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TEMCo Industrial SC0018

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Model: SC0018

INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of your TEMCo 233-280 uF MFD CD60 Start Capacitor. This capacitor is designed for single-phase motor applications in HVAC, compressors, and pumps, operating at 110-125V AC and 50/60 Hz.

Please read this manual thoroughly before attempting any installation or service to ensure proper function and safety.

SAFETY INFORMATION

WARNING: Electrical components can cause serious injury or death. Installation and service should only be performed by qualified personnel.

- Always disconnect power to the equipment before installing, servicing, or removing the capacitor.
- Capacitors can store an electrical charge even after power is disconnected. Always discharge the capacitor before handling. Use a properly insulated screwdriver with an insulated handle to short the terminals, or use a resistor designed for capacitor discharge.
- Wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves.
- Ensure the replacement capacitor matches the original specifications (uF/MFD, VAC, Hz) to prevent damage to the motor or system.
- Do not touch the terminals while the capacitor is energized or before it has been safely discharged.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm (Proposition 65 warning). Handle with care and wash hands after handling.

PRODUCT OVERVIEW

The TEMCo CD60 Start Capacitor is an electrolytic oil-filled capacitor housed in a rugged phenolic resin case. It is designed to provide the necessary starting torque for single-phase AC motors.



Image 1: A view of five TEMCo CD60 Start Capacitors, highlighting their uniform appearance and labeling.

Key Features:

- **Capacitance:** 233-280 uF (Microfarads)
- **Voltage Rating:** 110-125 VAC
- **Frequency:** 50/60 Hz
- **Temperature Range:** -40°C to +65°C (-40°F to +149°F)
- **Construction:** Rugged phenolic resin case
- **Terminals:** 1/4" Quick Disconnect Terminals (Standard)
- **Safety:** PCB-free, UL rated E492933, Electrolytic Oil filled

SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your motor. Refer to the equipment's specific wiring diagram and safety instructions.

Steps for Replacement:

1. **Power Disconnection:** Ensure all power to the motor or appliance is completely disconnected and locked out. Verify with a voltmeter.
2. **Locate Old Capacitor:** Identify the existing start capacitor. Note its physical orientation and wiring connections.
3. **Discharge Old Capacitor:** Safely discharge the old capacitor using a suitable tool (e.g., insulated screwdriver or discharge resistor) across its terminals.
4. **Remove Old Capacitor:** Carefully disconnect the wires from the old capacitor's terminals. Note that these capacitors typically have 1/4" quick disconnect terminals.
5. **Verify New Capacitor:** Confirm that the new TEMCo capacitor matches the capacitance (uF/MFD) and voltage

(VAC) ratings of the original capacitor.

6. **Install New Capacitor:** Connect the wires to the new capacitor's 1/4" quick disconnect terminals. Ensure connections are secure.
7. **Secure Capacitor:** Mount the new capacitor securely in its designated location, ensuring it does not vibrate or come into contact with moving parts.
8. **Restore Power:** Once installation is complete and all connections are verified, restore power to the equipment.
9. **Test Operation:** Test the motor's operation to ensure it starts smoothly and functions correctly.



Image 2: Detail of the capacitor's quick disconnect terminals, essential for wiring connections.

For a detailed installation guide, you may refer to the official [Installation Manual \(PDF\)](#).

OPERATING PRINCIPLES

A start capacitor, like the TEMCo CD60, is a temporary component in a single-phase AC motor circuit. Its primary function is to create a phase shift in the auxiliary winding current relative to the main winding current. This phase shift generates a rotating magnetic field, providing the necessary torque to initiate motor rotation from a standstill.

Once the motor reaches approximately 75% of its operating speed, a centrifugal switch (or electronic equivalent) disconnects the start capacitor from the circuit. The motor then continues to run on its main winding. The capacitor is not designed for continuous operation.

MAINTENANCE

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

- **Visual Inspection:** Regularly check the capacitor for any signs of physical damage, such as bulging, leaks, cracks in the case, or discoloration. These are indicators of internal failure.

- **Terminal Connections:** Ensure that the quick disconnect terminals are clean and securely connected. Loose connections can lead to arcing and overheating.
- **Environmental Conditions:** Ensure the capacitor is operating within its specified temperature range (-40°C to +65°C). Excessive heat can shorten its lifespan.
- **Cleaning:** Keep the capacitor free from dust, dirt, and moisture. Use a dry, non-abrasive cloth for cleaning.

