

Ecostruxure™
Innovation At Every Level

GenieEvo

Catalogue 2025

Air Insulated MV Switchgear 3.3-13.8 kV



www.se.com/GenieEvo

Life Is On

Schneider
Electric



Are you dealing with complex electrical grids and trying to go green at the same time?

Or perhaps large or critical applications that face challenges to decarbonize?

At Schneider Electric, we are committed to help you maximize performance, while becoming more sustainable by embracing **AIR & DIGITAL** technologies

Same technology, same offer, simpler names.

We're making it easier for you to navigate across the wide range of our world-class digital products and select the offers that are right for you and your needs with confidence. 

Active Connectivity

Our latest equipment takes advantage of advancements in digitization to be connected by default. We call this Active connectivity.

Featuring a scalable range of connected features, smart sensors and devices, integrated seamlessly in the factory to provide data about the installation environment and health of your installation.

Together, this data is easily shared to improve all aspects of the application lifecycle.

Read-on to learn more about Active connectivity.



GenieEvo Active, a new generation of natively connected MV switchgear



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PM108951

Our purpose is to

empower all to make the most of our energy and resources



Find more information [here](#)



All pictures of the catalogue illustrate the product in an environment close to reality. They were taken off-line. For live operation the PPE. (personal protective equipment) must be used in accordance with the regulations of the place of installation.

GenieEvo
Active Plus,
for 24/7 businesses
that stay On!



Overview



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Innovative technologies for greater sustainability

Powered by air and digital

Next generation power system equipment prioritizes sustainability by focusing on efficient air-based switching and digital integration. Our latest MV equipment is designed to be more sustainable when powered by Air and Digital.

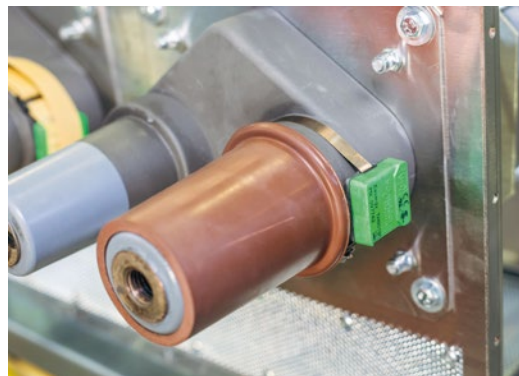
Sustainability, let's clear the Air

With increasing energy demands and the need to decarbonize, making the CO₂ footprint of our products clearly visible is a priority for understanding their sustainability impact. Our Product Environmental Profiles show all necessary information for making a sustainable choice. Our latest ranges use breaking and isolation technologies based on pure air or vacuum technology, reducing CO₂ footprint and concerns for future regulation.

Natively digital equipment contributes massively to sustainability goals in a number of ways. With embedded connectivity and IoT sensors in our Active ranges, you can:

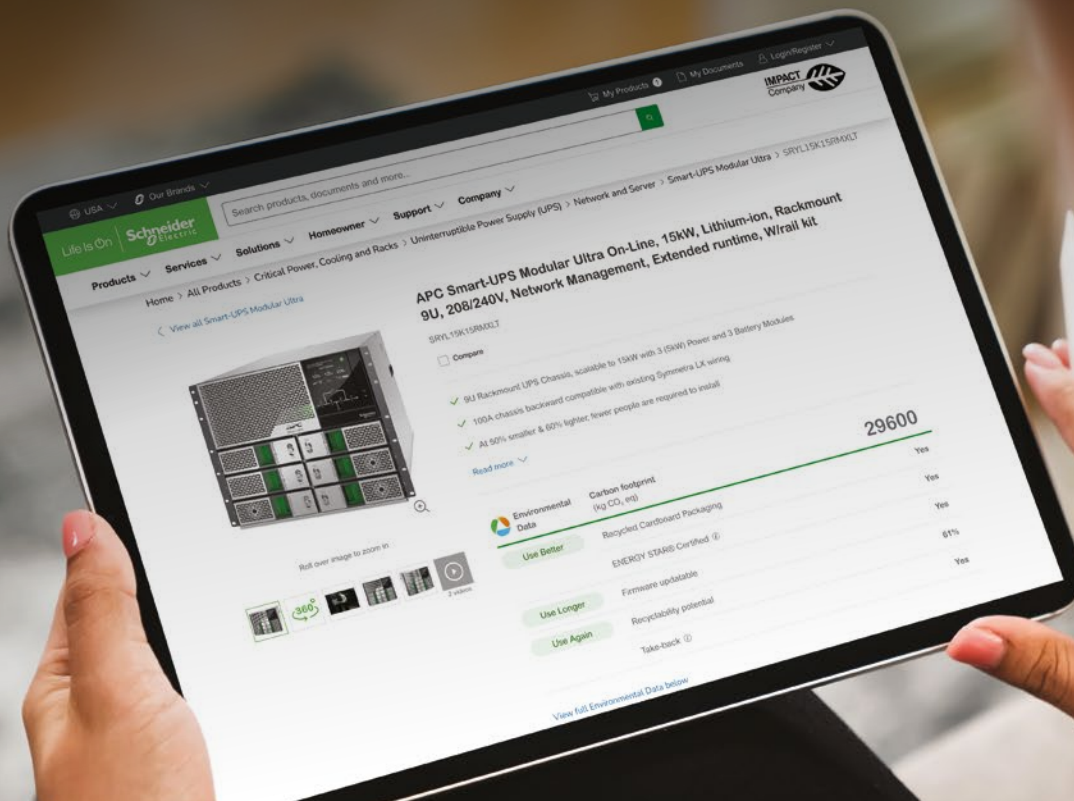
- Monitor equipment health and use optional EcoCare membership to optimize efficiency, and reduce unplanned downtime
- Enable operation of live equipment from outside of the arc-flash zone
- Speed up daily interactions with paperless documentation and records.

The unique combination of Air and Digital equipment with EcoCare membership helps you decarbonize, simplify, reduce downtime and maintenance costs, while increasing equipment lifespan and saving time. All with less CO₂, for a more sustainable future.





Environmental Data Program

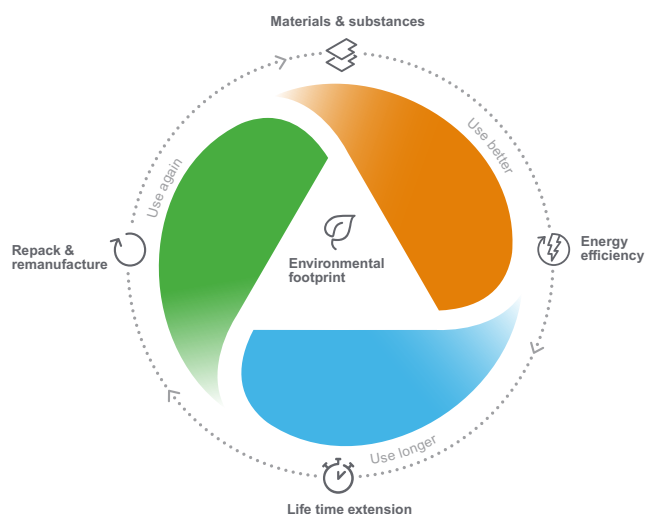


Next-level transparency for better-informed product choices

The Environmental Data Program is a framework for how we measure, categorize, and compare the environmental attributes and footprint of our products.

Using a rigorous, fact-based methodology, the program provides environmental data from across the product lifecycle.

Five data categories across the product lifecycle



Use Better: How sustainable a product is, including environmental footprint, materials and substances, packaging, and energy efficiency.

Use Longer: How a product's life time can be effectively extended in terms of reparability and updatability.

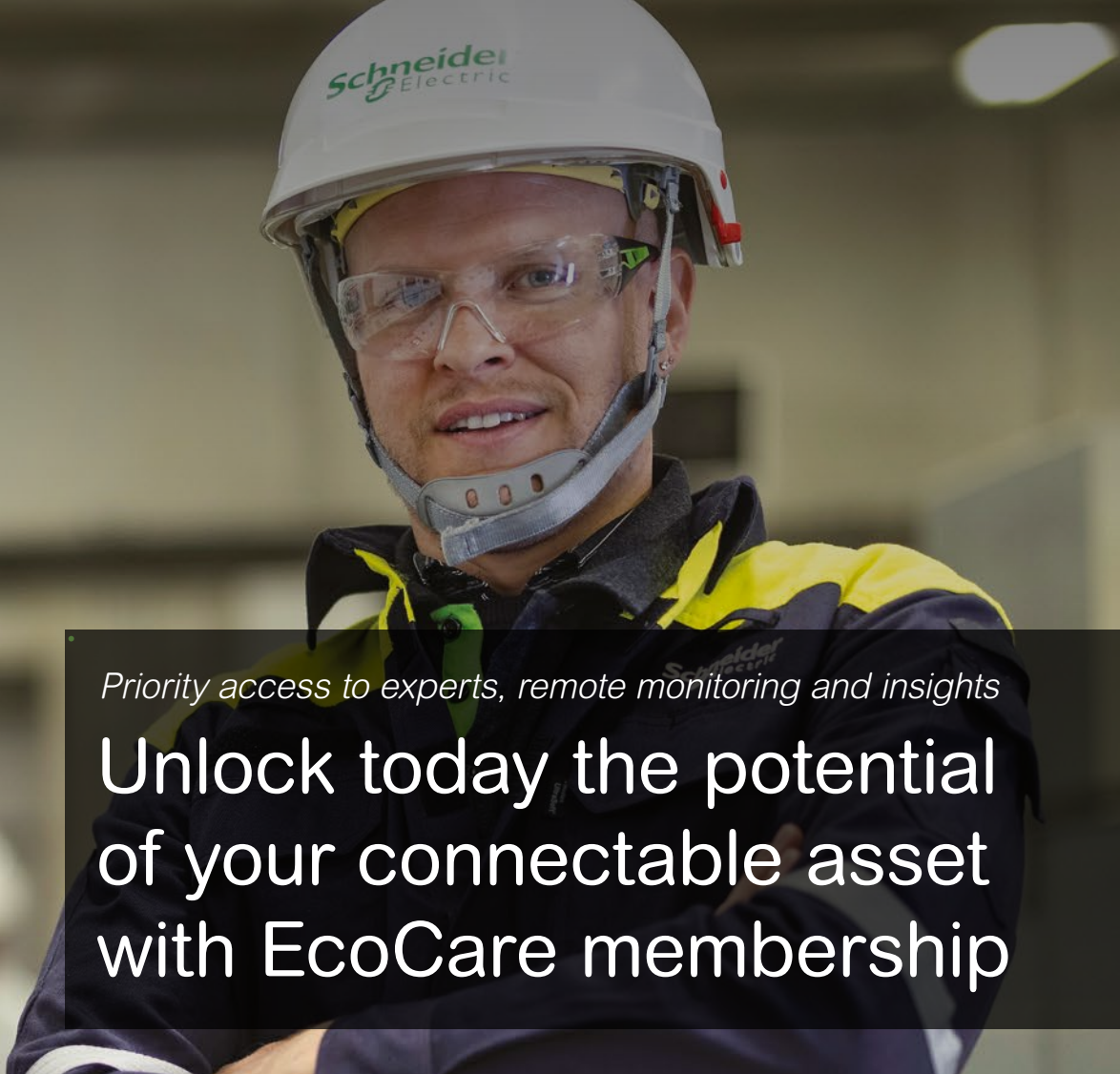
Use Again: How a product can be reused, from dismantling and remanufacturing to recyclability and manufacturer take back.

With this transparent, verified data, customers and partners are empowered to make conscious environmental choices and accurately evaluate and report on sustainability performance.

All our hardware offers have an associated environmental data available on se.com product pages.



Learn more about the
Environmental Data Program



Priority access to experts, remote monitoring and insights

Unlock today the potential of your connectable asset with EcoCare membership

With EcoCare membership, a next-generation service plan, you gain exclusive support for your equipment from day 1 and throughout its entire lifecycle. For minimal investment compared with your overall CapEx, you'll enjoy 24/7 remote monitoring and alarm management, and access to technical expertise, on-site and remotely, as defined by service level agreement (SLA).

This proactive approach helps reduce the risk of unexpected downtime and related costs, while enhancing uptime, safety and efficiency of your operations. EcoCare membership helps:

- Reduce by **up to 75 %** electrical failure risk and unplanned downtime¹
- Reduce by **up to 40 %** on-site maintenance activities and planned downtime costs²

A 3-tiered offer to cover all your needs

Overview



Key features



EcoCare Essential

Available when you need us

As an EcoCare member you have **exclusive access to resources and expertise** to resolve issues faster and improve the resiliency and efficiency of your business and operations.



- Priority remote access to experts.
- Exclusive EcoCare rates on all services.
- On-site intervention SLA: standard or upgraded³.
- 24/7 monitoring and alarming for connected assets.
- Extended warranty⁴.

EcoCare Advanced

Fully empowered

We **empower your teams** to run more resilient, safe, efficient, and sustainable operation by anticipating and remotely **helping you mitigate downtime events**.



- Priority remote access to experts.
- Exclusive EcoCare rates on all services.
- On-site intervention SLA: standard or upgraded³.
- 24/7 monitoring and alarming for connected assets.
- Extended warranty⁴.
- + Consultancy from our experts, with advanced analytics.

EcoCare Advanced+

Optimized uptime

We anticipate risks of downtime to give you the **right support** at the right time, and we **optimize the lifecycle of your assets** to **maximize your business continuity**.



- Priority remote access to experts.
- Exclusive EcoCare rates on all services.
- On-site intervention SLA: standard or upgraded³.
- 24/7 monitoring and alarming for connected assets.
- Extended warranty⁴.
- Consultancy from our experts, with advanced analytics.
- + Recommendations for dynamic maintenance.
- + Condition-based maintenance.

¹ - Percentage non-contractual and based on our experience and expertise for the main root cause of electrical failure risk observed and for which Schneider Electric has developed solutions.

² - Percentage non-contractual and based on the time between 2 manufacturer maintenance activities which can be extended by up to 2 years compared to a traditional calendar-based maintenance contract, from 3 to 5 years

³ - Maximum zone coverage and response times might vary

⁴ - Applicable for new and modernized equipment sold together with EcoCare

Check with your local Schneider Electric Services representative

Design for a large field of application

A

GenieEvo switchgear has been designed for the various operating requirements in public and industrial medium-voltage systems.



Power Supply Companies

- HV/MV substation
- MV/LV substation
- MV/MV substation
- Power generation



Industries

- Energy & Chemicals
- Automotive
- Semi Conductor
- Mining, Mineral, Metal
- Process engineering



Infrastructure

- Airports
- Tower Blocks
- Water plants
- Marine and Shore Power



Building

- Large commercial centres
- Hospitals
- Hotels
- Education



Medium & Hyper scale Data Centers

- Extra Large Data Centers
- Cloud & Service Providers

Natively digital for next level reliability

A



Enhanced safety

GenieEvo Active now embeds a set of comprehensive features like remote controlled circuit breakers, Optional internal arc detection dedicated to reduce risks.



Simpler

GenieEvo Active has been designed to accommodate a diverse range of installation requirements, yet simplify operations. This is done by improving visibility and accessibility so that users take decisions and act faster. The digital logbook gives simple access to all related document in a user-friendly manner.



Resilient

GenieEvo Active benefits from more than 25 years of experience in medium voltage switchgear and in-house component design. Now with condition monitoring sensors, users can stay informed of real condition to maintain more reliable power, even in the harshest of environments.



