

R4GM Series

Installation Instructions

Low Ambient Control Kit #918797 (Replaces Kit #917163)

This Low Ambient Control Kit monitors the Stage 1 compressor discharge pressure and cycles the outdoor fan(s) On and OFF as required to maintain a high evaporator temperature. Outdoor fan cycling allows the system to operate without freezing the evaporator coil and losing capacity during low ambient conditions.

Read these instructions in their entirety before proceeding with the installation of the pressure control switch and wiring.

⚠ WARNING:

This kit is to be installed by a qualified service technician in accordance with these instructions and all codes having jurisdiction. Failure to follow these instructions could result in serious injury, property damage, or death.

⚠ WARNING:

All electrical wiring must comply with the latest edition of the National Electrical Code ANSI/NFPA 70.

These instructions are primarily intended to assist qualified individuals experienced in the proper installation of this appliance. Some local codes require licensed installation/service personnel for this type of equipment.

NOTE: Application of this kit is designed for ambient conditions no lower than 35°F.

Kit includes:

- 1 Pressure control with mounting box, cover, and wiring
- 1 36" length of copper tubing with flare nuts
- 4 Mounting screws- #10 x 1/2" SHWH self drilling
- 2 Cover screws - #8 x 3/8" SHWH
- 1 Service Valve "T" assembly
- 6 6" wire ties
- 3 Closed end connectors
- 1 Mounting Bracket (Used on 150/180 Series only)

Installation (See Figure 1) R4G*-090/120 Series

1. Set indoor thermostat to "OFF" position.
2. Disconnect all electrical power to appliance.
3. Remove compressor access and control access panel covers.
4. Assemble the copper connecting tube, one end to the head pressure control assembly and the other end to the open service port of the "T" adapter provided with this kit. Remaining port with schrader valve will be used for service. Tighten as required to ensure leak free connections.
5. Locate the head pressure control assembly on compressor side of the compressor/blower divider panel. Mount the pressure control in the vicinity of the outdoor motor capacitor(s) using self drilling screws provided or drill 1/8" diameter holes on 2-3/4" centers.
6. Attach the "T" adapter to Stage 1 compressor discharge service port. Care should be taken not to kink the copper tube while extending. Position tube away from other components in the unit and leave a minimum of one loop in coil for vibration dampening. Tighten "T" adapter as required to ensure a leak free connection.
7. Run pressure control wiring up through the unit wiring entrance of the control panel. Secure wires to existing wire bundle to ensure no interference with condenser fan blade(s).

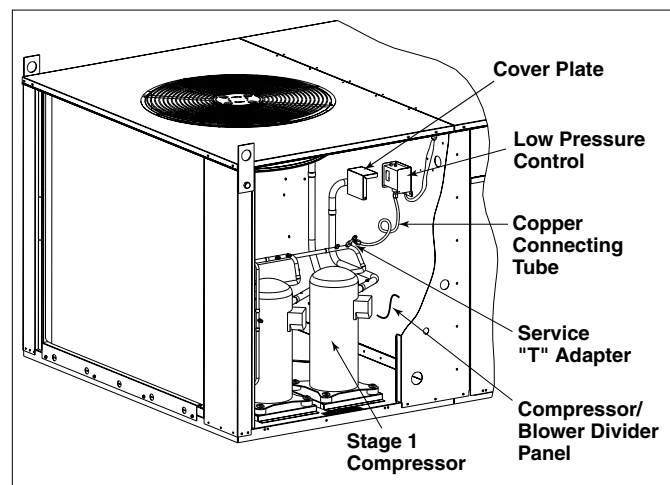


Figure 1.

Electrical Wiring – R4GM-090* Series

Note: Outdoor thermostat (located on right inside wall of control panel) must be disconnected when installing this kit.

