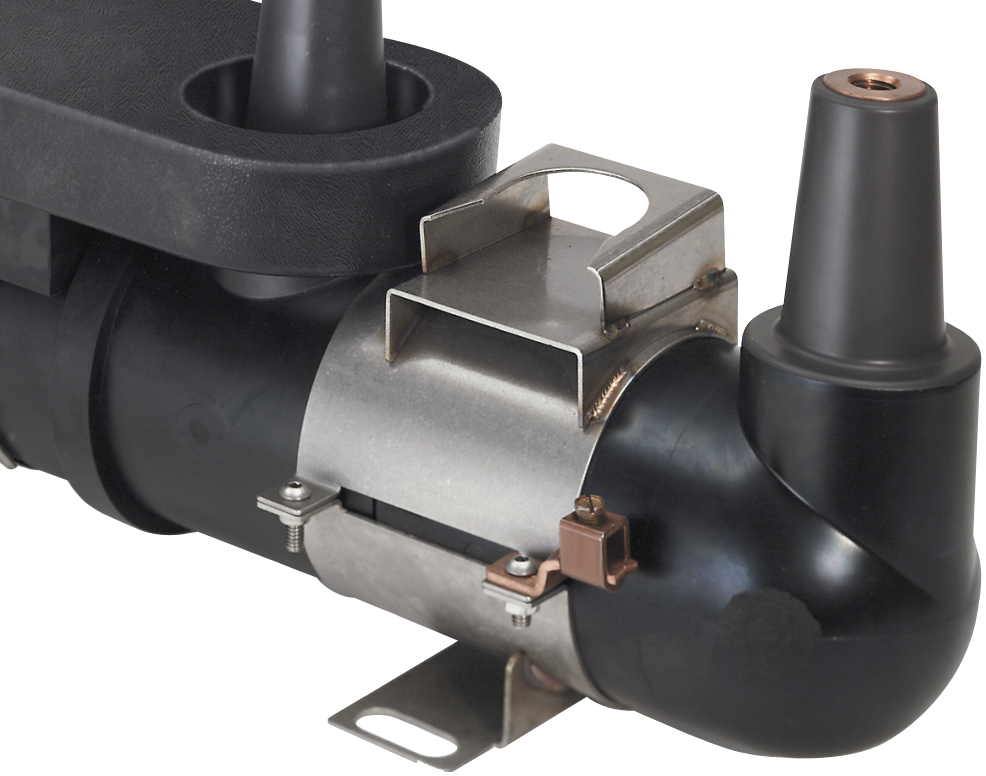
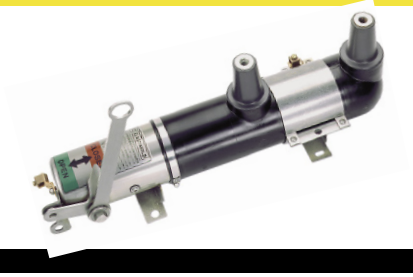


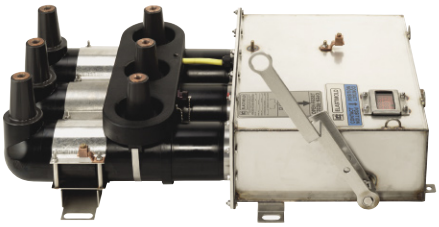
ELASTIMOLD®

Product Guide

Protection and Control

UNDERGROUND DISTRIBUTION SWITCHGEAR





- **Solid Dielectric Switchgear**
  - No Oil, No Gas, No Maintenance
  - Fully Sealed
- **Submersible**
- **Deadfront Construction**
- **Small Footprint**
- **Not Position Sensitive**
- **Vault, Subsurface, Padmount and Riser Pole Installations**
- **Flexible, Modular Building Blocks for Multiple Applications**
  - MVS Molded Vacuum Switches
  - MVI Molded Vacuum Interrupters
  - MCAN Molded Fuse Canisters
- **Applications**
  - Switching and Sectionalizing
  - Overcurrent Protection
  - Automatic Source Transfer

Thomas&Betts

UNDERGROUND DISTRIBUTION SWITCHGEAR

Overview

Protection and Control Products

Nowadays electric underground distribution systems demand high performance in the form of improved reliability and power quality, reduced operational and maintenance costs, and flexibility of operation. These can be accomplished by sectionalizing feeders, installing equipment with minimal maintenance/ installation costs, installing protection equipment, installing automatic source transfer packages, and/or providing ways to monitor the system and quickly locate a fault.

FEATURE	BENEFIT
■ EPDM Molded Rubber Construction with Stainless Steel Hardware and Mechanism Boxes	■ Fully sealed ■ Fully submersible
■ Vacuum Switching and Vacuum Interruption	■ Maintenance-free ■ Small foot-print ■ Lightweight ■ NO gas, NO oil, NO hassle
■ Deadfront Construction	■ Insulates, shields and eliminates exposed live parts
■ Compact and Light Weight	■ Fits in tight spaces ■ Suitable for padmount, subsurface, vault or riser pole installations ■ Smaller foootprint compared to other switchgear
■ Non-position sensitive	■ Can be installed almost anywhere and in any position (e.g. hanging from ceilings, wall-mounted, mounted at an angle, riser pole mounted)
■ Modular construction	■ Allows any combination of fused, switched and interrupter ways on one piece of switchgear up to 35kV ■ The knowledge and training acquired can be applied to multiple installations.
■ Electronic controls for protection and automatic source transfer applications	■ Flexibility of settings and operation in different locations throughout the distribution system ■ Tailored to fit a wide variety of system applications
■ Motor operators for remote/local open/ close operation of three-phase switched or interrupter ways	■ Allow remote reconfiguration of loops and sectionalizing of feeders ■ Allow automatic or manual source transfer ■ Can be used with a wide variety of RTUs and communication devices

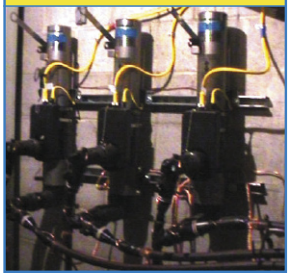
Overview

Elastimold® Switchgear is the result of extensive field experience in underground distribution systems combined with state of the art know-how, and top-notch customer support. The result? Equipment that fits multiple application needs and contributes to improve the reliability and operating performance of underground distribution systems up to 35kV. Elastimold Switchgear is fully submersible and features deadfront construction. Solid EPDM insulation and vacuum switching/interruption translate into small footprint, no maintenance products. With a wide range of configurations suitable for feeder sectionalizing/protection, loop sectionalizing/protection, riser pole installations, and automatic source transfer, Thomas & Betts is able to provide the right solutions to overcome your underground distribution system performance challenges.

PADMOUNT

SUBSURFACE

VAULT



RISER POLE

SWITCHGEAR BUILDING BLOCKS

Whether it is a standard or a custom application, Thomas & Betts has the right combination of components and expertise to fit your needs. The modularity and flexibility of Elastimold Switchgear allows the user to combine the different individual components into products that satisfactorily improve the reliability and performance of distribution systems. Three basic components form the basis for Elastimold Switchgear:

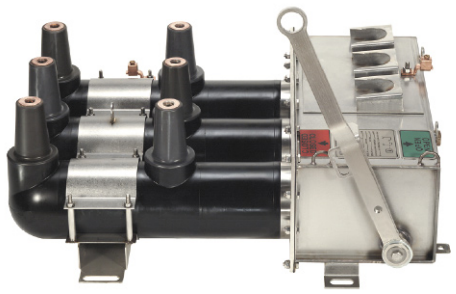
- **Single-phase and Three-phase Molded Vacuum Switches (MVS)**
- **Single-phase and Three-phase Molded Vacuum Interrupters (MVI)**
- **Fuse Canisters (MCAN)**

These components combined with electronic controls, motor operators, and SCADA ready controls make the "building blocks" of Elastimold Switchgear.

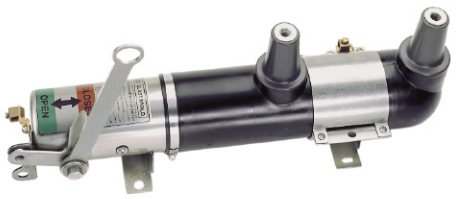
UNDERGROUND DISTRIBUTION SWITCHGEAR

Building Blocks

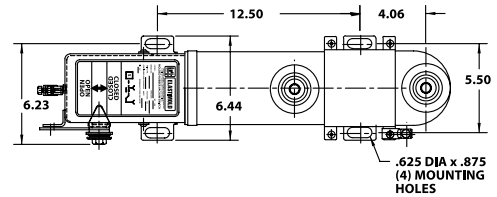
Elastimold MVS Molded Vacuum Switches are spring energy, load switching devices capable of making, carrying and interrupting load currents through 600 amperes on 5-38kV distribution systems. The MVS combines vacuum switching with high dielectric strength EPDM rubber insulation, providing compact, light-weight 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.

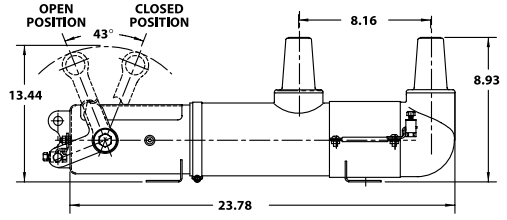


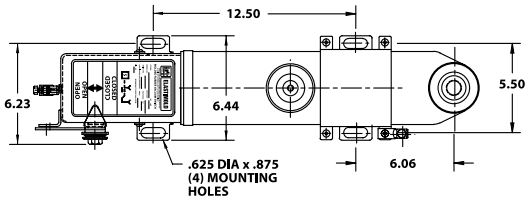
MVS

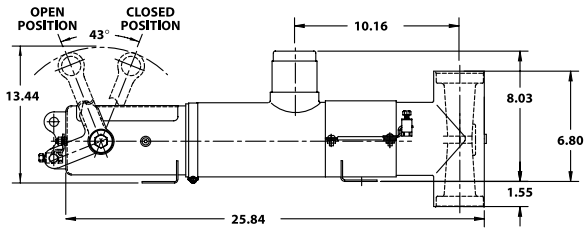


SINGLE PHASE SWITCHES
Approx. Weight 30 lbs.



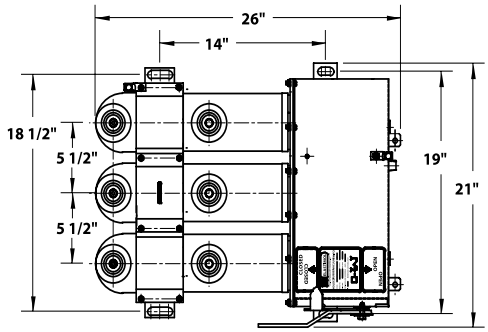


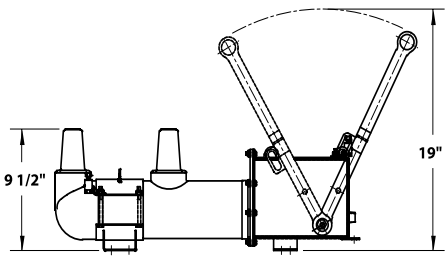




Available with 600 amp one piece bushings or 200 amp wells on either/both terminals

THREE PHASE SWITCHES
Approx. Weight 135 lbs.