Efficient

Accommodating circuit breakers, metering in compact cubicles saves space. Combined with native connectivity, you can operate and monitor equipment remotely with condition-based maintenance providing powerful insights, anywhere, anytime to stay at peak efficiency.

Enhance Safety & Reliability

Unique benefits of digitally native GenieEvo

Enhanced operational safety

As a natively digital switchgear, GenieEvo Active Plus enables nearby digital control and monitoring features.

Digital controls allow users to operate and monitor the switchgear from a smart device or HMI, enabling staff to do their jobs without physically interacting with the equipment. Circuit Breaker operation, can be managed from outside of the arc flash zone.

The latest embedded IoT monitoring sensors provide a scalable way to maintain visibility of equipment condition in real-time. Starting with Genie Evo Active allows users to benefit from essential monitoring features to avoid unplanned downtime. Scaling up to GenieEvo Active Plus brings our latest Partial Discharge monitoring when combined with a dedicated expert monitoring service.



Simplicity

It takes time to manage power distribution applications correctly, while avoiding unplanned downtime and increasing costs. We designed our latest digitally native GenieEvo with simplicity in mind. All necessary components are embedded, covering today and tomorrow's needs, simple to specify, order, install and use.

Connectivity features and sensing are factory installed and tested, meaning no complex engineering or commissioning.

Documentation and drawings of the as-built configurations are loaded to a unique cloud-based repository called Digital Logbook, to be viewed and updated anytime, anywhere.

Our simple architectures for cloud or edge (on-premise) connectivity use a single gateway, EcoStruxure Panel Server to gather and communicate with wired and wireless sensors, devices and HMI.

Enhance Safety & Reliability

Unique benefits of digitally native GenieEvo

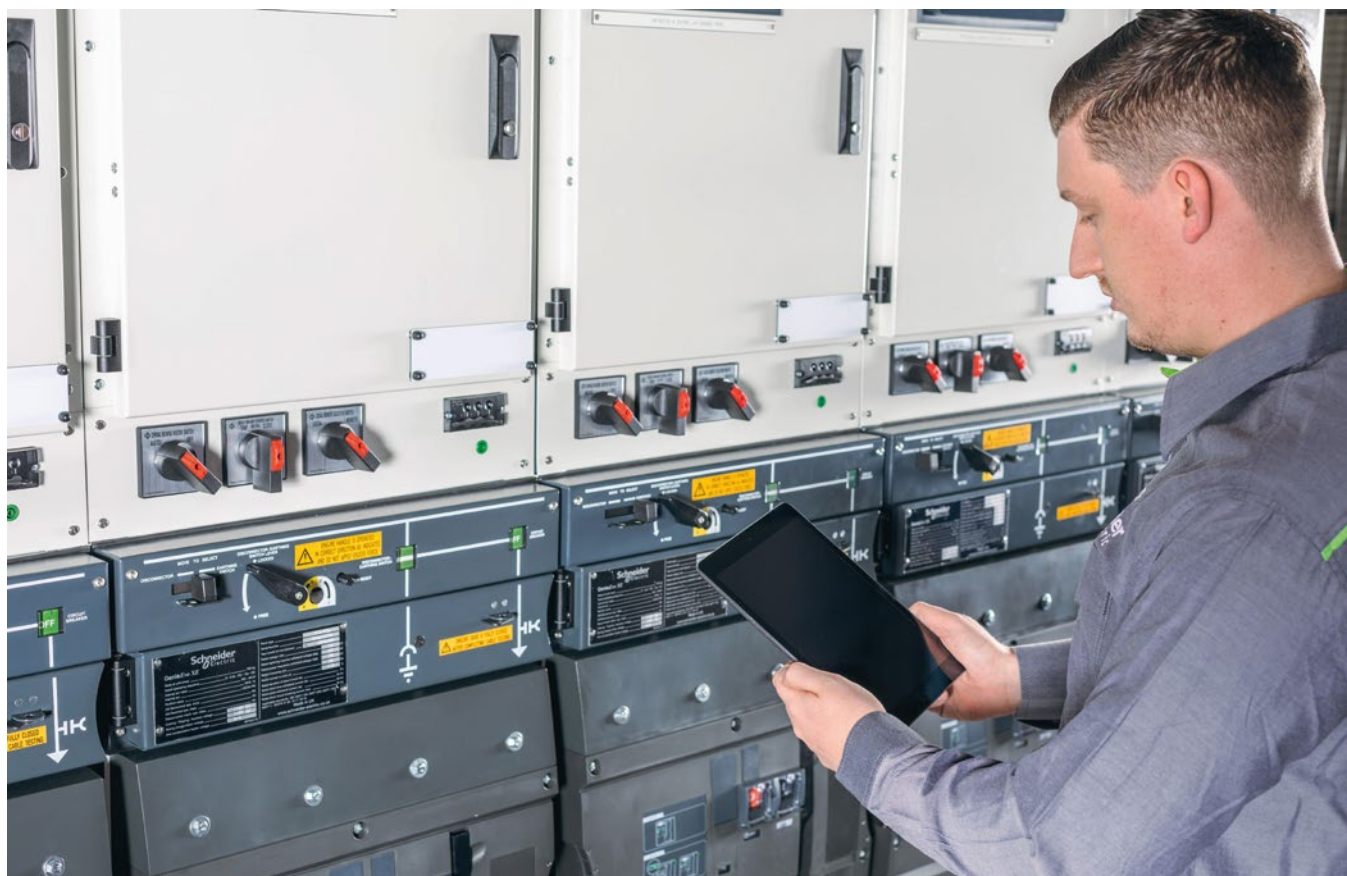
A

More Resilience

With more than 25 years experience in medium voltage, we know that design for safety and reliability go hand in hand as critical factors in the selection of equipment. We take extra special care using in-house design of key components to bring you the Optimal experience, even in the harshest of installation conditions.

Using the latest IoT sensors to monitor installation conditions, busbars, circuit breakers and more allows GenieEvo Active to take resilience to the next level. The use of condition-monitoring with alerts allows maintenance to be optimized, while reducing costs.

Application data from sensors are utilized in powerful analytics within EcoCare membership, delivering alerts, predictions and expert knowledge to guide your decisions 24/7. Whether on-site or on-holiday, you can count on a team of dedicated professionals to support and help your every move help prevent downtime.



Striving for Efficiency

Linked to sustainability, make the most of your energy extends to everything we do.

Whether integrating circuit breakers, contactors or protection relays, our integrated approach means that you receive factory tested, connected components, all ready for use with minimal additional integration. We develop digital components with the same philosophy, including embedded cybersecurity compliance for all components, truly digitally native.

GenieEvo Active can be cloud connected, as easily as inserting a SIM card and configuring a new phone, but flexible to connect your on-premise solutions, all thanks to simplicity of architectures and a single, all-in-one gateway for data, EcoStruxure Panel Server. Take efficiency further and save time by using remote digital monitoring and controls on a local HMI or mobile device, all designed for efficiency.

EcoCare membership supports your transition to more predictive maintenance. Scalable and powered by our EcoStruxure Digital platform, using condition monitoring alerts, lifespan predictions and expert support, for best-in-class efficiency with GenieEvo Active equipment.

What is EcoStruxure?

Overview of GenieEvo Active and GenieEvo Active Plus

500 000

EcoStruxure™ has been deployed in almost 500 000 sites with the support of 20 000+ developers, 650 000 service providers and partners, 3 000 utilities, and connects over 2 million assets under management.

EcoStruxure™ ready



Efficient asset management

Boost your efficiency and reduce downtime using predictive maintenance tools



24/7 connectivity

Make better informed decisions with real-time data that is available everywhere, anytime



Enhanced safety

Advanced features designed-in and based on well-known designs, experience and technology.

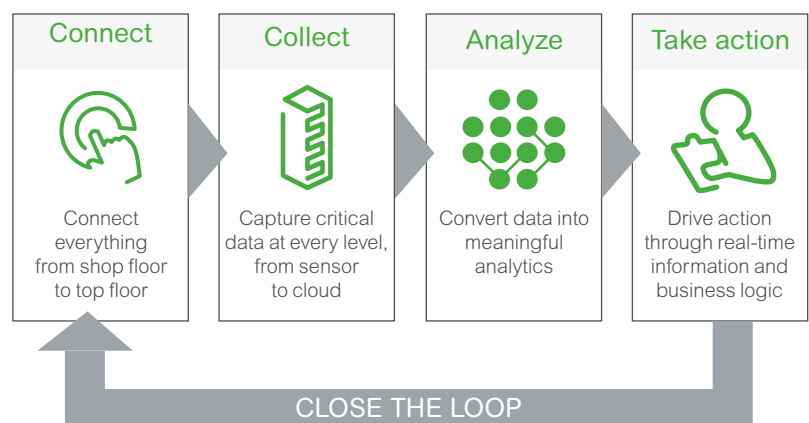
EcoStruxure™ is our open, interoperable, IoT-enabled system architecture and platform. EcoStruxure delivers enhanced value around **safety**, **reliability**, **efficiency**, **sustainability**, and **connectivity** for our customers. EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level. This includes Connected Products, Edge Control, and Apps, Analytics & Services which are supported by Customer Lifecycle Software.

Turn data into action

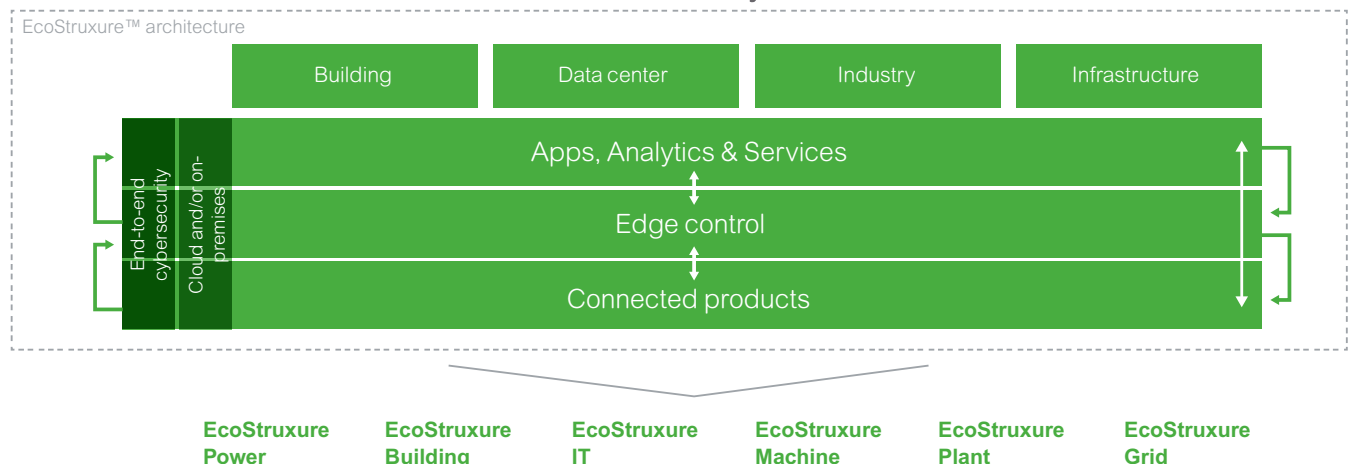
EcoStruxure™ architecture lets customers maximize the value of data.

Specifically, it helps them:

- Translate data into actionable intelligence and better business decisions
- Take informed decisions to help secure uptime and operational efficiency thanks to real-time control platforms
- Gain visibility to their electrical distribution by measuring, collecting, aggregating, and communicating data



EcoStruxure™
Innovation At Every Level



What is EcoStruxure?

GenieEvo Active & GenieEvo Active Plus

A

Unlock the full potential of your GenieEvo Active and its performance by **combining it with EcoCare membership*** and get access to:

- 24/7 health monitoring & alarms from our Connected Services Hub, our remote team of experts including Partial Discharge monitoring (Active Plus only)
- Exclusive priority access to Schneider Electric expertise and on-site interventions, defined by Service Level Agreement (SLA)
- Proactive recommendations and insights to your operations to reduce costs and disruption, increase safety, reliability and help extend the equipment lifespan to optimize costs or carbon emissions.

GenieEvo Active: Natively connected essential monitoring

GenieEvo Active is our well known MV switchgear equipped natively with thermal, environmental and circuit breaker monitoring.

This solution connects your substation equipment to a cloud-based remote monitoring platform for 24/7 health assessment from day one of operations.

GenieEvo Active Plus: Comprehensive with optional Partial Discharge monitoring

Additionally, GenieEvo Active Plus adds comprehensive monitoring using Partial Discharge monitoring sensors. When coupled with dedicated expert services, it helps you identify a variety of abnormal events before they result in unplanned downtime.

GenieEvo Active: ● + option ●

GenieEvo Active Plus: ● + ●



(*) Please contact your local Schneider Electric representative to verify the availability of EcoCare / [EcoStruxure Service Plan](#) in your region.

EcoStruxure™ Panel Server PAS600

Seamless connection of smart IoT devices to your applications

- All-in-one gateway
- Wireless or wired devices
- Simple commissioning and operation
- Edge or Cloud architectures

PowerLogic CL110 Environmental Sensor

Measure ambient temperature and humidity to detect abnormal conditions in:

- Switchgear electrical room
- Cable or busbar compartment
- Dew point calculation
- Battery-powered (service life > 15 years)

PowerLogic P5 Protection Relay

- Built-in arc flash protection
- 8 Communication protocols, including IEC 61850
- Nearby operation through your smartphone
- Cybersecurity compliance
- Withdrawable design
- Advanced color screen display

PowerLogic PD100 Partial Discharge sensor

Continuous partial discharge monitoring to detect abnormal activity in switchgear and cables terminations

- Based on capacitive coupling
- Fully integrated sensors
- Optional, expert driven Service

PowerLogic TH110 Thermal Sensor

Continuous thermal monitoring to detect hotspots and potential loose connections of:

- Cable connections
- Busbar connections (optional)
- Circuit breaker arms (optional)
- Battery-less sensor

GenieEvo Connectivity Architectures

Active:

Digitally native with essential monitoring

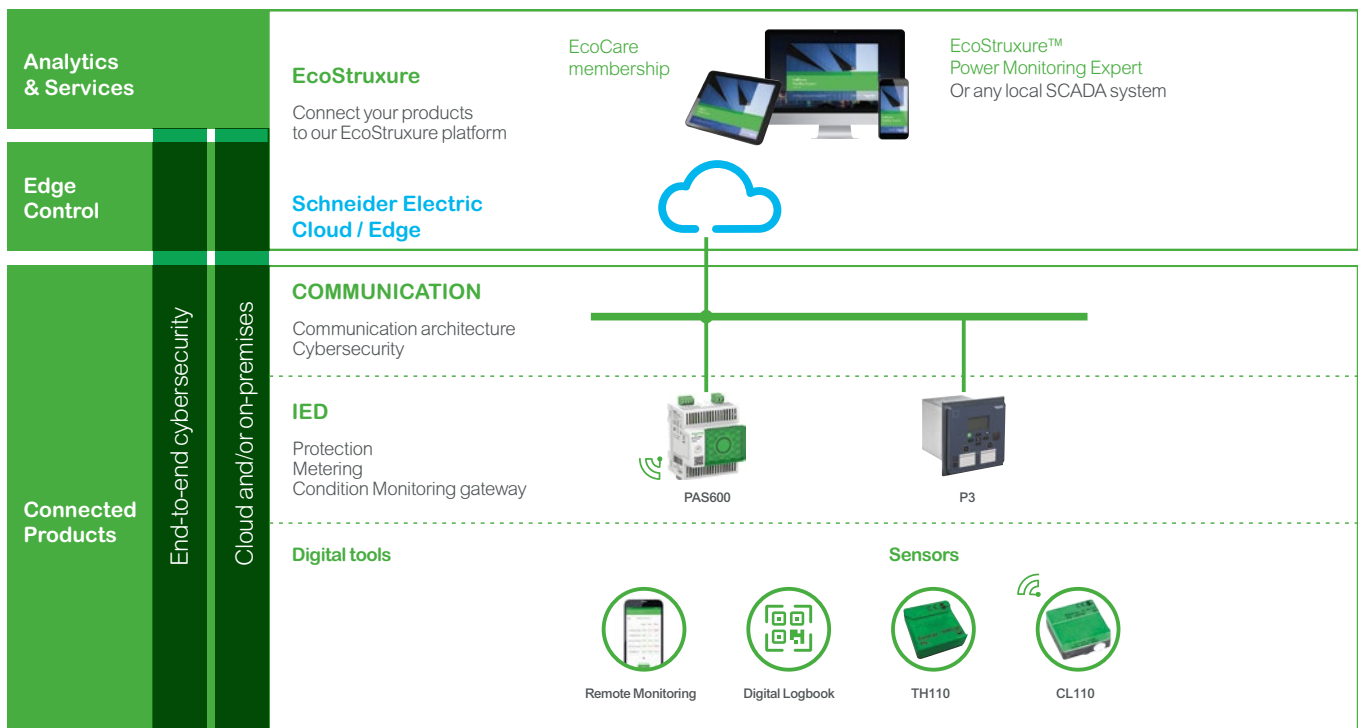
GenieEvo Active

Features native connectivity to cloud or edge architectures

Detect and react faster to abnormal conditions, with 24/7 cloud connectivity with essential monitoring features.

