TECHNICAL Bulletin

Generator Communication Troubleshooting

Technical Support
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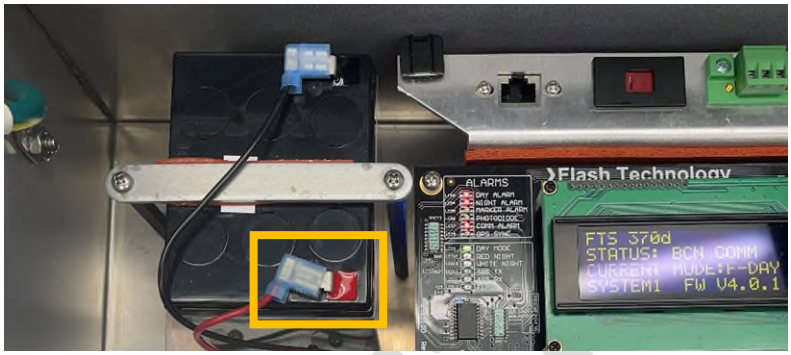
Product:	FTS-370
Brand(s):	Flash
Effective Date:	January 25, 2024
Part Affected:	PCB4 Smart Power Supply
Issued By:	Joshua Crowne, Manager, Systems and Solutions Engineering

This bulletin is issued to guide our customers of the correct procedure to troubleshoot Generac and Kohler generator monitoring on the Flash brand monitoring equipment that utilize Smart Power Supply PCB4.

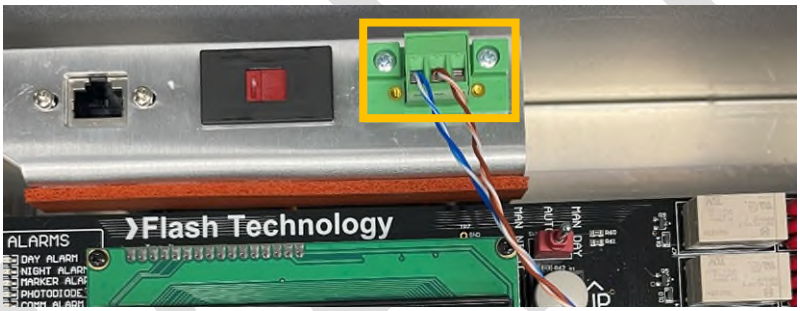
CONTENTS

1. VERIFY 120VAC POWER ON PCB4

1.1. REMOVE RED LEAD FROM BACKUP BATTERY



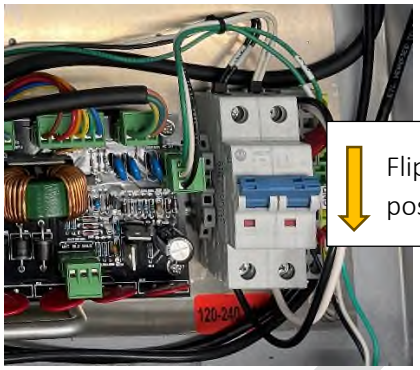
1.2. REMOVE AUX POWER CONNECTION FROM GENERATOR BRACKET



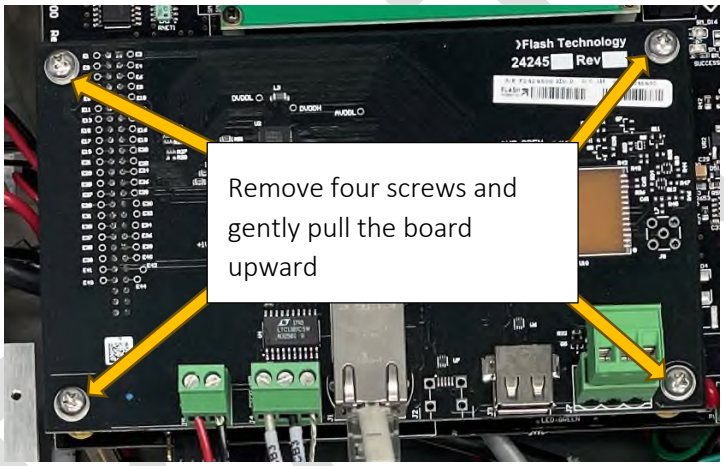
1.3. IS THE LCD DISPLAY POWERED ON?

