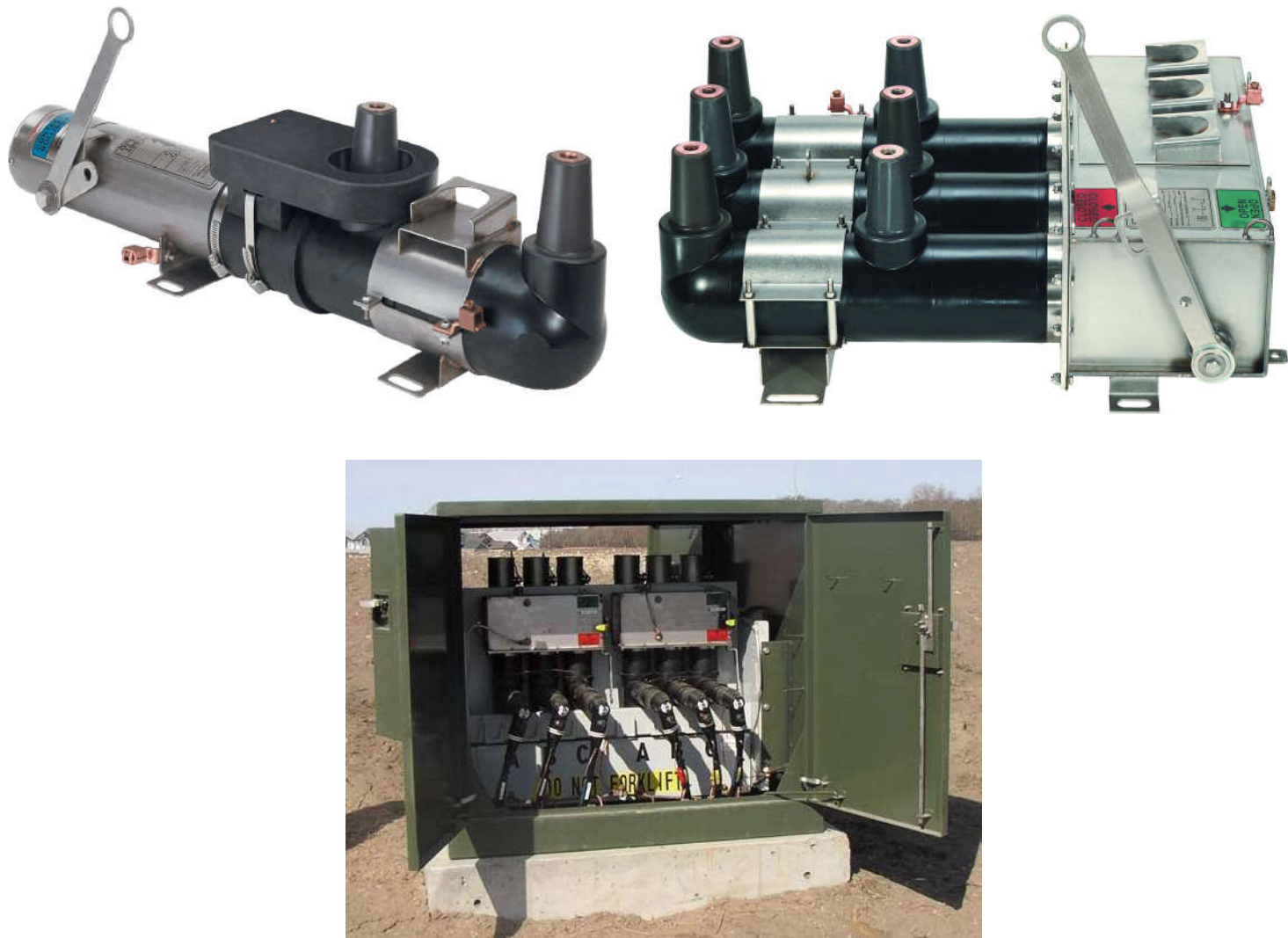


Switchgear Operation & Installation Guide

Elastimold® Switchgear
Complete Instructions for the Installation, Operation, Maintenance Instructions

IS-1169



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Safety Information

This product was designed, tested and manufactured under controlled processes to meet or exceed all applicable industry standards for your safety. It should be installed, operated and maintained by competent personnel trained in good safety practices involving high voltage electrical equipment. These instructions are not intended as a substitute for adequate training or experience in such safety practices. All apparatus must be installed, operated and maintained in accordance with individual user, local and national work rules. These instructions do not attempt to provide for every possible contingency.

It is extremely important to read and understand all hazard statements.

There are four levels: DANGER, WARNING, CAUTION and IMPORTANT, as defined below:

1. Hazard Statements Definitions

! DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

! WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

! CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against practices that result in damage to the product or that may cause injury.

! IMPORTANT: Indicates a potentially hazardous situation which, if not avoided may result in improper assembly and damage to the equipment.

2. Safety Instructions

Following are general hazard statements that apply to this equipment. Additional statements, related to specific tasks and procedures, are located throughout the manual.

! DANGER: HAZARDOUS VOLTAGE. Contact or near contact with high voltage will cause death or severe personal injury.

! DANGER: All apparatus must be de-energized during installation.

! WARNING: Failure to follow these instructions will result in damage to the product and serious or fatal injury.

! CAUTION: Excess distortion of the assembled cable accessory may result in its failure.

! IMPORTANT: Check contents of package to ensure they are complete and undamaged and ensure proper fit with cable and/or mating products.

About This Document

3. Purpose

This manual includes information needed to apply, store, handle, install, test and operate the ELASTIMOLD® three-phase vault mount or pad-mounted switchgear.

4. Application

This manual is the main source of information for ELASTIMOLD® three-phase vault mount or pad-mounted switchgear.

Description

5. General Description

Multi-way vault and padmount units are built using MVS Molded Vacuum Switches and MVI Molded Vacuum Interrupters as required by the application. These are mounted onto the Multi-way common bus system and assembled on a freestanding, floor mounted frame. At this stage the product is ready to be used in above or underground vault installations.

For padmount installations, a double-sided, drop-over, painted, mild-steel enclosure is provided. Munsell Green 7GY 3.29/1.5 is the standard enclosure color. Other colors are available upon request. Painted stainless steel or fiberglass enclosures are available as options.

The enclosure meets the IEEE C57.12.28 Standard for Padmounted equipment – enclosure integrity.

Vault Style Unit

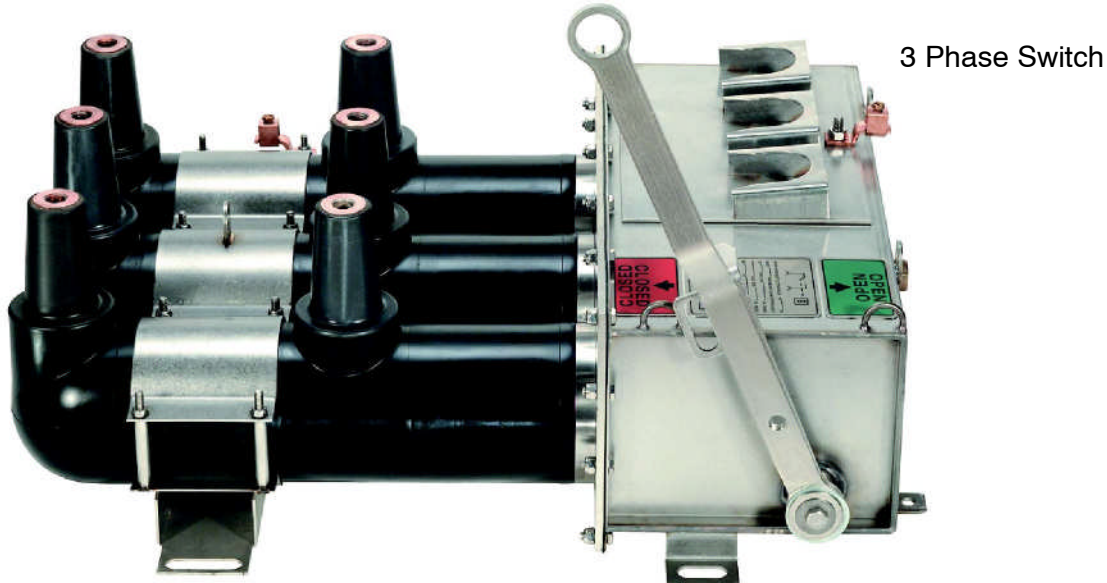


Padmount Style Unit



6. Description of Components

MVS Molded Vacuum Switches are spring energy, load switching devices capable of making, carrying and interrupting load currents through 630 amperes on 5-38kV distribution systems. The MVS combines vacuum switching with high dielectric strength EPDM rubber insulation, providing compact, light-weight submersible switching. Units include molded-in elbow connection interfaces, spring energy mechanism and are available in both single and three phase models. Units are manually operated with a hot stick. Motor operator, SCADA and Auto-Transfer Control options are available.



