



PowerSafe Arc-Resistant Switchgear

TECHNICAL AND APPLICATION GUIDE

Spike Electric's Arc-Resistant Switchgear is designed for safety and reliability. The PowerSafe is capable in handling electrical arcs, a common hazard in electrical systems. This switchgear includes arc chutes to direct and suppress arcs in a safe manner. It's built to protect against faults with specialized relays that monitor and react to abnormal electrical conditions. This robust system suits environments demanding high safety ensuring continuity and protection in any power system application.



Valued Partner Acknowledgment Statement: Spike Electric Controls has partnered with ABB as a Value Add Partner, blending ABB's cutting-edge technology with our expertise in electrical solutions to elevate industry standards. This partnership aims to globally enhance system efficiency, reliability, and sustainability, delivering sophisticated electrification solutions to our customers. Additionally, this alliance includes dual branding of our Switchgear products and extends ABB's warranties through Spike's comprehensive Switchgear solutions, ensuring quality and reliability.



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Green Energy Efficient: Spike Electric's PowerSafe Arc-Resistant Switchgear is designed to prioritize energy efficiency and sustainability in power distribution systems. It reduces operational costs and extends system longevity by mitigating electrical hazards and lowering incident energy levels. The product's modular design minimizes environmental impact through efficient use of materials and advanced manufacturing processes. Committed to sustainable energy management, this switchgear is a key



AMERICAN-MADE EXCELLENCE

Our Commitment to the Build America Buy America Act

At Spike Electric, we take pride in making switchgear solutions. They are at the forefront of tech innovation. They are also deeply rooted in our commitment to American manufacturing excellence. The Build America Buy America Act aims to boost American industry. It does this by requiring federally funded infrastructure projects to use American-made products. We are a top provider of switchgear solutions. They meet and exceed these requirements.

Why Choose American-Made Switchgear?

Our switchgear solutions are made in the United States. They adhere to the highest standards of quality and reliability. The BABA Act stresses using American-made iron, steel, and products and construction materials. This is a standard that Spike Electric not only meets but proudly champions (U.S. Department of Commerce) (The Department of Energy's Energy.gov).

Supporting Local Economies: By choosing our American-made switchgear, you get a great product. You also support the American economy, protect local jobs, and help build a sustainable manufacturing sector. This sector is vital for the nation's infrastructure (Rural Development).

Compliance and Standards: Spike Electric follows the BABA Act. It ensures that our products are not just made in America. They also embody the spirit of American innovation and craftsmanship. Our switchgear solutions meet the tough standards of the IEEE, ANSI, and UL. They ensure that you get safe, efficient products. They are ready to meet the needs of today and tomorrow (U.S. Department of Commerce) (The Department of Energy's Energy.gov) (Rural Development).

Our Pledge to You

Spike Electric is dedicated to following the Build America Buy America Act. They provide switchgear for infrastructure projects across the nation. Their solutions are built on the foundation of American excellence. You may be involved in utility, industrial, or commercial projects. We are committed to US manufacturing. It ensures that you get products with unmatched quality, reliability, and performance.

Choose Spike Electric for your switchgear needs. See the difference that American-made quality brings to your projects.



PowerSafe Arc-Resistant Switchgear

TECHNICAL & APPLICATION GUIDE

General Overview



PowerSafe is Spike Electric's ANSI Arc-resistant metal-clad switchgear line for short circuit currents up to 63 kA and below at rated maximum voltages of 5 and 15 kV.

Certifications:

PowerSafe Arc-resistant metal-clad switchgear is seismic certified to IBC region D with importance factor of 1.5. The manufacturing location for PowerSafe is ISO 9001 certified. PowerSafe switchgear is available with UL label or as a CSA certified lineup.

Applicable Standards:

PowerSafe is built and tested per IEEE C37.20.2 metal-clad switch-gear construction standards and IEEE C37.20.7 Arc-Resistant.

Arc-Resistant Accessibility Type:

Per NFPA 70E 2015 edition, Table 130.7(c) (15)(A) (a), arc-flash PPE is not required for Arc-resistant switchgear tested in accordance with IEEE C37.20.7 for racking of circuit breakers, the ground and test device or the voltage transformers as long as the following is true: clearing times are less than the rated arc-duration with the prospective fault current not to exceed the Arc-resistant rating of the equipment, the equipment is properly maintained and installed, all equipment doors are closed and secured, all covers are in place and secured, and there is no evidence of impending failure.

Please see the NFPA 70E standard for more information including definitions for properly installed, properly maintained and evidence of impending failure. For 2B accessibility types, the instrument door is allowed to be open, but all other doors must be closed and secured and all other covers must be in place and secured.

Definitions are per IEEE C37.20.7 test guide.

Type 2: Front, sides and rear protection with all doors closed

Type 2B: Front, sides, rear and LV compartment. LV compartment door can be open. All other doors must be closed.

Type 2C: Front, sides, rear and between adjacent compartments and sections within a lineup

Type 2BC: Front, sides, rear, LV compartment and between adjacent compartments and sections within a lineup

PowerSafe is offered in accessibility types 2, 2B.

Construction:

PowerSafe is manufactured of hem bent, 11-gauge steel for superior rust and scratch protection. All non-galvanized steel parts are treated and painted ANSI 61 gray. PowerSafe's modular and bolted frame design with 19, 38, 57 or 95-inch compartment sizes, provides highly flexible design configurations and faster field changes to reduce downtime.

Outdoor Enclosure:

PowerSafe can be supplied in outdoor enclosures or PDC (power distribution center) enclosures.

Breakers:

The PowerSafe platform uses AMVAC and ADVAC breakers. More details, including detailed ratings tables, timing tables and power requirements can be found in the Technical Guide.

Instrument Transformer:

PowerSafe switchgear is available with standard and high burden current transformers. For Ground CT requirements the PowerSafe has different selections based on the required window size to accommodate incoming cables along with bending radiuses.

For potential transformers Spike's PowerSafe equipment offers the following configurations: WYE-WYE, Open Delta, Line to Line, and Line to Ground.

PowerSafe*

Characteristics	Unit	5 kV	8.25 kV	15 kV
Rated nominal voltages	kV	2.4, 4.16, 4.8	4.8, 6.9, 7.2	6.9, 7.2, 8.4, 11, 12, 47, 13.2, 13.8, 14.4
Main bus continuous current	A		1200, 2000, 3000, 4000**	
Short term current (rms)	kA		25, 31.5, 40, 50, 63	
Rated frequency	Hz		50-60	
Low frequency withstand (rms)	kV	19	36	36
Impulse Level (BIL, crest)	kV	60	95	95

** Forced Cooled



Accessories:

PowerSafe switchgear is available with the following accessories:

- Breaker accessory kit including breaker, PT and CPT, racking handle, and lifting yoke
- Lift truck
- Test cabinet and test jumper
- SmartRack™ remote racking device
- Electrically operated ground and test device
- Manually operated ground and test device

Testing:

PowerSafe is design tested per IEEE C37.20.7 and includes the following production tests:

- One second dielectric test of 1800 VAC for control circuits
- Control circuit verification
- Instruments energized via the low voltage winding of instrument transformers and operated through ratings ranges.
- Mechanical check for breaker alignment and interlock verification

Construction

Doors:

PowerSafe Arc-resistant switchgear front doors include sections for the breaker compartment, auxiliary unit compartments, and low voltage (LV) compartments.

