Advanced Power Solutions
Switchboard Apparatus, Inc.

PRODUCT GUIDE

SlimVAC™ Arc Resistant Switchgear

Product Overview

SlimVAC™ Arc Resistant Metal-Clad Switchgear provides the smallest footprint in the industry, and unparalleled personnel protection for even the most demanding metal-clad switchgear applications. The SlimVAC™ design allows for a high level of customization to meet specific project requirements, and is ideal for use in distribution systems where the reliable delivery of power is essential.

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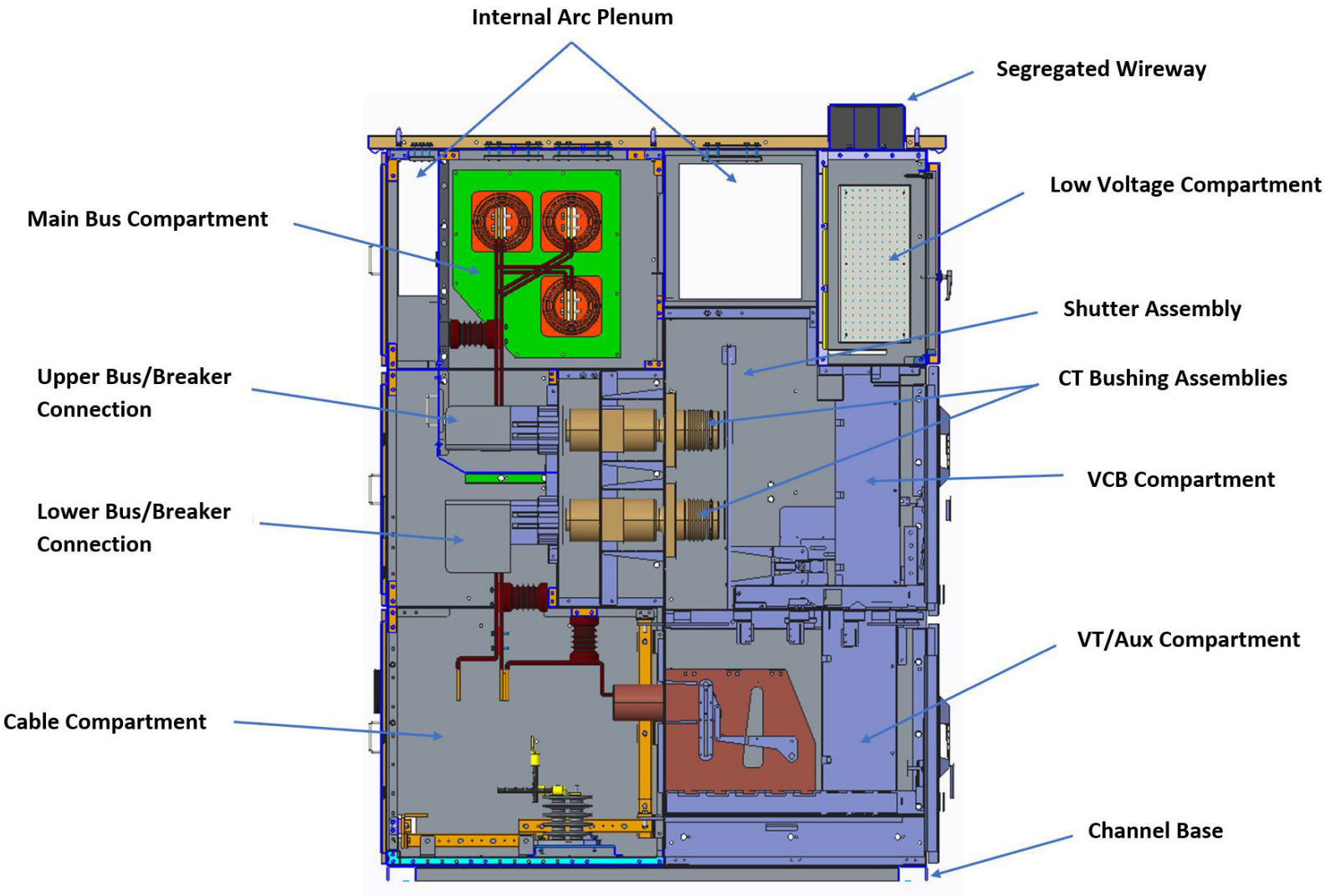
Certifications and Standards

SlimVAC™ is a UL listed product for Metal-Clad Switchgear over 1000V and classified as Arc Resistant. It has been designed, tested and certified to IEEE C37.20.2 and C37.20.7 as well as NEMA C37.55.

Product Ratings

Voltage Class	**5kV**	**15kV**
Rated nominal voltages	2.4, 4.16, 4.76 (kV)	7.5, 8.4, 12, 12.47, 13.2, 13.8, 14.4, 15 (kV)
Short term current (rms)	25, 31.5 (kA)	25, 31.5 (kA)
Frequency	60Hz	60Hz
Continuous Current	1200, 2000 (A)	1200, 2000 (A)
Lightning Impulse (BIL)	60 (kV)	95 (kV)
Arc-Resistance	2, 2B	2, 2B

Typical Enclosure Arrangement



Compartment Types and Features

Center Breaker Compartment

- Integral Breaker Racking System with through door racking and 3 breaker positions; Disconnect-Test-Connect
- Automatic Shutter System to shield primary contacts when breaker is removed or in Disconnected or Test position
- Front Removable CT Bushing Assemblies (with breaker removed) for access to Current Transformers and Terminals
- Up to four Current Transformers per compartment. Available in metering and relay classes, with 1A and 5A secondaries, in any combination.

