EasyStart Home AC Wiring
Using Micro-Air ASY-364 or ASY-368

Contents

Safety and Warnings

- AC Power can be dangerous or lethal if the proper safeguards are not understood or performed.
- If you are not sure of any aspect of this installation or proper safety when working with AC line voltages, please seek installation by a qualified HVAC or electrical professional.
- Turn off all power to the air conditioning system before proceeding.
- Read all instructions before starting installation.
- Capacitors can store a charge and should be discharged by touching both terminals simultaneously with an insulated screw driver. Three terminal caps should use the "C" terminal to short each of the other two terminals.

Identify your system

Most users will follow the guide presented in Section 1: Installing EasyStart in most systems. This section includes all systems without an Emerson comfort alert control board. Please note that there is a different type of comfort alert system that looks like a black box and connects to the contactor with compressor wires passing through it. These users will also use section 1.

Some users may encounter an Emerson control board in their system. These boards are clearly marked and have the compressor connections made to the circuit board. There is no contactor in these systems since the connection is provided by relays on the circuit board. Please use Section 2: Comfort alert control board systems if you have one of those systems.

Section 1: Installing EasyStart in most systems

Step 1: Identify the components
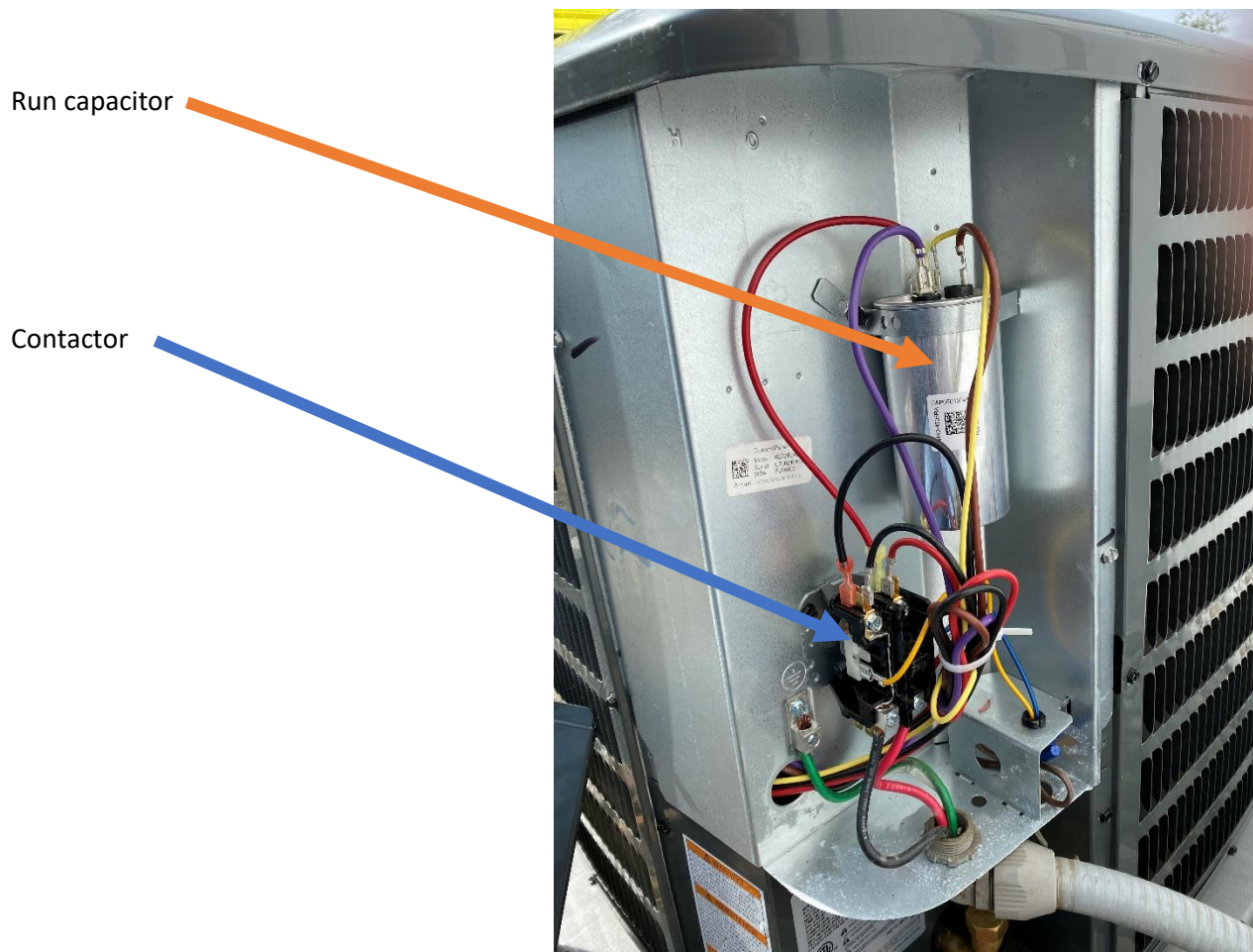
Run capacitor

