ABB – ELDS, 2019

MV Primary Gas-insulated Switchgear

Type ZX0.2

Speaker, position

ZX0.2

MV Primary Gas-insulated Switchgear – ZX0.2

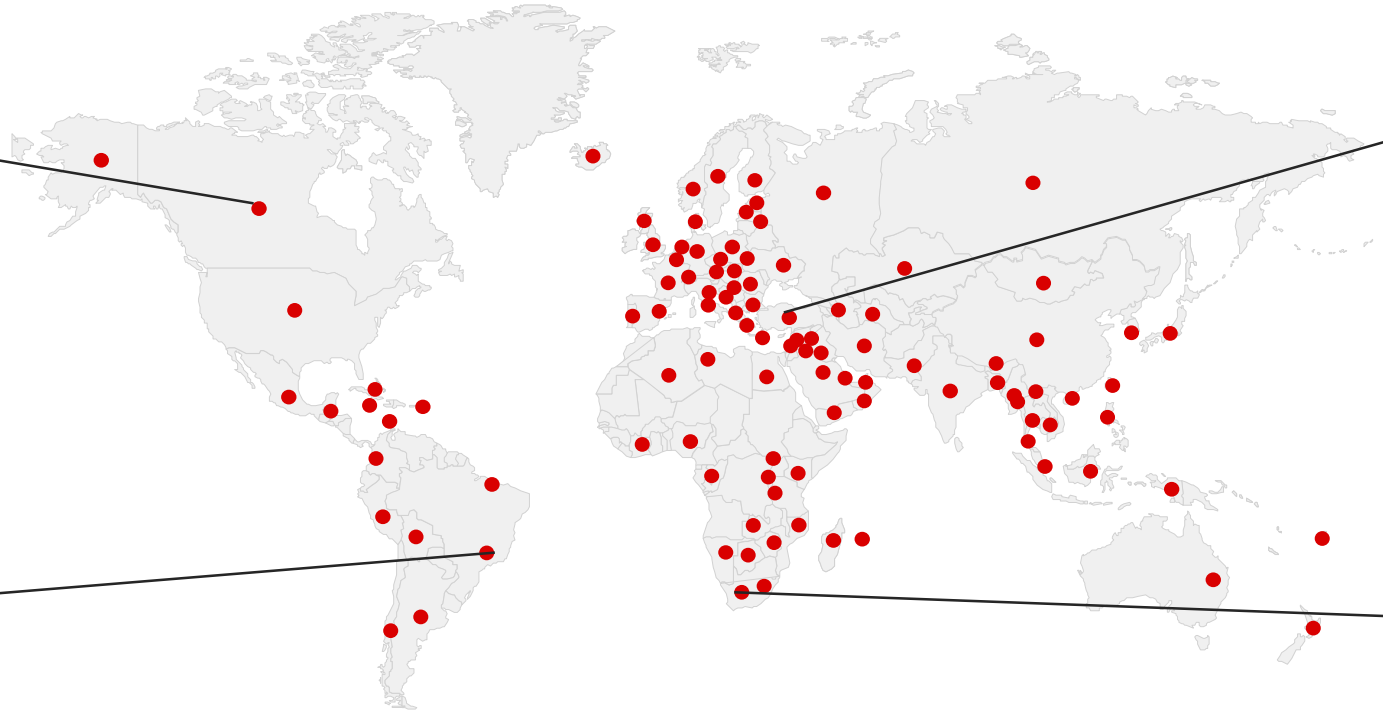
References

Canada

Crosslinx Transit Solution Constructors
122 x ZX2 Panels for Toronto Metro

Brazil

Arena Fonte Nova
18 x ZX0.2 Panels for the stadium



Turkey

Istanbul Metropolitan Municipality
198 x ZX0.2 panels for the Istanbul Metro

South Africa

City of Cape town
More than 100 x ZX0.2 Panels for the Cape Town

Over 75.000 panels installed in more than 100 countries!