- Thermal monitoring
- Environmental monitoring
- Circuit Breaker monitoring
- Connectivity gateway to Schneider Electric cloud
- QR code access to a Digital logbook and product information via **EcoStruxure Facility Expert**
- Combine GenieEvo Active with **EcoCare membership** for exclusive access to our MV services experts and advanced analytics

EcoStruxure™
Innovation At Every Level



PowerLogic Environmental Tag

CL110 monitors ambient conditions continuously to:

- Help maintenance manager to monitor ambient moisture and pollution which are detrimental to the switchgear.
- Calculate condensation cycle, compared with mission profile conditions. Using EcoCare membership, a team of dedicated experts can recommend maintenance and cleaning frequency adjustment in order to maintain the switchgear in its nominal status.

PowerLogic Thermal Tag

TH110 monitors thermal condition of live components connections to:

- Highlight thermal anomalies in critical power connections
- Continuous monitoring helps prevent deterioration, reducing risks to operators and equipment
- Optimize predictive maintenance and fire prevention

GenieEvo Connectivity Architectures

Active Plus:

Comprehensive monitoring & control

A

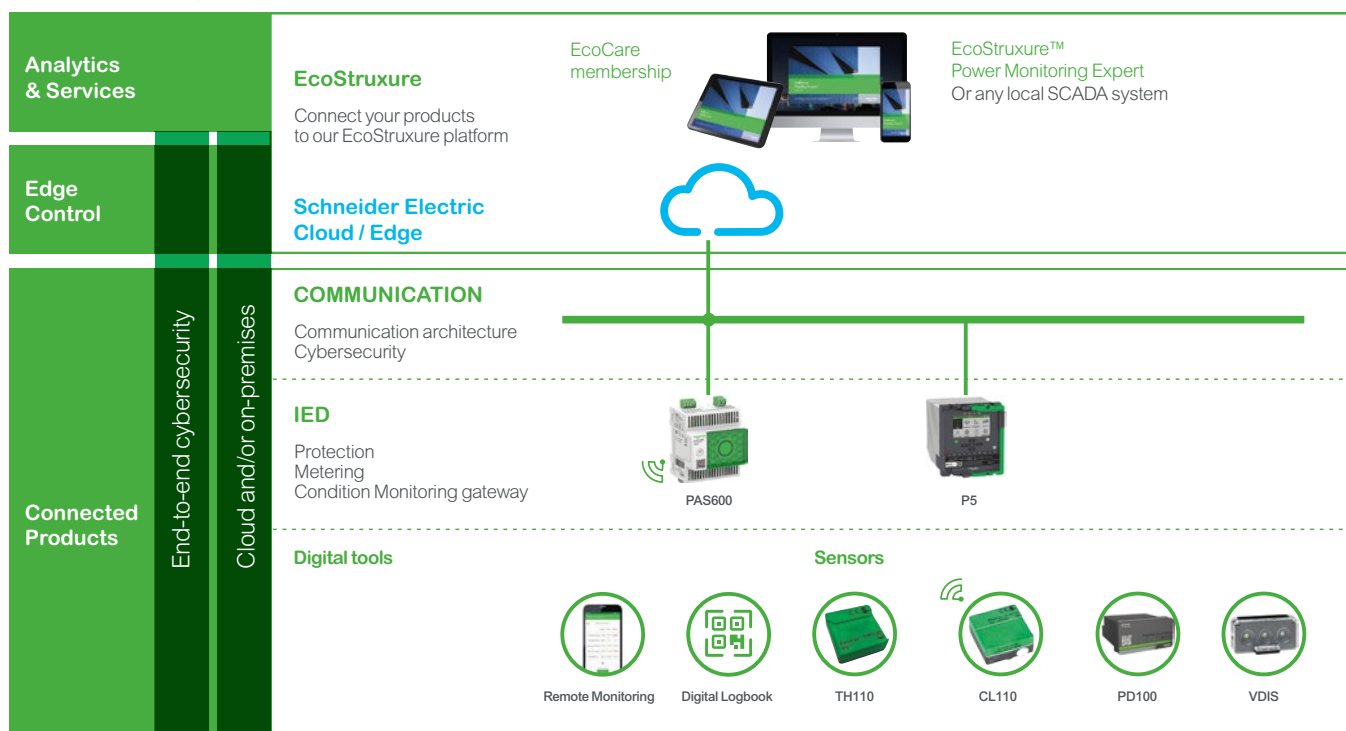
GenieEvo Active Plus

Takes monitoring and control to the next level.

Comprehensive monitoring and control of switchgear and breaker. Health diagnosis and remote alerts, as well as digital operation and racking, through your local HMI or mobile device

- Thermal monitoring
- Environmental monitoring
- Circuit Breaker monitoring
- Partial Discharge Monitoring (requires **EcoCare membership**)
- Connectivity gateway to Schneider Electric cloud
- QR code access to a Digital logbook and product information via **EcoStruxure Facility Expert**
- Combine GenieEvo Active Plus with **EcoCare membership** for exclusive access to our MV services experts and advanced analytics

EcoStruxure™
Innovation At Every Level



EcoStruxure™ Panel Server

PAS600 provides seamless connection of smart IoT devices to your applications

- All-in-one gateway.
- Wireless or wired devices.
- Simple commissioning and operation.
- Edge or Cloud architectures.

PowerLogic Voltage Detection

PowerLogic Voltage Detection and Indicating System (VDIS) in compliance with IEC 62271-213:2021

- 35 references available to adapt to all applications
- Voltage Output option to provide Voltage signal to Flair 2xD / VD23 or T300 SC150 module through an adapter

PowerLogic Partial Discharge sensor

PowerLogic PD100 monitors for all types of partial discharge in switchgear and cable terminations

- Fully integrated sensing based on capacitive coupling
- Requires EcoCare membership for analysis and recommendations

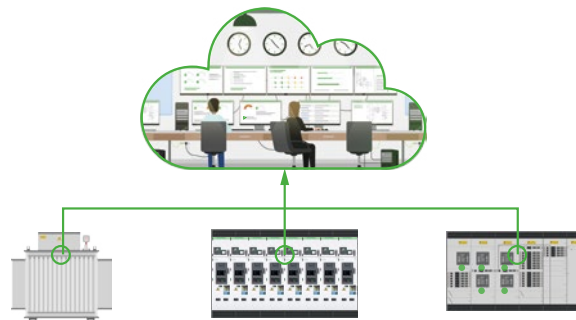
EcoCare membership

Combine GenieEvo Active or GenieEvo Active Plus with a next-generation services plan

We help you optimize your electrical asset management. How?

Even the most reliable switchgear can face unforeseen failures in the early years of operation, often due to unpredictable external factors like installation environment and operational practices.

With **EcoCare membership⁽¹⁾**, a next-generation service plan, you gain **exclusive support for your equipment from day 1** and throughout its entire lifecycle. For minimal investment compared with your overall CapEx, you'll enjoy 24/7 remote monitoring and alarm management, and get exclusive and faster access to technical expertise, on-site and remotely.



Understanding the EcoCare features and benefits

		EcoCare Essential	EcoCare Advanced	EcoCare Advanced+
Support to operations	• mySchneider portal • Premium support • Emergency support • Customer success management	✓	✓	✓
Workforce empowerment	Access to online training courses	✓	✓	✓
Exclusive Benefits	Members rates on other services: on-site intervention, advanced trainings, spare parts and more ⁽²⁾	✓	✓	✓
	24/7 monitoring and alarming	✓	✓	✓
	Consultancy by our experts and quarterly reports	-	✓	✓
	Condition-based maintenance	-	-	✓
	Partial discharge monitoring for medium voltage switchgear	-	Option	Option
	Advanced transformer oil monitoring	-	Option	Option
Extended warranty		✓	✓	✓
On-site maintenance	Manufacturer calendar-based maintenance visits with asset diagnostic	Option	Option	-

Why become an EcoCare member?

- **Simplified operations** with online asset condition monitoring and alarming.
- **Help prevent fires** with continuous thermal monitoring.
- **Increased asset uptime** with predictive analytics, remote, and on-site manufacturer expertise.
- **Faster issue resolution** with 24/7 remote technical assistance.
- **Optimized operational budget** with a condition-based maintenance strategy.
- **Improved asset's lifetime**, helping to avoid carbon emissions.

(1) If [EcoCare](#) is not available in your region, leverage [EcoStruxure Service Plan](#).

(2) Check with your local Schneider Electric services representative.

EcoCare membership

Combine GenieEvo Active or GenieEvo Active Plus with a next-generation services plan

A

EcoCare Membership can help you reduce electrical failure risk and unplanned downtime by up to 75%⁽¹⁾, on-site maintenance and planned downtime costs by up to 40%⁽²⁾, and also extend your assets' lifespan to optimize costs of carbon emissions.



Electrical Fire Index



Asset Health Index



Partial Discharge Monitoring

Unlock the potential of your connectable asset with EcoCare membership

Scan the QR Code to learn more
Or visit our [webpage](#)



Reducing electrical fire event probability with Electrical Fire Index

Combined with a Monitoring Level, Electrical Fire Index **provides extra protection against electrical fire events** in your installation.

- Based on field data and advanced analytics enabled by 24/7 monitoring of potential source of fire
- You receive alarm notifications and have access to the level of risk and localization in the equipment
- When the Electrical Fire Index increases, experts from the Connected Services Hub analyze the situation, and if needed, call you to propose a corrective action and/or an intervention of by a qualified Services representative.

Reinforcing electrical uptime with Health Index

The **criticality of each asset** is defined with each customer, taking into account the impact of potential downtime on their process.

The system provides:

- A Health Index for each connected asset and an overall site Risk Index
- Advanced analytics enabled by 24/7 asset monitoring
- Alarm notifications and easy access to data via mobile app and web portal
- When the Asset Health Index evolves, experts from the Connected Services Hub analyze the situation and provide actionable recommendations to help you reduce risk of downtime and optimize your assets' lifespan.

Reinforcing electrical uptime and minimize earlier degradation with Partial Discharge monitoring

Partial discharge is a localized electrical discharge which affects insulation, impacting equipment and business operations uptime, and lifespan since it's an **early indicator of equipment degradation**.

When Partial discharge sensor (PowerLogic PD100) is installed in medium-voltage switchgear with Active Plus connectivity, we can monitor this critical phenomenon as an **optional feature** in your EcoCare membership with:

- 24/7 monitoring and alarming with easy access to data through our mobile app and web portal
- Dedicated and specific monitoring by our Experts
- Detection of all types of Partial Discharge (Corona, surface or internal discharge)
- Advanced analytics to monitor trends and environmental conditions.

Moving to Condition-based maintenance with Maintenance Index

EcoCare Advanced+ helps you move from calendar to condition-based maintenance.

- By default, maintenance cycle might be potentially extended from 3 up to 5 years for assets connected to our EcoStruxure IoT platform
- Our team of remote experts provides recommendations and propose a dynamic maintenance management
- They leverage the Maintenance Index, our innovative analytics based on stress, wear and aging indicators, that continuously **controls the date of the next recommended maintenance** of each connected asset
- The Maintenance Index is also visible to you, along with associated dashboard, insights and notifications.

(1) This percentage is non-contractual and is based on our experience and expertise for the main root cause of electrical failure risk observed in low and medium-voltage equipment and for which Schneider Electric has developed solutions.

(2) This percentage is non-contractual and is based on the time between two manufacturer maintenance activities for low and medium voltage equipment which can be extended by up to 2 years compared to a traditional calendar-based maintenance contract, from 3 to 5 years.

EcoStruxure™ ready solutions

Digital Logbook



EcoStruxure Facility Expert: Digital Logbook

The digital logbook is an easy to use collaborative tool that keeps record of important documentation and maintenance schedules.



Enjoy convenient digital access to user manuals, single-line drawings, photos, factory and site acceptance tests, spare parts lists, and more



Share information with your professional partners



Get things organized and achieve a common goal



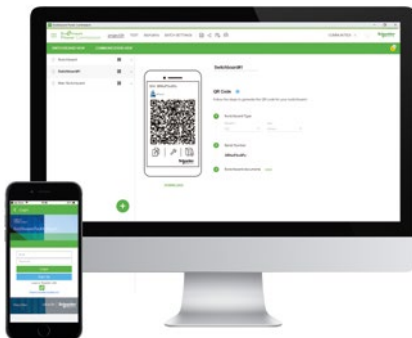
Create clear and consistent documentation



Identify key responsibilities and points of contact at different project stages



Help eliminate conflicting or missing information



Overview

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Range description

General overview B-2

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High performance

GenieEvo offers 6 switchgear options and 18 protection and control module options, providing a total of 69 standard panel combinations.

69 pre-engineered standard panel combinations. Customised solutions are also available on request.

GenieEvo offers a simple and flexible approach to switchgear with a wide choice of options covering all modern consumer applications.

GenieEvo comprises

- Cast resin encapsulated MV system
- Demountable vacuum circuit breaker
- Controlled air, resin encapsulated series disconnecter
- Flexible pre-engineered protection and control modules
- Smart grid and asset management ready.

Fixed pattern

Offering the following customer benefits

- Reduced substation dimensions
 - Saving civil and land costs
- No racking mechanism
 - Fewer switchgear components
 - Easier to operate
 - No associated maintenance
- No withdrawable isolation contacts
 - No associated maintenance
 - Fully encapsulated MV system.

Pre-engineered

Offering the following customer benefits

- Reduced lead time
 - Reduced engineering at factory
 - Production line optimized for standard panels
 - Reduced engineering time for client
- Lower selling costs
 - Reduced labour time during manufacture
 - Reduced contract engineering time
 - Manufacturing unit optimized for standard panels
- Less technical onus on client
 - Application based solutions
 - All information available pre-order
 - Schemes designed as a package solution.