Standard configurations for these doors include bolted models for 10-cycle operations across types 2, 2B, 2C, and 2BC, with an alternative multi-point latch (MPL) model available. For arc durations limited to 0.5 seconds, exclusively MPL type doors are used. MPL-equipped doors feature dual viewing windows, in contrast to the single window on bolted versions. The default configuration has doors hinged to the left (from the viewer's perspective), though right-side hinges are offered as an alternative. For accessing high voltage cable sections, the Spike Electric product includes rear doors in several styles:

- Power frequency withstand test from phase to phase and phase to ground
- Static circuit check
- Relays checked for proper performance characteristics
- Ratio and interconnection check for potential transformers
- Polarity verification for current transformers

Factory witness testing is also available on request.

Options:

Mechanical options

- Tin plated bus
- Mimic bus
- Cable supports
- Mechanical trip on breaker doors
- IR windows (IRISS or Fluke)
- Asset health monitoring of PD, bus temp, and humidity
- REA or UFES active arc protection

Electrical options

- Separate or common pull-out fuse block or molded case circuit breaker for trip and close coil protection
- Maximum 20% spare terminal blocks
- Phase bus marking labels
- Instrument door ground strap
- 12 or 10 AWG CT wiring

Arrangement Rules:

Every lineup must contain at least one (1) 66.5-inch instrument compartment for every seven (7) in order to provide a path to the plenum for arc ventilation.

2000 A lineups require at least one (1) 57-inch instrument compartment for every two (2) 2000 A breakers in order to provide a path to the plenum for heat ventilation

CPTs greater than 15 kVA single-phase require a draw-out fuse unit with stationary mounted CPT.

4000 A breakers must have located, in their own frame, a 66.5-inch instrument compartment directly above the breaker.

Divided doors for upper and lower compartments, both hinged and bolted

An alternative version of bolted, non-hinged divided doors

Both the front and rear doors are crafted from durable 11-gauge steel with a painted finish. To enhance security, padlock fixtures are installed on all doors, enabling them to be securely locked to restrict unauthorized compartment access. Specifically, for breaker compartment doors, padlock fixtures are also applied to the racking release mechanism as a safety measure against unintended breaker racking.

Doors for breaker and auxiliary units are designed with windows for visual inspection of the interior's component status and position without opening the door.

Furthermore, these doors may be equipped with SmartRack features to facilitate remote racking operations. However, the compact design precludes the possibility of fitting protection and control devices directly onto the doors of breaker and auxiliary units.



Bolted doors

Circuit Breaker Compartment:

PowerSafe Arc-resistant switchgear compartments for circuit breakers are built with safety as a priority, featuring viewing windows and an automatic latching mechanism for three-position racking without opening the door.

The circuit breakers feature self-aligning, fully automatic primary and secondary contacts, enabling operators to perform the racking operation with the door closed, thus upholding the Arc-resistant capabilities of the switchgear. This design simplifies installation, operation, and maintenance of PowerSafe Arc-resistant switchgear, placing a high emphasis on safety.

Racking Mechanism:

The racking mechanism is distinctive, incorporating a three-position system that allows for operation with the circuit breaker door closed. This mechanism is part of the circuit breaker itself, permitting inspection and maintenance of all moving parts outside the circuit breaker compartment and away from live primary components. A fixed ground contact engages the circuit breaker's grounding contact before the connection of primary and secondary contacts, maintaining this engagement throughout the racking process.

The three racking positions are specified as:

- Disconnected: Both primary and secondary (control) contacts are disconnected.
- Test: Primary contacts are disconnected, while secondary (control) contacts remain connected for breaker testing within the cell.
- Connected: Both primary and secondary (control) contacts are connected.

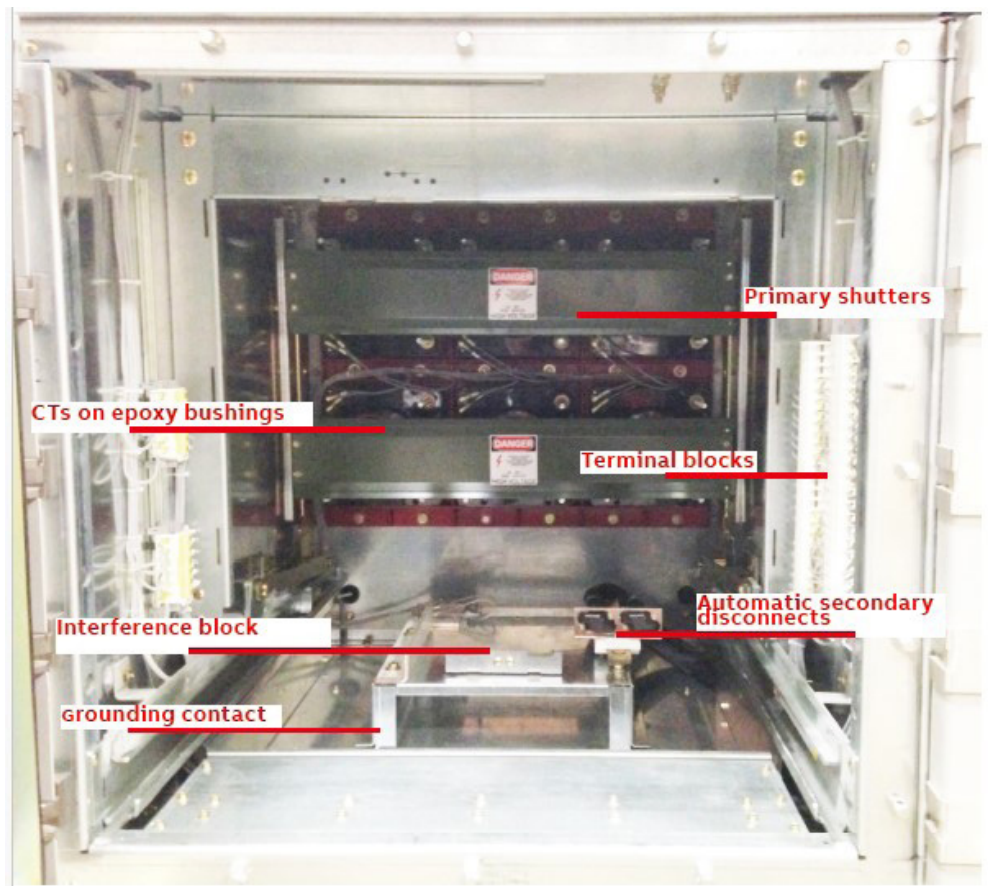
This racking system incorporates all necessary safety interlocks as mandated by ANSI/IEEE standards, ensuring correct sequence and safe operation. The safety interlock system prevents the breaker's operation in any intermediate position and blocks the insertion of a breaker with incorrect ratings.

