

Variable Capacity Commercial

Troubleshooting Guide



Model Numbers

CRV290T-T / EVA290T-T

CRV330T-T / EVA330T-T

PKV290T-T

PKV330T-T

PKV290T-L/R

PKV330T-L/R

IMPORTANT NOTE:

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


That's better. That's Actron.



Table of Contents

01. Fault Finding Guide	3
02. To check Output PWM in Indoor PCB	5
03. RPM Limits.....	5
04. Expected Control Voltage.....	6
05. Compressor Winding	7
06. Fault and Status Codes.....	8

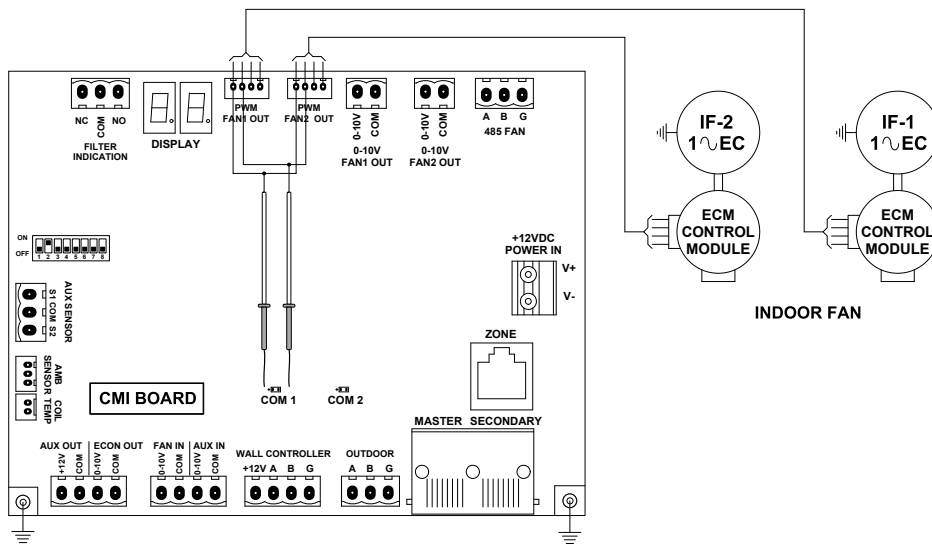
01. Fault Finding Guide

FAULT	POSSIBLE CAUSES	REMEDIES
The system does not start.	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.
Air does not flow (Indoor unit).	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.
Cooling/Heating is not sufficient.	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.
	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
Steam emitted from outdoor unit.	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.
Set temperature cannot be adjusted.	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.
Occasional hissing noise can be heard on heating cycle.	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.
The compressor is running but the system is not cooling.	You are in heating mode.	Check the temperature settings.
	The reversing valve has jammed between heating and cooling.	Replace reversing valve.
The outdoor coil keeps freezing over.	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.
There is only one condenser fan working.	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.
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?	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 4oC lower than room temp. If Heating adjust set-points more than 4oC higher than room temp. Complete charging procedure until finished.
The indoor unit gives out odour	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. To check Output PWM in Indoor PCB

UNIT MODEL	EXPECTED PWM % (APPROX)		
	LOW	MEDIUM	HIGH
PKV290T-T	33	52	99
PKV290T-L-R	34	54	93
PKV330T-T	42	67	99
PKV330T-L-R	46	72	99



Step-1:

1. Measure the Indoor Fan on/off signal.
On signal = 12 to 18V DC signal on Pin 1 and 3 (red and blue wires) .
Off signal= +0V DC signal on Pin 1 & 3.

Step-2:

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.
4. Compare the duty cycle output to the expected PWM for each model.

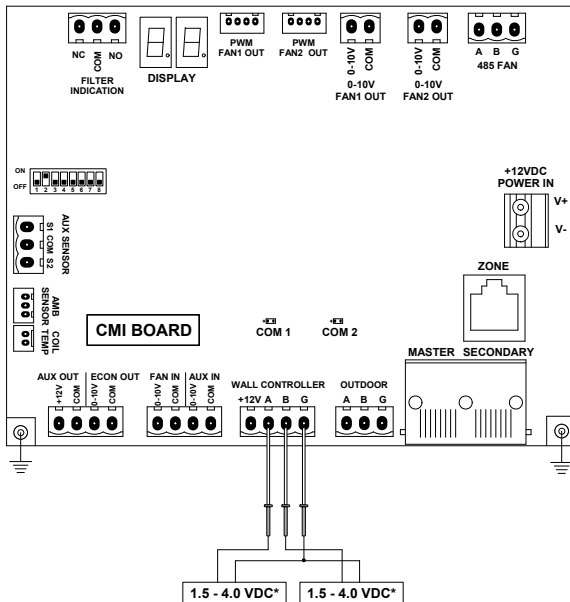
UNIT MODEL	RPM LIMITS		
	LOW	MEDIUM	HIGH
PKV290T-T	1200	1500	1800
PKV290T-L-R	1200	1500	1800
PKV330T-T	1400	1750	2100
PKV330T-L-R	1400	1750	2100

