1) The Other PIV/Trucks has moved outside of your PIV/Trucks Magnetic Field. 2) Your Magnetic Field has moved beyond the Structure Monitor. 3) "CAM Alerts" Factory default setting has not been changed (Factory setting is to Alert for 2 Seconds and then Timeout).
Solution	1) Move your PIV/Truck from its current location and then reengage with a PIV/Truck and/or Structure Monitor. 2) Ensure there is another PIV/Truck and/or Structure Monitor inside of your Magnetic Field? 3) Review the "CAM Alert" settings as shown below in Blue, change as required.
Note	1) Check that your MFG is sending "CAM Alerts"? This is done by looking at your MFG Orange LED. The Orange LED will be blinking at a very rapid rate when it sees another PIV/Truck and/or Structure Monitor. This Orange LED will Continue to blink (very rapid) even after the Warning Module has Stopped Alerting (timeout). 2) You will receive a "CAM Alert" if your PIV/Trucks Magnetic Field "Is Seeing" another PIV/Truck and/or Structure Monitor. Your Collision Avoidance System will Alert YOU of other PIV/Trucks and/or Structure Monitor in your Area.

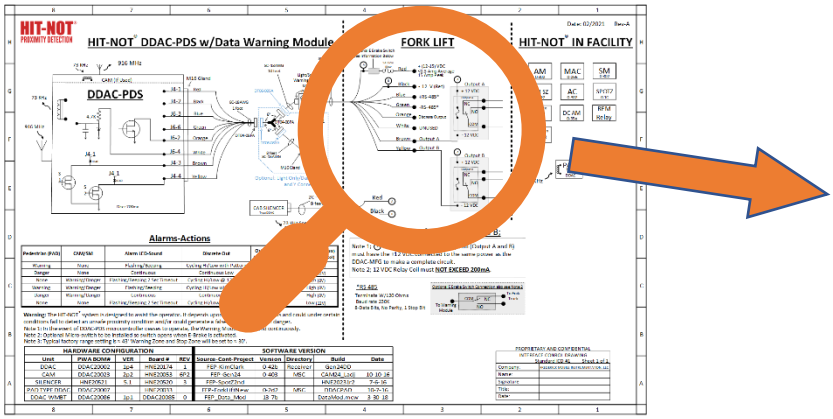


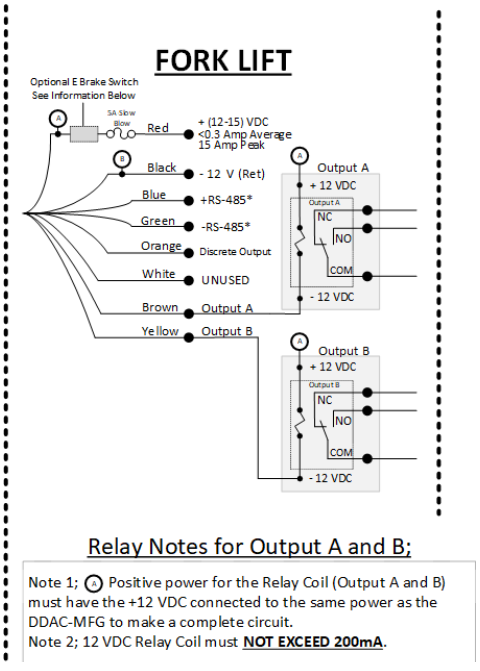
- **Issue #5 Collision Avoidance Only Alerts in One Zone.**

Problem	Collision Avoidance Only Alerts in One Zone
Cause	1) Collision Avoidance has ONLY ONE ZONE
Solution	1) Collision Avoidance has ONLY ONE ZONE, this ONE ZONE will include both the Warning and Danger into ONE Zone.

Issue #6 How to know if the PAD Output (Output A Brown Wire) is Working?

Problem	How do I know if the PAD Output (Output A Brown Wire) is Working?
Cause	1) There is NO PAD in the "Danger Zone" of **your** Magnetic Field. Warning Zone DOES NOT activate this function. 2) The Relay has not been connected per the ICD, see below. 3) Understanding when Output A will be energized or deenergized. 4) Damaged Unit
Solution	1) Ensure that a PAD is in **your** "Danger Zone" and that the is PAD sounding a "Danger Alert", (Solid Tone and Solid LED). 2) Ensure the Relay Coil is connected correctly, the Brown Wire should be connected to the (–) 12 VDC Minus on the Relay Coil. The 12 VDC (+) Positive on the Relay Coil must be connected to the same power as the DDAC-MFG to make a complete circuit, if not the circuit will not work. 3) The HITNOT® system is designed to power the Relay Coil when there is NO PAD in the "Danger Zone" i.e., NO PAD in the "Danger Zone" then the relay coil is energized. When the PAD enters the "Danger Zone" the completed circuit is disrupted and power is removed from the Brown Wire (Output A), there for removing power from the Relay Coil. 4) If damaged, swap unit and return non-functional unit to factory for repair.
Note	1) Relay Coil Must NOT EXCEED 200 mA.



