



INSTALLATION PRODUCTS CAA GROUP – NOVEMBER 2019

 elastimold

Tru-Break™ switchgear module

ABB

Tru-Break™ switchgear module — agenda

Design platform and value

Product specifications

Operation

Configuration examples

Elastimold® grounding accessories

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Tru-Break™ switchgear module — design platform and value

Value proposition

Safety



Easy-to-see
viewing windows



Dead-front
construction

Reliability



Maintenance-free
operation*



Withstands harsh
conditions

Flexibility



Completely
modular



Retrofit options available
for existing switchgear

Tru-Break™ switchgear module — design platform and value

Compelling value

Safe

- Dead-front construction with clear visual verification of circuit isolation
- Capable of withstanding 60 kV AC testing and full 125 kV BIL impulse voltage without the need for vacuum bottle series-connected support
- Positive-latching handle ensures that unit is in fully open or fully closed position
- ANSI/IEEE standard 600-amp bolted connection points can be ordered with standard Elastimold® cable accessory grounding devices to add easy, built-in grounding capability



Tru-Break™ switchgear module — design platform and value

Compelling value

Reliable

- Uses a proprietary EPDM rubber formulation — field proven for over 50 years — on a solid-dielectric platform
- Uses silicone diaphragm and air as an insulating medium
- Maintenance-free operation — no oil or gas*
- Rated and tested for optimum performance, even in the harshest environments

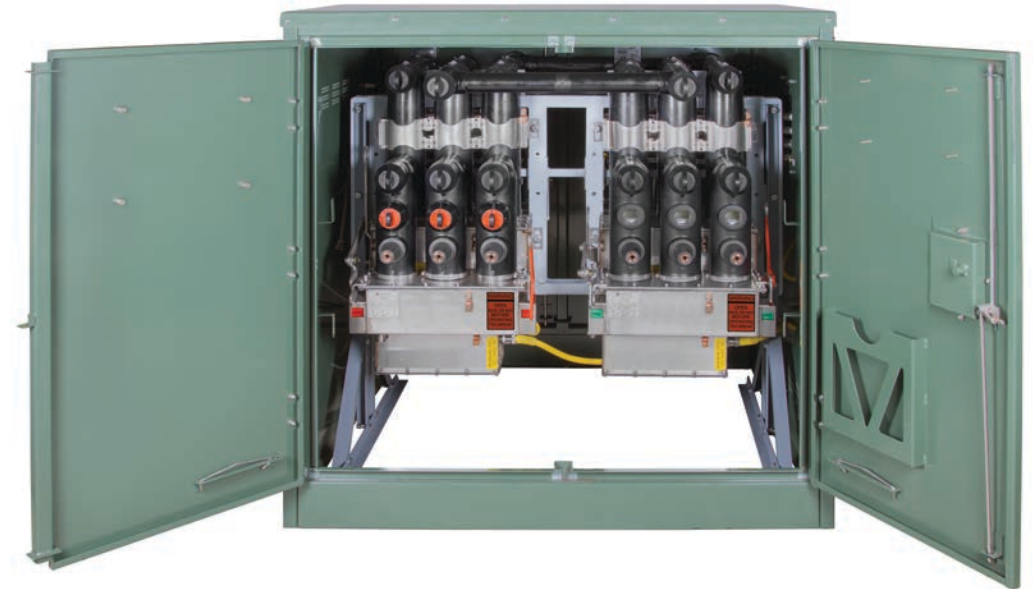


Tru-Break™ switchgear module — design platform and value

Compelling value

Flexible

- Rated for use with 15–29.3 kV, 630 A, up to 20 kA systems
- Rugged and submersible for multiway pad-mount or vault applications
- Compact size minimizes impact to switchgear footprint
- Modular design allows the potential for economical retrofit of existing Elastimold® switchgear



Tru-Break™ switchgear module — agenda

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Tru-Break™ switchgear module — product specifications

Electrical ratings — integrated systems

Molded vacuum switch (MVS)

- 15 kV, 630A, rated up to 20 kA
- 29.3 kV, 630A, rated up to 16 kA

Molded vacuum interrupter (MVI)

- 15 kV, 630A, rated up to 20 kA
- 29.3 kV, 630A, rated up to 12.5 kA

Tru-Break switchgear module

- 630 A continuous current
- 60 kV AC hi-pot rated*
- 125 kV BIL rated*
- IEEE 386 600-amp interface bolted connection



Tru-Break™ switchgear module — product specifications

Electromechanical features

Electromechanical features

- Mechanically interlocked with the switch/interrupter
- Pin-and-socket contacts have two position settings:
 - Closed (continuous circuit to vacuum bottle)
 - Open (circuit disconnected from vacuum bottle)
- Uses silicone diaphragm and air as an insulating medium
 - Current-carrying path completely encapsulated in solid dielectric in the open position
- Manual handle allows operation between different position settings
 - Unit has built-in positive stops in all positions
 - Operates all phases at the same time
- Available on three-phase switchgear apparatus:*
pad-mount and vault applications



Tru-Break™ switchgear module — product specifications

Highlights

Highlights

- Visible isolation disconnect
- Mechanical safety interlocks
- Large, highly visible viewing windows
- Rated for 15/29.3 kV systems
- Works on both switch and interrupter
- Rated for harsh/extreme environments
- Maintenance-free operation*
- Hot-stick operable
- Dead-front operation
- Retrofit ready**



Tru-Break™ switchgear module — agenda

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Tru-Break™ switchgear module — operation

Operational steps

The following are general product operating steps for reference. All end user local safety and operating procedures/requirements must be reviewed and followed.

- 1. Open vacuum bottles on interconnected device.**
Mechanical interlock prevents operation of Tru-Break switchgear module without associated device/gear being opened.
- 2. Operate Tru-Break switchgear module using hot stick.**
Move handle from closed to open position.
- 3. Follow local practices for testing, grounding and performing required service.**
- 4. Operate Tru-Break switchgear module by putting handle in closed position using hot stick.**
- 5. Close vacuum bottles on associated interconnected device.**
- 6. Restore load/service as required.**



