



# ASC01A Anti Short-Cycle Control PCK01A Pressure Control Kits Installation Instructions

## DESCRIPTION

This kit is for use with Amana VCA and RCB remote cooling units that do not have high or low pressure cutouts or factory-installed anti short-cycle protector. The Anti Short-Cycle Control kit (ASC) prevents short cycling of the compressor. The Pressure Control Kit (PCK) helps protect the compressor from damage due to abnormally high or low refrigerant pressures. It also prevents short cycling of the compressor.

Although it is not mandatory, we recommend that this kit be installed **before** the refrigerant lines are connected to the outdoor unit, and **before** the line and low voltage wiring is connected to the outdoor unit.

PCK kits include a high pressure cutout, a low pressure cutout, and an anti short-cycle control. It also includes tees for mounting the pressure cutouts on the outdoor unit service valves. After the tees are installed, a gauge manifold can be attached to them when servicing is necessary.

The ASC kit contains a anti short-cycle protector for use on units with reciprocating compressors.

**NOTE:** Units with scroll compressors have ASC protectors installed at the factory.

## BILL OF MATERIAL

		PCK01A	ASC01A
2	Refrigerant Tees, w/valvcores	◆	
1	Low Pressure Cutout, Auto Reset	◆	
1	High Pressure Cutout, Auto Reset	◆	
1	Short Cycle Protector	◆	◆
1	Yellow-1 Wire	◆	◆
1	Black-1 Wire	◆	◆
1	Wire Nut	◆	
1	Wiring Diagram Label	◆	◆
1	Installation Instructions	◆	◆
1	Sheet Metal Screw	◆	◆
4	Teflon Seals	◆	
1	Extension Tube		

These kits should only be installed by a qualified, experienced technician.



**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.

# COMPONENT INSTALLATION

## PRESSURE CUTOUT INSTALLATION

**NOTE:** The high and low pressure cutouts on the PCK reset automatically. All wiring to the pressure cutouts and the anti short-cycle control must be 24 volt.

The pressure cutouts are installed outside the unit casing. They are weatherproof but not tamper-proof. Please inform the building owner before installing that tampering with the pressure cutouts can cause refrigerant leakage and equipment damage.



### WARNING

To avoid the risk of electrical shock, injury, or death, disconnect the electrical, power before installing this kit.



### WARNING

To avoid possible injury from refrigerant, wear gloves and goggles while installing this kit.

1. Remove and save the caps from the service valves Schraeder fittings.

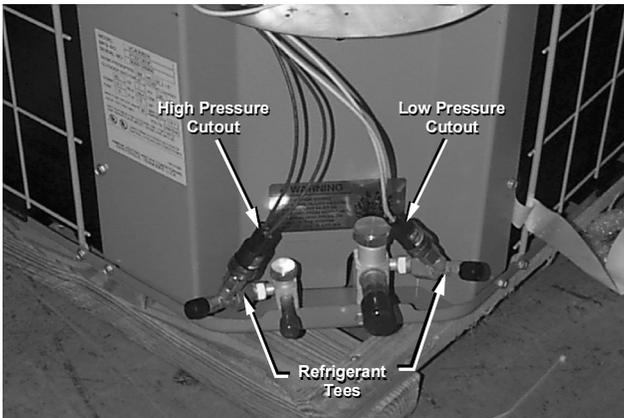


Figure 1

2. Install the PCK refrigerant tees onto the Schraeder fittings (Figure 1). Torque to 10 ft/lbs to avoid refrigerant leaks.
3. Place a Teflon seal in the fitting for the high pressure (blue wire) cutout. Install this cutout on the liquid line tee. The liquid line is the smaller of the two lines. Torque to 10 ft/lbs to avoid refrigerant leaks.
4. Place a teflon seal in the fitting for the low pressure (yellow wire) cutout. Install this cutout on the suction line tee. The suction line is the larger of the two lines. Torque to 10 ft/lbs to avoid refrigerant leaks.
5. Reinstall the caps on the ends of the refrigerant tees. Finger-tighten.
6. Insert the blue and yellow wires from the pressure cutouts into the low voltage entrance.



Figure 2

7. If the service valves have never been opened, proceed to *Anti Short-Cycle Control Installation*. If the valves have been opened, do not run the unit, but perform a preliminary leak check instead on the tees and pressure switches. If a leak is found, tighten the connection slightly and recheck. Repeat until leaks are eliminated.

## ANTI SHORT-CYCLE CONTROL INSTALLATION

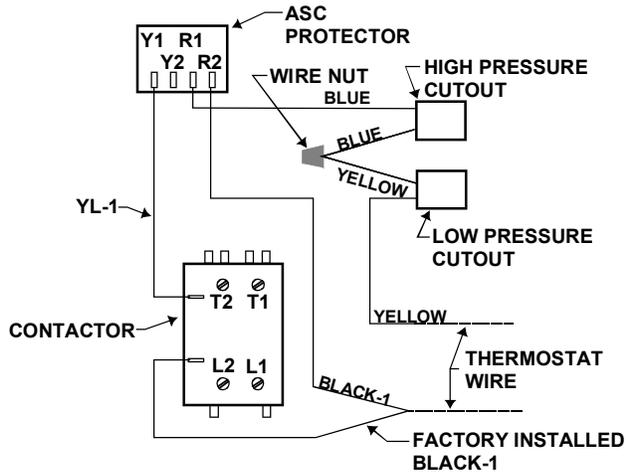


Figure 3

1. Remove and save the control box cover from the unit. Save the screws which held it in place.
2. In the extreme upper right corner of the control box is a filler screw. Remove and discard.
3. Mount the anti-short cycle control "upside down" in the filler hole (Figure 2). Ensure the control terminals are at the bottom. Secure the control using the large screw supplied in the kit.

