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QUICK START

General Handling Procedures for Medium Voltage Controllers

BULLETIN 1500 / 1900

ATTENTION

Read this document before you attempt to move your controller. The instructions are intended to help you safely inspect and transport your Rockwell Automation Medium Voltage product to its installation site. Failure to follow the procedures within this document may result in personal injury and/or damage to your controller.

ALLEN-BRADLEY • ROCKWELL SOFTWARE Rockwell Automation

IMPORTANT:

General Handling Procedures

ATTENTION

Never attempt to lift or move the controller by any means other than the handling methods listed in this publication. Failure to do so may result in personal injury or damage to the controller.

- ❒ Keep the controller in an upright position. Some units are top-heavy and may fall over if they are tilted too far.
- ❒ Ensure all controller doors are closed and retaining bolts are tight before moving the controller.
- ❒ Keep the controller bolted to the shipping skid to minimize the possibility of it tipping. Do not remove the skid until the controller is at the installation area.
- ❒ For handling of NEMA 3R enclosures, refer to your instruction manual or contact Rockwell Automation.

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Scope

This document pertains to the Bulletin 1500 and 1900 family of medium voltage (MV) controllers. Additional procedures may apply for specific equipment. Please refer to other documentation provided with the equipment.

Receiving

Upon receiving the controller, remove the packing and check for damage that may have occurred during shipping. Report any damage immediately to the claims office of the carrier. The customer must make all claims for damage to the carrier as soon as possible after receipt of the equipment. Rockwell Automation will be glad to offer reasonable assistance to the customer in resolving such damage claims.

Accessories

Accessory items may be shipped with the controller. During the post-delivery inspection, all accessories or loose items listed on the shipping documentation should be located before moving the controller to an installation or storage area. Be careful not to mix the accessory kits. Tags may indicate the location of accessories.

Note: Bus splice links are shipped with the equipment in a separate box. Retain these links for future use as the equipment is assembled.

Storage

Important: Store the controller in the following conditions if it will not be installed immediately after receiving it.

- ❑ Store the controller in a clean, dry, dust-free environment.
- ❑ Storage temperature should be maintained between –20°C to 65°C (-4°F to 149°F). Relative humidity must not exceed 95%, non-condensing. The controller should be stored in a climate-controlled building with regulated air circulation to avoid damage.

Important: Remove all packaging from the controller while storing it to prevent condensation from damaging the cabinet and/or components.

- ❑ Factory installed space heaters are recommended to prevent condensation if storage temperature fluctuates or if humidity exceeds 85%.
- ❑ Medium voltage controllers that are designed for indoor use are not shipped with sufficient packaging for outdoor storage. Make sure you have provided adequate protection for your controller if you plan to store it outside. Temporary electrical heating to prevent condensation should also be installed. A space heater rated at approximately 150 watts per vertical section is adequate for most controllers. To avoid fire hazard, remove any loose packing or flammable material from the cabinet prior to starting the space heaters.

Using a Fork Lift

A fork lift is the most common and versatile method for moving a single controller.

1. Insert forks into openings located at the front of the skid.
2. Carefully balance the controller on the forks. Depending upon the options installed, the center of gravity may be offset.
3. Use safety strap(s) to ensure the controller remains steady.

Overhead Lifting

When two or more controllers are shipped as an assembly, overhead lifting is the recommended method for safely moving it in your facility.

1. Attach rigging to the lifting apparatus.

ATTENTION

Ensure that the load ratings of the lifting device, slings, hooks and shackles have a lifting capacity rated equal to or greater than the load. Failure to do so may result in personal injury and/or equipment damage. For your controller's specific weight, refer to shipping weights on the packing slip.

2. Do not pass slings or cables through the support holes in the lifting angle brackets. Use slings with safety hooks or shackles.
3. Select or adjust the rigging lengths to compensate for the unequal length and weight distribution of the load. Maintain the controller in an upright position.
4. To reduce the tension of the rigging and the compressive load on the lifting device, do not allow the angle between the lifting cables to exceed 45 degrees from the vertical plane. (See Figure 1)