Secondary Disconnect System:

For control circuit connections, a dual (50-pin) self-aligning secondary disconnect system is a standard specification. The female part is located within the circuit breaker module, with secondary contacts designed to be touch-safe and requiring no manual connection.

Primary Shutters:

Primary shutters are automatically positioned to cover primary contacts when the breaker is in any position other than connected. These shutters can be made from grounded metal or optional Lexan material, with their movement directly linked to the movement of the circuit breaker, independent of springs or gravity. An integrated interlock prevents shutter opening when the circuit breaker is extracted, and this feature can be secured with a padlock for enhanced safety.



Grounded metal barriers cover the terminal blocks located on the side.

These Compartment types barriers have been removed in this photo.

Auxiliary Modules:

PT/CPT/Draw-out fuse compartments

are designed with functionality similar to breaker compartments, featuring an automatic latching mechanism for the secure insertion of auxiliary equipment without opening the door. These compartments share the same interface components as the circuit breaker module, making them compatible with Spike Electric's SmartRack remote racking device. Secondary contacts automatically engage and disengage, with interlocks in place to guarantee correct operation where necessary.

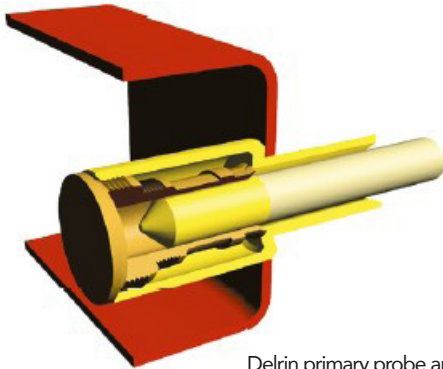
All primary auxiliary compartments, including those for potential transformers, control power transformers, and draw-out fuse compartments, incorporate arc-suppressing Delrin® technology in their primary contact assemblies. A conductor probe tipped with Delrin® inserts into a Delrin® housing with recessed contacts. When a load break occurs, the Delrin® material's exposure to arc-induced heat releases an inert gas that fills the isolation gap, effectively containing and extinguishing the arc.

Control Power Transformer CPT & Draw-out fuses

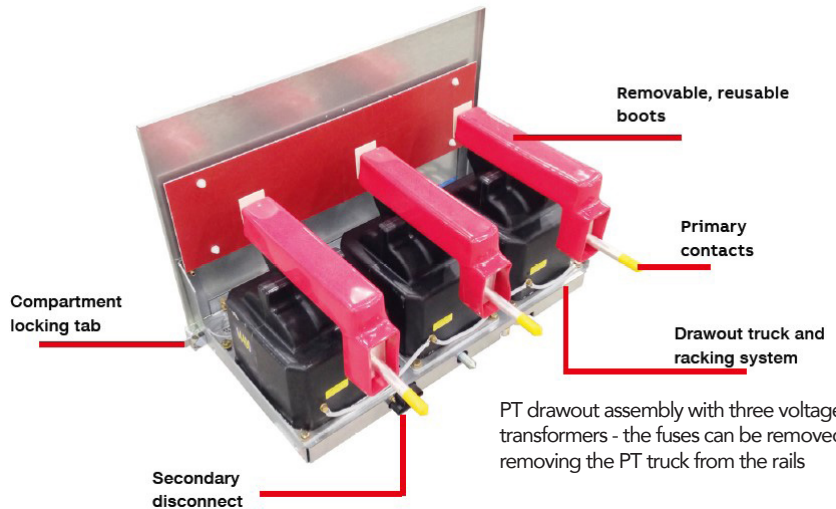
PT draw-out units are designed to slide out

beyond the frame's front on integral rails, facilitating straightforward inspection or replacement of fuses. The Control Power Transformer (CPT) modules and draw-out fuses enhance the switchgear's functionality. CPT modules support the convenient installation and operation of single-phase control power transformers with capacities up to 15kVA, reducing the risk of accidentally interrupting control power.

Fuse modules, on the other hand, can house up to three primary fuses and are used alongside fixed-mount control power transformers. Fixed-mounted CPTs may be installed either in the rear lower cable compartment or at an alternate location.



Delrin primary probe and recessed contact assembly



PT drawout assembly with three voltage transformers - the fuses can be removed without removing the PT truck from the rails

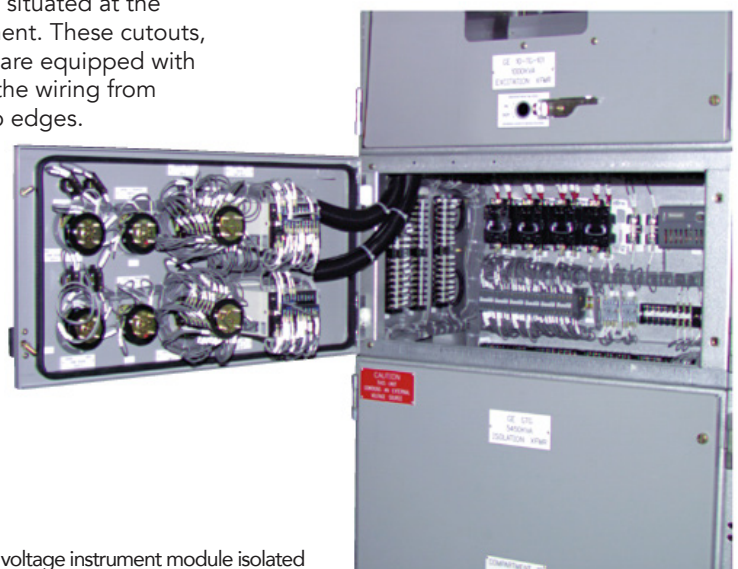
Instrument Compartment:

Spike Electric positions all control and protection apparatus within an exclusive low voltage compartment. Each compartment designated for low voltage instruments is fully isolated and distinctly divided from the high-voltage sections, which enhances safety for personnel involved in operating, controlling, and maintaining auxiliary circuits.

To safeguard and organize wiring, encased plastic wireways are employed, ensuring both protection and a clean layout. This arrangement facilitates the straightforward integration of additional wiring as needed.

For enhanced visibility and ease of use, devices and control switches are affixed to the compartment door. Any devices that do not require immediate manual access are placed within the compartment.

Interconnections between frames are made possible through cutouts situated at the back of the LV compartment. These cutouts, each measuring 4" x 6", are equipped with edge guards to prevent the wiring from being damaged by sharp edges.