Available with 600 amp one piece bushings or 200 amp wells on either/both terminals

Building Blocks

CERTIFIED TESTS AND PERFORMANCE

MVS loadbreak switches have been designed and tested per applicable portions of IEEE, ANSI, NEMA and other industry standards including:

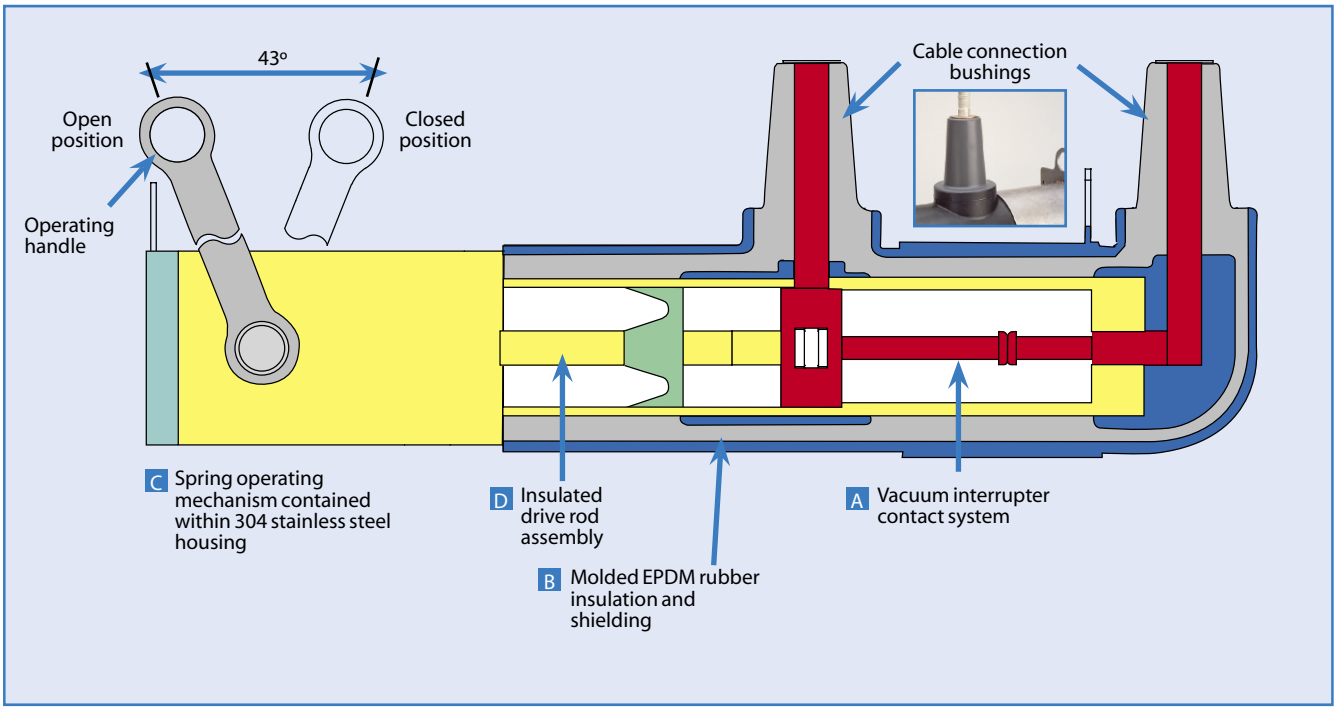
- ANSI C37.71 Standard for Subsurface and Vault Load Interrupting Switches.
- ANSI C37.72 Standard for Padmounted Load Interrupting Switches
- IEEE 386 Standard for Separable Connectors and Bushing Interfaces
- IEC 265 International Standards for Load Interrupting Switches
- ANSI C57.12.28 Standard for Padmount Enclosures

RATINGS

Maximum Design Voltage	15.5 kV	27 kV	38 kV
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
BIL Impulse Withstand	95 kV	125 kV	150 kV
One Minute AC Withstand	35 kV	60 kV	70 kV
Fifteen Minute DC Withstand	53 kV	78 kV	103 kv
Load Interrupting & Loop Switching	600 A	600 A	600 A
Transformer Magnetizing Interrupting	21 A	21 A	21 A
Capacitor or Cable Charging Interrupting	40 A	40 A	40 A
Asymmetrical Momentary and 3 Operation Fault Close	20,000 A	20,000 A	20,000 A
Symmetrical One Second Rating	12,500 A	12,500 A	12,500 A
Continuous Current	600 A	600 A	600 A
8 Hour Overload Current	900 A	900 A	900 A

APPLICATION INFORMATION

Construction:	Submersible, corrosion resistant, fully shielded
Ambient Temperature Range:	-30 to +40 degrees centigrade
Mechanical Endurance:	2000 operations



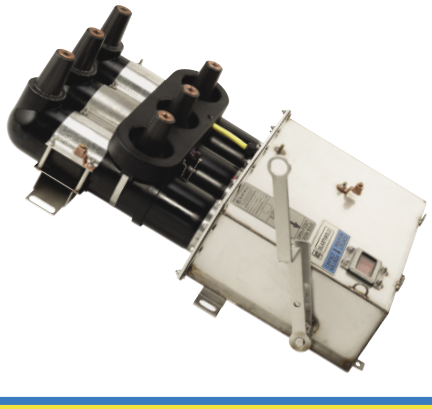
UNDERGROUND DISTRIBUTION SWITCHGEAR

Building Blocks

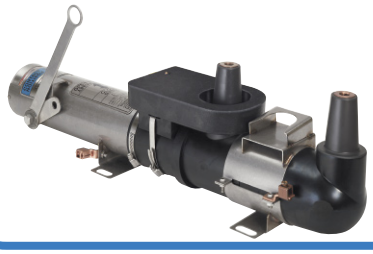
Elastimold MVI Molded Vacuum Fault Interrupters are devices capable of making, carrying and automatically interrupting currents through 12,500 amperes symmetrical on 5-35kV distribution systems. The MVI combines vacuum interrupters, programmable electronic self powered controls and high dielectric strength 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 Characteristic (TCC) curves and trip settings. The TCC curve provide predictable tripping for ease of coordination with up-stream and/or down-stream protective devices. The control monitors the circuit condition and sends a signal to the tripping mechanism if the programmed parameters are exceeded.

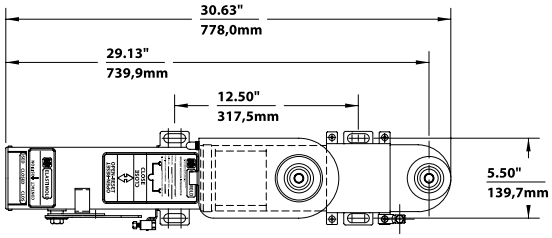
Motor operators and controls are available, and allow reconfiguration of radial feeders or loops, manually or via SCADA.



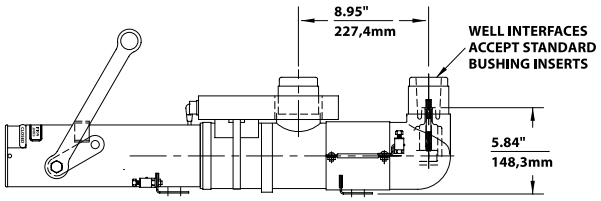
MVI



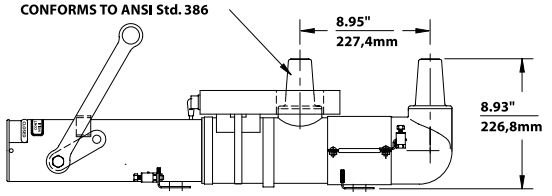
FRONT VIEW SINGLE-PHASE



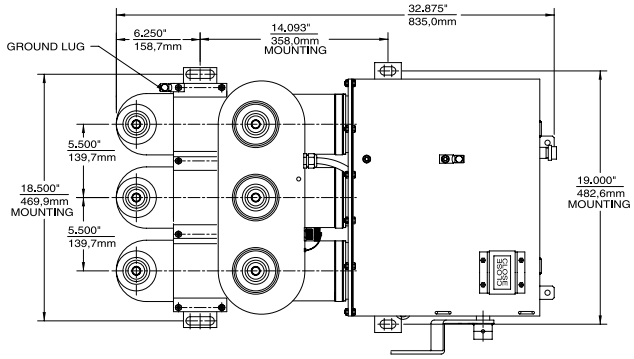
200 AMP WELLS



600 AMP BUSHINGS



FRONT VIEW THREE-PHASE



Building Blocks

CERTIFIED TESTS AND PERFORMANCE

MVI Molded Vacuum Fault Interrupters have been designed and tested per applicable portions of IEEE, ANSI, NEMA and other industry standards, including:

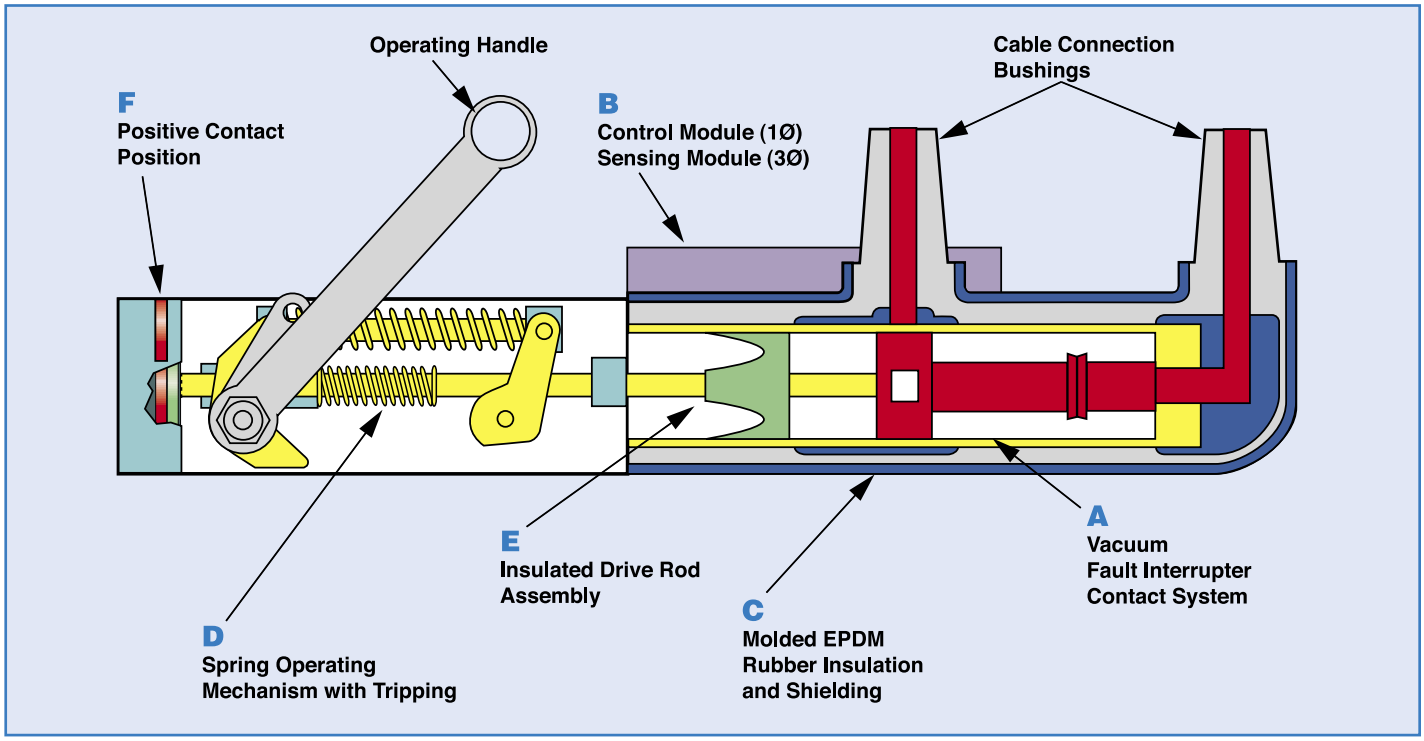
- ANSI C37.60 Standard for Fault Interrupters
- ANSI C37.71 Standard for Subsurface and Vault Load Interrupting Switches
- ANSI C37.72 Standard for Padmounted Load Interrupting Switches
- IEEE 386 Standard for Separable Connectors and Bushing Interfaces
- IEC 265 International Standards for Load Interrupting Switches
- ANSI C57.12.28 Standard for Padmounted Enclosures

