EcoStruxure™
Innovation At Every Level

SeT Series

MCSeT

Digitally Native up to 24 kV
Air-insulated Switchgear

Catalog 2026
With EvoPacT HVX Vacuum
Circuit Breaker

April, 2026

se.com

Schneider Electric

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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.

SeT Series

Featuring outstanding medium-voltage (MV) and low-voltage (LV) switchboards, motor control centers and power distribution solutions for high-performance power applications, SeT Series provides optimized solutions based on a modular architecture and incorporating smart connected devices to increase enhanced safety, reliability, performance, and energy efficiency. Explore our SeT Series latest offers here

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.

MCSeT Active,
a new generation of natively digital MV switchgear

GENERAL CONTENT

Find more information here

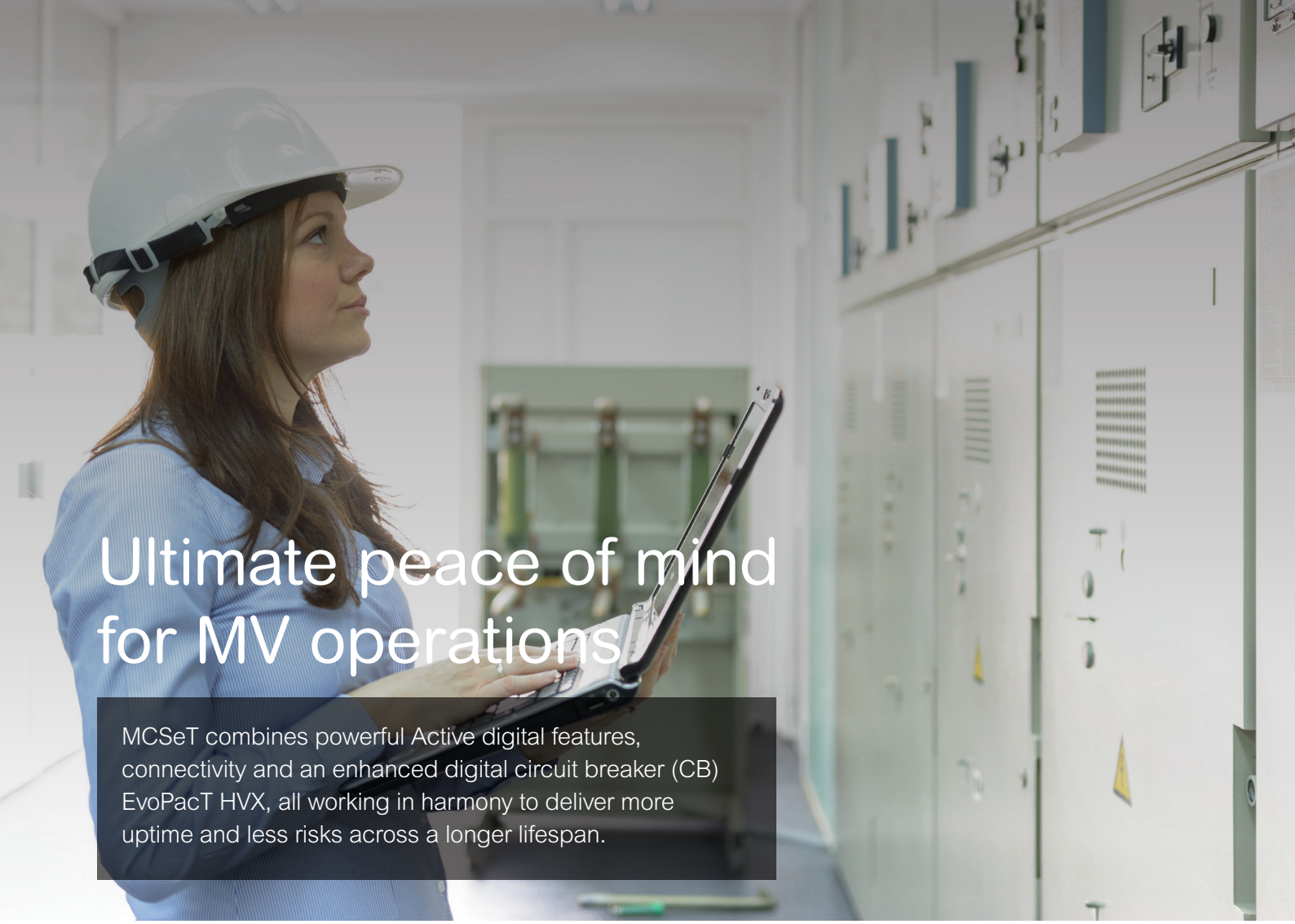
All pictures of the catalogue illustrate the product in an environment close to reality. They were taken off-line. For live operation the P.P.E. (personal protective equipment) must be used in accordance with the regulations of the place of installation.

MCSeT Active and Active Plus,

for 24/7 businesses that stay On!

Overview

Overview



Ultimate peace of mind for MV operations

MCSeT combines powerful Active digital features, connectivity and an enhanced digital circuit breaker (CB) EvoPacT HVX, all working in harmony to deliver more uptime and less risks across a longer lifespan.

Extended CB life

- Count on extended life for your MV applications, powered by a new optimized circuit breaker, EvoPacT HVX that lasts much longer than previous VCBs.
- Engineered with decades of experience and innovative condition monitoring for less overall maintenance and breaker replacement.

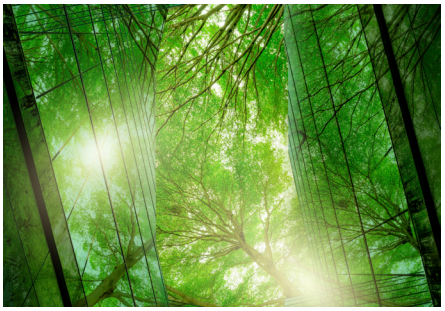
More Uptime

- A data-driven maintenance program from Day 1, for optimized and more predictive maintenance from the start. Component health and abnormal conditions are continuously monitored, with alerts and recommendations from EcoCare membership, tailored for more uptime.

Reduce Risks

- Using connectivity and data can help minimize risk exposure. Firstly, you get fast information to support faster decisions, early warnings of abnormal conditions before they escalate and with EcoCare membership, expert recommendations and support at your side so your business keep running.

PM111554



Built-in sustainability

MCSeT is a range of switchgear that is designed to be more efficient and more sustainable, part of our commitment to deliver sustainable performance for our customers.

- Environmental Data Program certified
- Modular with easy upgrades
- Digital integrations to save time
- Longer CB Operational life
- Air-based (Vacuum) switching

Environmental Data Program

PM105396

afaq ISO 9001 Qualité AFNOR CERTIFICATION

PM105397

afaq ISO 14001 Environnement AFNOR CERTIFICATION

Scalable and ready for everything

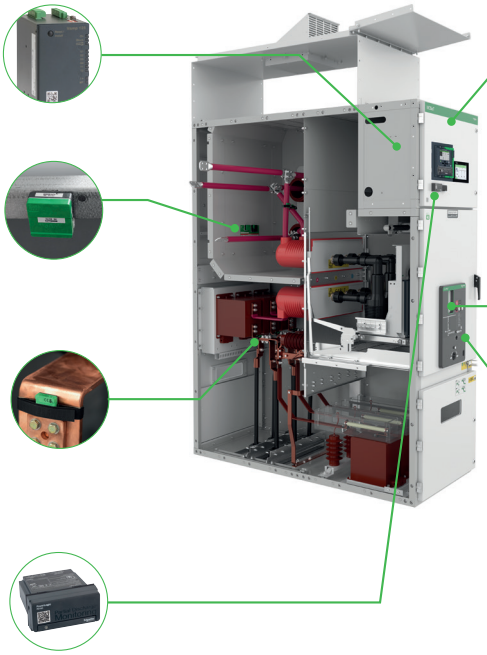
MCSeT Active sets a new standard with natively digital features to simplify asset management and daily operations.
Scalable monitoring and control features can be combined with cloud-connected digital services designed to help you get the optimized performance from your equipment and keep your business running smoothly.

Internal arc detection
Optical light sensors allow relays to clear internal arc conditions faster, to decrease risks for operators and potential equipment damage

Thermal monitoring
Wireless sensors help detect temperature anomalies prompting diagnosis of potential faults, fire risks and maximizing uptime

Environmental monitoring
Wireless sensors monitor installation conditions, detect ambient temperature and humidity that may accelerate aging

Partial discharge monitoring
Optional expert-driven Service to continuously monitor and detect abnormal activity linked to insulation degradation



Switchgear HMI
Optional local display of the latest status, health conditions and alarms

Comprehensive breaker health
Enhanced monitoring of entire circuit breaker, wear, speed and component health status

Local or Remote Control
Digital operation of CB Open/ Close and racking from outside of the arc flash zone

EcoCare Membership(1)
Get the optimized condition monitoring, recommendations and support with a dedicated Service Plan.

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

Discover powerful connectivity

EvoPacT HVX boasts powerful digital capabilities, designed to help you optimize operations with more visibility and uptime.
Whether you start with the standard EvoPacT HVX, EvoPacT HVX Active or EvoPacT HVX Active Plus digital monitoring and control features are modular and easily scaled to grow with your business.

PM110769

PM110781

PM110782

EvoPacT HVX

The next generation of digital circuit breaker, with future-ready compatibility and fast access to documentation (using the Digital Logbook) via QR code on your mobile device.

EvoPacT HVX Active

React faster to help prevent unplanned downtime with 24/7 condition monitoring using scalable health sensors from essential thermal monitoring to critical components such as operating coils, vacuum interrupters, motors and mechanisms.

EvoPacT HVX Active Plus

Comprehensive set of sensors that monitor the complete circuit breaker, plus digital CB Controls and truck operations. EvoPacT HVX Active Plus gives the necessary insights into the overall health of your circuit breaker with alerts through a dedicated monitoring platform on your connected smart device.

Designed for a Large Field of Application

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

Power Supply Companies

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

Industries

- Automotive and E-Mobility
- Oil, Gas, and Petrochemicals
- Chemical industry
- Mining, Mineral, and Metal
- Semiconductor

Infrastructures and Buildings

- Water and Wastewater Plants
- Airports
- Utilities
- New Energy
- Tower Blocks
- Marine (up to 12 kV)

Data Centers

- Extra Large Data Centers
- Cloud and Service Providers

Longer Service Life

PM110948

Count on an extended life for MV switchgear

With MCSeT Active, you can count on an extended life, powered by a new EvoPacT HVX VCB integrated with condition-based maintenance, meaning that your next projects will last longer and with less overall maintenance, reducing project carbon footprint and optimizing costs.

50,000x

Mechanical and electrical operations

Replacing a worn-out circuit breaker is costly, so our new EvoPacT HVX increases the benchmark for longevity to 50,000 (electrical and mechanical operation) for 12/17.5 kV and 30,000 (electrical and mechanical operation) for 24 kV, up to 50 short circuit breaking operations(1), tested to more than double the expected lifespan of current generation VCBs. It is engineered to last longer thanks to decades of experience and high quality components.

With a CB that lasts longer, maintenance costs and spares holding are reduced, altogether a reduced lifetime cost.

MCSeT Active has been designed to monitor all critical components with scalable architectures of embedded sensors and connectivity meaning no additional engineering. Dedicated sensors report the real condition of critical operation components such as Vacuum Interrupters, Operating Coils and Mechanisms. This condition monitoring can be viewed in a range of ways, including a local HMI and a variety of EcoStruxure applications.

To take full advantage of digital features, we recommend EcoCare membership(2) which enables your entire switchgear to take the path to predictive maintenance. EcoCare members benefit from 24/7 condition monitoring with alerts to abnormal conditions, maintenance recommendations from our team of MV experts and even more with Support, Training and Warranty extensions.

(1) Operations at normal rated current.
(2) Please contact your local Schneider Electric representative to verify the availability of EcoCare / EcoStruxure Service Plan in your region.

More Uptime for your Business

PM110841

More uptime, so your business stays online

Every second of downtime costs money, whether planned or not, MCSeT Active helps you reduce downtime and focus on becoming the uptime champion of your business.

Reduced

-40%

Unplanned downtime

Starting on Day 1, comprehensive health monitoring sensors continuously collect data 24/7 to detect potential problems before you even energize your solution.

Our latest innovative sensors are designed for wireless or continuously connected applications, that means you can track any abnormal conditions and investigate the trend without the need to shutdown operations. Choose the right time to plan a shutdown, prepared with the knowledge skills or spare parts needed to maintain your equipment to the applicable standards.

For an optimized uptime, we recommend EcoCare membership(1) with MCSeT Active, our unique package that will help your business stay running. The essential health data is subjected to analytics to track data trends, and provide predictions, lifetime estimations and more. Alerts from EcoCare will help you understand when changes occur that risk uptime and you also get the support of a team of experts with recommendations or even on-site support when needed.

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

Reduce Operational Risks

PM110843

Better manage risks, with new ways of working

MCSeT Active comes with in-built digital tools and smart monitoring capabilities to help manage both facility and staff risks.

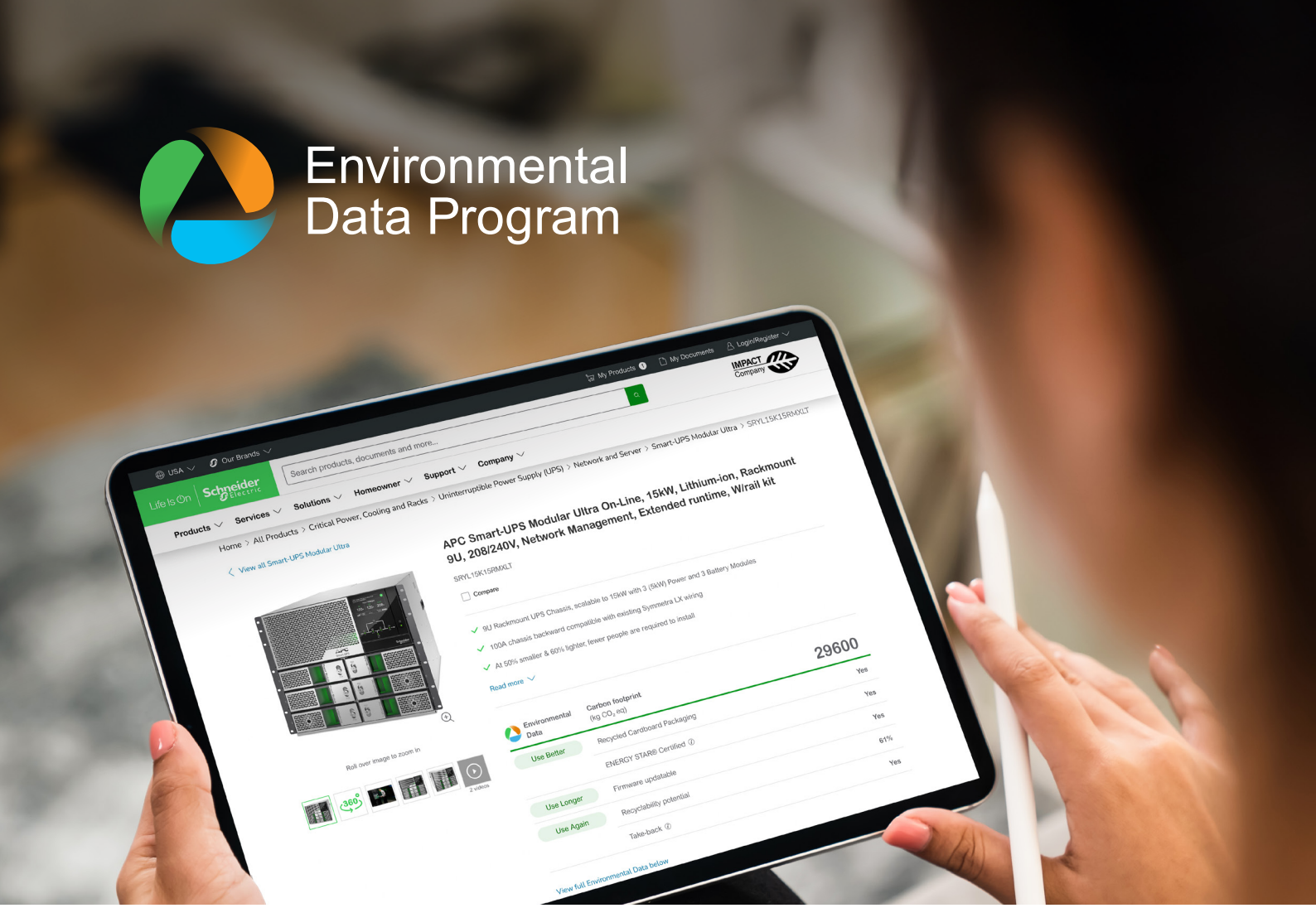
With visibility boosted by local HMI, sensors, and cloud connectivity, it has never been easier or faster to get the correct information in your hands, even in urgent situations.