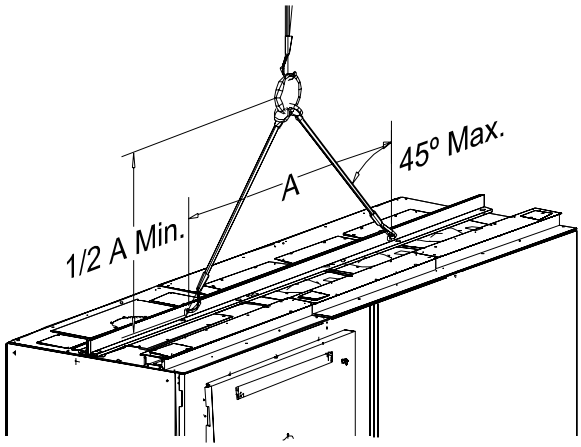


Figure 1 – Overhead Lifting with a Rigging Apparatus

5. Use a spreader bar to lift the controller if there is insufficient overhead space to permit a 45-degree angle of the lifting cables with respect to the vertical. Ensure the load rating of the spreader bar is sufficient to handle the controller. (See Figure 2)

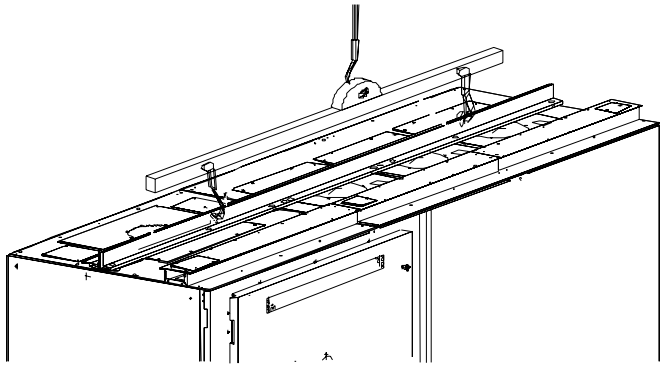


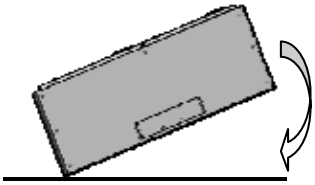
Figure 2 – Overhead Lifting with a Spreader Bar

6. Lift the controller only a few inches at first and verify that it is properly secured and balanced before proceeding further.

ATTENTION

Some controllers may contain heavy equipment that could be adversely affected by lifting. Ensure your controller does not have loose items inside when lifting. Failure to do so could result in personal injury and/or equipment damage.

Laying Controllers Down



It may be necessary to lay the controller down while you are moving or installing it. Contact Rockwell Automation for special considerations with your controller. Be sure to provide a description of your controller including the series number, which can be found on a metal nameplate midway up the cabinet on the right-hand flange.

Rod or Pipe Rollers

This method offers an alternative to using a fork lift or an overhead lifter, and should only be attempted on a level surface.

1. Place 2-inch. x 6-inch boards or equivalent under the skid. Make sure the boards are at least 30 cm (one foot) longer than the shipping skid.
2. Carefully move the shipping skid over the roller pipes until the pipes bear the entire weight of the controller.
3. The controller may now be rolled to its designated location. Steady the load to prevent tipping and use pinch bars to aid the movement.

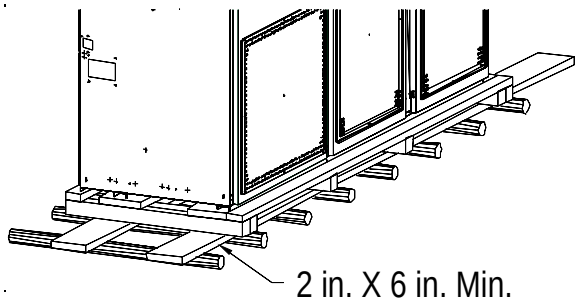


Figure 3 – Pipe Rolling the Controller

Opening the Controller Doors

The doors to your controller are designed to prevent access to any medium voltage compartment while the unit is energized.

Note: The door opening procedure for ArcShield™ arc resistant units differs from the standard listed below.

Standard (Non-ArcShield) Units

1. Move the isolating switch handle to the OFF position; this is the lower position of the handle (see Figure 4). **You must move the isolating switch handle to the OFF position before any door providing access to a medium voltage compartment will open.**
2. Loosen the door retaining screws of the main power cell door, which is adjacent to the isolating switch handle, and open the door.

For cabinets with two power cells, each medium voltage section contains its own separate door interlock. Once you have moved one of the isolating switch handles to the OFF position, you can open the corresponding medium voltage door without disengaging the second isolating switch handle.