RATINGS

Voltage Class	15.5 kV	27 kV	35 kV
Maximum Design Voltage	17 kV	29 kV	38 kV
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
BIL Impulse Withstand	95 kV	125 kV	150 kV
One Minute AC Withstand	35 kV	60 kV	70 kV
Fifteen Minute DC Withstand	53 kV	78 kV	103 kV
Load Interrupting & Loop Switching	600 A	600 A	600 A
Transformer Magnetizing Interrupting	21 A	21 A	21 A
Capacitor or Cable Charging Interrupting	40 A	40 A	40 A
Sym./Asym. Momentary and Fault Close	12.5/20 kA	12.5/20 kA	12.5/20 kA
Symmetrical One Second Rating	12.5 kA	12.5 kA	12.5 kA
Continuous Current	600 A	600 A	600 A
Sym./Asym. Interrupting Capability	12.5/20 kA	12.5/20 kA	12.5/20 kA

APPLICATION INFORMATION

Endurance:	
2,000 Amperes Sym. Interrupting (15-20% of maximum rating)	44 operations
6,000 Amperes Sym. Interrupting Amps (45-55% of maximum rating)	56 operations
12,500 Amperes Sym. Interrupting Amps (90-100% of maximum rating)	16 operations
Mechanical	2000 operations
Construction: Submersible, corrosion resistant, fully shielded	
Ambient Temperature Range: -30 to +40 degrees centigrade	



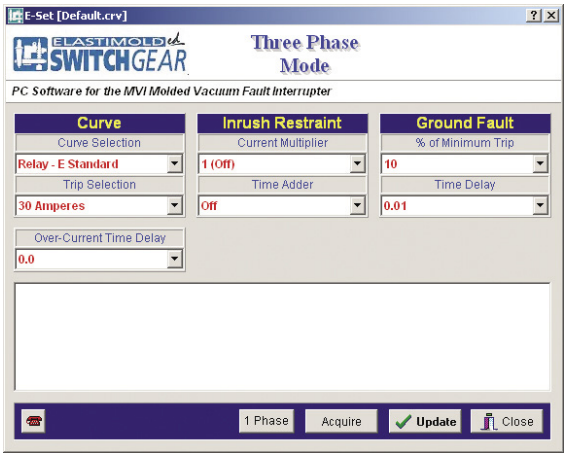
UNDERGROUND DISTRIBUTION SWITCHGEAR

Building Blocks

The **Molded Vacuum Interrupters** are provided with self-powered electronic control packages, requiring no batteries or external power. Field-selectable Fuse or Relay Curves and Trip Settings are available. The controls monitor current through the interrupter, and if an overcurrent condition is detected, send a signal to the vacuum interrupters to trip open and interrupt the fault. Depending on the application, four electronic control options are available for the MVI:

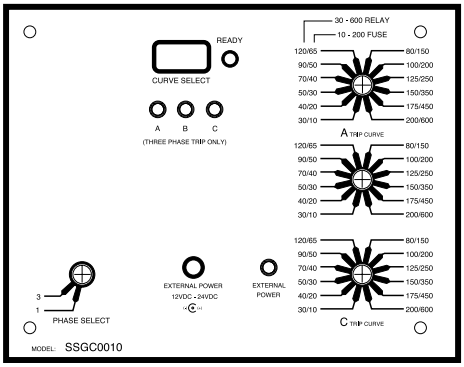
INTERNAL CONTROL

This control is integral to the unit (no separate control box) and molded inside the current sensing device. It is accessible via computer connection to view or modify settings. This control is used on ganged three-phase or single-phase MVI mechanisms. Phase and Ground trip, as well as Inrush restraint are available. The E-Set software allows the user to connect to the internal control either in the shop or the field to program or change settings. MVI-STP programming connector is required to connect between the PC and the MVI. With a computer connected to the MVI control the user can view real-time currents, the number of overcurrent protection operations, current magnitude of the last trip, and the phase/ground fault targets. This is the default control option.



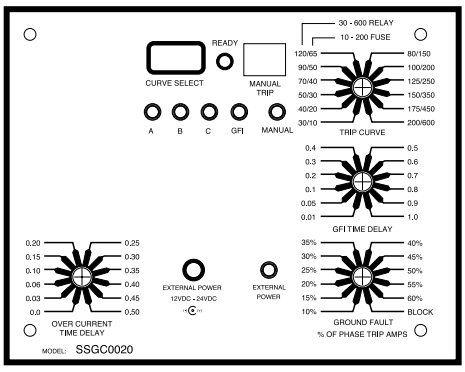
EXTERNAL CONTROL WITH SINGLE/THREE-PHASE TRIP SELECTION (Style 10)

This control is mounted external to the mechanism and provides the ability to select TCCs by setting dip switches on the front panel. Each phase can be assigned a different minimum trip setting by means of manual rotary switches. This control is used on three single-phase MVI mechanisms.



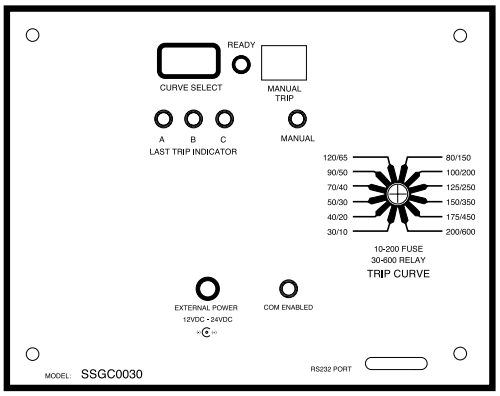
EXTERNAL CONTROL WITH PHASE AND GROUND TRIP (Style 20)

This control is mounted external to the mechanism and provides the ability to select phase minimum trip (one for all three phases), time delay for phase tripping, ground trip as a percent of phase minimum trip, and ground trip delay by means of manual rotary switches. This control may be used on ganged three-phase or three single-phase MVI mechanisms.



EXTERNAL CONTROL WITH THREE-PHASE TRIP ONLY (Style 30)

This control is mounted external to the mechanism and provides the ability to select phase minimum trip (one for all three phases) by means of a manual rotary switch. It also has an RS232 port for connection to a PC to view the last trip data. This control is used on ganged three-phase or three single-phase MVI mechanisms.



CURVES

Relay Curves

Curve #	Curve Reference #	Curve Type
01	MVI-TCC-01	E Slow
02	MVI-TCC-02	E Standard
03	MVI-TCC-03	Oil Fuse Cutout
04	MVI-TCC-04	K
05	MVI-TCC-05	Kearney QA
06	MVI-TCC-06	Cooper EF
07	MVI-TCC-07	Cooper NX-C
08	MVI-TCC-08	CO-11-1
09	MVI-TCC-09	CO-11-2
10	MVI-TCC-10	T
11	MVI-TCC-11	CO-9-1
12	MVI-TCC-12	CO-9-2
13	MVI-TCC-13	Cooper 280ARX
14	MVI-TCC-14	F
16	MVI-TCC-16	Kearney KS
17	MVI-TCC-17	GE Relay

Fuse Curves

Curve #	Curve Reference #	Curve Type
54	MVI-TCC-54	E Slow
55	MVI-TCC-55	E Standard
56	MVI-TCC-56	Oil Fuse Cutout
57	MVI-TCC-57	K
58	MVI-TCC-58	Kearney QA
59	MVI-TCC-59	Cooper NX-C
60	MVI-TCC-60	T
61	MVI-TCC-61	Kearney KS

MINIMUM TRIP SETTINGS

Relay Curves	Fuse Curves
30 Amperes	10 Amperes
40 Amperes	20 Amperes
50 Amperes	30 Amperes
70 Amperes	40 Amperes
90 Amperes	50 Amperes
120 Amperes	65 Amperes
150 Amperes	80 Amperes
200 Amperes	100 Amperes
250 Amperes	125 Amperes
350 Amperes	150 Amperes
450 Amperes	175 Amperes
600 Amperes	200 Amperes

Building Blocks

The Elastimold MCAN Fuse Canister is a compact, lightweight EPDM molded rubber Fuse Enclosure Package. MCAN Fuse Canisters are maintenance free, completely sealed and submersible. Designs are deadfront using molded rubber to insulate, shield and eliminate exposed live parts. Units are ideally suited for padmount, subsurface or vault applications. Construction is modular to allow for various elbow connections or direct attachment to equipment mounted bushings. The various end fittings and bushings allow fuse canisters to be applied throughout the system in switchgear, junctions, transformers, cable runs and tap installations. Standard 300 series stainless steel mounting brackets accommodate a variety of mounting arrangements. The MCAN will accommodate and has been thoroughly tested with Elastimold EFX and Hi-Tech™ Trans-Guard FX fuses.