Contactor

Figure 1

The two components shown in figure 1 will be used to connect your EasyStart. Locate these components in your air conditioner before proceeding. Some compressors will have additional components and may have a circuit board as well. Power comes in from the bottom of the contactor usually from a breaker or fuse panel on the dwelling. This must be disconnected (Turn the breaker off) before connecting EasyStart.

Step 2: Mounting the unit

EasyStart can be mounted on any flat surface in either a horizontal or vertical position. It can also be mounted with the clear cover pointing up. The wire entry must face down when EasyStart is mounted vertically.

Step 3: Identify the capacitor terminals

Three terminal run capacitors

HERM

FAN

C
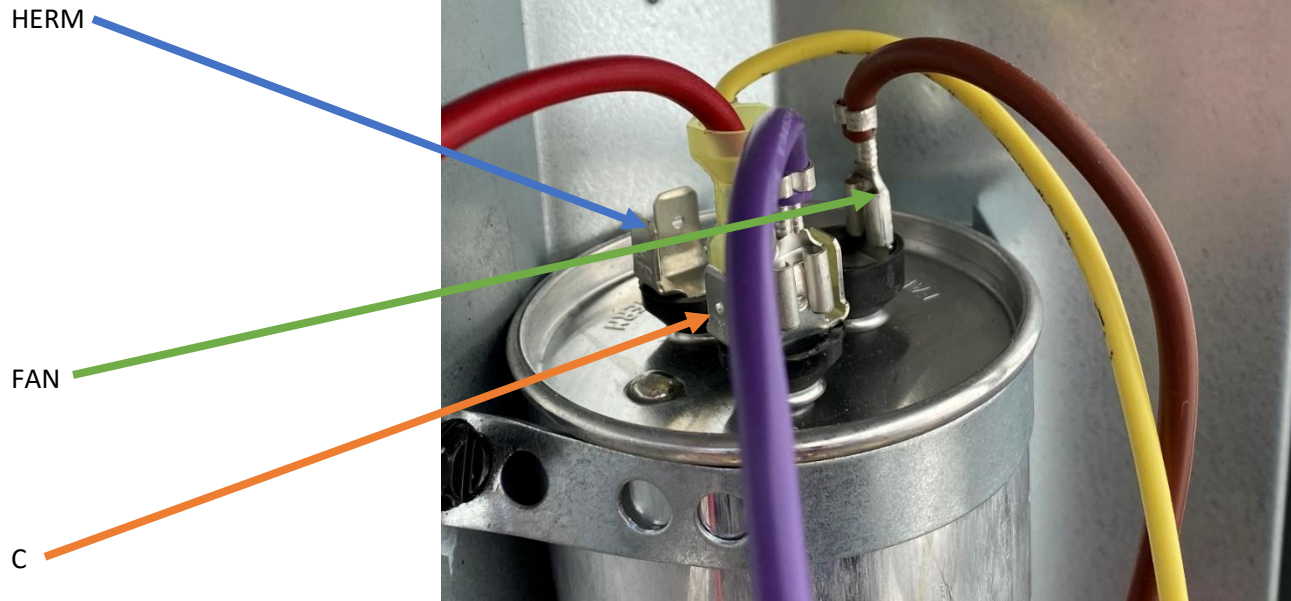
Figure 2

Many compressors have three terminal group capacitors as shown in figure 1. These capacitors feature labels on the top as indicated by the arrows above. Use the labels on these capacitors to identify where to make connections.

Two terminal run capacitors

Two terminal group caps are harder to identify the terminals because they are not labeled. Look for a wire that connects the contactor to the capacitor like the red one shown in figure 3. This wire is connected to the "C" terminal and will be left in place. The other unmarked terminal is the HERM terminal. For the remainder of this document, we will refer to the HERM terminal and C terminal for all types of capacitors.