Lower VT/AUX Compartment

- Truck mounted, fully withdrawable roll-in style VT assembly with direct bus connection
- Discharging interlock to allow for safe removal of VT compartment through outer door
- Utilizes integral fusing. Fuse types; Bussman CAVH Series and Mersen 9560 Series, EJ-1

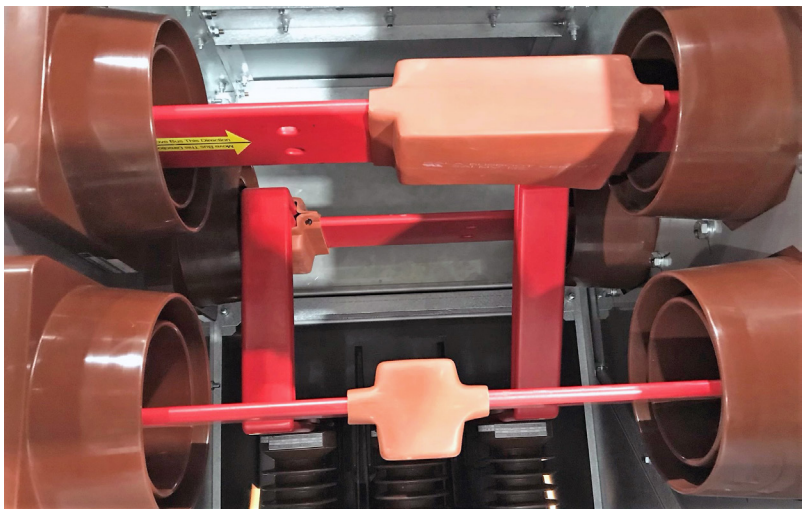
Compartment Types and Features

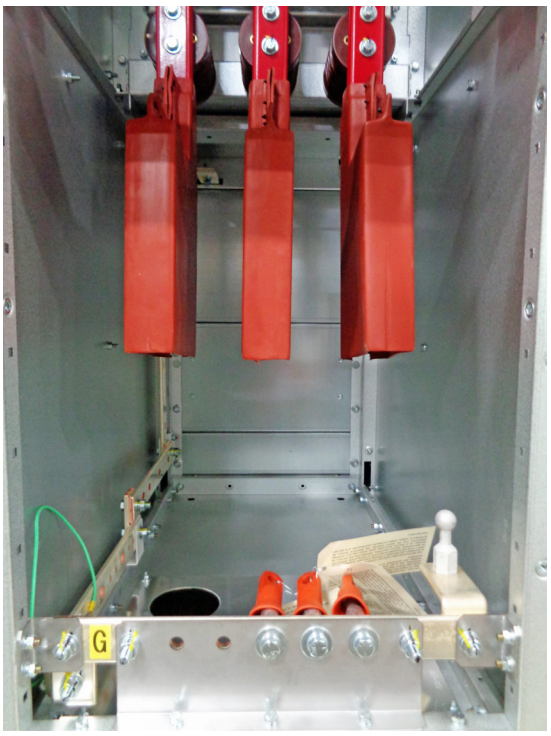
Bus Compartment

- Fully isolated line and load bus compartments with removable access panels for maintenance and installation
- Bus shipped installed with temporary hardware to allow for ease of installation for shipping splits
- Heavy Duty side wall bushings for adequate support and to guide bus for field linking and installation

Rear Cable Compartment

- Inspection windows for all cable connections
- Top, Bottom and Middle compartments accessible through dedicated removable rear compartment covers
- Accessible Ground bus, provisions for grounding ball studs
- Removable Cable access plates; optionally pre-punched for pre-determined bushing sizes and locations
- Infrared Scanning Ports available as an option for all cable connection points