MV Primary Gas-insulated Switchgear – ZX0.2

Reliable, safe, cost-effective and operator-friendly

Our solution

Reliable

- Performance and aging behavior independent of site conditions
- **Proven**, durable circuit breaker design with extended lifetime
- Increased avaiulability

Safe

- Reduced fault rate
- Increased operator safety due to **arc-resistant** design
- No access to MV parts

Cost-effective

- **Compact** switchgear design and optimized substation layout
- **Maintenance-free** MV parts
- Reduced demand for spare parts

Operator-friendly

- **Safe, fast and easy installation** without gas works and the need for special tools
- Intuitive panel control
- **Flexible, customized design**

Portfolio

Portfolio overview ZX0.2

Why choose ABB?

Contacts

MV Primary Gas-insulated Switchgear – ZX0.2

ABB's MV GIS offering

IEC primary switchgear

Gas-insulated switchgear (GIS Primary):

– Global: ZX0, **ZX0.2, ZX1.2, ZX2**, ZX1.5R (for rail applications)

Recent innovations: **Digital switchgear, eco-efficient GIS**

For ANSI markets

Gas-insulated switchgear (GIS Primary): **ZX2, ZX2.2, ZX0.2**

IEC secondary switchgear

Gas-insulated switchgear (GIS RMU): **SafeRing, SafePlus, SafeLink** families

Recent innovations: **Eco-efficient GIS, smart grid enabled switchgear**

MV Primary Gas-insulated Switchgear – ZX0.2

Where is MV GIS technology used?

Applications

Utilities (ZX0.2, ZX2)

- **Electricity Distribution**
- **Substations**
- Power Generation
  - Conventional
  - **Renewables**

Industry (ZX2, ZX1.2)

- Oil and Gas
- **Mining and Minerals**
- **Pulp and Paper**
- Petrochemicals
- Steel

Transportation (ZX0.2, ZX2, ZX1.5R)

- **Rail**
- Airports
- Marine
  - Offshore Applications
  - Vessels

Building (ZX0.2, ZX2)

