



Aircore EC+ Troubleshooting Guide

These instructions do not cover all variations in equipment nor provide information for every possible condition in installation, operation, or maintenance. For additional information, contact Infinitum Support.

Motor troubleshooting and service must be performed by qualified personnel with proper tools and equipment. LOTO operation should be followed per company guidelines.

Issue	Observations	Probable Cause	Mitigation
Motor unresponsive/ fails to start	No LED status lights	No 460-480 voltage	<ul style="list-style-type: none"> <input type="checkbox"/> Check incoming voltage. <input type="checkbox"/> If no incoming voltage contact site electrician. <input type="checkbox"/> Retry motor once voltage has been confirmed. <input type="checkbox"/> If voltage is confirmed go to next troubleshooting step.
	Nearby motors also inoperable	No 460-480 voltage	<ul style="list-style-type: none"> <input type="checkbox"/> Check incoming voltage. <input type="checkbox"/> If no incoming voltage contact site electrician. <input type="checkbox"/> Retry motor once voltage has been confirmed. <input type="checkbox"/> If voltage is confirmed go to next troubleshooting step.
Motor fails to start with confirmed VAC	No LED status lights on motor	Internal failure	<ul style="list-style-type: none"> <input type="checkbox"/> Perform LOTO. <input type="checkbox"/> Remove VFD access or drive cover. (Depending on the model.) <input type="checkbox"/> Confirm connections for all internal wiring connections, particularly the main 460 VAC line-in wiring and the cable from the Inverter board to CIO board. <input type="checkbox"/> Using a multimeter, determine continuity of the three fuses. <input type="checkbox"/> If any are open, record which one, RMA motor. <input type="checkbox"/> Close cover and try power again if no open fuses. <input type="checkbox"/> If no LEDs are lighted, RMA motor
	Solid green LED, normal yellow heartbeat LED, no red LED: serial Modbus connection incomplete, grounded, or reverse polarity	Lack of external communication to the motor	<ul style="list-style-type: none"> <input type="checkbox"/> Correct the polarity. <input type="checkbox"/> Correct the ground/shield/drain by termination at the main RTU device with a contiguous, isolated run from end of line to end of line. <input type="checkbox"/> Remove any wrongful ground locations. <input type="checkbox"/> Verify each connection point or break for proper termination of the conductors along the daisy chain. <input type="checkbox"/> Verify the correct wire for the application is being used.
	Solid green LED, normal yellow heartbeat LED, no red LED: analog control unresponsive or incorrect motor speed	Incorrect signal voltage or incorrect I/O terminal connection	<ul style="list-style-type: none"> <input type="checkbox"/> The +24v terminal on the I/O board is OUTPUT in DC voltage only. <input type="checkbox"/> The digital input 1(DIN1) needs to receive 24v DC for the motor to start at minimum speed which can be set under Parameter Settings>Terminal Settings>A11 Min Setting (%). <input type="checkbox"/> The analog input(A_IN) by default will accept 0-10v for 0-100% speed.
	Red LED Fault LED illuminated	Internal electrical issue	<ul style="list-style-type: none"> <input type="checkbox"/> Use MCS to determine fault, and Serial # for motor. <input type="checkbox"/> Photograph motor label and reach out to Infinitum Support for assistance.
No connection to Motor Control Software via TCP (ethernet)	LEDs (green on, yellow flashing), No red LED	Incorrect motor operating mode	<ul style="list-style-type: none"> <input type="checkbox"/> Change MCS operating mode on upper left corner of home screen.
	LEDs (green on, yellow flashing). No red LED	Incorrect IP address	<ul style="list-style-type: none"> <input type="checkbox"/> Confirm static IP address: 172 17 20 153 / 255 255 0 0

Issue	Observations	Probable Cause	Mitigation
MCS connects to motor, but motor won't start	Fault observed in upper right corner of MCS	Internal motor fault	<ul style="list-style-type: none"> <input type="checkbox"/> Create a save state to record the data. <input type="checkbox"/> Confirm the motor parameters are set to what is needed for the spec of the fans. <input type="checkbox"/> Record the state of the motor and the order of the faults as they are listed. <input type="checkbox"/> Refer to Fault Page on the Infinitem Support page for information. <input type="checkbox"/> Clear Faults with the MCS and see if the motor will restart at the Minimum RPM. <input type="checkbox"/> If the motor starts, then observe its operation for 15 mins listening and looking for any defects. <input type="checkbox"/> If the observation is ok turn the motor to mid the full RPM for 10 mins each. <input type="checkbox"/> If the motor runs for both with no issues, then remove the laptop and return motor to service.
MCS connects to motor, but motor has Modbus or Serial communication issues	MCS connects to motor. No operation via Modbus or Serial	Cable, or Board issue	<ul style="list-style-type: none"> <input type="checkbox"/> LOTO the motor at the mainline disconnect and follow your company procedure to ensure no power. <input type="checkbox"/> Check L1, L2, L3 on the motor after LOTO to confirm no power. <input type="checkbox"/> Are wires stripped properly and inserted into the terminal – Remove wires and re-seat to confirm. <input type="checkbox"/> Review boards and wiring inside of motor access panel to determine if anything looks burnt, unplugged, or out of place. <input type="checkbox"/> Contact Infinitem Support with any concerns. Pictures will help. <input type="checkbox"/> MAKE SURE MOTOR HAS POWER REMOVED AND LOTO – Then physically spin motor to see if it spins freely. <input type="checkbox"/> If there is resistance record it with a video and send to Infinitem Support. <input type="checkbox"/> If motor spins freely then remove the CIO 24V DC Comm wires and use a meter to check them. <input type="checkbox"/> Check all wires in the array of fans that are for the Modbus/Coms. <input type="checkbox"/> Confirm shields are terminated where needed, solid connections are made, and wires are not pinched/nicked anywhere. <input type="checkbox"/> It may be necessary to remove all connections and reseat them back in the terminals/connectors. <input type="checkbox"/> It is very important to have good connections on the Modbus/Comm side. <input type="checkbox"/> Make sure all motors in the array have the end of line jumper or end of line resistor installed per specs and only at the end of line. <input type="checkbox"/> Confirm all motors that are not end of line motors have the comm dipswitch in the off position. <input type="checkbox"/> Remove field wires for the Modbus comms making sure the ends do not touch and are safely covered with tape or connectors. <input type="checkbox"/> Install wires from USB to RS485 adapter in the comm ports. <input type="checkbox"/> See if the motor will run using only the MCS and attached wires. <input type="checkbox"/> If YES then there is a field wire issue. <input type="checkbox"/> If NO then contact Infinitem Support for a new CIO board.
MCS connects to motor but not delivering 100% power	Motor is running, LEDs are normal (green ON, yellow flashing)	Power wiring, or Board issue	<ul style="list-style-type: none"> <input type="checkbox"/> Perform LOTO. <input type="checkbox"/> Remove VFD access cover on Gen2 or entire drive cover on Gen3 VFD. <input type="checkbox"/> Confirm connections for power connections, measure the main 460 VAC line-in wiring for all three phases. <input type="checkbox"/> The motor will run even if one phase is lost.