# WIRING

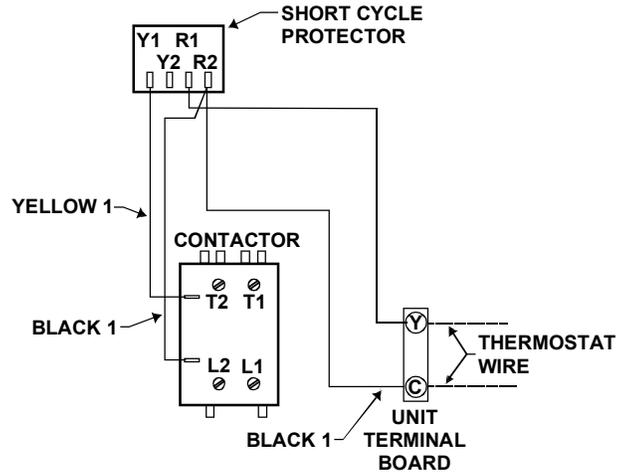
## PCK01A WIRING



**Figure 4**

1. Remove the factory-installed YL-1 low voltage wire attached to the coil of the compressor contactor and thermostat wire connection. Discard.
2. Connect the yellow low pressure cutout wire with the flag terminal to the field-supplied thermostat wire coming from "Y" indoors. Cut and strip if necessary. Connect the other yellow low pressure cutout wire to the stripped end of the blue high pressure cutout wire. Wire nut the ends and crimp (see Figure 4).
3. Attach the flagged end of the blue high pressure cutout wire to terminal "R1" on the ASC control.
4. Attach one end of the Black-1 wire provided with the PCK kit to terminal "R2" on the ASC control. Attach the other end to the field-supplied thermostat wire coming from terminal "C" indoors and the factory-installed Black-1 wire coming from the coil of the compressor contactor.
5. Attach one end of the YL-1 wire provided with the kit to terminal "Y1" on the ASC control. Attach the other end of this wire to the coil of the compressor contactor.
6. Using the wiring diagram (10799001) included in the kit as a guide, inspect all wiring to ensure that all connections are tight and no errors have been made.
7. Remove the backing from the wiring diagram. Without covering the unit wiring diagram, attach the PCK wiring diagram on the inside of the control box cover.

## ASC01A WIRING



**Figure 5**

1. The Black-1 wire provided with the kit includes a piggyback terminal. Attach this end to "R2" on the short cycle control.
2. Disconnect the BK-1 wire that runs from unit contactor to low voltage connection and reconnect this end to the piggyback terminal on the "R2" terminal of the short cycle control.
3. Connect the other end of the BK-1 wire supplied with the kit to the unit contactor (same terminal disconnected in step 2 above).
4. Disconnect YL-1 wire at the contactor end and reconnect it to the "R1" terminal on the anti short-cycle control.
5. Connect one end of the YL-1 wire supplied with the kit to the Y1 terminal on the short cycle control and the other end to the unit contactor coil terminal vacated in step 4.
6. Use the anti short-cycle control wiring label, 11036301, which is included in the ASC kit, as a guide. Inspect all wiring carefully to ensure that all connections are tight and no errors have been made.
7. Remove the backing from the anti short-cycle control label. Without covering the unit wiring diagram, attach the label on the inside of the control box cover.

## WRAP-UP

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1. Replace the cover on the control box.
2. To complete the outdoor unit installation, refer to the outdoor unit Installation Manual.
3. When the system installation is complete and the outdoor temperature is 50°F or higher, run the system to confirm proper operation:
  - If any sparking, unusual noises, or unusual odors are noticed, immediately disconnect the electrical power, then recheck wiring and components.
  - Upon the initial call for cooling, the compressor and outdoor fan should start. The high and low pressure switches should both be closed.
  - End the call for cooling, and then immediately begin another call for cooling. Assuming that no indoor fan time delay relay is present, the indoor fan should restart immediately, but the compressor and outdoor fan should not restart for about 3 minutes.
  - To avoid possible equipment damage, do not adjust airflow or refrigerant charge in an attempt to cause the pressure switches to open. The high pressure switch opens at about 400 psi, and closes at about 300 psi. The PCK01A low pressure switch opens at about 35 PSI, and closes at about 85 PSI. A properly operating cooling system will not experience pressure extremes enough to cause these pressure switches to open.
4. While the system is operating, perform a final refrigerant leak check on the tees and pressure switches. If a leak is found, tighten the joint slightly and retest. Repeat until all leaks are eliminated.