Wire to contactor and capacitor
DO NOT REMOVE OR DISCONNECT THIS WIRE

Figure 3

Step 4: Removing start devices

HERM terminal group

Figure 4

There is only a single yellow wire connected to the HERM terminal in figure 4. Compressors with only one wire on the HERM terminal have no start components and can go on to the next step. ***Note: your wire colors may be different.***

If you find there is more than one wire on this group, you will need to identify which of these wires, if any, goes to a start device.

One wire will always go to the compressor which you can verify using your factory wiring diagram or tracing them out. One may be a compressor monitoring wire and should be preserved and is explained in the next step. The one to remove can go to a relay, a second capacitor called a start capacitor or a PTC device which is a small disk. Remove this start assist wire from the herm terminal at both ends while leaving all the other HERM wires alone. If you have a PTC or hard start you can just remove the entire device.

Step 5: Check for compressor monitoring systems

Some systems have monitoring circuit that verifies the compressor is running and provides feedback, like a lights or fault indication, when the compressor fails to start. These systems have a control board located in the electrical box and a fault chart located nearby that lists specific compressor faults. If your system contains one of these control boards, you will need to remove the start delay in EasyStart so it does not cause an artificial fault.

See Appendix 1: Compressor monitoring system changes for information on this change if it is required for your installation.

Step 6: Connecting the ORANGE wire
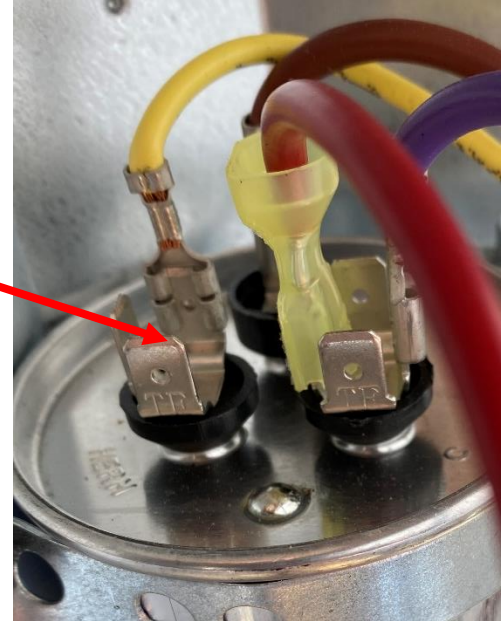Connect the EasyStart ORANGE wire to the HERM terminal.

Step 7: Connecting the BROWN wire

Follow the wire that connects the C terminal on the run capacitor to the contactor. ***Do not remove or disconnect this wire. It is identified here only to show the side of the contactor we are referencing***. Wires are arranged in a group on the contactor. The four spade terminals and the screw terminal make up one group Locate the compressor "R" terminal wire located on this group of terminals. This wire is usually a heavy gauge wire connected to the screw part of the contactor. It may also be on a quick connect as shown in figure 5 on smaller compressors.

Disconnect the compressor "R" wire from the contactor and connect it to the BROWN wire from EasyStart. Connect only these two wires together and not to anything else.

Note: the fan wire often connects to another of the spade terminals. Make sure you are not connecting the fan wire to the EasyStart brown wire. If you do make this mistake, you will not damage anything, it just will not work properly.

Figure 5

Step 8: Connecting the WHITE wire

Connect the EasyStart WHITE wire to the contactor where the wire was removed from in step 7. This is typically under the screw terminal on the contactor near where the red arrow is pointing.

Note: Compressors with an RLA over 18 amps should not use the spade connection like shown in figure 5 but should connect using a ring, fork or direct wire connection under the screw. Be sure to match whatever method is used for the original installation.