1. Remove “Blue” low voltage wire from outdoor fan 24V contactor coil. Cut off wire termination and strip wire approximately 3/8". Remove “Yellow” low voltage wire from outdoor fan 24V contactor coil, strip and terminate with closed end connector (provided) to eliminate the possibility of touching other electrical components (See Figure 2a).
2. Locate closed end wire connection with two “Yellow” wires, one marked “Low Ambient Kit Connection” and remove closed end connector. Strip “Yellow” wire marked for kit approximately 3/8" and twist together

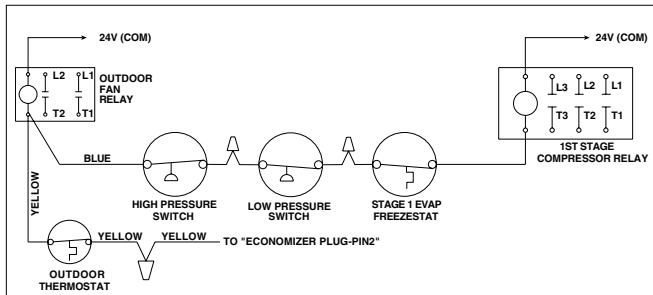


Figure 2a. R4GM-090* Factory Wiring

- with “Blue” wire from Step 1. Secure using closed end connector provided (See Figure 2b).
3. Terminate end of remaining “Yellow “ wire with closed end connector to eliminate the possibility of touching other electrical components.
4. Attach one Pressure Control switch Red wire to the 24V hot terminal (Single Black lead) of the Stage 1 compressor contactor coil.
5. Attach the remaining Pressure Control Red wire to the Outdoor Fan 24V contactor coil terminal where the two wires were removed in Step 1.
6. Check all connections and tighten as required.
7. Replace all panels
8. Reconnect power to unit and thermostat.

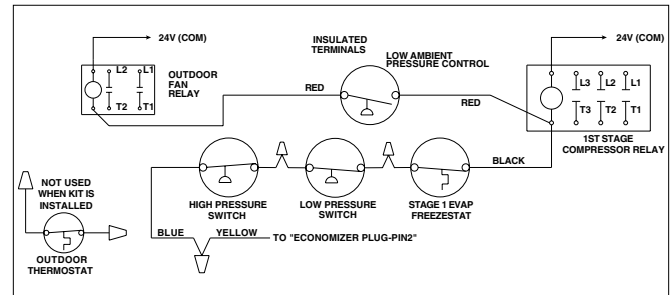


Figure 2b. R4GM-090* Low Ambient Wiring

Electrical Wiring - R4GM-120* Series

1. Remove the two “Red” outdoor fan low voltage control circuit wires (one insulated) from the top terminal of the side auxiliary switch on the STAGE 1 compressor contactor (See Figure 3a).
2. Remove “Red” wire with piggy-back terminal from Outdoor Fan 24V contactor coil terminal and replace using Red wire with insulated spade terminal. Discard wire with piggy-back terminal.
3. Attach one Pressure Control switch Red wire to either

of the two condenser fan contactor 24V coil terminals with Red wires already attached.

4. Take remaining “Red” pressure control switch wire and attach to the top (N.O.) terminal of the STAGE 1 compressor contactor auxiliary switch.
5. Check all connections and tighten as required.
6. Replace all panels
7. Reconnect power to unit and thermostat.