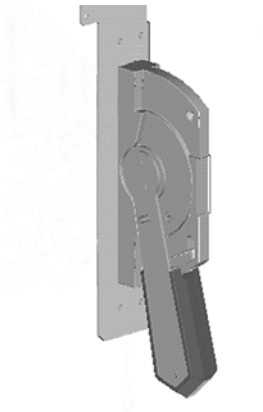


Figure 4 – Isolation Switch Handle in the OFF Position

Opening the Controller Doors (cont.)

ArcShield Units

Refer to label on unit door (see Figure 5 for typical label).

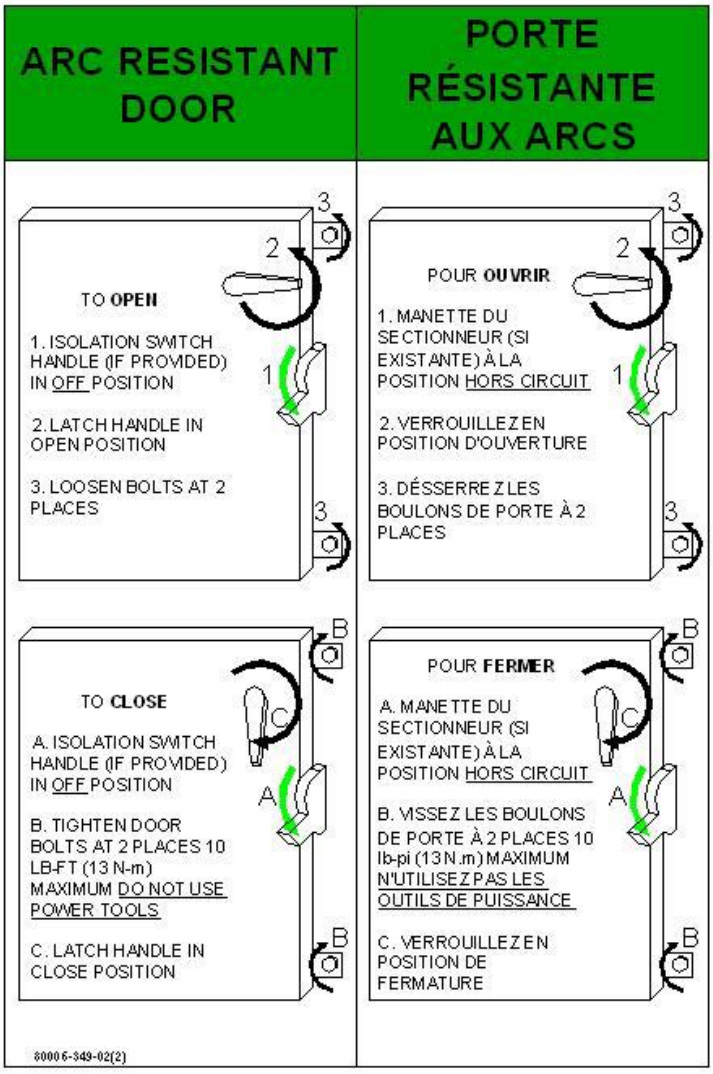


Figure 5 – Typical Label on Arc Resistant Door

Refer to the controller's User Manual for specific information regarding the interlocking configuration.

Levelling the Controller

Note: The mounting surface for the equipment is to be flat within ±1 mm per meter. Installation of metal shims is an acceptable method of compensating for mounting surfaces that are out of tolerance. Mounting surfaces that are not flat may inhibit proper set-up and operation of latches and interlocks of the equipment.

1. Do not remove the controller from the shipping skid until it is at the installation area.
2. The controller is bolted to the shipping skids at the front and back of the cabinet. At the rear, lag bolts hold angle brackets to the mounting channel at the base of the cabinet. The front lag bolts are located just inside the lower cabinet door at the corners of the cabinet bottom. Remove the lag bolts and the angle brackets, then remove the controller from the shipping skid.
3. It is important to position the controller on a level surface at the final destination, especially if it will be joined to another one. A flush mating surface between the controllers is required to ensure a proper attachment. A level concrete surface should be prepared for the controller; however, shimming the controller is suitable, provided the shimming object is dense enough to bear the weight of the controller for an extended period of time. Sheet metal shims are suggested (wooden shims are not recommended).

ATTENTION

Refer to the technical drawings and installation manual for your controller's mounting instructions. Failure to correctly anchor the cabinet may result in damage to the equipment or injury to personnel. Contact the area Rockwell Automation sales office if you do not have these documents.

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Medium Voltage Products, 135 Dundas Street, Cambridge, ON, N1R 5X1 Canada, Tel: (1) 519.740.4100, Fax: (1) 519.623.8930, www.ab.com/mvb

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