MCAN

200 AMP. WELLS

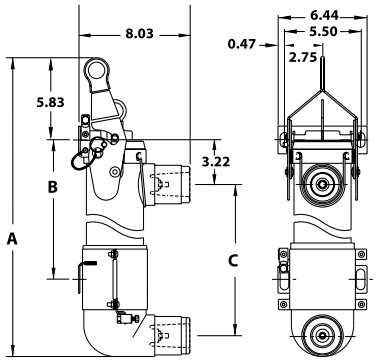


Figure 1

600 AMP. BUSHINGS

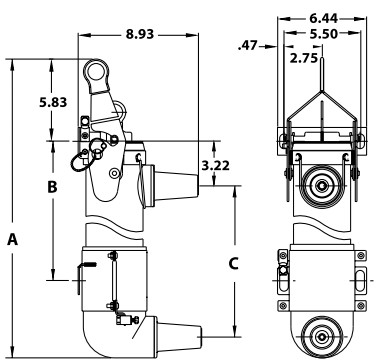


Figure 2

200 AMP. WELL & 600 AMP. ELBOW END MODULE

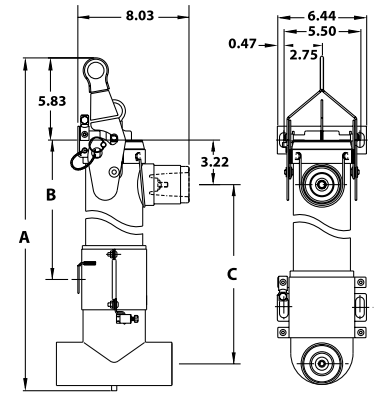


Figure 3

600 AMP. BUSHING & 600 AMP. ELBOW END MODULE

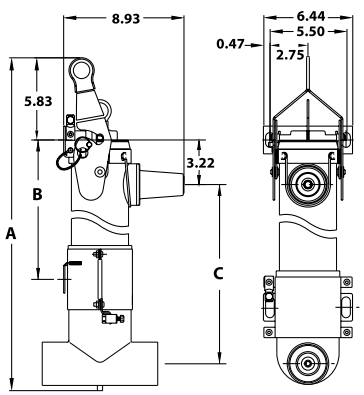


Figure 4

DIMENSIONS IN INCHES

Catalog Number	Figure	(A)	(B)	(C)
MCAN-4B15-22	1	21.49	10.06	10.91
MCAN-5B25-22	1	25.80	14.37	15.22
MCAN-6B25-22	1	28.68	17.25	18.10
MCAN-4B15-66	2	21.49	10.06	10.91
MCAN-5B25-66	2	25.80	14.37	15.22
MCAN-6B25-66	2	28.68	17.25	18.10
MCAN-4B15-6E2	3	23.90	10.06	12.91
MCAN-5B25-6E2	3	28.21	14.37	17.22
MCAN-6B25-6E2	3	31.08	17.25	20.09
MCAN-4B15-6E6	4	23.90	10.06	12.91
MCAN-5B25-6E6	4	28.21	14.37	17.22
MCAN-6B25-6E6	4	31.08	17.25	20.09

Building Blocks

CERTIFIED TESTS AND PERFORMANCE

Elastimold Molded Fuse Canisters and EFX fuses have been designed and tested per applicable portions of IEEE, ANSI, NEMA and other industry standards including:

- ANSI C37.40 Standard for Current Limiting Fuse Service Conditions
- ANSI C37.41 Standard for Current Limiting Fuse Design & Testing
- ANSI C37.47 Standard for Current Limiting Fuse Ratings & Specifications
- ANSI/IEEE 386 Standard for Separable Connectors & Bushing Interfaces

FUSE CANISTER RATINGS

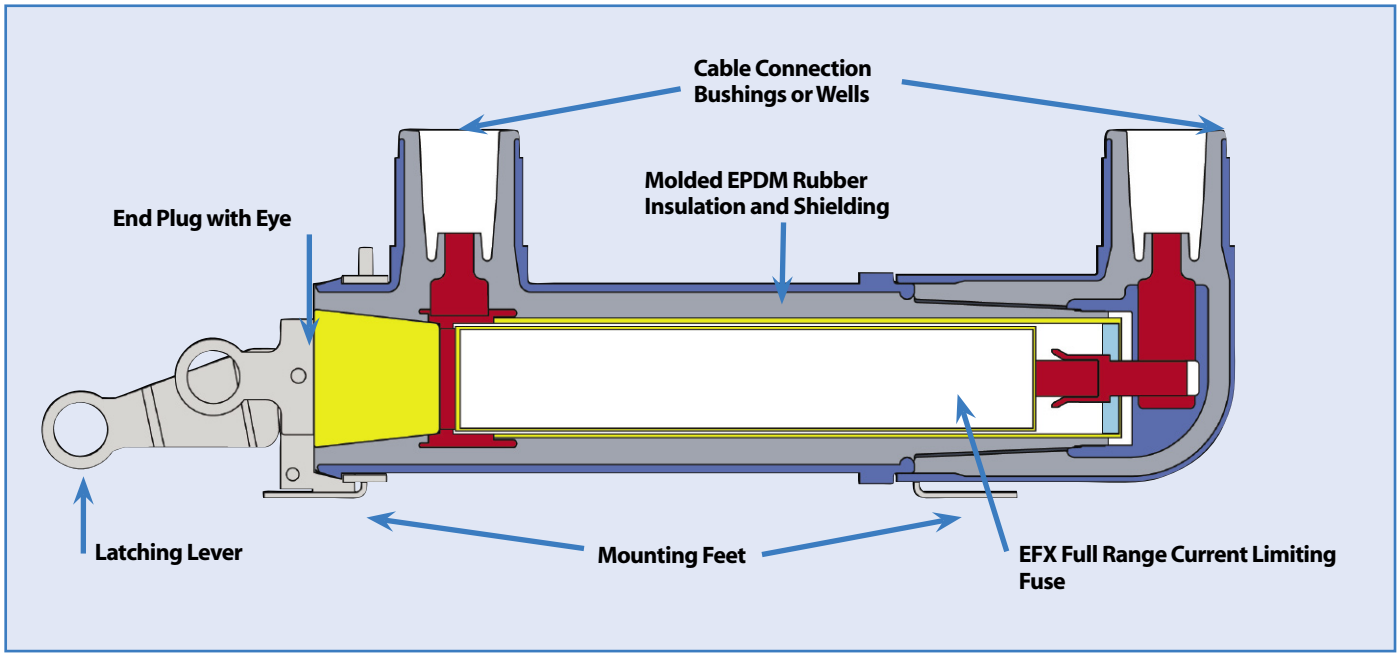
Voltage Class	15kV	25 kV
Maximum Line to Ground Voltage	10.0kV	17.2kV
Frequency	50/60hz	50/60hz
BIL Impulse Withstand	95 kV	125 kV
One Minute AC Withstand	34 kV	40 kV
Fifteen Minute DC Withstand	53 kV	78 kV
Maximum Continuous Current	200 Amps*	200 Amps*
Momentary Current	10kA*	10kA*
Construction:	Submersible, corrosion resistant, fully shielded	

FUSE RATINGS

Nominal Voltage Rating (kV)	8.3	15.5	23.0
Rated Maximum Voltage (kV)	8.3 or 10.0	15.5 or 17.2	23.0
Frequency	50/60hz	50/60hz	50/60hz
Rated Continuous Current, Amperes	3-50+	3-50+	6-50+
Rated Maximum Interrupting Current (Sym. Amperes)	50,000	50,000++	50,000
Ambient Temperature Range: −30 to 140° C for the 2.25" diameter fuse			

* Without Fuse + Without de-rating ++3 amp fuse was tested @ 44kA

Note: See **Catalog PC-Fuses** for additional details on MCAN Fuses.



UNDERGROUND DISTRIBUTION SWITCHGEAR

Products

Elastimold Switchgear building blocks as described in the previous section can be combined into a wide arrangement of configurations, and applied to solve different challenges in the distribution system. Elastimold Switchgear products can be classified in three categories according to the function they perform:

- Switching and Sectionalizing Equipment
- Overcurrent Protection Equipment
- Automatic Source Transfer Equipment

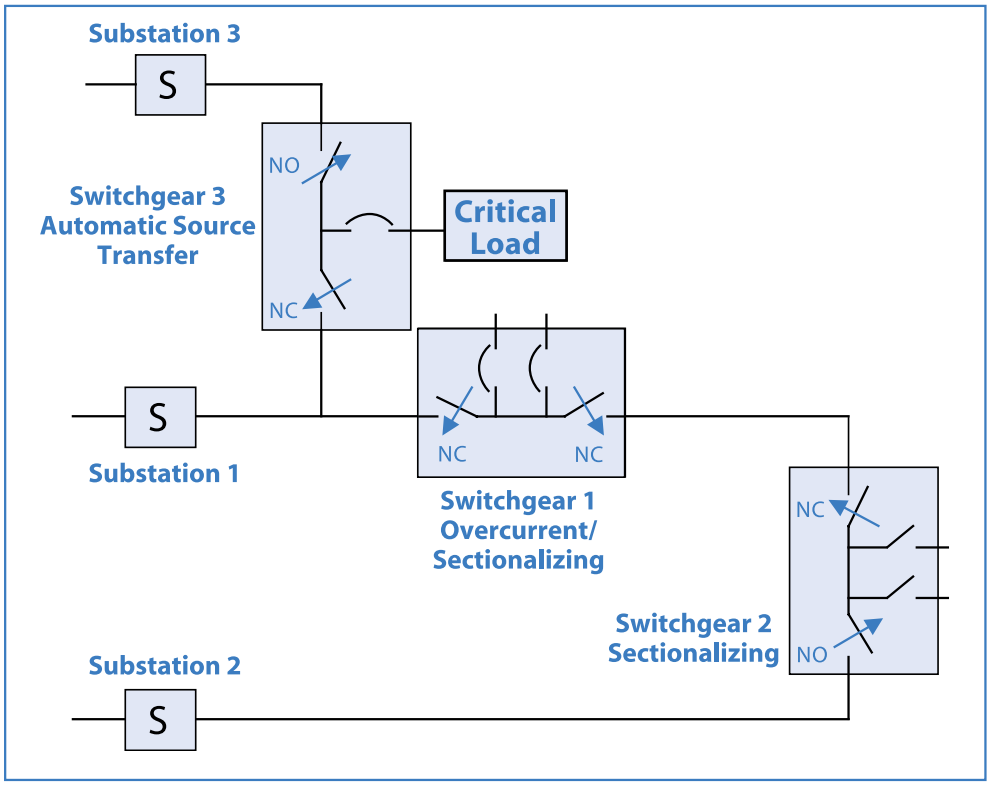
These products can be applied in different types of installations:

- Padmount
- Subsurface / Wet or Dry Vaults
- Pole

The switching or manually sectionalizing of loads can be accomplished with the use of Molded Vacuum Switch (MVS) modules. The simplest manual sectionalizer is a single MVS switch, which can be installed in a vault, pole, or inside a padmount enclosure. One of the most popular applications of this sectionalizer is as a replacement of existing oil fuse cutouts. Two, three and four-way units are also available in vault and padmount styles. These would aid in the manual reconfiguration of distribution loops by installing them at the open point in the circuit.

Overcurrent protection is accomplished using Molded Fuse Canister (MCAN) or Molded Vaccum Interrupter (MVI) modules. These can be used in combination with MVS modules. The simplest product is a single MVI unit, which can be installed in a vault, pole, or inside a padmount enclosure. One of the most popular applications of this configuration is as a replacement of existing oil fuse cutouts. Another application could be three MCAN fuses installed inside a padmount enclosure to protect a tap load. Two, three, and four-way units are also available in any combination of MVI, MCAN and MVS modules, and in vault and padmount styles. These would be applied in underground loops to aid in the sectionalizing of the main feeder and to provide protection to the loads along the loop.