YES	Go to Step 2
NO	Go to Step 1.4

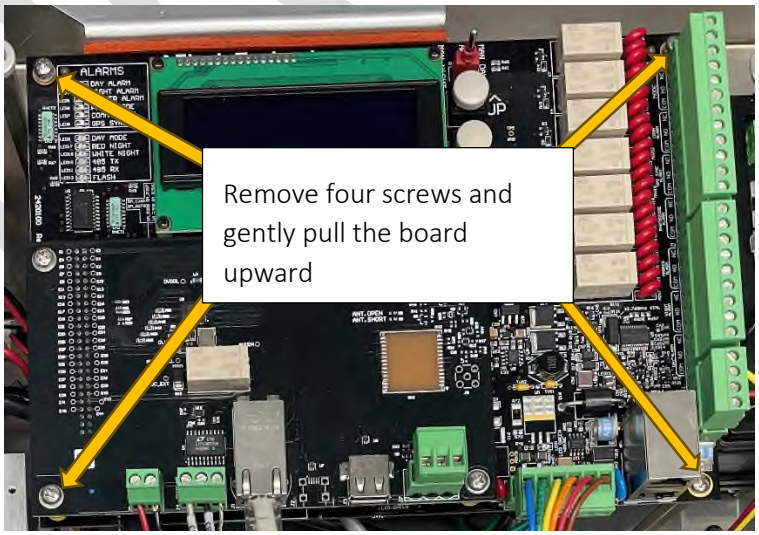
1.4. TURN OFF THE MAIN POWER TO THE CONTROLLER USING THE INTERNAL BREAKER



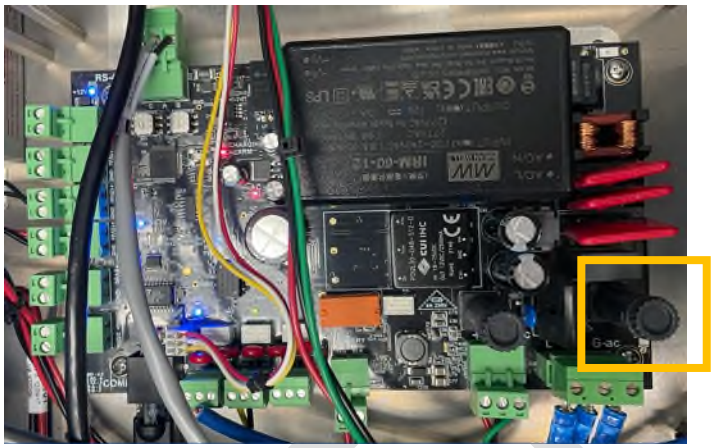
1.5. REMOVE THE SMART CARD FROM THE DISPLAY BOARD AND SAFELY SET ASIDE



1.6. REMOVE THE DISPLAY BOARD AND SAFELY SET ASIDE



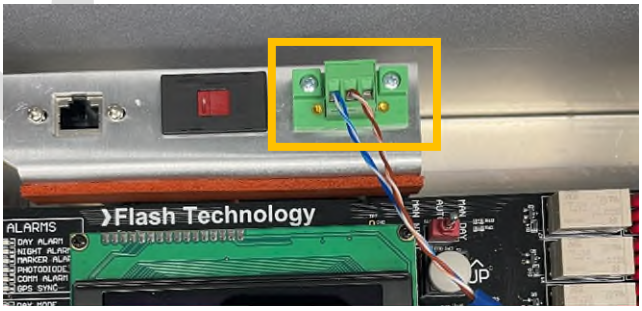
1.7. REMOVE FUSE F1 FROM PCB4 AND VERIFY IN OHMS WITH A VOLTMETER. DOES THE FUSE MEASURE LESS THAN 5Ω?



YES	Replace PCB4. Reinstall Display Board Reinstall Smart Card Turn on the main power to the Controller Go back to Step 1.3
NO	Replace Fuse F1. Reinstall Display Board Reinstall Smart Card Turn on the main power to the Controller Go back to Step 1.3

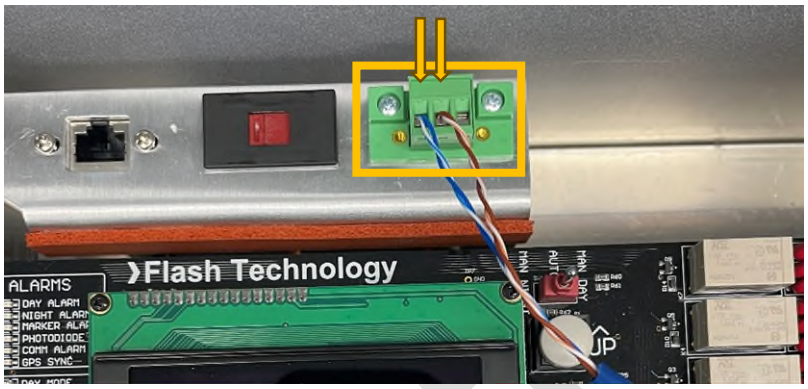
2. VERIFY POE POWER ON PCB4

2.1. IS THE POE CAT5 CABLE FROM THE GENERATOR WIRED CORRECTLY AS SHOWN BELOW?



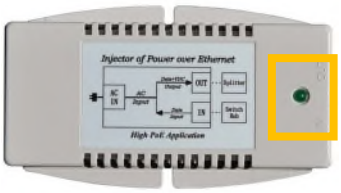
YES	Continue to Step 2.2
NO	Correct the wiring then continue to Step 2.2

2.2. MEASURE + AND – THE POE INPUT POWER WITH A METER IN DC VOLTAGE. DOES THE METER READ GREATER THAN 20VDC?



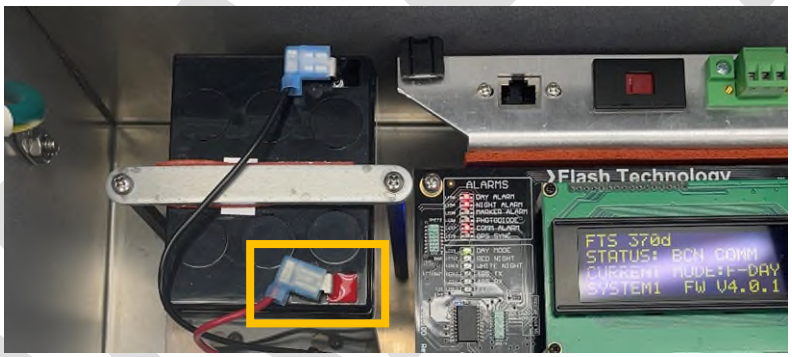
YES	Continue to Step 2.4
NO	Continue to Step 2.3

2.3. LOCATE THE POE INJECTOR THAT IS INSTALLED IN THE GENERATOR. IS THE GREEN POWER LED ON SOLID ON THE INJECTOR?

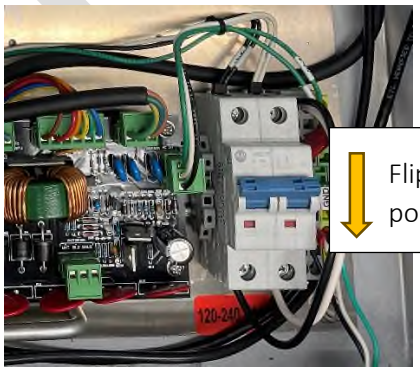


YES	Likely cause is bad CAT5 cable. Use a known good cable to verify. This can temporarily be run above ground for this test. Go Back to Step 2.2
NO	Replace POE injector. Go Back to Step 2.2