PM103563



PM109099



Normal operating conditions according to IEC 62271-200 and IEC 62271-1

Rated voltage			
	Ur	(kV)	13.8
Rated insulation level			
Power frequency withstand voltage 50 Hz - 1 min	Ud	(rms kV)	38
Rated frequency	Fr	(Hz)	50/60
Lightning impulse	For 25 kA	Up	(kV peak)
	For 31.5 kA		75 95
			75
Rated normal current and maximum short time withstand current (1)			
Functional unit with circuit breaker			
Short time withstand current	I _k max.	I _k /t _k (kA/3 s)	25
Rated current	I _r max. busbar	I _r	(A)
			630
			1 250
			2 000
Rated current	I _r CB	I _r	(A)
			630
			1 250
			2 000 A only
Busbar			
Busbar type		Copper single, cast resin insulated	
Busbar ratings		630 A/1 250 A/2 000 A	
Internal Arc Classification		(25 kA/1 s) AF, A-FLR, 31.5 kA/1s A-FLR	
Partition class		LSC2A-PM	

(1) For functional units equipped with circuit breakers, the breaking capacity is equal to the short time withstand current. In all cases, the device peak making capacity is equal to 2.5 times the short time withstand current for 50 Hz, and 2.6 times the short time withstand current for the 60 Hz.

IAC (Internal Arc Classification)

The metal enclosed switchgear may have different types of accessibility on the various sides of its enclosure.

For identification purposes concerning the different sides of the enclosure, the following code shall be used (according to the IEC 62271-200 standard):

- **A:** Restricted access to authorized personnel only. Sides of the enclosure which meet the criteria of the internal arc test
- **F:** Front side
- **L:** Lateral side
- **R:** Rear side

B

Operating conditions and Standards

B

PM108957



PM108359



Operating conditions

Normal operating conditions, according to the IEC International Standards listed below, for indoor switchgear.

Ambient air temperature

- Less than or equal to 40 °C
- Less than or equal to 35 °C on average over 24 hours
- Greater than or equal to -5 °C

Altitude

- Less than or equal to 1000 m
- Above 1000 m, a derating coefficient is applied (please consult us)

Atmosphere

- No dust, smoke, or corrosive, or inflammable gas and vapor, or salt

Humidity

- Average relative humidity over a 24 hour period $\leq 95\%$
- Average relative humidity over a 1 month period $\leq 90\%$
- Average vapor pressure over a 24 hour period ≤ 2.2 kPa
- Average vapor pressure over a 1 month period ≤ 1.8 kPa

Specific operating conditions (please consult us)

GenieEvo has been developed to meet the following specific conditions:

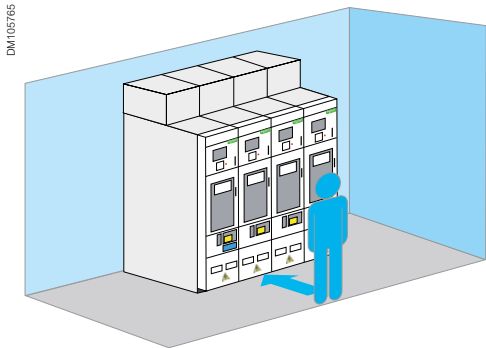
- High ambient temperature (possible derating)
- Corrosive atmospheres, vibrations, (possible adaptation)
- Optional monitoring of cubicle is available like CL110 etc.

Storage conditions

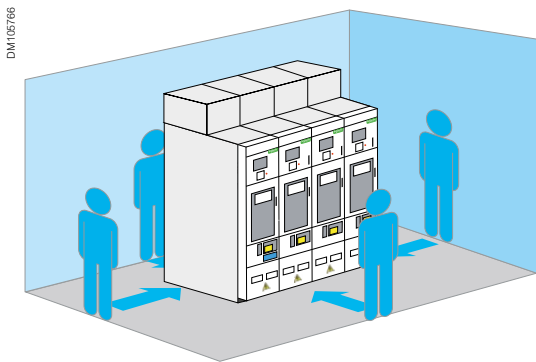
In order to retain all of the functional unit's qualities when stored for prolonged periods, we recommend that the equipment is stored in its original packaging, in dry conditions, and sheltered from the sun and rain at a temperature ranging from -25 °C up to +55 °C.

Protection of people

Internal Arc classification



Internal arc classification IAC: accessible sides AF



Internal arc classification IAC: accessible sides AFLR

- IAC** Internal Arc Classification
- A** Accessibility **A**
Restricted to authorized personnel only
- F** For front side
- L** For lateral side
- R** For rear side
- 31.5 kA** Arc fault current **31.5 kA**
- 1s** Arc fault duration **1 s**

Example of GenieEvo with internal arc classification IAC

Internal faults causing internal arcs

- Due to its design, the GenieEvo switchgear has a high level of service continuity:
 - No sources of interference due to external influence during operation
 - In accordance with IEC/EN 62271-200, avoiding internal arcs has top priority
 - The IEC/EN 62271-200, recommendations include the use of Air-insulated switchgear as a preventive measure to help avoid faults due to dirt, moisture, dust, vermin etc.
- The operating company is free to select a switchgear unit with internal arc classification IAC according to the applicable standards. According to IEC/EN 62271-200, switchgear cubicles with internal arc classification should only be used if the operating company considers it essential to prevent the risk of danger to life due to internal arcs.

Internal arc classification

- The internal arc classification IAC provides a verified level of operator safety in the immediate vicinity of the switchgear under normal operating conditions
- The internal arc classification is an option in accordance with IEC 62271-200 and EN 62271-200. It refers to the effect of internal excess pressure on covers, doors, inspection ports, vents etc. Moreover, the thermal effects of the internal arc and its roots on the enclosure and escaping hot gases or incandescent particles are taken into account.
- Metal-enclosed switchgear and controlgear are granted Internal Arc Classification if all the following criterias are met:
 - Criteria No 1: Correctly secured doors and covers do not open
 - Criteria No 2: No fragmentation of the enclosure occurs during the arc fault duration
 - Criteria No 3: Arcing does not cause holes by burning through the classified sides up to a height of 2000 mm
 - Criteria No 4: Indicators do not ignite due to the effect of hot gases
 - Criteria No 5: The enclosure remains connected to the earthing point
- Internal arc classification IAC has been conducted successfully
- If the GenieEvo needs to be installed in the switchgear room with access to the switchgear via the rear side, the switchgear must be provided with additional elements for internal arc classification IAC AFLR (optional)
- Arc flash detection is available (optional).

Loss of service continuity

Partition Class

- Partition class PM
 - Segregation of the high-voltage compartments with continuous metallic partitions.

Loss of service continuity category

The loss of service continuity category LSC according to IEC 62271-200 defines the possibility to keep either high-voltage compartments and/or functional units energized when opening an accessible high-voltage compartment.

- The loss of service continuity category for GenieEvo with circuit breaker is LSC2, as the air-insulated compartments are accessible.
- The busbar system on single-busbar switchgear and controlgear is out of range of the definition for the LSC category, according to section 3.131.1.1 of IEC 62271-200.

Degree of protection



IEC 62271-102(2022) protection against hazardous parts and ingress of foreign objects

The metal-enclosed switchgear and control gear type GenieEvo meets the requirements for degrees of protection, according to IEC 62271-1, IEC 60529 and IEC 62262:

- Degree of protection provided by the enclosure against access to hazardous parts
 - Front side of low-voltage compartment: IP4X
 - Front side of cable compartment: IP4X
 - Front of the mechanical operation interface: IP2X, optional IP4X.

B

IEC 62271-1 and IEC 62271-200

Protection of persons against contact with dangerous parts and protection of equipment against penetration of solid foreign matter (IP code).

Degree of protection	Protection against ingress of solid foreign bodies	Protection against access to hazardous parts
IP2X	Objects of 12.5 mm diameter or more	Access with a finger (test-finger 12 mm diameter, 80 mm long)
IP3X	Objects of 2.5 mm diameter or more	Access with a steel rod (steel rod 2.5 mm diameter, 80 mm long)
IP4X	Objects of 1 mm diameter or more	Access with a wire (wire-test 1.0 mm diameter, 100 mm long)

Applicable standards

B

Designation	Standard	Title
Switchgear and controlgear	IEC 62271-1 (2021)	High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear
	IEC 62271-200 (2021)	High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV
Circuit breaker	IEC 62271-100 (2021)	High-voltage switchgear and controlgear - Part 100: Alternating-current circuit breakers
Disconnectors and earthing switches	IEC 62271-102 (2022)	High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches
Voltage detecting system	IEC 61243-5 (1997)	Live working - Voltage detectors - Part 5: Voltage detecting systems (VDS)
Voltage detecting and indicating system	62271-213 (2021)	High-voltage switchgear and controlgear - Part 213: Voltage detecting and indicating system (VDIS)
Plug-in type bushings for cable connections and busbar system	EN 50181 (2010)	Plug-in type bushings above 1 kV up to 52 kV and from 250 A to 2,50 kA for equipment other than liquid filled transformers
IP code	IEC 60529 (2013)	Degree of protection provided by enclosures (IP code)
IK code	IEC 62262 (2022)	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)
Current transformer	IEC 61869-2 (2012)	Instrument Transformers: Additional requirements for current transformers
Voltage transformer	IEC 61869-3 (2011)	Instrument Transformers: Additional requirements for inductive voltage transformers
Installation	IEC 61936-1 (2021)	Power installations exceeding 1 kV AC and 1,5 kV DC - Part 1: AC

Functions and characteristics

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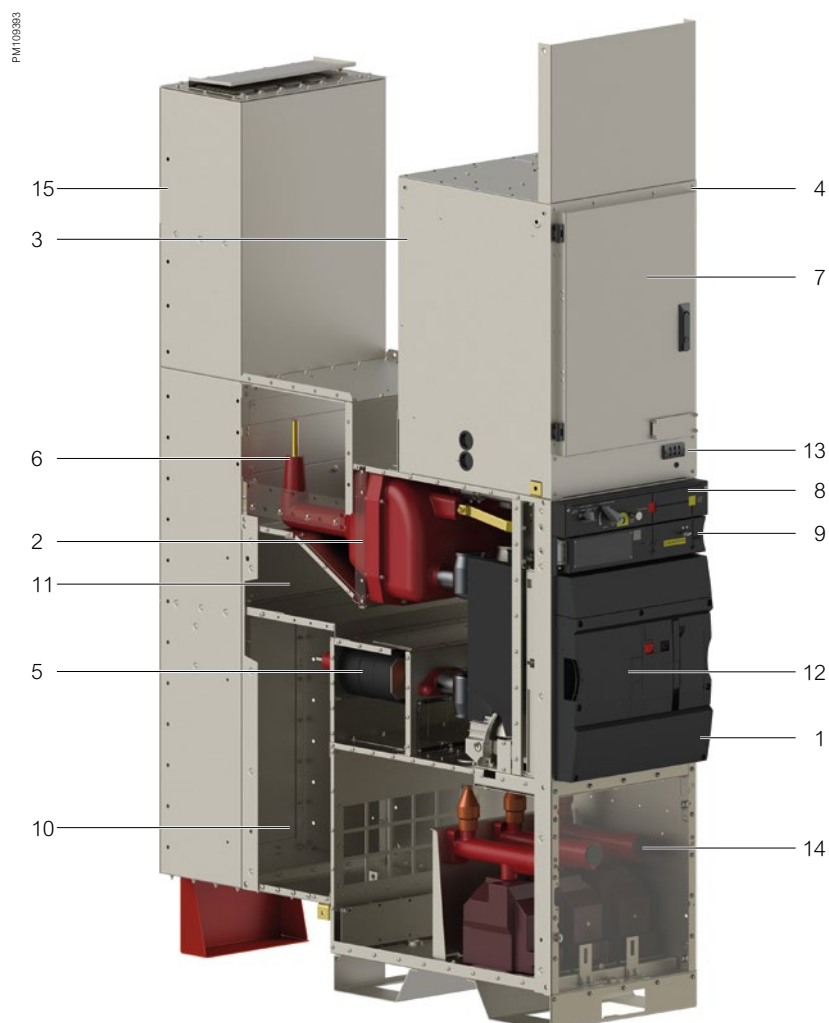
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Presentation

25 kA

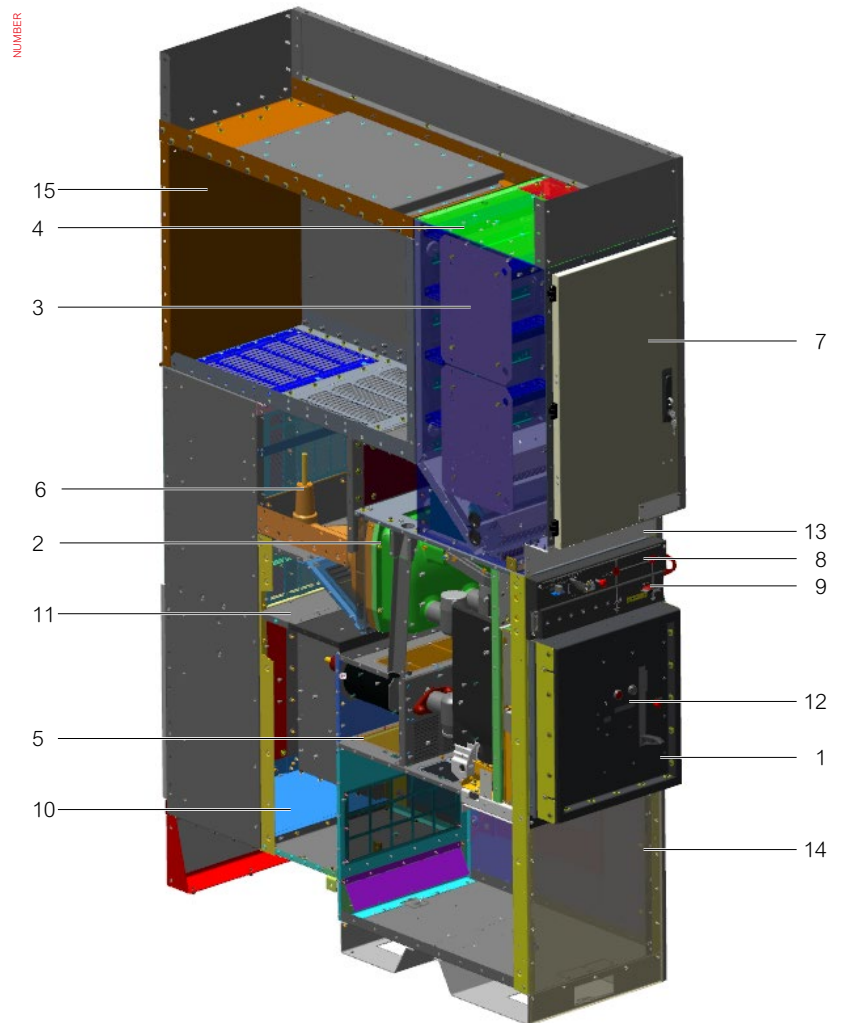


Genie's evolution is a result of valuable customer feedback and incorporates many improved features:

- 1 Vacuum circuit breaker
- 2 Controlled air disconnect
- 3 Top entry pilot box
- 4 Internal arc protection
- 5 CT chamber
- 6 Cast resin insulated busbar system with optional earth shielding
- 7 Multi functional protection and control unit
- 8 Unit fascia with active operating mimic display
- 9 Front access cable and vacuum test facility
- 10 Rear entry MV cable box (inverted option available)
- 11 Internal arc vented via dedicated trunking for enhanced operator safety
- 12 Mechanical operations counter
- 13 Circuit potential indicator as standard
- 14 VT chamber
- 15 Internal arc chimney (AFLR)

Presentation

31.5 kA



Genie's evolution is a result of valuable customer feedback and incorporates many improved features:

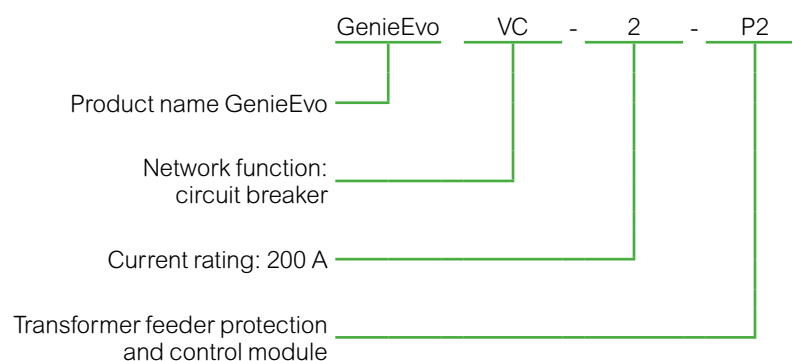
- 1 Vacuum circuit breaker
- 2 Controlled air disconnect
- 3 Top entry pilot box
- 4 Internal arc protection
- 5 CT chamber
- 6 Cast resin insulated busbar system with optional earth shielding
- 7 Multi functional protection and control unit
- 8 Unit fascia with active operating mimic display
- 9 Front access cable and vacuum test facility
- 10 Rear entry MV cable box (inverted option available)
- 11 Internal arc vented via dedicated trunking for enhanced operator safety
- 12 Mechanical operations counter
- 13 Circuit potential indicator as standard
- 14 VT chamber
- 15 Internal arc chimney (AFLR)

Selection guide

Designation

Designation

The designation of the type tested GenieEvo switchgear gives information about its design and rated electrical parameters.