Get alerts

24x7

- Cloud-based applications provide actionable insights and can replace the need for traditional actions such as Thermal inspections are used to identify hotspots on busbars or cable connections. Using periodic or 24/7 connected monitoring, maintenance teams can produce reports, identify problems faster, reducing risk of downtime, and highlighting the specific location before any work commences.
- The use of monitoring data is also used to detect potential problems faster, giving an early warning before conditions escalate. With faster detection and remote inspections through monitoring data and trends, the risks to downtime, equipment or staff can all be minimized.
- While there are many potential causes of arc-flash, even in arc-fault-tested designs and the close proximity to live switching can now be avoided. Using remote or nearby operation with digital tools such as mobile apps, local HMI or fully remote access, you can operate from outside of the arc flash zone, changing the way you work with live equipment and reducing risks.
- With EcoCare membership, you can also take recommendations to improve safety and efficiency, including extended warranties and on-site expertise.

Environmental Data Program

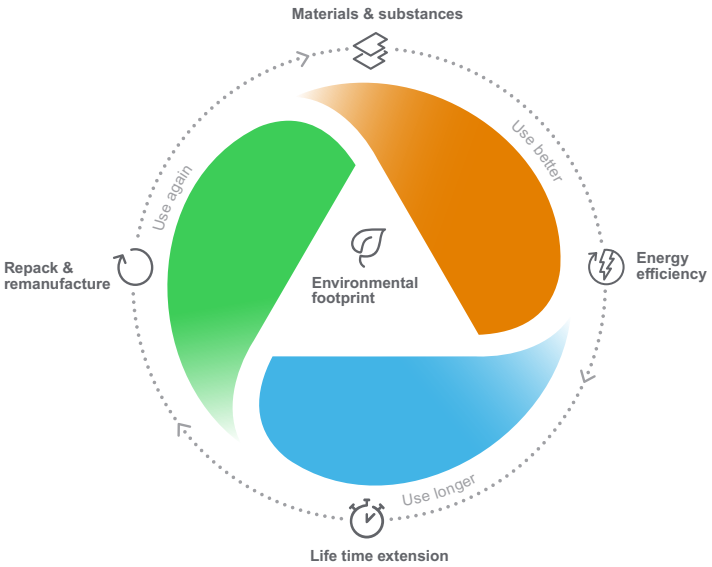


Next-level transparency for better-informed product choices

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 repairability 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

Sustainability

Environmental and Quality Performance

PM108293

Sustainability, powered by air and digital

Sustainable industries, buildings and grids help ensure a greener future for our planet and ourselves.
MCSeT switchgear is **Environmental Data Program** certified, part of our commitment to deliver sustainable performance for our customers.

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.

CB Operational lifespan

x2

means less replacement, less materials, less waste

MCSeT uses EvoPacT HVX circuit breakers to boost sustainability:

- Modular and easily upgradable, MCSeT can quickly adapt to your changing business needs, whether adding sensors or replacing worn components.
- Long-lasting circuit breaker performance and durability, up to 30,000 operations so you replace your circuit breaker less often.
- Built using vacuum interruption technology with familiar operation and no fluorinated gases to avoid environmental pollutants.
- Condition monitoring and EcoCare membership(1) optimize maintenance and support for reduced environmental impact, lower overall maintenance, and improved lifetime costs.
- Speed up daily interactions with paperless documentation and records in your own Digital Logbook.
- Cradle-to-Cradle (EvoPacT HVX) certification by independent external body.

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

What is EcoStruxure?

Introduction of MCSeT Active and MCSeT 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.

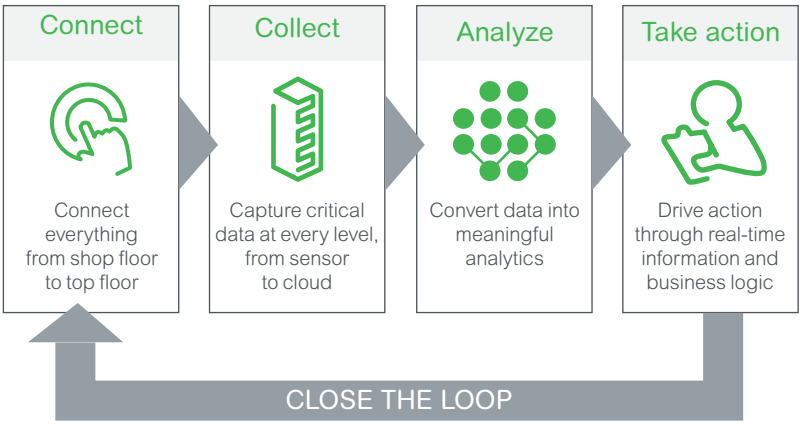
EcoStruxure™ is our open, interoperable, IoT-enabled system architecture and platform. EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers. EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity 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

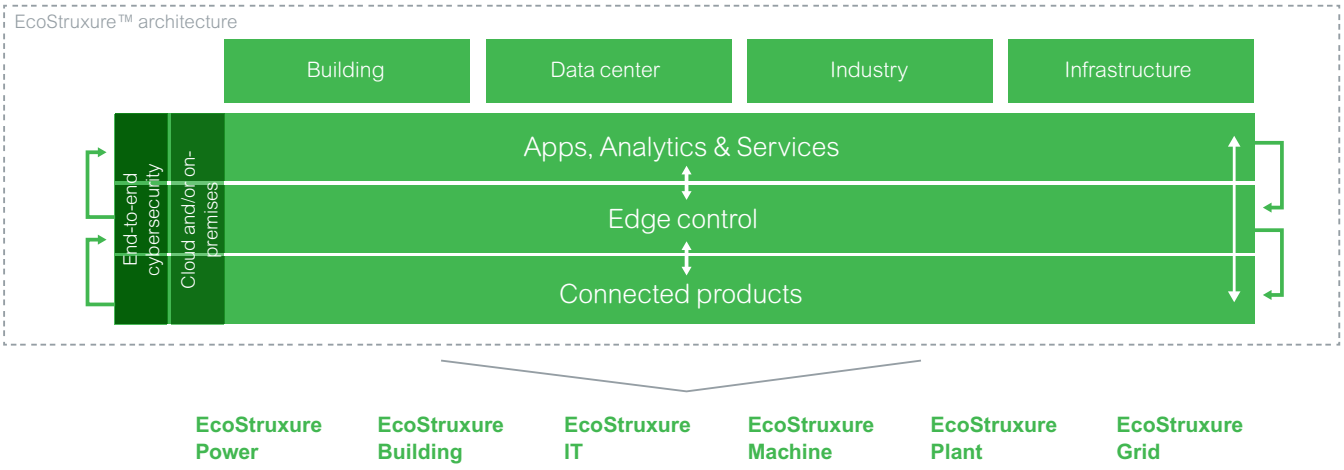
EcoStruxure™ architecture lets customers maximize the value of data.

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



EcoStruxure Power | **EcoStruxure Building** | **EcoStruxure IT** | **EcoStruxure Machine** | **EcoStruxure Plant** | **EcoStruxure Grid**

What is EcoStruxure?

MCSeT Active and MCSeT Active Plus

Unlock the full potential of your MCSeT 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 (Optional Service)
- 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.

MCSeT Active: Natively connected essential monitoring

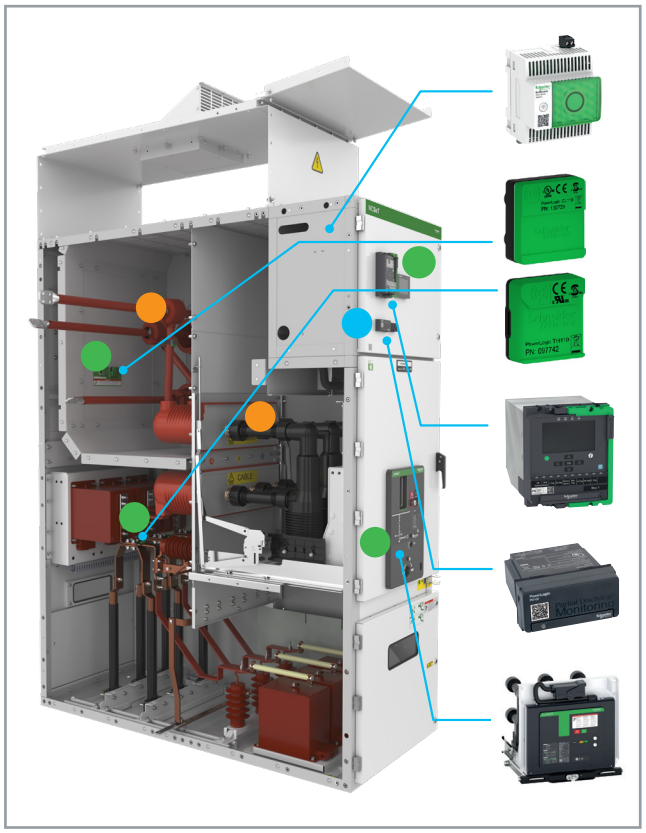
MCSeT Active is our well known MV switchgear equipped natively with thermal, environmental and circuit breaker monitoring.
This solution connects your substation equipment to an optional cloud-based monitoring platform for 24/7 health assessment from day one of operations.

MCSeT Active Plus: Comprehensive with Partial Discharge monitoring

Additionally, MCSeT 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.

MCSeT Active: ● + *optional* ●

MCSeT Active Plus: ● + ●



EcoStruxure™ Panel Server PAS600

Seamless connection of smart IoT devices to your applications

PowerLogic CL110 Environmental Sensor

Measure ambient temperature and humidity to detect abnormal conditions

PowerLogic TH110 Thermal Sensor

Continuous thermal monitoring to detect hotspots and potential loose connections

PowerLogic P5 Protection Relay

Withdrawable design with embedded arc flash protection, IEC 61850 communication and cyber security compliance

Partial Discharge monitoring (optional service)

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

- Based on capacitive coupling
- Fully integrated sensors

Circuit breaker monitoring

Comprehensive monitoring and remote-control functions:

- Vacuum interrupter wear
- Operating Mechanism, Coils, and motor health
- CB Operation, Racking, and Alignment

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

What is EcoStruxure?

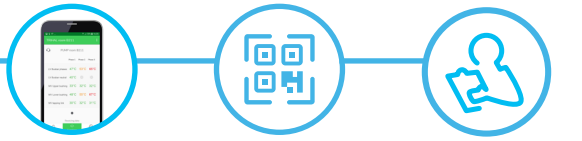
MCSeT Active

MCSeT Active

React faster to help prevent unplanned downtime with 24/7 cloud connectivity and **essential condition monitoring** using scalable features.

Digital tools

Condition monitoring alerts
Paperless asset management
EcoStruxure Service Plan/EcoCare Membership



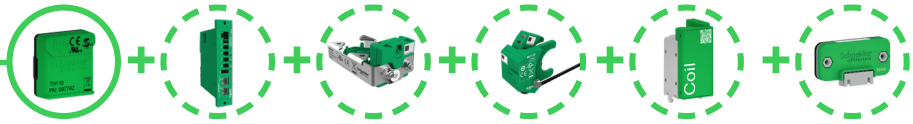
Remote monitoring | Digital Logbook | Essential condition monitoring

Essential monitoring at Cubicle Default features

PAS600 + TH110 + CL110 + Arc Flash + MCM100

Communication Gateway
Thermal Monitoring
Environmental Monitoring
Arc Flash Detection (optional)
Motor Control and Monitoring (optional)

Essential CB monitoring



TH110 + BM100 + VI110 + MC110 + Coils + TS110

Thermal Monitoring
Breaker Monitoring
Vacuum Interrupter Monitoring
Mechanism Monitoring
Auxiliary Circuit Monitoring
Truck Alignment Monitoring

Optional

Embedded

What is EcoStruxure?

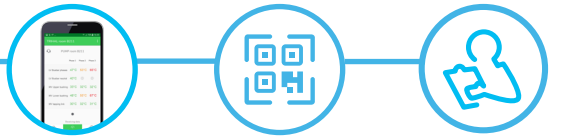
MCSeT Active Plus

MCSeT Active Plus

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.

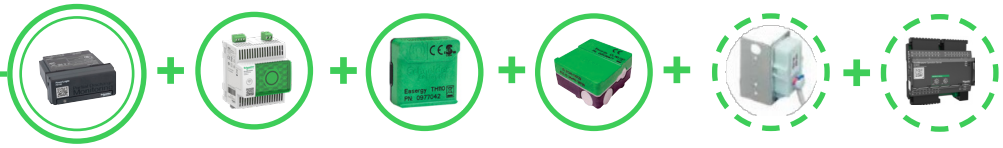
Digital tools

Condition monitoring alerts
Paperless asset management
EcoStruxure Service Plan / EcoCare Membership



Remote monitoring and control | Digital Logbook | Comprehensive condition monitoring

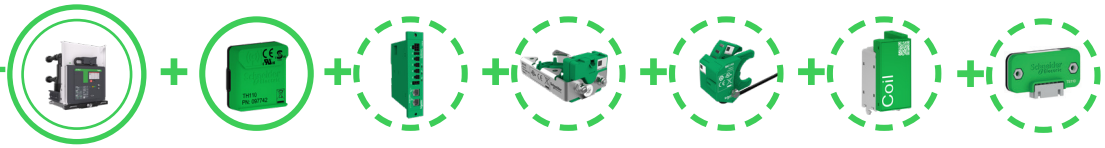
Comprehensive monitoring at Cubicle default features



PD100 + PAS600 + TH110 + CL110 + Arc Flash + MCM100

- Partial Discharge Monitoring
- Communication Gateway
- Thermal Monitoring
- Environmental Monitoring
- Arc Flash Detection (optional)
- Motor Control and Monitoring (optional)

Best-in-class CB monitoring and control



CB Control + TH110 + BM100 + VI110 + MC110 + Coils + TS110

- CB Monitoring and Control
- Thermal Monitoring
- Breaker Monitoring
- Vacuum Interrupter Monitoring
- Mechanism Monitoring
- Auxiliary Circuit Monitoring
- Truck Alignment Monitoring
- EcoStruxure Service Plan / EcoCare Membership

Optional

Embedded

Overview

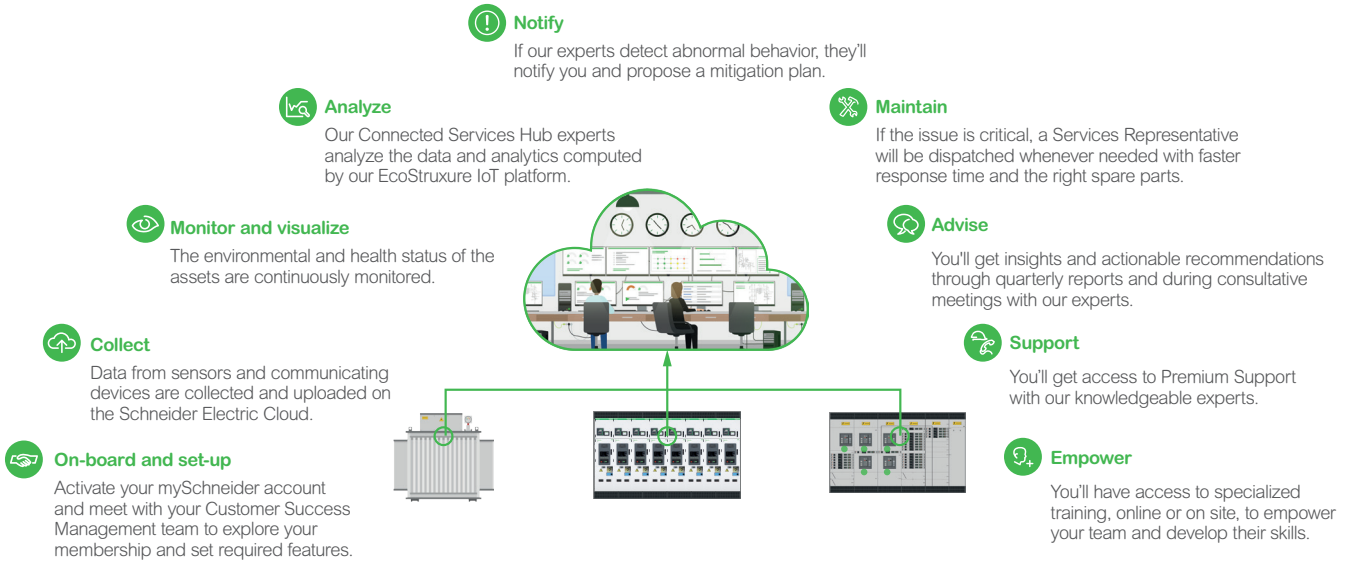
EcoCare Membership

Combine MCSeT 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	–	Optional	Optional
	Advanced transformer oil monitoring	–	Optional	Optional
Extended warranty		✓	✓	✓
On-site maintenance	Manufacturer calendar-based maintenance visits with asset diagnostic	Optional	Optional	–

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.