Tru-Break™ switchgear module — operation

Clear visible indicator

Closed position



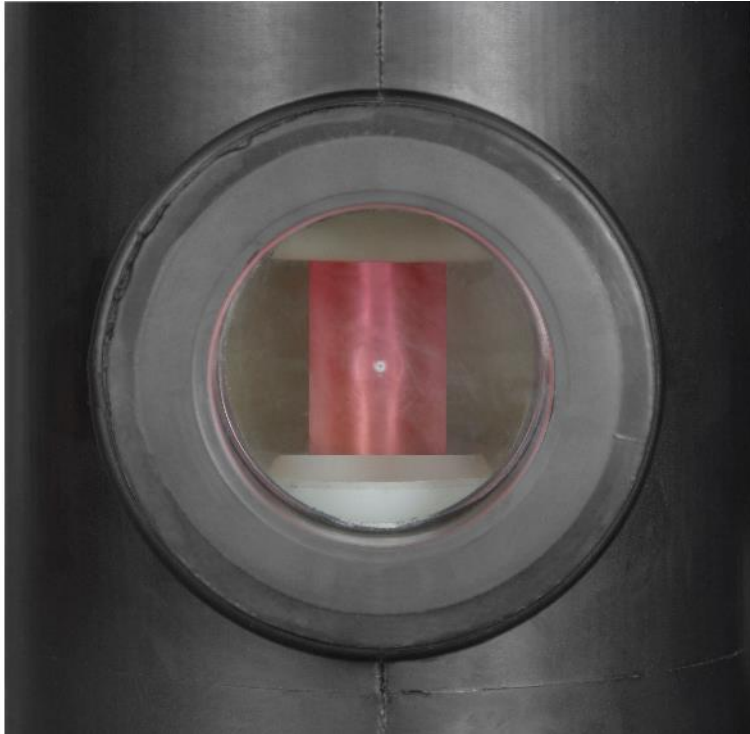
Open position



Tru-Break™ switchgear module — operation

Clear visible indicator close-up view

Closed position



Open position



Tru-Break™ switchgear module — operation

Clear color labeling

Clear color labeling

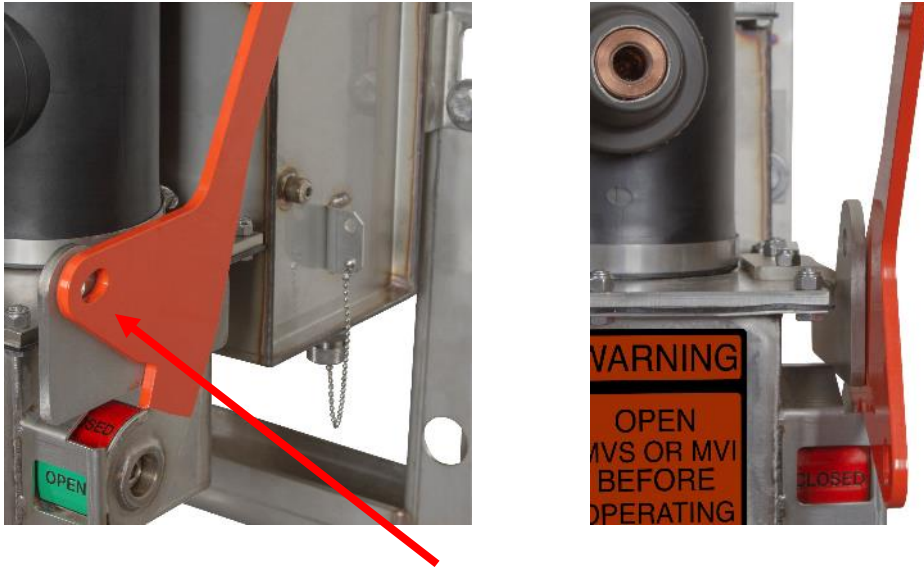
- Orange hot stick-removable dust covers
- Orange warning label — indicates operating requirements
- Orange handle



Tru-Break™ switchgear module — operation

Close-up feature views

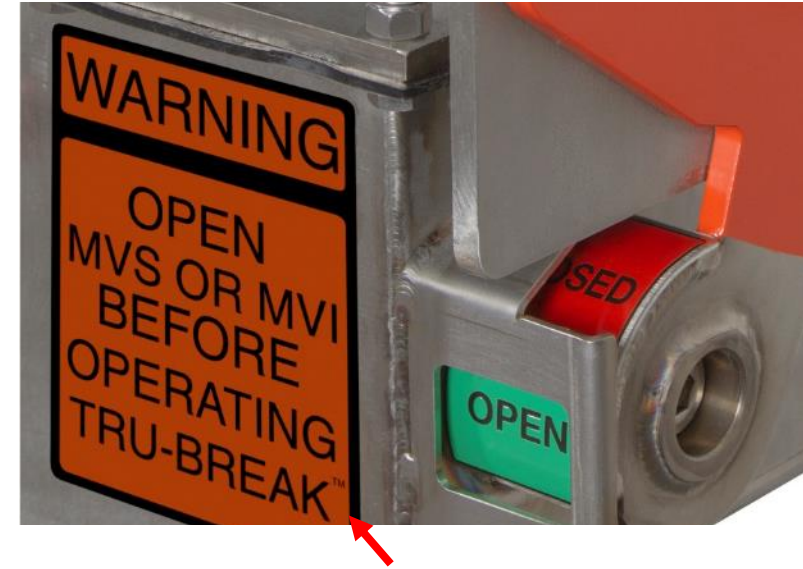
Handle



Padlock provisions

Option prevents local operation in both open (left image) and closed (right image) position.

Warning label



Operational note

Label indicates requirement to open interconnected device because of the mechanical interlocks.

Tru-Break™ switchgear module — agenda

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Tru-Break™ switchgear module — configuration examples

Footprint



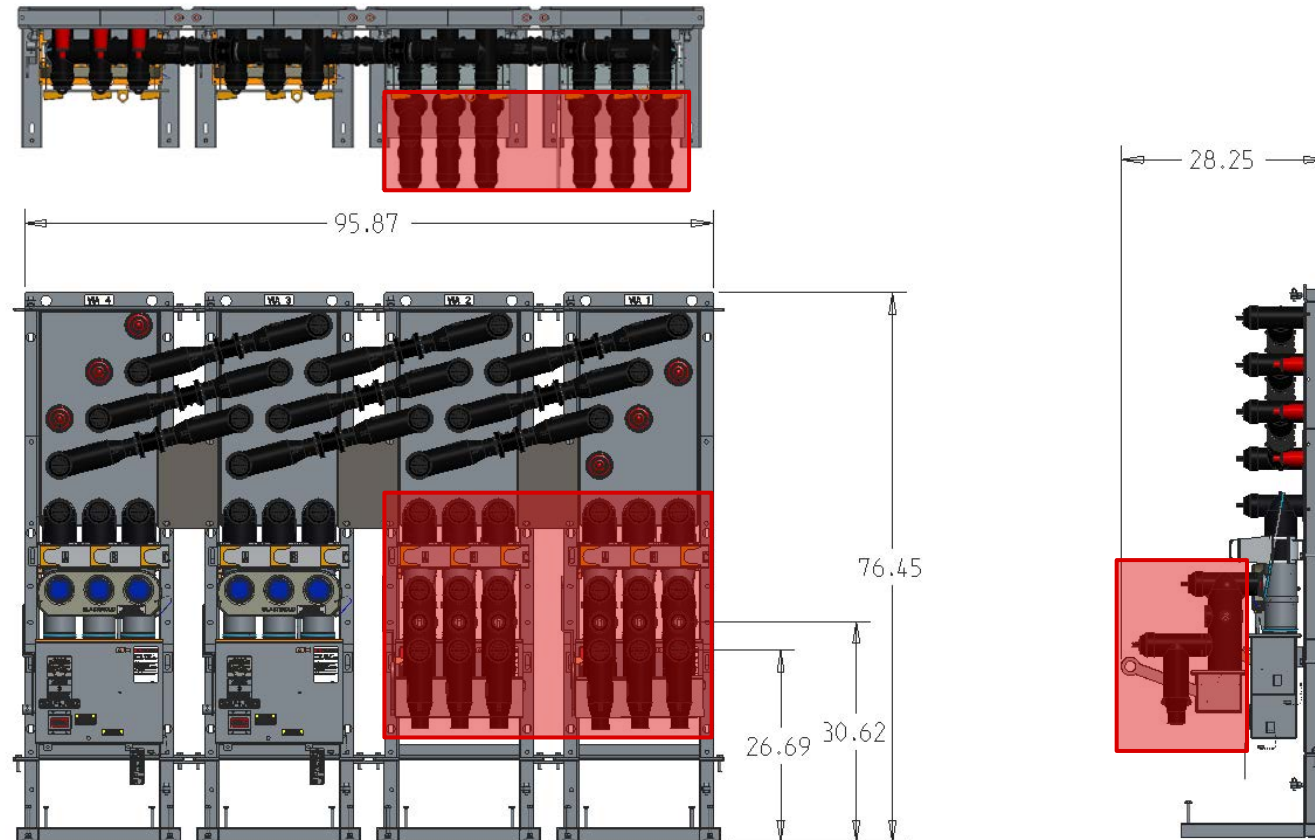
Tru-Break switchgear module dimensions

Width	18 in. (457.2 mm)
Height	20 in. (508.0 mm)
Weight	97 lb. (44 kg)

Note: Dimensions are approximate.