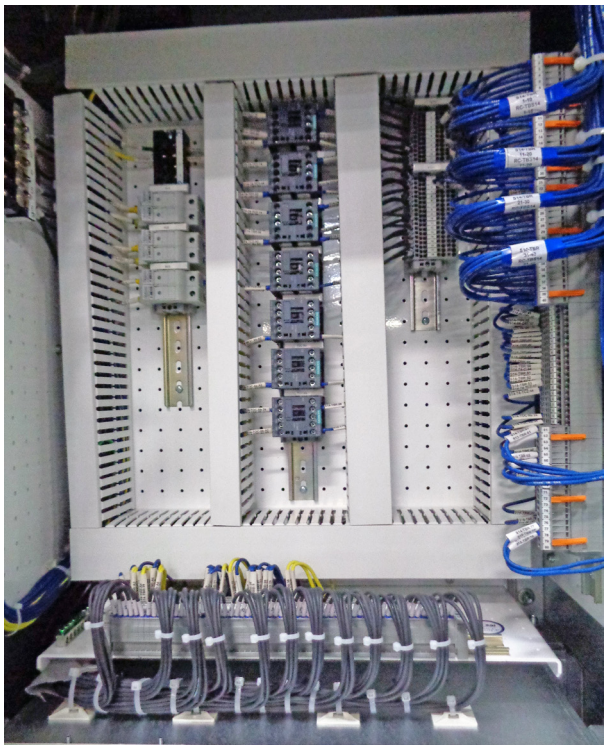




Compartment Types and Features

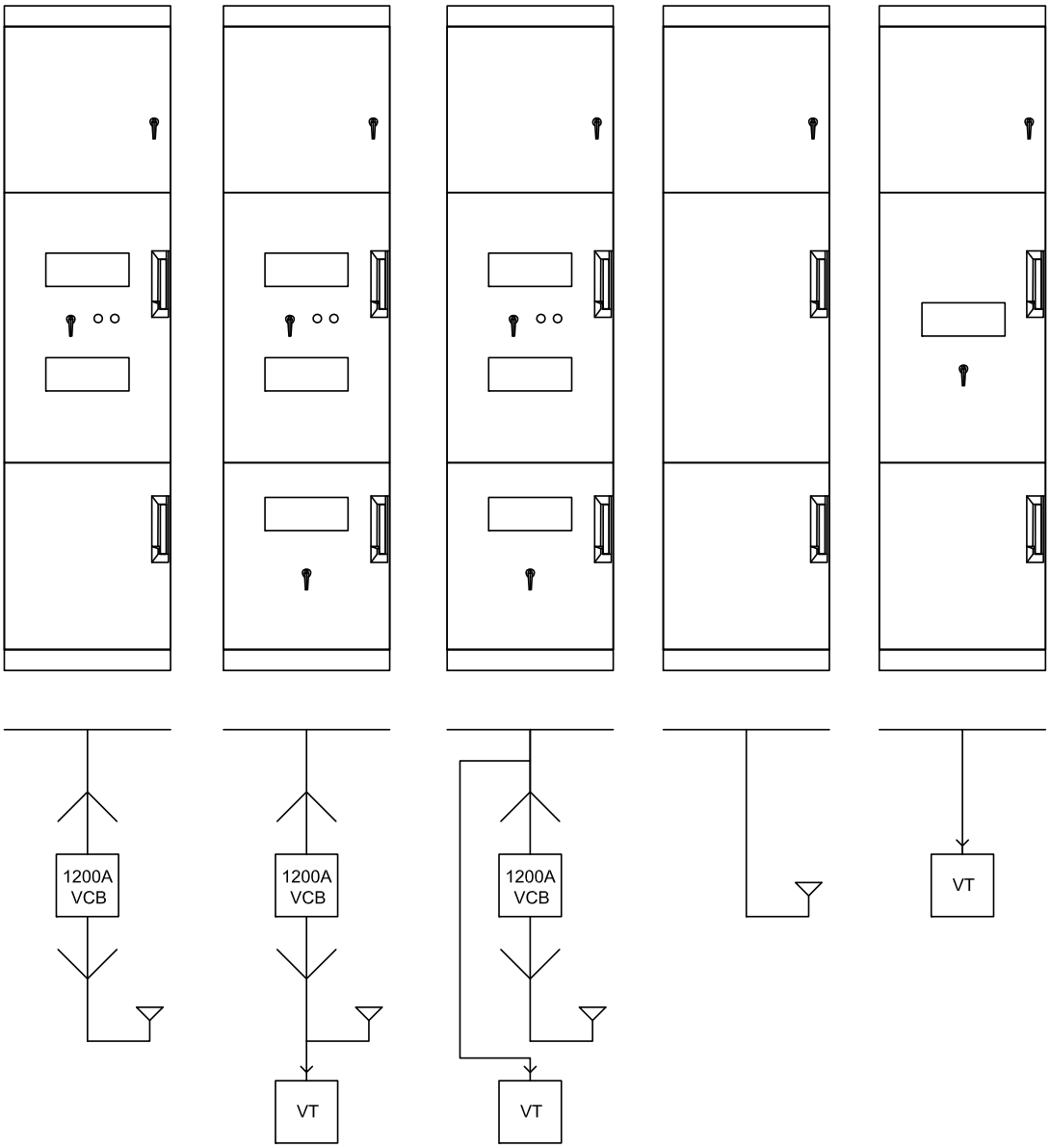
Low Voltage Compartment/Wireway

- Standardized arrangement for easy field interconnection, all outgoing connection points located in common right-hand side terminal block utilizing plug-in connections
- Multiple access points to overhead integrated wireway
- Segregated wireway for isolation of AC, DC and Communication wires
- Removable Access panels from top for ease of routing wires and for landing fixed conduits for control wires