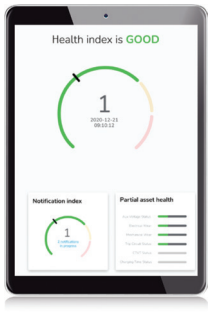
Overview

EcoCare Membership

Combine MCSeT Active or MCSeT Active Plus with a Next-generation Services Plan

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 and 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 an 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 is 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.

MCSeT Connectivity Architectures

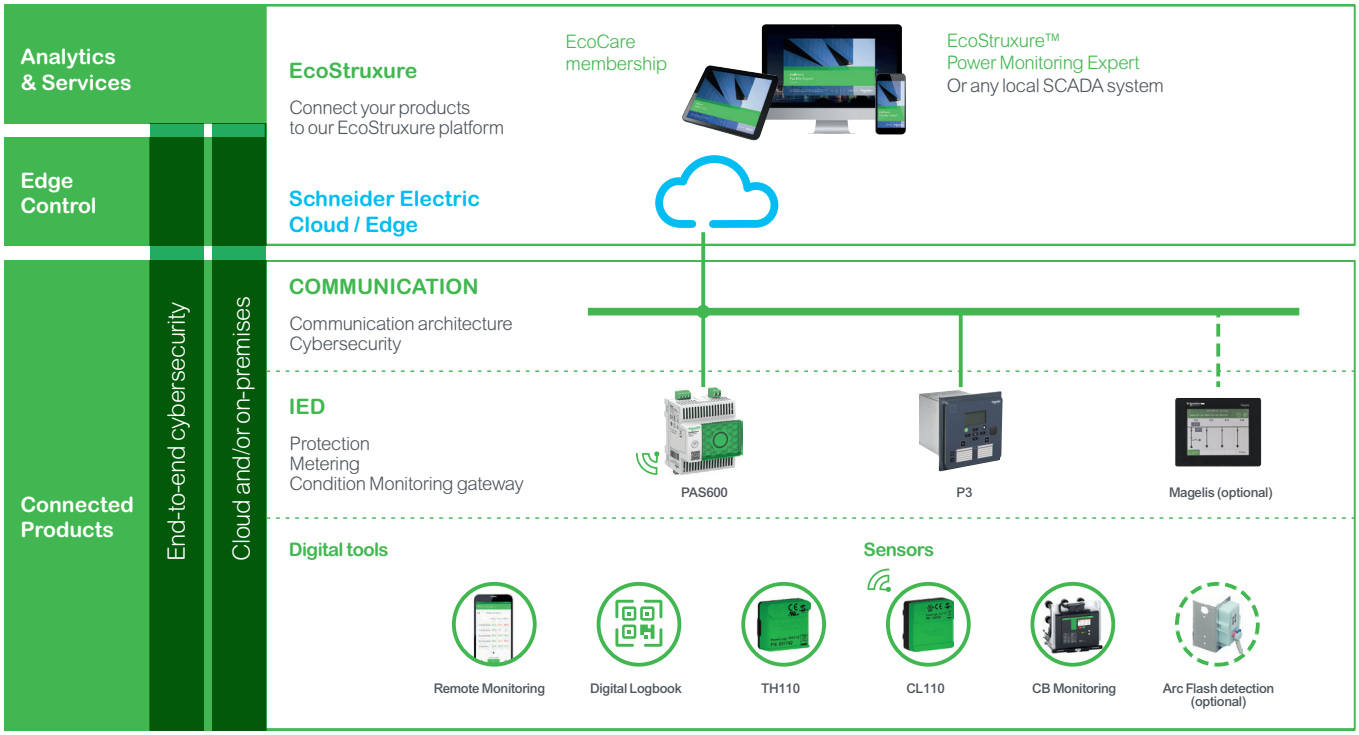
Active:
Digitally Native with Essential Monitoring

MCSeT 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 MCSeT 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

MCSeT Connectivity Architectures

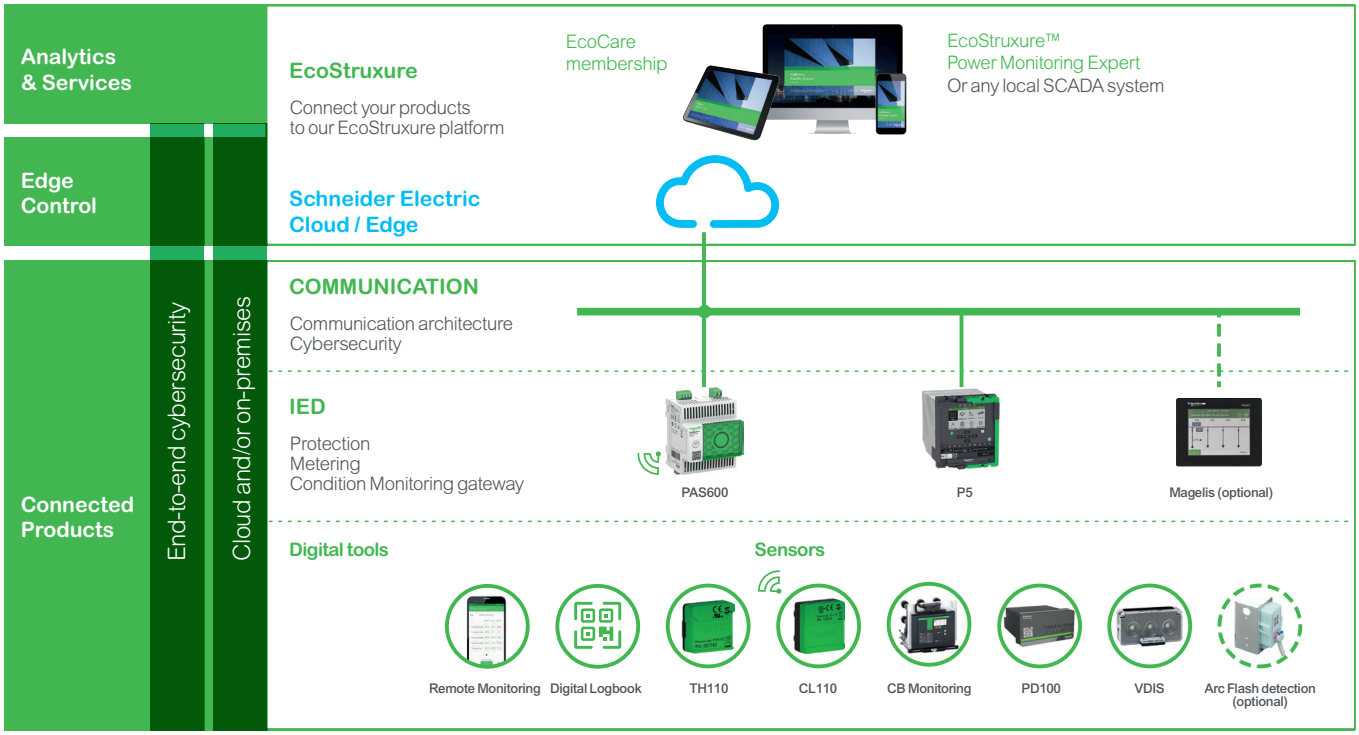
Active Plus:
Comprehensive monitoring and control

MCSeT 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 MCSeT 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 Detecting 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

EcoStruxure™ Ready Solutions

EcoStruxure™ Power Device App and Digital Logbook

Introducing Power Device App

EcoStruxure Power Device App is a single app to operate and maintain power distribution equipment from Schneider Electric.

It allows users to use a mobile device such as tablet or smartphone to interact with designated protection relays, circuits breakers and applications in medium and low voltage applications. In a single mobile app, all necessary information to efficiently operate your enabled equipment by wireless connection, from a safer distance, outside of the arc flash zone for enhanced safety and convenience.

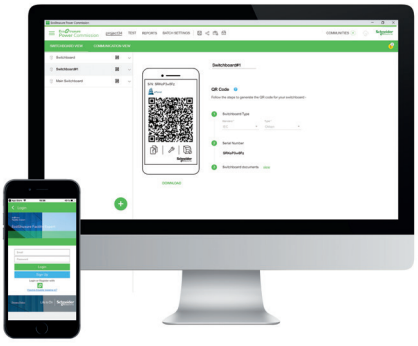
Features include:

- Thermal monitoring
- Environmental monitoring
- Circuit Breaker monitoring
- Partial Discharge Monitoring (requires EcoCare membership)
- Connectivity gateway to Schneider Electric cloud.

Free download
EcoStruxure Power Device on:

Download on the App Store

GET IT ON Google Play



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

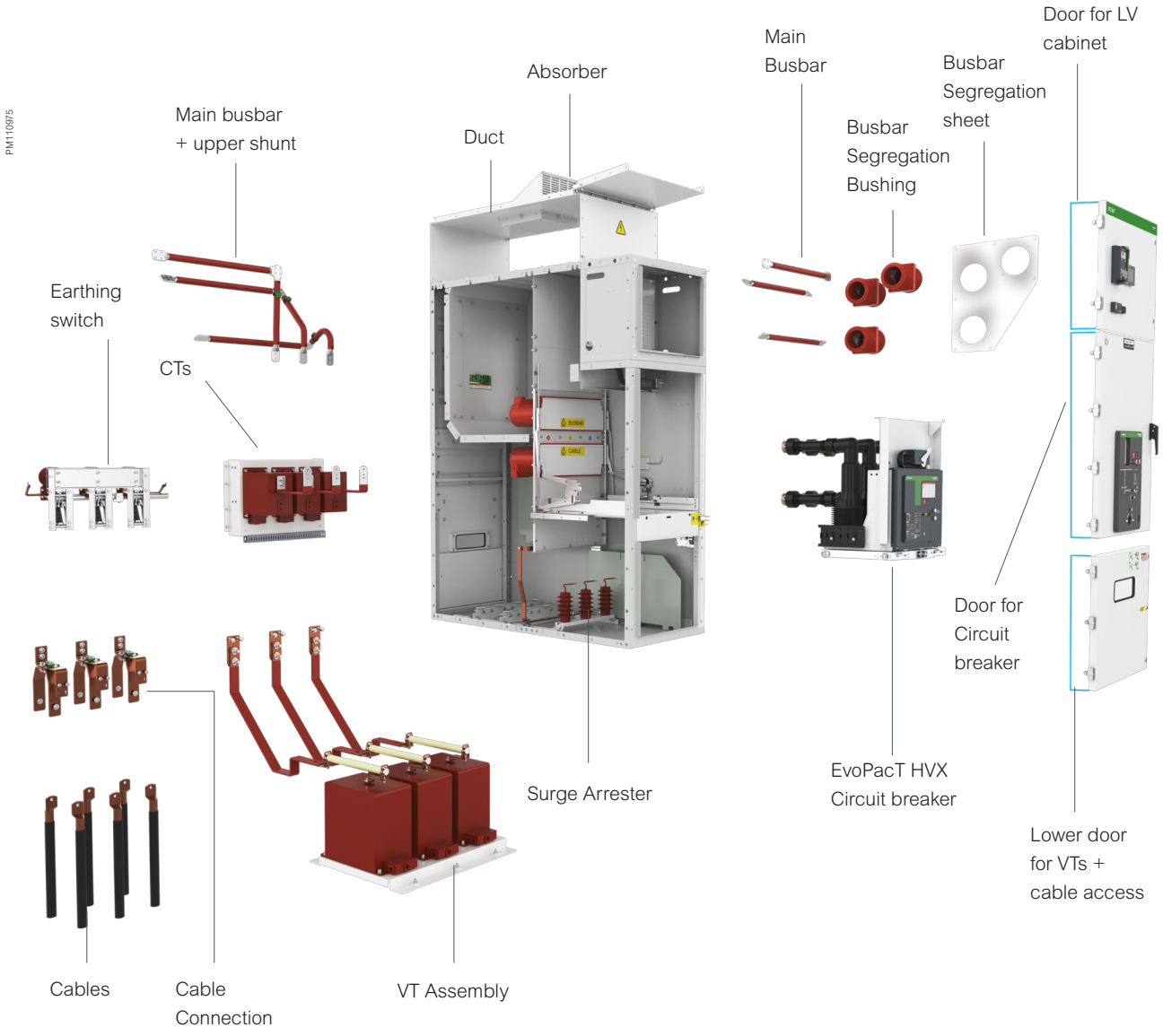
Identify key responsibilities and points of contact at different project stages

Helps eliminate conflicting or missing information

Range Description

Range Description

Description



Note: The images shown here are for illustration purposes only.

Description

Make up of an MCSeT Switchboard

MCSeT switchboards are made up of several interconnected functional units.

Power connections are made between functional units within a switchboard via a single busbar.

The electrical continuity of all metal frames is provided by the connection of each functional unit's earthing busbar to the switchboard's main earthing circuit.

Low voltage wiring trays are provided in the switchboard above the low voltage control cabinets.

LV cables can enter the switchboard through the top or bottom of each functional unit.

Description of a Functional Unit

A functional unit comprises all equipment in the main and auxiliary circuits which together provide a protection function. Each functional unit combines all the components which are required to fulfil this function:

- The cubicle
- The protection, monitoring, and control system
- The withdrawable part

The Cubicle

The cubicle is of LSC2B (Loss of Service Continuity Category) type as defined by IEC 62271-200, in other words the medium voltage parts are compartmented using metal partitions (PM class) which are connected to earth and which separate:

- The busbars
- The withdrawable part (circuit breaker and metering truck)
- MV connections, earthing switch, current transformers and voltage transformers as required

MCSeT is categorized **LSC2B** in the Loss of Service category defined by the IEC standard 62271-200 with **PM** Partition with Metal helps to provide a high level of protection for people. This allows the accessibility of withdrawable part compartment with other compartments like busbar and/or cable compartment to remain energized.

The low voltage auxiliaries and monitoring unit are in a control cabinet separated from the medium voltage section.

Six basic cubicle layouts are offered:

- Incomer or feeder **I/F**
- Bus section coupler **BSC**
- Bus section riser **BSR**
- Busbar metering and earthing **BME**
- Feeder with contactor **FC**

I/F and **BSC** cubicles have withdrawable circuit breaker.

FC cubicle has a withdrawable contactor (CVX7-C).

LSC2B (Loss of Service Continuity IEC 62271-200)

This category defines the possibility of keeping other compartments energised (in service) when opening a main circuit compartment.

Technical Characteristics

For Cubicles with VCB

Normal Operating Conditions According to IEC 62271-200 and IEC 62271-1

Rated voltage					
	Ur	kV	up to 12	17.5	24
Rated insulation level					
Power frequency withstand voltage 50 Hz - 1 min	Ud	(rms kV)	28	38	50
Lightning impulse withstand voltage 1.2/50 µs	Up	(kV peak)	75	95	125
Rated frequency	Fr	Hz	50/60	50/60	50/60
Rated normal current and maximum short time withstand current (1)					
Functional unit with circuit breaker					
Short time withstand current	Ik max.	Ik/tk (kA/3 s)	25/31.5/40	25/31.5/40	25/31.5
Rated current busbar, max	Ir bb	A	up to 4000(2)	up to 4000(2)	up to 3150(2)
Rated current circuit breaker	Ir	A	630	630	630
	Ir	A	1250	1250	1250
	Ir	A	2000	2000	2000
	Ir	A	2500	2500	2500
	Ir	A	3150	3150	3150(2)
	Ir	A	4000(2)	4000(2)	–
Internal arc classification					
Internal arc	Isc	kA	25/31.5/40	25/31.5/40	25/31.5
Arc duration	t	s	1	1	1
Classification			AFLR	AFLR	AFLR
Degree of protection					
				IP4X(3)(4)	
				IP2X	

(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.
(2) With forced cooling.
(3) IP41 and IP42 options are available.
(4) IP5X for LV box is optional.