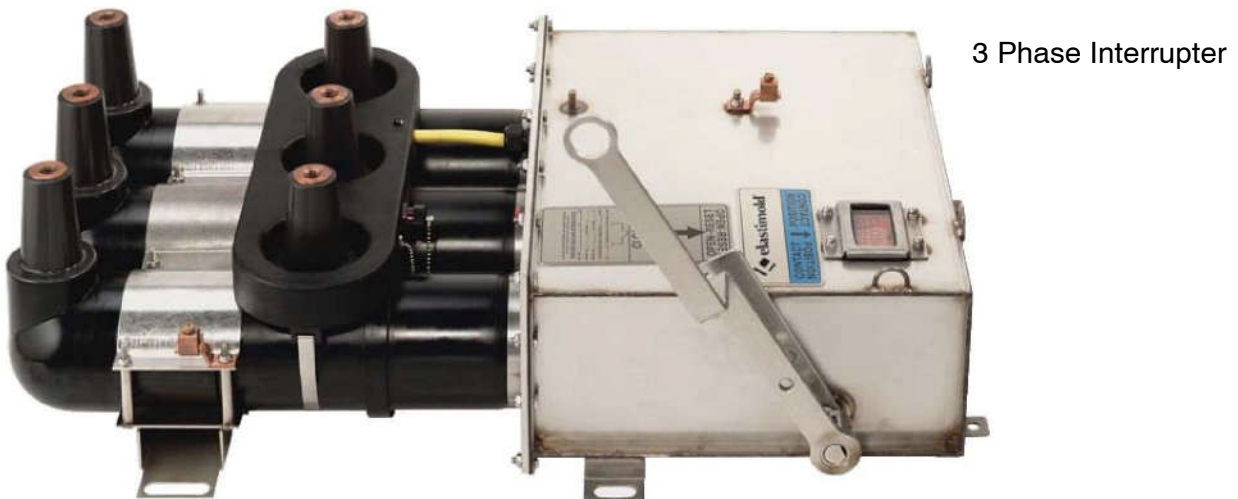
3 Phase Switch

MVI Molded Vacuum Interrupters are spring energy close, stored energy open devices capable of making, carrying and automatically interrupting currents through 12,500 amperes symmetrical on 5-38kV distribution systems. The MVI combines vacuum interrupters, programmable electronic self-powered controls and high dielectric strength EPDM rubber insulation, to provide compact, light-weight submersible over-current protection. Units include molded-in elbow connection interfaces, trip free mechanism, and are available in single phase and three phase models.

Units are self-powered and include current sensing and electronic control. The control is field programmable with a wide range of Time-Current Characteristics (TCC) curves and trip settings. The TCC curves provide predictable tripping for ease of coordination with up-stream and down-stream protective devices. The control monitors the circuit conditions and sends a signal to the tripping mechanism if the programmed parameters are exceeded.

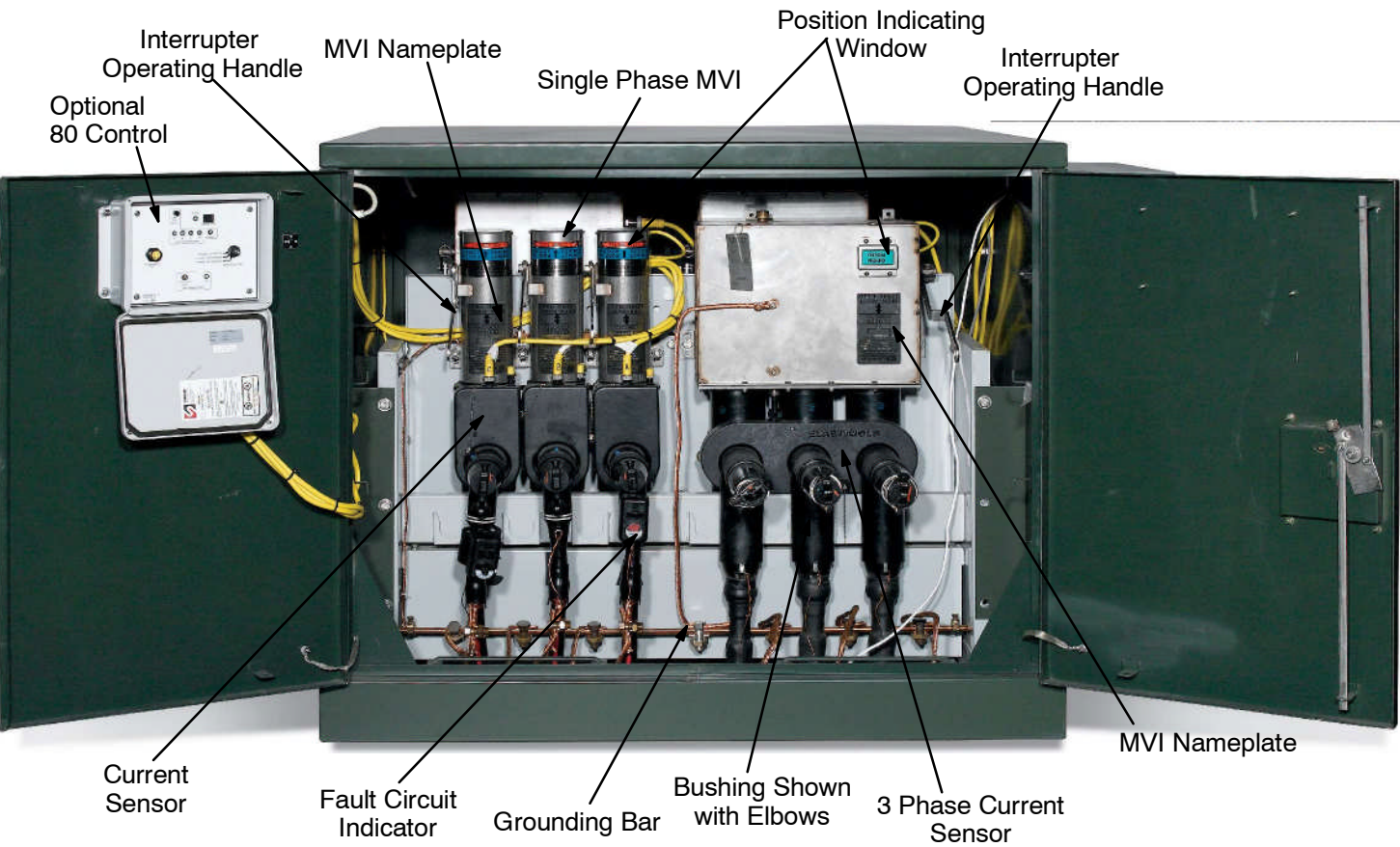
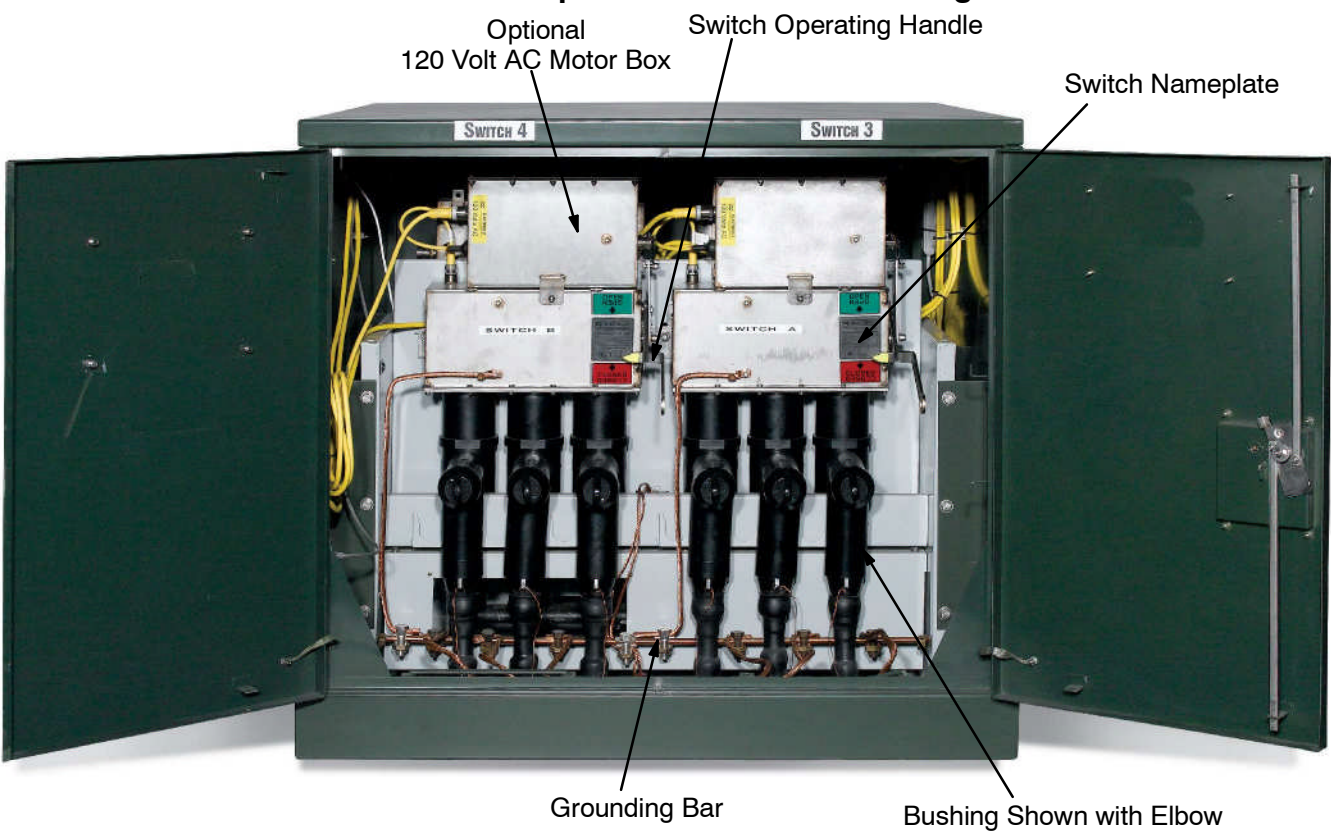
The MVI can be provided with an internal or external control and can be upgraded by adding a motor operator and control in the field.