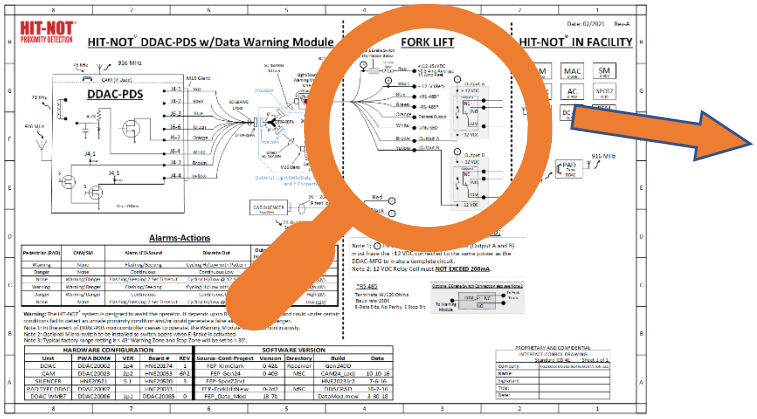


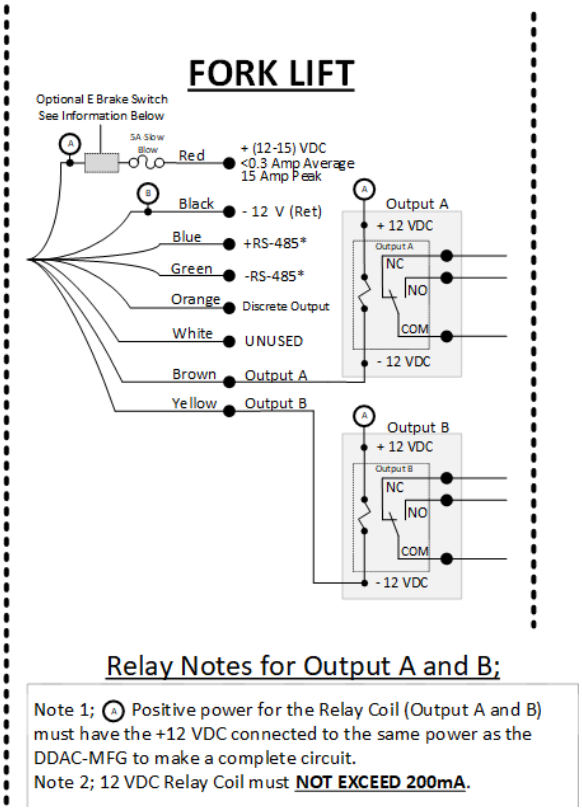
Relay Notes for Output A and B;

Note 1; Ⓐ Positive power for the Relay Coil (Output A and B) must have the +12 VDC connected to the same power as the DDAC-MFG to make a complete circuit.
Note 2; 12 VDC Relay Coil must **NOT EXCEED 200mA**.

Issue #7 How to know if the CAM/SM Output (Output B Yellow Wire) is Working

Problem	How do I know if the **C**ollision **A**voidance **M**odule (**CAM**) / **S**tructure **M**onitor (**SM**) Output (Output B Yellow Wire) is Working?
Cause	1) There is "NO" CAM/SM in **your** "Magnetic Field", remember the CAM has ONLY ONE ZONE and it will include both the Warning and Danger into this ONE Zone. 2) The Relay has not been connected per the ICD, see below. 3) Understanding when Output B will be energized or deenergized. 4) Damaged Unit
Solution	1) Ensure that a CAM/SM is in **your** "Magnetic Field", as stated back up in Issue #4, Check The Orange LED on **your** MFG as it will be blinking at a very rapid rate when it sees another CAM (PIV/Truck) and/or Structure Monitor. This Orange LED will Continue to blink (very rapid) even if the Warning Module has Stopped sounding an Alert (timeout). 2) Ensure the Relay Coil is connected correctly, the Yellow Wire should be connected to the (–) 12 VDC Minus on the Relay Coil. The 12 VDC (+) Positive on the Relay Coil must be connected to the same power as the DDAC-MFG to make a complete circuit, if not the circuit will not work. 3) The HITNOT® system is designed to power the Relay Coil when there is NO CAM/SM is in **your** "Magnetic Field", i.e., NO CAM/SM is in **your** "Magnetic Field", then the relay coil is energized. When the CAM/SM enters **your** "Magnetic Field", the completed circuit is disrupted and power is removed from the Yellow Wire (Output B), there for removing power from the Relay Coil. 4) If damaged, swap unit and return non-functional unit to factory for repair.
Note	1) Relay Coil Must NOT EXCEED 200 mA.