Step 9: Connecting the BLACK wire

Contactors are "split" into two electrically separate halves with each half connected to a single voltage line of the incoming service. The red wires are both connected to one side of the contactor in the picture below and the black wires are connected on the other side of the contactor. The wire colors may be different in your installation. Connect the BLACK EasyStart wire to the side of the contactor where the EasyStart WHITE wire is NOT connected using an available connection point.
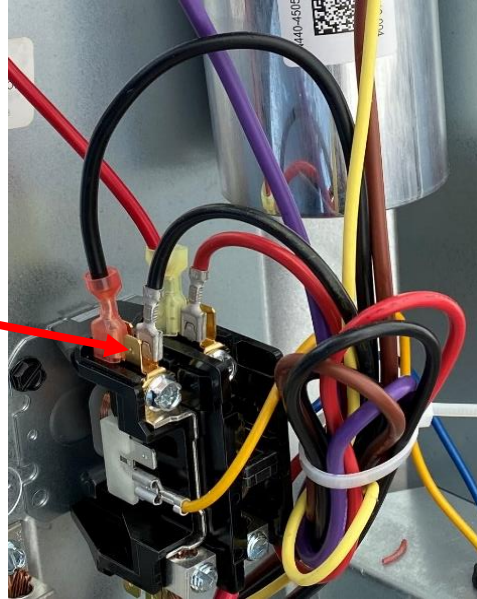
Connect here

Figure 6

Step 10: Learning

Start the air conditioner on AC mains power. The fan will come on followed shortly after by the compressor. EasyStart is now installed. The compressor can be cycled normally to complete the learning process. If you are going to test on a generator or alternate power source, be sure the compressor has started five times before starting on a generator or other power source.

Section 2: Comfort Alert control board systems
Goodman GSCZ, Rheem RARL, Goodman GSXC and possibly others
Step 1: **DISCONNECT ALL POWER**

Step 2: Disconnect the red wire pointed to by the green arrow in figure 1. Pull it back out through the transformer pointed to by the blue arrow.

Step 3: Thread the white EasyStart wire back through the transformer like the red wire that was removed and connect it to the connection terminal. It should be connected under the screw for compressors larger than three tons (36,000 BTU).
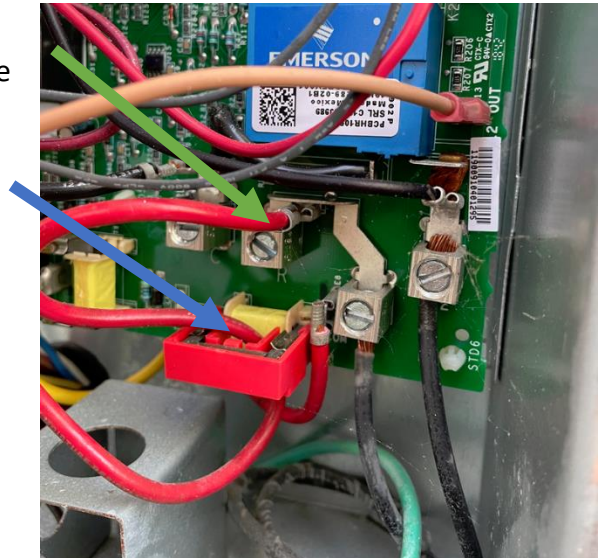

Figure 2

Step 4: Temporarily connect the black EasyStart wire to the screw terminal shown by the black arrow in figure 2. Use a piece of tape or wire nut to insulate the EasyStart brown and orange wires from touching anything else. Set the thermostat for off then turn on power.
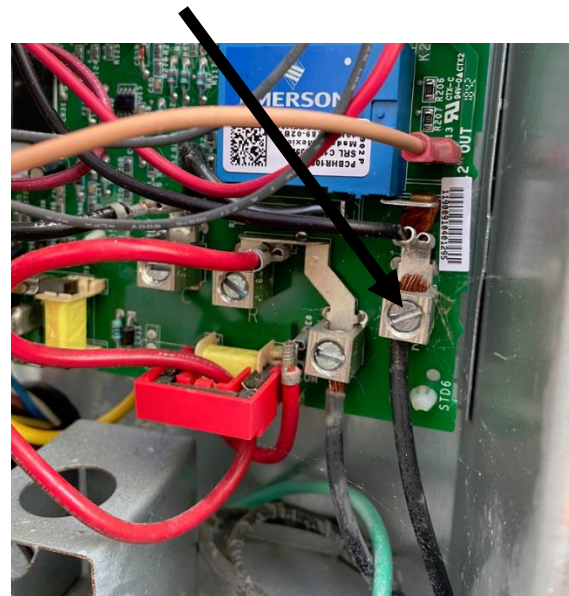
Load the EasyStart application on a smart device and open the application. Enter "EasyStart_" in the entry box (with the underscore but without the quotes). Press "connect". When the connection is complete, press the relearn tab. Change the switch for "No Start delay" to on and then press "Send to EasyStart" Once you are successful you can close the app and remove power. Disconnect the black wire after power is removed.