Tru-Break™ switchgear module — configuration examples

Installed on switchgear — 4-way vault-style version



Tru-Break™ switchgear module — configuration examples

Vault

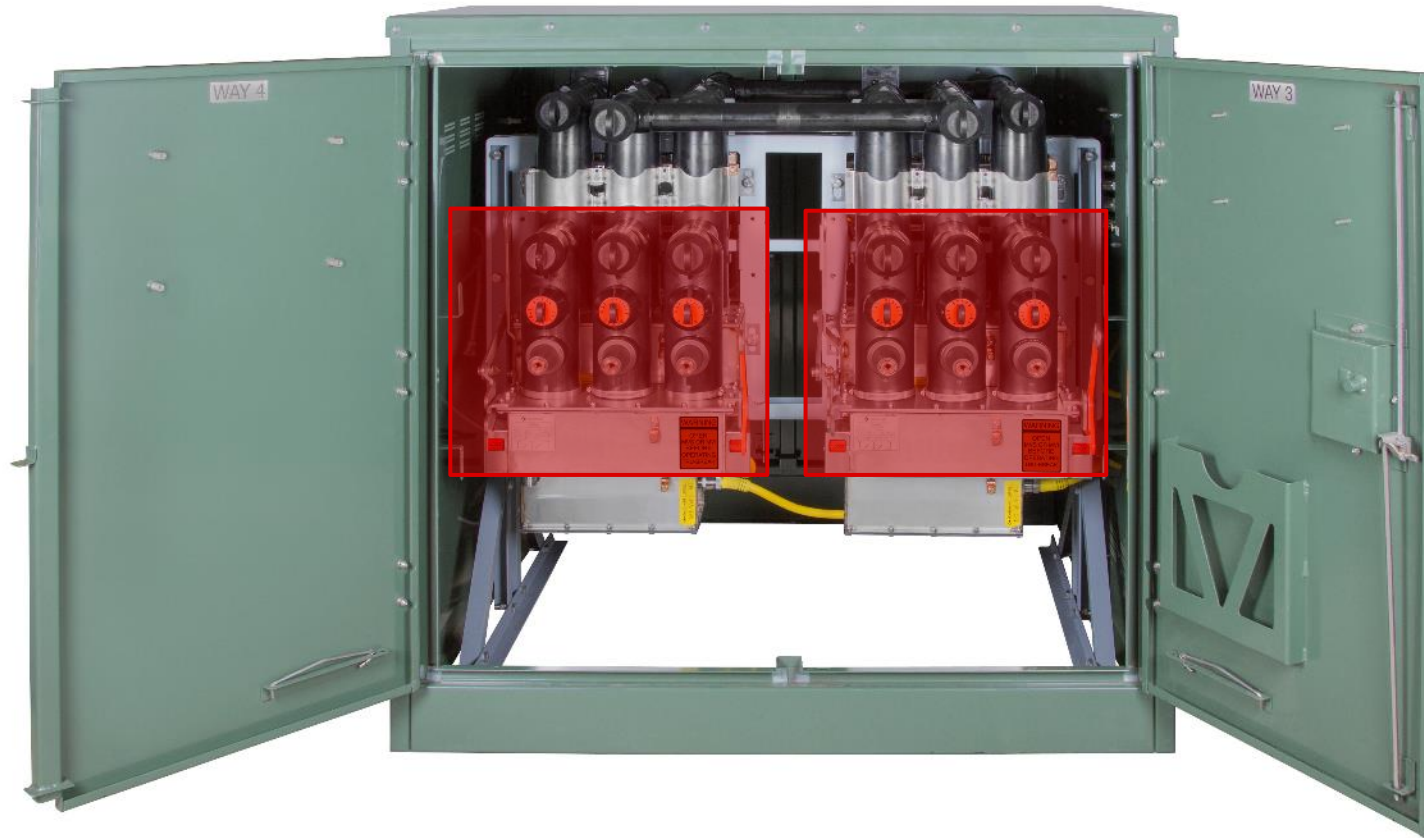
Tru-Break
switchgear module
on MVI



Tru-Break
switchgear module
on MVS

Tru-Break™ switchgear module — configuration examples

Installed on switchgear — 4-way pad-mount with new modular H-bus design



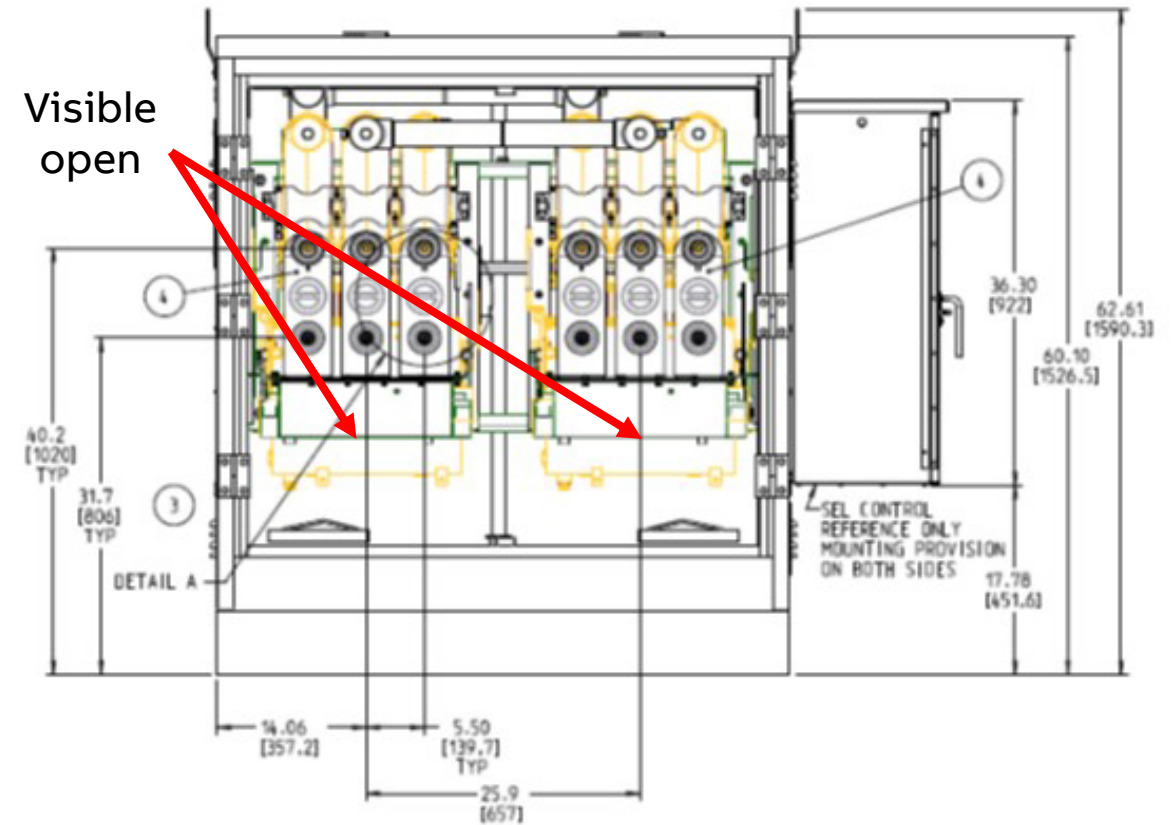
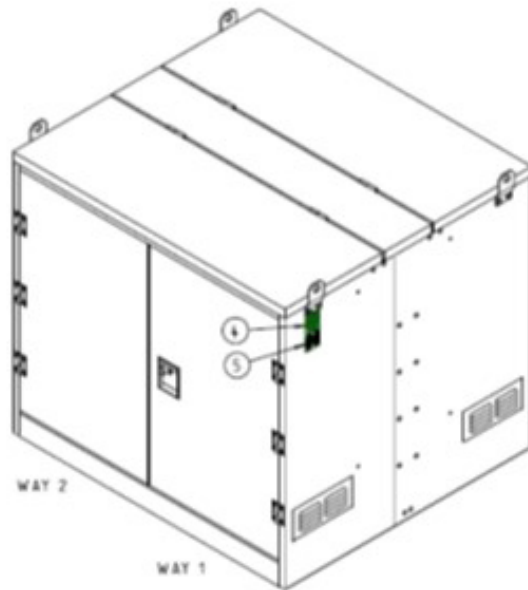
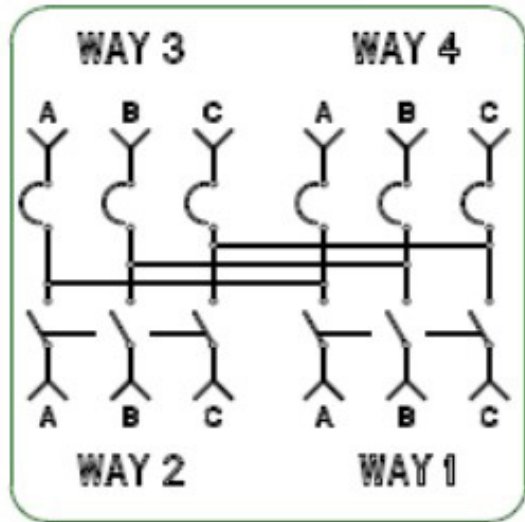
Tru-Break™ switchgear module — configuration examples