Low voltage instrument module isolated for maximum safety when working with low voltage circuits

Bus Compartment:

Main Bus Compartment:

The primary bus bars are made of copper, featuring a design that prevents corona discharge, and come in capacities of 1200, 2000, 3000, and 4000 A (the 4000 A capacity is achieved with the aid of forced air cooling). At the connection points, the bus bars are silver-plated and secured with at least two half-inch SAE grade 5 bolts, and grade 8 bolts for 63kA ensuring secure and optimal connectivity. The torque applied to these connections is meticulously verified using calibrated instruments for both safety and peak performance. The design

of the main bus bar is straight, without any tapering, allowing for easy extensions at either end to accommodate future system expansions.

The insulation of the bus bars employs a technique that effectively prevents any voids or defects, thereby ensuring the insulation's integrity. For ease of maintenance and access, each joint is equipped with removable and reusable insulating boots.

The bus bars are firmly held in place by insulating standoffs, including risers (which connect the stationary primary contacts to the main bus) and runbacks (connections from stationary primary contacts to line or bus terminations). For internal support,

standoffs and inter-frame braces use materials. For internal support, standoffs and inter-frame braces use materials made of epoxy, with porcelain bus supports offered as an optional upgrade. PowerSafe, metal-clad switchgear's design certifications include the use of both polyester and porcelain for primary bus support structures. Detailed drawings are provided to show the placement and dimensions of compartment-mounted primary contact supports, horizontal bus supports between frames, and standoff insulators.

Technical Requirements

Cantilever Strength:	1000# (4.6KN)
Tensile Strength:	3000# (13.7KN)
Torsion Strength:	3500# (0.41KN.M)
Compression Strength:	20000# (91KN)
NEMA Voltage Rating:	14.4kV
60 Hertz Withstand - Dry:	50kV
60 Hertz Withstand - Dew:	30kV
Impulse Withstand:	110kV
Glaze:	ANSI 70 Light Grey
Applicable Standard:	ANSI C29.10 - 1989

Main Bus Compartment

Continuous Current	Short-circuit Rating (kA)	Quantity/Phase	Size	63kA
1200A	25, 31.5, 40, 50, 63	1	1/4" x 4"	1/2" X 6"
1200A	50, 63	1	3/4" x 4"	3/4" X 6"
2000A	25, 31.5, 40, 50, 63	1	3/4" x 4"	1/2" x 6"
3000A	25, 31.5, 40, 50, 63	2	3/4" x 4"	(2) (1/2" x 6")
4000A	25, 31.5, 40, 50, 63	2	1/2" x 6"	(2) (5/8" x 6")





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Compartment Types



Cable Compartment:

The layout of the cable compartments in PowerSafe switchgear from Spike Electric is designed for efficiency, offering substantial space for stress cones along with various options for cable terminations and lug types. Customers can opt for either top or bottom cable entry, with provisions also made for connecting to top and bottom bus ducts.

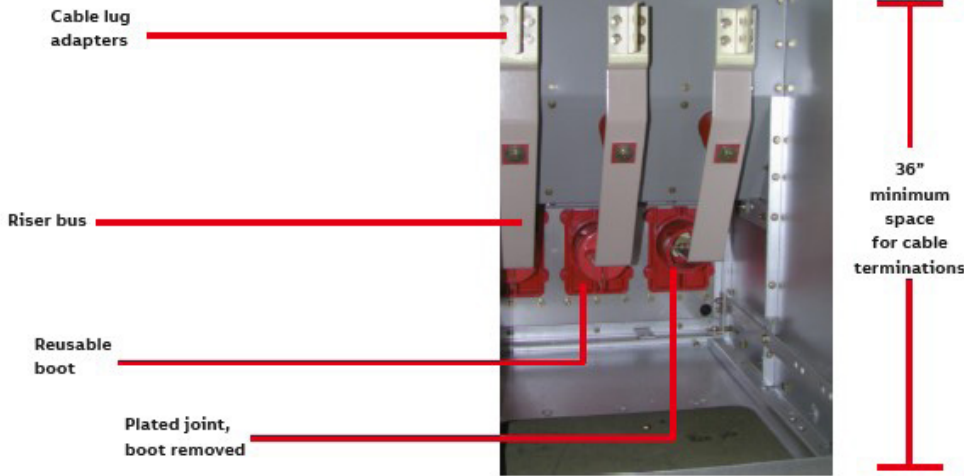
In configurations where two circuit breakers are stacked, steel dividers are employed to separate the upper and lower cable compartments, ensuring isolation of the primary circuits. Standard features include

lug boots, with the additional option to add cable supports for enhanced security of field connections.

Cable compartments can be equipped with optional features such as easily accessible zero sequence (ground sensor) current transformers, surge arrestors, capacitors, or ground studs on the bus risers. The introduction of a draw-out fuse compartment at the switchgear's front leaves ample space in the rear cable compartment for a substantial three-phase floor-mounted control power transformer, accommodating up to 75 kVA for three-phase systems or 63

kVA for single-phase systems.

Primary cable compartments come with detachable, unpainted stainless steel cover plates for conduit or cable sealing gland installations. PowerSafe uses 12-gauge type 304 stainless steel for these cover plates, which are essential for both the top and bottom of the cable compartment. To avert arc faults from penetrating the setup at the cover plates, all conduit/cable openings must be sealed. Spike Electric advises the utilization of sealing glands for all primary cables to maintain the integrity of the Arc-resistant design.

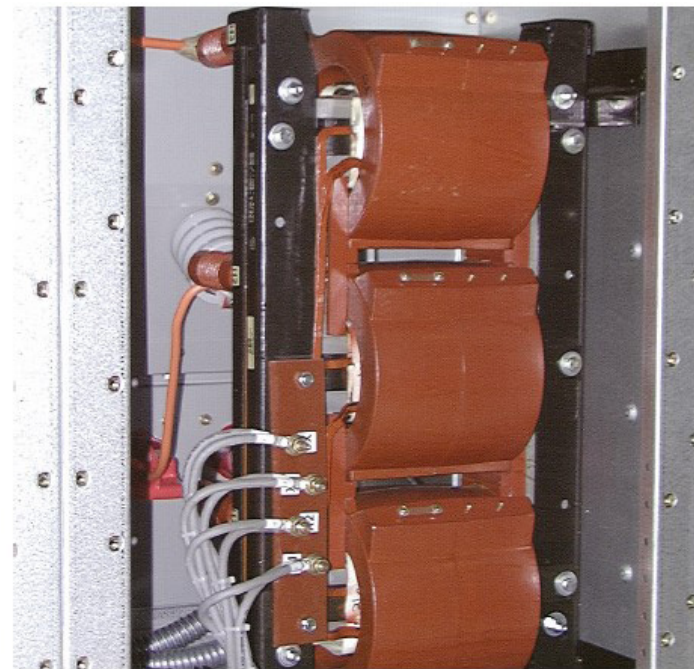


Cable compartment (main bus - cover installed)
Various application designs in cable compartments



Surge arrestors

Connection of up to eight cables per phase (three cable lugs shown). Contact factory for more than eight cables per phase requirements. Larger CPT specs available. Contact factory if larger sizes are needed.



