

# Three Phase Platinum

## Troubleshooting Guide



### Model Numbers

CRQ2-16AT / ERQ2-16AS  
CRQ3-18AT / ERQ3-18AS  
CRQ5-21AT / ERQ5-21AS  
CRQ5-24AT / ERQ5-24AS

**IMPORTANT NOTE:**

Please read this manual carefully before installing or operating your air conditioning unit.


*That's better. That's Actron.*



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## 01. Fault Finding Guide

FAULT	POSSIBLE CAUSES	REMEDIES
<b>The system does not start.</b>	Built-in safety timers have been activated.	Ensure that 5 minutes has passed from turn on time.
	A breaker has turned OFF or a fuse has blown.	Check breakers and fuses.
	The thermostat set point is incorrect.	Check the wall control settings are correct. Check the “set point” is set low enough for cooling or high enough for heating.
	The master wall controller timer setting is incorrect.	Check the wall controller timer settings. See Operating Instructions section.
<b>Air does not flow (Indoor unit).</b>	Zones might be switched off.	Check zones are switched on.
	During heating operation, the hot start function may have been activated.	During heating operation, the indoor fan is delayed for 46 seconds or until the indoor coil reaches 24°C (whichever occur first). This is to prevent cold drafts. Wait for 46 seconds and the air will start flowing.
	During defrost of the outdoor coil in heating operation; the indoor fan will not operate for several minutes. (The wall controller will display Defrost symbol  in the top left-hand of the screen status bar. This Defrost symbol will be seen on all screens).	This is normal operation during the defrost cycle to prevent cold air being blown into rooms.
<b>Cooling/Heating is not sufficient.</b>	The cooling/heating function may not work effectively when the return air filter is clogged with dust and dirt.	Clean the return air filter.
	The cooling/heating function may not work effectively if the air inlet and air outlet on the outdoor unit are blocked.	Make sure the air inlet and air outlet on the outdoor unit is not blocked. Check that the area around the outdoor unit is free from obstructions that may cause the airflow to recirculate.
	The airflow across the indoor coil may not be enough and the anti-freeze protection or over heat prevention systems can lower the cycle capacity for the unit	Reduce the total static pressure on the indoor fan to increase airflow. For example increase duct sizes, reduce tight duct work bends or increase return air grille size.
	The cool/heat load is too great for the air conditioner.	Perform a heat load analysis on the conditioned space. You may need to consider upgrading your air conditioner with a larger system.
	Open windows or doors will cause inefficient operation.	Close windows and doors in conditioned areas.
	Appropriate zones not turned on.	Turn on appropriate zones (if applicable).
	The outside temperature is beyond the air conditioner design conditions.	If you know an extreme day is coming turn the air conditioner on a few hours before ambient temperatures reach extreme. This should help on those few extreme days.
	You may be trying to operate the whole house on Auto Fan Mode.	Change fan mode to constant HIGH fan speed. This increases the total fan speed. This will boost fan capacity.

FAULT	POSSIBLE CAUSES	REMEDIES
<b>Steam emitted from outdoor unit.</b>	This is caused by the defrosting operation of the outdoor units heat exchanger in heating operation in cold ambient conditions.	This is normal during the defrost operation in cold ambient conditions.
	Condensation of water on the outdoor coil during heating operation.	This is normal during heating operation. You can purchase drip trays to contain then drain this excess water.
<b>Set temperature cannot be adjusted.</b>	The zone control set temperature limits are being exceeded.	Check the upper and lower temperature limits are set correctly. See operation manual for details on setting upper and lower temperature limits.
<b>Occasional hissing noise can be heard on heating cycle.</b>	This is the sound of the gas changing direction as de-ice cycle begins.	This is a normal function of an air conditioner. The unit is removing any ice on the outdoor unit.
<b>The compressor is running but the system is not cooling.</b>	You are in heating mode.	Check the temperature settings.
	The reversing valve has jammed between heating and cooling.	Replace reversing valve.
<b>The outdoor coil keeps freezing over.</b>	Outdoor coil sensor might be faulty. See sensor (temperature/resistance) table and check resistance value.	Replace faulty sensor.
	May have obstruction in outdoor coil.	Remove obstructions.
<b>There is only one condenser fan working.</b>	The fan is faulty. Test the fan motor for correct voltage, check motor winding resistance, open circuit, check capacitor, etc.	Replace faulty fan. If the fan motor needs to be replaced and there is no one available immediately, then just disconnect the fan electrically and cover the faulty motors fan guard. This way the unit can still operate at reduced capacity using 1 fan until you get a replacement fan motor.
<b>The system is short on gas. You have fixed the leak and want the system to operate at 100% so gas charge can be corrected. What can you do to ensure 100% compressor operation?</b>	You can adjust your wall controller temperature so you have a large differential. This will operate at the system at 100% till the temperature gets to within 4°C of the set point.	Select Cooling or heating mode. If cooling adjust set-points more than 4°C lower than room temp. If Heating adjust set-points more than 4°C higher than room temp. Complete charging procedure until finished.  It is recommended to run QUE test mode (cool or heat test). This can be found in the test menu in the technical menu of the QUE master control.
<b>The indoor unit gives out odour</b>	This happens when smell of the room, furniture, or cigarettes are absorbed into the unit and discharged with the airflow.	If this happens, we recommend you to run the air conditioner on cooling for a period of time with the doors and windows open or have the indoor unit washed by a technician. Consult the installer from whom you bought the air conditioner.
	Check the drain is not piped into the sewerage drain line.	Re-pipe drain with a P-Trap and connect into household drainage or storm water drain.