- **Data Center**
- Hospitals
- Infrastructure

MV Primary Gas-insulated Switchgear – ZX0.2

Well-positioned in attractive markets

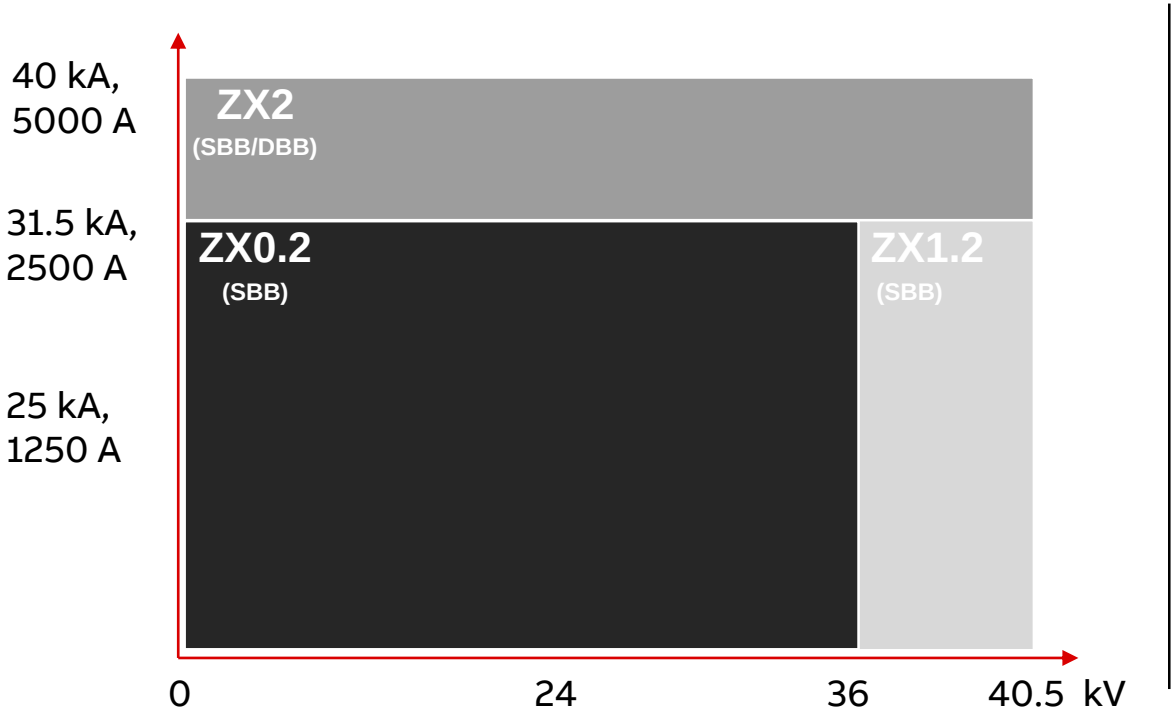
Well-positioned ZX portfolio

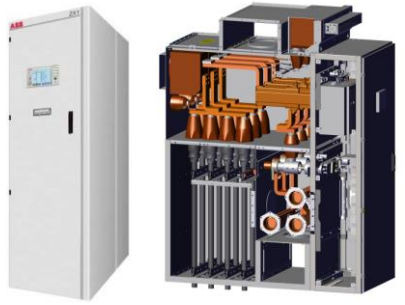
- Most **complete switchgear** portfolio
- Global coverage of requirements – **locally supplied and supported**
- **Flexible** design, **reliable and** and **cost-efficient**
- Global presence with **local service and support**

Most complete portfolio, global coverage

MV Primary Gas-insulated Switchgear – ZX0.2

ZX Family





ZX1.2

ZX0.2

ZX2

MV Primary Gas-insulated Switchgear – ZX0.2

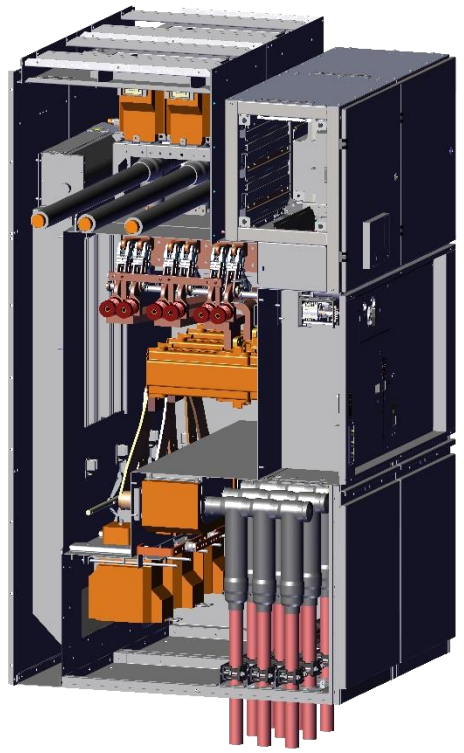
Cost-effective design for applications with little real estate

MV Primary Gas-insulated Switchgear – ZX0.2

Are you looking for a safe, reliable and compact switchgear design?

Flexible, high-quality design to meet all customer requirements type ZX0.2

- Up to **36kV**
- Up to **2500A**
- Up to **31.5kA, 3 sec**
- **3-phase encapsulated, modular arc-resistant design**
- Factory-assembled, -filled and –tested panels
- IEC62271-200
- Several local certifications available on request



MV Primary Gas-insulated Switchgear – ZX0.2

Are you concerned about gas handling?

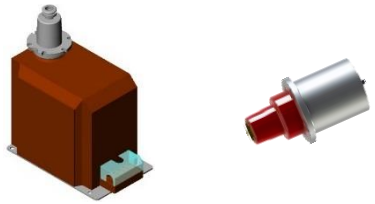
Gas compartments

- Gas compartments made from laser-cut stainless steel
- Gas compartment is equipped with a on-return filling valve (with protective cap) and repair openings
- Rated operating pressure 130kPa up to 24kV, 150kPA @36kV
- **Low amount of SF6** used per panel: 5 - 10kg
- **Gas leakage < 0,1% per year**
- **No checks on the insulating gas are necessary and maintenance-free**

