


PTAC CONTROL BOARD KIT RSKP0010


INSTALLATION INSTRUCTIONS

Description

Control board installation procedures are described in detail in these instructions. Read and follow these instructions carefully before replacing the control board. Failure to do so may result in control board damage. Pages 3 through 5 are procedures for programming the control board and the diagnostic codes for the control board.

 **WARNING**

HIGH VOLTAGE
DISCONNECT ALL POWER BEFORE SERVICING. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Important Note:

Damage to the control board can occur from failure to disconnect power supply or failure to set the master switch (located on the control board) to OFF before removing the low voltage terminal strip cover from an installed control board. Damage to this board by not following these instructions is considered misuse and not covered under either the standard unit warranty or any extended service contract.

Important Note:

All warranty replaced boards must be returned to the parts source from which they were purchased to insure proper warranty credit.

Electrostatic Discharge (ESD) Precautions

Before removing the new control board from the static wrap, it is very important to discharge any static electricity. This can be accomplished in two methods. Servicer can wear a ground strap or by touching the metal chassis before replacing the board.

Existing Control Board Removal Procedures

1. Disconnect electrical power to the unit.
2. Remove front cover.
3. Remove the two mounting screws, one on each side of control board cover. **Lift the cover up to gain access to the ribbon connector. Unplug ribbon connector from control board and remove cover completely.** Remove the screw on right side of the control panel.
4. If a remote thermostat or any low voltage accessory is being used, remove the low voltage pin connector from the low voltage terminal strip.
5. Remove the wires from the control board and unplug the thermistors from the control board. Remove the four screws that secure the control board to the control panel and remove the existing control board.



RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION.

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.



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5151 San Felipe, Suite 500 • Houston, TX 77056

www.amana-ptac.com

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IO-706A
February 2011



New Control Board Removal Procedures

WARNING

HIGH VOLTAGE

DISCONNECT ALL POWER BEFORE SERVICING. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



- Set the new control board in place and reattach to control panel with the four screws removed in Step 5.
- Reconnect the wires across the top terminals of the control board (Refer to Figure 1 below), they are as follows: Red 33 to Line 1 (Either terminal), Brown 34 to Heater 1, Brown 34 to Heater 2, Power cord or Black 18 to Line 2 (either terminal), Violet 12 to Compressor, Black 16 to Fan High, Red 17 to Fan Low and Black 19 to Rev Valve.
- Install high and low voltage wires from the transformer to the control board. Grey 21 from 230v or 265v to line 1, Grey 22 from COM to Line 2, Black 37 from LOAD to 24V Transformer Terminal and the second Black 37 from LOAD to the remaining 24V Transformer Terminal.
- Reconnect the thermistors to the control board. The Black thermistor connects to the IAT BLACK terminal and the Red Thermistor connects to the ICT RED terminal on the control board. The Yellow Thermistor connects to the IDT YELLOW terminal on the control board.

Note: If the unit is a heat pump, the Blue Thermistor connects to the OCT BLUE terminal.