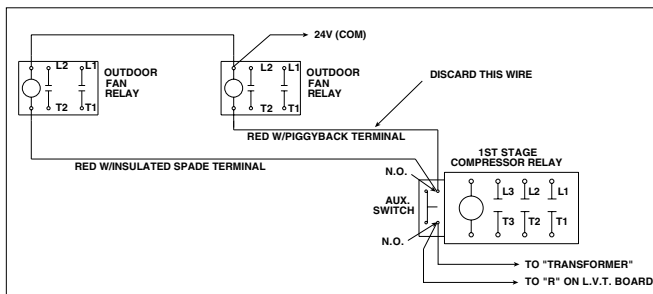


Figure 3a. R4GM-120* Factory Wiring

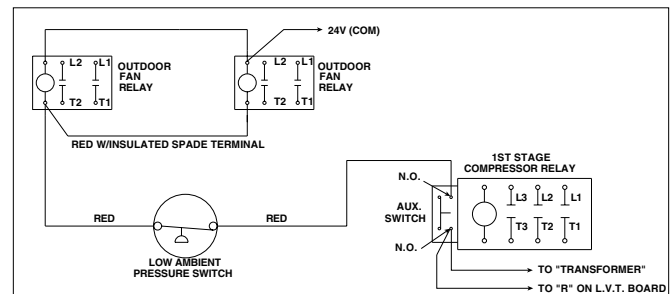


Figure 3b. R4GM-120* Low Ambient Wiring

Installation (See Figure 4) R4GM-150/180 Series

1. Set indoor thermostat to "OFF" position.
2. Disconnect all electrical power to appliance.
3. Remove both compressor access covers and the condenser section wiring junction box cover. Open the motor access and electrical control access doors.
4. Assemble the copper connecting tube, one end to the head pressure control assembly and the other end to the open service port of the "T" adapter provided with this kit. Remaining port with schrader valve will be used for service. Tighten as required to ensure leak free connections.
5. Attach the pressure control mounting bracket to the compressor mounting panel using self-drilling screws provided. (See Figure 4) Next, mount the pressure control to mounting bracket using remaining screws provided.
6. Attach the "T" adapter to Stage 1 compressor discharge service port. Care should be taken not to kink the copper tube while extending. Position tube away from other components in the unit and leave a minimum of one loop in coil for vibration dampening. Tighten "T" adapter as required to ensure a leak free connection.
7. Route pressure control wiring through grommet on mounting plate and back to the junction box. Secure to existing unit wire bundle using wire ties provided. Pass wires up through knockout in the bottom of the junction box and then through the knockout of the divider panel following the unit wiring back into the control panel. Ensure wiring has no interference with moving parts or sharp edges.

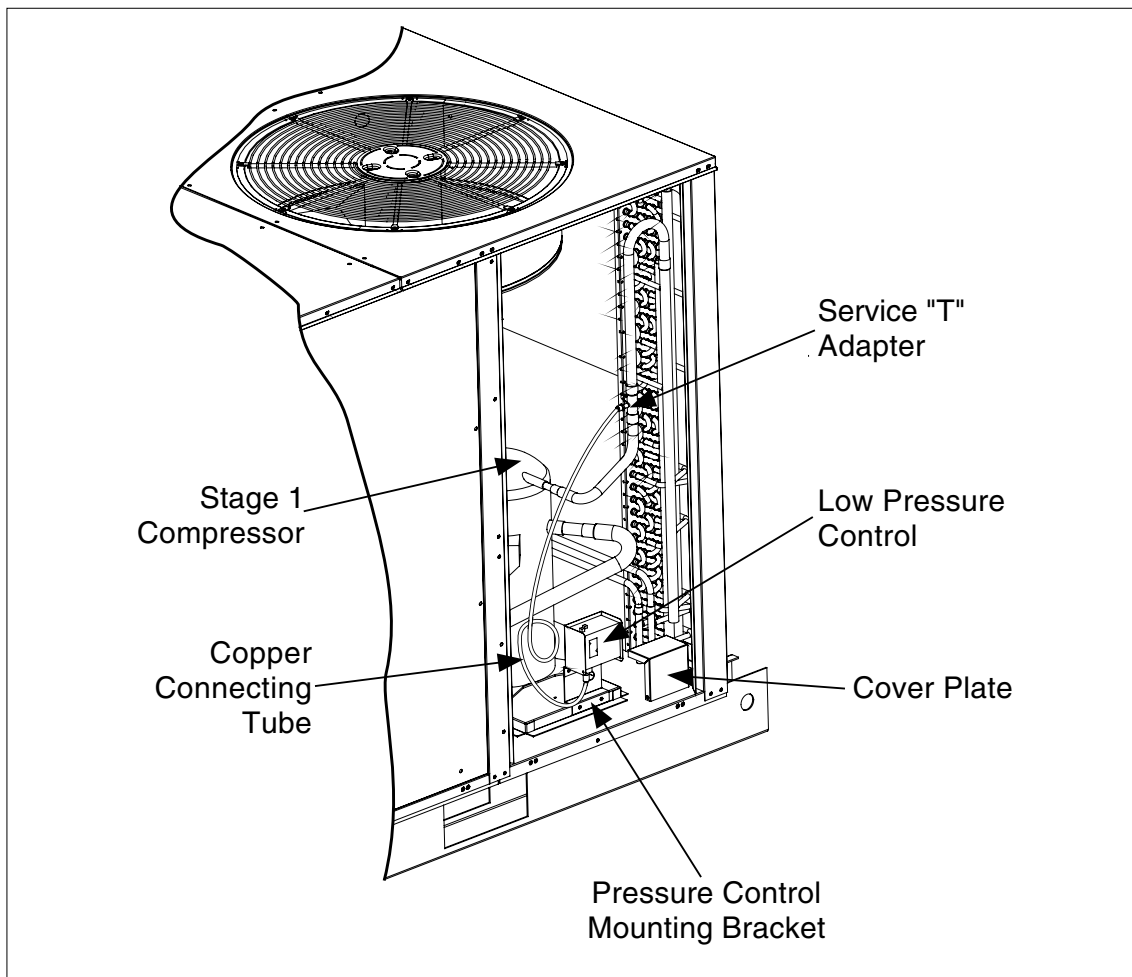


Figure 4.