PM105969

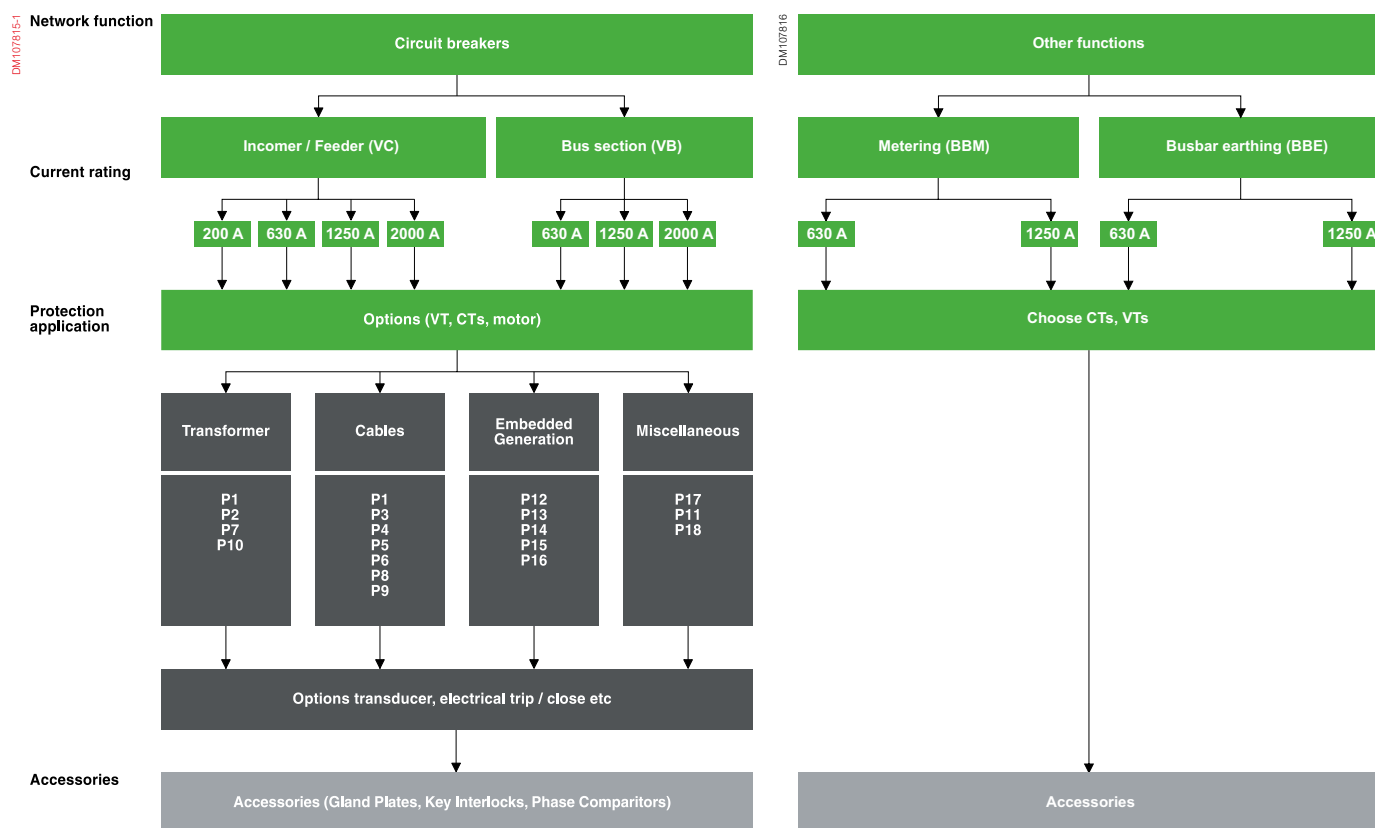


Code description

Network function code	Description
VC	Circuit breaker
VB	Bus section
BBM	Busbar metering
BBE	Busbar earthing
Current rating code	Description
2	200 A
6	630 A
12	1250 A
20	2000 A
Protection and control module code	Description
P1	General purpose feeder or incomer
P2	Transformer feeder
P3	Cable feeder with advanced monitoring and control
P4	Unit protected cable feeder
P5	Unit protected cable feeder with back up overcurrent and measurement
P6	Unit protected cable feeder with back up overcurrent and power measurement
P7	Single transformer incomer
P8	Cable feeder or incomer with full measurement (suitable for automatic changeover)
P9	Parallel cable feeder or incomer with directional overcurrent and earth fault
P10	Parallel dual transformer incomer
P11	Control logic for changeover scheme (fitted to bus section)
P12	Interconnection breaker (G59 power export)
P13	Interconnection breaker (G59 no power export)
P14	REC metering for embedded generation
P15	Transformer incomer for LV generator
P16	MV generator incomer
P17	Basic circuit breaker control no protection
P18	Control logic for changeover scheme

Functional overview

Choice of functional units



Example:

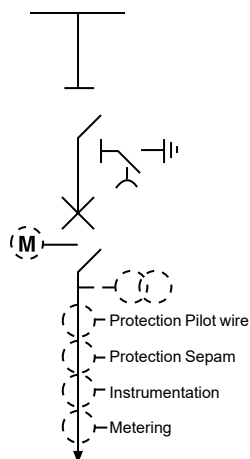
A **GenieEvo** feeder for a 2 MVA, 11 kV transformer (primary current 104 Amps)
 Vacuum breaker current rating 200 Amps = VC2
 Protection and control module = P2
 Recommended panel reference = VC2 - P2

Functional overview

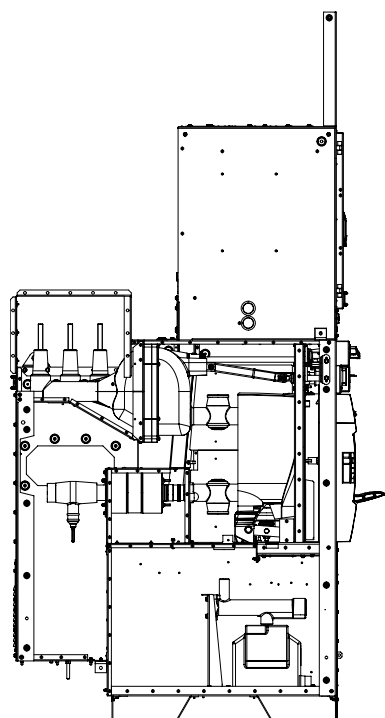
VC incomer/feeder

Circuit breaker module type	VC2	VC6	VC12	VC20
Busbar current rating	630 A	■	■	
	1250 A	■	■	
	2000 A	■	■	■
Circuit breaker normal rated current	200 A	630 A	1250 A	2000 A

DE9318



DM107800



Environment

Indoor	■
IP3X as standard	■

Ratings

Highest system voltage	15.5 kV
Rated voltage	13.8 kV
Service voltage 3.3, 6.6, 11, 13.8 kV	□
Rated BIL	75 / 95 kVp for 25 kA 75 kVp for 31.5 kA
Rated frequency	50/60 Hz
Rated internal arc (1 s)	25 kA / 31.5 kA
Rated breaking capacity	25 kA / 31.5 kA
Rated making capacity	62.5 kA / 78.8 kA
Rated short circuit withstand current main circuit	25 kA / 31.5 kA (3 s)
Rated short circuit withstand current earthing circuit	25 kA / 31.5 kA (3 s)

Circuit breaker mechanism

Release	■
Electrical release	□
Mechanical endurance	M2

Circuit breaker electrical control

Trip coil / Close coil	24 V DC	□
	30 V DC	□
	48 V DC	□
	110 V DC	□
Motorized stored energy	24 V DC	□
	48 V DC	□
	110 V DC	□
	220 V DC	□
	230 V AC	□

Indication

Mechanical circuit breaker ON/OFF	■
Mechanical disconnector MAIN/ISOLATED/EARTH SELECT	■
Neon indication facility 3.3 - 13.8 kV	■
Auxiliary contacts 4NO and 4NC spare for customer use	■

Test facility

Integral cable test/earth facility	■
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Standard features

Operating handle - series disconnector	■
Mechanical operations counter - circuit breaker	■

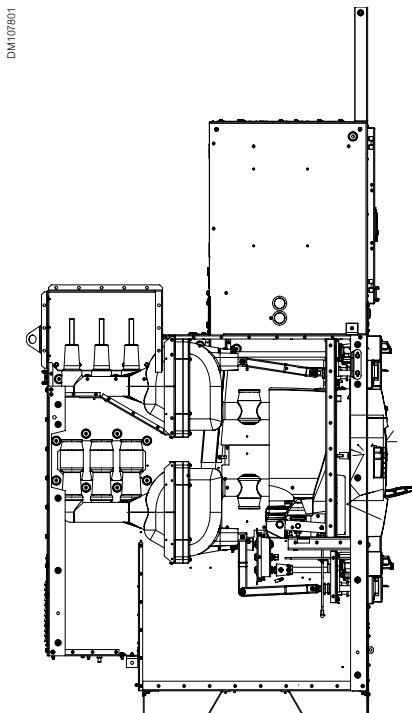
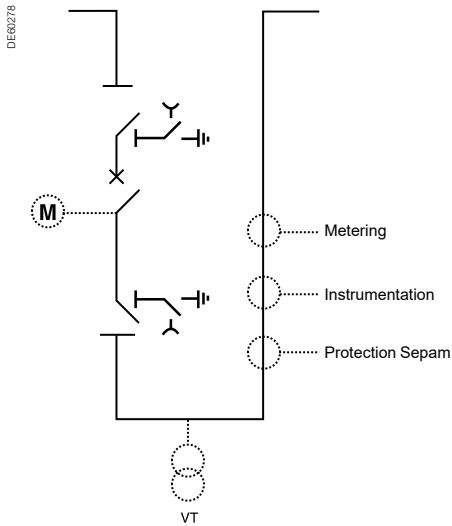
Key ■ Standard feature □ Optional feature

(*) Fan cooled when current exceeds 2100 A, please consult us.

Functional overview

VB busbar section

Circuit breaker module type	VC6	VC12	VC20
Busbar current rating	630 A	1250 A	2000 A
	1250 A	2000 A	
	2000 A		
Circuit breaker normal rated current	630 A	1250 A	2000 A



Environment

Indoor	■
IP3X as standard	■

Ratings

Highest system voltage	15.5 kV
Rated voltage	13.8 kV
Service voltage 3.3, 6.6, 11, 13.8 kV	□
Rated BIL	75 / 95 kVp for 25 kA 75 kVp for 31.5 kA
Rated frequency	50/60 Hz
Rated internal arc (1 s)	25 kA / 31.5 kA
Rated breaking capacity	25 kA / 31.5 kA
Rated making capacity	62.5 kA / 78.8 kA
Rated short circuit withstand current main circuit	25 kA / 31.5 kA (3 s)
Rated short circuit withstand current earthing circuit	25 kA / 31.5 kA (3 s)

Circuit breaker mechanism

Release	■
Electrical release	□
Mechanical endurance	M2

Circuit breaker electrical control

Trip coil / Close coil	24 V DC	□
	30 V DC	□
	48 V DC	□
	110 V DC	□
Motorised stored energy	24 V DC	□
	48 V DC	□
	110 V DC	□
	220 V DC	□
	230 V AC	□

Indication

Mechanical circuit breaker ON/OFF	■
Mechanical disconnector MAIN/ISOLATED/EARTH SELECT	■
Neon indication facility 3.3 - 13.8 kV	■
Auxiliary contacts 4NO and 4NC spare for customer use	■

Test facility

Integral cable test/earth facility	■
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Standard features

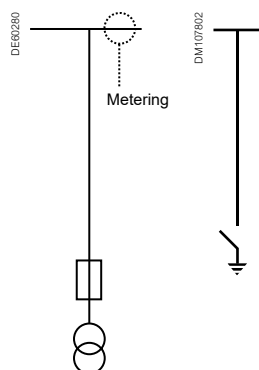
Operating handle - series disconnector	■
Mechanical operations counter - circuit breaker	■

Key ■ Standard feature □ Optional feature

(*) Fan cooled when current exceeds 2100 A, please consult us.