Automatic Source Transfer packages are used to ensure the shortest interruption of power possible to critical loads such as hospitals, factories, and financial institutions. These packages switch the load from its normal source to a backup source of power in the event that the normal (preferred) source is lost. Elastimold switchgear combines MVS and MVI modules with an Automatic Transfer Control and motor operators to provide a complete package.



Common Bus Assembly

MULTI-WAY UNIT CONSTRUCTION

Multi-way vault and padmount units are built using MVS, MVI, and MCAN modules as required by the application. These are mounted onto the ES Multi-way common bus system and assembled on a free standing, floor mounted frame. At this stage the product is ready to be used in vault installations.

Vault Style Unit

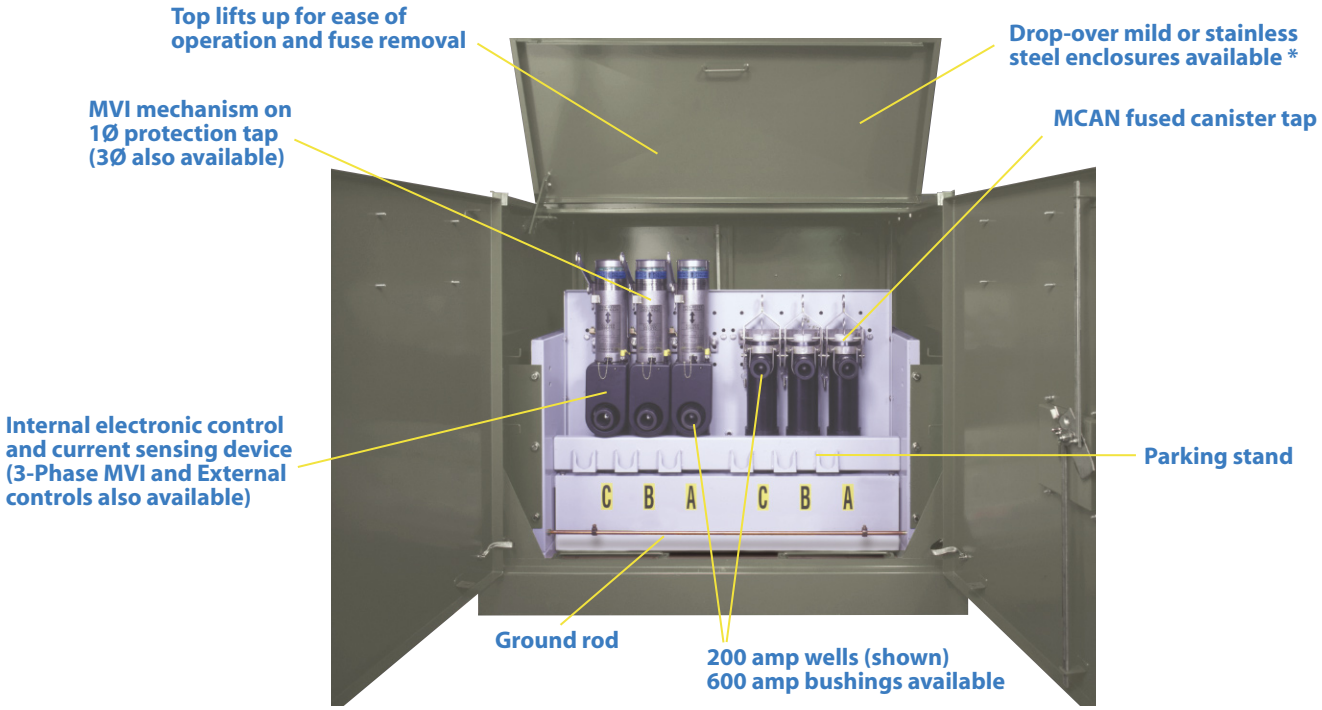
For padmount installations, a double-sided, drop-over, painted, mild-steel enclosure is provided. Munsell Green 7GY 3.29/1.5 is the standard enclosure color. Other colors are available upon request. Painted stainless steel or fiberglass enclosures are available as options.

Padmount Style Unit

UNDERGROUND DISTRIBUTION SWITCHGEAR

Products

PADMOUNT UNIT: Tap (Load) Side



*Consult your local representative for fiberglass enclosure options

The remaining pages of this Product Guide are divided into three sections according to the function a product performs:

- **Switching and Sectionalizing**
- **Overcurrent Protection**
- **Source Transfer**

From the following table, select the function and application specific to your system needs. The last column will indicate the product to be used for the specific selection. With this information, go to the appropriate section and finalize the construction of the catalog number that you would need to order.

FUNCTION	APPLICATION	INSTALLATION	NOMINAL VOLTAGE	CONTINUOUS CURRENT	INTERRUPTING CURRENT	BIL	PRODUCT
Switching Sectionalizing	Fuse Cutout Replacement	Subsurface/Vault	15kV 25kV 35kV	600/200 A 600/200 A 600/200 A		95kV 125kV 150kV	MVS
	Manual Underground Feeder or Loop Sectionalizing	Subsurface/Vault Padmount	15kV 25kV 35kV	600/200 A 600/200 A 600/200 A		95kV 125kV 150kV	MVS/ESV ESD/PMVS
Overcurrent Protection	Riser Pole	Pole	15kV 25kV 35 kV	600/200 A 600/200 A 600/200 A	12.5kA 12.5kA 12.5kA	95kV 125kV 150kV	RMVI
	Fuse Cutout Replacement	Subsurface/Vault	15kV 25kV 35 kV	600/200 A 600/200 A 600/200 A	12.5kA 12.5kA 12.5kA	95kV 125kV 150kV	MVI
	Automatic Undergr. Feeder or Loop Sectionalizing	Subsurface/Vault	15kV 25kV 35 kV	600/200 A 600/200 A 600/200 A	12.5kA 12.5kA 12.5kA	95kV 125kV 150kV	MVI/ESV PMVI/ESD
	Underground Feeder or Loop Protection	Padmount					
Source Transfer	Automatic Source Transfer	Subsurface/Vault Padmount	15kV 25kV 35kV	600/200 A 600/200 A 600/200 A	12.5kA 12.5kA 12.5kA	95kV 125kV 150kV	ATV/ATS ATD

Products

The following graph shows how to construct the catalog number for multi-way switchgear or transfer packages. Catalog numbers are shown on **Tables 1-3** for the most common configurations:

EXAMPLE: The catalog number for an autotransfer package for padmount installation on a 3-phase, 27kV system, with two MVI protected taps, 600 Amp terminals and standard mild-steel enclosure is:

ATD324-AAPP-6666

XXXXXX – XXXX – XXXX – X – X

SWITCH TYPE
AT = AUTO TRANSFER
ES = MULTI WAY SWITCH

TYPE
V = VAULT
S = SUB SURFACE
D = DOUBLE SIDE PADMOUNTED

PHASE
1 = SINGLE PHASE
3 = THREE PHASE

VOLTAGE CLASS
1 = 15.5kV
2 = 27.0kV
3 = 38.0kV

WAYS
2 = 2-WAY
3 = 3-WAY
4 = 4-WAY

ENCLOSURE MATERIAL
BLANK = MILD STEEL
S = STAINLESS STEEL

CABINET DEPTH PADMOUNT UNITS
BLANK = 42 INCHES
3 = 54 INCHES

INTERFACE BY WAY
2 = 200 AMP BUSHING WELL
6 = 600 AMP BUSHING

COMPONENTS BY WAY

A - 3 PHASE SWITCH MOTOR OPERATOR AUTO TRANSFER
B - SOLID TAP / DIRECT BUS CONNECTION (600 or 200 A)
C - 3 PHASE MVI PAULT INTERRUPTER 20 CONROL
D - 3 PHASE MVI FAULT INTERRUPTER, 30 CONTROL
E - MCAN 4B CL FUSE CANISTER 8.3kV FUSES
F - MCAN 5B CL FUSE CANISTER 15.5kV FUSES
G - MCAN 6B CL FUSE CANISTER 8.323.0kV FUSES
H - MCAN 6C CL FUSE CANISTER ALL 3.44 DIA FUSES
J - (3) 1 PHASE FAULT INTERRUPTERS
K - (3) 1 PHASE FAULT INTERRUPTERS, 310 CONTROL
L - (3) 1 PHASE FAULT INTERRUPTERS, 311 CONTROL
M - (3) 1 PHASE FAULT INTERRUPTERS, 320 CONTROL
N - (3) 1 PHASE FAULT INTERRUPTERS, 330 CONTROL
0 - (3) PHASE MVI FAULT INTERRUPTERS, 80 CONTROL
P - 3 PHASE MVI FAULT INTERRUPTER
Q - 3 PHASE MVS SWITCH WITH UAD CONTROL
R - 3 PHASE MVI FAULT INTERRUPTER MOTOR OPERATOR 12-24 VDC
S - (3) 1 PHASE MVS SWITCHES
T - 3 PHASE MVS SWITCH
U - 3 PHASE MVS WITH 12-24 VDC MOTOR
V - 3 PHASE MVS WITH 120 VAC MOTOR
W - 3 PHASE MVI FAULT INTERRUPTER MOTOR OPERATOR 120 VAC
Z - 3 PHASE MVI FAULT INTERRUPTER WITH UAD CONTROL
2 - 200 AMP BUSHING WELL (2 WAY ONLY)
6 - 600 AMP BUSHING (2 WAY ONLY)

AUTO TRANSFER WAYS 1 AND 2 ARE ALWAYS "AA"

Consult your local representative on multi-way configurations that include 38 kV MVIs.

SWITCHING AND SECTIONALIZING

Products

Load switching is required when:

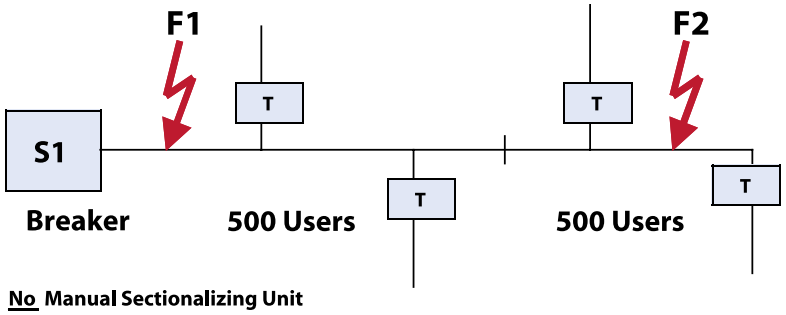
1. A load needs to be isolated to perform maintenance
2. A load needs to be isolated to repair a fault
3. A loop needs to be reconfigured to feed certain load from a different substation and isolate the faulted portion of the loop

In any case, the use of a manual sectionalizer contributes to reduce the length of time that unfaulted or unaffected portions of the system are exposed to an outage. This results in improved reliability of the system as the duration of outages is reduced (i.e. the SAIDI and CAIDI reliability indices).