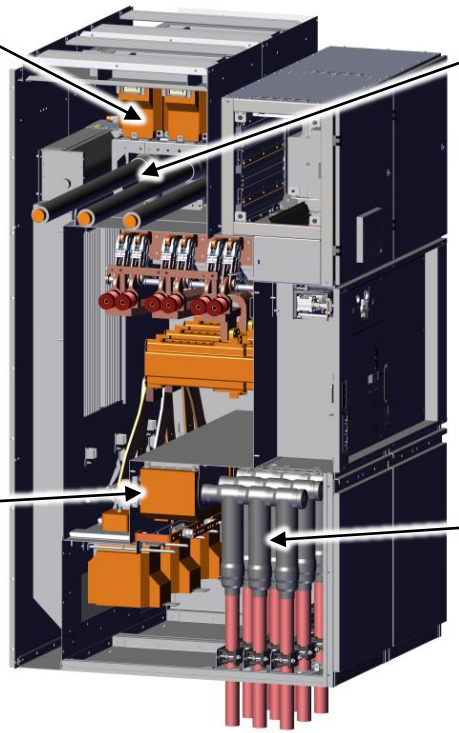
MV Primary Gas-insulated Switchgear – ZX0.2

Technology: safe, fast and easy installation

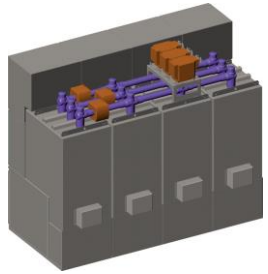
Voltage transformer / Sensor



Ring core type / Sensor



Busbar



Cable plug

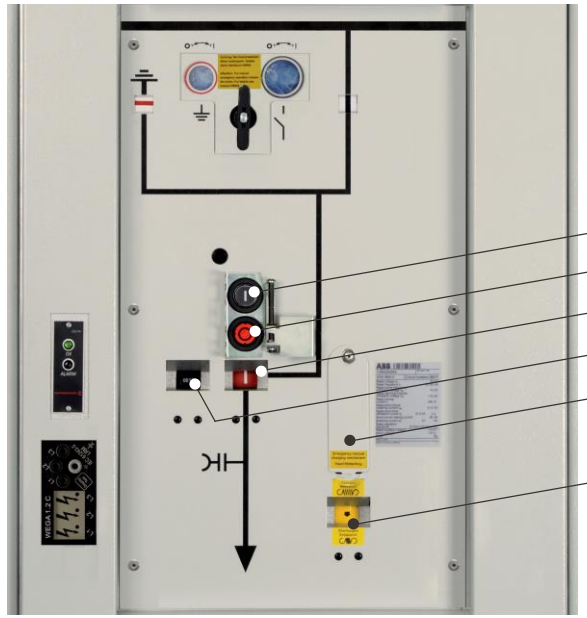
MV Primary Gas-insulated Switchgear – ZX0.2

Key components

Operations

- Motorized operating mechanisms for switching devices located easily accesible inside LVC
- Optional view ports for visual verification
- Operator control area, controls and indicators for the CB
- CB operation mechanism is located in the mechamism bay of the panel. The indicators and control for CB are located in the operator control area of the panel

Operator control area, controls and indicators for CB



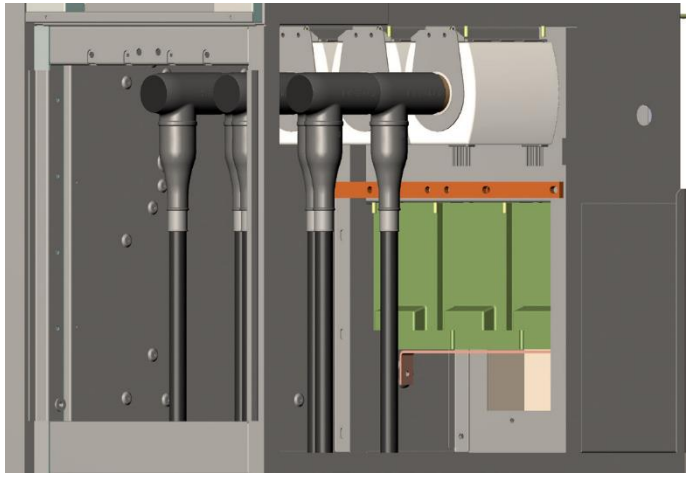
1	Mechanical N pushbutton ci cuit-breaker
2	Mechanical OFF pushbutton circuit-breaker
3	Cover on the receptacle for manual charg-ing of the stored-energy spring
4	Mechanical indi ator for “Circuit-breaker ON” “Circuit-breaker OFF”
5	Mechanical indicator “Stored-energy spring charged” “Stored-energy spring dis-charged”
6	Operating cycle counter

MV Primary Gas-insulated Switchgear – ZX0.2

How would you like to make your cable connection?