New pad-mount H-bus design expands the Elastimold® modular switchgear platform



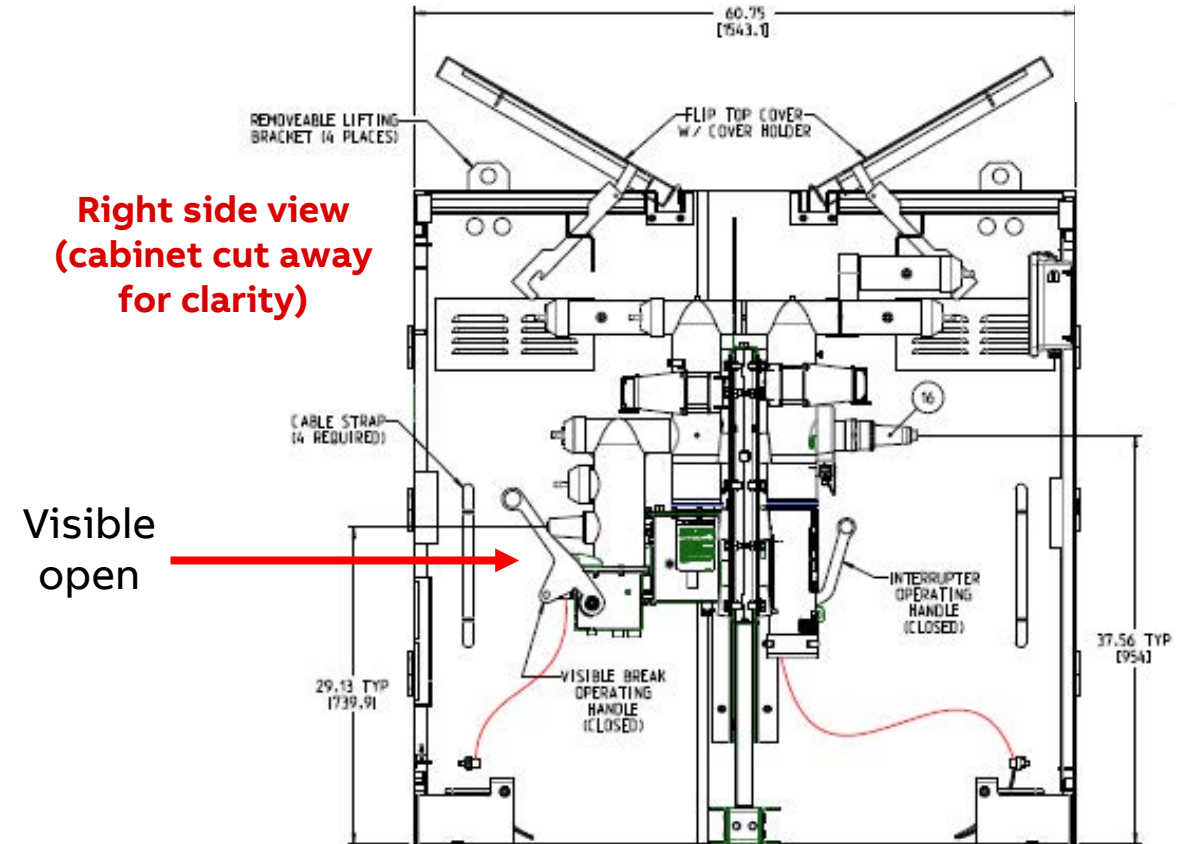
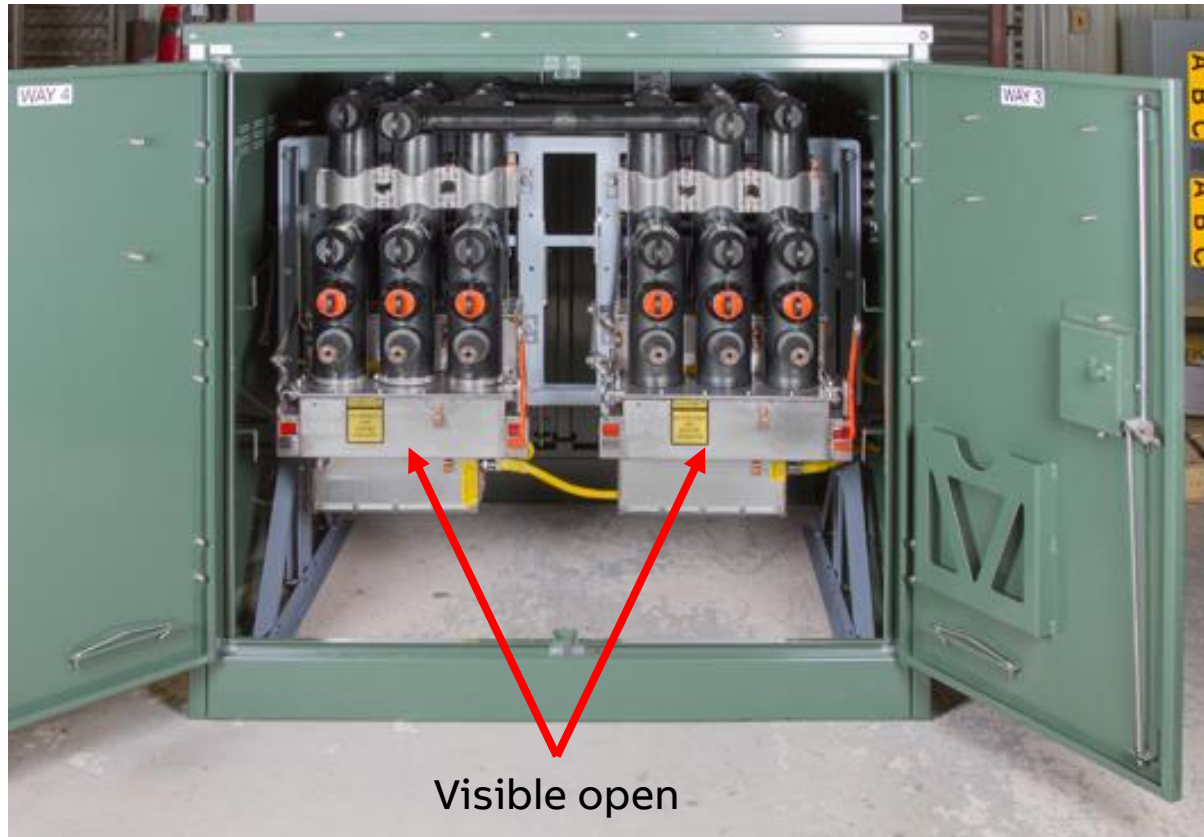
Tru-Break™ switchgear module — configuration examples