Switching products can be applied as replacement for existing Oil Fuse Cutouts or as Manual Sectionalizers for loops or radial feeders. Depending on the application these sectionalizers may be installed in a vault, or inside a padmount enclosure. Pole installations are also available.

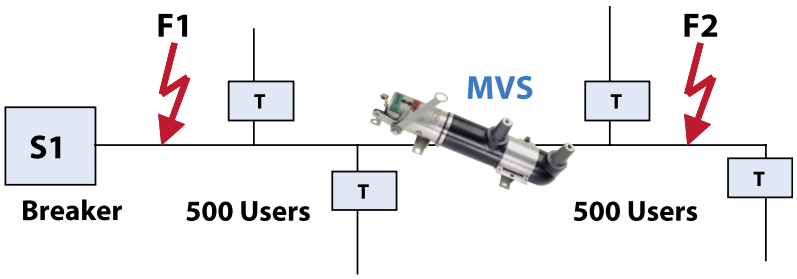
MANUAL SWITCHING/SECTIONALIZING IMPROVES RELIABILITY

In the example to the right, a radial feeder is exposed to two failures in one year. Without any manual sectionalizing, all customers are subject to both failures and are out of power until failures are restored. Assuming that the duration of outage one (F1) is one hour, and outage two (F2) is two hours, the calculation of SAIDI shows 3 hours of interruption duration per year.



No Manual Sectionalizing Unit
Permanent Faults F1 and F2
Interruption Duration: F1 = 1hr; F2 = 2hr.
Evaluation Period = 1yr.

SAIDI = [(1hr)*(1000) + (2hr)*(1000)] / 1000 = 3 hr/yr
SAIFI = [1000 + 1000] / 1000 = 2 Interruptions / yr



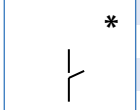
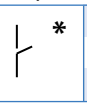
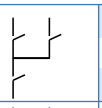
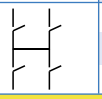
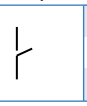
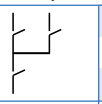
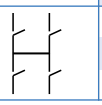
MVS Manual Sectionalizing Unit = Shorter restoration time for 500 customers
Permanent Faults F1 and F2
Interruption Duration: F1 = 1hr; F2 = 2hr for 500 users; F2 = 1hr for 500 users
Evaluation Period = 1yr.

SAIDI = [(1hr)*(1000) + (1hr)*(500) + (2hr)*(500)] / 1000 = 2.5 hr/yr
SAIFI = [1000 + 1000] / 1000 = 2 Interruptions / yr

With the use of an MVS at the mid-point of the feeder, the restoration time is reduced. Once the fault is located, the MVS is open to isolate the faulted portion of the feeder. At this point the other half of the feeder can be energized, reducing the outage duration or SAIDI from 3 hours to 2.5 hours per year (16.6%).

Similar application of MVS switches in loop configurations contribute to significantly reduce the outage duration. In these cases single or multi-way switch configurations can be applied.

TABLE 1 - SWITCHING AND SECTIONALIZING SWITCHGEAR

Diagram	Catalog Number	Description	W	H	D	Wt.
SUBSURFACE						
Single-phase Vacuum Switches						
 *	MVS1-21-15-XX	15kV 2-way 1-phase Switch	6	24	14	30
	MVS1-21-15-6EX	15kV 2-way 1-phase Switch - Elbow Interface	6	26	15	30
	MVS1-21-27-XX	25kV 2-way 1-phase Switch	6	24	14	30
	MVS1-21-27-6EX	25kV 2-way 1-phase Switch - Elbow Interface	6	26	15	30
	MVS1-21-38-XX	35kV 2-way 1-phase Switch	6	24	14	30
Three-phase Vacuum Switches						
 *	MVS3-21-15-XX	15kV 2-way 3-phase Switch	21	26	19	135
	MVS3-21-25-XX	25kV 2-way 3-phase Switch	21	26	19	135
	MVS3-21-38-XX	35kV 2-way 3-phase Switch	21	26	19	135
Three-phase Multi-way Arrangements						
	ESV313-TTT-XXX	15kV 3-way 3-phase Switch	48	36	22	750
	ESV323-TTT-XXX	25kV 3-way 3-phase Switch	48	36	22	750
	ESV333-TTT-XXX	35kV 3-way 3-phase Switch	48	36	22	750
	ESV314-TTTT-XXXX	15kV 4-way 3-phase Switch	48	36	22	880
	ESV324-TTTT-XXXX	25kV 4-way 3-phase Switch	48	36	22	880
	ESV334-TTTT-XXXX	35kV 4-way 3-phase Switch	48	36	22	880
PADMOUNT						
Single-phase Vacuum Switches						
	PMVS1-21-15-XX	15kV 2-way 1-phase Switch	36	30	30	310
	PMVS1-21-27-XX	25kV 2-way 1-phase Switch	36	30	30	310
	PMVS1-21-38-XX	25kV 2-way 1-phase Switch	36	30	30	310
Three-phase Vacuum Switches						
	ESD312-T-XX	15kV 2-way 3-phase Switch	32	42	48	680
	ESD322-T-XX	25kV 2-way 3-phase Switch	32	42	48	680
	ESD332-T-XX	35kV 2-way 3-phase Switch	32	42	48	680
Three-phase Multi-way Arrangements						
	ESD313-TTT-XXX	15kV 3-way 3-phase Switch	54	42	48	1250
	ESD323-TTT-XXX	25kV 3-way 3-phase Switch	54	42	48	1250
	ESD333-TTT-XXX	35kV 3-way 3-phase Switch	54	42	48	1250
	ESD314-TTTT-XXXX	15kV 4-way 3-phase Switch	54	42	48	1380
	ESD324-TTTT-XXXX	25kV 4-way 3-phase Switch	54	42	48	1380
	ESD334-TTTT-XXXX	35kV 4-way 3-phase Switch	54	42	48	1380

NOTES:
Other Configurations are Available. Please Consult Your Local Representative on Configurations Not Shown Here.
* Height includes handle

ACCESSORIES (Add the catalog number as a suffix to single- and three-phase units)

Catalog Number	Description
MO120A	120 Vac Motor Operator for 3-phase Units. For Multi-Way Units, Replace **T** with **V** for a Motor Operated Switch.
MO12D	12 Vdc Motor Operator for 3-phase Units. For Multi-Way Units, Replace **T** with **U** for a Motor Operated Switch.
UAD	12 Vdc Cleveland Price Motor Operator. For Multi-Way Units, Replace **T** with **Q** for a Motor Operated Switch.
PS	Parking Stand for MVS units
PS6	Double Parking Stand for MVS3 units
MPS	Parking Stand for MVS3 units on Mechanism Cover

OVERCURRENT PROTECTION

Products

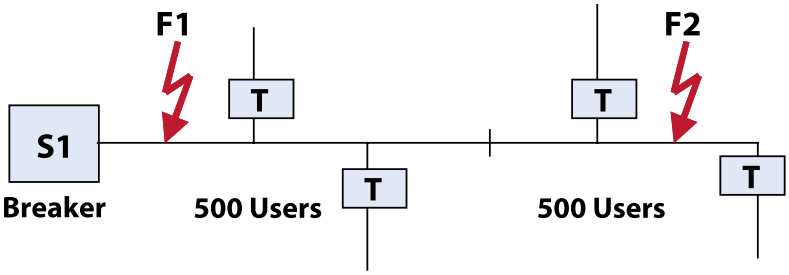
The use of fault interrupting devices is required when:

1. Feeders need to be split into smaller sections, so that if there is a fault only a small section of the load is affected
2. Radial taps deriving from a main feeder or loop need to be protected

While a switching device contributes to improve the duration of outages, fault interrupters contribute to reduce the duration AND frequency of outages (i.e. SAIDI, CAIDI, SAIFI, CAIFI reliability indices).

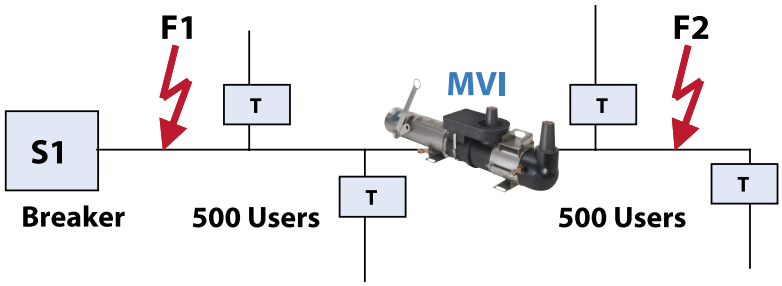
AUTOMATIC FAULT PROTECTION/SECTIONALIZING IMPROVES RELIABILITY

In the example to the right, a radial feeder is exposed to two failures in one year. Without any automatic sectionalizing (overcurrent protection), all customers are subject to both failures and are out of power until failures are restored. Assuming that the duration of outage one (F1) is one hour, and outage two (F2) is two hours, the calculation of SAIDI shows 3 hours of interruption duration per year. The calculation of the frequency of interruptions (SAIFI) shows two interruptions per year.



No Automatic Sectionalizing Unit
Permanent Faults F1 and F2
Interruption Duration: F1 = 1hr; F2 = 2hr.
Evaluation Period = 1yr.

SAIDI = [(1hr)*(1000) + (2hr)*(1000)] / 1000 = 3 hr/yr
SAIFI = [1000 + 1000] / 1000 = 2 Interruptions / yr



MVI Sectionalizing Unit = Eliminate one Interruption for 500 users
Permanent Faults F1 and F2
Interruption Duration: F1 = 1hr; F2 = 2hr for 500 users
Evaluation Period = 1yr.

SAIDI = [(1hr)*(1000) + (2hr)*(500)] / 1000 = 2.0 hr/yr
SAIFI = [1000 + 500] / 1000 = 1.5 Interruptions / yr

With the use of an MVI overcurrent fault interrupting device at the mid-point of the feeder, failure F2 only affects half of the load. Proper protection coordination, between the MVI and the substation breaker, allows the MVI to clear the fault before any customers between the MVI and the breaker are affected. Frequency and duration of interruption are significantly reduced. SAIDI is reduced from 3 to 2 hours of interruption per year (33%), and SAIFI is reduced from 2 to 1.5 interruptions per year (25%).

Similar improvements can be accomplished with the use of single and multi-way configurations of MVIs and MVSs in loop systems. Elastimold switchgear will contribute to improve the reliability of distribution systems, not only through their normal operation, but by reducing the operation and maintenance time that is invested in keeping the system running.