2.4. REMOVE RED LEAD FROM BACKUP BATTERY



2.5. REMOVE MAIN POWER TO CONTROLLER

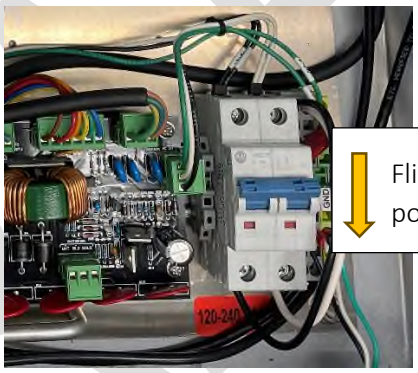


Flip breaker to the down position

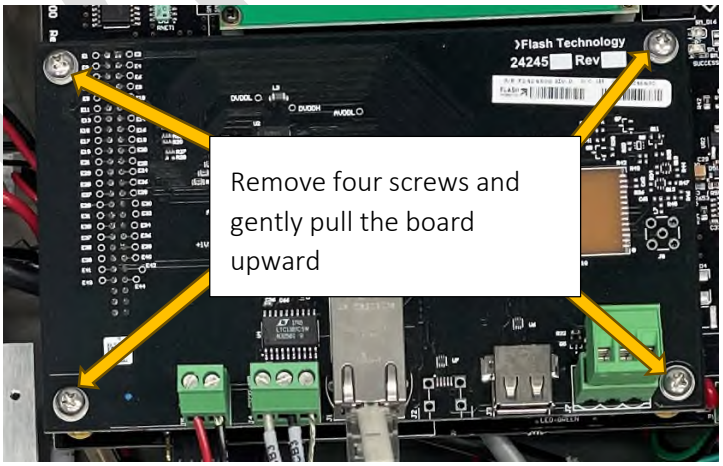
2.6. IS THE LCD DISPLAY POWERED ON?

YES	Go to Step 3
NO	Go to Step 2.7

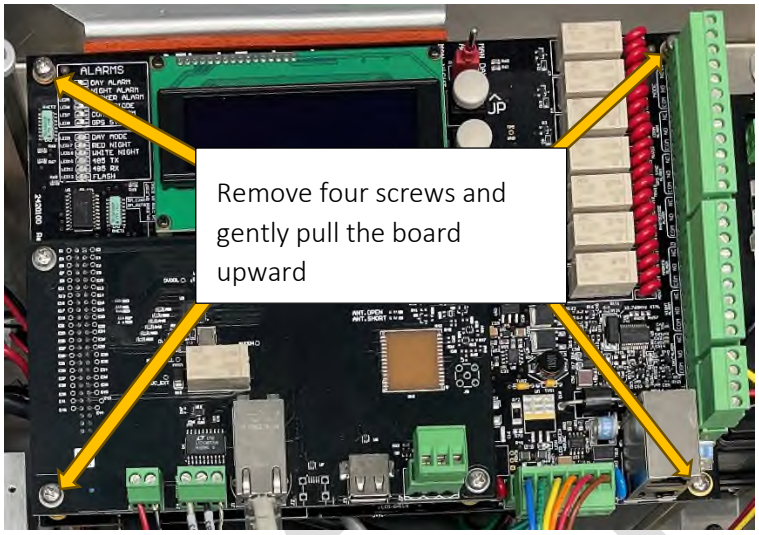
2.7. TURN OFF THE MAIN POWER TO THE CONTROLLER USING THE INTERNAL BREAKER



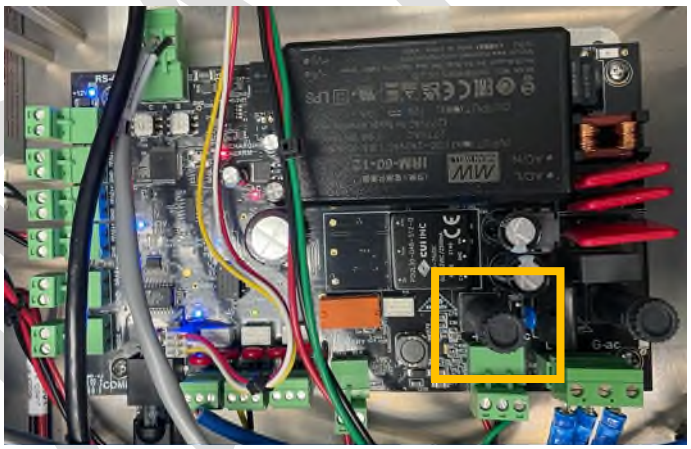
2.8. REMOVE THE SMART CARD FROM THE DISPLAY BOARD AND SAFELY SET ASIDE



2.9. REMOVE THE DISPLAY BOARD AND SAFELY SET ASIDE



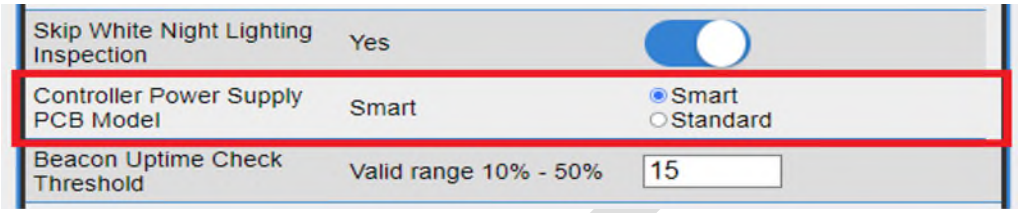
2.10. REMOVE FUSE F2 FROM PCB4 AND VERIFY IN OHMS WITH A VOLTMETER. DOES THE FUSE MEASURE LESS THAN 5Ω?



YES	Replace PCB4. Reinstall Display Board Reinstall Smart Card Reconnect AUX Power to Generator Bracket Go back to Step 2.6
NO	Replace Fuse F2. Reinstall Display Board Reinstall Smart Card Reconnect AUX Power to Generator Bracket Go back to Step 2.6

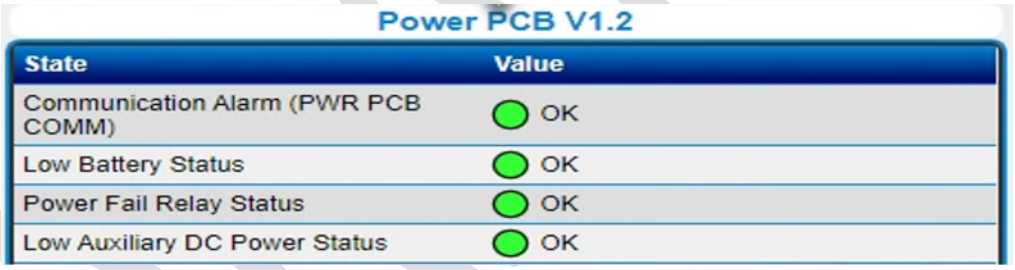
3. VERIFY 'CONTROLLER POWER SUPPLY PCB MODEL' IS SET TO 'SMART' ON THE TOWER LIGHTING CONFIGURATION WEBPAGE (COMPLETED BY THE NOC)