Large fixed-mount CPT
up to 75 kVA 3-phase or
50 k single-phase



Connection of up to eight cables per phase (three cable lugs shown). Contact factory for more than eight cables per phase requirements.

Larger CPT specs available. Contact factory if larger sizes are needed.

Arc Chamber and Plenum:

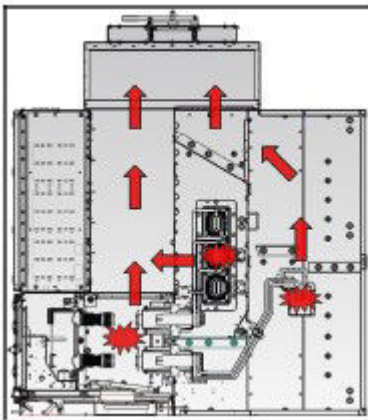
Inside the PowerSafe switchgear lineup, a network of chambers functions as an exhaust system, channeling arc-produced gases away from both personnel and the specific compartment experiencing an arc fault. This system incorporates vents and flaps within these chambers, leading to a plenum mounted atop the enclosure. The plenum then directs gases and pressure outside the facility, ensuring safety for both personnel and adjacent equipment. The design of the plenum includes external flanges to simplify the bolting of sections together upon installation. Spike Electric engineered this innovative venting solution, holding patents for the distinctive details of its internal chamber and plenum design.

Plenum Exhaust Clearance Requirements:

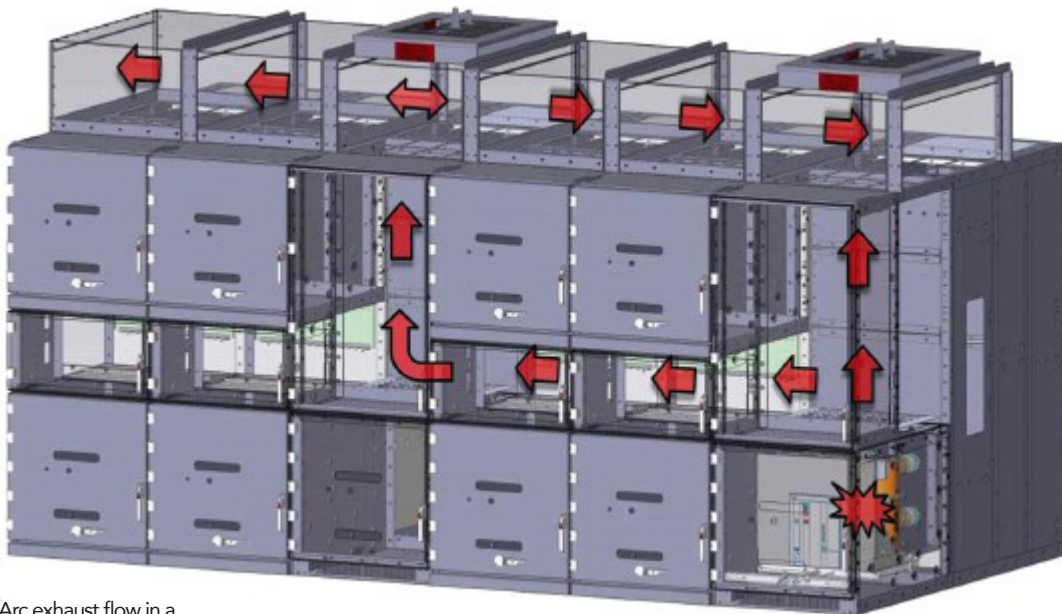
For the effective and safe exhaust of arc fault by-products, a clearance zone extending eight feet vertically and projecting outwards for 15 feet from the plenum's exterior exit must be maintained free of any objects and individuals. For comprehensive details, consult the Plenum Technical Application Guide. Expert installation and commissioning skills are essential for Arc-resistant metal-clad switchgear. It is advisable to seek factory assistance for these processes.

The vent chambers, aside from their primary role in arc fault management, double as thermal ventilation ducts under standard operational conditions. This ventilation is

crucial to keep the equipment operating within ANSI's prescribed temperature standards. It is imperative that these chambers remain unobstructed and unaltered to preserve the uninterrupted flow of air.



Arc exhaust flowing through a typical frame of switchgear

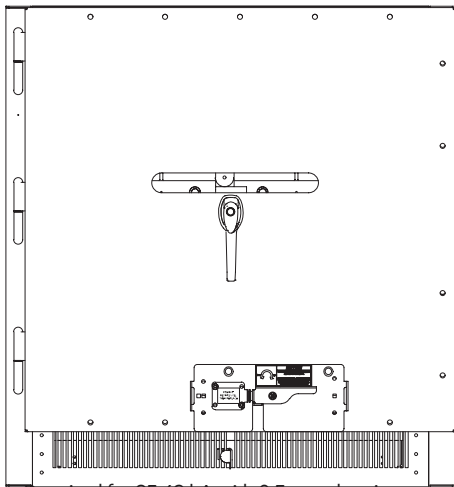


Arc exhaust flow in a typical switchgear lineup



Circuit Breaker Doors:

Single handle multi-point latch (MPL) breaker door designs



Required for 25-63 kA with 0.5s arc duration,
type 2/2B only



Notes:

- When bolted breaker doors are supplied (Fig.1&2), all low voltage instrument compartment doors will be single handle style.
- PT, CPT and CPT fuse auxiliary unit doors will utilize the same door securing method (bolted vs. MPL) as shown on the breaker doors.

One-high Frames :

Description

The one-high, bottom mounted device frame consists of a 57-inch instrument compartment stacked over a 38-inch breaker, PT, CPT or draw-out fuse compartment.