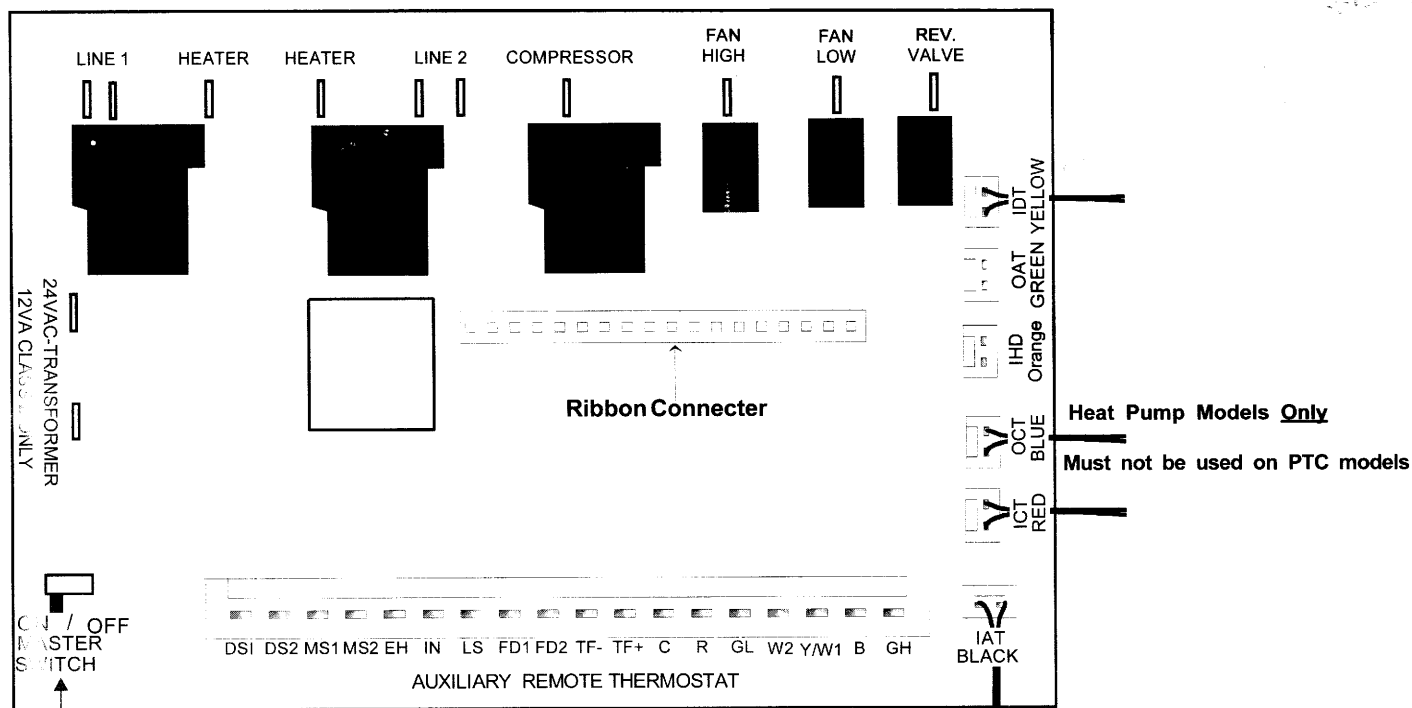
- If any remote thermostat or low voltage accessory is being used, reconnect the low voltage pin connector to the low voltage terminal strip on the control board.
- The control board cover is now ready to be installed. The ribbon for the touch pad will need to be reconnected to the control board. Take caution not to bend or fold the ribbon (See figure 1 below for ribbon connection). Ensure that no wires are pinched or caught between the cover and the panel and then reinstall the screws removed in Step 3.

CRITICAL STEP

This service control *will not operate* until it has been configured to control a heat pump or cooler. As long as the display shows **Eo**, the unit *will not operate*.

Follow directions on Page 3 and set feature code **C3** to option **H** if the unit is a heat pump, or option **C** if the unit is a cooler with or without electric heat.

- Set the master switch to the ON position, restore electrical power and verify that the unit is functioning correctly.



Left is ON Position

Figure 1

Configuration Settings

The control can be configured to operate a wide range of options. The options listed below with the * are the factory default settings. If these are acceptable, then the unit does not require any additional configuration and is fully operable. To configure the unit, first select the configuration feature code setting and then an option code to change from the factory default setting.

To enter configuration feature mode:

1. **Press and continue to hold** the up and down arrow keys and quickly **press the OFF key twice within a two (2) second time frame**. The display will alternate between displaying the feature code **C1**, for example, and the option code **0** (factory default setting). The lower right dot on the display will flash.

To select a configuration **feature code**, press the **HEAT** key until the desired configuration comes up. To scroll to a previously viewed configuration codes press the **COOL** key.

Once you have scrolled to the correct feature, then to select the **option code** for your desired configuration, press either the up or down key to scroll through the options of the selected feature code.

To exit configuration mode:

1. **Press the OFF key**. Configuration feature mode will also exit if **no keys are pressed for a period of two (2) minutes**.