03. Expected Control Voltage

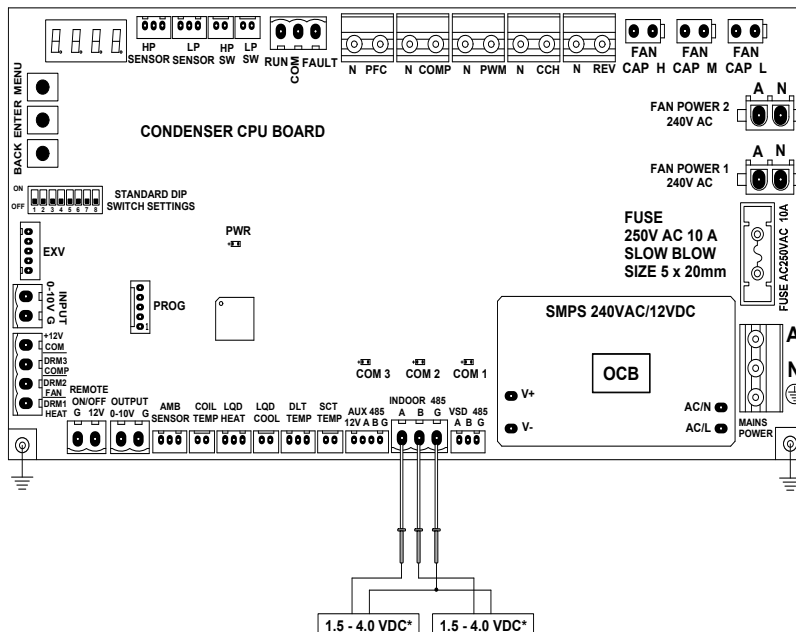
NOTE

- If COM1 (LED1) and COM2 (LED2) are blinking, communication is happening.
- Voltage sending between A-G and B-G are fluctuating, this means communication is happening.

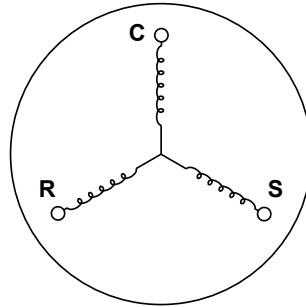
03.01. Indoor Board (CMI Board)



03.02. Outdoor Board (UNO Board)



04. Compressor Winding



COMPRESSOR WINDINGS
SINGLE PHASE

UNIT MODEL	COMPRESSOR PART NUMBER/MODEL	RATING OF COMPRESSOR WINDINGS (OHMS)		
		C - S	C - R	S - R
PKV290T-T	ZPD104KCE-TFD-522	1.38	1.38	1.38
PKV290T-L-R		1.38	1.38	1.38
PKV330T-T	ZPD122KCE-TFD-522	1.17	1.17	1.17
PKV330T-L-R		1.17	1.17	1.17

05. Fault and Status Codes

Error Codes Display LC7 / ODB	Category	FUNCTION / FAULT
E1	IDU	Indoor Fan RPM feedback Error
E2	IDU	Indoor Coil Sensor Error
E3	IDU	Indoor Room Temperature Sensor Error
E6	ODU	High Discharge Line Temperature
E7	ODU	Outdoor Coil Sensor Error
E8	ODU	Outdoor Discharge Temperature Sensor Error
E9	ODU	LP Switch Trip / Phase Sequence Relay Fault
E10	ODU	LP Transducer Error
E11	ODU	HP Switch Trip
E12	ODU	HP Transducer Error
E18	ODU	Suction Temperature Sensor Error
E22	ODU	Ambient Sensor Error
E50	ODU	Outdoor Board Configuration Error
E51	IDU / ODU	Indoor - Outdoor Communication Error
E52	IDU	Indoor - Wall Controller Communication or Multiple ID on Wall Controller
E56	IDU	No Master Wall Controller Detected

NOTE

When unit is powered up, “boot” will show in 7 segment display of outdoor board for 30 seconds, followed by normal controller status codes.



ActronAir

That's better. That's Actron.

actronair.com.au

1300 522 722