Note: The images shown here are for illustration purposes only.

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.

Technical Characteristics

For Feeder with Contactor

Normal Operating Conditions According to IEC 62271-200 and IEC 62271-1

Rated voltage				
	Ur	kV	7.2	12
Rated insulation level				
Power frequency withstand voltage 50 Hz - 1 min	Ud	(rms kV)	20	28
Lightning impulse withstand voltage 1.2/50 µs	Up	(kV peak)	60	60(1)
Rated frequency	Fr	Hz	50/60	50/60
Rated normal current and maximum short time withstand current				
Functional unit with CVX				
Short time withstand current	Ik max.	Ik/tk (kA)	31.5(2)/40(2)	31.5(2)/40(2)
Rated current busbar, max	Ir bb	A	up to 4000	up to 4000
Rated current CVX	Ir	A	400	400
Internal arc classification				
Internal arc	Isc	kA	31.5/40(1)	31.5/40(1)
Arc duration	t	s	1	1
Classification			AFLR	AFLR
Degree of protection				
			IP4X(3)(4)	
			IP2X	

(1) Minimum limit as specified by IEC.
(2) Limited by fuse.
(3) IP41 and IP42 options are available.
(4) IP5X for LV box is optional.

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.

Note: The images shown here are for illustration purposes only.

Operating Conditions and Standards

PM106682

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 (contact Schneider Electric)

Atmosphere

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

Humidity

- Average relative humidity over a 24 hour period ≤ 95%
- Average relative humidity over a 1 month period ≤ 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 (contact Schneider Electric)

MCSeT 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, and so on.

Standards

The MCSeT meets the following international standards:

- **IEC 62271-1**: High-voltage switchgear and controlgear: common specifications
- **IEC 62271-200**: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kA
- **IEC 62271-100**: High-voltage switchgear and controlgear - Alternating current circuit breakers
- **IEC 62271-102**: High-voltage switchgear and controlgear - Alternating current disconnectors and earthing switches
- **IEC 60255**: Measuring relays and protection equipment - Common requirements
- **IEC 61869-2**: Instrument transformers - Current transformers
- **IEC 61869-3**: Instrument transformers - Inductive voltage transformers
- **IEC 60044-8**: Instrument transformers - Electronic current transformers
- **IEC 61869-11**: Instrument transformers - Part 11: Additional requirements for low power passive voltage transformers
- **IEC 62271-213**: High-voltage switchgear and control gear - Part 213 : voltage detecting and indicating system
- **IEC 63000**: Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Storage Conditions

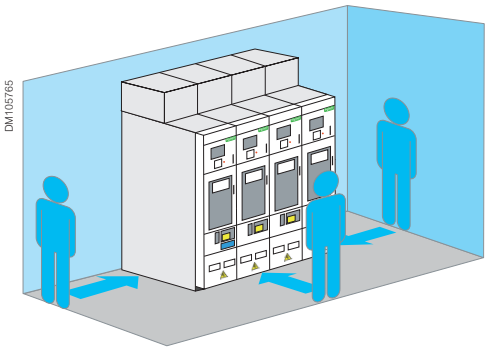
To retain all of the functional units qualities when stored for prolonged periods, we recommend that the equipment is stored as follows:

- In its original packaging.
- In dry conditions.
- Sheltered from the sun and rain at a temperature ranging from -25 °C up to +55 °C.

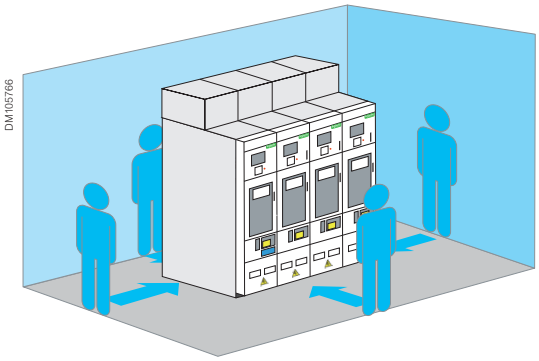
For detailed information, refer to ***Receipt Guide (BQT8677900)***.

Enhanced Protection of People

Internal Arc Classification



Internal arc classification IAC: Accessible sides AFL



Internal arc classification IAC: Accessible sides AFLR

IAC	**I**nternal **A**rc **C**lassification
A	Accessibility **A** Restricted to authorized personnel only
F	**F**ront side
L	**L**ateral side
R	**R**ear side
31.5 kA/ 40 kA	Arc fault current
1s	Arc fault duration **1 s**

Example of MCSeT with internal arc classification IAC

Internal Faults Causing Internal Arcs

- Due to its design, the MCSeT switchgear has the 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 must be the top priority.
- 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 only must be used if the operating company considers it essential to help 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 criteria 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 MCSeT 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.
- Arc flash detection is available (optional).

Specific Applications

PM111556

Seismic Areas

MCSeT meets international seismic specifications (Seismic = 0.5 g, Class 1).

For test procedures, follow the TS62271-210 (class 1) ZPA standard.

Notes

Function/Module Description

Function/Module Description

Functional Overview

Choice of Functional Units

MCSeT has a comprehensive range of functions to suit all requirements for many applications.

The table below can be used to link requirements to functional units and gives basic information on the general composition of each unit.

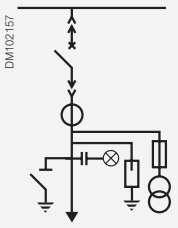
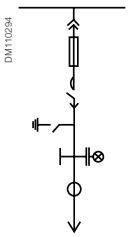
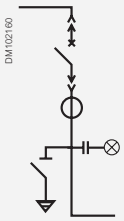
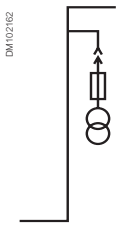
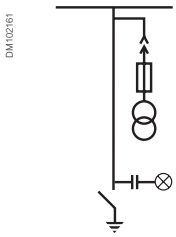
Selection Guide

For example:

You want to supply power to a transformer:

- The chosen solution is a **transformer feeder/breaker**.
- The corresponding functional unit will therefore a **I/F cubicle**.
- The main functions of the equipment are shown below.

Note: Additional functions are available upon request to answer specific requirements.

Cubicle architecture	Incomer/Feeder	Feeder	Bus coupler	Bus riser	Busbar metering and Busbar earthing	
Application	**Line/ Transformer/ Generator**	**Feeder with contactor**	**Bus section coupler**	**Bus section riser**	**Voltage transformer**	**Earthing switch**
Main device	Circuit breaker	Contactor	Circuit breaker	Voltage transformer or fix copper bar	Voltage transformer	Earthing switch
Type of device	EvoPacT HVX	CVX7-C	EvoPacT HVX	EvoPacT MTX	EvoPacT MTX	Earthing switch
Cubicle function	Incomer/Feeder	Feeder with contactor	Bus sectioning		Busbar voltage metering	Busbar earthing
Cubicle name, code	**I/F**	**FC**	**BSC**	**BSR**	**BME**	
Single line diagrams						

Functional Overview

Incomer or Feeder (I/F)-Type Cubicles

I/F

MV devices

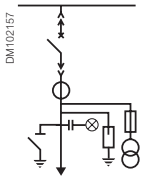
1. Busbars for cubicle interconnection
2. Current transformers
3. Earthing switch
4. MV connections by bottom cables accessible from the front (for top cable and top busbar entry, contact Schneider Electric)
5. Voltage Transformers
6. Main switching device

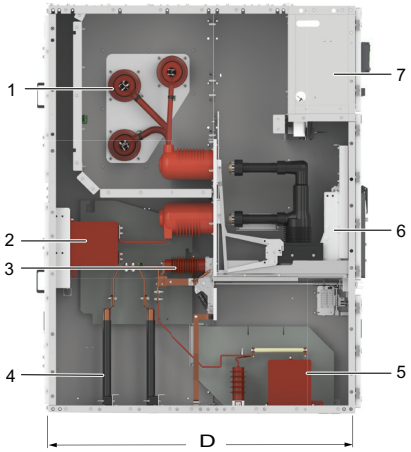
LV control cabinet

7. Low voltage auxiliaries and the protection, monitoring and control unit are in a control cabinet which is separated from the medium voltage part

Options

- Fixed VTs with fuses
- Fixed VTs without fuses
- Withdrawable VTs with fuses
- Withdrawable VTs with fuse without shutter
- Earthing switch and circuit breaker keylocks
- Surge arresters
- Circuit breaker truck motorisation
- Earthing switch motorisation
- Top busway entry (depth may vary based on the customer requirement)
- Top cable entry (depth may vary based on the customer requirement)





Note: The images shown here are for illustration purposes only.

Characteristics		Incomer / Feeder (I/F)		
Rated voltage (kV)		Up to 12	17.5	24
Short time withstand current (kA)		25/31.5/40	25/31.5/40	25/31.5
Rated current (A)				
EvoPacT HVX circuit breaker	630	●	●	●
	1250	●	●	●
	2000	●	●	●
	2500	●	●	●
	3150	●	●	●(1)
	4000	●(1)(2)	●(1)(2)	–
Short-circuit making current Ip (peak value kA)	50 Hz	62.5 / 79 / 100	62.5 / 79 / 100	62.5 / 79
	60 Hz(3)	65 / 82 /104	65 / 82/104	65 / 82
Dimensions (mm)	H	2240	2240	2400
	W	650 / 800 / 1000	650 / 800 / 1000	800 / 1000
	D	1440	1440	1860 / 2450(4)
Approximate Weight (kg)(5)	With packing (650/800/1000 mm)(6)	800 / 920 / 1050	800 / 920 / 1050	1160 /1470
	Without packing (650/800/1000 mm)(6)	700 / 820 / 950(7)	700 / 820 / 950(7)	1020 /1330

● Basic equipment.

(1) With forced cooling.
(2) For the rated current of 4000 A, the cubicle width is 1000 mm and the depth is 1640 mm.
(3) Contact Schneider Electric for 60 Hz.
(4) For two sets of CTs per phase.
(5) Fully equipped cubicle.
(6) Cubicle width 650 mm is applicable up to 17.5 kV.
(7) The weight of 4000 A cubicle with 1640 depth is 1045 kg.

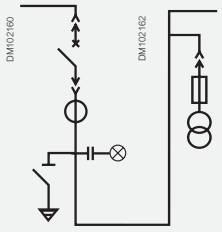
Note: VT device is not mandatory for Feeder/Outgoing cubicle.

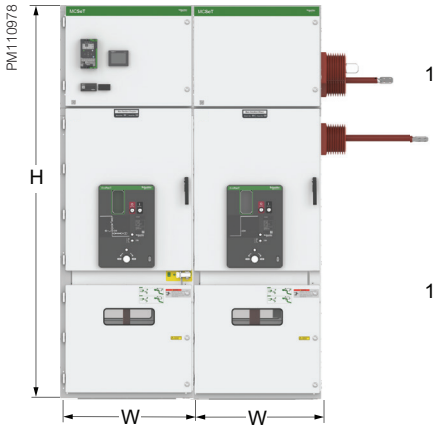
Function/Module Description

Functional Overview

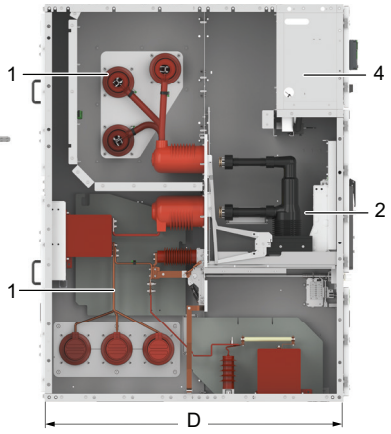
Bus Section Coupler (BSC) and Bus Section Riser (BSR)

The bus sectioning functional unit comprises two cubicles mounted side by side (one cubicle equipped with a circuit breaker, the other with a busbar return).

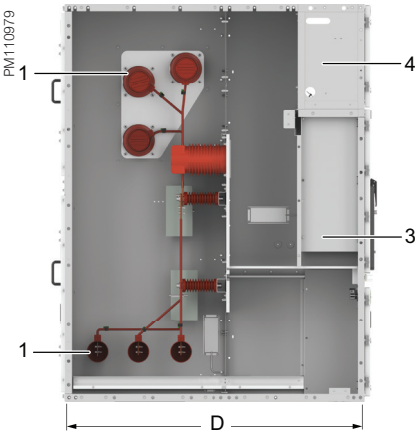




BSC



BSR



Note: The images shown here are for illustration purposes only.

MV devices

1 Busbars to connect the bus-sectioning functional unit with other switchboard functional units
2 Main switching device
3 Metering truck (Optional)

LV control cabinet

4 Low voltage auxiliaries and the protection, monitoring and control units are in one control cabinet which is separated from the medium voltage part

Options

- Voltage transformers

Characteristics		BSC/BSR(1)		
Rated voltage (kV)		Up to 12	17.5	24
Short time withstand current (kA)		25/31.5/40	25/31.5/40	25/31.5
Rated current (A)				
EvoPacT HVX circuit breaker	630	●	●	●
	1250	●	●	●
	2000	●	●	●
	2500	●	●	●
	3150	●	●	●(2)
	4000	●(2)(3)	●(2)(3)	–
Short-circuit making current Ip (peak value kA)	50 Hz	62.5 / 79 / 100	62.5 / 79 / 100	62.5 / 79
	60 Hz	65 / 82 / 104	65 / 82 / 104	65 / 82
Dimensions (mm)	H	2240	2240	2400
	W	650 / 800 / 1000	650 / 800 / 1000	800 / 1000
	D	1440	1440	1860
Approximate Weight (kg)	With packing (650 / 800 / 1000 mm)(4)	720 / 840 / 970(5)	720 / 840 / 970(5)	1190 / 1510(5)
		480 / 630 / 750(6)	480 / 630 / 750(6)	800 / 1030(6)
	Without packing (650 / 800/1000 mm)(4)	620 / 740 / 870(5)	620 / 740 / 870(5)	1120 / 1440(5)
		380 / 530 / 650(6)	380 / 530 / 650(6)	730 / 960(6)

● Basic equipment.

(1) The BSR cubicle is not equipped with a circuit breaker.
(2) With forced cooling
(3) For the rated current of 4000 A, the cubicle width is 1000 mm, the depth is 1640 mm, and the weight for the BSC cubicle is 960 kg (without packing), while for the BSR cubicle, it is 720 kg (without packing).
(4) Cubicle width 650 mm is applicable up to 17.5 kV.
(5) Weight values of BSC cubicle.
(6) Weight values of BSR cubicle.

Functional Overview

Busbar Metering and Earthing (BME)

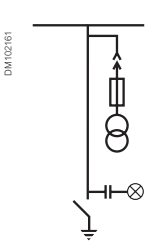
BME

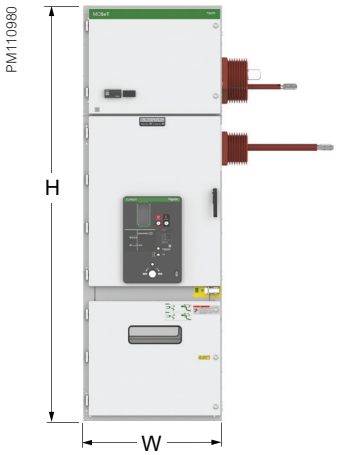
MV devices

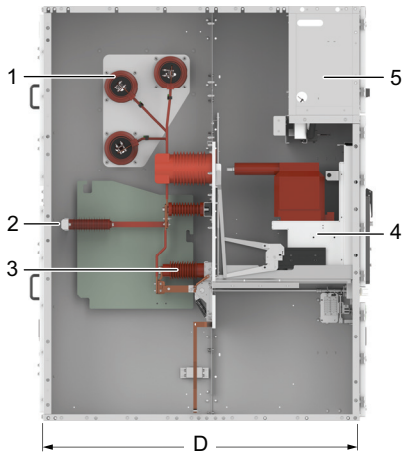
1 Busbars to connect the BME functional unit with other switchboard cubicles
2 Surge arrester (optional)
3 Earthing switch (optional)
4 Metering Truck (optional)

LV control cabinet

5 LV Box







Note: The images shown here are for illustration purposes only.