Dimensions

Frame	Width (in)	Height (in)	Depth (in)
2000 / 3000 / 4000	36	1229.5	96 or 104
A Breaker	4	8	BYZ-S
All other frames	36	129.5	96 or 104

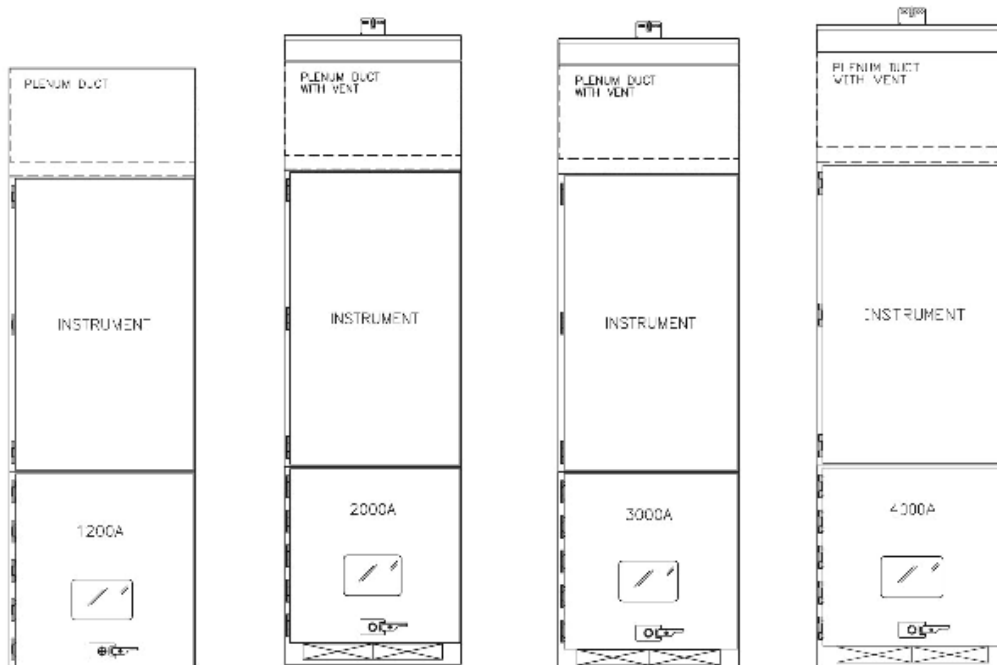
Cable Termination Information

Cable size	# of terms single pad per phase	# of terms bifurcated pad per phase*	GCT option
#2 AWG	4	8	BYZ-S
#4 AWG	4	8	BYZ-S
500 MCM	4	8	BYZ-S
750 MCM	4	8	BYZ-L
1000 MCM (2 hole)	2	4	BYZ-S
1000 MCM (4 Hole)	1	2	BYZ-S

Options

- Ground CTs
- Surge arrestors
 - Distribution
 - Intermediate
 - Station
- Surge capacitor
- Ground studs
- Space heaters
- Cable supports

* Bifurcated lug pad requires 93.35-inch depth frame



All ratings (refer to page 11 for door details and pages 21-24 for floor plans)

Two-high Frames:

Description

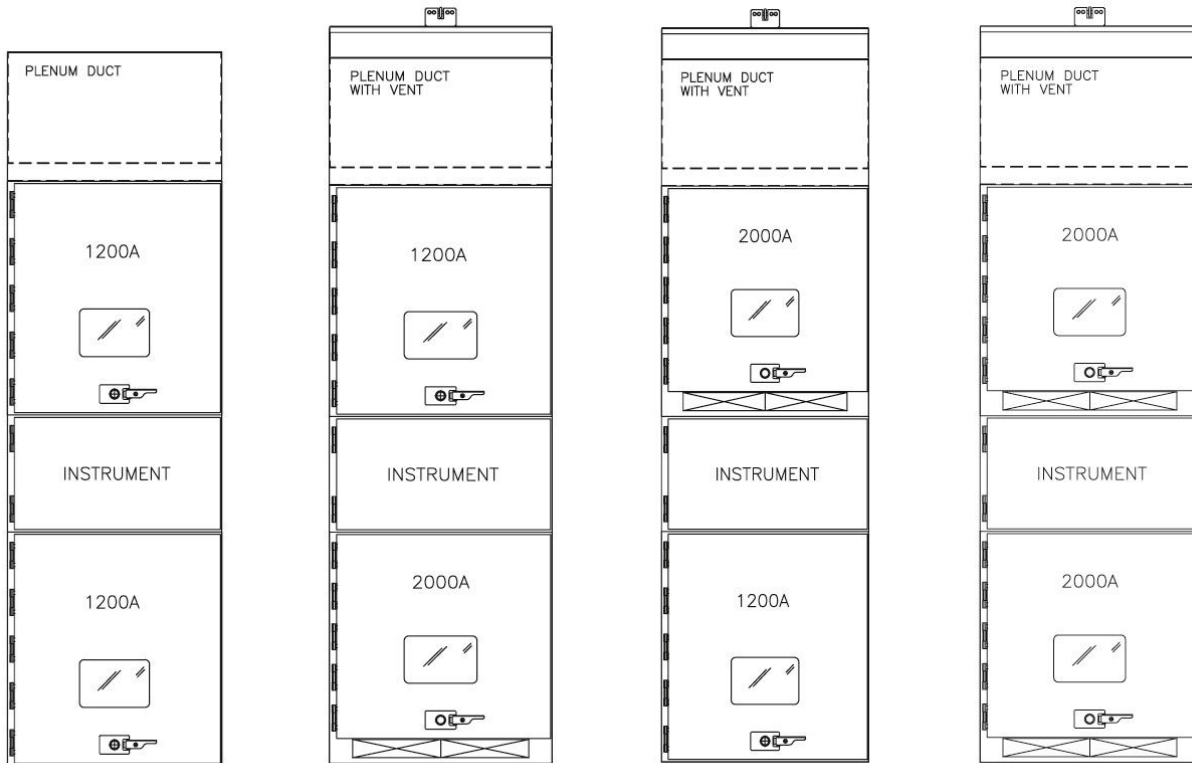
The two-high breaker frame consists of two 38 inch breaker compartments with a 19-inch instrument compartment in between for two breakers in a single frame.

Cable Termination Information

Cable size	# of terms single pad per phase	GCT option
#2 AWG	4	BYZ-S
#4 AWG	4	BYZ-S
500 MCM	4	BYZ-S
750 MCM	4	BYZ-L
1000 MCM (2 hole)	2	BYZ-S
1000 MCM (4 Hole)	1	BYZ-S

Application notes

1. Arrangements shown are available for all ratings except as noted
2. Maximum cumulative load at main bus limited to 2500A. Refer to IEEE C37.20.2, section 8.4.2.3, for further details on determining loading of these frame configurations
3. Maximum cumulative load at main bus limited to 3000 A if main bus rating is 3000A. If 3200 A or higher main bus is used, then maximum cumulative load is 3200 A. Refer to IEEE C37.20.2, section 8.4.2.3, for further details on determining loading of these frame configurations
4. Available for 10-cycle arc duration only
5. Available for 0.5s arc duration only
6. Available for 40-63kA, 10-cycle
7. All doors are of bolted type



See notes 2 and 4

See notes 3 and 4

All ratings refer to page 11 for door details and pages 21-24 for floor plans

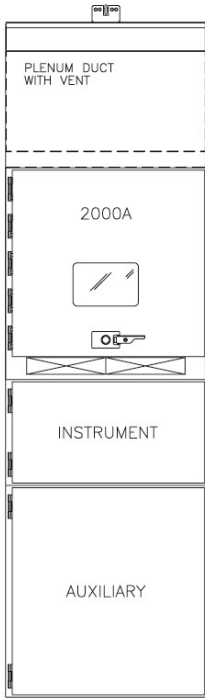
Breaker and Auxiliary Frames:

Description

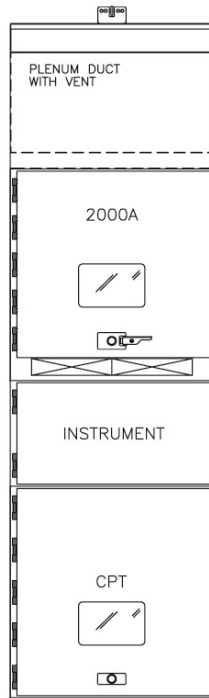
The two-high breaker and auxiliary frame consists of two 38-inch compartments with a 19-inch instrument compartment in between for one breaker and an auxiliary device in a single frame or one 38-inch compartment with 19-inch low voltage and two 19-inch auxiliary compartments for equipment with short circuit ratings less than 40 kA.

Less than or equal to 31.5 kA (breaker below)

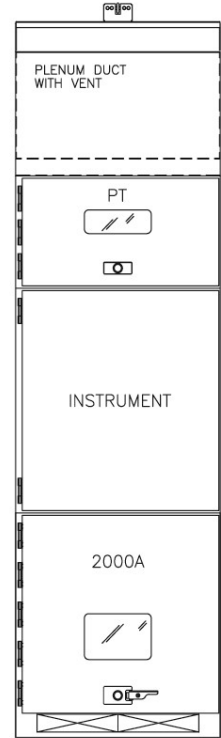
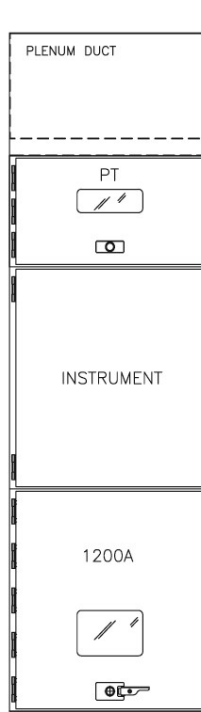
* Bifurcated lug



See note 4

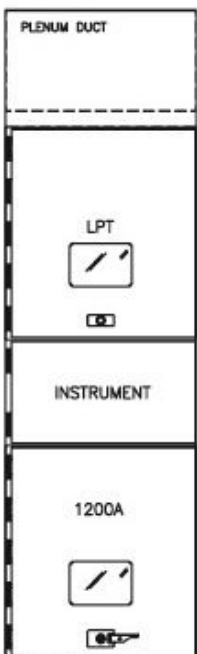


See note 4

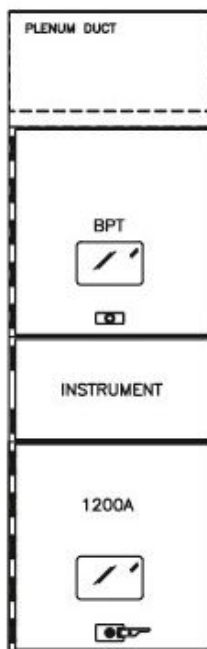


All ratings refer to page 11 for door details, page 13 for application notes and pages 21-24 for floor plans

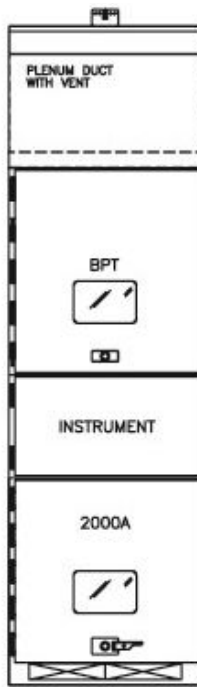
Greater than or equal to 40 kA (breaker below)



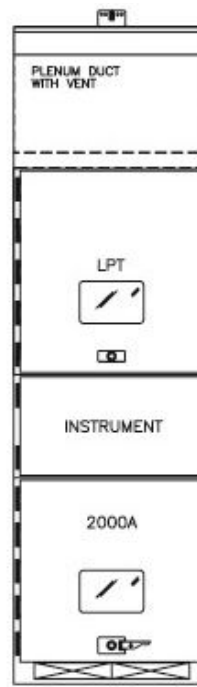
See note 6



See note 6



See note 6



See note 6



The two-high auxiliary frame consists of compartments with a 19-inch instrument compartment in between multiple auxiliary devices per frame.

Dimensions

Frame	Width (in)	Height (in)*	Depth (in)
All Frames	36	118	94 or 104

* Height includes plenum

Options

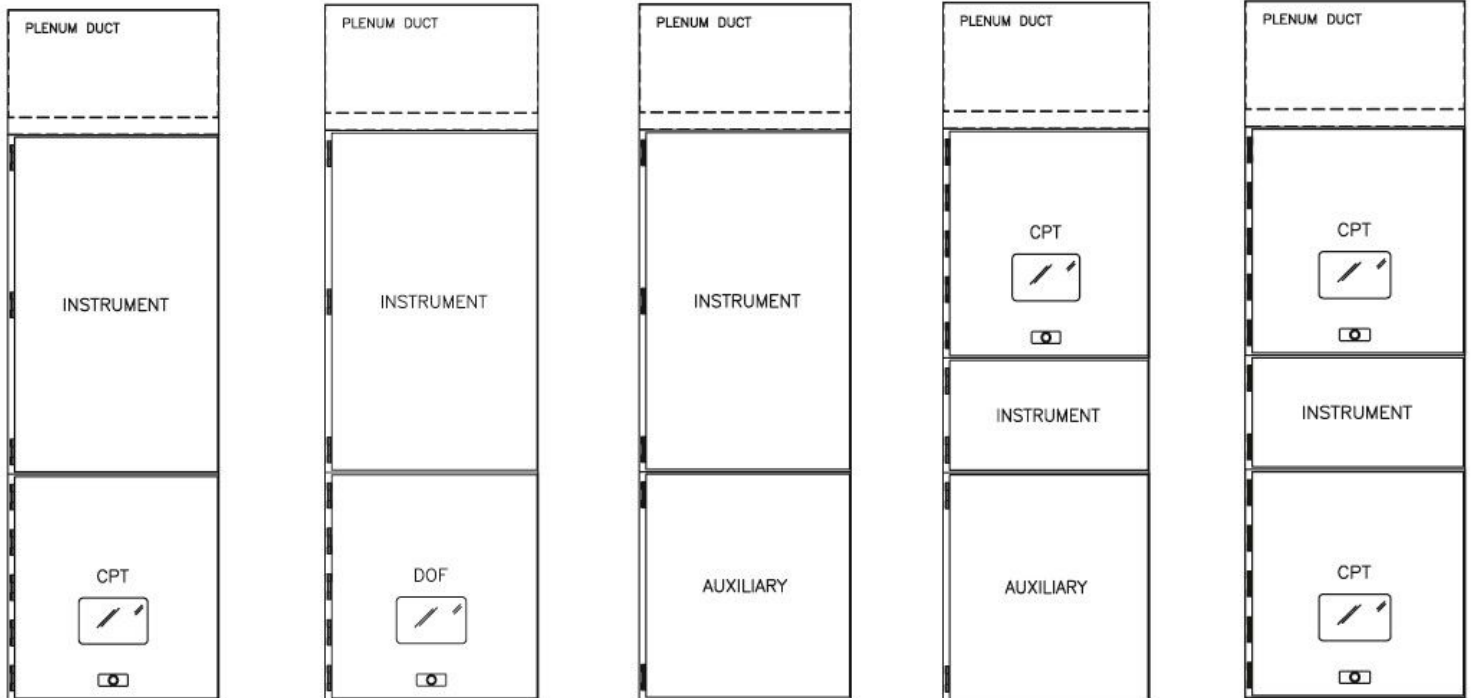
- Space heaters
- Incoming/outgoing cables
- Surge arrestors
 - Distribution
 - Intermediate
 - Station
- Ground studs
- Cable supports
- IR window
- SmartRack® remote racking system
- Switchgear MD™ 24 x 7 monitoring system