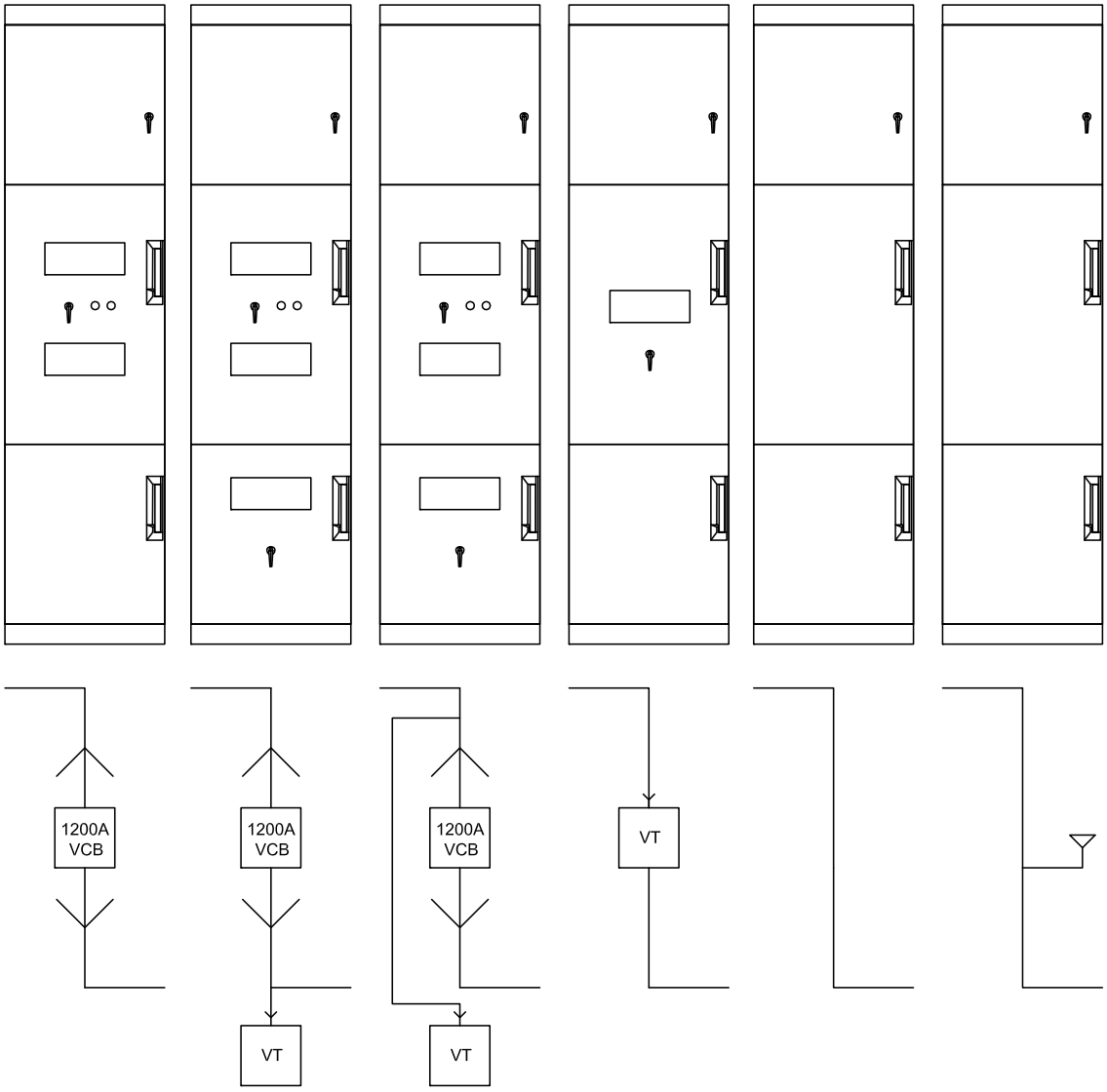
Common Configurations

Enclosure Width:	24”	24”	24” or 30”	24”	24”
Bus Ratings:	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A
Voltage Class:	5kV or 15kV	5kV or 15kV	5kV(24”) or 15kV(30”)	5kV or 15kV	5kV or 15kV
Breaker Ratings:	1200A	1200A	1200A	N/A	N/A