Characteristics		BME		
Rated voltage (kV)		Up to 12	17.5	24
Short time withstand current (kA)		25/31.5/40	25/31.5/40	25/31.5
Short-circuit making current Ip (peak value kA)	50 Hz	62.5 / 79 / 100	62.5 / 79 / 100	62.5 / 79
	60 Hz	65 / 82 / 104	65 / 82 / 104	65 / 82
Dimensions (mm)	H	2240	2240	2400
	W	650 / 800	650 / 800	800 / 1000
	D	1440	1440	1860
Approximate weight (kg)	With packing (650 / 800 / 1000 mm)(1)	470 / 720	470 / 720	765 / 980
	Without packing (650 / 800 / 1000 mm)(1)	350 / 620	350 / 620	700 / 910

(1) Cubicle width 650 mm is applicable up to 17.5 kV.

Functional Overview

Feeder with Contactor - FC

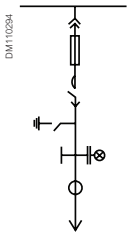
FC

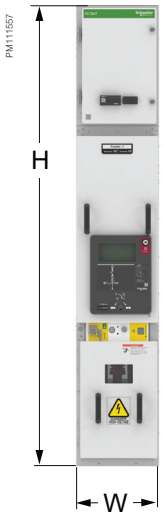
MV devices

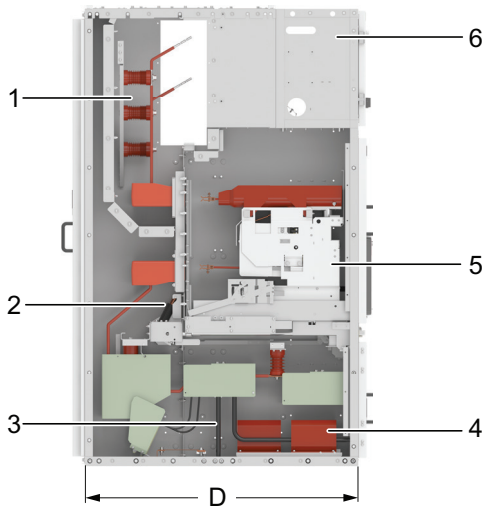
1 Busbars for cubicle interconnection
2 Earthing switch
3 MV connections by bottom cables accessible from the front (for top cable and top busbar entry, contact Schneider Electric)
4 Current transformers
5 Main switching device

LV control cabinet

6 Low voltage auxiliaries and the protection, monitoring and control unit are in a control cabinet which is separated from the medium voltage part







Note: The images shown here are for illustration purposes only.

Characteristics		FC	
Rated voltage (kV)		7.2	12
Short time withstand current (kA)		31.5/40(1)	31.5/40(1)
Peak current (peak value kA)	50 Hz	100(1)	100(1)
	60 Hz	104(1)	104(1)
Dimensions (mm)	H	2240	2240
	W	400	400
	D	1440	1440

(1) Limited by fuse.

Note: For the feeder with contactor, two cubicles are coupled and packaged together. The weight including packaging will be 1300 kg.

Notes

Components and Accessories

Components and Accessories

Enhanced Safety and Protection of Persons and Property

PM1110981

Note: The images shown here are for illustration purposes only.

EvoPacT HVX Circuit Breaker

The devices used to equip the MCSeT range of functional units have outstanding features:

- Long service life
- Maintenance-free live parts
- High electrical endurance
- Enhanced operating safety
- Insensitivity to the environment

EvoPacT HVX Circuit Breaker

A circuit breaker is a safety device enabling switching and protection of electrical distribution networks. Installed in the MCSeT cubicle, it helps to protect all components situated downstream during a short-circuit.

- Vacuum breaking: EvoPacT HVX

The live parts are housed in an insulating enclosure in the sealed pressure system in compliance with IEC 62271-100.

PM110580

PM110593

EvoPacT HVX Circuit Breaker

EvoPacT HVX Circuit Breaker

General Characteristics

PM110586

PM110588

EvoPacT HVX Circuit Breaker

Description

EvoPacT HVX is our latest range of vacuum circuit breaker (VCB), addressing up to 24 kV networks with up to 40 kA short circuit capacities and ranging from 630–4000 A.

It is designed to connect large commercial and industrial buildings, electro sensitive applications and electro intensive processes to the power grid, help protecting people and equipment.

EvoPacT is a durable MV circuit breaker with 50,000 cycles for 12/17.5 kV, 30,000 cycles for 24 kV of mechanical and electrical operations, and 50 short-circuit breaking cycles for all ranges.

Mechanism

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

This component is the heart of the circuit breaker. The very careful Schneider Electric own design allows to break 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

EvoPacT HVX Circuit Breaker

General Characteristics

Main Electrical Characteristics according to IEC 62271-100: 2021

Electrical characteristics																								
Rated voltage	Ur	kV	12								17.5								24					
Rated frequency	fr	Hz	50/60																					
Rated short-duration power frequency withstand voltage (1 min)	Ud	kV	28								38								50					
Rated lightning impulse withstand voltage	Up	kV	75								95								125					
Rated operating sequence			O - 0.3 s - CO - 15 s - CO																					
Phase distance		mm	150		210			275			150		210			275			210		275			
Rated short-circuit breaking current	Isc	kA	25	31.5	25	31.5	40	25	31.5	40	25	31.5	25	31.5	40	25	31.5	40	25	31.5	25	31.5		
Rated continuous current	Ir	630 A	•	•	•	•					•	•	•	•					•	•	•	•		
		1250 A	•	•	•	•	•			•	•	•	•	•	•			•	•	•	•	•		
		1600 A			•	•	•	•	•	•			•	•	•	•	•	•			•	•		
		2000 A			•	•	•	•	•	•			•	•	•	•	•	•			•	•		
		2500 A						•	•	•						•	•	•			•	•		
		3150 A						•	•	•						•	•	•						
Rated short-time withstand current	Ik	kA	25	31.5	25	31.5	40	25	31.5	40	25	31.5	25	31.5	40	25	31.5	40	25	31.5	25	31.5		
Rated duration of short-circuit	tk	s	3																					
Rated peak withstand current	Ip	kA	65	82	65	82	125	65	82	125	65	82	65	82	125	65	82	125	65	82	65	82		
DC component of the short-circuit breaking current			52%																					
DC time constant	t	ms	45																					
Opening time		ms	22–40																					
Closing time	t	ms	36–60																					
Rated cable charging breaking current	Ic	A	25								25								31.5					
Rated line charging breaking current	Il	A	10																					
Rated back-to-back capacitor bank breaking current	Ibb	A	400																					
Rated back-to-back capacitor bank inrush making current (inrushfrequency)	Ibi	kA	24 (4250 Hz)																					
Mechanical endurance		operations	50,000 (≤1250 A and ≤31.5 kA) 30,000 (≥1600 A and 1250 A 40 kA)								50,000 (≤1250 A and ≤ 31.5 kA) 30,000 (≥1600 A and 1250 A 40 kA)								30,000					
Electrical endurance	Rated continuous current breaking times	operations	50,000 (≤1250 A and ≤31.5 kA) 30,000 (≥1600 A and 1250 A 40 kA)								50,000 (≤1250 A and ≤31.5 kA) 30,000 (≥1600 A and 1250 A 40 kA)								30,000					
	Full capacity rated short circuit break current breaking times	operations	100								100								50					
Circuit breaker classification			C2–E2–M2-S1																					

EvoPacT HVX Circuit Breaker

Operating Conditions

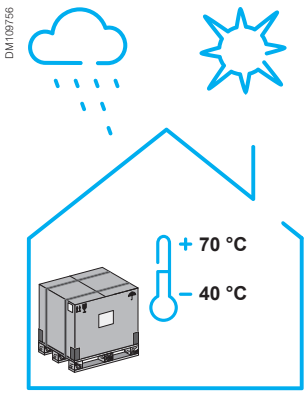
According to IEC 62271-100 Designed to operate in the following conditions:

Operating conditions		
Ambient air temperature	Minimum value	-25 °C
	Maximum value	+40 °C
Altitude (maximum without derating)	Stand alone circuit breaker	1000 m
Environment	No dust, smoke, salt corrosive, or flammable gas or vapor	
Humidity	Average relative humidity over 1 month	≤ 90%

Other service conditions

If operated beyond the normal service conditions, the circuit breaker is submitted to accelerated aging.

The circuit breaker may only be used under conditions other than the normal service conditions with express written permission from Schneider Electric.



Storage

In order to preserve all of the device's characteristics when stored for prolonged periods, we recommend to store the device in its original packaging, in dry conditions and sheltered from the sun and rain at a temperature between -40 °C and +70 °C.

The maximum storage period is 12 months.

If the device was stored:

- Between 6 and 12 months: perform basic preventive maintenance to help ensure correct device operation.
- Beyond 12 months: contact your Schneider Electric Service local representative for device check-up.

EvoPacT HVX Circuit Breaker

Vacuum Interrupters

PM110058

New Schneider Electric Vacuum Interrupters Bottles

The heart of the circuit breaker

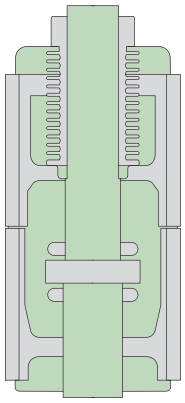
Vacuum interrupters are the heart of a medium voltage circuit breaker: its electrical performances highly depend upon the vacuum interrupters characteristics and quality. They are designed to convey and break the rated normal current as well as the rated short circuit one for a number of times specified by the manufacturer.

Brand new design

Schneider Electric has been designing and producing its own Vacuum Interrupters (VI) for 45 years and carries a unique know-how in this field.

Using a development process called Model based system engineering, we created a brand new range of vacuum interrupters. The process allowed innovative solutions to be implemented that improve the durability and lifespan of the VI including shape, contact shape, radial magnetic field petal shape and specific barriers to help protect the ceramics used in the VI body.

DM107955



Vacuum Interrupters Inside principle

Designed to serve high performances and energy continuity

The result is a range of vacuum interrupters with high electrical performances, long life expectancy, high endurance, in a compact volume.

Addressing needs of up to 4000 A nominal current and 40 kA short-circuit breaking, the endurance is exceptional: up to 50,000 (electrical and mechanical operation) for 12/17.5 kV and 30,000 (electrical and mechanical operation) for 24 kV up to 50 short-circuit breaking operations.

The capacitive switching is also enhanced with C2 class for back to back capacitors installation.

The compact volume of the new VI allows to increase the insulation distance within the breaker, enhancing safety and smooth operation.

DM107966

Specific Contacts Shapes Inside Vacuum Interrupters

Strict quality controls

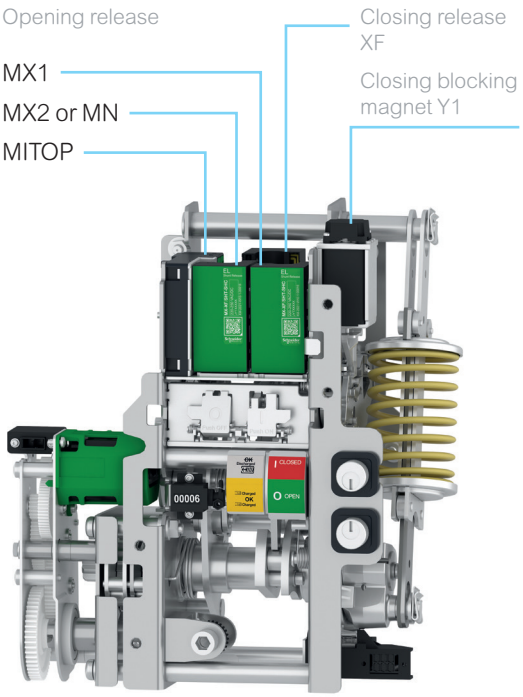
The manufacturing uses optimized processes designed for a total vacuum inside the VI bottle. It uses techniques such as high temperature brazing and **getter materials** to absorb residual gas within a high quality sealed enclosure.

The **anti-twist** feature allows mounting of the vacuum interrupter inside the pole of the circuit breaker in an easy way to help ensure high performance of the VI. This new range of VI is therefore above fully compliant with all the main circuit breaker standards such as GB/T 1984-2014, DL/T 402-2016, IEC62271-100, IEEE C37.04-1999 and C37.06-2009.

EvoPacT HVX Circuit Breaker

Opening and Closing Functions

PM110095



PM110110

Electronic Release for
MX1/MX2 and XF

PM110008

Operation Counter

PM110093

Blocking Magnet on Closing Y1

Operating mechanism

Shunt opening release MX

The MX shunt releases are used to open the circuit breaker. One shunt release is delivered natively with the circuit breaker. A second optional one can be selected as a back-up. The shunt releases are actuated by the auxiliary power supply.
They open the circuit breaker when the voltage at the terminals of the release is between 70% and 110% (in the case of direct current) or between 85% and 110% (in the case of alternative current) of its rated voltage
The coil is designed for short operation only; it is therefore routed via an auxiliary switch contact controlled by the circuit breaker shaft, and upon release it interrupts the current circuit.

Characteristics		
Power supply	Vac	110/120/220/230
	Vdc	24/48/60/110/125/220
Operating range	Vac	0.85 to 1.1 Ua
	Vdc	0.7 to 1.1 Ua
Consumption	Vac	220 VA
	Vdc	220 W

Shunt closing release XF

The XF release is used to close the circuit breaker. The release coil is actuated by the auxiliary power supply when the voltage at the terminals of the release is between 85% and 110% of its rated voltage.
The coil is designed for short operation only; it is therefore routed via an auxiliary switch contact controlled by the circuit breaker shaft, and upon release it interrupts the current circuit.

Characteristics		
Power supply	Vac	110/120/220/230
	Vdc	24/48/60/110/125/220
Operating range	Vac	0.85 to 1.1 Ua
	Vdc	0.85 to 1.1 Ua
Consumption	Vac	220 VA
	Vdc	220 W

Operation counter

The operation counter installed on the operating mechanism records the number of opening/closing cycles.

Blocking magnets

Blocking magnet on closing Y1

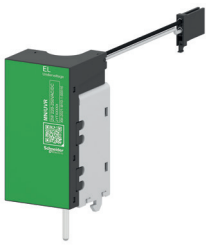
If the controlling power supply to operate this magnet is lost, the circuit breaker cannot perform the normal closing operation (including manual closing).

Characteristics		
Power supply Ua	Vac	110/120/220
	Vdc	24/48/60/110/125/220
Operating range	Vac	0.85 to 1.1 Ua
	Vdc	0.85 to 1.1 Ua
Consumption	Vac	12 ± 1 VA
	Vdc	12 ± 1 W

EvoPacT HVX Circuit Breaker

Opening and Closing Functions

PM110087



Undervoltage Release
MN

Undervoltage release MN

The undervoltage release operates to open the circuit breaker when the voltage at the terminals of the release falls below 35% of its rated voltage, even if the fall is slow and gradual.

The undervoltage release does not operate the circuit breaker when the voltage at its terminals exceeds 70% of its rated supply voltage.

The area between 35% and 70% is uncertain, care should be taken that the undervoltage release might operate to open the circuit breaker at these voltages.

For closing of the circuit breaker, the undervoltage release requirements (measured at terminals) are:

- > 85% rated voltage to close
- < 35% rated voltage closing is blocked

Characteristics						
Power supply	Vac	110/120				220/230
	Vdc	24–30	48–60		110–125	220–250
Operating range	Opening	0.35 to 0 Ua				
Starting consumption (W)	Vac	–			–	–
	Vdc	288	329	400		
Holding consumption (W)	Vac	–			–	–
	Vdc	4	7	6		

PM110220

Low energy Release
MITOP

Low energy release (MITOP)

This release includes a low consumption unit and is specifically used with the Micom P115 self-powered unit (**REFLEX MODULE**), or the VIP relay.

Any tripping due to the Mitop release unit is momentarily indicated by an SDE type changeover contact, provided with the Mitop.

This release also includes a coil (reset) enabling remote SDE contact reset.