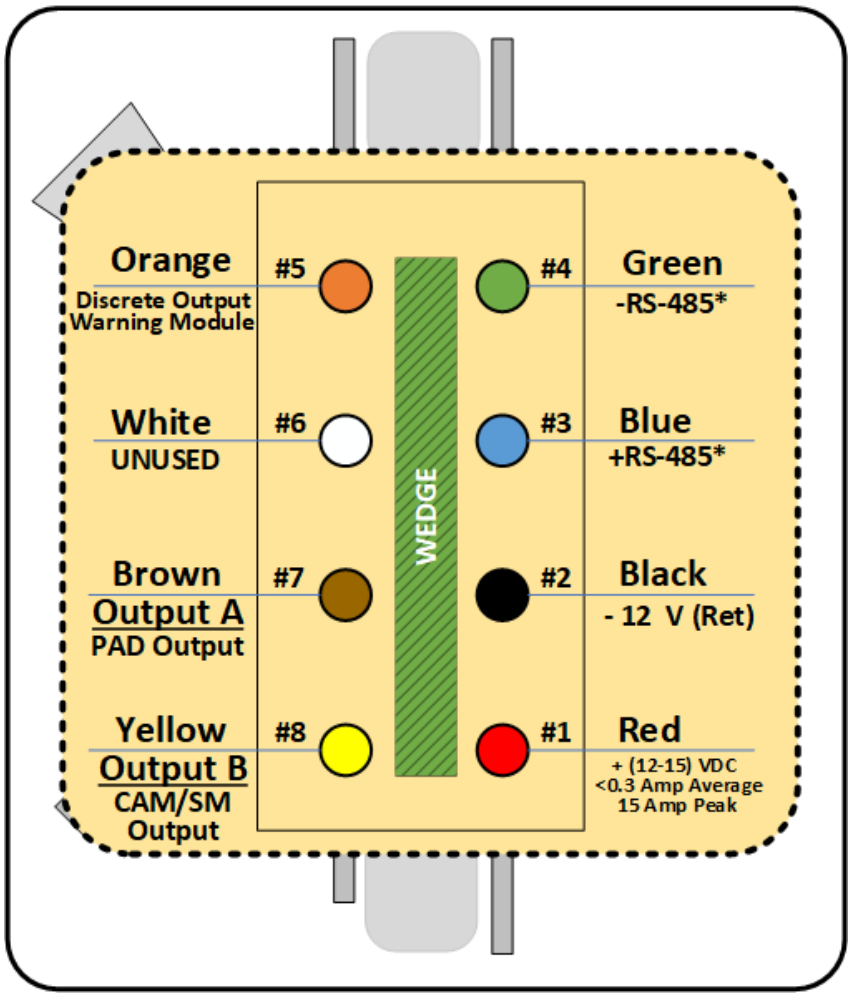


Relay Notes for Output A and B;

Note 1; Ⓐ Positive power for the Relay Coil (Output A and B) must have the +12 VDC connected to the same power as the DDAC-MFG to make a complete circuit.
Note 2; 12 VDC Relay Coil must **NOT EXCEED 200mA**.

Issue #8 Warning Module has constant Alarm

Problem	Warning Module Alarms constantly when NO PAD is in the Danger Zone
Cause	4) Low Power 5) Orange Wire is connected to Power Circuit Return (same as the black wire) and/or the Orange wire is touching the machine frame. 6) Watchdog – damaged unit
Solution	3) Are the Deutsch connectors FULLY Mated Together? 4) Ensure Orange Wire is Isolated from any other Circuits. 5) Ensure the Warning Module Cable is NOT Damaged/Smashed and Causing a Short Circuit. 6) Check Keyed Power and ensure 12-15 Vdc power is available at Warning Module connector (Pin 1 (red) and Pin 2 (black) on Deutsch connector, see diagram below). 7) If power is present, swap unit and return non-functional unit to factory for repair.