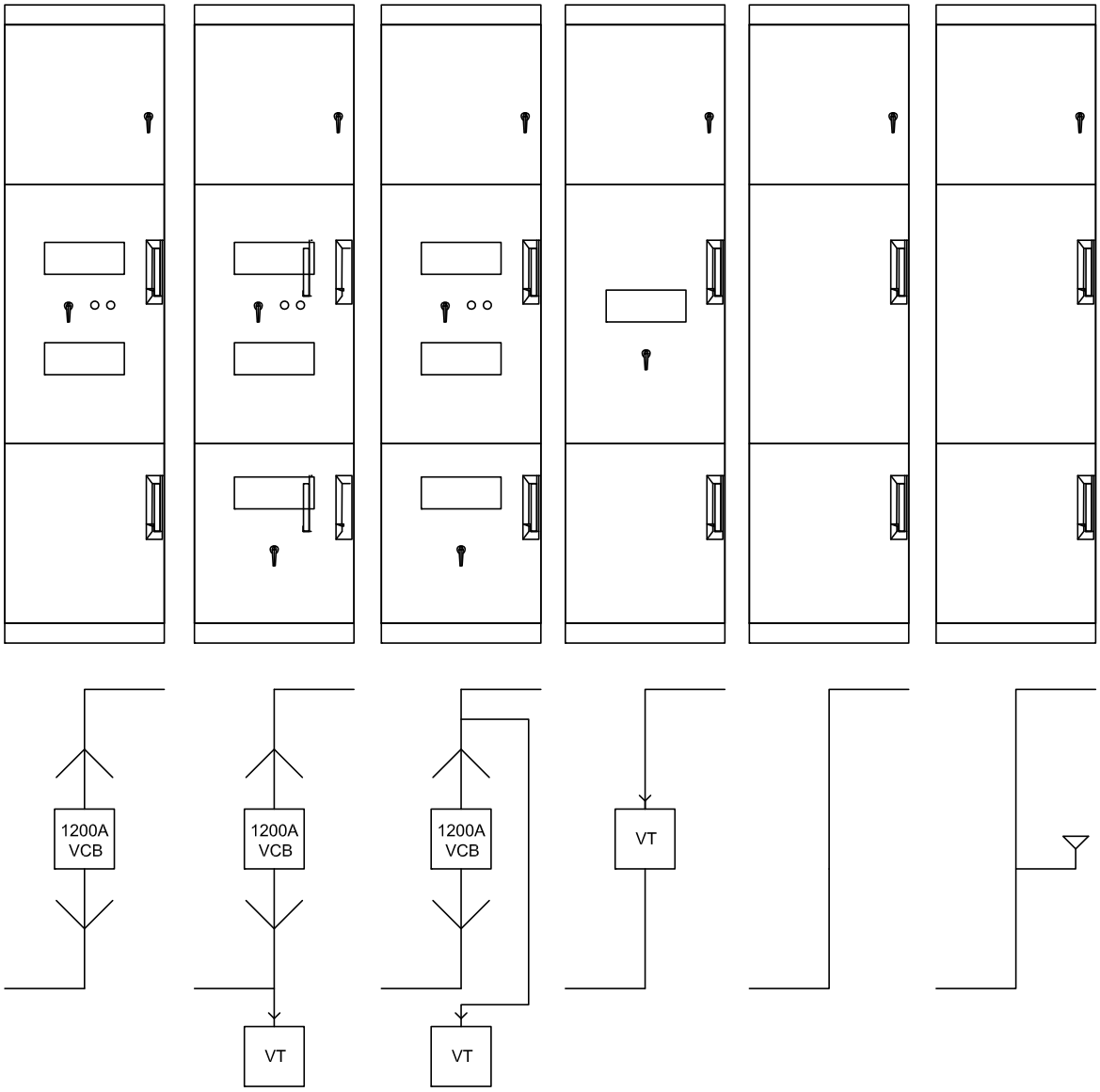
Common Configurations

Enclosure Width:	24”	24”	24” or 30”	24”	24”	24”
Bus Ratings:	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A
Voltage Class:	5kV or 15kV	5kV or 15kV	5kV(24”) or 15kV(30”)	5kV or 15kV	5kV or 15kV	5kV or 15kV
Breaker Ratings:	1200A	1200A	1200A	N/A	N/A	N/A



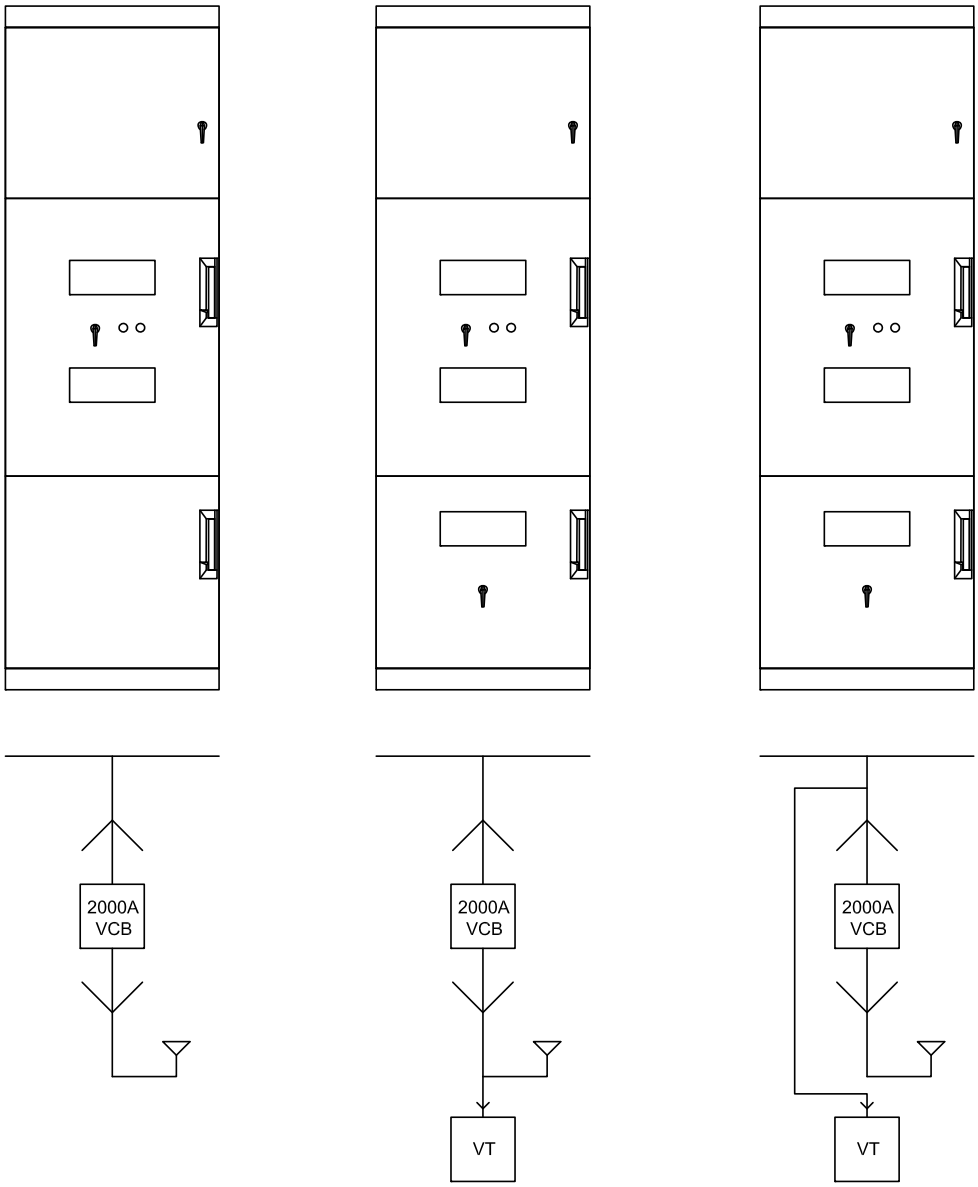
Common Configurations

Enclosure Width:	24”	24”	24” or 30”	24”	24”	24”
Bus Ratings:	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A	1200 or 2000A
Voltage Class:	5kV or 15kV	5kV or 15kV	5kV(24”) or 15kV(30”)	5kV or 15kV	5kV or 15kV	5kV or 15kV
Breaker Ratings:	1200A	1200A	1200A	N/A	N/A	N/A