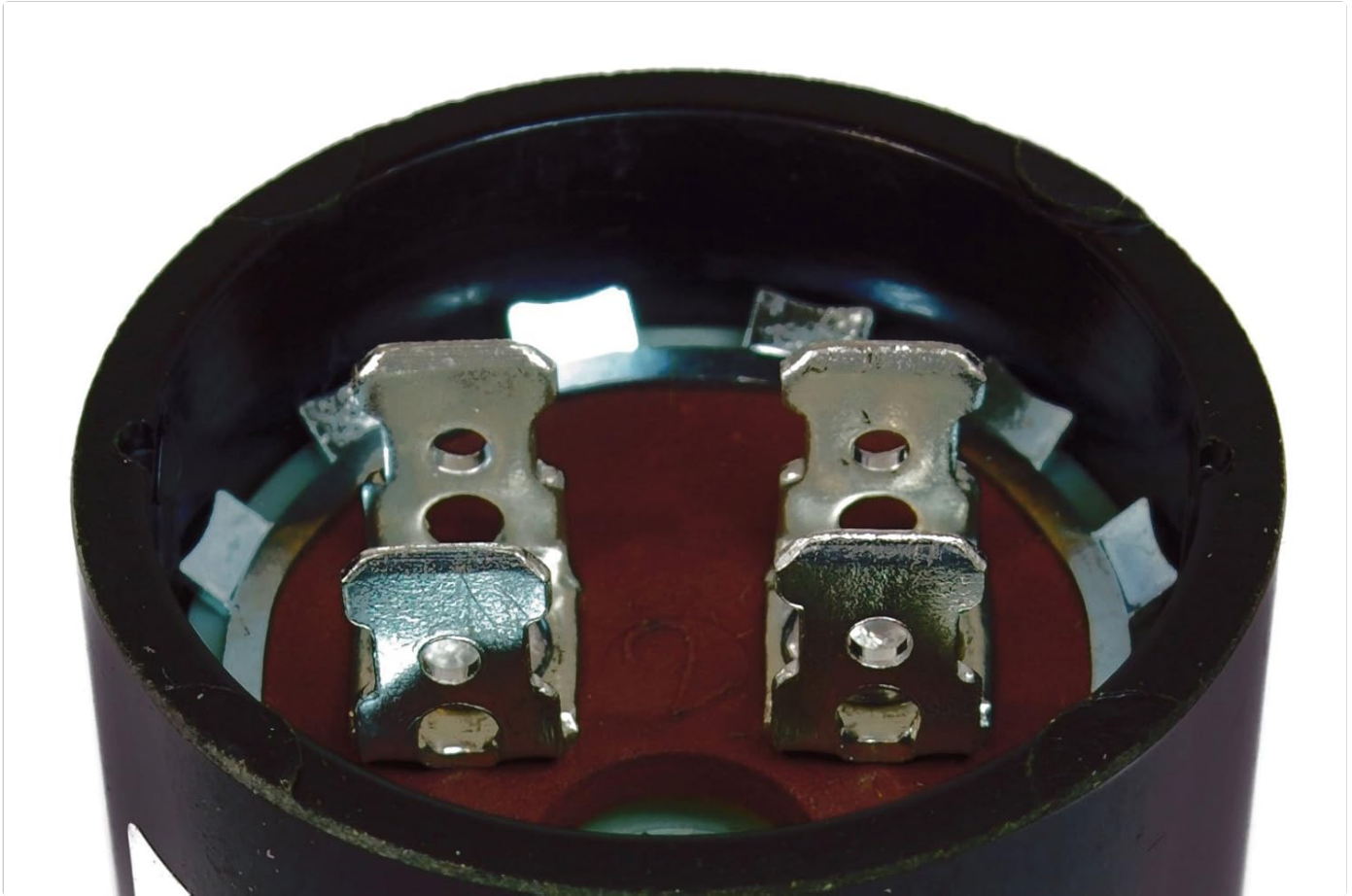


Image 3: An internal view of the capacitor's terminals, showing the connection points.

TROUBLESHOOTING

If a motor fails to start or operates incorrectly, the start capacitor is a common point of failure. Always follow safety precautions when troubleshooting electrical components.

Symptom	Possible Cause	Solution
Motor hums but does not start (or starts slowly)	Failed start capacitor (open circuit or low capacitance)	Disconnect power, discharge capacitor, test capacitance with a multimeter. Replace if faulty.
Capacitor is bulging, leaking, or discolored	Internal failure due to overheating or overvoltage	Disconnect power, discharge capacitor, and replace immediately. Investigate potential causes of overheating/overvoltage.
Motor trips circuit breaker on start-up	Short-circuited start capacitor	Disconnect power, discharge capacitor, test for short circuit. Replace if faulty.
Motor runs but does not reach full speed	Start capacitor not disconnecting (faulty centrifugal switch)	Inspect and repair/replace the centrifugal switch or associated components. The capacitor itself might be fine.

If troubleshooting does not resolve the issue, consult a qualified electrician or motor repair specialist.

SPECIFICATIONS

Attribute	Value
Brand	TEMCo Industrial
Model Number	SC0018 (5x SC0017)
Capacitance	233-280 uF (Microfarads)
Operating Voltage	110-125 Volts AC
Frequency	50/60 Hz
Temperature Operating Range	-40°C to +65°C (-40°F to +149°F)
Product Dimensions	1.44 x 1.44 x 2.75 inches
Weight	1.08 Pounds (for the 5-pack)
Material	Phenolic Resin Case
Shape	Round
Terminals	1/4" Quick Disconnect
Certifications	UL rated E492933, PCB-free

WARRANTY AND SUPPORT

This TEMCo Industrial Start Capacitor comes with a **5 Year Warranty**.

For technical support or warranty claims, please contact TEMCo Industrial directly. Contact information can typically be found on the manufacturer's official website or through your point of purchase.

Additional resources and product information may be available on the TEMCo Industrial Store on Amazon.