Motor operators and controls are available, and allow reconfiguration of radial feeders or loops, manually or via SCADA.



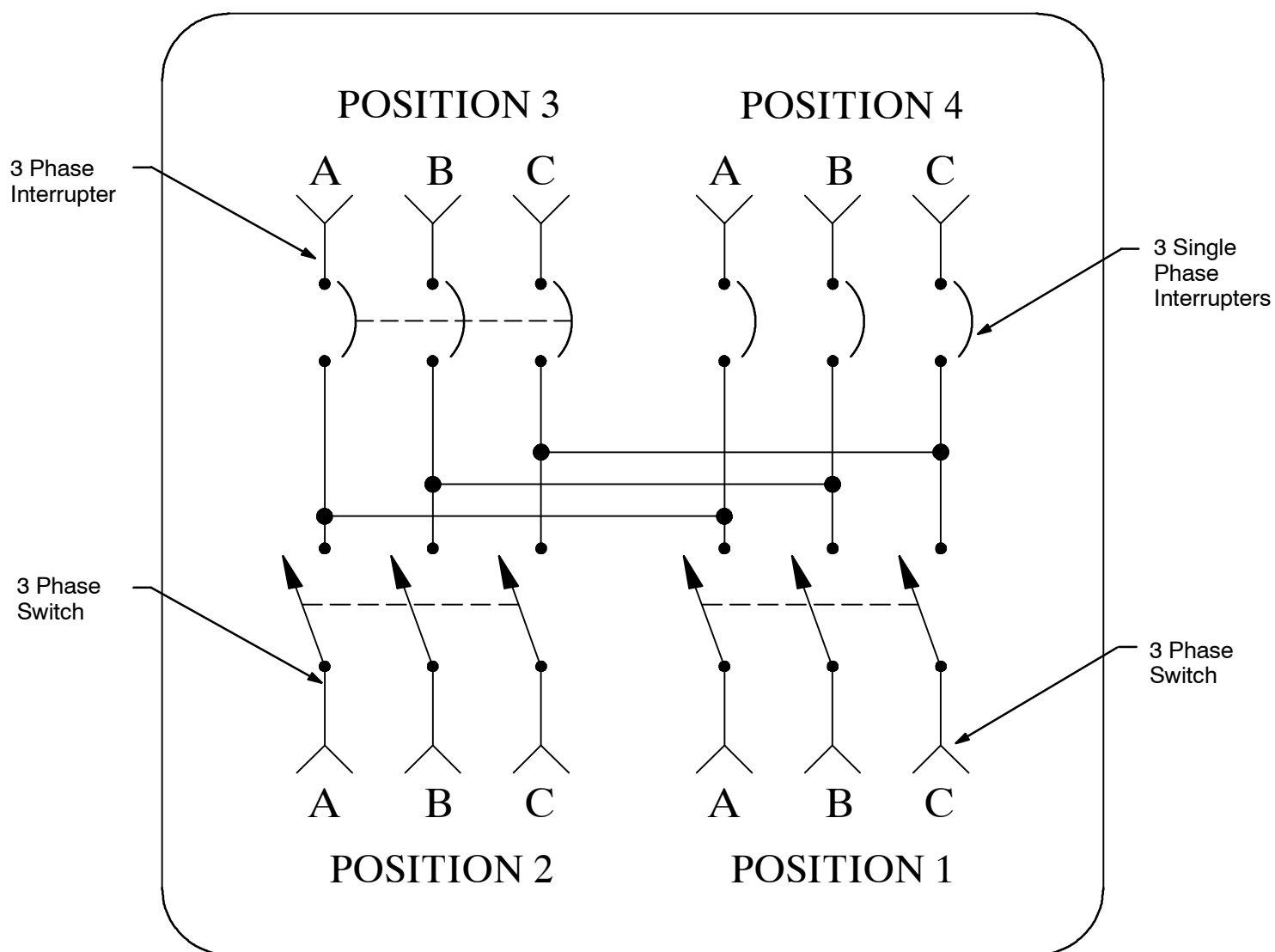
3 Phase Interrupter

Motor-operated Padmount Switchgear



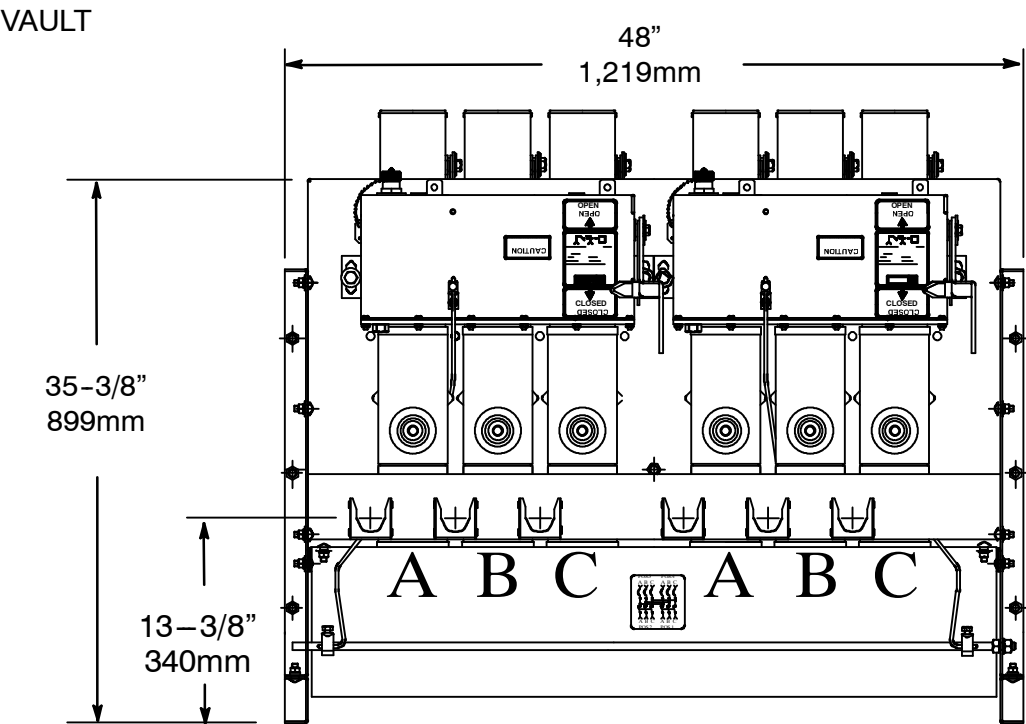
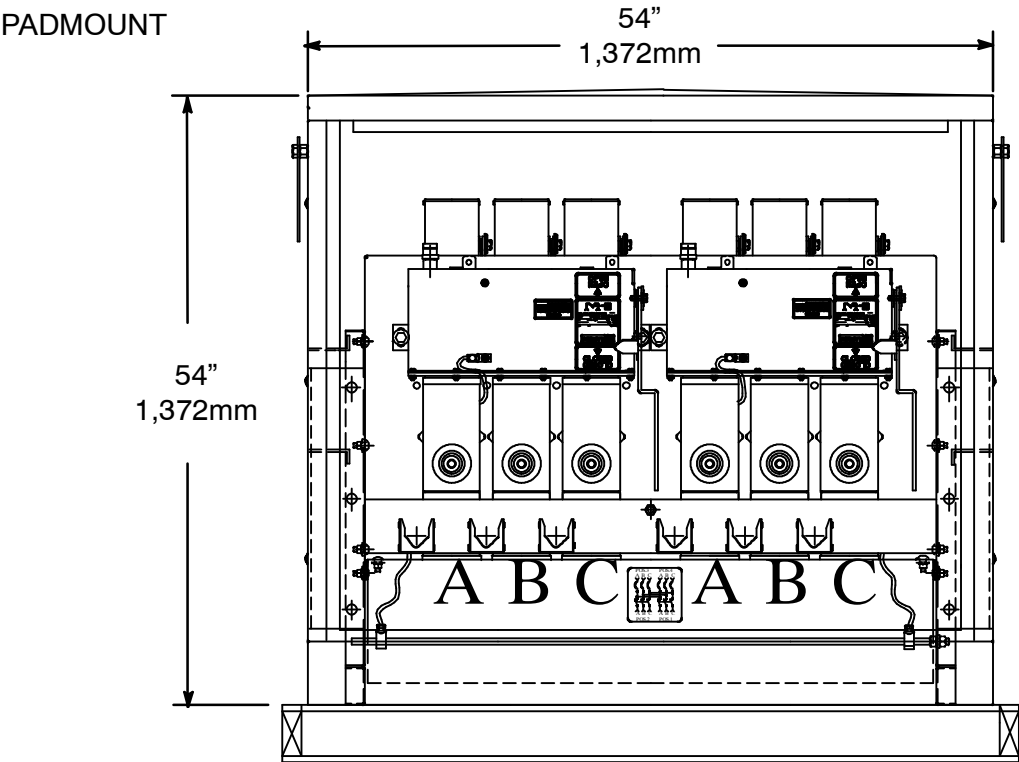
7. Configuration Schematic

