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BMI (1)BMI_708-850x125_(1)QC-13

BMI/USA Start Capacitor User Manual

Model: (1)BMI_708-850x125_(1)QC-13

PRODUCT OVERVIEW

The BMI/USA Start Capacitor, model 092A708B125BD4A, is a critical component designed for superior performance in starting fractional horsepower, single-phase electric motors, and gear motor applications. Manufactured in the U.S.A. to the highest EIA Standards, this capacitor is housed in a rugged plastic case that requires no added insulation, offering moisture and oil resistance.

Each capacitor is individually boxed and tested prior to packaging to ensure reliability. It is designed for intermittent standard AC duty and includes a 2-watt, 15K Ohm bleed resistor (not installed) and 1/4" quick disconnect terminals.



Image: BMI/USA Start Capacitor (708-850 uF, 125 VAC) with an uninstalled bleed resistor.

SAFETY INFORMATION

WARNING: Electrical components can be dangerous. Always disconnect power to the equipment before installing, servicing, or inspecting the capacitor. Failure to do so may result in serious injury or death. If you are not familiar with electrical work, consult a qualified electrician.

Ensure proper handling to avoid damage to the capacitor or injury. Do not attempt to open or modify the capacitor casing.

SETUP AND INSTALLATION

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

1. **Power Disconnection:** Before beginning any work, ensure that the main power supply to the motor or appliance is completely disconnected and locked out. Verify with a voltage tester.
2. **Identify Old Capacitor:** Locate the existing start capacitor in your equipment. Note its microfarad (uF) and voltage (VAC) ratings. It is essential to match these specifications precisely with the new capacitor.

3. **Discharge Old Capacitor:** Safely discharge the old capacitor using a properly insulated tool or a resistor. Even after power is off, capacitors can retain a charge.
4. **Remove Old Capacitor:** Disconnect the terminals of the old capacitor.
5. **Install New Capacitor:** Connect the 1/4" quick disconnect terminals of the new BMI/USA capacitor to the corresponding wires. Ensure connections are secure and free from corrosion.
6. **Bleed Resistor (Optional):** The included 2-watt, 15K Ohm bleed resistor is designed to discharge the capacitor after power is removed. While not pre-installed, it can be connected across the capacitor terminals if desired for added safety.
7. **Secure Capacitor:** Place the new capacitor securely in its mounting location. The rugged plastic case requires no added insulation.
8. **Restore Power:** Once installation is complete and all connections are verified, restore power to the equipment.



Image: Top view of the capacitor showing the 1/4" quick disconnect terminals.



Image: The included 2-watt, 15K Ohm bleed resistor, which can be connected across the capacitor terminals.

OPERATING PRINCIPLES

The BMI/USA Start Capacitor is designed to provide a temporary boost of current to the auxiliary winding of a single-phase AC induction motor during startup. This creates a rotating magnetic field, allowing the motor to overcome its initial inertia and begin rotating.

Once the motor reaches approximately 75% of its operating speed, a centrifugal switch (or electronic equivalent) typically disconnects the start winding and the capacitor from the circuit. The motor then continues to run on its main winding. This capacitor is specifically rated for intermittent duty, meaning it is only active for short periods during motor startup.

MAINTENANCE

Start capacitors are generally maintenance-free components. However, periodic visual inspection can help identify potential issues:

- **Visual Inspection:** Regularly check the capacitor for any signs of physical damage, such as bulging, leaks, cracks, or discoloration. Any such signs indicate a failing capacitor and necessitate replacement.
- **Terminal Connections:** Ensure that the quick disconnect terminals remain clean and securely connected. Loose or corroded connections can lead to poor performance or failure.
- **Environmental Conditions:** While the capacitor is moisture and oil resistant, ensure it is not exposed to extreme conditions beyond its specified operating temperature range (-40 to +65°C).

Always disconnect power before performing any inspection or maintenance.

TROUBLESHOOTING

If your motor is not starting or is struggling to start, a faulty start capacitor could be a cause. However, it is important to diagnose the issue correctly:

- **Motor Does Not Start:** If the motor hums but does not spin, or spins slowly, the start capacitor may be weak or

failed.

- **Verify Capacitor Specifications:** Ensure that the replacement capacitor's microfarad (uF) and voltage (VAC) ratings precisely match the original capacitor's specifications. Mismatched specifications can lead to improper motor operation or damage.
- **Capacitor Testing:** A qualified technician can test the capacitor's capacitance using an RMS meter. Note that each BMI/USA capacitor is tested prior to packaging and shipping.
- **Other Potential Issues:** If the capacitor tests good, the problem may lie elsewhere in the motor system, such as a faulty centrifugal switch, motor windings, or power supply issues. Consult a professional for further diagnosis.

Important Note: Physical dimensions of capacitors can vary between manufacturers. Always match the electrical specifications (uF and VAC) rather than relying on physical size for replacement.

SPECIFICATIONS

Feature	Specification
Capacitance Range	708-850 uF
Operating Voltage	125 VAC
Operating Frequency	50 / 60 Hz
Operating Temperature	-40 to +65°C
Terminals	1/4" Quick Disconnect
Case Material	Plastic
Shape	Round
Resistor Included	2 Watt, 15K Ohm (not installed)
Certifications	UL 810 Recognized & Approved
Country of Origin	USA
Product Dimensions	0.04 x 0.04 x 0.04 inches (approximate, refer to diagram for specific model)
Weight	4 ounces



Image: Dimensional diagram of the BMI/USA Start Capacitor, showing approximate height and diameter.



Image: "Made in the USA" stamp, indicating the product's origin and adherence to U.S. manufacturing standards.

WARRANTY INFORMATION

Specific warranty details for the BMI/USA Start Capacitor are not provided within this manual. For information regarding product warranty, please refer to the product packaging, the seller's terms of sale, or contact the manufacturer directly.

SUPPORT AND CONTACT

For technical support, questions, or assistance with your BMI/USA Start Capacitor, please contact the original seller or the manufacturer, BMI. Contact information can typically be found on the product packaging or the seller's website.

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