Figure 3

Note: if you have trouble connecting in Android, go to settings-> applications-> EasyStart-> Permissions and turn on permission for location services.

Step 4: Connect the disconnected red wire to the EasyStart brown wire using an end splice joint.

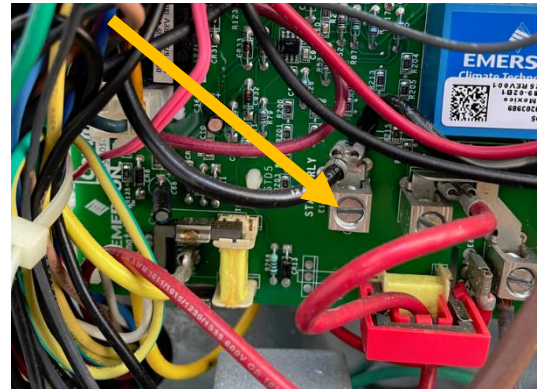Step 5: Connect the black EasyStart wire under the screw pointed to by the yellow arrow in figure 3.

Figure 4

Step 6: Connect the orange wire to the terminal on the run capacitor indicated by the orange arrow in figure 4.
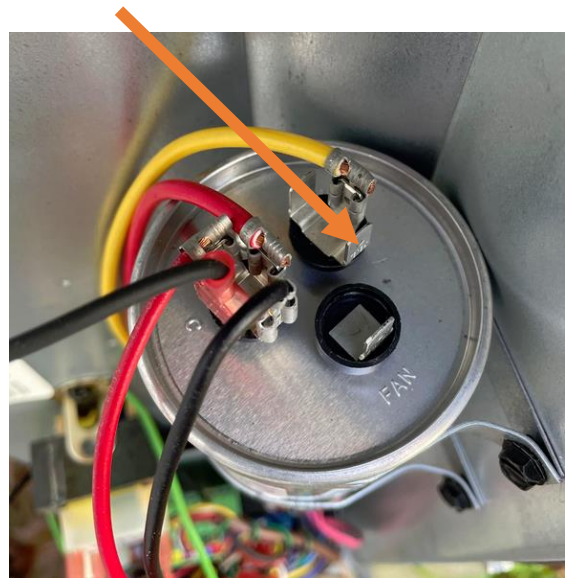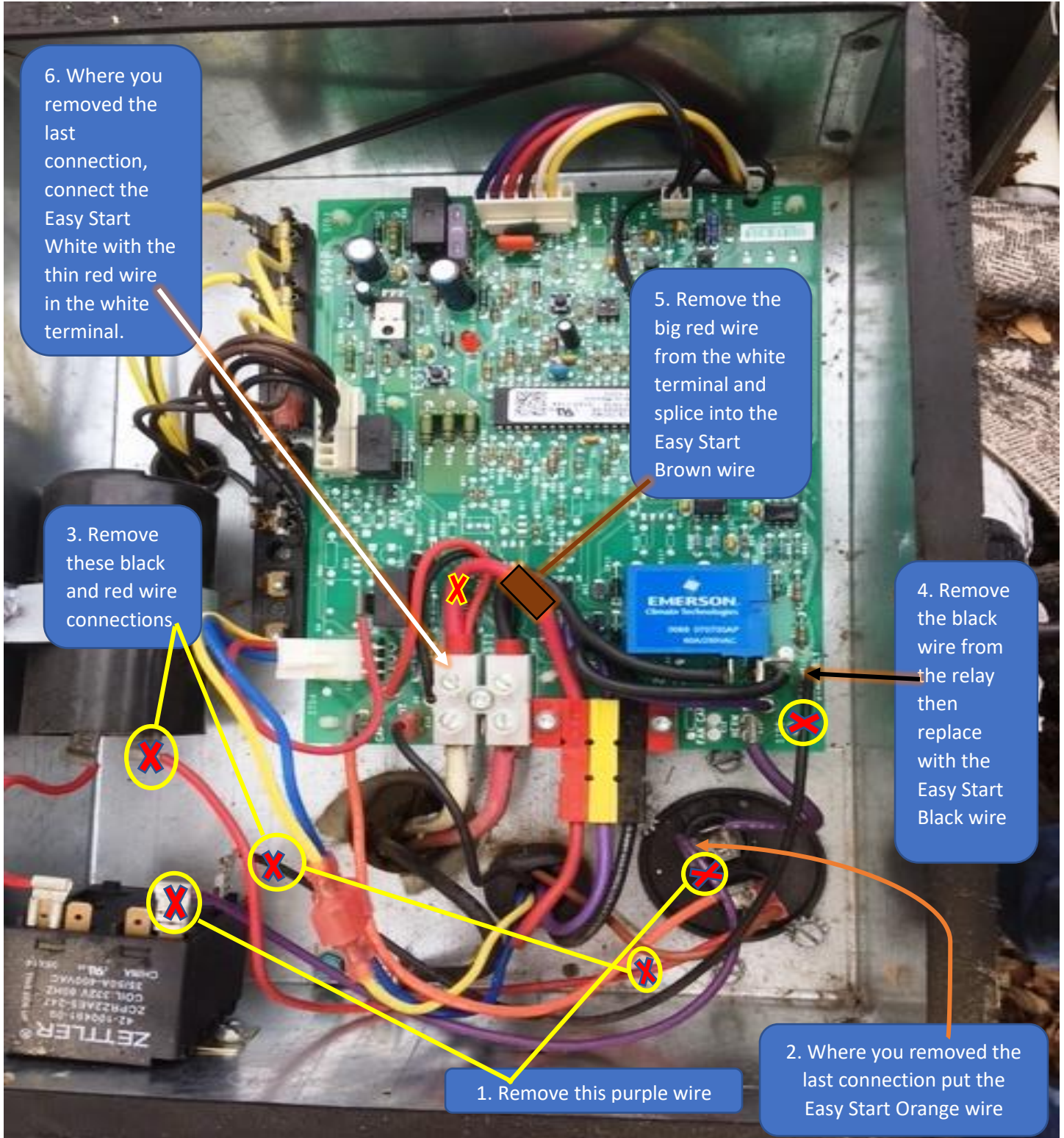