TABLE 2 - OVERCURRENT PROTECTION SWITCHGEAR

Diagram	Catalog Number	Description	W	H	D	Wt
RISER POLE (Three-Phase Installations Only)						
	RMVI3-21-15-6ABX	15kV 2-way 3-phase Interrupter with Air Bushings on Top Terminals	30	45	25	150
	RMVI3-21-27-6ABX	27kV 2-way 3-phase Interrupter with Air Bushings on Top Terminals	30	45	25	150
	RMVI3-21-38-6ABX	35kV 2-way 3-phase Interrupter with Air Bushings on Top Terminals	30	45	25	150
SUBSURFACE						
Single-phase Vacuum Interrupters						
	MVI1-21-15-XX	15kV 2-way 1-phase Interrupter	6	31	9	45
	MVI1-21-15-6EX	15kV 2-way 1-phase Interrupter - Elbow Interface	6	31	11	45
	MVI1-21-27-XX	27kV 2-way 1-phase Interrupter	6	31	9	45
	MVI1-21-27-6EX	27kV 2-way 1-phase Interrupter - Elbow Interface	6	31	11	45
	MVI1-21-38-X2	38kV 2-way 1-phase Interrupter	6	31	9	45
	MVI1-21-38-6E2	38kV 2-way 1-phase Interrupter - Elbow Interface	6	31	11	45
Three-phase Vacuum Interrupters						
	MVI1-21-15-XX-3YY	15kV 2-way 3-phase Interrupter - Single-phase Trip Selectable - Ext. Control	20	31	9	145
	MVI1-21-27-XX-3YY	27kV 2-way 3-phase Interrupter - Single-phase Trip Selectable - Ext. Control	20	31	9	145
	MVI1-21-38-XX-3YY	38kV 2-way 3-phase Interrupter - Single-phase Trip Selectable - Ext. Control	20	31	9	145
	MVI3-21-15-XX	15kV 2-way 3-phase Interrupter	20	33	10	145
	MVI3-21-38-XX	38kV 2-way 3-phase Interrupter	20	33	10	145
	MVI3-21-27-XX	27kV 2-way 3-phase Interrupter	20	33	10	145
Three-phase Multi-way Arrangements (Fuses are not included and must be ordered separate)						
	ESV312-E2-XX	8.3kV 2-way 3-phase - One Fused Tap with Fuse Canisters	21	24	11	63
	ESV322-F2-XX	15kV 2-way 3-phase - One Fused Tap with Fuse Canisters	21	29	11	69
	ESV332-G2-XX	23kV 2-way 3-phase - One Fused Tap with Fuse Canisters	21	32	11	72
	ESV312-TE-XX	8.3kV 2-way 3-phase - One Source Switch, One Fused Tap	24	36	22	350
	ESV322-TF-XX	15kV 2-way 3-phase - One Source Switch, One Fused Tap	24	36	22	350
	ESV332-TG-XX	23kV 2-way 3-phase - One Source Switch, One Fused Tap	24	39	22	350
	ESV313-TEE-XXX	8.3kV 3-way 3-phase - One Source Switch, Two Fused Taps	48	36	22	560
	ESV323-TFF-XXX	15kV 3-way 3-phase - One Source Switch, Two Fused Taps	48	36	22	560
	ESV333-TGG-XXX	23kV 3-way 3-phase - One Source Switch, Two Fused Taps	48	39	22	560
	ESV313-TTE-XXX	8.3kV 3-way 3-phase - Two Source Switches, One Fused Tap	48	36	22	560
	ESV323-TTF-XXX	15kV 3-way 3-phase - Two Source Switches, One Fused Tap	48	36	22	560
	ESV333-TTG-XXX	23kV 3-way 3-phase - Two Source Switches, One Fused Tap	48	39	22	560
	ESV313-TPP-XXX	15kV 3-way 3-phase - One Source Switch, Two Vacuum Interrupter Taps	48	40	22	660
	ESV323-TPP-XXX	27kV 3-way 3-phase - One Source Switch, Two Vacuum Interrupter Taps	48	40	22	660
	ESV313-TTP-XXX	15kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	48	40	22	660
	ESV323-TTP-XXX	27kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	48	40	22	660
	ESV314-TEEE-XXXX	8.3kV 4-way 3-phase - One Source Switch, Three Fused Taps	48	36	22	670
	ESV324-TFFF-XXXX	15kV 4-way 3-phase - One Source Switch, Three Fused Taps	48	36	22	670
	ESV334-TGGG-XXXX	23kV 4-way 3-phase - One Source Switch, Three Fused Taps	48	36	22	670

OVERCURRENT PROTECTION

Products

TABLE 2 - OVERCURRENT PROTECTION SWITCHGEAR (Cont'd)

Diagram	Catalog Number	Description	W	H	D	Wt.
SUBSURFACE (Cont'd)						
	ESV314-TTEE-XXXX	8.3kV 4-way 3-phase - Two Source Switches, Two Fused Taps	48	36	22	740
	ESV324-TTFF-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Fused Taps	48	36	22	740
	ESV334-TTGG-XXXX	23kV 4-way 3-phase - Two Source Switches, Two Fused Taps	48	39	22	740
	ESV314-TTTE-XXXX	8.3kV 4-way 3-phase - Three Source Switches, One Fused Tap	48	36	22	810
	ESV324-TTTF-XXXX	15kV 4-way 3-phase - Three Source Switches, One Fused Tap	48	36	22	810
	ESV334-TTTG-XXXX	23kV 4-way 3-phase - Three Source Switches, One Fused Tap	48	39	22	810
	ESV314-TPPP-XXXX	15kV 4-way 3-phase - One Source Switch, Three Vacuum Interrupter Taps	48	40	22	880
	ESV324-TPPP-XXXX	27kV 4-way 3-phase - One Source Switch, Three Vacuum Interrupter Tap	48	40	22	880
	ESV314-TTPP-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	48	40	22	880
	ESV324-TTPP-XXXX	27kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	48	40	22	880
	ESV314-TTTP-XXXX	15kV 4-way 3-phase - Three Source Switches, One Vacuum Interrupter Tap	48	40	22	880
	ESV324-TTTP-XXXX	27kV 4-way 3-phase - Three Source Switches, One Vacuum Interrupter Tap	48	40	22	880
PADMOUNT						
Single-phase Vacuum Interrupters						
	PMVI1-21-15-XX	15kV 2-way 1-phase Interrupter	36	30	30	310
	PMVI1-21-27-XX	27kV 2-way 1-phase Interrupter	36	30	30	310
	PMVI1-21-38-XX	38kV 2-way 1-phase Interrupter	36	30	30	310
Three-phase Vacuum Interrupters						
	PMVI1-21-15-XX-3YY	15kV 2-way 3-phase Interrupter - Single-phase Trip Selectable - Ext. Control	36	48	42	680
	PMVI1-21-27-XX-3YY	27kV 2-way 3-phase Interrupter - Single-phase Trip Selectable - Ext. Control	36	48	42	680
	PMVI1-21-38-XX-3YY	38kV 2-way 3-phase Interrupter - Single-phase Trip Selectable - Ext. Control	36	48	42	680
Three-phase Multi-way Arrangements (Fuses are not included and must be ordered separate)						
	ESD312-E-XX	8.3kV 2-way 3-phase - One Fused Tap	36	48	42	610
	ESD322-F-XX	15kV 2-way 3-phase - One Fused Tap	36	48	42	610
	ESD332-G-XX	23kV 2-way 3-phase - One Fused Tap	36	48	42	610
	ESD312-P-XX	15kV 2-way 3-phase - One Vacuum Interrupter Tap	36	48	42	680
	ESD322-P-XX	27kV 2-way 3-phase - One Vacuum Interrupter Tap	36	48	42	680
	ESD312-TE-XX	8.3kV 2-way 3-phase - One Source Switch, One Fused Tap	36	48	42	750
	ESD322-TF-XX	15kV 2-way 3-phase - One Source Switch, One Fused Tap	36	48	42	750
	ESD332-TG-XX	23kV 2-way 3-phase - One Source Switch, One Fused Tap	36	48	42	750
	ESD313-TEE-XXX	8.3kV 3-way 3-phase - One Source Switch, Two Fused Taps	54	48	42	1050
	ESD323-TFF-XXX	15kV 3-way 3-phase - One Source Switch, Two Fused Taps	54	48	42	1050
	ESD333-TGG-XXX	23kV 3-way 3-phase - One Source Switch, Two Fused Taps	54	48	42	1050
	ESD313-TTE-XXX	8.3kV 3-way 3-phase - Two Source Switches, One Fused Tap	54	48	42	1050
	ESD323-TTF-XXX	15kV 3-way 3-phase - Two Source Switches, One Fused Tap	54	48	42	1050
	ESD333-TTG-XXX	23kV 3-way 3-phase - Two Source Switches, One Fused Tap	54	48	42	1050
	ESD313-TPP-XXX	15kV 3-way 3-phase - One Source Switch, Two Vacuum Interrupter Taps	54	48	42	1160
	ESD323-TPP-XXX	27kV 3-way 3-phase - One Source Switch, Two Vacuum Interrupter Taps	54	48	42	1160

TABLE 2 - OVERCURRENT PROTECTION SWITCHGEAR (Cont'd)

Diagram	Catalog Number	Description	W	H	D	Wt.
PADMOUNT (Cont'd)						
	ESD313-TTP-XXX	15kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	54	48	42	1160
	ESD323-TTP-XXX	27kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	54	48	42	1160
	ESD314-TEEE-XXXX	8.3kV 4-way 3-phase - One Source Switch, Three Fused Taps	54	48	42	1170
	ESD324-TFFF-XXXX	15kV 4-way 3-phase - One Source Switch, Three Fused Taps	54	48	42	1170
	ESD334-TGGG-XXXX	23kV 4-way 3-phase - One Source Switch, Three Fused Taps	54	48	42	1170
	ESD314-TTEE-XXXX	8.3kV 4-way 3-phase - Two Source Switches, Two Fused Taps	64	48	42	1240
	ESD324-TTFF-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Fused Taps	64	48	42	1240
	ESD334-TTGG-XXXX	23kV 4-way 3-phase - Two Source Switches, Two Fused Taps	64	48	42	1240
	ESD314-TTTE-XXXX	8.3kV 4-way 3-phase - Three Source Switches, One Fused Tap	54	48	42	1310
	ESD324-TTTF-XXXX	15kV 4-way 3-phase - Three Source Switches, One Fused Tap	54	48	42	1310
	ESD334-TTTG-XXXX	23kV 4-way 3-phase - Three Source Switches, One Fused Tap	54	48	42	1310
	ESD314-TPPP-XXXX	15kV 4-way 3-phase - One Source Switch, Three Vacuum Interrupter Taps	54	48	42	1380
	ESD324-TPPP-XXXX	27kV 4-way 3-phase - One Source Switch, Three Vacuum Interrupter Taps	54	48	42	1380
	ESD314-TTPP-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	54	48	42	1380
	ESD324-TTPP-XXXX	27kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	54	48	42	1380
	ESD314-TTTP-XXXX	15kV 4-way 3-phase - Three Source Switches, One Vacuum Interrupter Tap	54	48	42	1380
	ESD324-TTTP-XXXX	27kV 4-way 3-phase - Three Source Switches, One Vacuum Interrupter Tap	54	48	42	1380

ACCESSORIES	
Catalog Number	**Description**
MVI-STP	Adapter for Connection Between MVI Units with Internal Control, and a Computer for Programming/ Viewing Settings
MO120A	120 Vac Motor Operator for 3-phase Units For Multi-way Units Replace **T** with **V** for a Motor Operated Switch For Multi-way Units Replace **P** with **W** for a Motor Operated Interrupter
MO12D	12-24Vdc Motor Operator for 3-phase Units For Multi-way Units Replace **T** with **U** for a Motor Operated Switch For Multi-way Units Replace **P** with **R** for a Motor Operated Interrupter
UAD	12 Vdc Cleveland Price Motor Operator and Control with SCADA Provisions For Multi-way Units Replace **T** with **Q** for a Motor Operated Switch. For Multi-way Units Replace **P** with **Z** for a Motor Operated Interrupter
PS	Parking Stand for MVI1, MVI3, MVS1, MVS3 or PMVI1Between Bushings
PS6	Double Parking Stand for MVI3 or MVS3
BT	Bail Tab Plate Installed

NOTES:
Weights and Dimensions are Approximate
X=6 for 600 Amp or 2 for 200 Amp
YY=10; or 20; or 30 For Different Electronic Controls
Accessories should be added as suffix to the main catalog number for Non-Multi-Way Units.
Other Configurations are Available. Please Consult Your Local Representative on Configurations Not Shown Here.