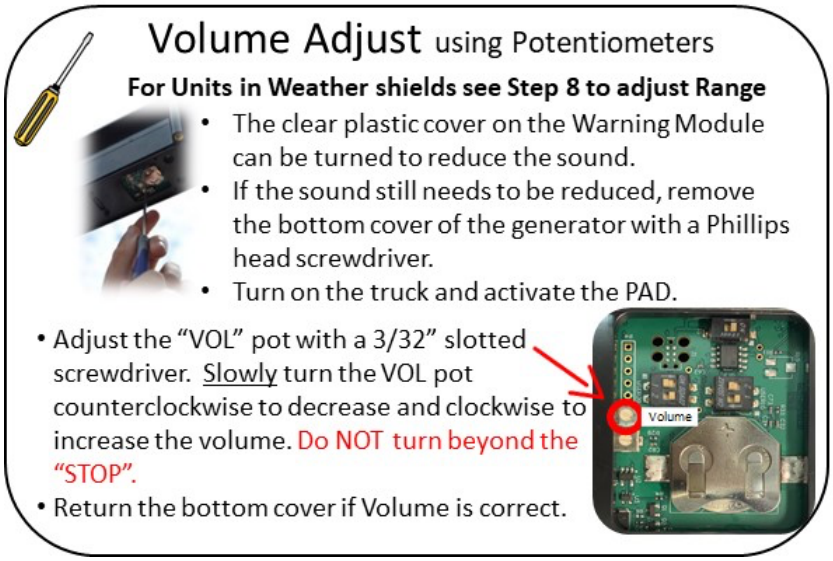


Issue #9 Warning Module is NOT Alarming

Problem	Warning Module is NOT Alarming even when a PAD is in the Danger Zone
Cause	1) Bad connection at the Deutsch connector 2) Orange Wire is damaged (broken/smashed) in the Warning Module cable. 3) Damaged unit
Solution	1) Are the Deutsch connectors FULLY Mated Together? 2) Ensure the Warning Module Cable is NOT Damaged/Smashed and Causing an Open Circuit, replace Warning Module cable if damaged. 3) If damaged, swap unit and return non-functional unit to factory for repair.

Issue #10 Warning Module has LOW Volume and/or Dim Warning Light when Alarming

Problem	Warning Module has Low Volume and/or a Dim Light when a PAD is in the Danger Zone
Cause	1) Bad connection at the Deutsch connector 2) Clear Cover on the Warning Module has the Volume reduced. 3) Volume has been adjusted previously. 4) Damaged unit
Solution	1) Are the Deutsch connectors FULLY Mated Together? 2) Rotate the Clear Cover on the Warning Module to Increase the Volume Level. 3) Adjust the Volume, this will also increase the brightness of the warning light (Shown below). 4) If damaged, swap unit and return non-functional unit to factory for repair.



Issue #11 Light ONLY Warning Module is not Working but Light and Sound Warning Module is Working

Problem	Light Only Warning Module is NOT working
Cause	1) Bad connection at Light ONLY Warning Module Deutsch connector 2) Bad Y Adapter Cable 3) Red and/or Orange Wire is damaged (broken/smashed) in the Light ONLY Warning Module cable. 4) Damaged unit
Solution	1) Are the Deutsch connectors FULLY Mated Together? 2) Ensure the Y Adapter Cable is NOT Damaged, if it is then Replace 3) Ensure the Light ONLY Warning Module Cable is NOT Damaged/Smashed and Causing an Open Circuit, replace Light ONLY Warning Module cable if damaged. 4) If damaged, swap unit and return non-functional unit to factory for repair.

Issue #12 Cab Silencer is NOT Fully Silencing Operators PAD when inside the Operators Cab or the Silent Zone is extending Outside the Operators Cab.

Problem	Cab Silencer is NOT silencing the PAD within 1’ (Cab Silencer Typically has a 2’ Radius)
Cause	1) Unit NOT powered with 12-15 Vdc. 2) Damaged unit
Solution	1) Check Keyed Power and ensure 12-15 Vdc power is available at the Red and Black wires. 2) Check the Top of the Cab Silencer to see that the Orange LED is ON Note: The Orange LED will turn ON at 5 Vdc so you must check for proper voltage. 3) If power source is ok, Return to Factory for Repair.

Problem	Cab Silencer Zone is NOT Large enough and/or Extends Outside of the Operators Compartment and/or PAD still alerts when in the silent zone (PAD alerts can be Random/ Intermittently).
Cause	1) Cab Silencer is Improperly Mounted 2) Cab Silencer is Improperly Adjusted 3) PAD NOT worn as designed 4) High Electromagnetic Interference **(EMI)** inside the Operators Cab.
Solution	1) Mount Cab Silencer as Shown Below, if Improperly mounted it can reduce the size of the Silent Zone. 2) Adjust Cab Silencer Zone per Install Guide, Silent Zone MUST NOT EXTEND OUTSIDE of Operators Compartment. 3) PAD must be worn in a vest or pouch as stated in the Installation Guide. 4) Replace Standard Cab Silencer with a Jammer Cab Silencer (Part #; DDAC-CAB-SI-JAM).