Installed on switchgear — new 4-way pad-mount version



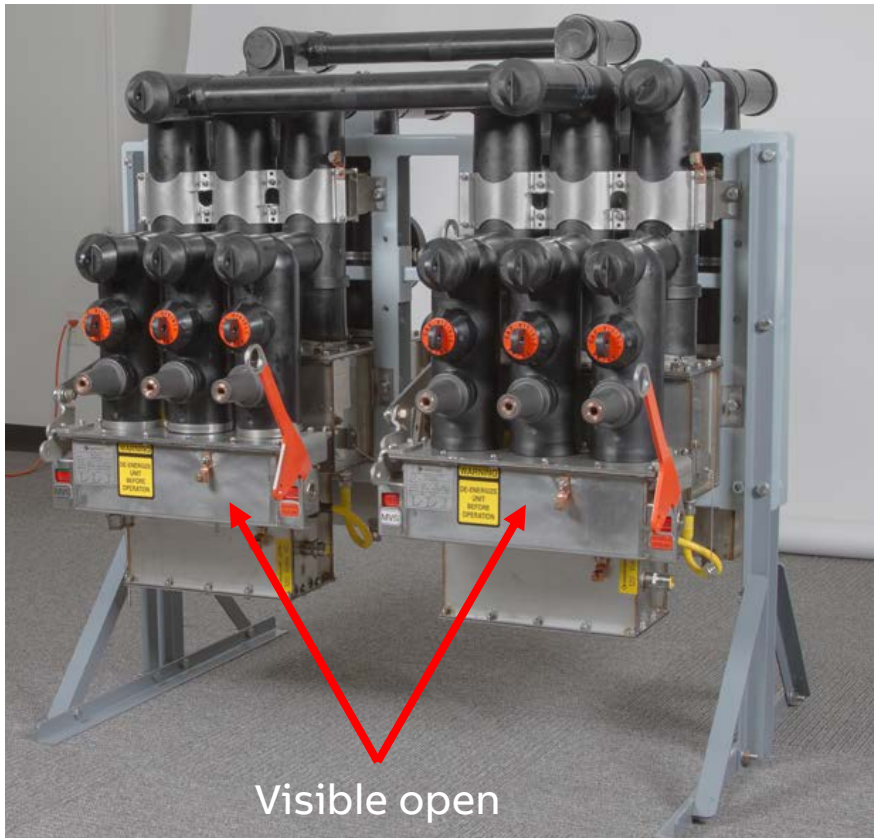
Tru-Break™ switchgear module — configuration examples

Installed on switchgear — new 4-way pad-mount version

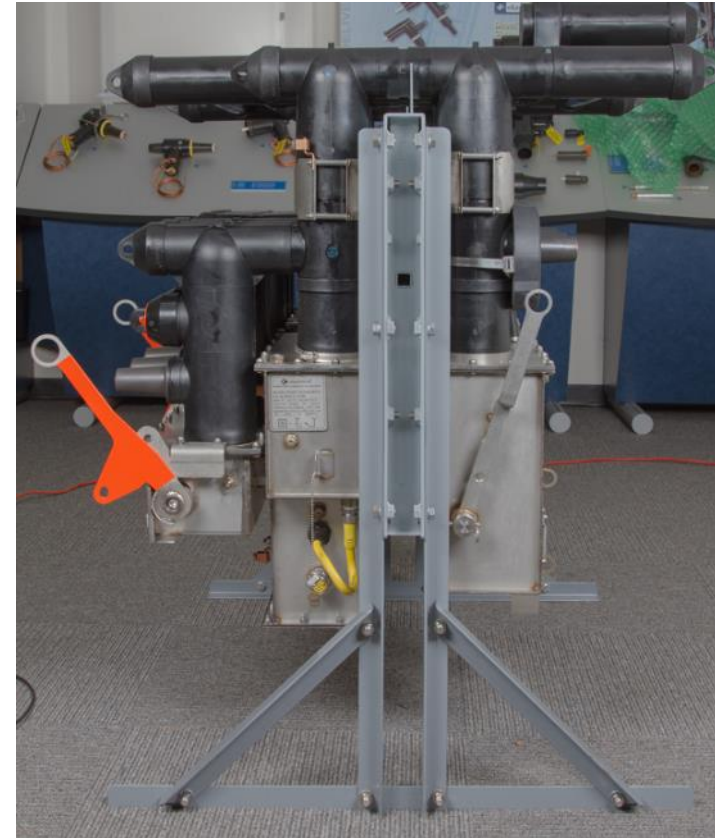


Tru-Break™ switchgear module — configuration examples

Installed on switchgear — new 4-way pad-mount version



Side view



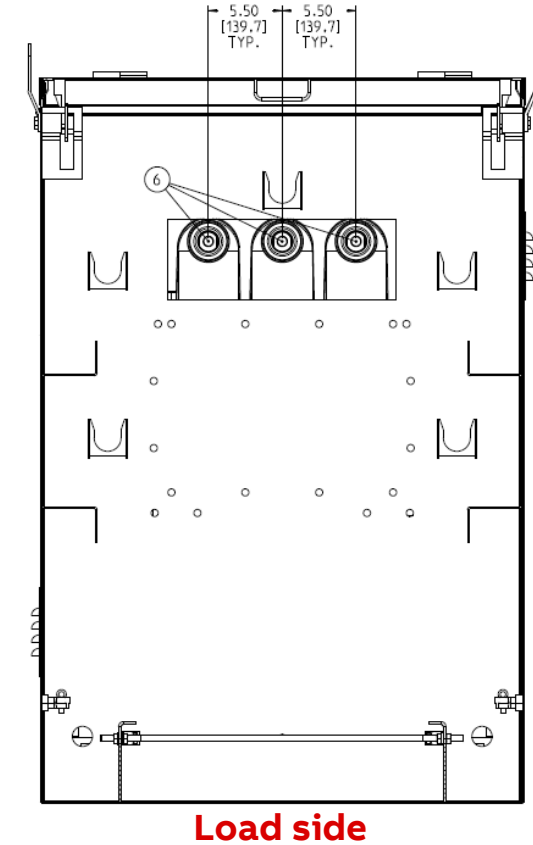
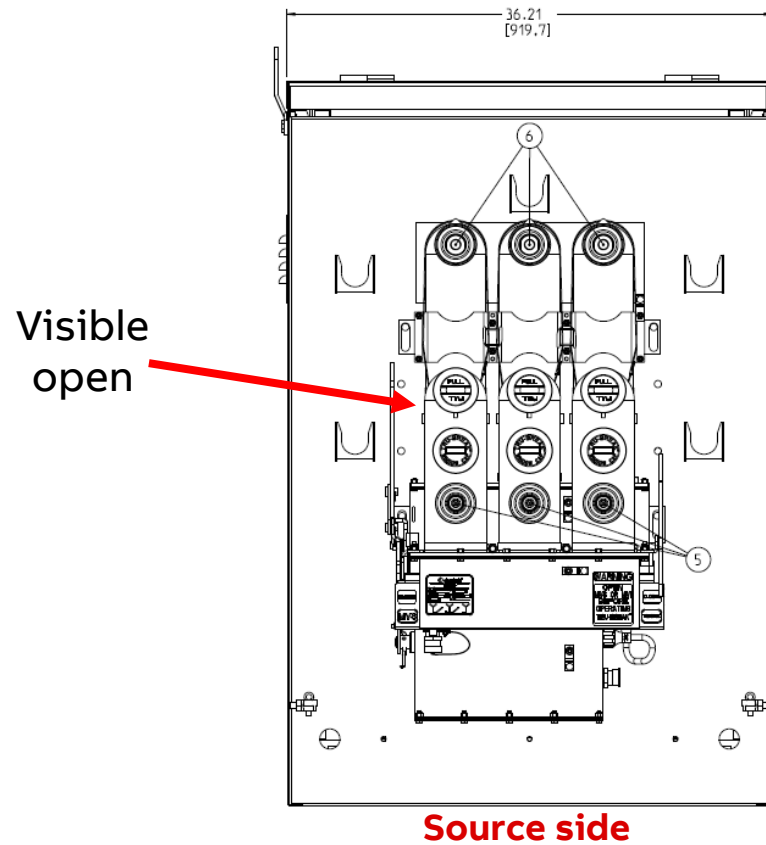
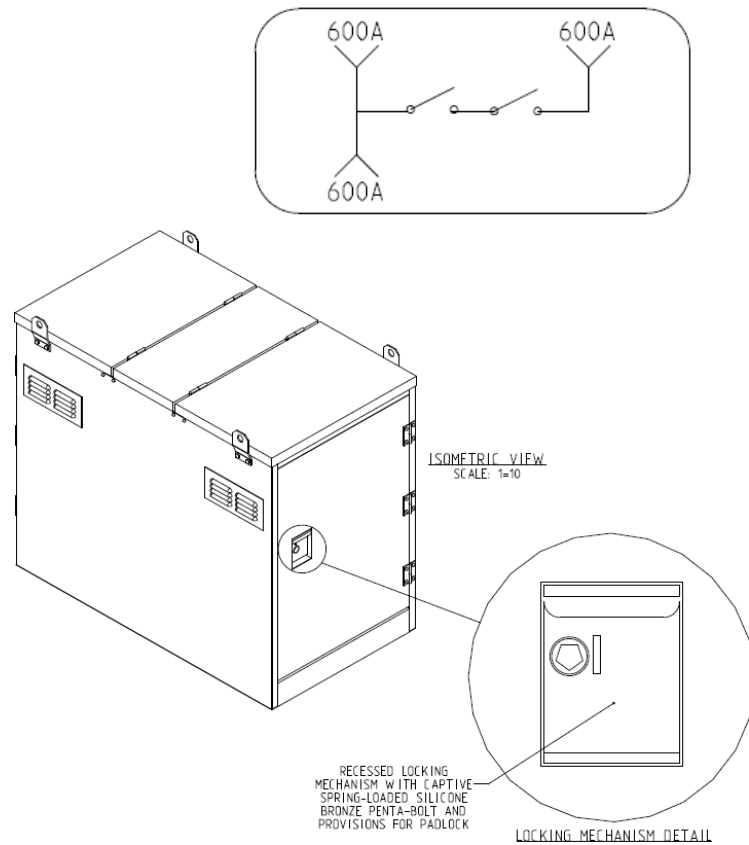
Tru-Break™ switchgear module — configuration examples