An electrical schematic of this switch is shown on the nameplate of the switch. The following is a sample schematic for a 4-way switch with interrupter protection.

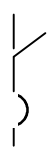
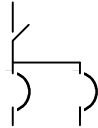
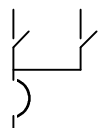
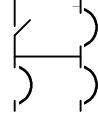
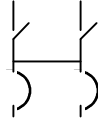
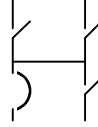


8. Characteristics of the Switchgear

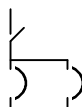
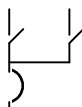
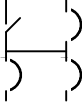
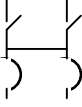
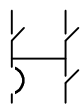
A) Typical Dimensions



PADMOUNT

Diagram	Catalog Number	Description	Width	Height	Depth
	ESD312-TP-XX	15kV 2-way 3-Phase One Source Switch, One Vacuum Interrupter	54"	54"	54"
	ESD322-TP-XX	25kV 2-way 3-Phase Source Switch, on Vacuum Interrupter	54"	54"	54"
	ESD312-P-XX	15kV 2-way 3-phase One Vacuum Interrupter Tap	54"	54"	54"
	ESD322-P-XX	25kV 2-way 3-phase One Vacuum Interrupter Tap	54"	54"	54"
	ESD332-P-XX	35kV 2-way 3-phase One Vacuum Interrupter Tap	54"	54"	54"
	ESD313-TPP-XXX	15kV 3-way 3-phase One Source Switch, Two Vacuum Interrupter Taps	54"	54"	54"
	ESD323-TPP-XXX	25kV 3-way 3-phase One Source Switch, Two Vacuum Interrupter Taps	54"	54"	54"
	ESD333-TPP-XXX	35kV 3-way 3-phase One Source Switch, Two Vacuum Interrupter Taps	72"	54"	72"
	ESD313-TTP-XXX	15kV 3-way 3-Phase Two Source Switches, One Vacuum Interrupter Tap	54"	54"	54"
	ESD323-TTP-XXX	25kV 3-way 3-Phase Two Source Switches, One Vacuum Interrupter Tap	54"	54"	54"
	ESD333-TTP-XXX	35kV 3-way 3-Phase Two Source Switches, One Vacuum Interrupter Tap	72"	54"	72"
	ESD314-TPPP-XXXX	15kV 4-way 3-phase One Source Switch, Three Vacuum Interrupter Taps	54"	54"	54"
	ESD324-TPPP-XXXX	25kV 4-way 3-phase One Source Switch, Three Vacuum Interrupter Taps	54"	54"	54"
	ESD334-TPPP-XXXX	35kV 4-way 3-phase One Source Switch, Three Vacuum Interrupter Taps	72"	54"	72"
	ESD314-TTPP-XXXX	15kV 4-way 3-phase Two Source Switches, Two Vacuum Interrupter Taps	54"	54"	54"
	ESD324-TTPP-XXXX	25kV 4-way 3-phase Two Source Switches, Two Vacuum Interrupter Taps	54"	54"	54"
	ESD334-TTPP-XXXX	35kV 4-way 3-phase Two Source Switches, Two Vacuum Interrupter Taps	72"	54"	72"
	ESD314-TTTP-XXXX	15kV 4-way 3-phase Three Source Switches, One Vacuum Interrupter Taps	54"	54"	54"
	ESD324-TTTP-XXXX	25kV 4-way 3-phase Three Source Switches, One Vacuum Interrupter Taps	54"	54"	54"
	ESD334-TTTP-XXXX	35kV 4-way 3-phase Three Source Switches, One Vacuum Interrupter Taps	72"	54"	72"

VAULT

Diagram	Catalog Number	Description	Width	Height	Depth
	ESV313-TPP-XXX	15kV 3-way 3-phase One Source Switch, Two Vacuum Interrupter Taps	40"	48"	22"
	ESV323-TPP-XXX	25kV 3-way 3-phase One Source Switch, Two Vacuum Interrupter Taps	40"	48"	22"
	ESV313-TTP-XXX	15kV 3-way 3-phase Two Source Switches, One Vacuum Interrupter Tap	40"	48"	22"
	ESV323-TTP-XXX	25kV 3-way 3-phase Two Source Switches, One Vacuum Interrupter Tap	40"	48"	22"
	ESV314-TPPP-XXXX	15kV 4-way 3-Phase One Source Switch, Three Vacuum Interrupter Taps	40"	48"	22"
	ESV324-TPPP-XXXX	27kV 4-way 3-Phase One Source Switch, Three Vacuum Interrupter Taps	40"	48"	22"
	ESV314-TTPP-XXXX	15kV 4-way 3-Phase Two Source Switches, Two Vacuum Interrupter Taps	40"	48"	22"
	ESD324-TTPP-XXXX	27kV 4-way 3-Phase Two Source Switches, Two Vacuum Interrupter Taps	54"	54"	54"
	ESD314-TTTP-XXXX	15kV 4-way 3-Phase Three Source Switches, One Vacuum Interrupter Tap	54"	54"	54"
	ESD324-TTTP-XXXX	23kV 4-way 3-Phase Three Source Switches, One Vacuum Interrupter Tap	54"	54"	54"

8. Characteristics of the Switchgear

B) Electrical Characteristics

Molded Vacuum Switches

RATINGS			
Voltage Class	15.5 kV	27 kV	38 kV
Frequency	50/60Hz	50/60Hz	50/60Hz
Rated Lightning Impulse Withstand Voltage (Open Contact)	95 kV	125 kV	150 kV
Rated Power Frequency Withstand Voltage (1 Minute)	35 kV	60 kV	70 kV
Five Minute DC Withstand	53 kV	78 kV	103 kV
Load Interrupting & Loop Switching	630 A	630 A	630 A
Rated Transformer Magnetizing Switching Current	21 A	21 A	21 A
Rated Cable Charging Switching Current	10 A	15 A	20 A
Rated Peak Withstand Current - 3 sets of 3 Operations 12.5kA Sym./20kA Asym. (rms) for 10 cycles			
Rated Fault Making Current 3 Faults 12.5kA rms / 20kA Asym (rms)			
Short Time Withstand Current 12.5kA Sym. for 1 second.			
Continuous Current	630 A	630 A	630 A
8 Hour Overload Current	900 A	900 A	900 A
APPLICATION INFORMATION			
Construction: Submersible, corrosion resistant, fully shielded			
Ambient Temperature Range: -40 to +65 degrees centigrade			

Standards:

IEEE C37.74 Standard for Subsurfaces, Vault and Padmounted Load Interrupting Switches

IEEE 386 Standard for Separable Connectors and Bushing Interfaces

IEC 265 International Standards for Load Interrupting Switches

ANSI C57.12.28 Standard for Padmount Enclosures

8. Characteristics of the Switchgear (Continued)

B) Electrical Characteristics

Molded Vacuum Interrupters

RATINGS			
Voltage Class	15.5 kV	27 kV	35 kV
Frequency	50/60Hz	50/60Hz	50/60Hz
Rated Lightning Impulse Withstand Voltage (Closed Contacts)	95 kV	125 kV	150 kV
Rated Lightning Impulse Withstand Voltage (Open Contacts)	95 kV	125 kV	135kV
Rated Power Frequency Withstand Voltage (1 minute)	35 kV	60 kV	70 kV
Five Minute DC Withstand	53 kV	78 kV	103 kV
Load Interrupting & Loop Switching	630 A	630 A	630 A
Rated Line Charging Current Interruption	2 A	5 A	5 A
Rated Cable Charging Current Interruption	10 A	25 A	40 A
Rated Symmetrical/Asymmetrical (rms) Interrupting Fault Making Current 12.5kA/20kA			
Current Sensor Ratio	1000:1	1000:1	1000:1
APPLICATION INFORMATION			
Construction: Submersible, corrosion resistant, fully shielded			
Ambient Temperature Range: -40 to +65 degrees centigrade			

Standards:

IEEE C37.60 Standard for Fault Interrupters

IEEE 386 Standard for Separable Connectors and Bushing Interfaces

IEC 265 International Standards for Load Interrupting Switches

ANSI C57.12.28 Standard for Padmounted Enclosures

9. Switchgear with motorized way

Motorized operators with controls are available for manual, SCADA, and automatic source transfer operation.