Functional overview

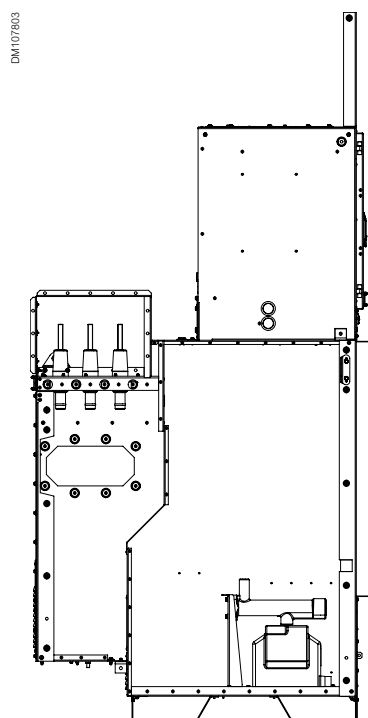
Metering BBM / earthing BBE section



Module type	BBM
Busbar current rating (630 A)	■
Busbar current rating (1250 A)	■
Busbar current rating (2500 A)	■

Environment	
Indoor	■
IP3X as standard	■

Ratings	
Highest system voltage	15.5 kV
Rated voltage	13.8 kV
Service voltage 3.3, 6.6, 11, 13.8 kV	□
Rated BIL	75 / 95 kVp for 25 kA 75 kVp for 31.5 kA
Rated frequency	50/ 60 Hz
Rated internal arc (1 s)	25 kA / 31.5 kA
Short time withstand current	25 kA / 31.5 kA (3 s)



Selection guide

Transformer feeders and incomers protection

Protection and control module type		Transformer feeders and incomers			
		P1	P2	P7	P10
Application		General purpose feeder or incomer	Transformer feeder	Single transformer incomer	Parallel dual transformer incomer
Environment					
Indoor		■	■	■	■
IP3X		■	■	■	■
Protection relays*					
PowerLogic (type)		P3U30	P3F30	P3T32	P3T32
Power meter					
PM5000 range power meter		□	□	□	□
Protection function	ANSI				
3 ph overcurrent	50/51	■	■	■	■
Earth fault	50N/51N	■	■		
Standby earth fault	51G			■	■
Negative sequence O/C	46	■			
Thermal overload	49	■	■	■	■
3 ph dir overcurrent	67	□ (4)	□ (4)	■	■
Restricted earth fault	64			■	■
Measurement					
Phase current		■	■	■	■
Max. demand current		■	■	■	■
Phase voltages		□ (4)	□ (4)	■	■
kW, kVA, cos φ		□ (4)	□ (4)	■	■
kWh, kVARh		□ (4)	□ (4)	■	■
kWh pulsed output		□ (2)	□ (2)	□ (2)	□ (2)
Heat capacitance		■	■	■	■
Tripping current		■	■	■	■
Monitoring and control					
Trip circuit supervision		■	■	■	■
Circuit breaker ready to close supervision		■	■	■	■
Lockout relay		■	■	■	■
Intertrip send		■	■	■	■
Intertrip receive		■	■	■	■
VT supervision		□ (4)	□ (4)	□ (4)	■
Remote emergency trip		□	■	■	■
Logic (block send)		■	■	■	■
Logic (block receive)		■	■	■	■
Current transducer (1 A/4-20 mA)		□	□	□	□
Comms (5)		□	□	□	□
Earth selector status (via SCADA)		□	□	□	□
Earth status (via SCADA)		□	□	□	□
Spring charge status (via SCADA)		□	□	□	□
Communications SCADA (6)		□	□	□	□
Arc flash detection/protection		□	□	□	□
Temperature alarm		■	■	■	■
Temperature trip		■	■	■	■
Buchholz alarm		□	■	■	■
Buchholz trip		□	■	■	■
Tripped on fault indication contact		■	■	■	■
Trip circuit fault alarm contact		■	■	■	■
Interposing trip/close		□	□	□	□
Trip/neutral/close switch		□	□	□	□
Local/remote switch		□	□	□	□
Motor ON/OFF switch		□	□	□	□
CB aux contact (4 N/O + 4 N/C) spare volt free		■	■	■	■
Remote tariff metering					
Tariff metering CTs wired out (1)		□	□	□	□

Key ■ Standard feature □ Optional feature

(1) Tariff metering CTs are fitted to the CB module. Ratio and class to be selected from a list of standard options given in section 3 of this document.

(2) Measurement available locally and via Modbus RS485 serial communication with PM5000 range power meter option.

(4) When VT fitted.

(5) Available; RS485, RS232, RJ45, Ethernet LC, Serial fiber.

(6) Communications protocols; Modbus, IEC 60870-5-101, IEC 60870-5-103, DNP3, DeviceNet, Profibus, SPABus, IEC 61850, EtherNet/IP

* Other manufacturers' relays are available on request.

Selection guide

Cable feeders or incomers

Protection and control module type		Cable feeders and incomers						
		P1	P3	P4	P5	P6	P8	P9
Application		General purpose feeder or incomer	Cable feeder with advanced monitoring and control	Unit protected cable feeder	Unit protected cable feeder with back up overcurrent	Unit protected Cable feeder with back up overcurrent and power measurements	Cable feeder or incomer with full measurement (suitable for automatic changeover)	Parallel cable feeder or incomer with directional OCEF
Environment								
Indoor		■	■	■	■	■	■	■
IP3X		■	■	■	■	■	■	■
Protection relays*								
PowerLogic (type)		P3U30	P3L30		P3U30	P3U30	P3L30	P3L32
Solkor RF or MBCI01				■	■	■		
Power meter								
PM5000 range power meter		□		□	□			
Protection function		ANSI						
3 ph overcurrent		50/51	■	■	■	■	■	■
Earth fault		50N/51N	■	■	■	■	■	■
Negative sequence O/C		46	■		■			
Pilot wire differential		87F		■	■	■		
3 ph dir overcurrent		67						■
Directional earth fault		67N						■
Undervoltage		27				■	■	■
Measurement								
Phase current		■	■	□ (2) (3)	■	■	■	■
Max. demand current		■	■	□ (2)	■	■	■	■
Phase voltages		□ (4)	□ (4)	□ (2)	□ (4)	■	■	■
kW, kVA, cos φ, kVAR		□ (4)	□ (4)	□ (2)	□ (4)	■	■	■
kWh, kVARh		□ (4)	□ (4)	□ (2)	□ (4)	■	■	■
kWh pulsed output		□ (2)		□ (2)	□ (2)			
Tripping current		■	■	■	■	■	■	■
Monitoring and control								
Trip circuit supervision		■	■	□	■	■	■	■
Circuit breaker ready to close supervision		■	■		□	■	■	■
Lockout relay		■	■		□	■	■	■
Intertrip send		■	■		□	■	■	■
Intertrip receive		■	■		□	■	■	■
VT supervision		□ (4)	□ (4)		□ (4)	■	■	■
Remote emergency trip		■	■		■	■	■	■
Logic (block send)		■	■		■	■	■	■
Logic (block receive)		□	■		□	■	■	■
Current transducer (1 A/4-20 mA)		□	□	□	□	□	□	□
Comms (5)		□	□	□	□	□	□	□
Earth selector status (via SCADA)		□	□		□	□	□	□
Earth status (via SCADA)		□	□			□	□	□
Spring charge status (via SCADA)		□	□		□	□	□	□
Communications SCADA (6)		□	□		□	□	□	□
Arc flash detection/protection		□	□		□	□	□	□
Tripped on fault indication contact		■	■		■	■	■	■
Trip circuit fault alarm contact		□	■	□	□	■	■	■
Loss of voltage indication contact		□ (4)	□ (4)		□ (4)	■	■	
Interposing trip/close		□	□	□	□	□	□	□
Trip/neutral/close switch		□	□	□	□	□	□	□
Local/remote switch		□	□	□	□	□	□	□
Motor ON/OFF switch		□	□	□	□	□	□	□
CB aux contact (4 N/O + 4 N/C) spare volt free		■	■		■	■	■	■
Remote tariff metering								
Tariff metering CTs wired out (1)		□	□	□	□	□	□	□

Key ■ Standard feature □ Optional feature

(1) Tariff metering CTs are fitted to the CB module. Ratio and class to be selected from a list of standard options given in section 3 of this document.

(3) L3 phase ammeter also available.

(4) When VT fitted.

(5) Available; RS485, RS232, RJ45, Ethernet LC, Serial fiber.

(6) Communications protocols; Modbus, IEC 60870-5-101, IEC 60870-5-103, DNP3, DeviceNet, Profibus, SPABus, IEC 61850, EtherNet/IP

* Other manufacturers' relays are available on request.

Selection guide

Embedded generation feeders and incomers

Protection and control module type		Embedded generation feeders and incomers				
		P12	P13	P14	P15	P16
Application		Interconnection Breaker (G59 power export)	Interconnection Breaker (G59 no power export)	REC metering for embedded generation	Transformer incomer for LV generator	MV generator incomer
Environment						
Indoor		■	■	■	■	■
IP3X		■	■	■	■	■
Protection relays*						
PowerLogic (type)		MICOM P341	MICOM P341	P3F30	P3T32	P3G32
Protection function	ANSI					
3 ph overcurrent	50/51	■	■	■	■	■
Earth fault	50N/51N	■	■	■	■	■
Standby earth fault	50G/51G					■
Voltage restrained O/C	50V/51V			■	■	■
3 phase directional O/C	67			■		
Negative sequence O/C	46	■	■		■	■
Undervoltage	27	■	■			■
Neutral voltage displacement	59N	■		■		
Reverse active power	32P	■	■			■
Reverse reactive power	32Q/40					■
Low forward power	37P					■
Over/under frequency	81	■	■			■
Loss of mains (dF/dt)	81R	■				
Generator differential	87G					■
Overvoltage	59	■	■			■
Measurement						
Phase current		■	■	■	■	■
Max. demand current		■	■	■	■	■
Phase voltages		■	■	■	■	■
kW, kVA, cos φ, kVAR		■	■	■	■	■
kWh, kVARh		■	■	■	■	■
Maximum demand active/reactive power		■	■	■	■	■
Tripping current		■	■	■	■	■
Monitoring and control						
Trip circuit supervision		■	■	■	■	■
Circuit breaker ready to close supervision		■	■	■	■	■
Lockout relay		■	■	■	■	■
Intertrip send		■	■	■	■	■
Intertrip receive		■	■	■	■	■
Check synchronising		□	□		□	□
Parallel operation timer (5 minutes)			■			
Generator breaker status monitoring			■		■	■
Earthing contactor status monitoring					■	■
Open/close neutral earthing point		■	■	■	■	■
VT supervision		■	■	■	■	■
Remote emergency trip						■
Enable/disable local earthing contact						■
Exciter trip output contact						■
Engine/turbine trip output contact						■
Excitation failure alarm						■
Diode failure alarm						■
Logic (block send/receive)		■	■	■	■	■
Current transducer (1 A/4-20 mA)		□	□	□	□	□
Comms ⁽⁵⁾		□	□	□	□	□
Earth selector status (via SCADA)		□	□	□	□	□
CB spring charge status (via SCADA)		□	□	□	□	□
CB earth status (via SCADA)		□	□	□	□	□
Communications SCADA ⁽⁶⁾		□	□	□	□	□
Arc flash detection/protection		□	□	□	□	□
Tripped on fault indication contact		■	■	■	■	■
Trip circuit fault indication contact		■	■	■	■	■
Interposing trip/close		■	■	■	■	■
Trip/neutral/close switch		□	□	□	□	□
Local/remote switch		□	□	□	□	□
Motor ON/OFF switch		□	□	□	□	□
CB aux contact (4 N/O + 4 N/C) spare volt free		■	■	■	■	■
Remote tariff metering						
Tariff metering CTs wired out ⁽¹⁾		□	□	□	□	□

Key ■ Standard feature □ Optional feature

(1) Tariff metering CTs are fitted to the CB module. Ratio and class to be selected from a list of standard options given in section 3 of this document.

(5) Available; RS485, RS232, RJ45, Ethernet LC, Serial fiber.

(6) Communications protocols; Modbus, IEC 60870-5-101, IEC 60870-5-103, DNP3, DeviceNet, Profibus, SPABus, IEC 61850, EtherNet/IP

* Other manufacturers' relays are available on request.

Selection guide

Miscellaneous

Protection and control module type	Miscellaneous		
	P11	P17	P18
Application	Control logic for changeover scheme (fitted to bus section)	Basic circuit breaker control no protection	Control logic for changeover scheme (fitted to incomers)
Environment			
Indoor	■	■	■
IP3X	■	■	■
Protection relays*			
PowerLogic (type)	P5F30		P5F30
Measurement			
Phase current	■	□ (2) (3)	■
Max. demand current	■	□ (2)	■
Phase voltages	■	□ (2)	■
kW, kVA, cos φ, kVAR	■	□ (2)	■
kWh, kVARh	■	□ (2)	■
Maximum demand active/reactive power	■	□ (2)	■
Tripping current	■		■
Monitoring and control			
Trip circuit supervision	■	□	■
Circuit breaker ready to close supervision	■		■
Lockout relay	■		■
Modbus RS485 serial comms	□		□
Earth selector status (via Modbus)	□		□
CB spring charge status (via Modbus)	□		□
CB earth status (via Modbus)	□		□
Trip circuit fault indication contact	■	□	■
Interposing trip/close	□	□	□
Trip/neutral/close switch	□	□	□
Local/remote switch	□	□	□
Motor ON/OFF switch	□	□	□
CB aux contact (4 N/O + 4 N/C) spare volt free		■	■
Remote tariff metering			
Tariff metering CTs wired out ⁽¹⁾	□	□	□

Key ■ Standard feature □ Optional feature

(1) Tariff metering CTs are fitted to the CB module. Ratio and class to be selected from a list of standard options given in section 3 of this document.

(2) Measurement available locally and via Modbus RS485 serial communication with PM810, PM820 or PM850 power meter option.

(3) Yellow phase ammeter also available.

* Other manufacturers' relays are available on request.

Note: there is a complete Functional Design Specification (FDS) available for each of the above detailed 18 protection and control modules. To receive a copy please contact your local Schneider Electric representative or local Schneider Electric office.

EasyPact EXE circuit breaker



EasyPact EXE is our latest range of state of the art vacuum circuit breakers. Its design is the result of more than 40 years of Schneider Electric experience in switching devices. It has been designed to suit particularly applications such as: Infrastructure, Commercial and Industrial Buildings, Industrial plants and Distribution substations. The materials used to manufacture this circuit breaker have been selected and designed to operate 10 000 cycles.

The operating mechanism gives the device an opening and closing speed that is independent of the operator whether the order is electrical or manual. It carries out reclosing cycles and it is automatically recharged by a geared motor after each closing.

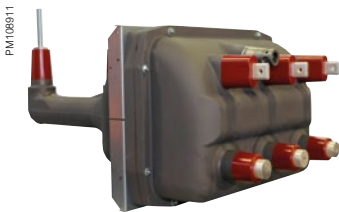
Vacuum interrupter is the heart of the circuit breaker. Schneider Electric's own, very careful, design allows breaking of the rated short-circuit current and this is achieved by:

- Choosing materials that are specifically selected for this application (metals and ceramics)
- Choosing an appropriate assembly process (vacuum, high temperature brazing)
- The use of a 'getter' material to absorb the residual gas inside the enclosure



According to IEC 62271-100

Common characteristics		12 kV
Rated short-time withstand current (Ik/tk)	kA/3s (50/60 Hz)	= Isc
Rated operating sequence	O-3 min - CO-3 min - CO	•
	O-0.3 s - CO-3 min - CO	•
	O-0.3 s - CO-15 s - CO	•
Operating times	Opening	< 51 ms
	Breaking	< 66 ms
	Closing	< 71 ms
Mechanical endurance	Class	M2
Electrical endurance	Class	E2
Rated line-charging breaking current	A-class	10-C2
Rated cable-charging breaking current	A-class	25/31.5 - C2
Type of the system according to IEC 62271-100	S1-class	



Sealed for life disconnector enclosure helps to provide less maintenance and offers more reliability. Higher levels of operator safety and reliability can be improved through the isolators robust cast resin screened enclosure that offers:

- Safety; over pressure relief system that helps preventing injury to an operator
- High electrical endurance
- Reliability; insensitivity to atmospheric conditions
- High performance, low mechanical wear with main contact materials

The disconnector is in conformity with mechanical endurance class IEC 60056: class M1 (2,000 operations).

Electrical characteristics - series disconnector	
Technology	Sealed controlled air
Construction	Earth screened, cast resin encapsulation IP65
Rating	Off load device
Mechanism type	Dependent manual



Test access

A fully interlocked integral cable test system employing a removable circuit earth starpoint, accessed from the front of the panel interlocked without the need for a loose key, is fitted to every panel. On bus section circuit breakers this facility allows you to test the bus bars. In addition to this it also helps ensuring that the cable or busbar is at earth potential before removing the earth star point connection to allow testing.