Installed on switchgear — new 4-way pad-mount version — bus work



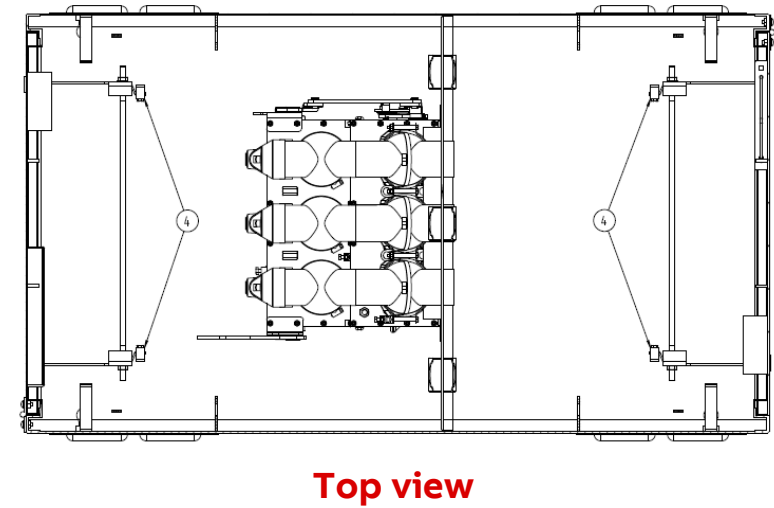
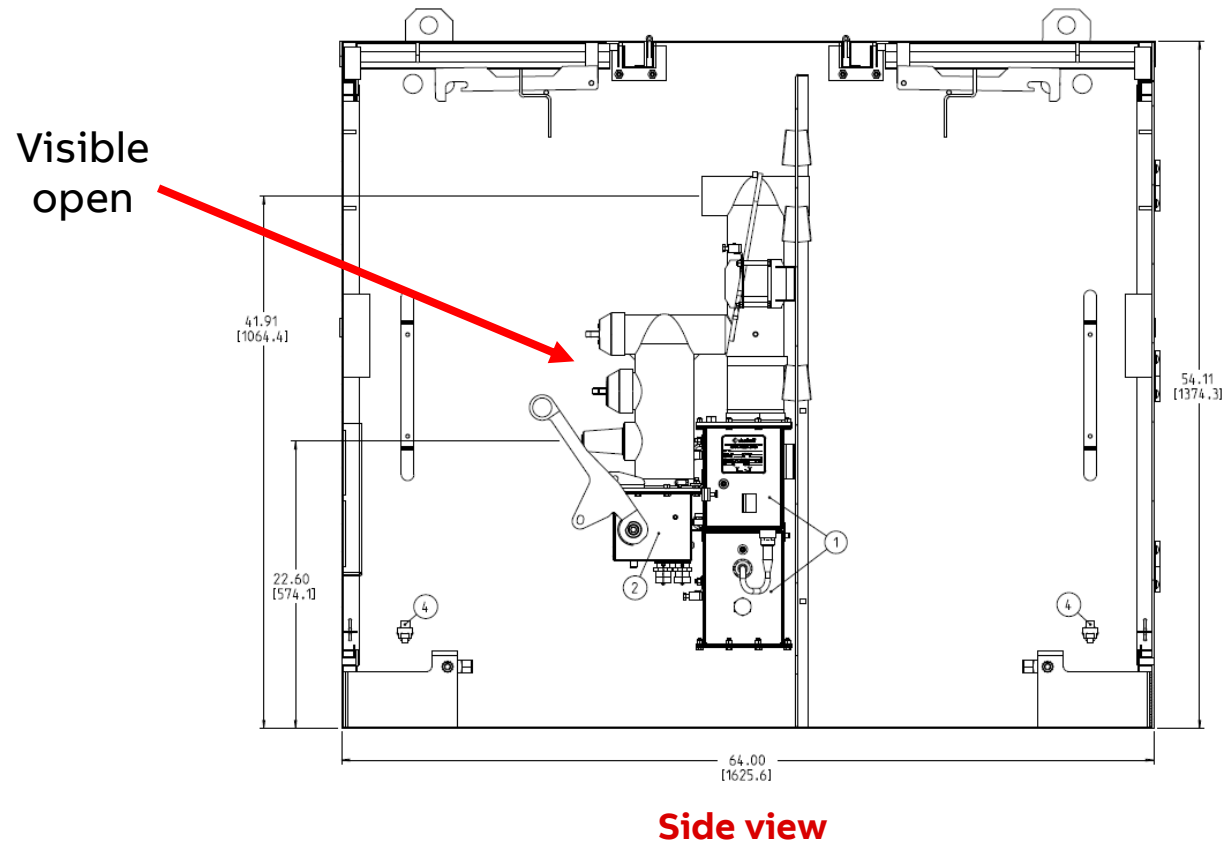
Tru-Break™ switchgear module — configuration examples