Electrical Wiring-R4G*-150/180* Series

1. Remove both the Blue and Yellow wire from the Outdoor Fan 24V contactor coil. Cut off wire terminations and strip both wires approximately ½". Connect together and terminate using closed end wire connector provided.
2. Attach one Pressure Control Red wire to Outdoor Fan 24V contactor coil terminal where wires were removed in Step 1.
3. Attach remaining Pressure Control Red wire to Stage 1

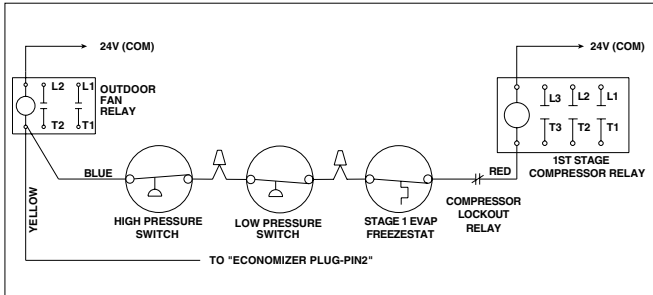


Figure 5a. R4GM-150/180* Factory Wiring

- Compressor 24V contactor coil with Red wire already attached.
4. Check all connections and tighten as required.
 5. Replace and close all panels.
 6. Reconnect Power to Unit and Thermostat.

Control Adjustment (See Figure 6)

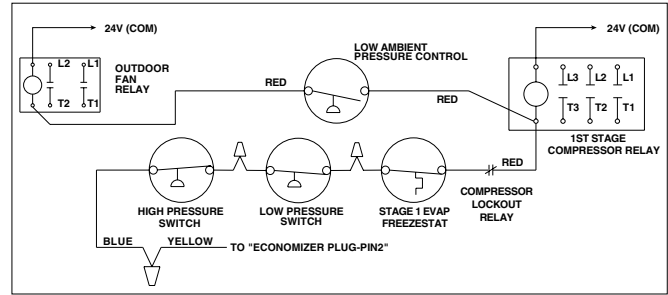


Figure 5b. R4GM-150/180* Low Ambient Wiring

The low pressure control switch comes factory set to Cut-In at approximately 280 PSIG and to Cut-Out at approximately 140 PSIG. (140 Lb. differential) If required, the pressure control switch may be adjusted as follows:

1. Rotate the round adjustment screw on top of the control to the new Cut-In (High Event) pressure. The Cut-In pressure is indicated by the set of numbers on the right of the control front cover.
2. Rotate the square differential adjustment screw on top the control to correspond to the new Cut-Out pressure. Differential pressure is indicated by the set of numbers on the left of the control front cover

NOTE: New Cut-Out pressure is switch Cut-In (High Event) pressure minus Differential pressure.

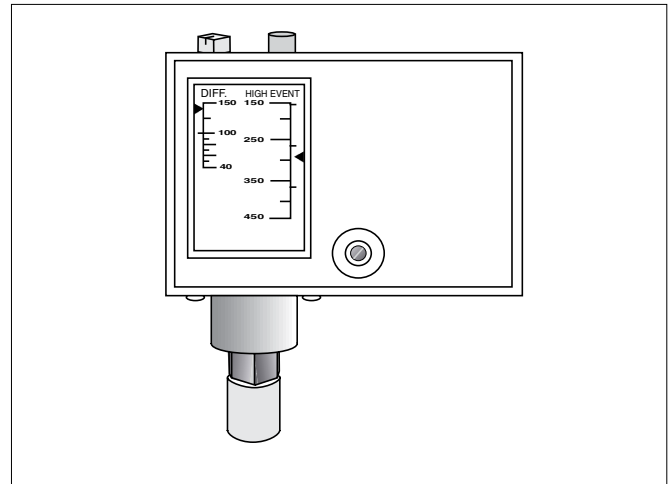


Figure 6. Control

