



FOLLOW THE GUIDELINES BELOW TO TROUBLESHOOT NON-OPERATIONAL TRILOGY INVERTER BOARD / COMPRESSOR:

WARNING!

WARNING! When the disconnect switch is closed, high Voltage is present in some areas of the electrical panel. Exercise caution when working with energized equipment. Verify that the ground terminal is connected to the cabinet.

1. Bus voltage verification on CNDC connector pins:

 Using volt meter to measure DC voltage at CNDC pins. If voltage across pins >325VDC proceed to next step (typically, 325 – 360VDC). If volts across CNDC pins <325VDC, disconnect power to the unit. Wait for at least 15 minutes for capacitors to discharge. After 15 minutes, disconnect the compressor from Inverter board and re-test for volts at CNDC. If volts at the CNDC pins <240VDC, replace the Inverter board.



2. Check communication at the MIM board:

- At power-up, both RED and GREEN LEDs should flash rapidly for a few moments while communications are being established. Once communication is established, RED and GREEN LEDs will each flash at 5 second intervals, indicating that MIM is powered, and in communication with the EXM and inverter boards, and that the inverter board has been initialized and is ready for operation.
- If **RED LED** remains ON continuously, MIM is unable to communicate with Inverter.
- If **GREEN LED** remains ON continuously, MIM is unable to communicate with EXM.



MIM LED Conditions		
Fault RED LED	Status GREEN LED	Description
ON	-	MIM powered but no inverter communication
-	ON	MIM is powered but no EXM communication
FAST FLASH	-	MIM communicating with inverter but initialization not complete
-	SLOW FLASH	MIM communicating with EXM (GOOD!)
SLOW FLASH	-	MIM communicating with initialized inverter (GOOD!)
OFF	OFF	MIM not operational

If no inverter communication has been verified, **replace the Inverter or MIM board** (inverter is the most likely problem). If communication has been verified, proceed to next step.



3. Check communication at the MIM board:

Turn power off to the unit. Wait for at least 15 minutes for capacitors to discharge. Remove compressor electrical terminal cap, and then remove the compressor wires from the compressor electrical terminals. Using a very accurate ohm meter, check winding resistance between the pins (verify resistance of meter leads first, as this value must be subtracted from measured compressor winding resistance). Compressor windings should measure ~0.6Ω each, indicating no issues with the compressor windings. A meter reading <0.4Ω indicates a shorted winding but needs to be checked with more accuracy. An open winding will usually be indicated as infinite resistance on meter. Also check resistance/continuity between each compressor terminal to equipment "ground" and the other two windings to verify any shorts to ground or between windings. If any winding is found to be open or shorted, replace compressor. If all checks out, proceed to next step.



4. External Capacitor check:

Turn power off to the unit. Wait for at least 15 minutes for capacitors to discharge. Remove rubber boot from the capacitor electrical terminals. Disconnect white and black wire from the capacitor terminals. Using multimeter capable of capacitance measurement [-l(-], check the capacitor and note value (µF). Be sure to observe polarity when reconnecting to board (P2 = positive, N2 = negative). If the capacitance (µF) reads less than 90% (>10% below) the value specified the capacitor marking, replace external capacitor. If all checks out proceed to next step.

5. External Inductor check:

• Turn power off to the unit. Wait for at least 15 minutes for capacitors to discharge. Disconnect external inductor from the board DCL1 and DCL2 connectors on the inverter board. Using ohm meter, test for low resistance / continuity (verify resistance of meter leads first, as this value must be subtracted from measured compressor winding resistance). If the resistance reads >1 Ω , check for bad connections on the external inductor terminals (external Inductor winding resistance should be minuscule, <1 Ω). Also examine the inductor for any discoloration or burnt windings. If all checks out, reconnect inductor wires to board DCL1 and DCL2.





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