Installed on switchgear — single device double-sided pad-mount*



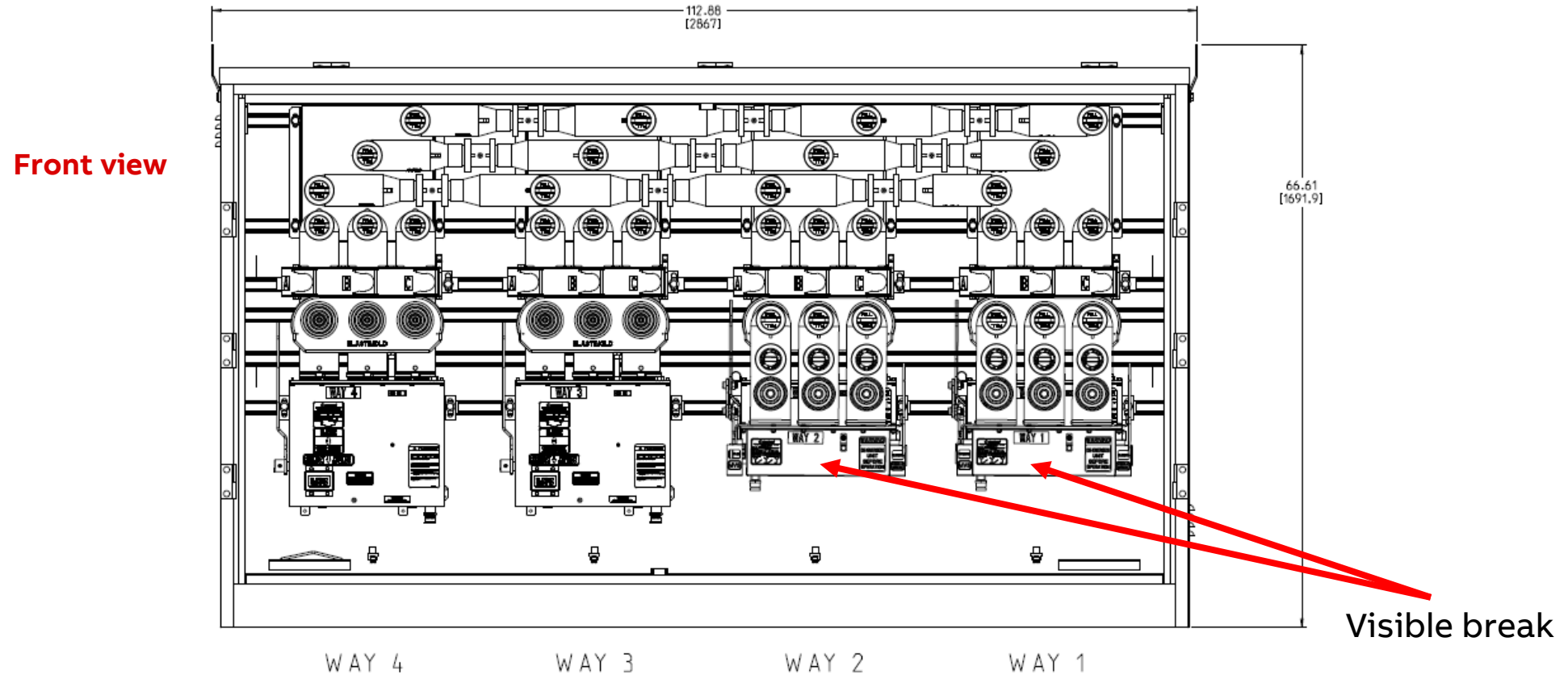
Tru-Break™ switchgear module — configuration examples

Installed on switchgear — single device double-sided pad-mount*



Tru-Break™ switchgear module — configuration examples

Installed on switchgear — 4-way single-sided pad-mount





Tru-Break™ switchgear module — configuration examples

Potential for retrofit

Equipment type	Retrofit-capable?
Single-sided pad-mount	Yes, for standard configurator versions.
Double-sided pad-mount	In some cases. For 5- and 6-way, likely yes. 4-way requires new H-bus and new cabinet dimensions.
Vault	Yes.
Small vault	Possibly. Determined on case-by-case basis due to compact design.
Stand-alone MVI/MVS	Yes.
Competitors' switchgear	No.

Exceptions: Tru-Break switchgear module retrofit is not currently available for 38 kV systems, single-phase device, devices with magnetic actuator mechanisms or devices with existing 200 A bushing wells.*



Tru-Break™ switchgear module — agenda

Design platform and value

Product specification

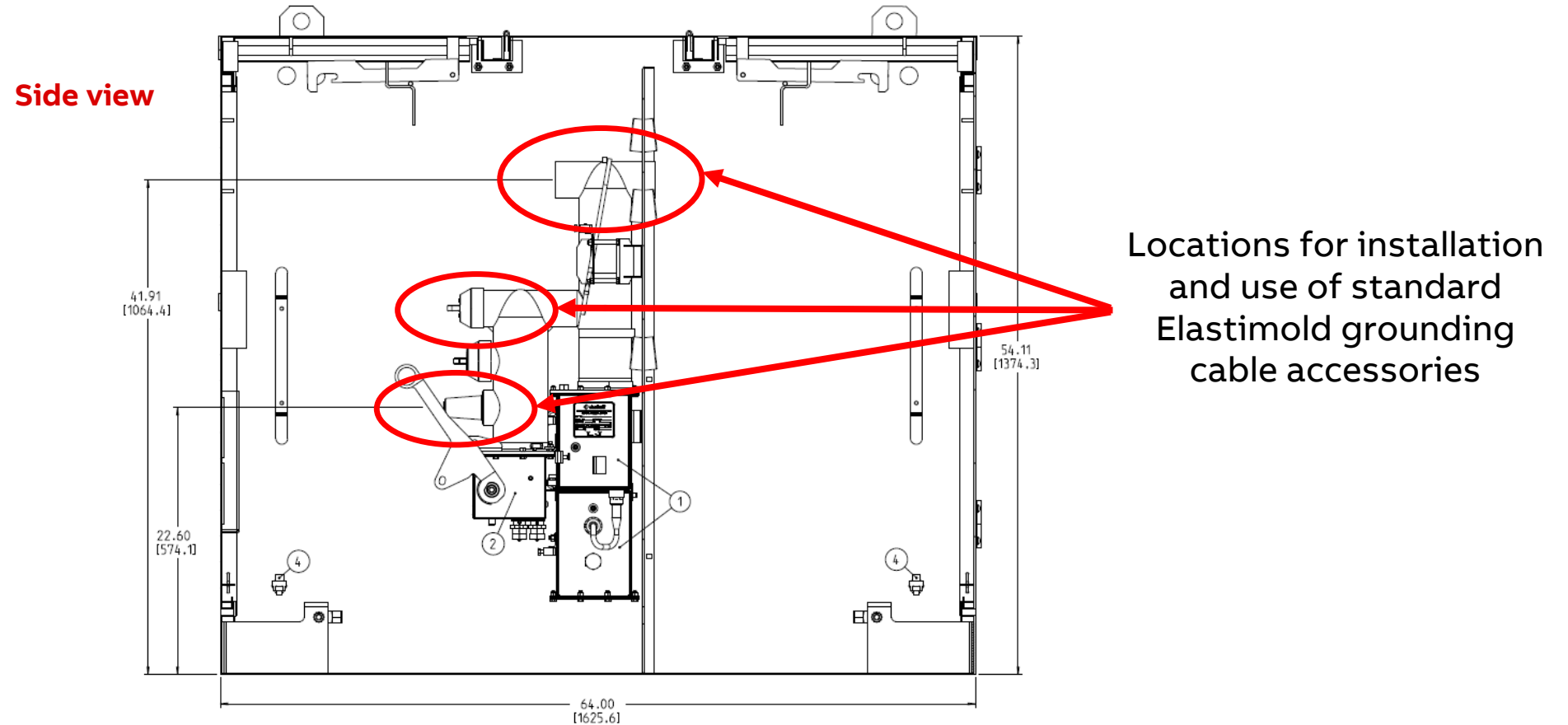
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Elastimold® grounding accessories