Installation

10. Inspection in the factory.

Before delivery, each unit is tested and checked in the factory as follows:

- A. Mechanical tests.
- B. Contacts' resistance.
- C. MVS and MVI water seal.
- D. Dielectric tests.
- E. Verification of the electrical control and of the control panel.

A test report of the production tests performed on this unit is enclosed with the unit.

11. Receiving Inspection

Examine the shipment for external evidence of damage as soon after receipt as possible, preferably before removal from the carrier's conveyance. Check the bill of lading to make sure that all shipping skids, crates, and containers listed thereon are present.

If there is visible loss and/or damage:

- A. Notify the delivery carrier immediately.
- B. Ask for a carrier inspection.
- C. Note condition of shipment on all copies of the delivery receipt.
- D. File a claim with the carrier.

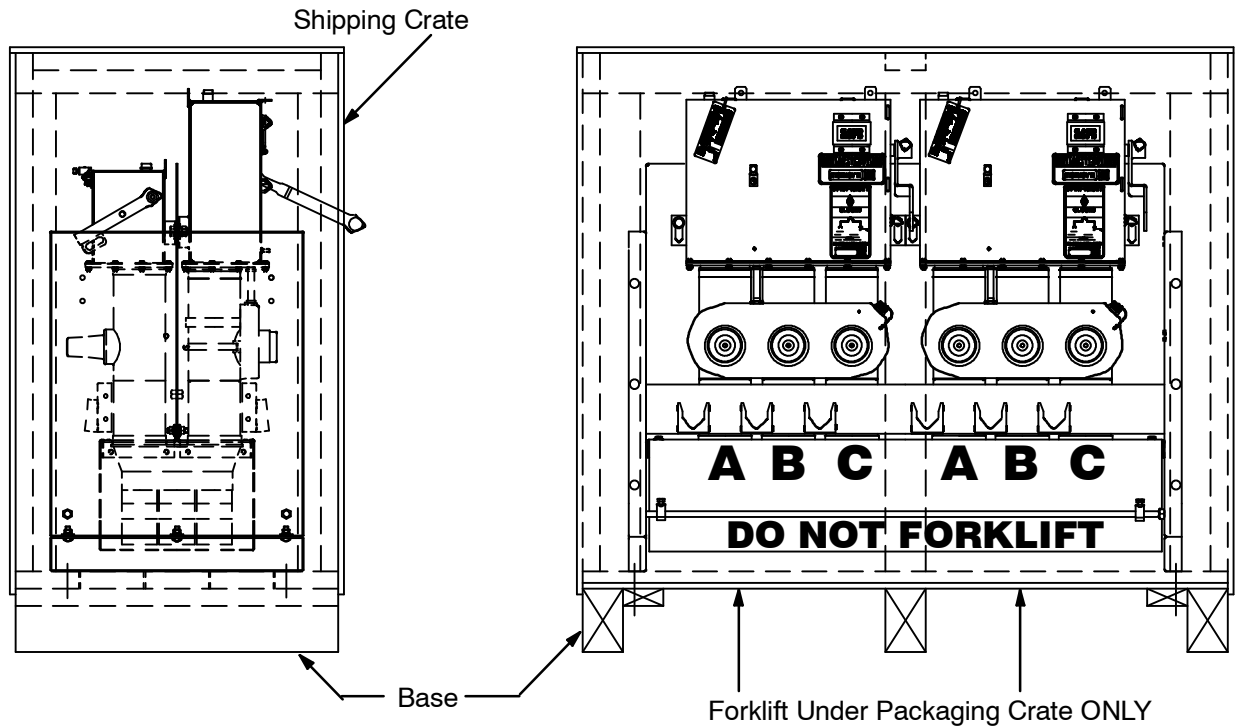
If concealed damage is discovered:

- A. Notify the delivery carrier within 15 days of receipt of shipment.
- B. Ask for a carrier inspection.
- C. File a claim with the carrier.

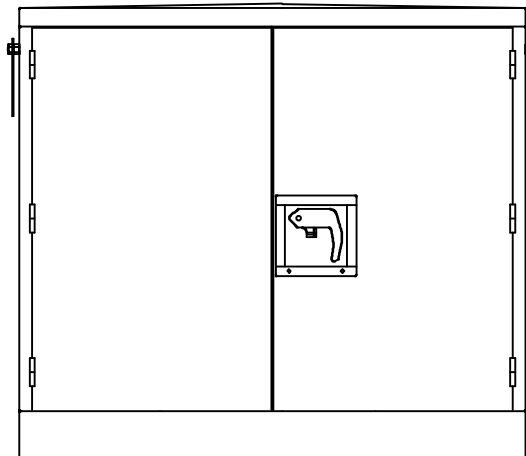
Also notify your local Thomas & Betts representative in all instances of loss and/or damage.

12. Handling & storage

Vault mount switchgear is securely mounted in a sturdy shipping crate in a closed position. The switchgear is protected with cardboard and shrinkwrap.



Padmount switchgear is shipped bolted to a reinforced wood pallet. The cabinet finish is protected with sheets of cardboard held in place with shrink wrap.



Be careful during handling and storage of the switchgear to minimize the possibility of damage. The switchgear should remain on its shipping pallet until it is installed. When handling the switchgear, always use a fork truck that has adequate lifting capability and **forks that extend the entire length of the pallet**. Improper handling can cause damage to the switchgear. It is recommended that the shrink wrap protection not be removed until the switch is to be installed and access to the lifting eyes is required.

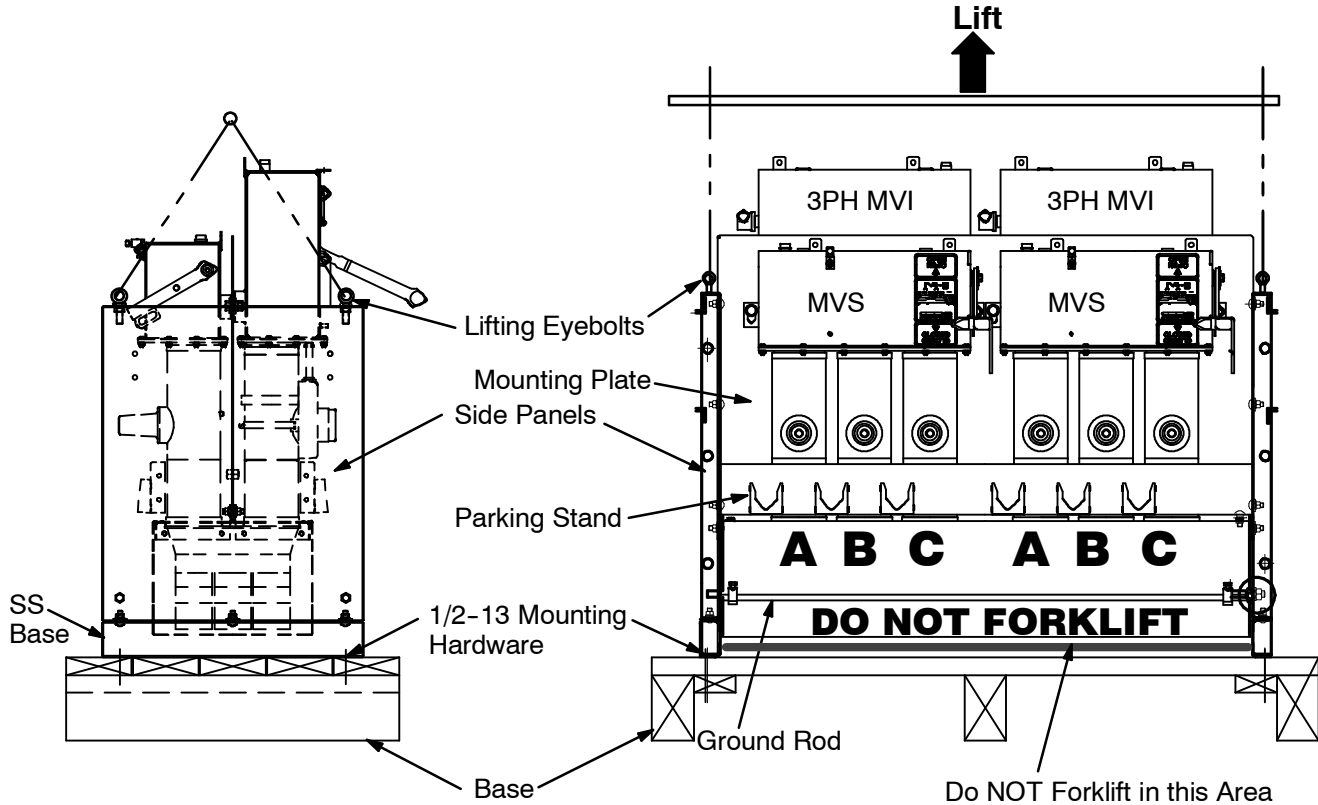
If the switchgear is to be stored for any length of time prior to installation, provide a clean, dry storage area. Do not stack other material on the switchgear cabinet. Separable connector interfaces must have protective covering as supplied.