Outer cone termination system

Cable termination compartment



Cable termination area

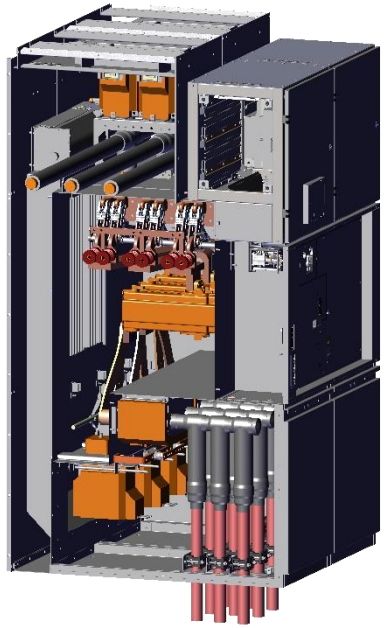
Connector

Cable termination

Panel with three position disconnector and fuse

MV Primary Gas-insulated Switchgear – ZX0.2

Current transformer

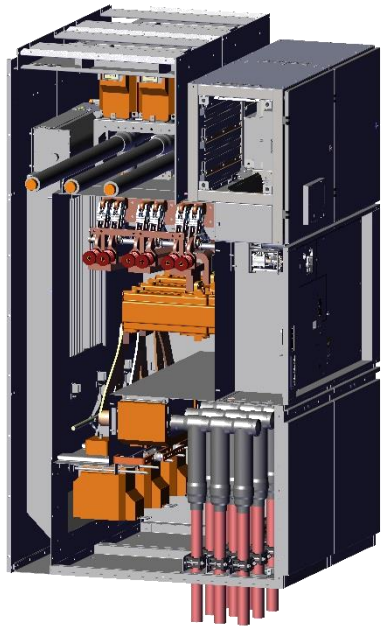


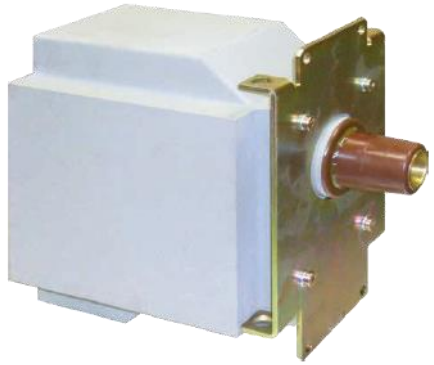
Technical data of the ring core current transformers

Current transformer type			1	2	3
Rated voltage	U_r	kV		0.72	
Panel width		mm	450	600	1200
Rated primary current	I_r	A	…630	…1250	…2500
Rated secondary current		A		1 or 5	
Max number of cores			2	3	5
Core data					
Measuring cores	Capacity Class	VA	2.5 to 15 0.2/0.5/1	…20 0.2/0.5/1	…20 0.2/0.5/1
Protection cores	Capacity Class Overcurrent factor	VA	2.5 to 15 5P to 10P 10 to 20	…20 5P 20	…20 5P 20

MV Primary Gas-insulated Switchgear – ZX0.2

Voltage transformer





Technical data of voltage transformers

Type of voltage transformer	Rated voltage [kV]	Max. capacity [VA]	Class	Rated secondary voltage of the metering winding [V]	Rated secondary voltage of the earth fault winding [V]	Rated thermal current limit of the metering winding with rated voltage factor 1.2 / continuous [A]	Rated thermal long duration current of the earth fault winding with rated voltage factor 1.9 / 8 h [A]
fixed mounted	up to 24	20 50 100	0.2 0.5 1	100 / √3 110 / √3	100 / √3 110 / √3	6	6
plug-in type	up to 36	25 60 120	0,2 0.5 1	100 / √3 110 / √3	100 / √3 110 / √3	6	6