## 02. EC Fan Troubleshooting

FAULT	SEQUENCE OF EVENTS	POSSIBLE CAUSES	REMEDIES
<b>Airflow hunting during AUTO and Self Learn Mode.</b>	Indoor fan will intermittently “huff”.	Excessive static in duct work.	Reduce static where possible. Review duct design with reference to ActronAir design guidelines (Service Manual, Section 23).
<b>Too much airflow when minimum zones are on.</b>	Air is blowing too much when in minimum zones.	Fan not set to Auto Mode.	Change fan setting to Auto Mode
		Duct design is not air balanced correctly.	Adjust the duct design to air balance correctly.
		Minimum duct and outlet sizes requirements not followed.	Check versus ActronAir guidelines and adjust/change if necessary. Review duct design with reference to ActronAir design guidelines (Service Manual, Section 23).
<b>Auto Mode is not available.</b>	When scrolling through fan speeds, Auto Mode is not selectable.	During commissioning, Self-Learn mode was not activated.	Carry out self learn mode. See additional operating instruction.
		Self learn failed during commissioning.	Ensure that the air is balanced correctly (static may be too low). Review duct design guidelines (Service Manual, Section 23).
<b>Low airflow during Auto Mode</b>	System produces reduced airflow on Auto mode when all or minimum zones are on.	System capacity has been designed to heat/cool only selected areas of the conditions space at any one time.	Operate indoor fan on Low/Med/ High speed to achieve more airflow.
		Excessive static in ductwork.	Reduce static where possible. Review duct design with reference to ActronAir design guidelines (Service Manual, Sec.23).
<b>Indoor fan not changing speeds when in Auto Mode.</b>	When zones are switched to the off position, or as the damper position of active zones close (VAV zones only), airflow to active zones does not reduce.	There is insufficient static within the duct design of the active zones.	Review duct design with reference to ActronAir design guidelines (Service Manual, Sec. 23).
	When zones are switched to the on position, or as the damper position of active zones open (VAV zones only), airflow to active zones does not increase.	There is excessive static within the duct design of the active zones.	Review duct design with reference to ActronAir design guidelines (Service Manual, Sec. 23).