Configuration Settings

Configuration Code	Description	Option Code	Description
C1	Interface	0*	Chassis Membrane*
		rE	Wireless Remote
		L5	Wired Thermostat
C2	Fan Operation	bP	Button present
		bA*	7-Button, reverts to Cyclic
		A	Always run fan (even in Off)
		bC	7-Button, reverts to Continuous
C3	Reverse Cycle Operation	C	Cooler Only
		H*	Heat Pump*
		0	Service No Operation "Eo"
C4	Room I.D. Digit 1 & 2	00* - 99	00* - 99
C5	Room I.D. Digit 3 & 4	00* - 99	00* - 99
C6	Wired or Wireless Occupancy	0*	Off*
		1	On
		18	18 Hour Automatic Entry
C8	Temp. Limiting Cool	60* - 72	60* - 72
C9	Temp. Limiting Heat	68 - 90, 80*	68 - 90, 80*
Cd	English / Metric Temp	F*	Fahrenheit Scale*
		C	Celsius Scale
d6	Sensorless Un-Occ. Time	1 - 32, 18*	1 - 32, 18*
d7	1st Un-Occ. Set Back Temp.	1 - 16, 2*	1 - 16, 2*
d8	1st Un-Occ. Set Back Time	.1, .5*, 1 - 24	.1, .5, 1 - 24, .5*
d9	2nd Un-Occ. Set Back Temp.	1 - 16, 3*	1 - 16, 3*
dA	2nd Un-Occ. Set Back Time	.1, .5, 1* - 24	(d8) - 24, 1*
db	3rd Un-Occ. Set Back Temp.	1 - 16, 6*	1 - 16, 6*
dC	3rd Un-Occ. Set Back Time	.1, .5, 1 - 24, 3*	(dA) - 24, 3*
dF	Jace Group Code	00* - 99	00* - 99
r4	Room Prefix	00* - 99	00* - 99
r5	Room Suffix	00* - 99	00* - 99



*Indicates factory default

See manufacturer for additional configuration options.

Diagnostic Maintenance & Status Report

The Diagnostic Maintenance & Status Report provides detailed information on PTAC control operation and operational status including present modes, failures, airflow restriction warnings, operating temperatures, and past failures. The lower right hand dot on the center display flashes in this mode. In some cases the green LED located in the lower left hand corner of the touchpad below the OFF key will also be lit. This Green LED "Status Light" only illuminates if there is a status code that has been activated and should be reviewed. In most cases, this light indicates that the indoor room filter is dirty should be cleaned or replaced. **NOTE:** Dirty filters cause the unit to consume more energy than normally needed to condition a room. Once the filter has been cleaned or replaced, the LED should go out. If the LED is still illuminated after the filter has been cleaned, activate the Diagnostic and Status mode to view any active codes. The unit may need additional cleaning or maintenance of the evaporator or condenser coils. Please perform this step before calling a servicer. **A servicer should be called only if cleaning the filter or coils does not clear the status code or the code indicates that servicer should be called.**



DIAGNOSTIC STATUS REPORT MODE.

To enter Diagnostic Status Report mode, press and hold the up and down  arrows and, while holding, quickly press the COOL key  twice.




ACTIVE FAILURES.

- If there are no active failures or lockouts, the display will show a double dash, "- -". If there is a code listed, see the unit "Diagnostic Codes" chart for a list of definitions.

OPERATING TEMPERATURES.

- If not in Diagnostic Status Report Mode, enter as instructed above and press the Fan Speed  key.
- If already in Diagnostic Status Report mode, press the Fan Speed  key. The display will show the temperature of the desired set point, SP; the temperature at the wireless thermostat, rL; the indoor ambient temperature behind the filter, IA; the indoor coil temperature, IC; the indoor discharge air temperature, Id; the outdoor coil temperature, OC; the outdoor ambient temperature, OA; and the spare probe temperature, IH. If any of the probes are not populated the display will show the corresponding failure code.

PAST FAILURE LOG

- If not in Diagnostic Status Report Mode, enter as instructed above and press the Fan Speed  key twice.
- If already in Diagnostic Status Report mode, press the Fan Speed  key. While the display is showing operating temperatures, the last 10 failure codes active or past can be requested by pressing the Fan Speed  key again. The codes are displayed last entry first followed subsequently by each preceding code.

Note that modes F1 and Fd are also displayed in the normal control operation (see "Diagnostic Codes" chart).

To exit Diagnostic Status Report mode, press the OFF  key.