3.1. IS THIS SETTING SET TO 'SMART' AS SHOWN?



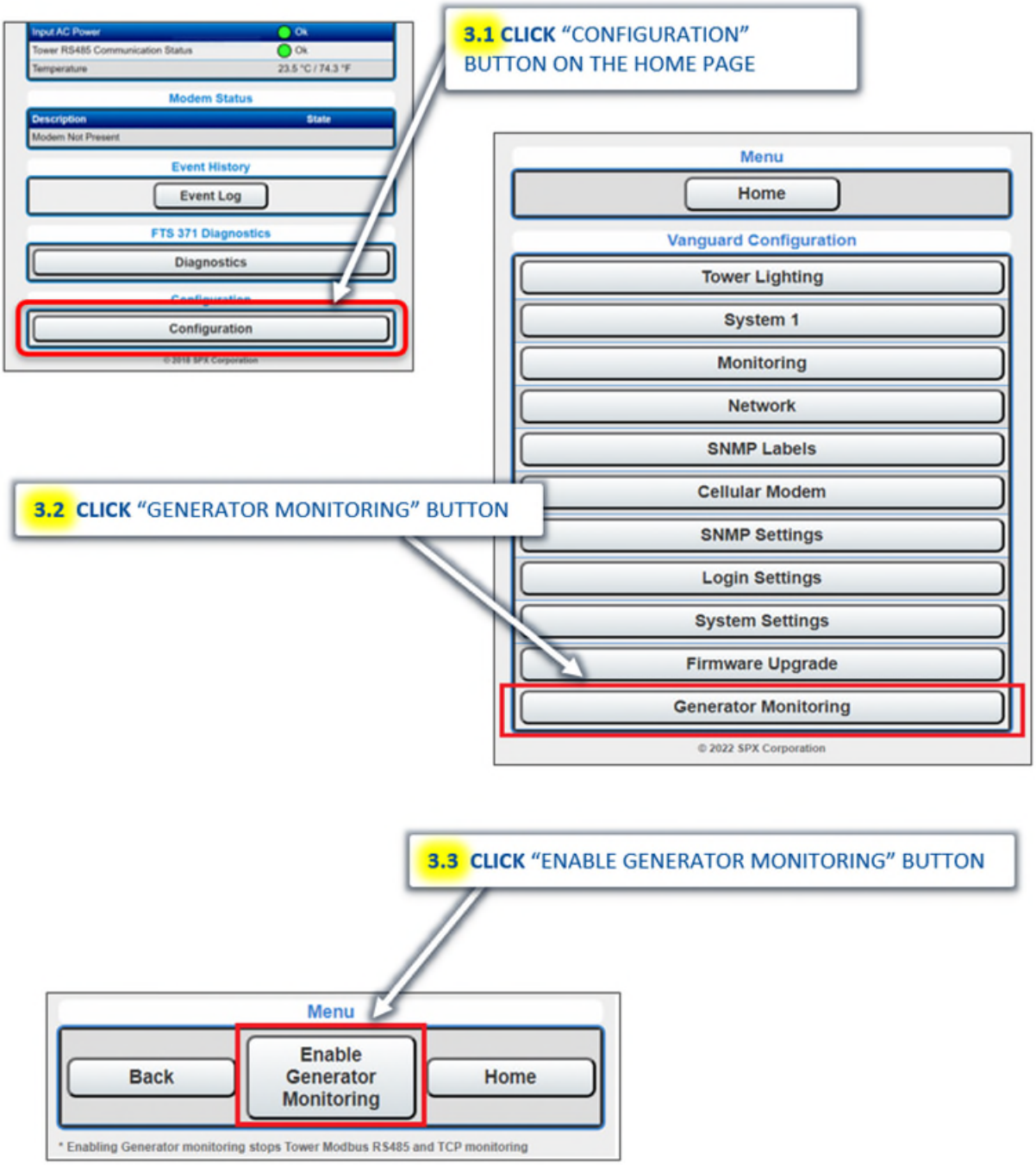
YES	Continue to Step 3.2
NO	Set this value to 'Smart' Click the 'Commit Settings' button Click the 'Power Supply PCB Reboot' button Continue to Step 3.2

3.2. CLICK ON THE DIAGNOSTICS BUTTON ON THE HOME PAGE AND NAVIGATE TO THE BOTTOM OF THE PAGE. ARE ALL THESE ALARM VALUES GREEN?