Our catalog of Protection Relays provides leading protection and control reliability for any network application. The latest PowerLogic Protection Relays also offer comprehensive security and dependability for your electrical grid, from overcurrent and arc protection to distance and differential protection of the transmission line. Our range offers solid protection with advanced communications such as the IEC 61850 to give you peace of mind in protecting your grid.



Need help choosing Protection Relays by Range?

Use this simple selector to find adequate fit for your needs.

Help Me Choose

Complete offer to reach all your requirements

PowerLogic Protection

Our latest Protection Relay range, with the heritage of many brands, our PowerLogic devices offer over 100 years of experience combined with the latest technology, communication and IoT connected concepts. Covering all applications from overcurrent to distance protection, they provide trusted know-how in a scalable range with a modern, digital experience.

	PowerLogic P1	Catalog
	Compact and cost-effective protection solution for MV/LV applications. With overcurrent, voltage, frequency, and earth-fault protection (directional as an option), housed in a uniquely small case with a quick fixing method.	
	PowerLogic P3	
	Easy-to-use protection relays for Medium Voltage applications with fast delivery, ideal for Panel builders, Contractors, Partners and end users. From overcurrent to more advanced protection, with Arc flash detection, LPCTs, LPVTs and Ethernet communication including basic implementation of IEC 61850.	
	PowerLogic P5	
	Protection and control relays with a focus on safety and cyber security. Easy to use for panel builders, system integrators and end users. From overcurrent to differential protection with arc flash protection, LPCTs, LPVTs, redundant Ethernet communication and IEC 61850.	
	PowerLogic P7	
	High-end protection and control range for MV and HV applications. It delivers a modular and cybersecure platform, fully prepared for virtualization. Its 7" color touchscreen and new engineering tool make it simple to configure, test, integrate, operate and maintain, while maximizing your sustainability goals.	

Easergy MiCOM Protection

	Easergy MiCOM P30 Series	
	Easergy MiCOM 30 Series protection relays offer comprehensive protection of MV, HV and EHV networks. With flexible, modular hardware, Ethernet communication and cyber security, they are a trusted device to help protect your critical power system assets.	
	Easergy MiCOM P40 Series	
	A trusted name in protection relays worldwide; our Easergy MiCOM P40 series contains all of the applications you need for MV, HV and EHV protection. High-performance protection functions, Ethernet communication and Cyber security makes this range ready for modern challenges.	

Protection relays and feeder automation

PowerLogic Arc Protection

PowerLogic A1 and A3



PowerLogic A1 and A3 are designed to mitigate the effects (damage / impact) of Arc faults inside electrical cubicles.

- PowerLogic™ A1: stand-alone device for cubicle protection.
- PowerLogic™ A3: can be used as a stand-alone device or together with other A3 devices as a system solution. It can help protect a group of cubicles with monitoring of up to 50 sensors.

V321



V321 Adapted to large substations and installations of up to 150 sensors and multiple selective control with I/O modules. It provides high performance with inputs for current measurement and communication to supervision solutions.



PowerLogic Control & Monitoring

PowerLogic T300



PowerLogic T300 – a remote terminal unit (RTU) configurable to your precise specifications. PowerLogic T300 delivers advanced monitoring, protection, control, and automation functions in both overhead and underground electrical distribution networks.



Current and voltage transformer

Current transformers

Ring type, air insulated current transformers are used for protection, indication and metering. Standard CT specification (ratio, class, and burden) have been selected to suit the network requirements. However, if the standard current transformers do not suit your specific application please consult us.

Voltage transformers

Cast resin voltage transformers are used for protection, indication and metering. Standard VT specification (system voltage, class, and burden) have been selected to suit the network requirements. However, if the standard voltage transformers do not suit your specific application please consult us.

- Fused VT's for circuit breakers.
- Fused VT's for right hand busbar only.
- Fused VT's for busbar metering.

A variety of CT's and VT's can be offered with GenieEvo panels. Below you will be able to find most common specifications of those for different types of panels. Please keep in mind that not every panel has all these CTs fitted it depends on the protection and control model selected, additionally please advise which CT ratio quoted is required at order placement.

If the standard CT ratios quoted do not suit your network requirements, please consult us.

Current transformers		VC2	VC6, VB6	VC12, VB12	VC20, VB20
Protection	Ratio	200/100/1 A	600/300/1 A	1250/800/1 A	2000/1600/1 A
	Class	5P20	5P20	5P20	5P20
	Burden	2.5 VA	2.5 VA	2.5 VA	2.5 VA
Instrumentation	Ratio	200/100/1 A	600/300/1 A	1250/800/1 A	2000/1600/1 A
	Class	1.0	1.0	1.0	1.0
	Burden	5 VA	5 VA	5 VA	5 VA
Metering	Ratio	200/100/5 A	600/300/5 A 400/200/5 A	1250/800/5 A 600/300/5 A	2000/1600/5 A
	Class	0.5 s	0.5 s	0.5 s	0.5 s
	Burden	7.5 VA	7.5 VA	7.5 VA	7.5 VA
Current transformers		VC2	VC6	VC12	VC20
Protection (pilot wire differential)	Ratio	400/300/5 A	400/300/5 A	800/1 A	2000/1600/1 A
	Class	X	X	X	X
	Knee point	52/39 V	52/39 V	191 V	260/208 V
	CT resistance	0.16 Ω/0.13 Ω	0.16 Ω/0.13 Ω	4.2 Ω	7.7 Ω/6.1 Ω
Current transformers					BBM (1) (2)
Protection	Ratio	600/300/1 A			
	Class	1.0			
	Burden	5 VA			
Metering	Ratio	1200/800/5 A			
		600/300/5 A			
		400/200/5 A			
		200/100/5 A			
	Class	0.5 S			
	Burden	7.5 VA			

(1) If busbar current transformers are required (1250 A busbars only), the width of the busbar metering chamber increases to 1000 mm. If the standard CT ratios quoted do not suit your network requirements, please consult us.

(2) Please advise which CT ratios quoted is required at order placement.

Current and voltage transformer

Busbar VTs can only be fitted to the right-hand side busbar of a bus section panel, left hand side shall be achieved via a separate busbar earth panel (BBM).

Voltage transformers		VC, VB	BBM
Circuit connected		☐	-
Busbar connected		-	■
Service voltage 3.3, 6.6, 11, 13.8 kV	Ratio	Service voltage/110 $\sqrt{3}$	600/300/5 A
	Class	0.5/3P	0.5/3P
	Burden	50 VA	50 VA
	BIL (1)	60 kV or 95 kV	60 kV or 95 kV
	Fused link	■	■
Isolatable fused link		☐	☐

Key ■ Standard feature □ Optional feature

(1) BIL is in line with the IEC 60185 standard for voltage transformers, i.e., 3.3 and 6.6 kV = 60 kV, 11 and 13.8 kV = 95 kV.

C



Power Meter

ION meters

As key components ION meters give you the power to take control. Designed for key distribution points and sensitive loads, these meters offer unmatched functionality, including advanced power quality analysis coupled with revenue accuracy, multiple communication options, web compatibility, and control capabilities.

Power Meter is a high performance low cost communicating meter.

Power Meter features are:

- Comprehensive measurements (I, V, kW, kVA, kWh, kVARh)
- Power quality data (total harmonic distortion)
- Load consumption monitoring via RS485 Modbus serial communications
- Easy integration in the PowerLogic software
- kWh pulsed output

Cable connectors

630 A disconnectable cable terminations (Dyscon) can be provided to facilitate the removal of cables without the breaking down of the cable joint.

- Kit ref: GDV-A202 (1 X 3)
- Kit ref: GDV-A203 (1 X 6)



Snubber

Snubber

High Frequency Transient Surge Suppressors for protection of medium voltage motors, transformers and generators.

In the modern power network (especially in Data Centres) we see increasing numbers of network issues caused by switching of low loaded transformers. This results in high transients and restrikes leading to insulation failure and downtime.

Snubber is a unique high frequency transient overvoltage surge suppressor for helping the protection of motors, transformers and generators from steep wave-front, short rise-time, high magnitude spikes, surges and other transient overvoltage generated by switching and other sources.

The protective characteristics of a snubber help provide comprehensive insulation co-ordination with motor impulse voltage withstands characteristics at all practical surge magnitudes and rise-times. It helps eliminate multiple pre-striking and re-striking (re-ignition) transients associated with vacuum and other switchgear.

In a case of uncertainty please contact us for a network study to examine the need for a snubber.



Damping resistor

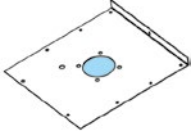
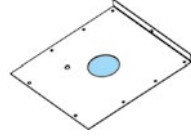
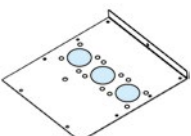
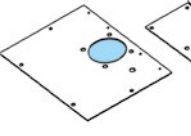
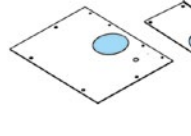
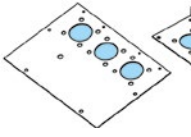
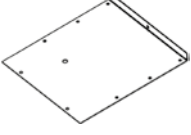
Damping resistor

A damping resistor is a resistor which is placed across a parallel resonant circuit or in series with a series resonant circuit to decrease the Q factor and thereby helps eliminates ringing. We suggest to use it in a scheme with 3 voltage transformers, where the 3rd is in open delta connection.

Surge arrestors

We suggest to use surge arresters for switchgear protection from all kind of over-voltages caused by lightning or switching operations. Surge arrestors are not generally designed to help protect against a direct lightning strike to a conductor, but rather against electrical transients resulting from lightning strikes occurring in the vicinity of the conduct.

To assist in the selection of gland plates the guide shows the available range.

Standard	CES5	Description
GDV-F128 	GDV-F120 	1 x 3 core (large gland)
GDV-F119		
		3 x 1 core (small gland)
GDV-F116		
	GDV-F117 	2 x 3 core (large gland)
GDV-F115		
		6 x 1 core (small gland)
GDV-F121		
		Blank metal

For VC20, VC25, VB20 please consult us.

Main cable box	VC2	VC6	VC12	VC20
Bottom entry	1 x 3c up to 300 mm ² or 3 x 1c up to 630 mm ²	☐	☐	
	2 x 3c up to 300 mm ²	☐	☐	
	6 x 1c up to 630 mm ²	☐	☐	☐
	12 x 1c up to 630 mm ²			☐
Top entry entry	1 x 3c up to 300 mm ² or 3 x 1c up to 630 mm ²	☐	☐	
	2 x 3c up to 300 mm ²	☐	☐	
	6 x 1c up to 630 mm ²	☐	☐	☐
	12 x 1c up to 630 mm ²			☐

Key ■ Standard feature □ Optional feature

For more options, please consult us.

Installation and connection

Cable entry	D-2
Installation and connection.....	D-3

D

Cable entry

Bottom entry

This cable box is intended for termination of PILC or XLPE cables from below in accordance with Energy Networks Association technical specification ENA-TS 12-11.

The box is suitable for dry type hot or cold fit termination kits using angled boots. If Dyscon terminations are used then termination kits with a straight boot should be used.

Cable sizes

- Up to 1250 A
 - 1 x 3 core up to 300 mm²
 - 3 x 1 core up to 630 mm²
 - 2 x 3 core up to 300 mm²
 - 6 x 1 core up to 630 mm².
- 2000 A, 2500 A
 - 6 x 1 core up to 630 mm²
 - 12 x 1 core up to 630 mm².

For other cable types/sizes please consult us.

Top entry

This cable box is intended for termination of PILC or XLPE cables from above in accordance with Electrical Association technical specification EA12-11.

The box is suitable for dry type hot or cold fit termination kits using angled boots. If Dyscon terminations are used then termination kits with a straight boot should be used.

Cable sizes

- Up to 1250 A
 - 1 x 3 core up to 300 mm²
 - 3 x 1 core up to 630 mm²
 - 2 x 3 core up to 300 mm²
 - 6 x 1 core up to 630 mm².
- 2000 A, 2500 A
 - 6 x 1 core up to 630 mm²
 - 12 x 1 core up to 630 mm².

For other cable types/sizes please consult us.

D

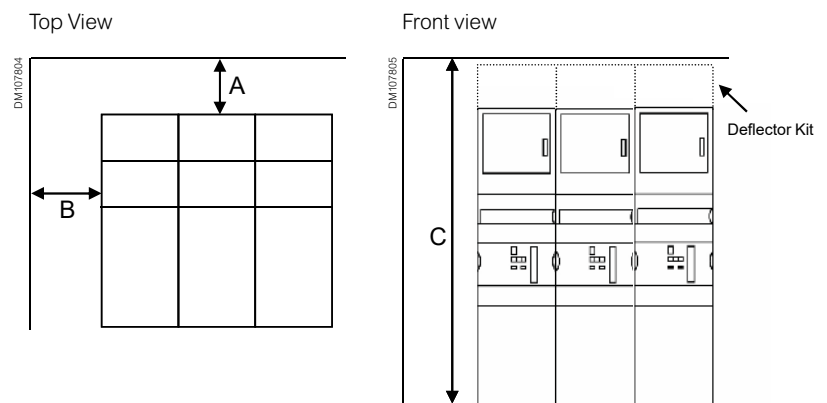
Installation for internal arc protection

To help maximise the reliability of the switchgear throughout its life the switchgear should be installed in a clean, dry, well ventilated, indoor switchroom whose climatic conditions are controlled to stay within those specified in IEC 62271-1 clause 2.1.1.

If special service conditions are required contact Schneider Electric for further advice.

Internal Arc

The standard GenieEvo product range has an internal arc classification of IAC AF / AFLR for 25 kA 1s and IAC AFLR 31.5 kA 1s when tested to IEC 62271-200. Our recommendation for installation is as follows.



Minimum Dimensions

- A: 800 mm
- B: 500 mm
- C: 3000 mm

For special conditions of lesser clearance, please consult us.

Installation and connection

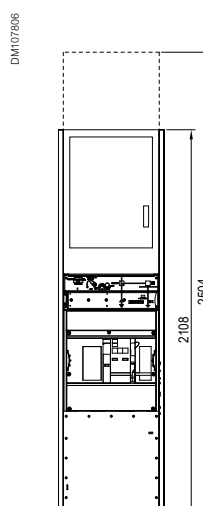
25 kA

Dimensions VC

Construction	VC2	VC6	VC12	VC20
Standard dimensions W x H x D (mm)	500 x 2108 x 1230			750 x 2108 x 1230
Height with deflector* (mm)	2504	2504	2504	2504
Minimum height (mm)	1900	1900	1900	1900
Depth with top cable entry (mm)	1598	1598	1598	1598
Depth with AFLR arc chimney (mm)	1513	1513	1513	1505
Depth with AFLR arc chimney and top entry (mm)	1846	1846	1846	1846
Front access space required for mechanical charging (mm)	735	735	735	735
Rear access for cable termination (mm)	700	700	700	700
Maximum weight (kg)	Up to 600			Up to 700

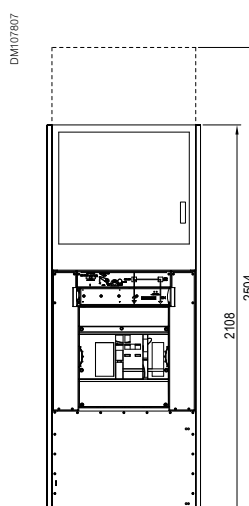
(*) If $A \leq 1500$ mm and $C \leq 4000$ mm, see page D-3.