Diagnostic Codes

CODE	STATUS	DISPLAY	ERROR LIGHT	SUGGESTED ACTION	
MODES	FP	Freeze Protection Engaged. The room temperature measured by the wireless remote thermostat or indoor ambient thermistor active sensor falls below 40°F.	Y	N	No Action required. This setting will disengage when the room temperature rises above 43°F.
	Fd	Front Desk switch is closed. All outputs are switched off.	Y	N	Open front desk switch to allow occupant unit operation.
	Eo	Un-Configured Service Board - All operation held awaiting configuration	Y	Y	Enter Configuration Menu and set "C3" to "C" for coolers with electric heat or "H" for heat pumps.
	EH	Emergency Hydronic Engaged. The EHH switch is closed. Compressor is switched off.	Y	N	Open front emergency hydronic switch to allow occupant unit operation.
	LS	Load Shedding Engaged. The LS switch is closed. Compressor and Electric heat is switched off.	Y	N	Open load shedding switch to allow occupant unit operation.
	On	Control is configured to respond to a wired thermostat	Y	N	No action if a wired thermostat is being used. Otherwise, see Configuration Settings.
	oP	Open Door Lockout (DS1 & DS2 open; wireless)	Y	Y	Close Room Door. Unit will not condition space with door open.
	nP	Window Switch Lockout - (LS & INN open)	Y	Y	Close Room Door or Window. Unit will not condition space with door or window open.
	hP	Heat Sentinel - (WIAT > u3)	Y	N	No action required. This setting will disengage when the room temperature falls.
	Ur	Un-Rented Status (EHH & INN or wireless)	Y	N	Front Desk needs to set to Rented mode (if applicable).
FAILURES	F1	Indoor Ambient Thermistor reads outside the range -20°F to 200°F & the wireless thermostat is not communicating to the unit control or Indoor Ambient Thermistor (IAT) without a wireless remote thermostat reads outside the range -20°F to 200°F.	Y	Y	Replace black Indoor Ambient Thermistor or Wireless Remote Thermostat.
	F2	Wireless Remote Thermostat failure	N	N	Replace Wireless Thermostat.
	F3	Indoor Ambient Thermistor reads outside the range -20°F to 200°F	Y	N	Replace black Indoor Ambient Thermistor.
	F4	Indoor Coil Thermistor either above or below operating tolerances.	N	Y	Replace Red Indoor Coil Thermistor .
	F5	Wireless Thermostat failure.	N	Y	Attempt to rebind Wireless Thermostat or Replace Wireless Thermostat.
	F6	Indoor Discharge Thermistor either above or below operating tolerances.	N	Y	Replace Yellow Indoor Discharge Thermistor.
	Fb	Low Remote Battery Warning.	N	Y	Replace Batteries in Wireless Devices.
	H1	High Voltage Protection engaged. Power supply voltage is too high.	Y	N	Check for incoming power at correct voltage.
br	Brown Out Protection engaged. Power was lost or voltage is low.	N	N	Check for incoming power at correct voltage.	
AIREFLOW ALERTS	L6	Discharge Air Too Hot.	N	Y	Clean Filter or Remove Air Blockage.
	LC	Outdoor Coil Thermistor temperature high.	N	Y	Clean Condenser Coils, Check Fan for fault. Code will reset after cleaning.
	C2	Indoor Air Recirculation. Large delta between thermostat and return.	N	Y	Clean Filter or Remove Air Blockage or Close Vent Door or Improve indoor to outdoor seal.
	C5	Outdoor Coil temperature too high for outdoor ambient temperature.	N	Y	Check for Blocked Outdoor Air or Clean Coil.
REFRIGERATION ALERTS	C1	Indoor Coil is freezing up.	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.
	C3	Indoor Coil is freezing up.	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.
	C4	Indoor Coil froze up.	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.
	C6	Poor Unit Performance.	N	Y	Check for blower motor, compressor, or electric heat operation.
	C7	Indoor Freezing Lockout (ICT - IAT > 20) +10 Min	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.

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NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN
ARE SUBJECT TO CHANGE WITHOUT NOTICE

Quality Makes the Difference!

All of our systems are designed and manufactured with the same high quality standards regardless of size or efficiency. We have designed these units to significantly reduce the most frequent causes of product failure. They are simple to service and forgiving to operate. We use quality materials and components. Finally, every unit is run tested before it leaves the factory. That's why we know. ... **There's No Better Quality.**

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