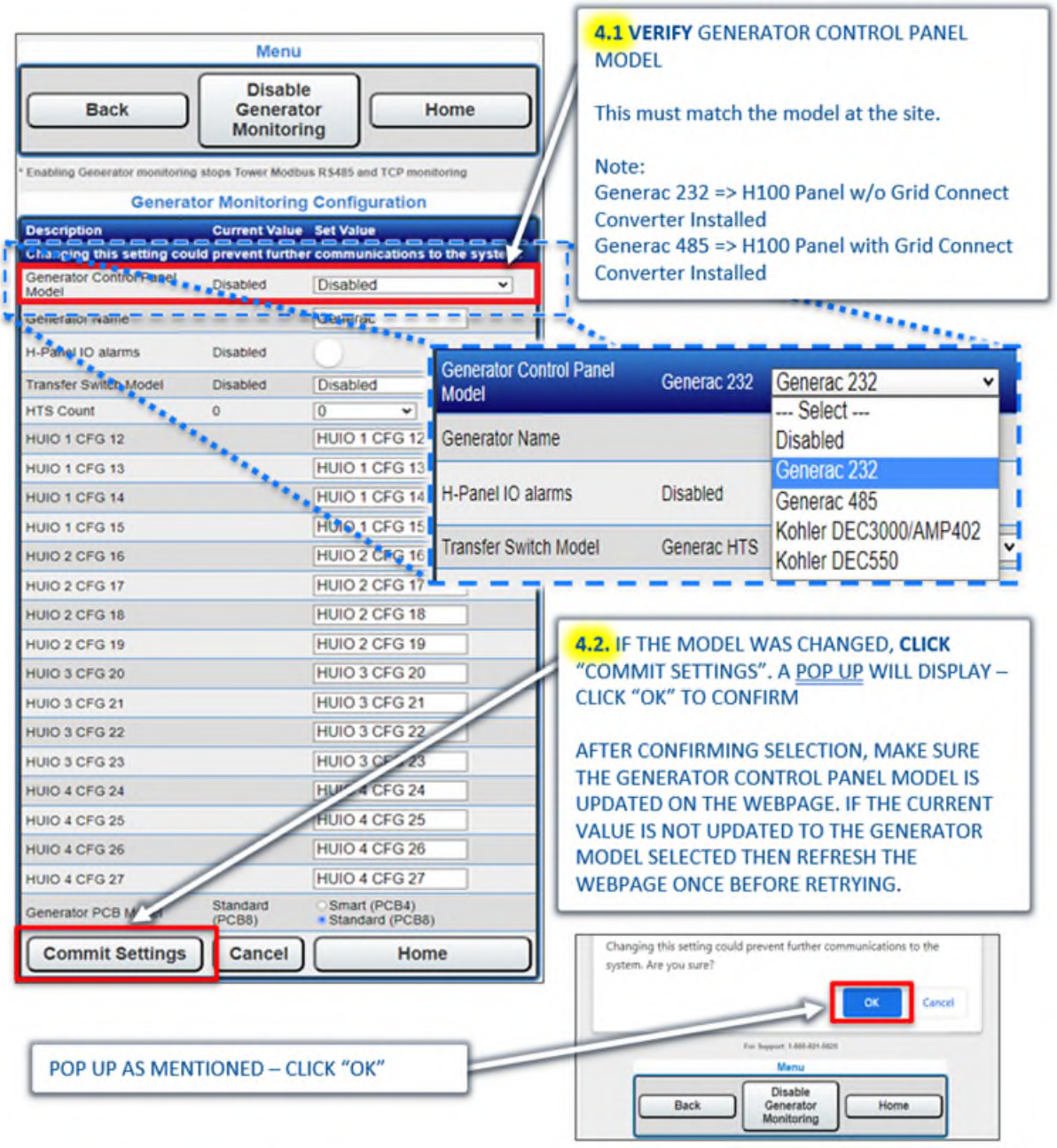


YES	Continue to Step 4
NO	Likely cause is PCB4 or PCB3. Please contact SPX AtoN Technical Support before replacement.

4. VERIFY GENERATOR MONITORING IS ENABLED (COMPLETED BY THE NOC)



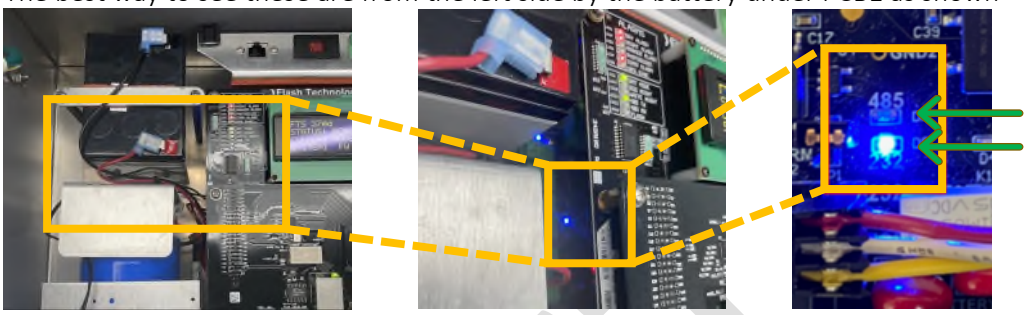
5. VERIFY GENERATOR CONTROL PANEL MODEL (COMPLETED BY THE NOC)



6. VERIFY RS485 OR RS232 LEDS ON PCB4

6.1. IS THE RED RS485 LED OR BLUE RS232 LED LIT ON PCB4?

The best way to see these are from the left side by the battery under PCB1 as shown



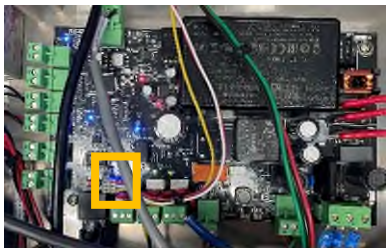
YES	Continue to Step 7
NO	Likely cause is bad PCB4. Replace PCB4 and go back to Step 6

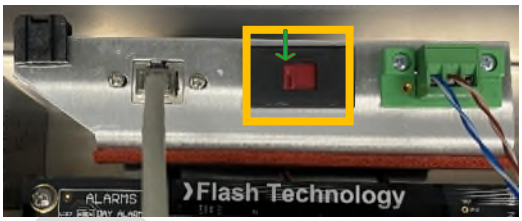
7. WHICH CONTROL PANEL MODEL HAS BEEN SELECTED?

- Generac 232 Comm Verification
- Generac 485 Comm Verification
- Kohler DEC3000/AMP402 Comm Verification
- Kohler DEC550 Comm Verification

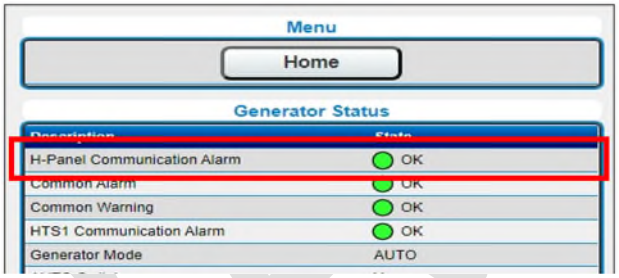
8. GENERAC 232 COMM VERIFICATION

8.1. VERIFY TERMINATION JUMPER P1 IS OPEN/OFF/UN-SHUNTED FOR GENERAC GENERATOR AND THE RS232 / RS485 SELECTOR SWITCH IS SET TO THE LEFT POSITION.