CPT=control power transformer

LVC=low voltage compartment/instrument compartment

PT=potential transformer

DOF=drawout fuse



All ratings refer to page 11 for door details and page 13 for application notes and pages 21-33 for floor plans



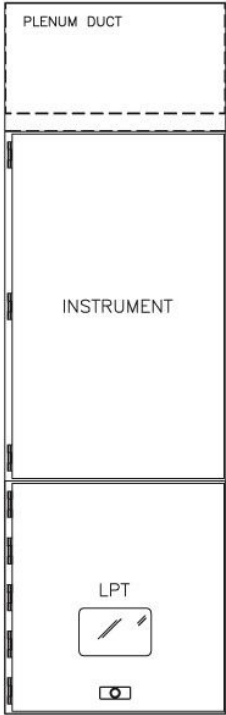
PowerSafe Arc-Resistant Switchgear

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Available Frame Types



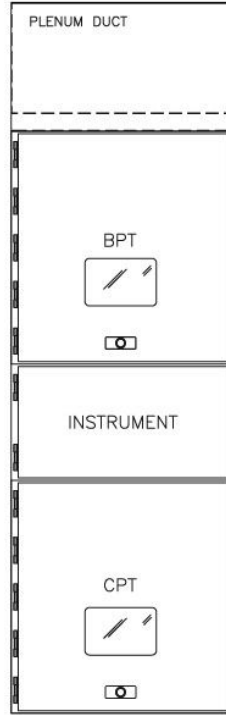
Auxiliary Frames:



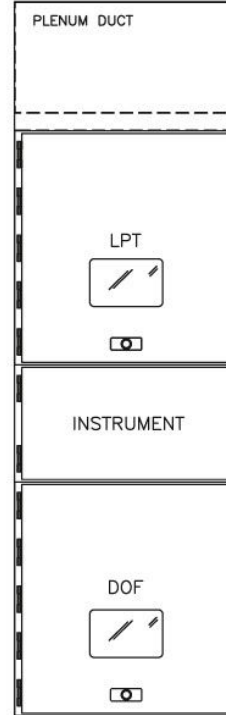
See notes 5 and 6



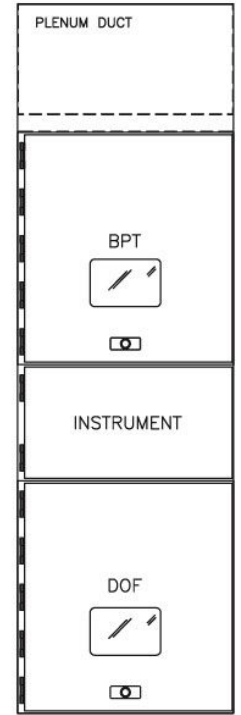
See notes 5 and 6



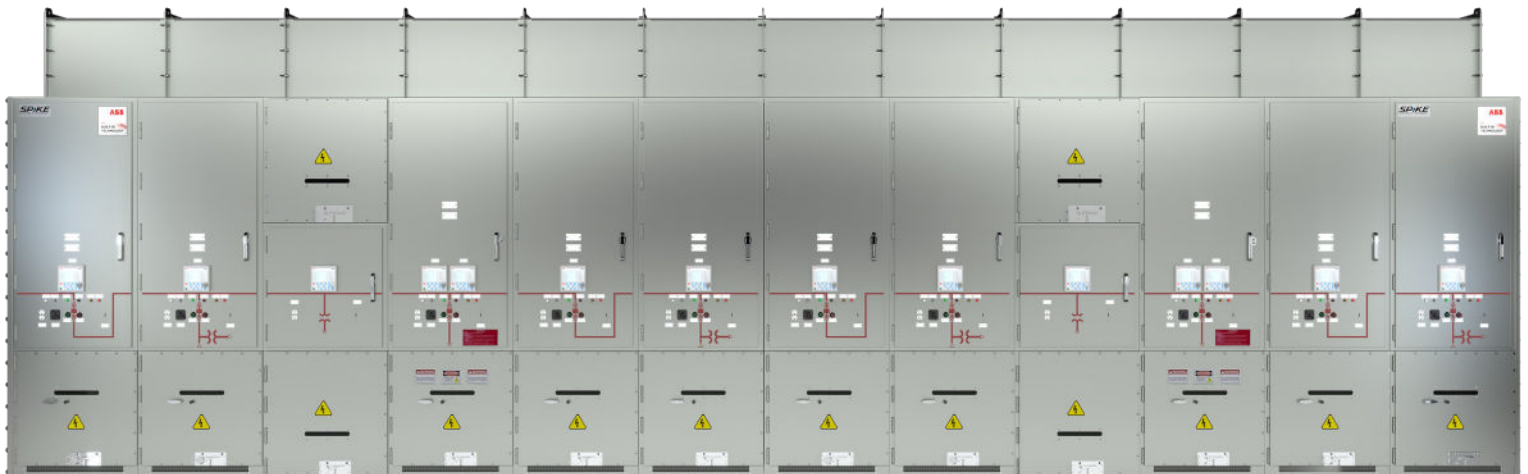
See notes 5 and 6



See notes 5 and 6



See notes 5 and 6





PowerSafe Arc-Resistant Switchgear

TECHNICAL & APPLICATION GUIDE

Typical Arrangements / Main-Tie-Main



1200 A, 2000 A, 3000 A & 4000 A up to & including 63 kA

Arrangements are the same for 5, 8.25 and 15 kV (refer to page 11 for door details and page 13 for application notes)
 *Customization available upon request