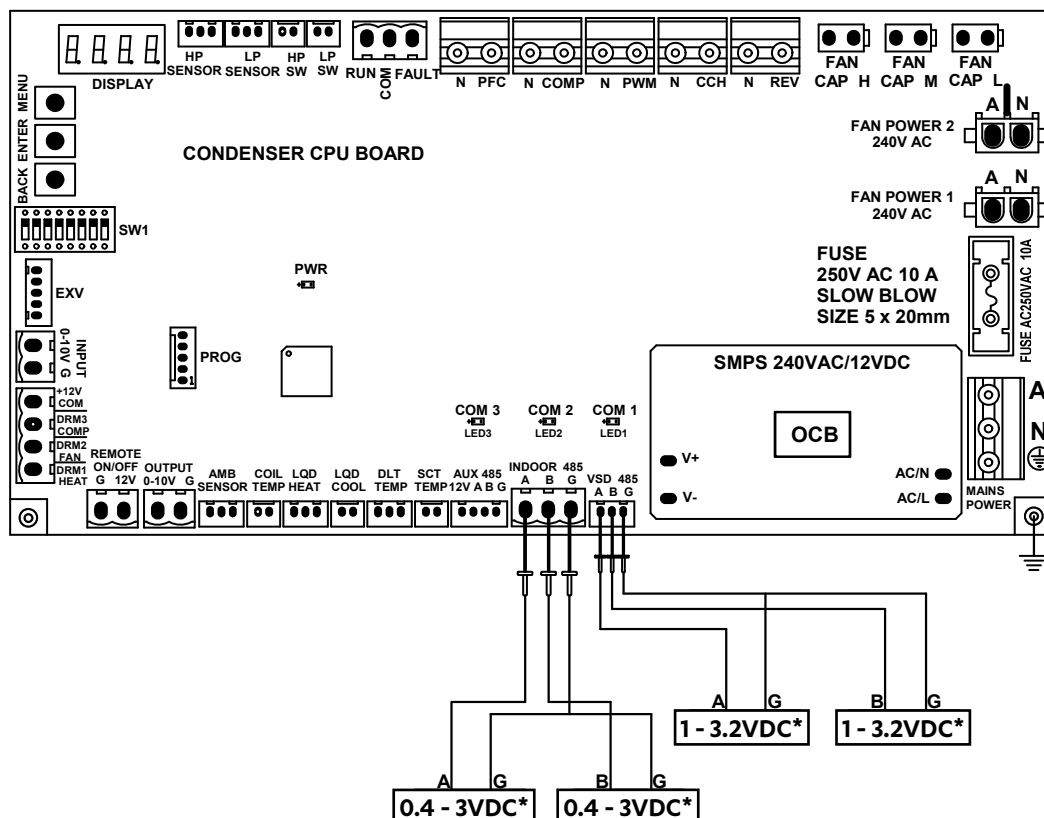
FAULT	SEQUENCE OF EVENTS	POSSIBLE CAUSES	REMEDIES
<p><b>Indoor fan not changing speeds when in Auto Mode.</b></p>	<p>When zones are switched on or off, or as the damper position modulates between the open and closed position (VAV zones only) of active zones open, airflow to active zones does not increase.</p>	<p>The indoor PCB is not changing the fan PWM to adjust the fan speed.</p>	<p>Check the output PWM from indoor PCB. An increase in fan speed should result in an increase in the fan % PWM (duty cycle). Refer to table below test points expected voltages. To determine if the system may be suffering from excessive or insufficient static, check PWM and RPM values through the indoor unit dashboard on the Master Wall Controller:</p> <ul style="list-style-type: none"> <li>• If the RPM is at its maximum value and the PWM has not reached its requested value, this indicates a high static. (Please refer to RPM Limits on next page)</li> <li>• When switching off zones and there is little or not change in the RPM value, this indicates insufficient static within remaining active zones duct work.</li> </ul>

## 03. Expected Voltage

### NOTES

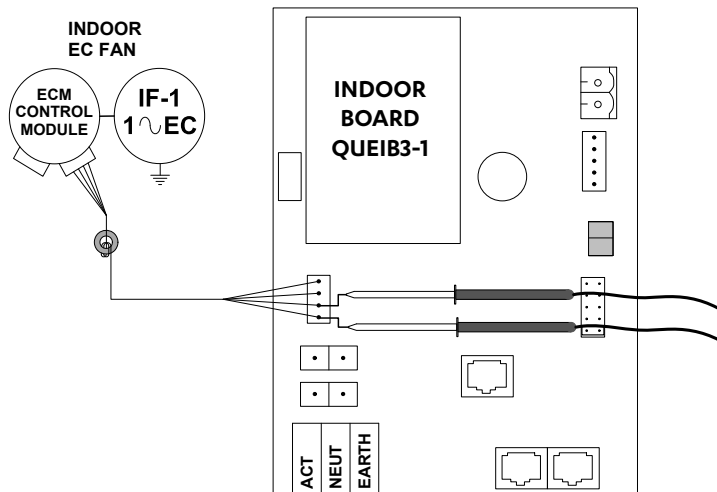
If COM1 (LED1) and COM2 (LED2) are blinking, communication is happening.

\* Voltage sending between A-G and B-G are fluctuating, this means that the communication is happening.



