

Handling, Inspection, and Storage of Medium Voltage Line Filter Capacitors

For General Use



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Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

Labels may also be on or inside the equipment to provide specific precautions.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

Introduction

The purpose of this publication is to allow you to receive, inspect for damage, handle, and store medium voltage Line Filter Capacitors (LFCs) shipped to you for use in Rockwell Automation PowerFlex® 7000 Medium Voltage (MV) Variable Frequency Drives (VFDs). The objective is to make certain that correct and undamaged LFCs are available for use, when required.



ATTENTION: Only personnel who have been trained and understand the PowerFlex 7000 MV VFD and Bulletin 1500 MV motor controllers should handle and install this equipment. Suitable safety equipment and procedures must be used when handling and installing this equipment. Failure to comply may result in personal injury and/or equipment damage.

Who Should Use This Publication?

This publication is intended for the site users of Rockwell Automation PowerFlex 7000 medium voltage VFDs.

What Is Not In This Publication?

Specific instructions to install the LFCs are not included in this publication.

A Rockwell Automation Tech Note (internal reference # PF 7000 Gen-98) has been created for the LFC installation process. Please contact your local Rockwell Automation sales representative to request a copy of that document. General Capacitor installation guidelines are included in publication [7000-UM202](#).

General Precautions



ATTENTION: This VFD contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference Allen-Bradley publication [8000-4.5.2](#), "Guarding Against Electrostatic Damage" or any other applicable ESD protection handbook.



ATTENTION: An incorrectly applied or installed VFD can result in component damage or a reduction in product life. Wiring or application errors such as undersizing the motor, incorrect or inadequate AC supply, or excessive ambient temperatures may result in malfunction of the system.

Who to Call for Commissioning

The Medium Voltage Support Group provides customer support for our medium voltage product lines.

We may be contacted at 519-740-4790 (option 4).

The support we offer includes, but is not limited to:

- Quoting and Managing Product On-site Start-ups
- Ongoing Preventative Maintenance Planning for our products
- Parts Management and on-site inventory agreements
- Customer in-house and on-site product training

What You Need To Do

Complete the following sections:

- Receive the LFCs
- Inspect the LFCs
- Store the LFCs until needed

Receive the LFCs

1. Receive the crate into the work site.



2. Verify that the correct parts have been received by matching the capacitors contained in the shipping crate with the VFD into which they will be installed.

Inspect the LFCs

1. Remove the top cover from the shipping crate.



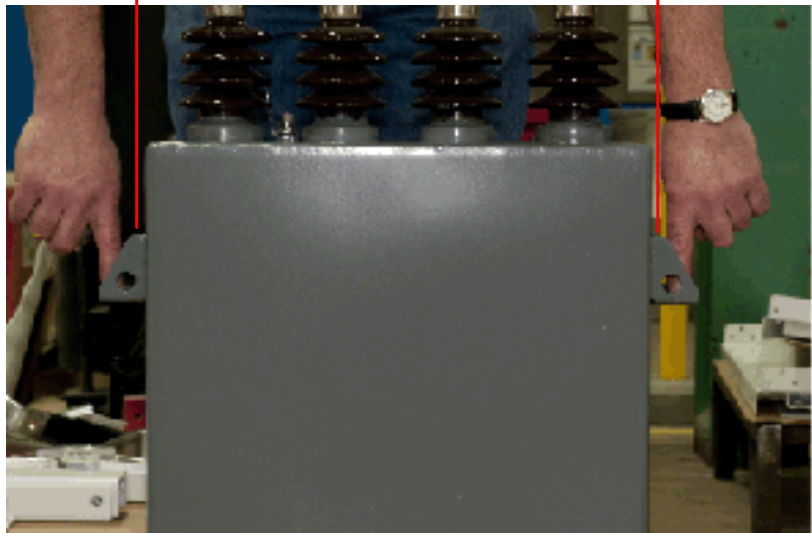
2. Remove the capacitors.



ATTENTION: Do not handle the LFC by the bushings. The bushings are fragile. Handle the LFC using the side mounted lifting/mounting brackets as shown in Figure 1. Due to the weight of the LFC (approximately 70 kg [150 lb]), use proper and safe lifting techniques, preferably with a lifting device or manually with more than one person.