Figure 5

6. Where you removed the last connection, connect the Easy Start White with the thin red wire in the white terminal.

5. Remove the big red wire from the white terminal and splice into the Easy Start Brown wire

3. Remove these black and red wire connections

4. Remove the black wire from the relay then replace with the Easy Start Black wire

1. Remove this purple wire

2. Where you removed the last connection put the Easy Start Orange wire

Instructions

1. Remove the purple wire from the start relay to the run capacitor.
2. Where you just removed the run capacitor purple wire, connect the Easy Start Orange wire.
3. Remove the black wire that goes from the start relay to the circuit board & red start capacitor to run capacitor wires.
4. Where you just removed the black wire in the previous step, connect the Easy Start Black wire.
5. Remove the thick red wire from the circuit board top left white terminal and splice into the Easy Start Brown wire leaving the thin red wire in place.
6. Where you removed the last connection, put the Easy Start White wire with the thin red wire in the white terminal.

NOTE: Wherever you see the red **X**, the wire must be removed.

Section 4: Comfort Alert and Core Sense Modules

If you have one of the devices in this section, the EasyStart power on delay must be disabled. Follow the instructions in Appendix 1: Compressor monitoring system changes. Most users with Bluetooth will follow the Models with Bluetooth section.

The provided links are included for additional information on these modules.
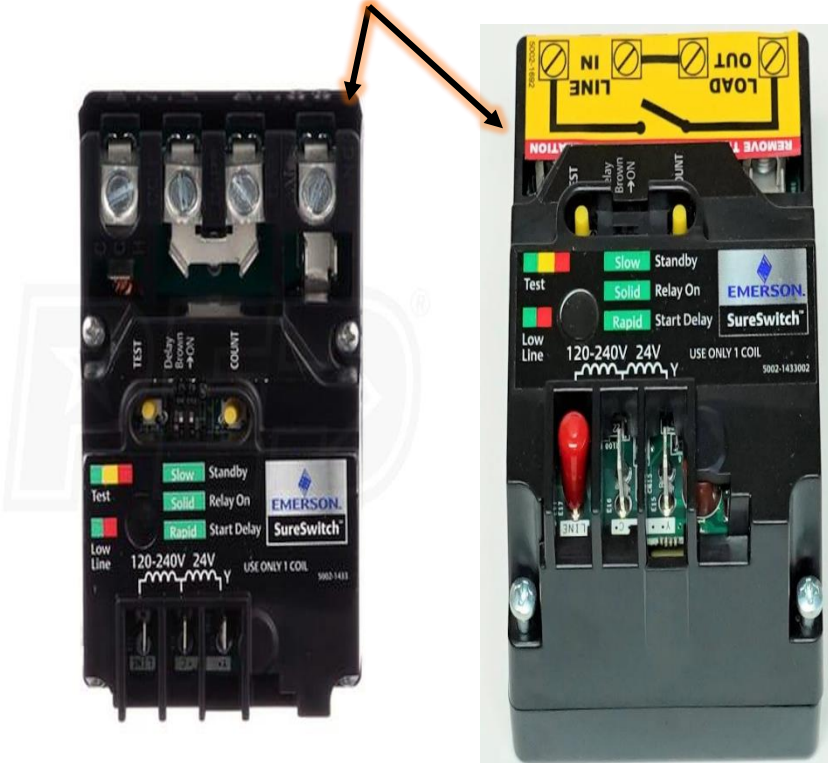Manual for the Comfort Alert Module #543-0038-02

Manual for the Coresense Module #571-0066-00

NOTE: These contactors are connected like a standard mechanical contactor. For more information on operation of this contactor, please click on the included link.

Instructions for the Sure Switch Contactor #49M11-843 .

Contactor integrated Core sense protection module ESC1AFPT-CC-901 (not shown).

Coresense Contactor ESC1AFPT-CC-901 for Scroll compressors bulletin & installation instructions

Appendix 1: Compressor monitoring system changes

This section details changes that should be made ONLY if you have a compressor monitoring system. These systems typically consist of a circuit board located inside the electrical box that incorporates LED's or a display to indicate a fault. There should be an instruction in the electric box that shows the meaning of the faults. If you do not have such a board or have a board without LED's or have no such instruction sheet, do not make these changes.