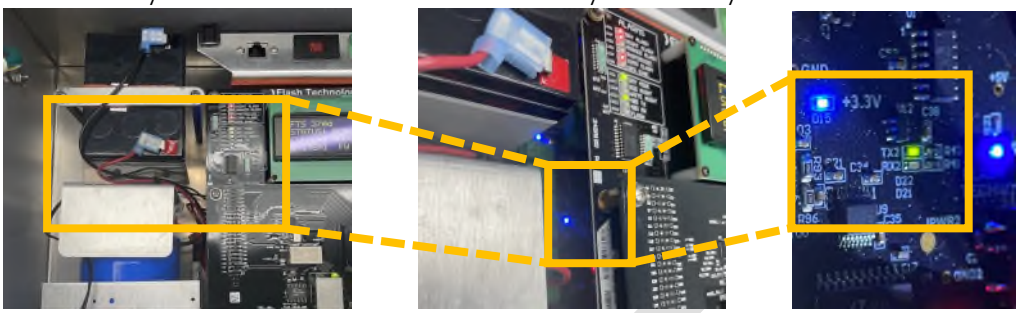
8.2. IS THE *'COMMUNICATION ALARM'* INDICATING A GREEN OK STATE ON THE GENERATOR STATUS PAGE? (COMPLETED BY THE NOC)



YES	Comms are working verify ATS settings
NO	Continue to Step 8.3

8.3. DO TX2 AND RX2 ON PCB4 FLASH TOGETHER?

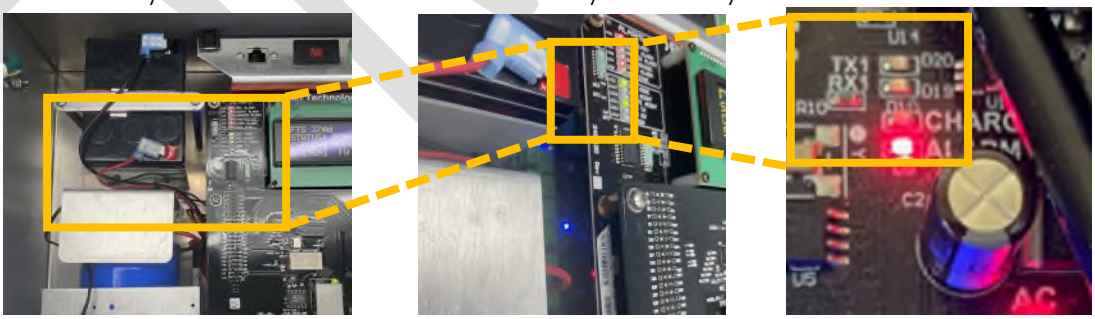
The best way to see these are from the left side by the battery under PCB1 as shown



YES	Continue to Step 8.4
NO – TX2 is not flashing	Likely cause is bad PCB4. Replace PCB4 and go back to Step 8.2
NO – Only TX2 is flashing	#1 Likely cause is bad CAT5 cable or RJ45 to DB9 converter. Use a known good cable and convertor to verify. These can temporarily be run above ground for this test. Once a known good cable and converter are installed go back to Step 8.2 #2 Replace PCB4 Go back to Step 8.2 #3 Contact AtoN Technical Support for more in depth troubleshooting.

8.4. DO TX1 AND RX1 ON PCB4 FLASH TOGETHER?

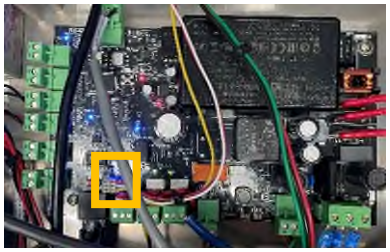
The best way to see these are from the left side by the battery under PCB1 as shown.

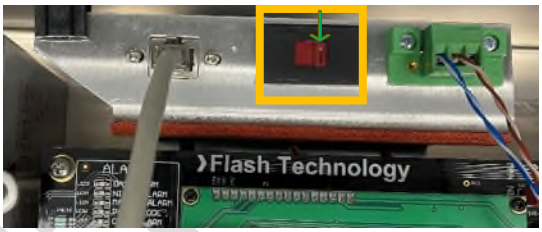


YES	Communication should be up. If not, please contact AtoN Technical Support for more in depth troubleshooting.
NO	Likely cause is bad PCB3. Replace PCB3 and go back to Step 8.3

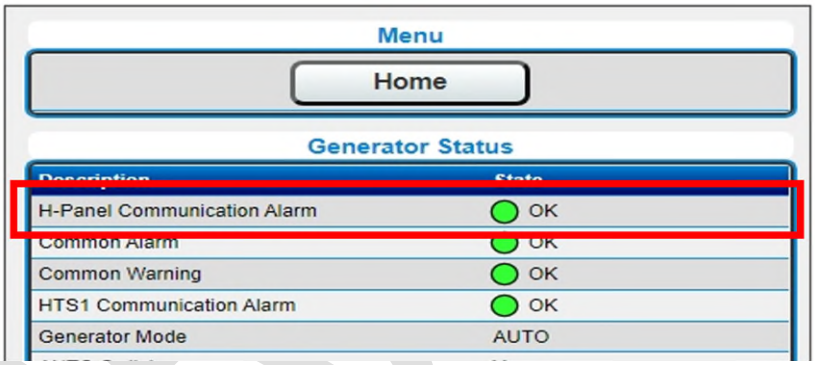
9. GENERAC 485 COMM VERIFICATION (GRIDCONNECT MUST BE INSTALLED IN THE GENERATOR AS SEEN IN STEP 8.3)

9.1. VERIFY TERMINATION JUMPER P1 IS OPEN/OFF/UN-SHUNTED FOR GENERAC GENERATOR AND THE RS232 / RS485 SELECTOR SWITCH IS SET TO THE RIGHT POSITION.





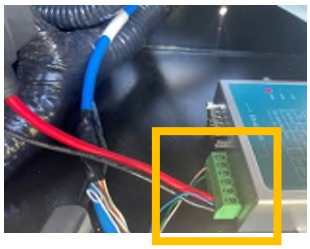
9.2. IS THE *'H-PANEL COMMUNICATION ALARM'* INDICATING A GREEN OK STATE ON THE GENERATOR STATUS PAGE? (COMPLETED BY THE NOC)



YES	Comms are working verify ATS settings
NO	Continue to Step 9.3

9.3. MAKE SURE THE BLUE CABLE IS SECURELY CONNECTED FROM THE RS-232 CONNECTION ON THE MOD-RS485-CNV-10XN AND THE GENERATOR.