SOURCE TRANSFER

Products

The main application of source transfer packages is to transfer a load from one power source to another. In some cases, when the load is not critical, this is done manually using a switching device (see switching section). In the case of critical loads such as hospitals, financial institutions, manufacturing facilities, and any other load that would have computer-related equipment, a fast transfer is required between the main (preferred) source and the backup (alternate) source. It is important for the automatic source transfer not to affect the operation of the load because any interruption of the business process translates into costly lost production and setup time. The preferred and backup sources are normally utility feeders, but in some cases the backup source may be a generator.

Elastimold Switchgear offers automatic transfer (AT) packages capable of performing a full transfer in less than 2 seconds. The system monitors the voltage on the preferred source, and initiates a transfer when the voltage is below the acceptable level for the customer. At this point the preferred source is disconnected and the alternate source connected. AT packages include:

- Two three-phase MVS switches with motor operators (one for the preferred source, and one for the alternate source)
- Six Voltage sensors (one for each phase of the MVS switches). These sensors monitor voltage on every phase and feed their output to the AT control.
- An AT control which receives the output from the voltage sensors, and determines if there is a loss of voltage. If there is a loss of voltage, the AT control sends an OPEN signal to the preferred source MVS, and a CLOSE signal to the alternate source MVS. When the voltage is restored the system transfers back to its normal state, either automatically or at a set time.
- One or two protected taps. These can be MCAN or MVI modules, which protect the critical load against overcurrent. Solid taps are also available.

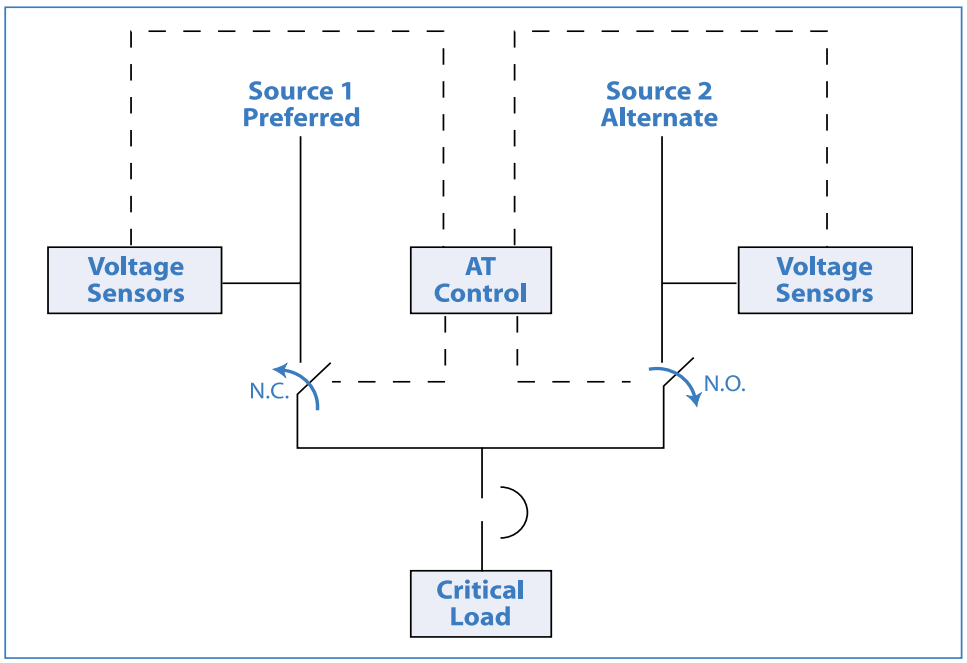
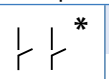
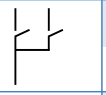
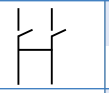
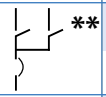
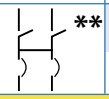
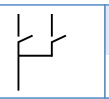
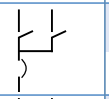
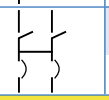
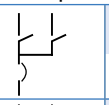
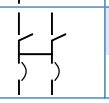
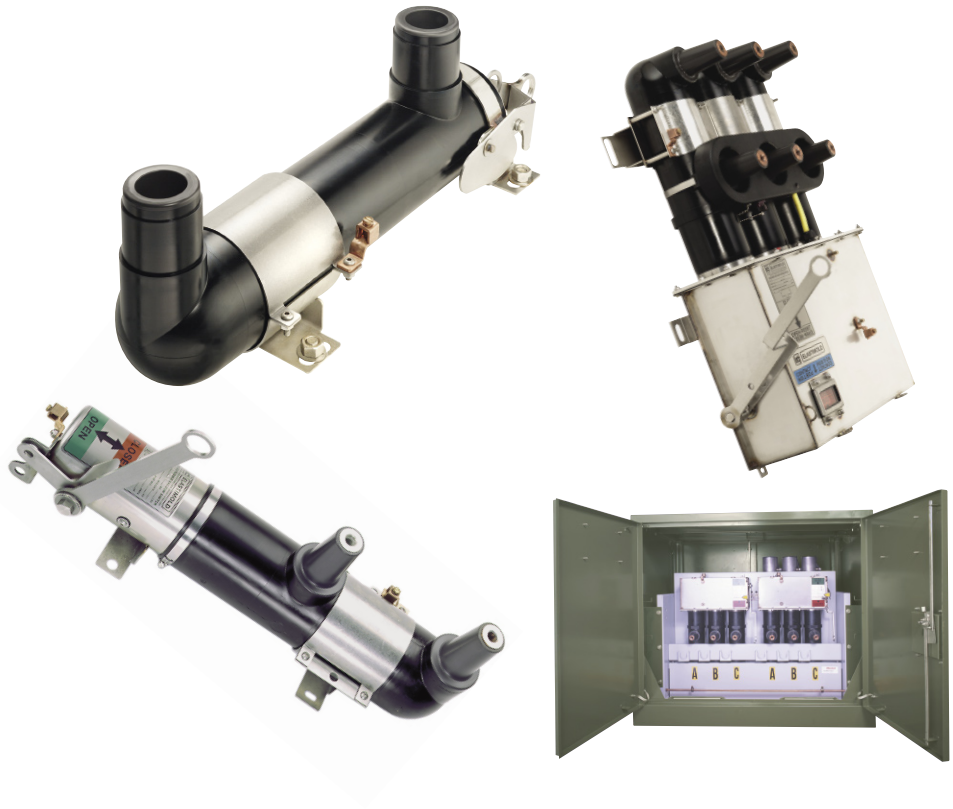


TABLE 3 - AUTOMATIC SOURCE TRANSFER

Diagram	Catalog Number	Description	W	H	D	Wt.
SUBSURFACE (2-MVS3 Interconnected with Multi-point Junctions. For Wall/Floor Mounting.)						
Three-phase Multi-way Arrangements						
 *	ATS312-AA-XX	15kV 2-way 3-phase - Two Source Switches, Customer Connected Tap	21	19	26	60
	ATS322-AA-XX	25kV 2-way 3-phase - Two Source Switches, Customer Connected Tap	21	19	26	60
	ATS313-AAB-XXX	15kV 3-way 3-phase - Two Source Switches, One Solid Tap	22	79	21	300
	ATS323-AAB-XXX	25kV 3-way 3-phase - Two Source Switches, One Solid Tap	22	79	21	300
	ATS314-AABB-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Solid Taps	22	79	21	300
	ATS324-AABB-XXXX	25kV 4-way 3-phase - Two Source Switches, Two Solid Taps	22	79	21	300
 **	ATS313-AAP-XXX	15kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	22	79	21	450
	ATS323-AAP-XXX	25kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	22	79	21	450
 **	ATS314-AAPP-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	22	79	21	600
	ATS324-AAPP-XXXX	25kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	22	79	21	600
VAULT (All Ways Mounted onto a Common Bus, and Supported by a Free-Standing Frame. For Floor Mounting.)						
Three-phase Multi-way Arrangements						
	ATV313-AAB-XXX	15kV 3-way 3-phase - Two Source Switches, One Solid Tap	48	36	22	620
	ATV323-AAB-XXX	25kV 3-way 3-phase - Two Source Switches, One Solid Tap	48	36	22	620
	ATV313-AAP-XXX	15kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	48	36	22	750
	ATV323-AAP-XXX	25kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	48	36	22	750
	ATV314-AAPP-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	48	36	22	880
	ATV324-AAPP-XXXX	25kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	48	36	22	880
PADMOUNT						
Three-phase Multi-way Arrangements						
	ATD313-AAP-XXX	15kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	54	42	48	1160
	ATD323-AAP-XXX	25kV 3-way 3-phase - Two Source Switches, One Vacuum Interrupter Tap	54	42	48	1160
	ATD314-AAPP-XXXX	15kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	54	42	48	1380
	ATD324-AAPP-XXXX	25kV 4-way 3-phase - Two Source Switches, Two Vacuum Interrupter Taps	54	42	48	1380

ACCESSORIES	
Catalog Number	**Description**
PS	Parking Stand for MVI3, MVS3
MPS	Parking Stand for MVI3 on Mechanism Cover

NOTES:
X=6 for 600 Amp or 2 for 200 Amp
Y=10, 20, 30 For Different Electronic Controls
Accessories Should Be Added as a Suffix to the Main Catalog Number Unless Noted Otherwise.
Other Configurations are Available. Please Consult Your Local Representative on Configurations Not Shown Here.
* Dimensions for One Switch
** Dimensions for 2-MVS3 Interconnected with Multi-Point Junctions. MVIs are Mounted Elsewhere in the Vault.



Protection and Control

UNDERGROUND DISTRIBUTION SWITCHGEAR

Thomas&Betts

Thomas & Betts Corporation
T&B Utility
8155 T&B Blvd.
Memphis, TN 38125
Tel: (800) 888-0211 x5016
Fax: ((800)888-0690
www.tnb.com

CATALOG # PC-SWITCHGEAR-0903