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UpStart Components CAP-97F9970-2PK

UpStart Components Dual Run Capacitor User Manual

Model: CAP-97F9970-2PK | Brand: UpStart Components

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the UpStart Components Dual Run Capacitor. Please read this manual thoroughly before installation and operation.

2. SAFETY INFORMATION

WARNING: Working on electrical systems can be hazardous. Always disconnect power to the system before attempting any installation, maintenance, or troubleshooting. Failure to do so may result in electrical shock, serious injury, or property damage.

- Ensure power is completely off and verified with a voltage tester before touching any components.
- Discharge the old capacitor before removal. Capacitors can store a charge even after power is disconnected.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- If you are unsure about any step, consult a qualified electrician or HVAC technician.

3. PRODUCT OVERVIEW

The UpStart Components Dual Run Capacitor is designed for use in various HVAC applications, including air conditioners and heat pumps. It is a replacement part compatible with numerous OEM models.



Figure 3.1: Two UpStart Components Dual Run Capacitors, showing the product and its packaging.

Key Features:

- Dual Run Type: Supports both compressor and fan motor.
- Round Case Style: Standard form factor for many applications.
- Push On Tab Terminals: For secure electrical connections.
- Designed for optimum performance in compatible systems.

4. SETUP AND INSTALLATION

Proper installation is crucial for the capacitor's performance and safety. Follow these steps carefully.

4.1 Pre-Installation Checks

1. **Verify Compatibility:** Ensure the new capacitor's specifications (voltage, capacitance, Hz, terminal type) match or exceed the original capacitor. The voltage should be higher or equal, but not lower. Capacitance (MFD) and Hz must match.
2. **Power Disconnection:** Turn off all power to the HVAC unit at the thermostat and the main breaker.
3. **Discharge Old Capacitor:** Using an insulated screwdriver with a metal shaft, short the terminals of the old capacitor to discharge any stored electrical energy. Be cautious, as a spark may occur.

4.2 Installation Steps

1. **Label Wires:** Before disconnecting, take a photo or label each wire connected to the old capacitor's terminals (Herm, Fan, Common).
2. **Remove Old Capacitor:** Disconnect the wires and carefully remove the old capacitor from its mounting bracket.
3. **Install New Capacitor:** Place the new UpStart Components capacitor into the mounting bracket.
4. **Connect Wires:** Reconnect the wires to the corresponding terminals on the new capacitor. Ensure connections are secure.





Figure 4.1: Detailed view of the capacitor's terminals and specifications label, crucial for correct wiring.

5. OPERATING PRINCIPLES

A dual run capacitor is an electrical component used in HVAC systems to assist both the compressor and the outdoor fan motor in starting and running efficiently. It stores electrical energy and releases it to provide a starting torque for the motors, and then helps maintain a consistent voltage during operation.

How it Works:

- The capacitor has three terminals: "Herm" (for Hermetic compressor), "Fan" (for fan motor), and "Common".
- It provides a phase shift to the motor windings, creating a rotating magnetic field necessary for motor startup.
- During operation, it helps improve the power factor and efficiency of the motors.

6. MAINTENANCE

Capacitors are generally maintenance-free components. However, periodic inspection can help identify potential issues before they lead to system failure.

Inspection Guidelines:

- **Visual Inspection:** Annually inspect the capacitor for signs of bulging, leaking fluid, or corrosion around the terminals. These are indicators of a failing capacitor.
- **Continuity Check:** If you suspect a problem, and after safely discharging the capacitor, use a multimeter to check for continuity across the terminals. A lack of continuity indicates an open circuit and a failed capacitor.
- **Capacitance Measurement:** A multimeter with capacitance measurement capabilities can be used to verify the capacitor's MFD rating. If the measured value deviates significantly from the specified rating, the capacitor may need replacement.



Figure 6.1: Angled view of the capacitor, showing its robust construction and terminal layout.

7. TROUBLESHOOTING

If your HVAC system is experiencing issues related to motor startup or operation, the capacitor may be the cause.

Common Symptoms of a Failing Capacitor:

- Outdoor unit fan or compressor hums but does not start.
- Fan motor runs slowly or intermittently.
- System frequently trips the circuit breaker.
- Reduced cooling or heating performance.

Troubleshooting Steps:

1. **Power Off:** Always disconnect power to the unit before inspection.
2. **Visual Check:** Look for physical signs of damage on the capacitor (bulging, leaks).
3. **Test Capacitance:** Use a multimeter to test the capacitance. Compare the reading to the specified MFD value on the capacitor label. A reading significantly lower than the specified value indicates a weak or failed capacitor.
4. **Replace:** If the capacitor shows signs of failure, replace it with a new UpStart Components capacitor with matching specifications.

8. SPECIFICATIONS

Detailed technical specifications for the UpStart Components Dual Run Capacitor.

Specification	Value
Brand	UpStart Components
Model Number	CAP-97F9970-2PK
Type	Dual Run Capacitor
Voltage Rating	370 Volts
Capacitance	50/5 MFD (Microfarad)
Frequency	50/60 Hz
Case Style	Round
Terminal Type	Push On Tab
Material	Copper
Product Dimensions	2.5 x 5 x 6 inches

9. WARRANTY AND SUPPORT

This UpStart Components product is a replacement part and is not affiliated with any OEM brands. Any warranties for this product are offered solely by UpStart Components.

For warranty claims or technical support, please refer to the contact information provided with your purchase or visit the official UpStart Components website.