Rated power frequency withstand voltage of voltage transformers

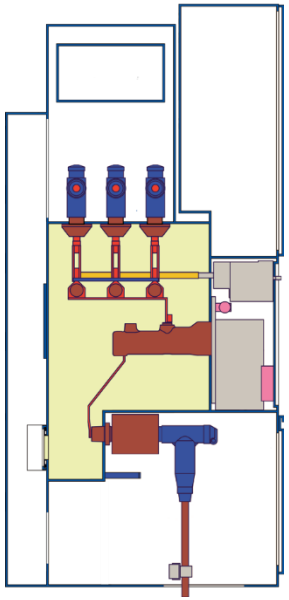
Ratd voltage [kV]	Rated power frequency withstand voltage (1 min)
> 12 – 24	50
> 24 – 36	70

MV Primary Gas-insulated Switchgear – ZX0.2

What is your control and protection philosophy?

LVC and Protection, metering and control

Panel with tall LVC



REF 620

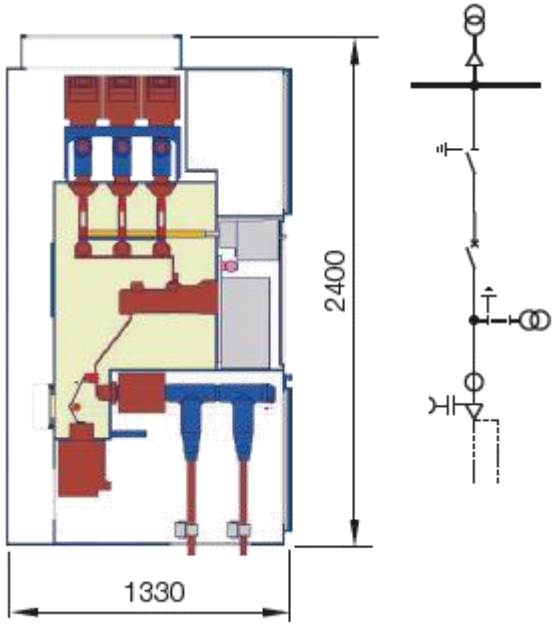
REF620 is a member of ABB's Relion® product family and part of its 620 protection and control product series.

The 620 series relays are characterized by their functional scalability, compactness and withdrawable plug-in unit design.

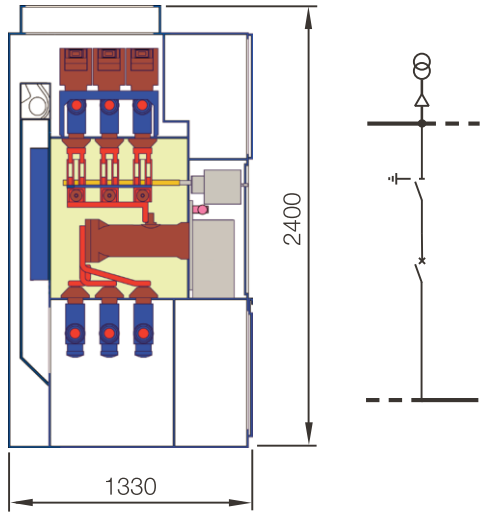
MV Primary Gas-insulated Switchgear – ZX0.2