If the switchgear is to be moved before installation, make sure the switchgear stays in the closed position.

13. Unpacking

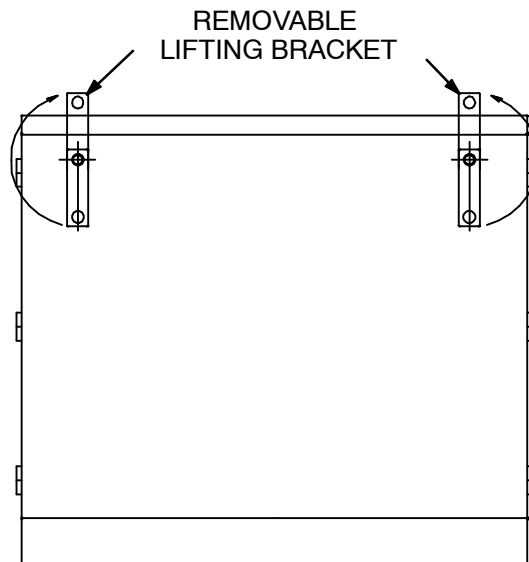
Vault Mount:

- A. Remove shrinkwrap and cardboard packaging.
- B. Remove 1/2-13 pallet mounting hardware.
- C. Note: mount (4) lifting eyebolts supplied by the customer on top of side panels.



Padmount:

- A. Remove shrinkwrap and cardboard packaging.
- B. Remove 1/2-13 pallet mounting hardware.
- C. Note: Attached or Rotate (4) arms with eyes on top sides of cabinet.



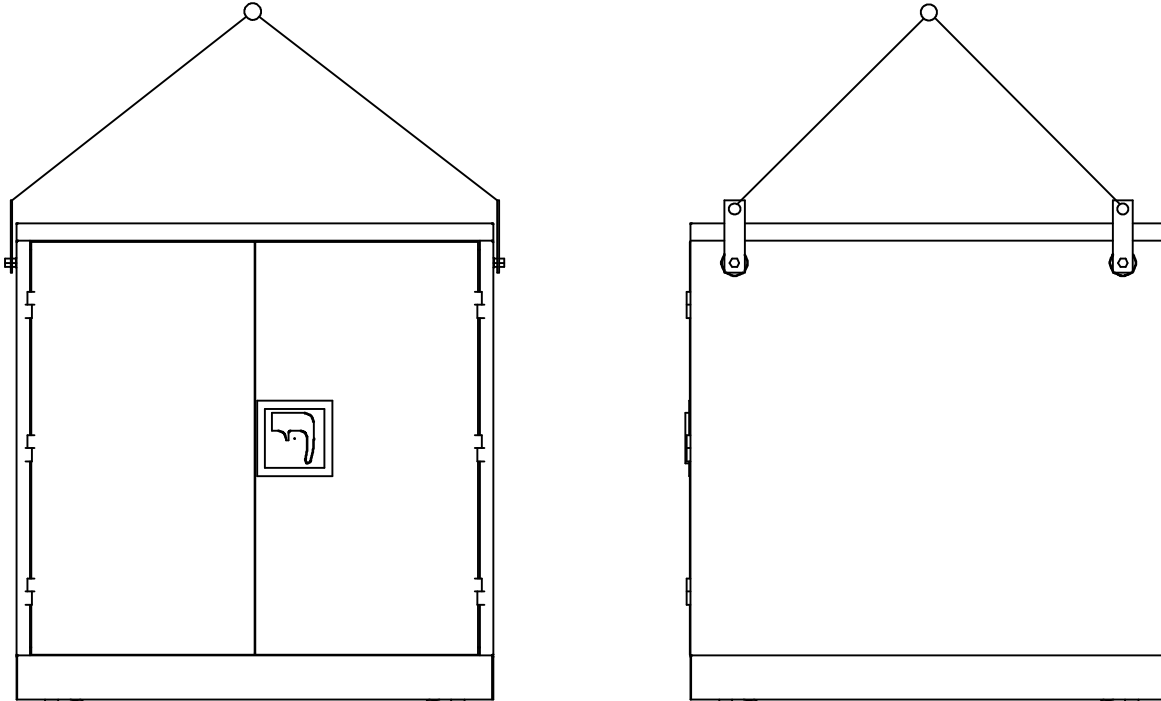
14. Lifting of the apparatus

- A. Attach two hoist slings to the four lifting eyes.

IMPORTANT: The cabinet can be damaged if all four lifting eyes are not used.

- B. Use adequate length hoist slings of equal length to prevent overstressing the enclosure during lifting. Attach as shown.
DO NOT cross cables over unit.

- C. Arrange the hoist slings so as to distribute the lifting forces equally between the lifting eyes.



15. Site installation

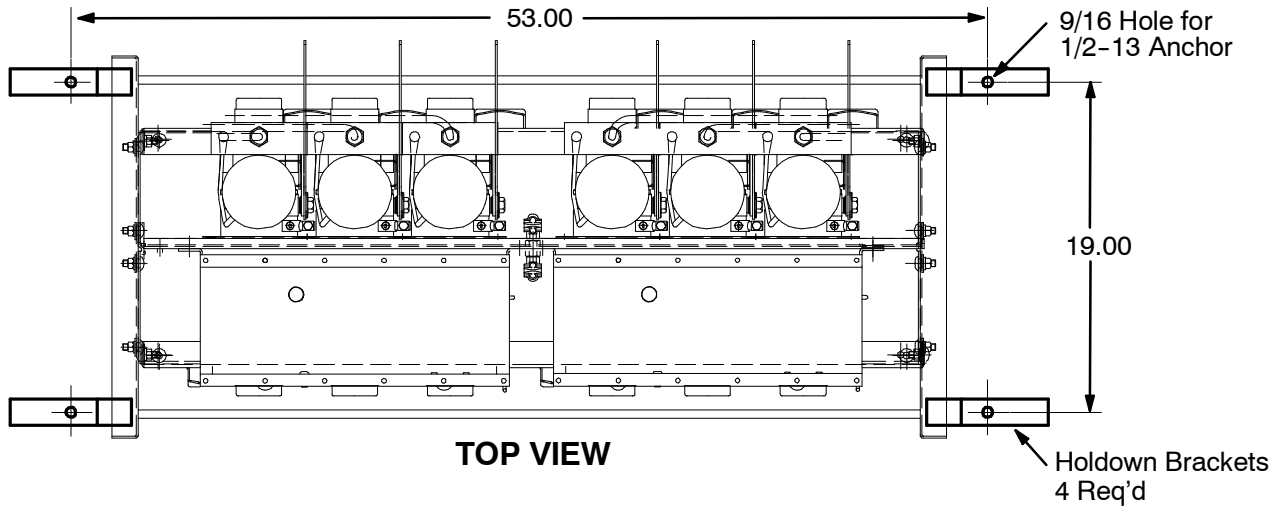
- A. Level switchgear using shims (customer supplied) on a flat concrete pad or structure designed to support the size and weight of the unit.

IMPORTANT: Cabinet doors will rub and be difficult to operate if the cabinet is not level.