Lifting Bracket

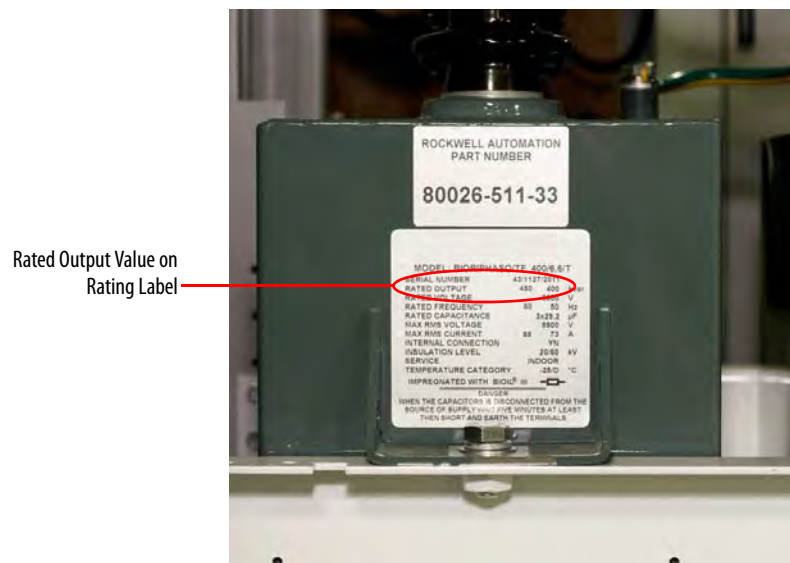
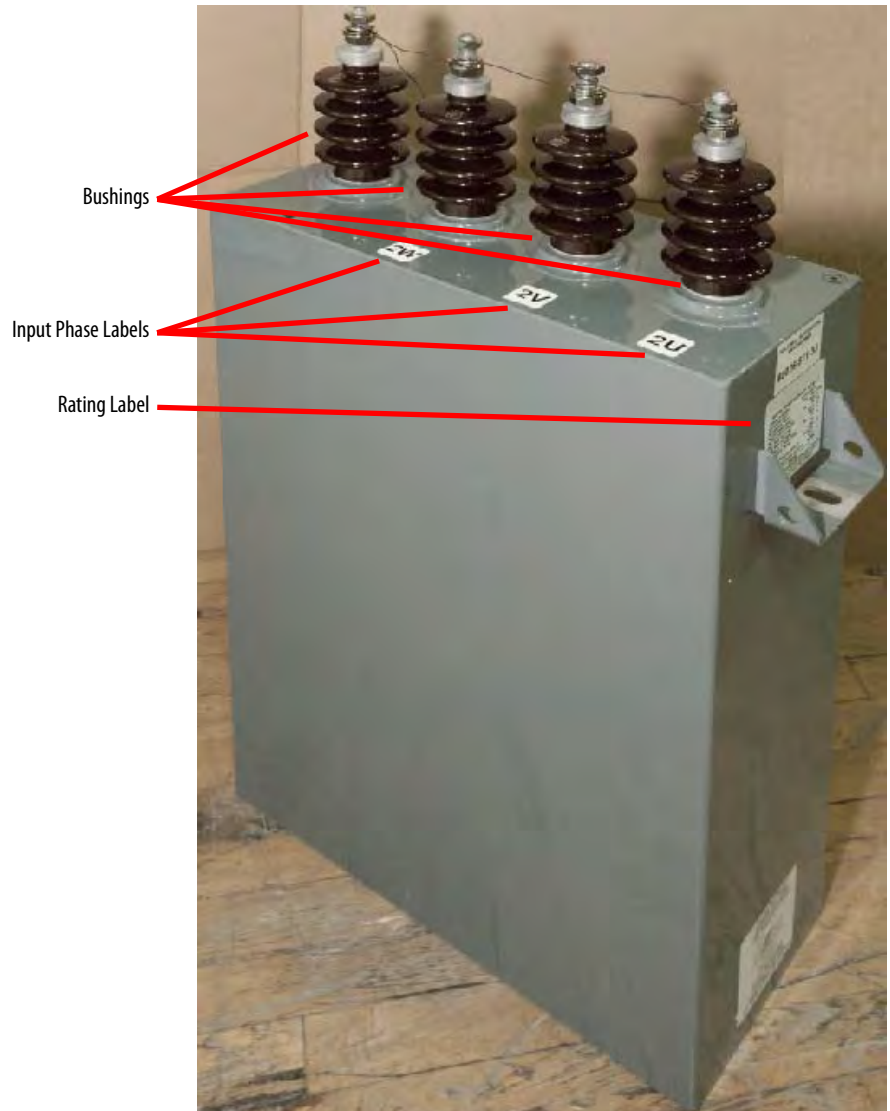
Lifting Bracket



3. Inspect the capacitors for damage, including cracks or chips in the porcelain bushings, impact or cracks in the LFC case, or leakage of oil.

IMPORTANT The porcelain bushings at the top of the capacitors are fragile. Any force applied to the bushings could damage the seal between the bushing and the capacitor body causing potential chipping of the bushing or capacitor leaks.

- Verify that the capacitors contain three phase labels (2U, 2V, 2W) and a rating label as shown.



5. Verify that the part number printed on the rating label on the side of the capacitor matches the capacitor part number printed in the Part Number list in the Back Ordered Parts section on the Back Order Notification form (CSP-2490-215-ss).

For replacement capacitors, typically the part numbers are 80026-511-*xx*.

Report Damaged Capacitors

If the capacitors are damaged, do the following:

- Note the exact damage on the bill of lading.
- Take photographs of the damage.
- Immediately report damage to Rockwell Automation.
 - Customers in North America, contact Rockwell Automation Medium Voltage Components by calling 519-740-4790 (option 2) or e-mail MVComponents@ra.rockwell.com.
 - Customers outside of North America, contact your local Rockwell Automation office.
- Retain the packaging.
 - Store the damaged crate and capacitors where they will not be disturbed until you receive instructions from Rockwell Automation.
 - If requested by Rockwell Automation, return the damaged LFC to the factory by using the same shipping crate for the replacement LFCs.

Store the LFCs

After receipt and inspection, repack the capacitors in the original shipping crate and store in a clean, dry, indoor facility.

Store where the relative air humidity does not exceed 95% (non-condensing). The preferred storage temperature is 0...40 °C (32...104 °F). However, the capacitors can be stored or transported at temperatures from -40...70 °C (-40...150 °F).

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support> you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at <https://rockwellautomation.custhelp.com/> for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates.

In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/services/online-phone>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/rockwellautomation/support/overview.page , or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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