Section views

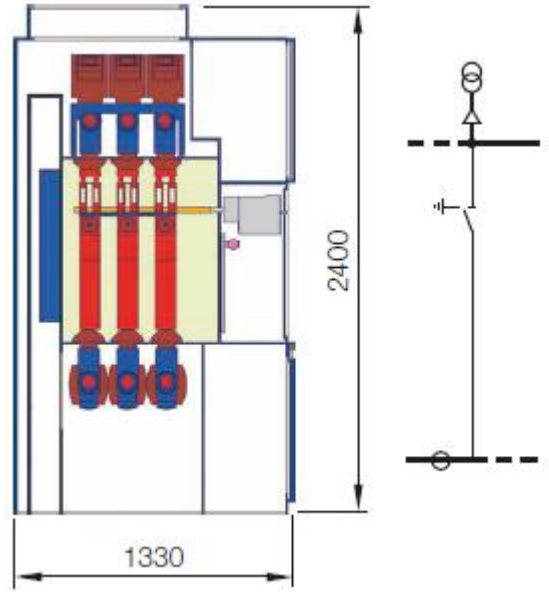
Typical panel variants ZX0.2



Feeder panel



Sectionaliser panel



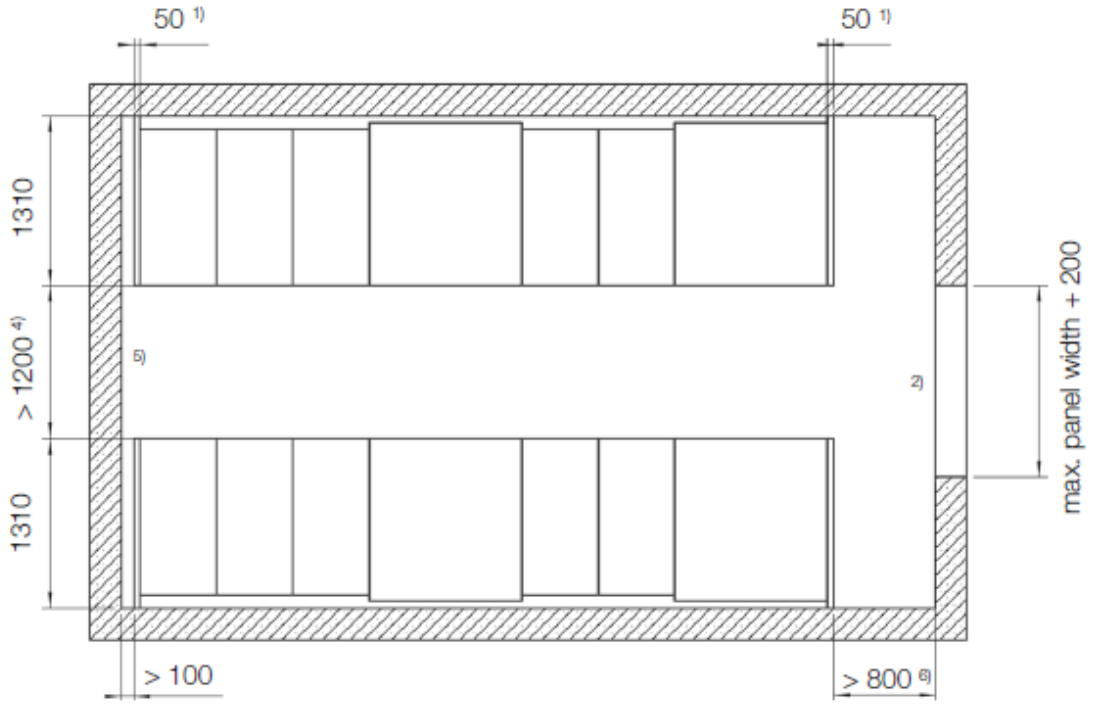
Riser panel

MV Primary Gas-insulated Switchgear – ZX0.2

Saving space helps to reduce cost

Installation

- Delivery of **factory filled and tested panels**
- Installation without gas works at site
- Wall mounting installation
- Transverse installation is possible
- Installation on standard floor frames embedded in concrete floor, on intermediate frame or on raised false floor
- Installation and commissioning shall be done by **trained and certified service personnel**



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Panel weights

Panel variants	Panel width [mm]	Rated normal current [A]	Weight, max [kg]
Feeder panel with three position switch disconnector and fuses	600	Dependet on the fuses	600
Feeder panel	450 600	…630 …1250	450 900
Sectionaliser panel	600	…1250	900
Riser panel	600	…1250	700
Transfer panel	600	…1000 (…1250)	800
Incomer panel	1200	…2500	2200
Sectionaliser panel	900	…2500	1600
Riser panel	900	…2500	1200

Sales Product Presentation – ZX0.2

Why choose ABB?

Highlights

- ABB is the pioneer in MV GIS
- Continuous improvement
- Products tailored to meet your local requirements and standards
- Highly reliable, smart, compact and economic solution
- Full engineering and technical support
- Worldwide footprint and service network

Sales Product Presentation – ZX0.2

Links

http://abb.com/

http://abb.com/medium-voltage

https://new.abb.com/medium-voltage/switchgear/gas-insulated-switchgear

Let’s write the future of safe, smart, and sustainable electrification


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