### 04. To check Output PWM in Indoor PCB

UNIT MODEL	EXPECTED PWM % (APPROX)		
	LOW	MEDIUM	HIGH
ERQ2-16AS	49	66	86
ERQ3-18AS	62	85	100
ERQ5-21AS	42	59	80
ERQ5-24AS	44	61	81

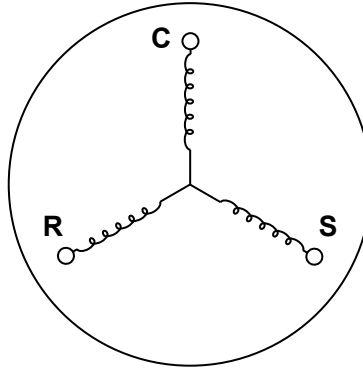


1. Set the tester to measure duty cycle.
2. Measure the reading across PIN 3 and 4 (blue and yellow wires).
3. Change fan speed and check for any changes in readings.

### 05. RPM Limits

UNIT MODEL	RPM LIMITS		
	LOW	MEDIUM	HIGH
ERQ2-16AS	1150	1290	1500
ERQ3-18AS	1150	1290	1500
ERQ5-21AS	1150	1290	1500
ERQ5-24AS	1150	1290	1500

## 06. Compressor Winding



COMPRESSOR WINDINGS  
SINGLE PHASE

UNIT MODEL	COMPRESSOR PART NUMBER/MODEL	RATING OF COMPRESSOR WINDINGS (OHMS)		
		C - S	C - R	S - R
CRQ2-16AT	ZPV038LE-4X9	0.521	0.521	0.521
CRQ3-18AT		0.521	0.521	0.521
CRQ5-21AT	ZPV050DE-4X9	0.610	0.610	0.610
CRQ5-24AT		0.610	0.610	0.610

NOTE

- Please refer to Section 13 - Operation Details on pages 40-41 of Service Manual for Compressor Suction / Discharge Temperature Sensor Chart.



## 07. Fault and Status Codes

QT*-1000, Master Controller (Main Screen)	ZT*-100 Zone Controller	Outdoor Unit CPU	Category	FUNCTION / FAULT
OFF	OFF	oFF	Status	Unit Off or Unit Turning Off (flashing)
Cooling (Status Bar)	Cooling	Cool	Status	Unit Cooling Mode or Start Cooling (flashing)
Heating (Status Bar)	Heating	HEAt	Status	Unit Heating Mode or Start Heating (flashing)
-	-	dEF3	Status	3 min to defrost
❄️ Defrost Status	-	dEF	Status	Heating Mode - Defrost
Heating	Heating	HEAt	Status	Heating Mode - Indoor coil pre-heat after defrost
-	-	dEF2	Status	2 min to defrost
-	-	dEF1	Status	1 min to defrost
-	-	oiLr	Status	Oil returning
Flash Icon ( Stat Bar)	-	dr-1	Status	DRM1
Flash Icon ( Stat Bar)	-	dr-2	Status	DRM2
Flash Icon ( Stat Bar)	-	dr-3	Status	DRM3
🔧 - Tech Menu (E02)	-	E02	IDU	Indoor Coil IN Sensor Error (open or short circuit)
🔧 - Tech Menu (E03)	-	E03	IDU	Indoor Room Sensor Error (open or short circuit)
🔧 - Tech Menu (E04)	-	E04	IDU	Indoor Coil OUT Sensor Error (open or short circuit)
🔧 - Tech Menu (E06)	-	E06	ODU	High Discharge Temp. (Discharge Temp exceeded 138°C)
🔧 - Tech Menu (E07)	-	E07	ODU	Outdoor Coil Sensor Error (open or short circuit)
🔧 - Tech Menu (E08)	-	E08	ODU	Outdoor Discharge Sensor Error (open or short circuit)
🔧 - Tech Menu (E09)	-	E09	ODU	LP Tripped
🔧 - Tech Menu (E10)	-	E10	ODU	LP Sensor Error (open/short circuit)
🔧 - Tech Menu (E11)	-	E11	ODU	HP Tripped
🔧 - Tech Menu (E12)	-	E12	ODU	HP Sensor Error (open/short circuit)
🔧 - Tech Menu (E15)	-	E15	ODU / VSD	VSD Communication Error
🔧 - Tech Menu (E18)	-	E18	ODU	Suction Temp Sensor is Open
🔧 - Tech Menu (E22)	-	E22	ODU	Ambient Sensor Failure (open/short circuit)
🔧 - Tech Menu (E26)	-	E26	VSD	Over Current
🔧 - Tech Menu (E27)	-	E27	VSD	Over Voltage
🔧 - Tech Menu (E28)	-	E28	VSD	VSD Temperature High
🔧 - Tech Menu (E29)	-	E29	VSD	Low Supply Voltage
🔧 - Tech Menu (E30)	-	E30	VSD	Trip Lock
🔧 - Tech Menu (E41)	-	E41	VSD	DC Link Voltage Low
🔧 - Tech Menu (E42)	-	E42	ODU	Envelope protection error - Extremely low evaporating pressure
🔧 - Tech Menu (E43)	-	E43	ODU	Envelope protection error - High compression ratio
🔧 - Tech Menu (E44)	-	E44	ODU	Envelope protection error - High condensing pressure
🔧 - Tech Menu (E45)	-	E45	ODU	Envelope protection error - Low compression ratio
🔧 - Tech Menu (E50)	-	E50	ODU	Outdoor Board configuration error
🔧 - Tech Menu (E51)	-	E51	IDU / ODU	Communication error between outdoor and indoor units
🔧 - Tech Menu (E52)	-	E52	IDU / Controller	Communication error between indoor and master controller
🔧 - Tech Menu (E53)	-	E53	IDU / Zone Module	Communication error between indoor board and 8-zone module.
🔧 - Tech Menu (E60)	-	E60	VSD	Compressor Phase Over Current
🔧 - Tech Menu (E62)	-	E62	VSD	DC Bus Over Voltage
🔧 - Tech Menu (E63)	-	E63	VSD	DC Bus Under Voltage
🔧 - Tech Menu (E66)	-	E66	VSD	AC Voltage Imbalance
🔧 - Tech Menu (E67)	-	E67	VSD	Inverter De-saturation
🔧 - Tech Menu (E69)	-	E69	VSD	PFC-IGBT Over Temp
🔧 - Tech Menu (E70)	-	E70	VSD	Lost Rotor Position
🔧 - Tech Menu (E71)	-	E71	VSD	Motor Thermistor Fault
🔧 - Tech Menu (E72)	-	E72	VSD	Pre-charged Relay Open
🔧 - Tech Menu (E74)	-	E74	VSD	Compressor Phase Over Current