9.4. IS 9VDC-30VDC SUPPLIED TO THE MOD-RS485-CNV-10XN ON THE DC+ AND DC- CONNECTIONS? (MEASURE THE WITH A MULTIMETER)

	YES	Continue to Step 9.5
	NO	Replace the inline fuse. Verify the power wiring is correct. Go back to Step 9.2

9.5. IS THE RED PWR LED ON THE MOD-RS485-CNV-10XN ON?

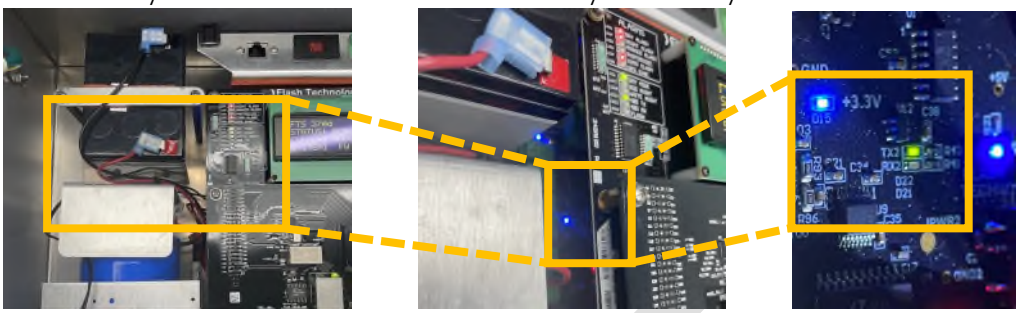
YES	Continue to Step 9.6
NO	Replace the MOD-RS485-CNV-10xN Go Back to Step 9.2

9.6. ARE THE GREEN RXD LED AND YELLOW TXD LED ON THE MOD-RS485-CNV-10XN FLASHING ONCE PER SECOND?

YES	Continue to Step 9.7
NO	#1 Likely cause is bad CAT5 cable. Use a known good cable to verify. This can temporarily be run above ground for this test. Once a known good cable is installed go back to Step 9.6 #2 Likely cause is bad MOD-RS485-CNV-10xN. Replace the MOD-RS485-CNV-10xN. Go back to Step 9.6 #3 Likely cause is bad PCB4 board. Replace the PCB4 board. Go back to Step 9.6

9.7. DO TX2 AND RX2 ON PCB4 FLASH TOGETHER?

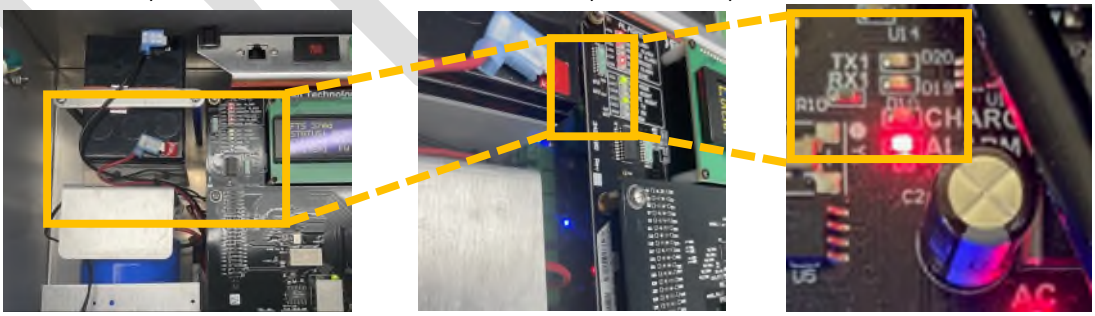
The best way to see these are from the left side by the battery under PCB1 as shown



YES	Continue to Step 9.8
NO – TX2 is not flashing	Likely cause is bad PCB4. Replace PCB4 and go back to Step 9.2
NO – Only TX2 is flashing	#1 Likely cause is bad CAT5 cable or RJ45 to DB9 converter. Use a known good cable and convertor to verify. These can temporarily be run above ground for this test. Once a known good cable and converter are installed go back to Step 9.2 #2 Likely cause is bad PCB4 board. Replace PCB4. Go back to Step 9.2 #3 Contact AtoN Technical Support for more in depth troubleshooting.

9.8. DO TX1 AND RX1 ON PCB4 FLASH TOGETHER?

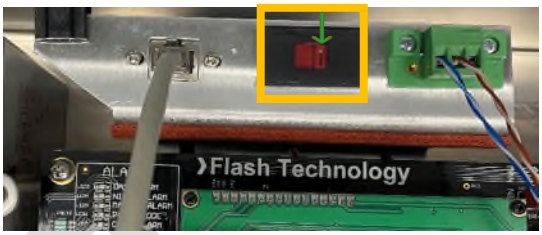
The best way to see these are from the left side by the battery under PCB1 as shown.



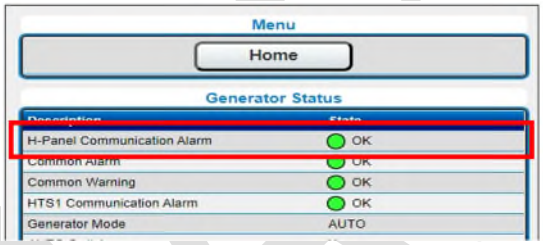
YES	Communication should be up. If not, please contact AtoN Technical Support for more in depth troubleshooting.
NO	Likely cause is bad PCB3. Replace PCB3 and go back to Step 9.2

10. KOHLER DEC3000/AMP402 AND DEC550 COMM VERIFICATION

10.1. VERIFY TERMINATION JUMPER P1 IS CLOSED/ON/SHUNTED FOR KOHLER GENERATOR AND THE RS232 / RS485 SELECTOR SWITCH IS SET TO THE RIGHT POSITION.