Comment:

Use of the Mitop low energy release requires adjustment of the protection relay time delay in order to help ensure that the circuit breaker trips between 45–50 ms.

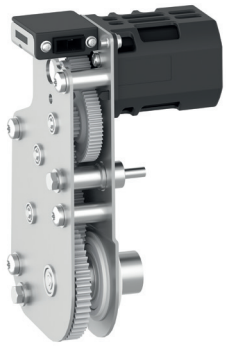
This specific coil actuates the opening mechanism of the poles to trip the circuit breaker.

Characteristics	
Power supply	9 V
Consumption (W/Vac)	1

EvoPacT HVX Circuit Breaker

Opening and Closing Functions

PM110007



Charging Motor M1

Operating mechanism

Charging motor M1

The electric motor charges the spring of the operating mechanism automatically as soon as it is discharged. This allows the circuit breaker to switch the second close-open-cycle within the rated operating sequence.

Characteristics		
Power supply	Vac	110/120/220/230
	Vdc	24/48/60/110/125/220
Operating range	Vac	0.85 to 1 Ua
	Vdc	0.85 to 1.1 Ua
Consumption	Vac	approx. 180 VA
	Vdc	approx. 180 W

Operating time of motor	
Motor charging time	≤12 s

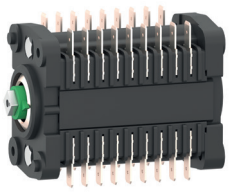
Open/closed auxiliary contacts

The number of contacts available depends on the options chosen for the operating mechanism.

In the basic configuration, the circuit breaker's operating mechanism comprises a total of:

- 9NO/9NC, including 5NO/5NC free for customer application

PM110023



Auxiliary Switch in Switching Position S11/S12

Circuit breaker On/Off status auxiliary switch S11

The auxiliary contacts in switching position indicate the ON/OFF status of the circuit breaker. They are actuated directly by the main shaft of the circuit breaker via a mechanical link. The position of the main shaft corresponds to the position of the auxiliary switches and indicates whether the circuit breaker is in ON or OFF.

Characteristics									
Rated operational voltage (Ua)	Vac/dc	230							
Rated operational current (Ic)	A	10							
Rated short-time withstand current (Icw)	A	250 (during 3 s)							
Rated breaking capacity with inductive charge		L/R=10 ms						L/R=20 ms	
Voltage	Vdc	24	48	60	110	125	220	110	220
Charging current	A	10	8	6	4	3	2	10	5
Max capacity (W)		440							

PM110089

Auxiliary Switch in Charging Position S2

Spring charging status auxiliary switch S2-A S2-B

The auxiliary switch is used to control the charging motor and to indicate the charging status.

When contact S2 is closed, the motor charges the spring of the operating mechanism automatically. When charging is complete, it breaks the electrical charging circuit.

PM110090

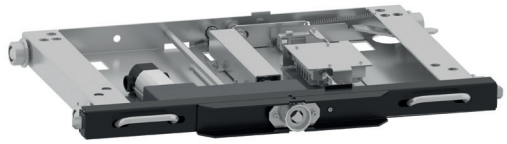
Auxiliary Switch in Charging Position S2-B

Micro switch for charging	A/Vdc	5/250
Micro switch for control	A/Vac	16/250

EvoPacT HVX Circuit Breaker

Racking Truck

PM110025



Racking **Truck**

Withdrawable type

In the withdrawable type the EvoPacT HVX is mounted on a racking truck to move the circuit breaker between test position and service position .

The EvoPacT HVX racking truck comprises:

- A frame with four wheels for moving the circuit breaker
- A drive system with a rotating shaft to move the circuit breaker inside the switchgear compartment
- An optional motor drive for electrical operation. A motor controller is provided and attached to the circuit breaker and is mandatory for the truck motorization function.
- A set of auxiliary contacts (3NC+3NO available for customer use), to indicate the service or test position of the circuit breaker
- A set of mechanical levers to interlock the truck with the operating mechanism and the earthing switch operation if assembled in the switchboard
- A system to latch the racking truck to the switchgear frame to withstand the mechanical forces of the short circuit
- An interlock between the racking truck and the door of the cubicle

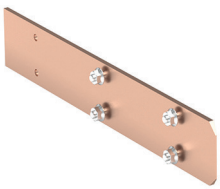
The circuit breaker is equipped with devices to operate the shutter mechanism.

PM110026

Racking Truck Motor M2

Characteristics		
Power supply	Vac	110/220/230
	Vdc	24/48/110/220
Operating range	Vac	0.85 to 1.1 Ua
	Vdc	0.85 to 1.1 Ua
Consumption	Vac	90 VA
	Vdc	90 W

PM108896



Underneath Earthing

PM111076S

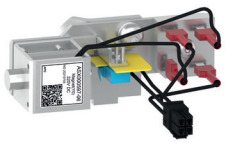
Side Earthing

Earthing (optional)

The racking truck is earthed using underneath copper bars located under the racking truck.

This can also be equipped with earthing sliding contacts on both sides of the racking truck.

PM110018



Blocking Magnet on Racking Truck Y0

Blocking magnets

Blocking magnet on racking truck Y0

If the secondary controlling power supply is lost, the truck cannot be racked in or out (either manually or by motorization).

Characteristics		
Power supply Ua	Vac	110/120/220/230
	Vdc	24/48/60/110/125/220
Operating range	Vac	0.85 to 1.1 Ua
	Vdc	0.85 to 1.1 Ua
Consumption	Vac	3.6 VA
	Vdc	3.6 W

EvoPacT HVX Circuit Breaker

Low Voltage Connection

Withdrawable type

An optional flexible LV (Low Voltage) plug and socket system enables connection of the circuit breaker auxiliary circuits to the switchgear control cabinet. It consists of an elbow-type connector mounted on the frame of the circuit breaker and a removable connector with 58 male pins mounted on a 525 mm flexible duct. This LV connector is to be connected to the LV cabinet of the cubicle.

The counter part connector equipped with the female contacts is assembled in the low voltage cabinet of the switchgear.

The LV plug connect electrical commands and status information from the circuit breaker terminal blocks and from the racking truck terminal blocks. The number of pins in the LV plug (maximum 58) may limit the number of available position contacts for the switchgear LV cabinet.

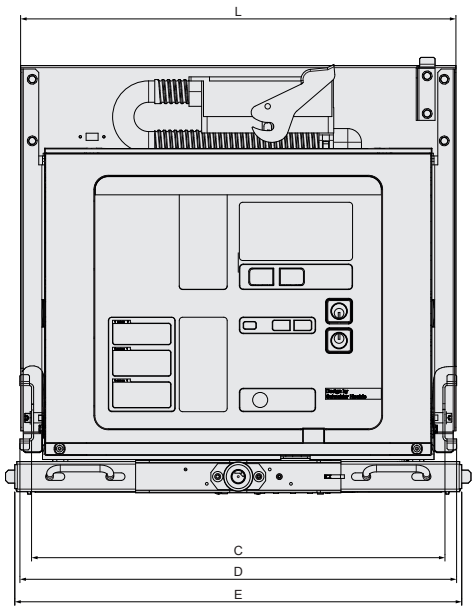
The EvoPacT HVX LV connector can only be removed when the circuit breaker is in the test position.

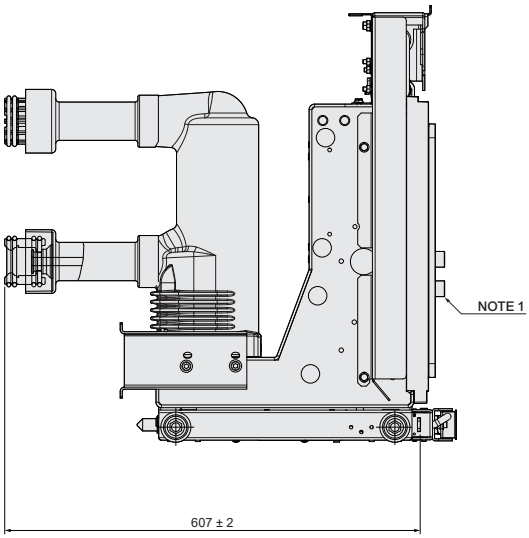
EvoPacT HVX Circuit Breaker

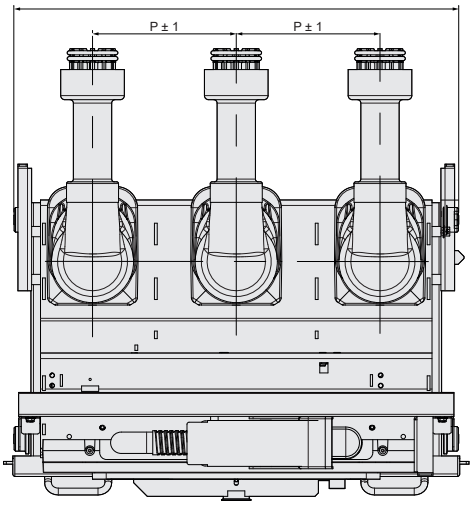
Withdrawable Circuit Breaker Dimensions

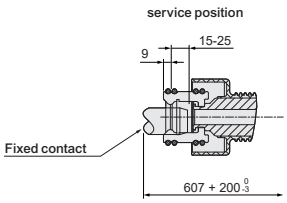
12 kV, 630/1250 A, 25/31.5 kA

DM111234









Note 1: Keylock and door interlock is optional.
Note 2: Refer to the outline drawing NAT1769802 for complete dimensions.

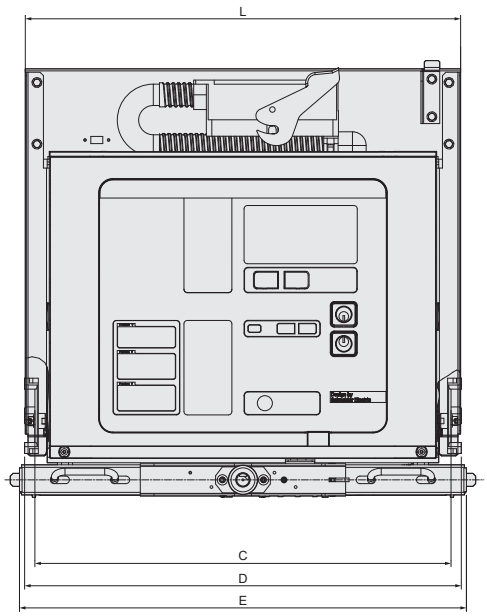
Rated current (A)	Rated short-circuit breaking current (kA)	P (mm)	A (mm)	C (mm)	D (mm)	E (mm)	L (mm)
630/1250	25/31.5	150	500	457	492	503	494
		210	650	605	640	653	638

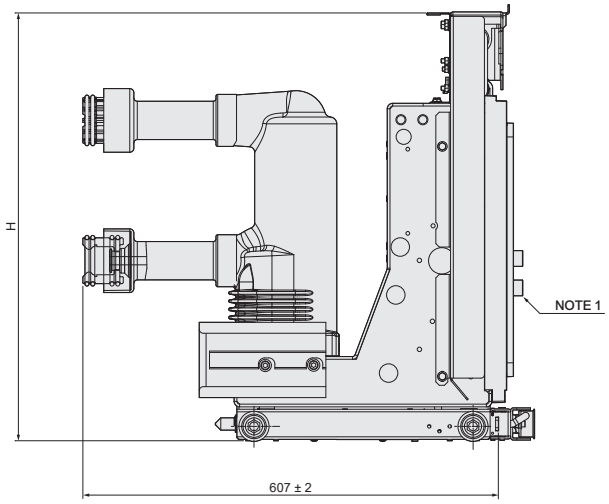
EvoPacT HVX Circuit Breaker

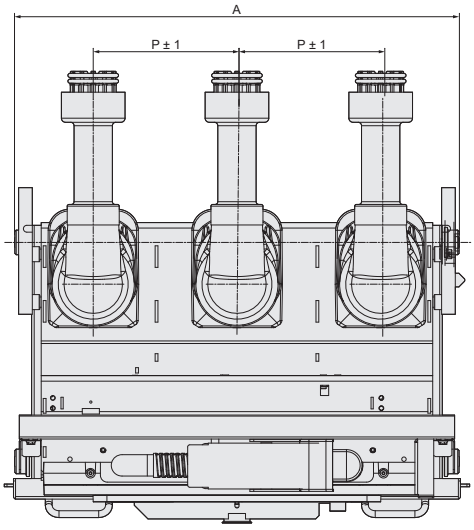
Withdrawable Circuit Breaker Dimensions

17.5 kV, 630/1250 A, 25/31.5 kA

DM111233







Note 1: Keylock and door interlock is optional.
Note 2: Refer to the outline drawing NAT1181502 for complete dimensions.

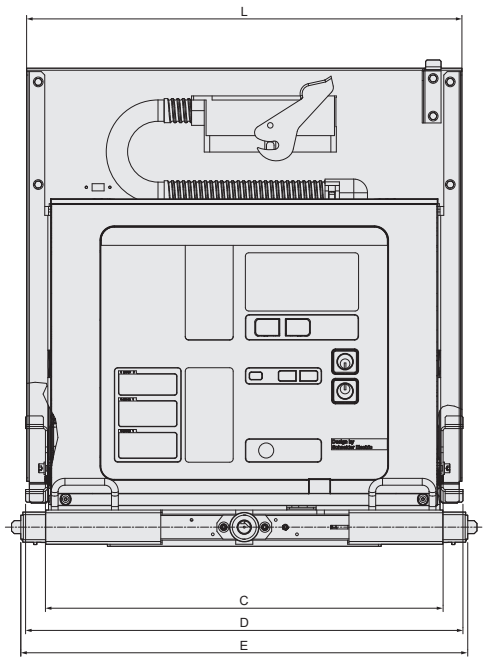
Rated current (A)	Rated short-circuit breaking current (kA)	P (mm)	A (mm)	C (mm)	D (mm)	E (mm)	L (mm)	H (mm)
630/1250	25/31.5	150	500	457	492	503	494	692
		210	650	605	640	653	638	730

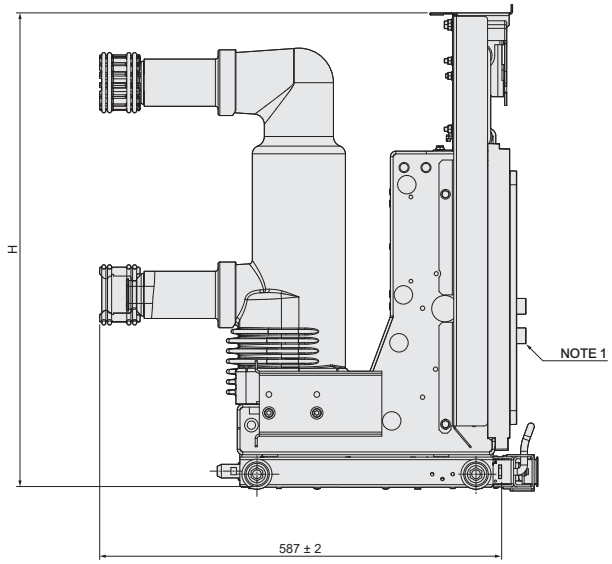
EvoPacT HVX Circuit Breaker

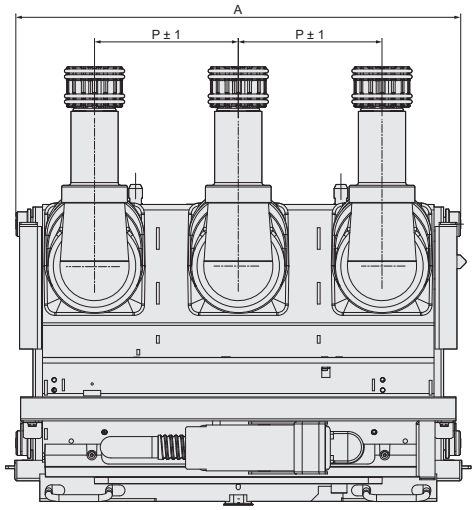
Withdrawable Circuit Breaker Dimensions

12/17.5 kV, 1250 A, 40 kA

DM111232







Note 1: Keylock and door interlock is optional.
Note 2: Refer to the outline drawing NAT1652002 for complete dimensions.