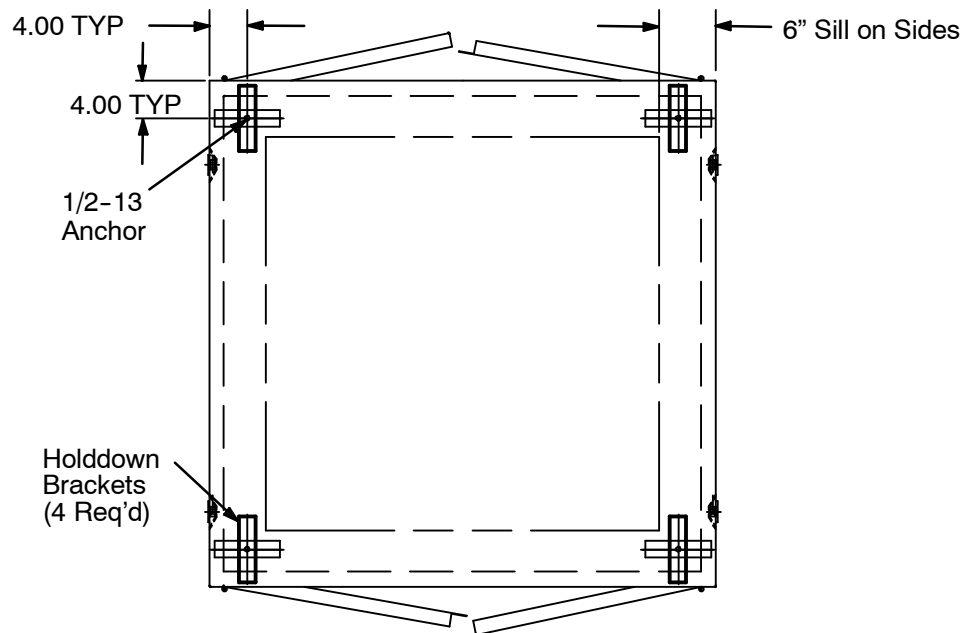
15. Site installation, (Continued)

- C. The switchgear must be anchored to the concrete pad with the (4) hold-down brackets (supplied). Attached to 1/2-13 anchors (customer supplied) to dimensions shown. Brackets may be rotated as shown.

Vault



Padmount



- D. Ground the switchgear. Switchgear must be adequately grounded. Install a permanent, low-resistance ground connection to the switchgear assembly. Grounding provisions are provided near the bottom of the switchgear assembly.
- E. If the switchgear is equipped with fuses, be sure that the fuses are rated correctly for the installation.

IMPORTANT: Fuses should be applied on solidly grounded wye systems only. Consult factory for fuse application on delta systems.

- F. If the switchgear is equipped with a motor operator and controls see attached instructions for installation procedures.

16. Separable Connector installation

- A. Feed cables into the termination compartment as the switchgear is being lowered.
- B. Make sure that the source-side and load-side cable elbows are correctly identified and that the unit is oriented correctly for the installation. The source leads must connect to the source bushings of the unit, and the load-side leads must connect to the load bushings of the unit.

CAUTION: Protective shipping covers are used to protect the bushing(s) or bushing well(s) during shipment and are to be removed prior to cable termination and connector assembly. DO NOT submerge or energize without installing the appropriate HV connectors.

- C. Prior to installing bushing inserts or connectors, remove the protective covers and clean the interfaces. Lubricate the interfaces with appropriate lubricant. It is recommended that the lubricant supplied with the connector be used.

IMPORTANT: Lubricants not approved by the connector manufacturer may be harmful to the product.

- D. Verify connectors' voltage ratings match the voltage rating of the switchgear nameplate.
- E. Verify connectors are properly sized to the cables.
- F. Terminate cables and install connectors following the instructions supplied with the separable connectors.

Operation

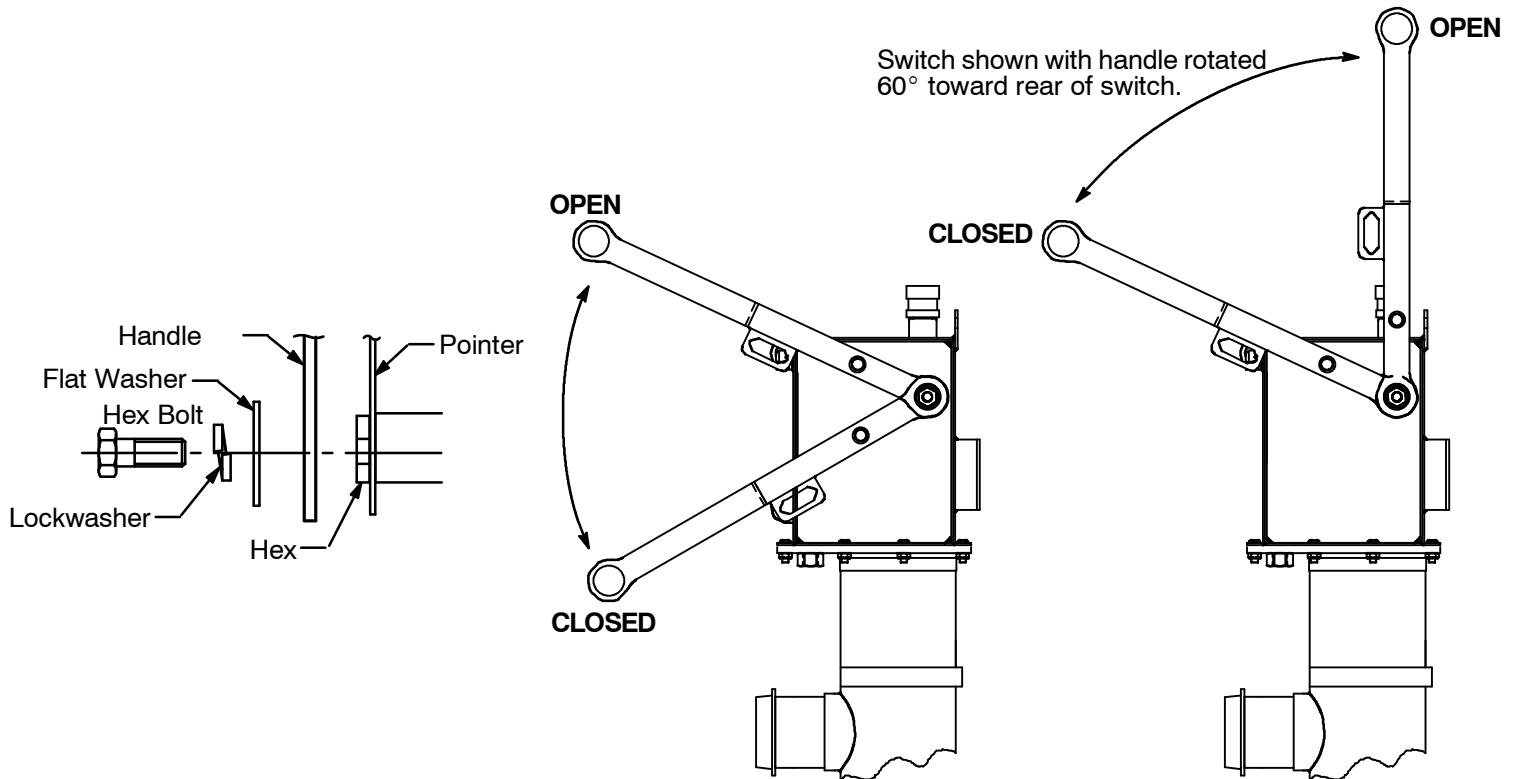
17. Application

This switchgear must be applied to distribution systems within its electrical ratings as defined on the name plate and in this manual. Handling, installation and operation must be done in accordance with this manual.

This switchgear should be operated by qualified personnel, with terminations fully connected and in good condition. Do not exceed the continuous, loadbreak, or fault close rating shown on the unit nameplate.

18. Switch Operation

Operation handle: The switchgear is equipped with manual operating handles to open and close the switch with a hot stick. An open/close indicator shows the status of the switch. The unit is shipped with the handle in the closed position. The handle may be rotated 60° by removing the hex bolt. To adjust the position, rotate the handle 60° as shown. Reassemble the hex bolt.



Operation:

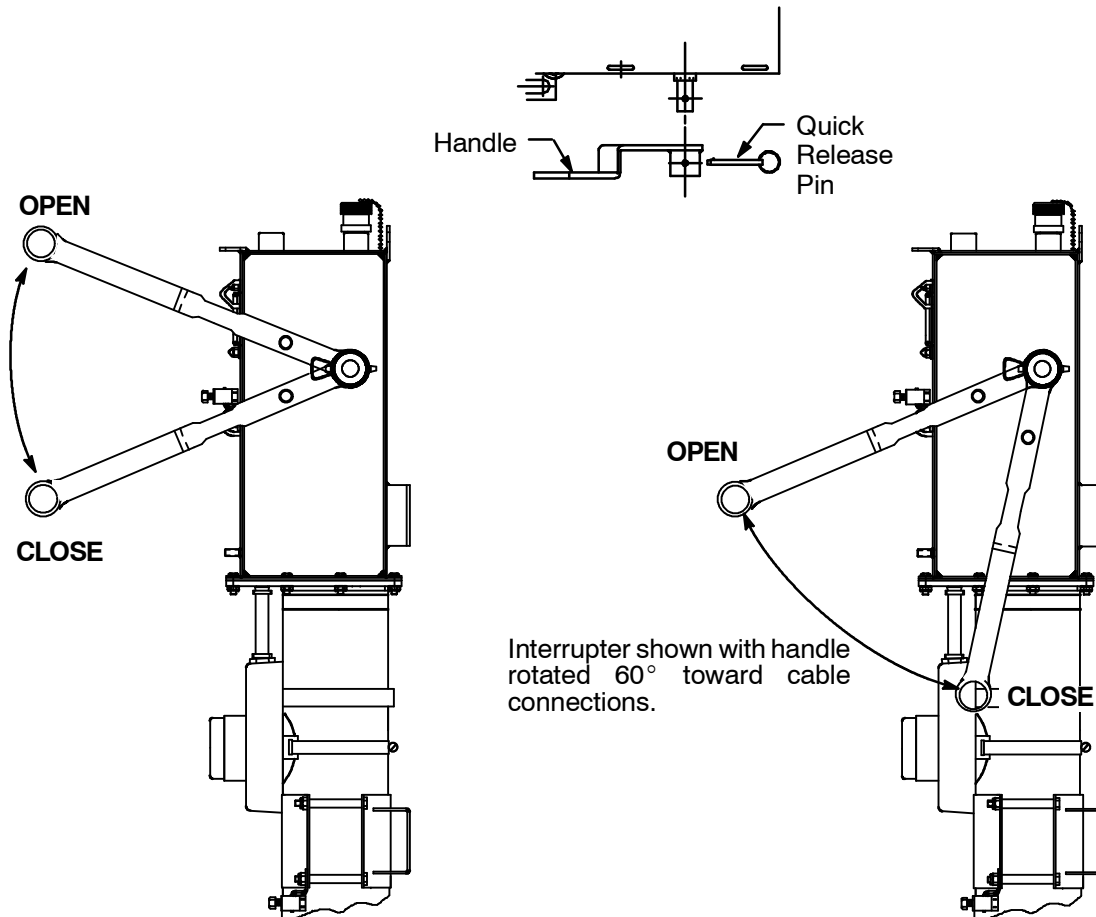
- A. If applicable, remove the padlock from the switch handle to be operated.
- B. TO OPEN THE SWITCH - Move the handle up (clockwise) approximately 45° until the switch operates; an audible "click" will be heard. The position indicator pointer will align with the green "Open" position status indicator.
- C. TO CLOSE THE SWITCH - Move the handle down (counter-clockwise) approximately 45° until the switch operates; an audible "click" will be heard. The position indicator pointer will align with the red "Closed" position status indicator.
- D. If applicable, reinstall padlocks and operate locks as required by the applicable operating system.

19. Interruptor Operation

Operation handle: The switchgear is equipped with operating handles to open and close the interrupter with a hot stick. The handle does not move when the interrupter trips.

WARNING: The position of the handle is not an indication of the contact position.

The unit is shipped with the handle in the closed position. The handle may be rotated 60° by removing the quick release pin. To adjust the position, rotate the handle 60° as shown. Reassemble the quick release pin.



Operation:

- If applicable, remove the padlock from the interrupter handle to be operated.
- TO OPEN THE INTERRUPTER** – Move the handle up (clockwise) approximately 45° until the interrupter operates; an audible "click" will be heard. The position indicator will show the green "Open" position status indicator.
- TO CLOSE THE INTERRUPTER** – Move the handle down (counter-clockwise) approximately 45° until the interrupter operates; an audible "click" will be heard. The position indicator will show the red "Close" position status indicator.
- TO RESET THE INTERRUPTER** – After a trip operation, move the handle up (clockwise) to the "Open" position. Then, move the handle down (counter-clockwise) to the "Closed" position. The position indicator will indicate "Close".
- Reinstall padlocks and operate locks as required by the applicable operating system.

Maintenance (Troubleshooting)

Under normal service conditions, these switches, interrupters and fuse canisters require no maintenance. However, if customer use exceeds the listed ratings then maintenance may be necessary. This must be determined by the customer's own engineers who have knowledge of the applications using switchgear. Field evaluation can be performed as described in the Testing section of this manual.

20. Replacement Parts

Field replacement parts for this switchgear consist of motors, controls, bushing inserts and fuses.

Use only factory-authorized Elastimold Molded Vacuum Switchgear and Hi-Tech fuse replacement parts. For replacements, contact your Thomas & Betts representative and refer to the catalog and serial number found on the nameplate. Replacement fuse size is determined by system requirements.

Switches, interrupters, fuse canisters or integral bushings (600A bushing or 200A bushing well) are not field replaceable. Contact your local Thomas & Betts representative for repair service.

21. Maintenance Inspection Procedure

- A. De-energize and properly ground the switchgear and all source or load cables.
- B. Inspect the unit for damage. Check for unusual wear of the paint finish. Check the bushings, elbows, switches, interrupters, and fuses. Verify connectors are secure. Check for unusual or abnormal indications of wear or abuse. Verify that the cabinet doors will lock securely. Record any unusual conditions.
- C. After inspection or repairs are complete, close and lock the doors of the switch to prevent unauthorized access and accidental contact with high-voltage lines.

Follow locally approved operating practices whenever changing bushing inserts. Verify that the replacement bushings are compatible with the switchgear. The bushing inserts can be changed in the switch, interrupter and fuse canister.

Testing

22. Resistance of Switch and Interrupter Contacts

DANGER: ALL SOURCES MUST BE ISOLATED PRIOR TO PERFORMING THESE CHECKS. BE SURE THAT CLEARANCE HAS BEEN OBTAINED AND ESTABLISHED USER SAFETY PROCEDURES ARE BEING FOLLOWED.

- A. Mechanically operate the switch carrying out three closings and openings. Latching can be ensured by noting the position of the pointed indicator and listening for an audible "click" as the switch handle is rotated between the two positions.
- B. With the switch contacts closed, measure the resistance between two bushings of the same phase.

IMPORTANT: Do not include more than one set of contacts in the measurement. Also do not include a fuse in the measurement.

Each switch module must be below 200 micro-ohms.

23. High-Potential Withstand Testing of Vacuum

DANGER: ALL SOURCES MUST BE ISOLATED PRIOR TO PERFORMING THESE CHECKS. BE SURE THAT CLEARANCE HAS BEEN OBTAINED AND ESTABLISHED USER SAFETY PROCEDURES ARE BEING FOLLOWED.

- A. Vacuum retention can be ensured by performing 30kVAC for 1 minute or 40kVDC hi- potential test across the open contacts for 5 minutes.

WARNING: AT voltages up to the specified field test voltage, the radiation emitted by the vacuum switch is negligible. However, above this voltage, radiation injurious to personnel can be emitted.

With the circuit de-energized, open the switch and ground one tap. With the opposite tap properly terminated, perform either an AC or DC hi-potential test across the open contacts.

- B. Perform an AC or DC Withstand Test, as noted in the previous step, in accordance with user requirements.

24. Interrupter Trip and Control Testing – Internal Control and 80 Electronic Control

- A1. Internal Control: Connect the Programming Cable (MVI-STP-USB) between the USB port of the computer and the programming port of the Current Sensing Unit on the interrupter.
- A2. 80 Control: Connect the Programming Cable (MVI-STP-USB) between the USB port of the computer and the programming port on the face of the 80 control.
- B. Open the Eset software and click on "Communications" at the top of the screen. Next click on "read amps". Pass current through the closed contacts and read the current on the computer amp meter screen. The test current and the reading should be within +/- 5% of each other.
- C. Set a TCC curve, minimum trip setting using the Eset Program, and download the settings to the Control using the UPDATE button.
- D. Pass enough current through the contacts to cause the interrupter to trip and verify the trip function.
- E. Set the desired TCC curve, Minimum trip and remaining settings using the Eset program for the specific field application.
- F. Program the Control with these settings by clicking on the UPDATE button.
- G. After the Control has been programmed, verify the settings in the control by clicking on the ACQUIRE button.
- H. Disconnect the Programming Cable and replace the cap on the programming port.

25. Interrupter Trip and Control Testing – 10, 20, or 30 Electronic Control

- A. Set a TCC curve and minimum trip setting using the rotary dials and dip switches on the control. If using a 20 Control, also set the Ground Fault to the block position.
- B. Pass enough current through the contacts of one of the phases to cause the interrupter to trip and verify the trip function. Also, the LED representing the correct phase should be light up.
- C. Set the desired TCC curve, minimum trip and remaining settings using the rotary dials and dip switches for the specific field application.

Limited Warranty:

1. T&B warrants that its products will be free from defects in materials or workmanship for a period of two (2) years, except for tools which are warranted for 90 days. Fisher Pierce® products and Elastimold® Reclosers are warranted for three years; and Joslyn™ VBT and VBU capacitor switches are warranted for four years or 40,000 operations whichever occurs first. Upon prompt notification of a warranted defect, T&B will, at its option, repair or replace the defective product.
2. In no event shall T&B be liable for any consequential, indirect or special damages, nor will T&B be liable for transportation, labor, or other charges arising out of the removal or reinstallation of its products. Liability for breach of warranty is limited to the cost of repair or replacement of the warranted product only.
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