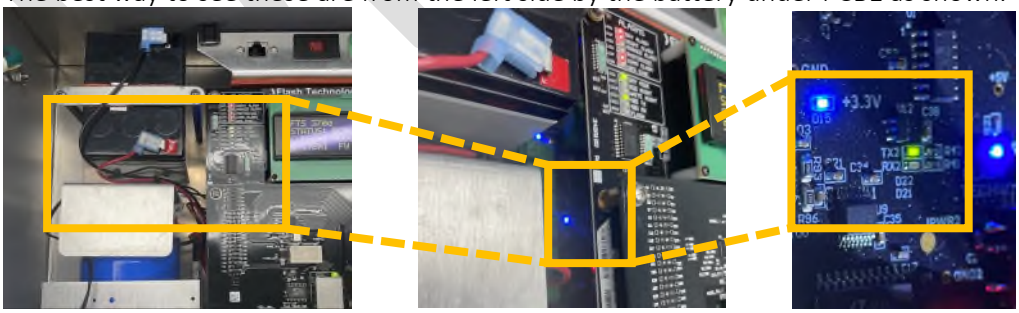
10.2. IS THE *'COMMUNICATION ALARM'* INDICATING A GREEN OK STATE ON THE GENERATOR STATUS PAGE? (COMPLETED BY THE NOC)



YES	Comms are working verify ATS settings
NO	Continue to Step 10.3

10.3. DO TX2 AND RX2 ON PCB4 FLASH TOGETHER?

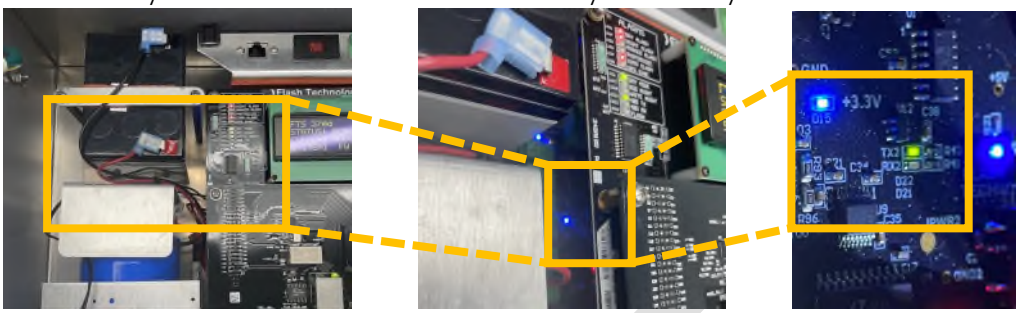
The best way to see these are from the left side by the battery under PCB1 as shown.



YES	Continue to Step 10.6
NO – TX2 is not flashing	Likely cause is bad PCB4. Replace PCB4 and go back to Step 10.2
NO – Only TX2 is flashing	Go to Step 10.4

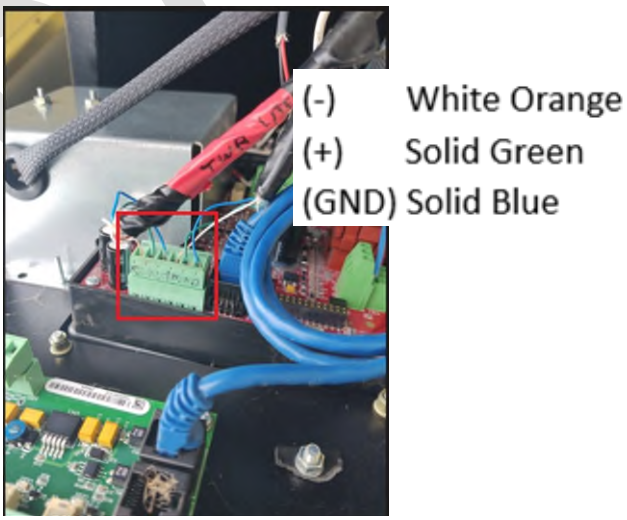
10.4. IS TX2 FLASHING AND RX2 SOLID ON ON PCB4?

The best way to see these are from the left side by the battery under PCB1 as shown.



YES	Swap the RS485 wiring in the Kohler generator panel on Step 10.5
NO	#1 Likely cause is bad CAT5 cable. Use a known good cable and convertor to verify. These can temporarily be run above ground for this test. Once a known good cable and converter are installed go back to Step 10.2 #2 Replace PCB4 Go back to Step 10.2 #3 Contact AtoN Technical Support for more in depth troubleshooting.

10.5. DOES THE RS485 WIRING IN THE KOHLER GENERATOR MATCH THE PICTURE BELOW?

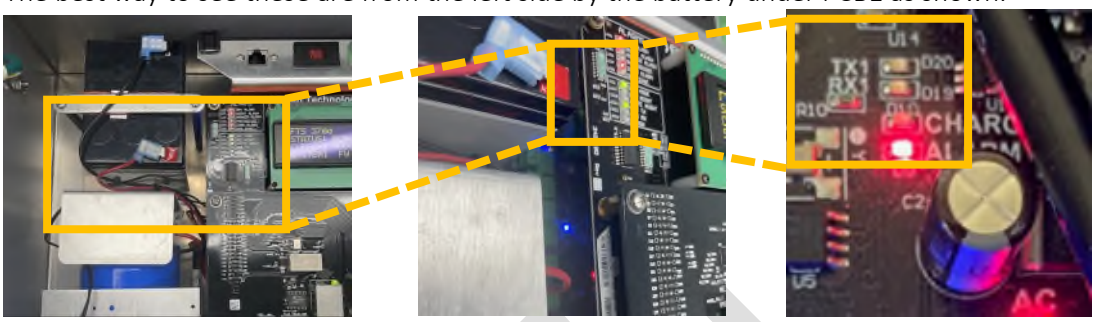


YES	Swap the RS485 wiring in the Kohler generator panel on Step 10.2
NO	#1 Fix the wiring in the Kohler back to Step 10.2 #2

	Contact AtoN Technical Support for more in depth troubleshooting.

10.6. DO TX1 AND RX1 ON PCB4 FLASH TOGETHER?

The best way to see these are from the left side by the battery under PCB1 as shown.



YES	Communication should be up. If not, please contact AtoN Technical Support for more in depth troubleshooting.
NO	Likely cause is bad PCB3. Replace PCB3 and go back to Step 10.2