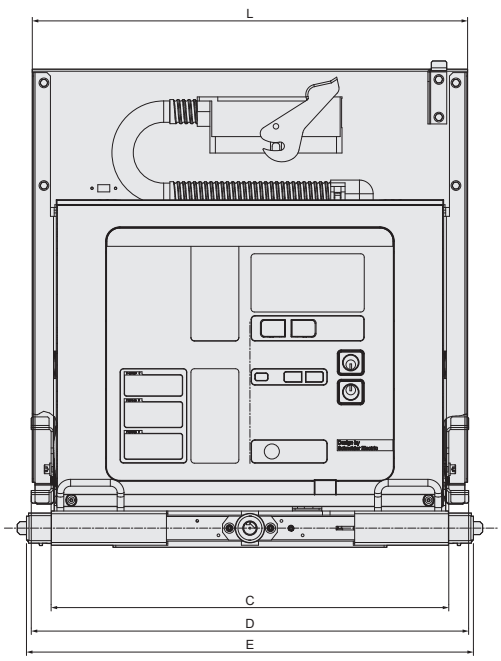
Rated current (A)	Rated short-circuit breaking current (kA)	P (mm)	A (mm)	C (mm)	D (mm)	E (mm)	L (mm)	H (mm)
1250	40	210	650	582	640	653	636	692
		275	850	777	836	853	842	730

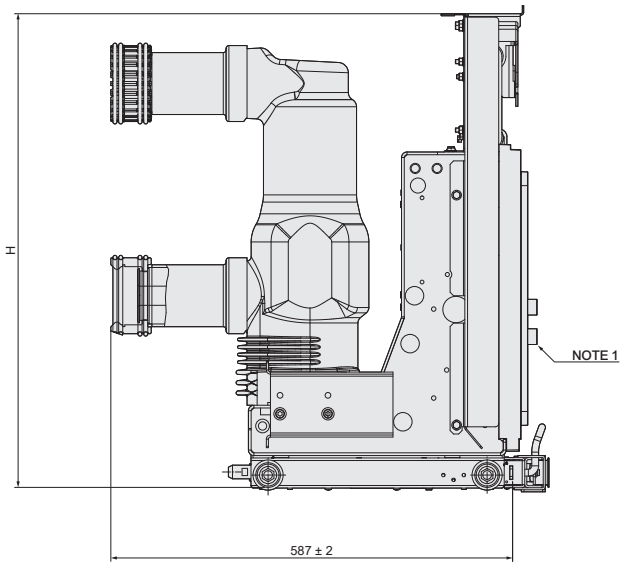
EvoPacT HVX Circuit Breaker

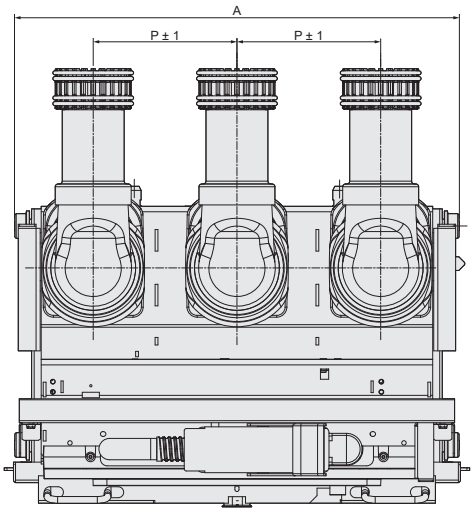
Withdrawable Circuit Breaker Dimensions

12/17.5 kV, 1600/2000 A, 25/31.5/40 kA

DM111231







Note 1: Keylock and door interlock is optional.
Note 2: Refer to the outline drawing NAT1652102 for complete dimensions.

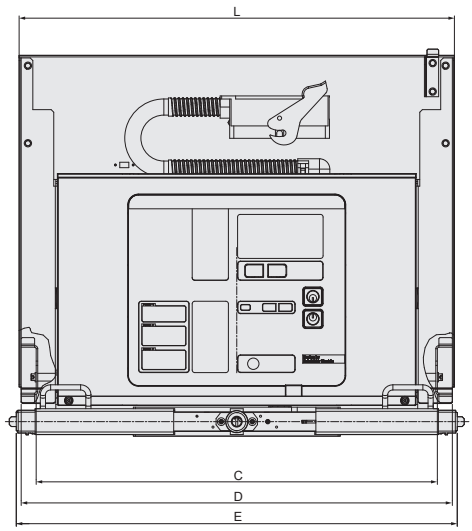
Rated current (A)	Rated short-circuit breaking current (kA)	P (mm)	A (mm)	C (mm)	D (mm)	E (mm)	L (mm)	H (mm)
1600/2000	25/31.5/40	210	650	582	640	653	636	692
		275	850	777	836	853	842	730

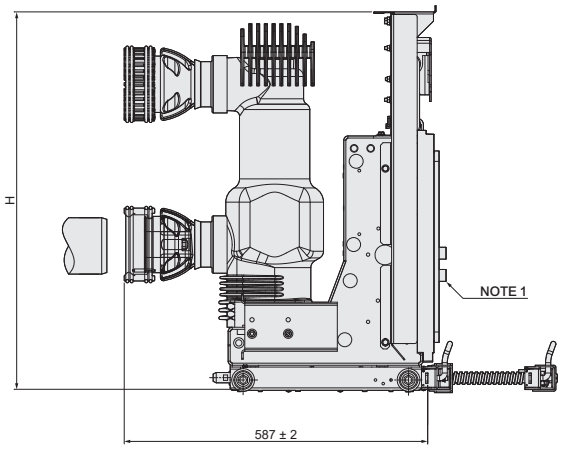
EvoPacT HVX Circuit Breaker

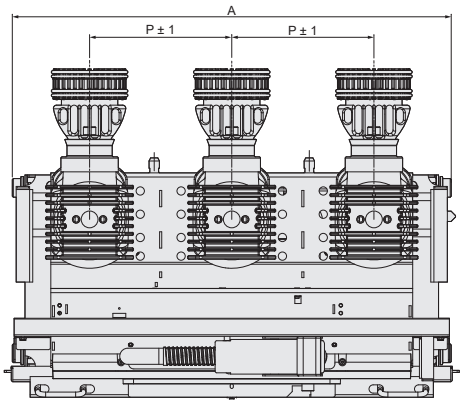
Withdrawable Circuit Breaker Dimensions

12/17.5 kV, 2500/3150/4000 A, 25/31.5/40 kA

DM111230







Note 1: Keylock and door interlock is optional.
Note 2: Refer to the outline drawing NAT1536902 for complete dimensions.

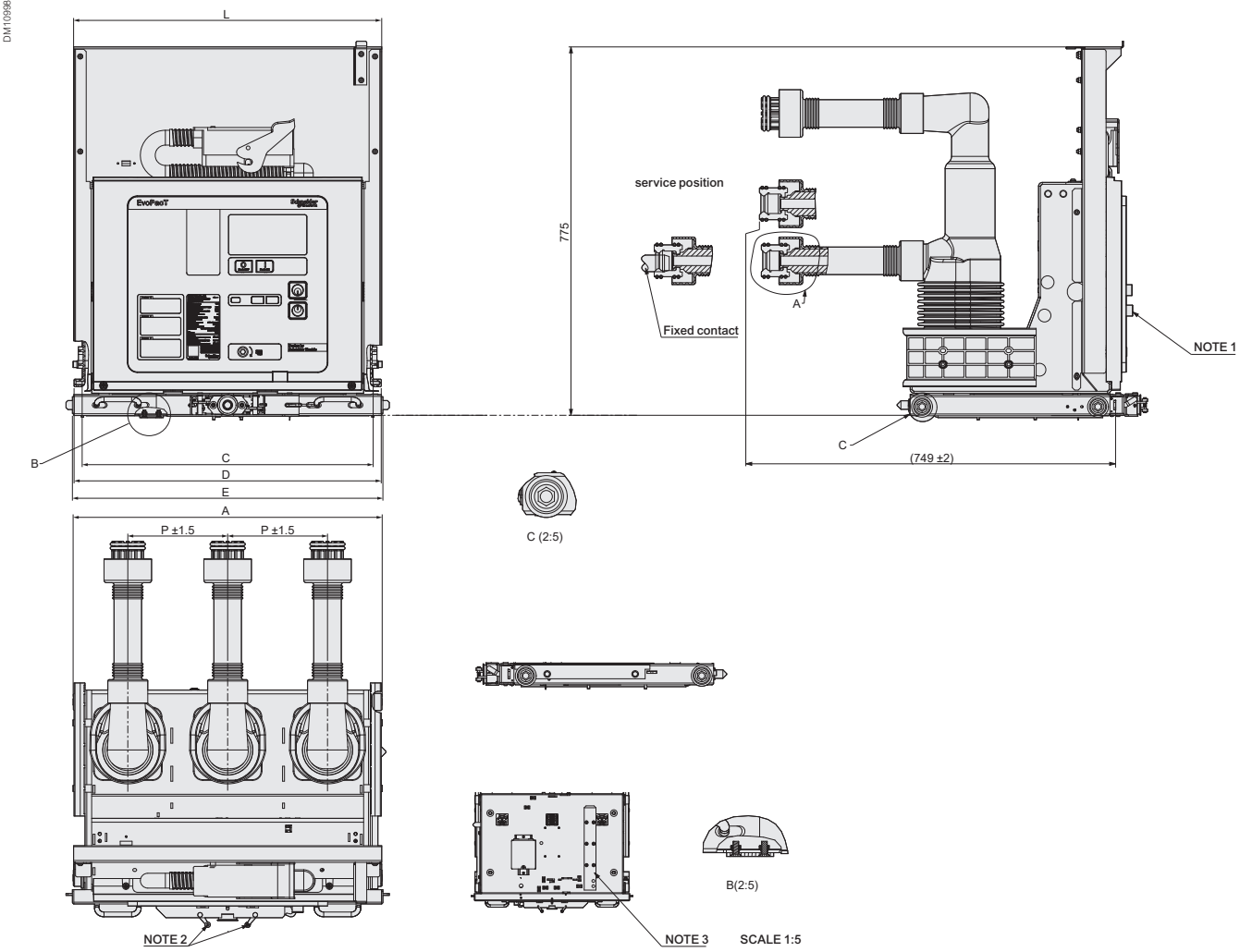
Rated current (A)	Rated short-circuit breaking current (kA)	P (mm)	A (mm)	C (mm)	D (mm)	E (mm)	L (mm)	H (mm)
2500/3150/4000	25/31.5/40	275	850	777	836	853	842	730

EvoPacT HVX Circuit Breaker

Withdrawable Circuit Breaker Dimensions

24 kV, ≤ 1 250 A, ≤ 31.5 kA

DM109982



Note 1: Keylock is optional.
Note 2: Door interlock is optional.
Note 3: Truck earthing busbar is optional.

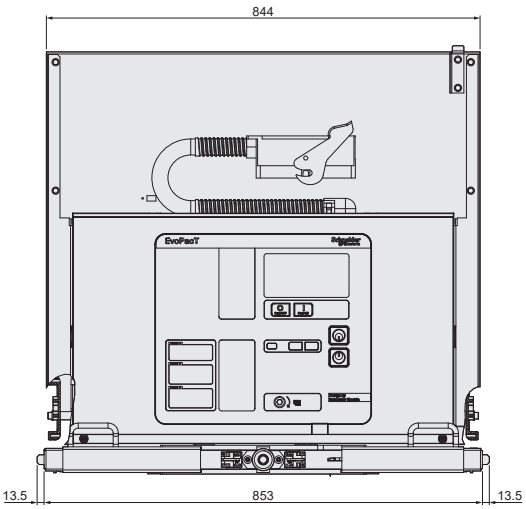
Rated current (A)	Rated short-circuit breaking current (kA)	P (mm)	D (mm)	E (mm)
630/1250	25/31.5	210	572	520
		275	748	700

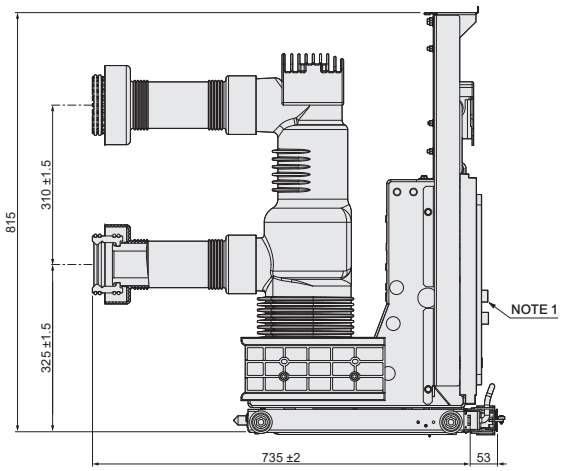
EvoPacT HVX Circuit Breaker

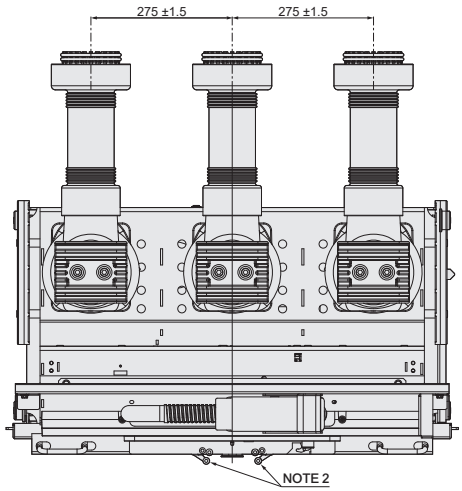
Withdrawable Circuit Breaker Dimensions

24 kV, 1600 A–2500 A, ≤ 31.5 kA

DM110185







Note 1: Keylock is optional.
Note 2: Door interlock is optional.
Note 3: Refer to the Outline drawing BQT5438302 for complete dimensions.

CVX Contactor

General Characteristics

CVX7-C Contactor

Description

CVX7-C

Withdrawable type of CVX7-C equipped with fuse holders (DIN or BS standard) up to 12 kV.

Main Electrical Characteristics according to IEC 62271-106

Electrical characteristics according to IEC 62271-106				CVX7-C
Phase to phase distance			mm	106
Rated voltage		Ur	kV 50/60 Hz	7.2/12
Insulation level	power frequency withstand	Ud	kV 50/60 Hz 1 min(1)	20/28
	lightning impulse withstand	Up	kV peak	60
Rated operational current		Ie	A	315(2)
Utilization category				AC3–AC4
Rated thermal current		Ith	A	400(2)
Rated short-circuit breaking current		Isc	kA	4
Rated short-time withstand current		Ik/tk	kA/1 s	5
Rated peak withstand current		Ip	kA	15
Rated back to back capacitor bank breaking current			A	400

(1) Ud 32 kV, 50 Hz, 1 min available in standard.

(2) The rated current linked to the capacity of the fuse: 270 A with a maximum fuse size of 315 A.