QT*-1000, Master Controller (Main Screen)	ZT*-100 Zone Controller	Outdoor Unit CPU	Category	FUNCTION / FAULT
🔧 - Tech Menu (E75)	-	E75	VSD	Compressor Phase Current Fold Back Timeout
🔧 - Tech Menu (E76)	-	E76	VSD	Power Module Temp. Fold Back Timeout
🔧 - Tech Menu (E77)	-	E77	VSD	AC Input Current Fold Back Timeout
🔧 - Tech Menu (E78)	-	E78	VSD	Auto Config Communication Timeout
🔧 - Tech Menu (E80)	-	E80	VSD	Motor Temp High
🔧 - Tech Menu (E81)	-	E81	VSD	Board Temp High
🔧 - Tech Menu (E82)	-	E82	VSD	Power Module Temp High
🔧 - Tech Menu (E83)	-	E83	VSD	PFC-IGBT Temp High
🔧 - Tech Menu (E84)	-	E84	VSD	DSP to PFC Communication Lost
🔧 - Tech Menu (E85)	-	E85	VSD	Comms to DSP Communication Lost
🔧 - Tech Menu (E86)	-	E86	VSD	Compressor Phase Current Imbalance
🔧 - Tech Menu (E87)	-	E87	VSD	3 Phase PFC Current Imbalance
🔧 - Tech Menu (E88)	-	E88	VSD	Micro Electronic Fault or Drive EEPROM Fault
🔧 - Tech Menu (E89)	-	E89	VSD	Motor Over speed
🔧 - Tech Menu (E90)	-	E90	VSD	Compressor Model Configuration Error
🔧 - Tech Menu (E91)	-	E91	VSD	Inverter Temp Imbalance
🔧 - Tech Menu (E92)	-	E92	VSD	PFC Temp Imbalance
🔧 - Tech Menu (E93)	-	E93	VSD	Motor Temp Low
🔧 - Tech Menu (E94)	-	E94	VSD	Board Temp Low
🔧 - Tech Menu (E95)	-	E95	VSD	Power Module Temp Low or Sensor Open fault
🔧 - Tech Menu (E96)	-	E96	VSD	PFC-IGBT Temp Low
🔧 - Tech Menu (E97)	-	E97	VSD	Comms ADC Failure

**PFC:** Power Factor Correction

**IGBT:** Insulated-Gate Bipolar Transistor

**DSP:** Digital Signal Processor

**ADC:** Analog to Digital Converter

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