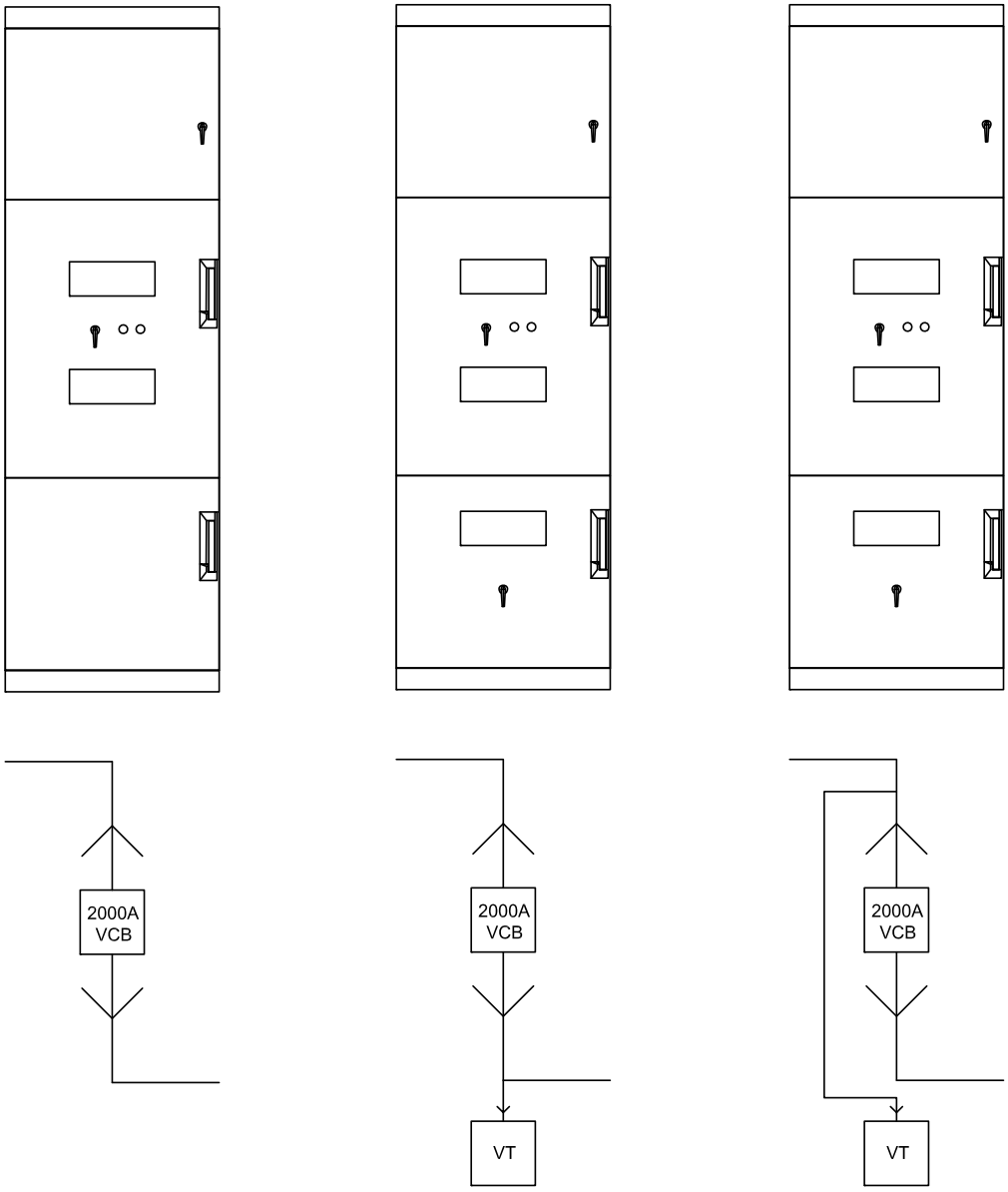
Common Configurations

Enclosure Width:	30”	30”	30”
Bus Ratings:	2000A	2000A	1200 or 2000A
Voltage Class:	5kV or 15kV	5kV or 15kV	5kV or 15kV
Breaker Ratings:	2000A	2000A	2000A