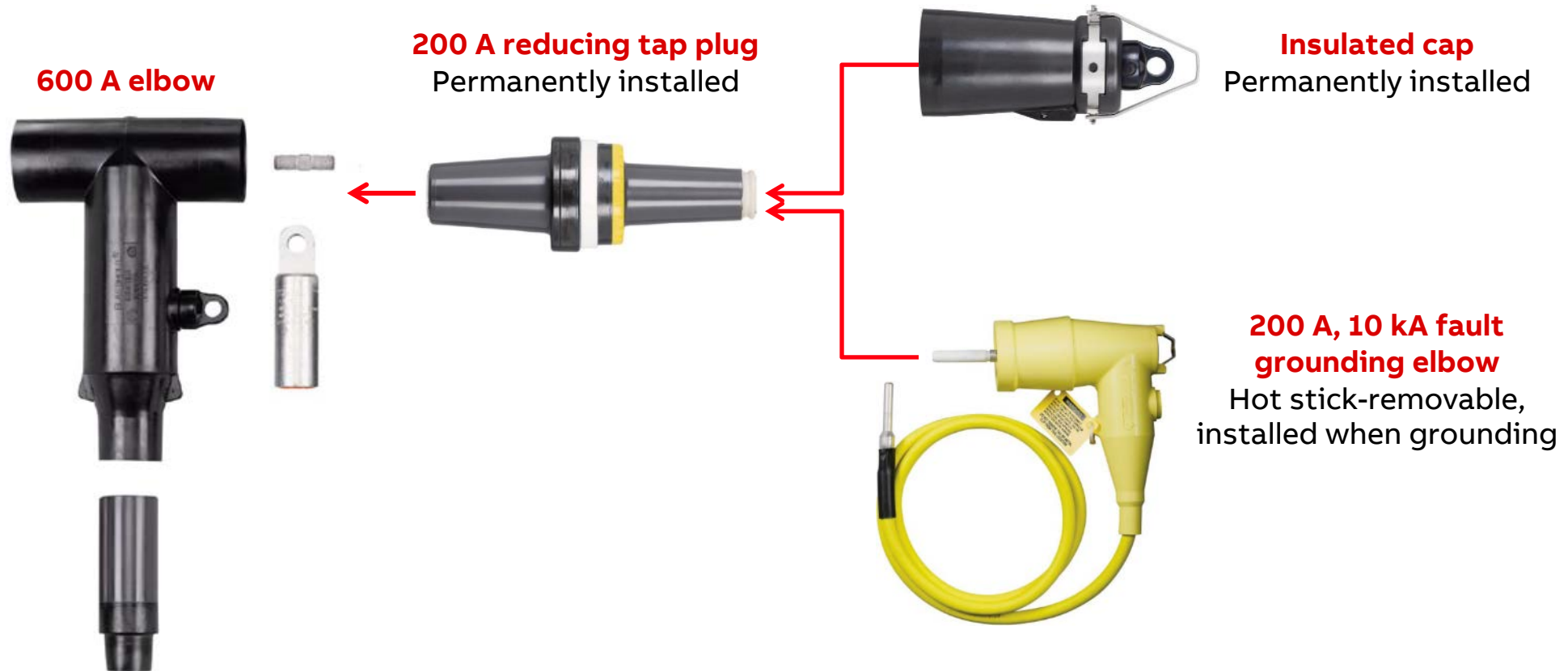
Tru-Break™ switchgear module — Elastimold® grounding accessories

Grounding options and interfaces



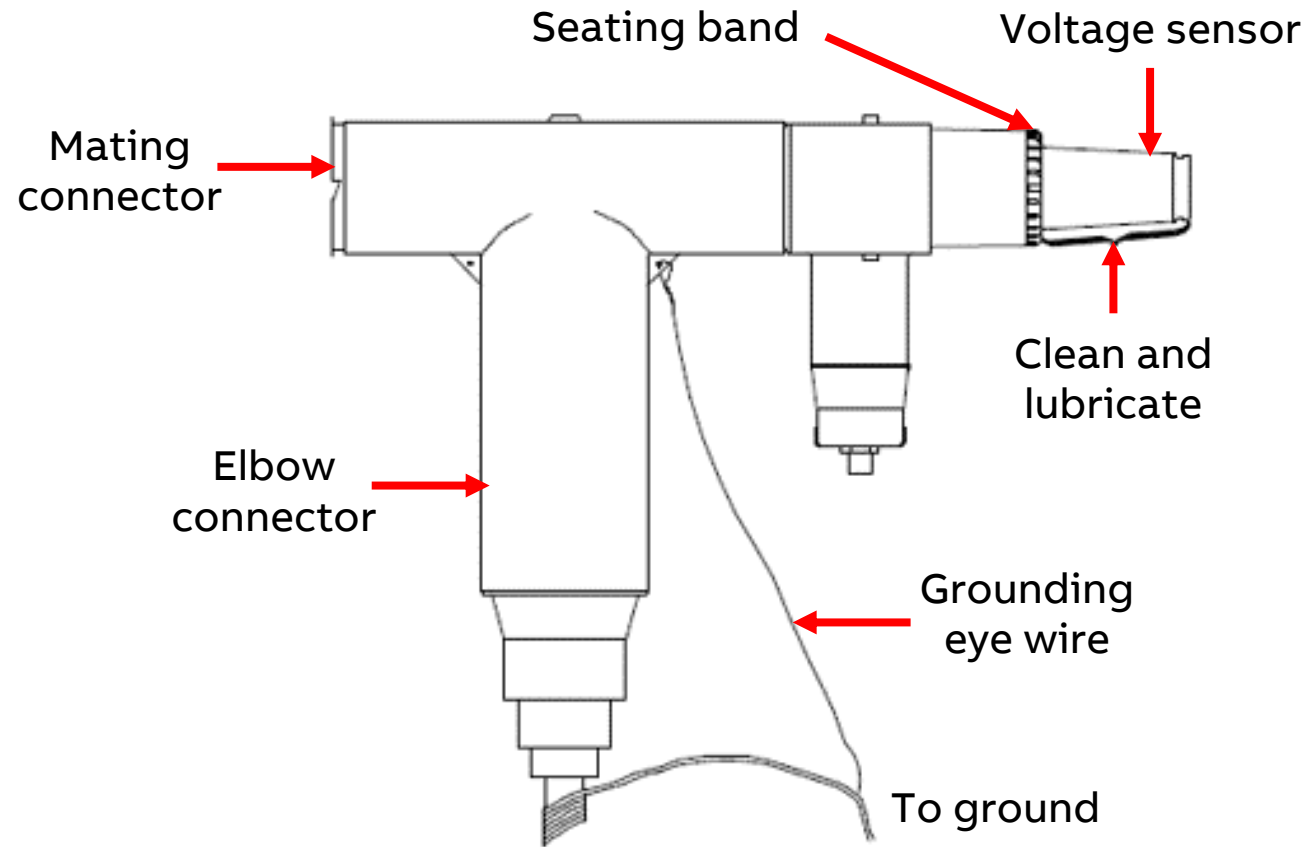
Tru-Break™ switchgear module — Elastimold® grounding accessories

Standard 10 kA interface approach



Tru-Break™ switchgear module — Elastimold® grounding accessories

Integrated into voltage sensors



Tru-Break™ switchgear module — Elastimold® grounding accessories

Grounding aid devices (GAD)



600 A direct ground connections



25 kA rating



600 A grounding device for hot sticks



Tru-Break™ switchgear module — Elastimold® grounding accessories

Grounding aid devices (GAD)



Up to 25 kA fault current ground kit

Tru-Break™ switchgear module — Elastimold® grounding accessories

Grounding aid devices (GAD) variations

GAD and GADDR



BGAD and BGADDR



ABB