KAACS0101PTC
KAACS0201PTC

Compressor Start Assist

Installation Instructions

NOTE: Read the entire instruction before starting the installation.

INTRODUCTION

This instruction covers the installation of compressor start assist kits Part No. KAACS0101PTC and KAACS0201PTC for air conditioning equipment. The device is designed to assist compressor starting torque.

SAFETY CONSIDERATIONS

Installation, start-up, and servicing of air conditioning equipment can be hazardous due to system pressures and electrical components. Only trained, qualified installers and service technicians should install, start-up, or service air conditioning equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils, or cleaning and replacing filters. All other operations should
be performed by trained service personnel. When working on air conditioning equipment observe precautions in the literature and on tags and labels attached to the unit.

Follow all safety codes. Wear safety glasses and work gloves. Use a quenching cloth for brazing operations. Have a fire extinguisher available.

Recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies a hazard which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before beginning any installation or modification, be sure the main electrical disconnect switch is in the OFF position. TAG THE DISCONNECT SWITCH WITH A SUITABLE WARNING LABEL.

⚠ WARNING

PERSONAL INJURY HAZARD

Failure to follow this warning could result in personal injury or death.

PTC temperature can exceed 250°F during unit operation. Make sure no wiring comes in contact with the device. Use extreme caution when handling this component.

DESCRIPTION AND USAGE

The Positive Temperature Coefficient (PTC) thermistor contained in this kit is a device which provides start assistance when installed parallel with the compressor ”run” capacitor. Use with 208-volt, 230-volt, or 208/230-volt, 60-hertz, single-phase units. The kit contains the following:

Mounting bracket 1
Wires 3
Three-terminal PTC thermistor 1

Refrigerant flow-control devices, capillaries, or bleed-type thermostatic expansion valves (TXV) can be used as metering devices in systems utilizing this PTC thermistor.

NOTE: This PTC thermistor, in most instances, will not provide adequate starting torque for non-bleed systems or for systems equipped with a start capacitor and relay.

If this kit is used to replace an existing PTC device, simply remove the defective PTC device and install the new one in the existing bracket.

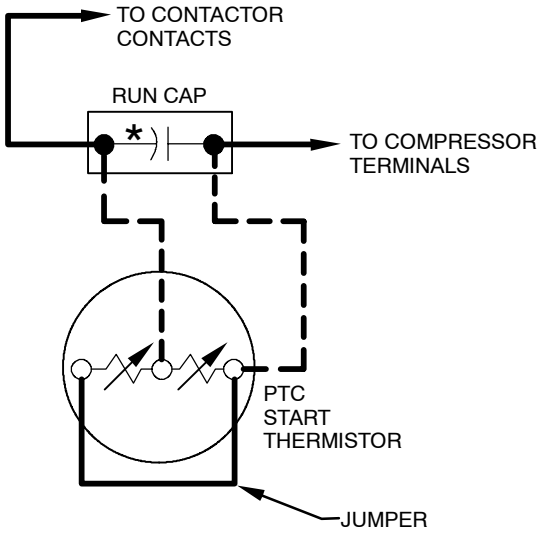

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Fig. 1 - PTC Thermistor Wiring Schematic

INSTALLATION

1. Mount clamp in electrical control box with at least 1/2-in. clearance of all surfaces including electrical terminals and wires that could conduct electricity. Route all wires away from thermistor body.
2. Install yellow jumper wire with piggyback terminal to connect two ends of PTC thermistor. Use other two wires to connect center terminal and one of the ends to run capacitor. (See Fig. 1)
3. Push PTC thermistor into its holding clamp.
4. Refer to existing unit wiring label to ensure new PTC wiring is correct.
5. Replace all panels on unit.

TROUBLESHOOTING

The PTC thermistor is a fail-safe device. If the component becomes defective it will fail to open (breaking the circuit).

The PTC thermistor is a resistor with an inherent self-heating characteristic. The temperature of the PTC device increases very rapidly at start-up and its increased resistance reaches a level that takes it out of the circuit within approximately 2 sec.

If a unit having a PTC device fails to start the compressor, remove PTC device from unit and take to a cool place. Wait 10 minutes for device to cool, then check for an open circuit. The resistance between an end terminal and the middle terminal with the jumper installed across the end 2 terminals should be its normal resistance of 12 to 25 ohms for 12.5-ohm device or 24 to 50 ohms for 25-ohm device.

If the PTC device is in working condition, measure the line voltage. The line voltage must be within voltage operating range indicated on unit rating. Also check that system pressures are equalized. Some compressors may experience rough handling in transit and may fail to start due to a locked condition. Should a compressor fail to start for this reason, ”bump” it with an appropriately sized start capacitor. After this initial “bump“ and an hour run-in, the compressor should restart with the PTC thermistor.

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