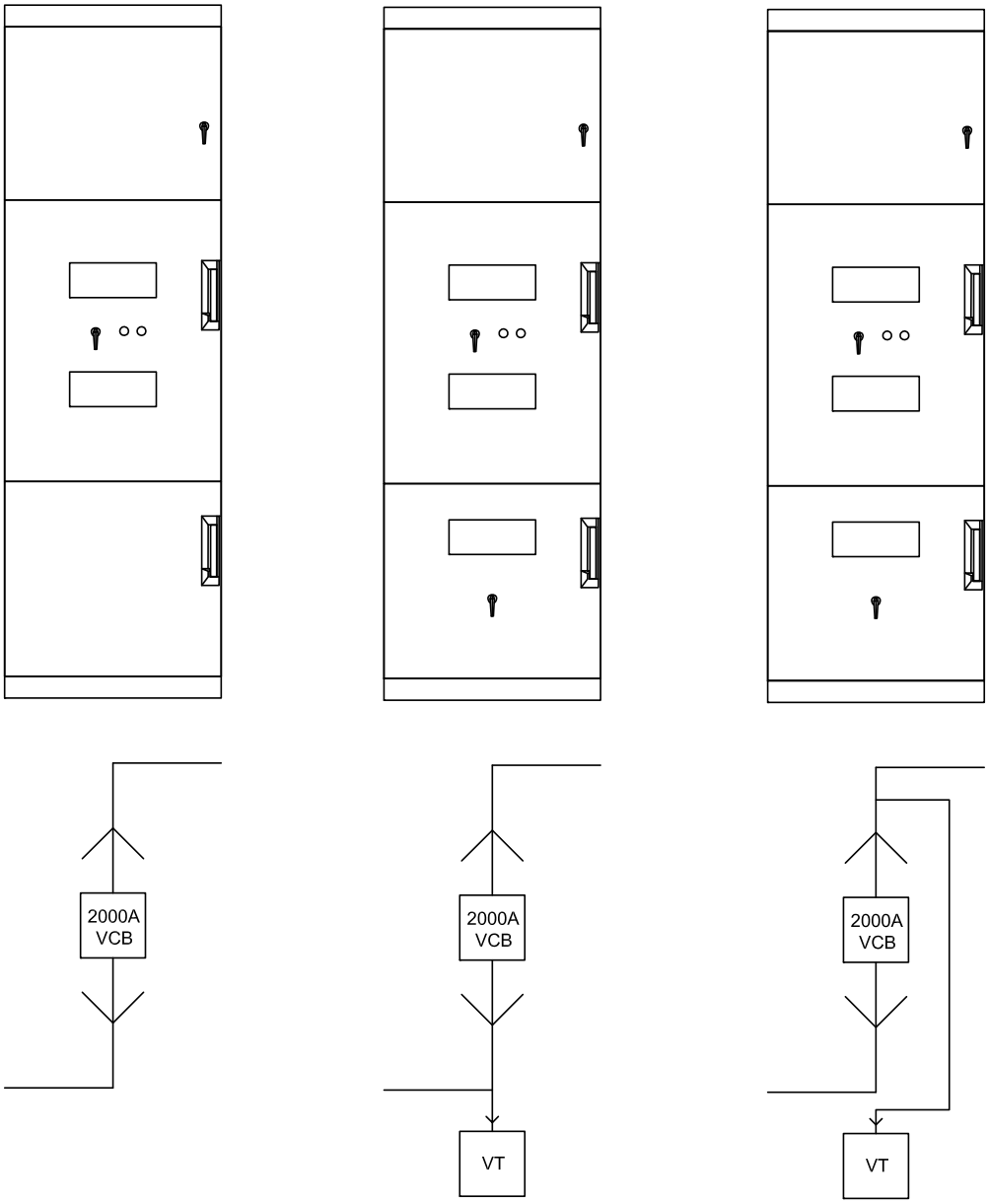
Common Configurations

Enclosure Width:	30”	30”	30”
Bus Ratings:	2000A	2000A	1200 or 2000A
Voltage Class:	5kV or 15kV	5kV or 15kV	5kV or 15kV
Breaker Ratings:	2000A	2000A	2000A

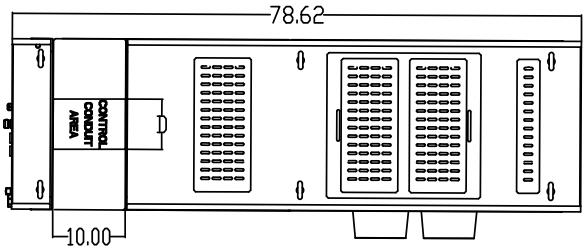


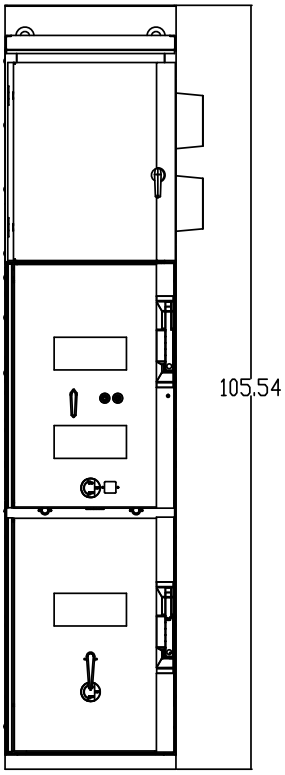
Common Configurations

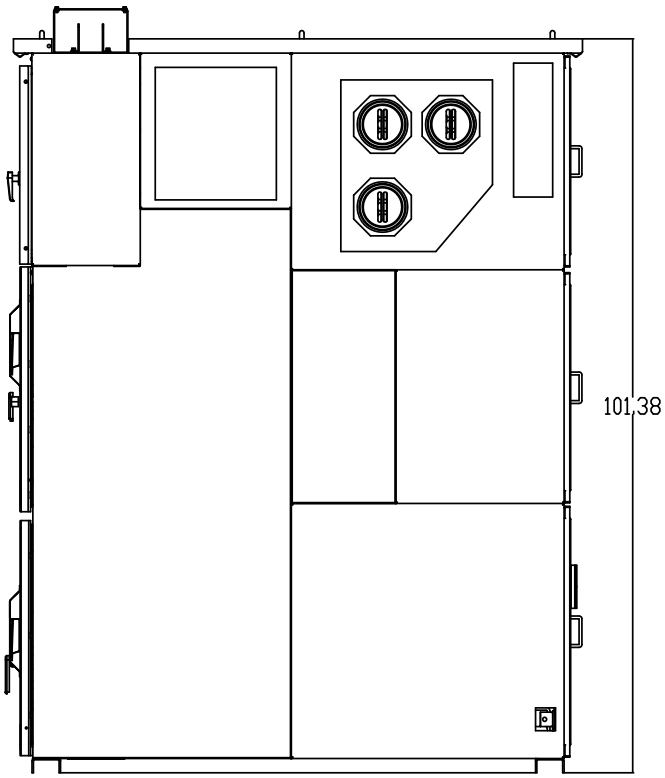
Enclosure Width:	30”	30”	30”
Bus Ratings:	2000A	2000A	1200 or 2000A
Voltage Class:	5kV or 15kV	5kV or 15kV	5kV or 15kV
Breaker Ratings:	2000A	2000A	2000A