Front



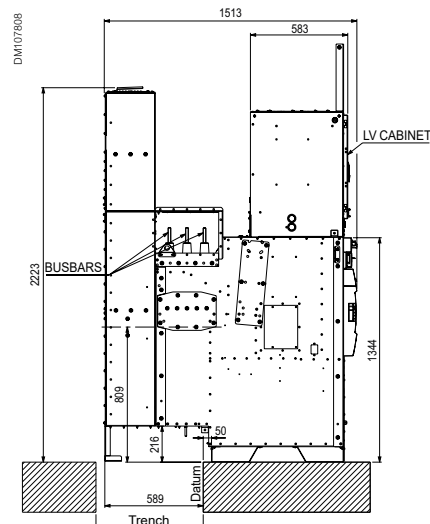
VC2, VC6, VC12

Front



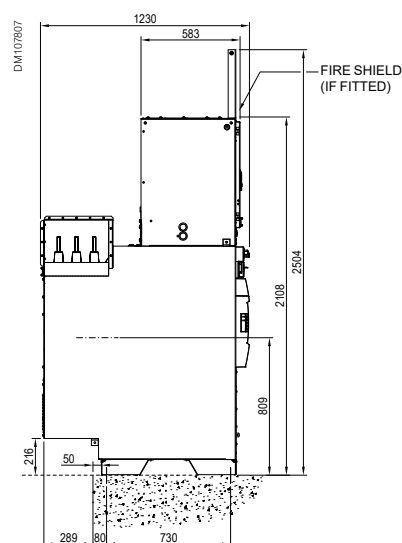
VC20

Side, cable bottom entry, AFLR



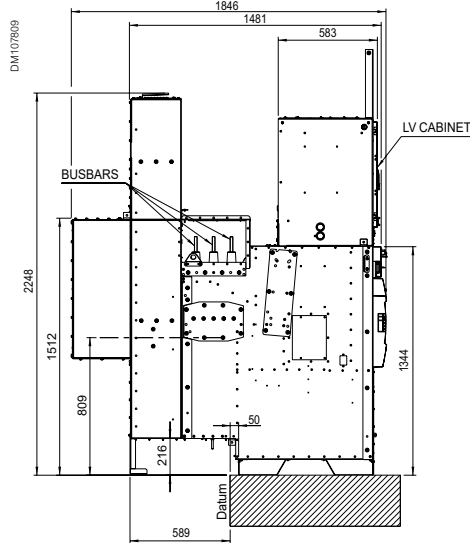
VC2, VC6, VC12

Side, cable bottom entry



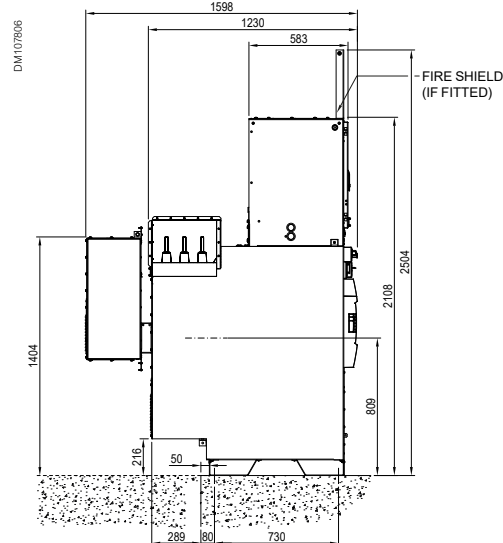
VC2, VC6, VC12, VC20

Side, cable top entry, AFLR



VC2, VC6, VC12

Side, cable top entry



VC2, VC6, VC12, VC20

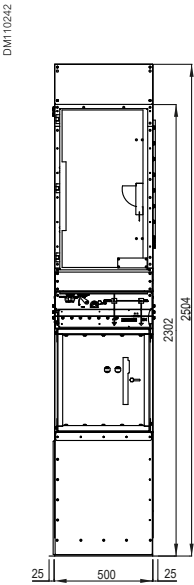
Installation and connection

31.5 kA

Dimensions VC

Construction	VC2	VC6	VC12	VC20
Standard dimensions W x H x D (mm)	500 x 2504 x 1658			750 x 2504 x 1658
Depth with AFLR arc chimney (mm)	1658	1658	1658	1658
Front access space required for mechanical charging (mm)	735	735	735	735
Rear access for cable termination (mm)	700	700	700	700
Maximum weight (kg)	Up to 650			Up to 750

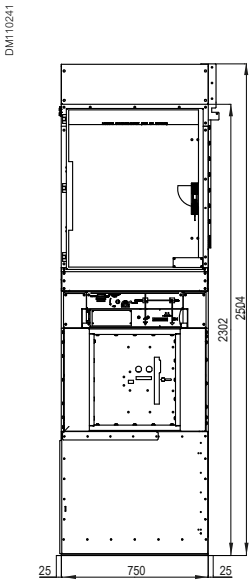
Front



Side, cable bottom entry

VC2, VC6, VC12

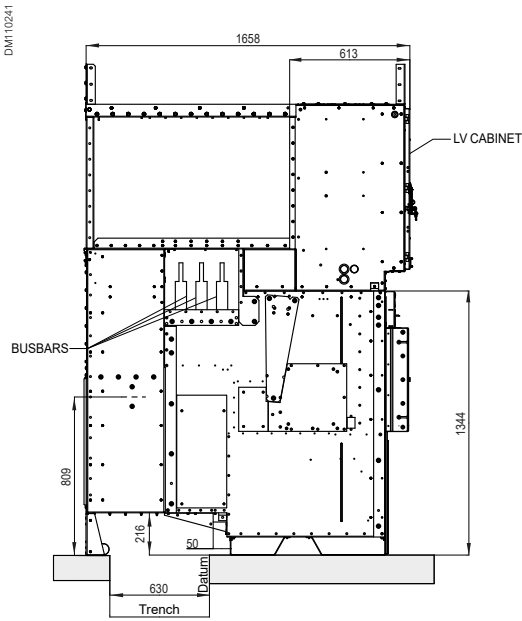
Front



Side, cable top entry, AFLR

VC20

Side, cable bottom entry, AFLR



Side, cable top entry

VC2, VC6, VC12

Installation and connection

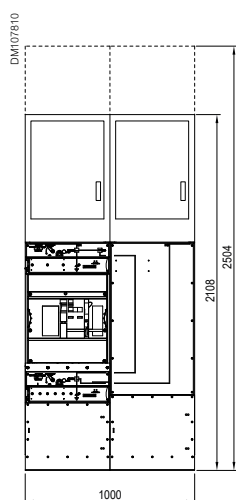
25 kA

Dimensions VB

Construction	VB6	VB12	VB20
Standard dimensions W x H x D (mm)	1000 x 2108 x 1230		1250 x 2108 x 1230
Height with deflector* (mm)	2504	2504	2504
Minimum height (mm)	1900	1900	1900
Depth with AFLR arc chimney (mm)	1513	1513	1505
Front access space required for mechanical charging (mm)	735	735	735
Maximum weight (kg)	Up to 750		Up to 1000

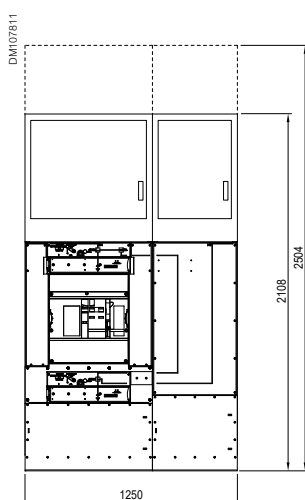
(*) If A ≤ 1500 mm and C ≤ 4000 mm, see page D-3.

Front



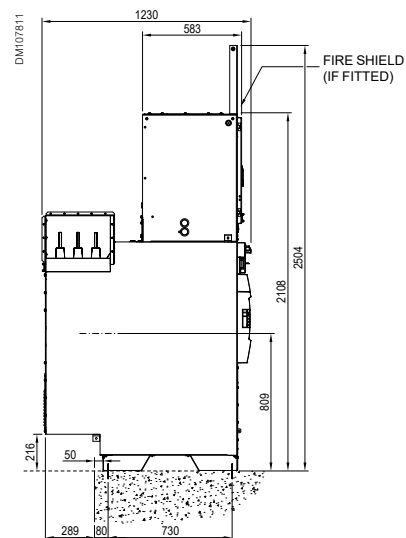
VB6, VB12

Front



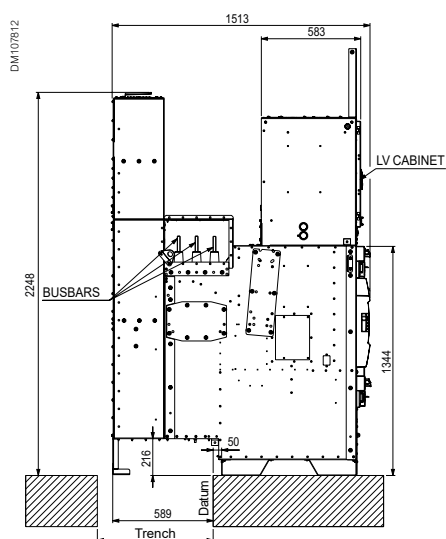
VB20

Side



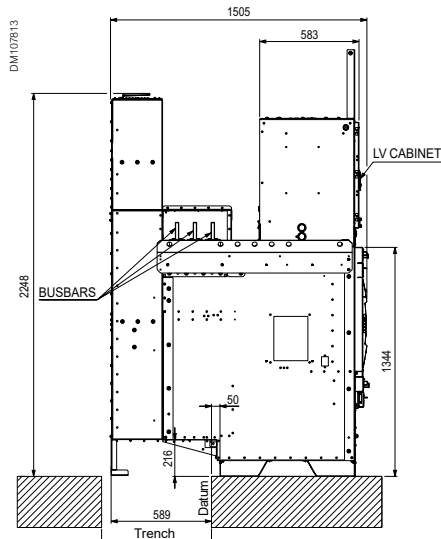
VC2, VC6, VC12, VC20

Side, AFLR



VB6, VB12

Side, AFLR



VB6, VB12

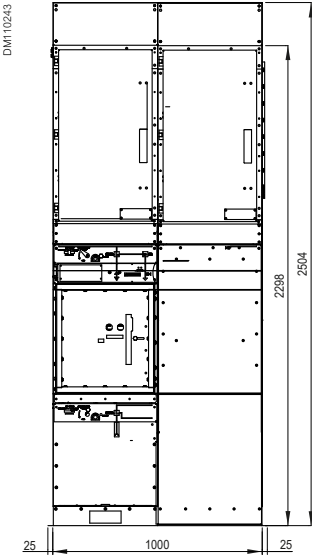
Installation and connection

31.5 kA

Dimensions VB

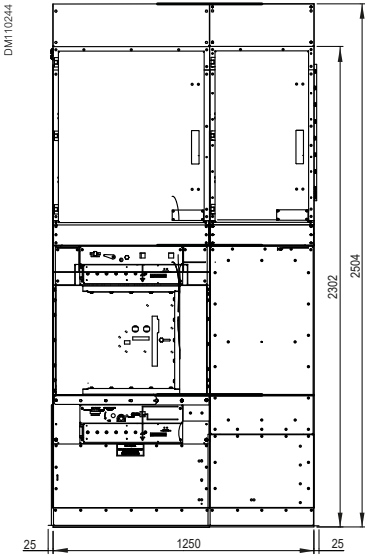
Construction	VB12	VB20
Standard dimensions W x H x D (mm)	1000 x 2504 x 1658	1250 x 2504 x 1658
Depth with AFLR arc chimney (mm)	1658	1658
Front access space required for mechanical charging (mm)	735	735
Maximum weight (kg)	Up to 800	Up to 1050

Front



VB12

Front



VB20

D

Installation and connection

25 kA

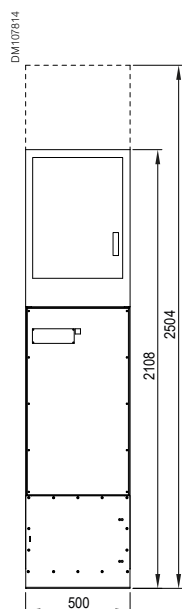
Dimensions BBM, BBE

Construction

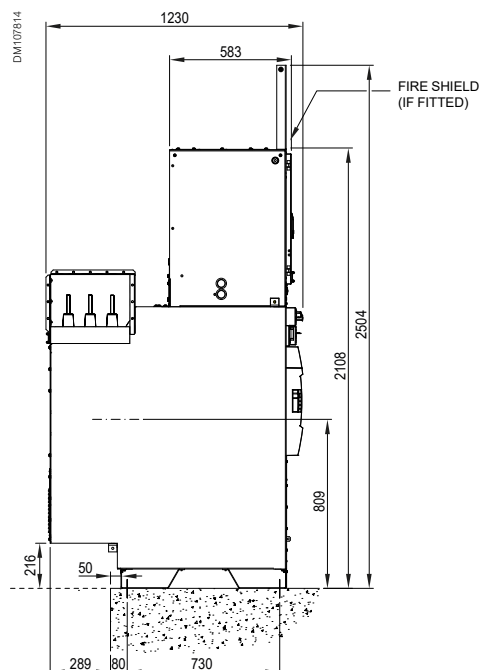
Standard dimensions W x H x D (mm)	500 x 2108 x 1230
Height with deflector* (mm)	2504
Minimum height (mm)	1900
Depth with AFLR arc chimney (mm)	1513
Maximum weight (kg)	250

(*) If $A \leq 1500$ mm and $C \leq 4000$ mm, see page D-3.

Front



Side

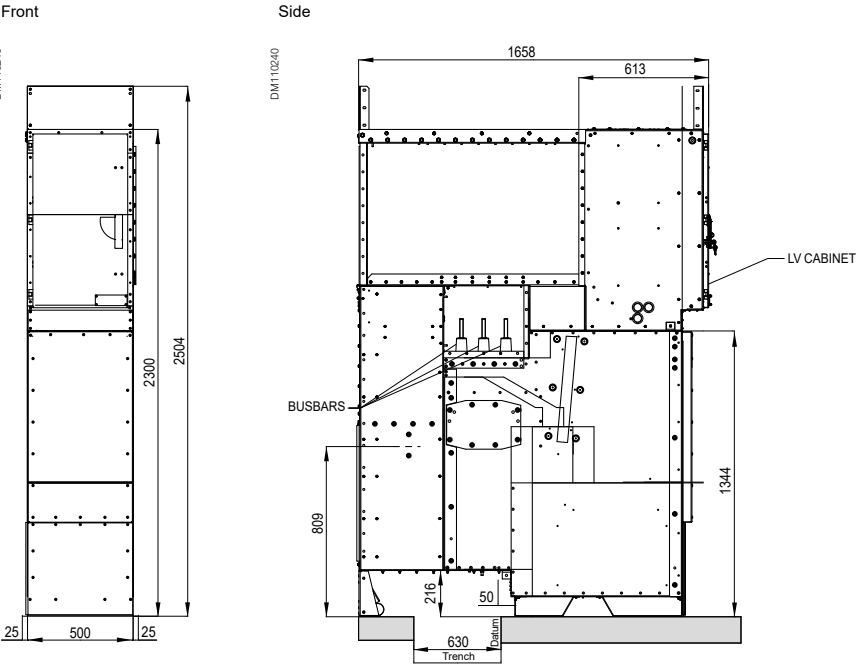


Installation and connection

31.5 kA

Dimensions BBM, BBE

Construction	
Standard dimensions W x H x D (mm)	500 x 2504 x 1658
Depth with AFLR arc chimney (mm)	1658
Maximum weight (kg)	300





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