IMPORTANT: These instructions are not interchangeable between Bluetooth and non-Bluetooth models. Bluetooth models should not have their cover removed. Using the non-Bluetooth instructions on the Bluetooth model will cause the unit to function improperly.

Models without Bluetooth

See above appendix 1 description before performing this step.

First place the shorting jumpers from the six-pin header on pins 1 and 3, and pins 4 and 6 as shown below. The next step is to cut JMP2 on the circuit board. This will disable the timer and start the compressor immediately. Your circuit board may look a little different from the image but the process is the same on all boards.

Figure 7

See above appendix 1 description before performing this step.

Bluetooth models must be connected to power to disable the starting delay before installation. Turn off the breaker to the air conditioner. Connect the black and white EasyStart wires to the line input side of the contactor indicated by the yellow arrows in figure 8. Tape or wire nut the EasyStart brown and orange wire ends so they cannot make electrical contact with anything. Turn on the breaker to the air conditioner.

Open the smart device application on an Android or Apple device. To start the connection, enter "EasyStart_", including the underscore (case sensitive), in the white box below "Enter EasyStart Bluetooth ID:" and press return. The "Connect to EasyStart" button will become enabled. Press the button to connect to the starter. The screen will change to show the ID of the starter.
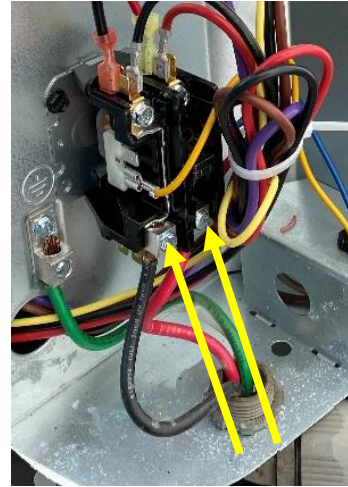
Figure 8

Click the relearn tab and slide the switch for "No pwr on delay" to "ON". Set the SCPT (minutes) for 1. Press "send settings to EasyStart". Exit the app and turn off the breaker to the air conditioner. Disconnect the white and black EasyStart wires and continue with the installation.

Appendix 2: Maintenance

The box and entry are water tight and can withstand normal rain events. The box should not be pressure washed since it is not rated for high power water jet cleaning. It can be washed with a mild soap and water solution.

Appendix 3: Additional Resources

For additional information on EasyStart, troubleshooting or assistance, please visit our website at www.Microair.net .