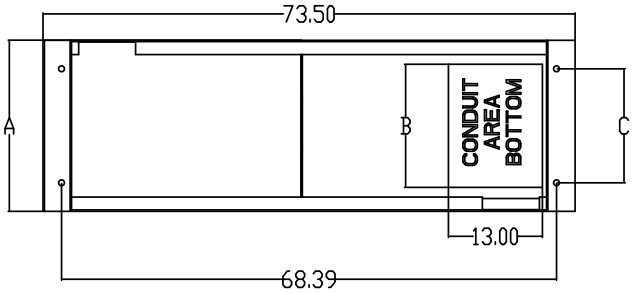
Dimensions







DIMENSION	24" WIDE SECTION	30" WIDE SECTION
A	23.63" (600mm)	29.53" (750mm)
B	17.00" (432mm)	22.91" (682mm)
C	15.75" (400mm)	21.64" (550mm)
D	5.91" (150mm)	11.81" (300mm)



Circuit Breaker Ratings

LSIS - Vacuum Circuit Breaker

Breaker Model Number	VL-05H 25		VL-05H 32		VL-15H 25		VL-15H 32	
Rated Voltage (kV)	4.76		4.76		15		15	
Rated Current (A)	1200	2000	1200	2000	1200	2000	1200	2000
Pole Distance (in)	5.91	8.27	5.91	8.27	5.91	8.27	5.91	8.27
Rated Interrupting Current (kA)	25		31.5		25		31.5	
Rated Short-Time Current (kA)	31.5/2s							
Rated Making Current (kA)	81.9							
Rated Interrupting Time (cycle)	3							
Insulation Withstand Impulse 1.2x50μs (kV peak)	60				95			
Mechanical Endurance (Operations)	10,000							
Rated Frequency (Hz)	60							
Rated Closing Control Voltage (V)	DC24~30, DC48~60, DC110, DC125, DC220, AC48, AC100~130, AC220~250							
Rated Trip Control Voltage (V)	DC24~30, DC48~60, DC110, DC125, DC220, AC48, AC100~130, AC220~250							
Aux. Contacts	4a/4b, 10a/10b							

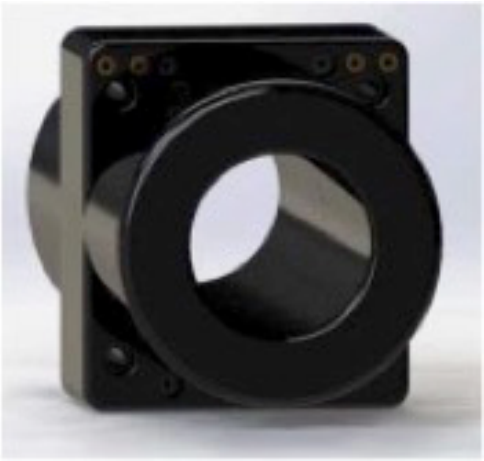
Instrument Transformers

Current Transformers

Current transformers are available in a wide range of ratings and accuracy classes and are manufactured to order. Current transformers are mounted in the vacuum circuit breaker compartment on the integral bushing. All current transformers are 600V indoor class, 10kV BIL, (50-400Hz) rated. Dual core CT's can be supplied on both the upper and lower bushings for all circuit breakers. Available configurations are single core metering, single core relay, dual core (1 relay and 1 metering), dual core metering and dual core relay class. Dual core current transformers are capable of having different primary and secondary current ratios, for example, an 800A:5A C200 relay class coil can be supplied together with a 400A:1A metering coil.

Voltage Transformers

Voltage Transformers are rated for up to 15,000V systems with 110kV BIL ratings. Primary voltage ratios range from 2,400V to 15,000V with 120VAC secondary voltages. The voltage transformers have a 0.3 accuracy class at W, X, M and Y burdens and a 1.2 accuracy class at Z burden. Primary terminals are spring contacts for encased fuses, suitable for use with Bussman CAVH and Mersen 9560, EJ-1 fuses. The full assembly is truck mounted for ease of installation and insertion through a closed door via the integral racking mechanism and safety interlocking system.



Accessories and Options

SlimVAC™ is available with the following accessories and options

- Front or Rear Accessible Cable Connections
- Current Transformers, High accuracy relay class and metering class options
- Truck Mounted Voltage Transformers
- Fully Customized Control Systems
- Silver plated and insulated copper bus bar, optional tin plating
- Breaker/Voltage Transformer Lift Truck
- Ground and Test Devices
- Lighting Arrestors
- Ground Studs
- Infrared Scanning Windows
- Mimic Bus
- Integrated Skid for fully assembled line-up prior to shipment

Accessories and Options

Breaker and VT Truck

SAI offers a unique manual circuit breaker and voltage transformer installation and removal truck. This device allows for small aisle access and clearances in front of the equipment for safe and easy installation and removal of both the circuit breakers and voltage transformer trucks.

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