Common characteristics according to IEC 62271-106			
Switch frequency		op./h	300
Mechanical endurance	for electromagnetic mechanism	op.	1,000,000
	for mechanical latch mechanism	op.	300,000
Electrical endurance at rated current		op.	250,000
Consumption closing power		W	500
Consumption holding power (magnet type)		W	80
Closing time		ms	120–200
Consumption opening power (mechanical type)		W	240
Opening time		ms	50–100
Operating rated ambient temperature		°C	-5/40
Average relative humidity		over 24 h	< 95%
		over 1 month	< 90%

CVX Contactor

The vacuum contactors CVX series include:

- CBX/CBX-C contactor body
- Enclosure for CVX7-C
- Fuse holder for CVX series
- Drawer for CVX series

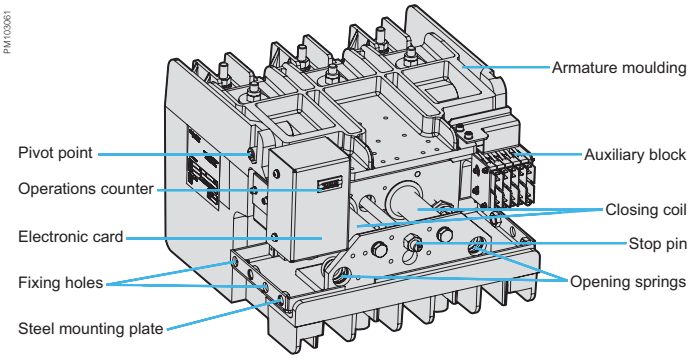
CBX/CBX-C Contactor Body

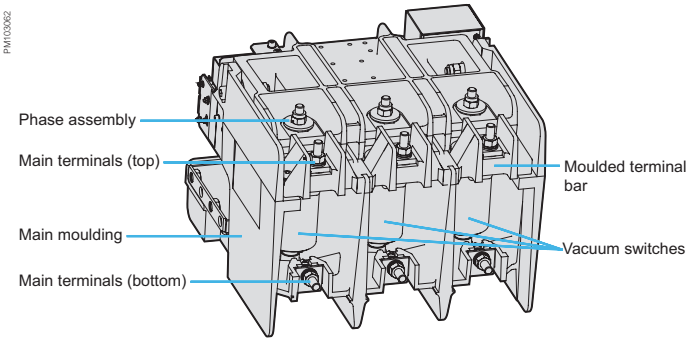
For the electromagnetic mechanism and mechanical latch mechanism:

- Main and armature moulding with two pivot points
- A steel mounting plate
- Three vacuum switches
- Two closing coils
- One auxiliary contact block
- One electronic card and operations counter

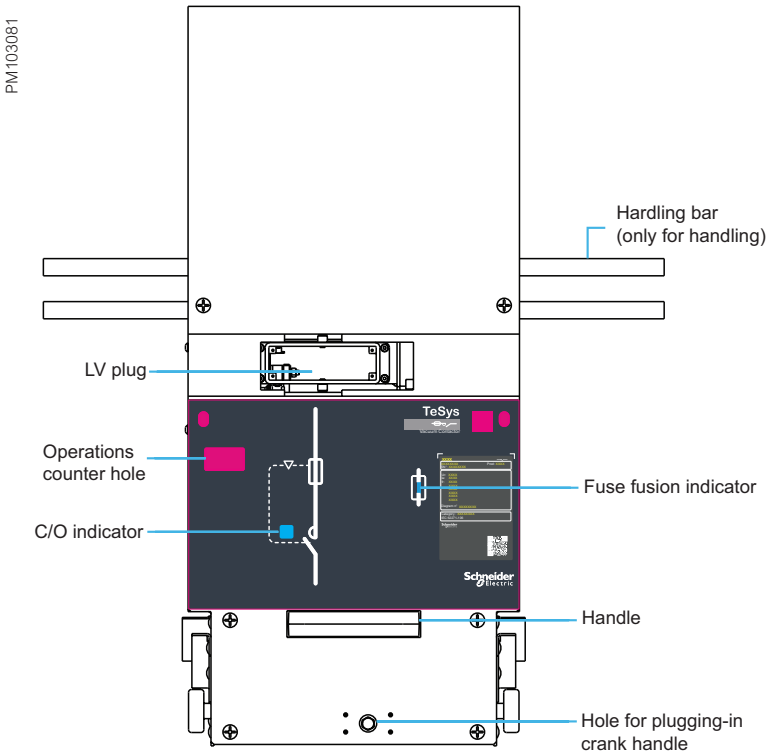
And for the mechanical latch mechanism:

- One mechanical latch
- One tripping coil

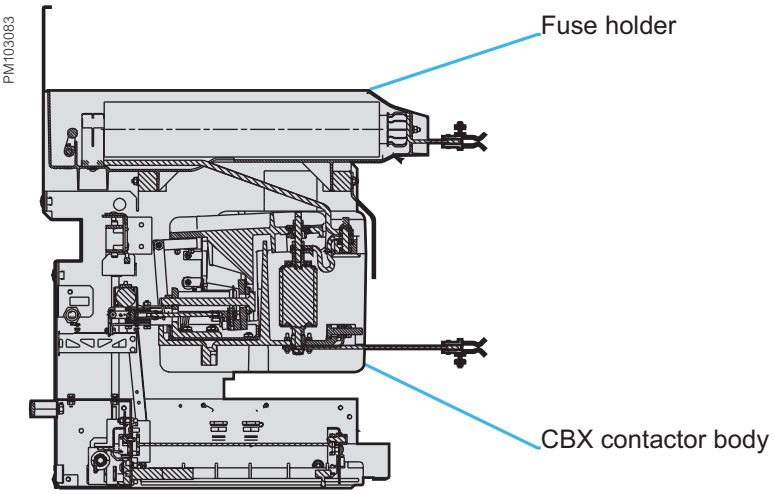




Enclosure for CVX7-C



Fuse Holder for CVX Series



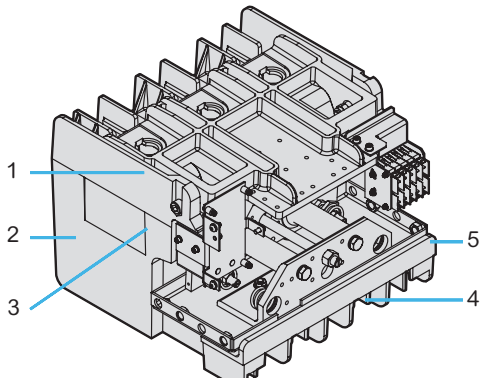
Note:

- DIN fuse: 442 mm/292 mm with extension or
  BS fuse: 454 mm/410 mm/305 mm.
- Fuses to be ordered separately.

CVX Contactor

Functions

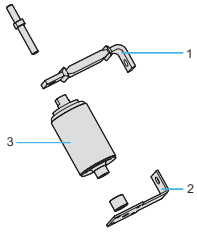
PM103077



Basic Frame

1 Main moulding
2 Armature moulding
3 Two pivot points
4 A steel mounting plate
5 Stop pin

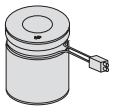
PM103078



Power Part

1 Main terminals (top)
2 Main terminals (bottom)
3 Vacuum switch

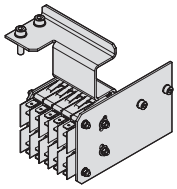
PM103053



Closing Coil

- DC 24–60 V
- DC 110–250 V/AC 110–240 V

PM103079



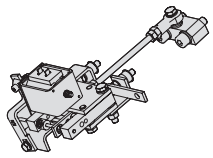
Auxiliary Contact

- 5NO + 5NC, right hand side assembly

CVX Contactor

Functions

PM103080



Mechanical Latch with Tripping Coil

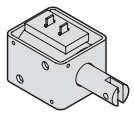
The mechanical latch mechanism with the tripping coil can be selected instead of the electromagnetic hold mechanism. It is comprised by 1 piece mechanical latch and 1 piece tripping coil:

- A mechanical latch part

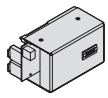
A corresponding tripping coil with various options for supply voltage:

- DC 24–30 V
- DC 48 V
- DC 110–250 V/AC 110–240 V

PM100233



PM103067

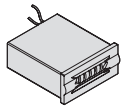


Electronic Card

A set of electronic card is equipped, and has various options for supply voltage:

- DC 24–60 V
- DC 110–250 V/AC 110–240 V

PM103057



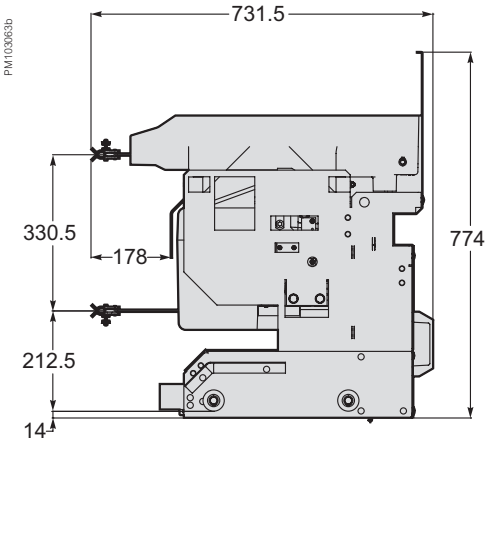
Operations Counter

For vacuum contactors CBX/CBX-C, an operations counter is equipped.

CVX Contactor

Dimensions

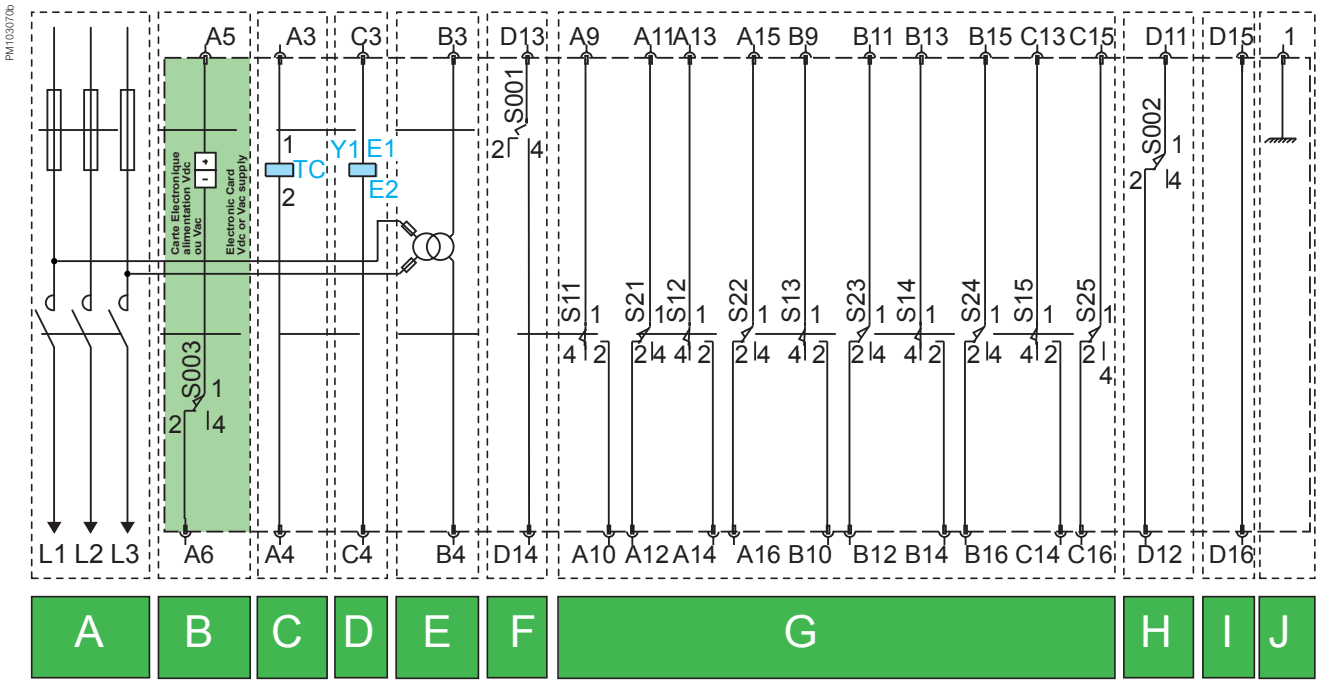
CVX7-C		
Phase to phase distance	mm	106
Size (W x D x H)	mm	359 x 731.5 x 774
Weight	kg	60



CVX Contactor

Electric Circuit Diagram

For CVX7-C DC and AC supply voltage



- **A** Fuse contactor
- **B** Closing
- **C** Tripping coil (for the mechanical latch mechanism)
- **D** Blocking magnet (handle) (optional)
- **E** Control power transformer (only for CVX7-C) (optional)
- **F** Fuse blowing
- **G** Auxiliary contact: 5NO + 5NC
- **H** Mandatory electrical interlock
- **I** Plug-in socket
- **J** Earthing

Note: Tripping coil (TC) should not be supplied more than 2 s.

CVX Contactor
Fuse Selection

The table in below contains a summary of the requirements of the different types of fuse according to the type of load:

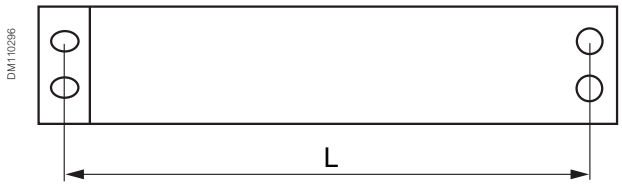
Type of load	Transformer	Motor	Capacitors	
			Single bank	Multiple step banks
Order of magnitude of fuse rating (A)	4 to 100	100 to 250	100 to 250	
Selection rules	IA < IN transf. < IB	Fixed by IP and tD IN motor x 1.2	IN bank x 1.7 < IN fuse Insc fixed by î. t	
Ip	No specification	Low		High t ≈ 1 ms
I fusing 0.1 s	High	No specification	High (t ≈ 0.1 s)	No specification
I fusing 10 s	Low for close-up protection	High	Low for close-up protection	
I3		No specification		
UN (kV)	0 to 36	0 to 12	0 to 36	

These specifications can be used to plot the ideal time/current characteristic for a fuse according to its use (refer to the diagram in below). This diagram clearly shows the requirement parameters for each type of protected load. It also clearly illustrates the relative insignificance of the IN value of a fuse when it is taken alone as a selection criterion (as is unfortunately too often the case).

Fuse Outline

Voltage (kV)	Fuse Type
7.2	BS454 mm, BS410 mm, BS305 mm, DIN 442 mm, and DIN 292 mm(1)
12	DIN 442 mm and DIN 292 mm(1)

DIN Standard Fuse



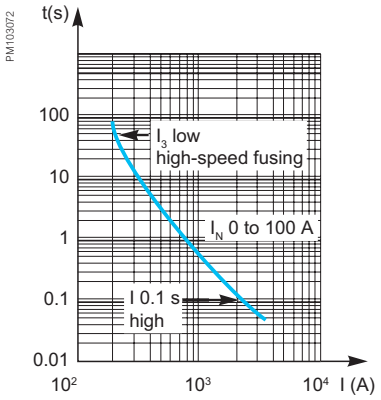
BS Standard Fuse

(1) If DIN fuses are 292 mm long, possibility to supply an extension piece.

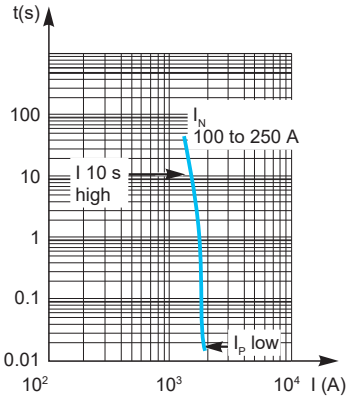
Fuse Selection

Ideal Time/Current Characteristics for Protecting

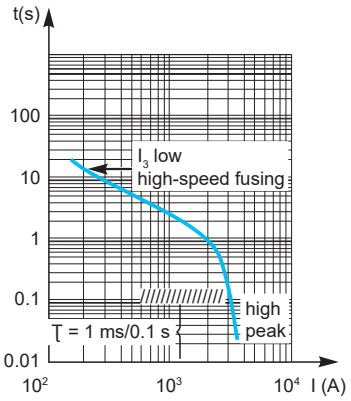
Transformer



Motor



Capacitor



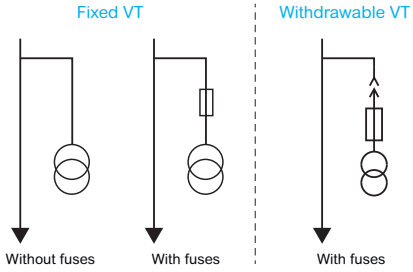
Recommended manufacturer of fuses by Schneider Electric

MERSEN France SB SAS

Voltage Transformers for MCSeT

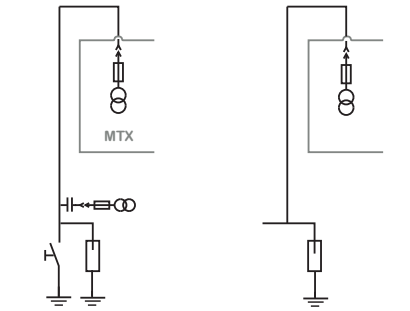
DM107636

Voltage metering on cable side



Voltage metering on busbar side

Withdrawable VT type MTX with fuses and shutters



Conventional voltage transformers provide a low voltage output (100 V or 110 V) for:

- Protection devices
- Measuring, metering, and monitoring devices

They are based on the inductive principle according to IEC 61869-3: 2011.

They include the model: Single pole version for measuring between phase and neutral.

Options for voltage metering on the cable side

- Fixed type version with or without fuses
- Withdrawable version with fuses

These supply power to:

- Measuring, metering and monitoring devices.
- Relays or protective devices.
- Auxiliary LV sources for various types of switchgear; all these devices have enhanced protection and insulated from the MV section.

They are installed at the bottom of the functional unit. They include the following models:

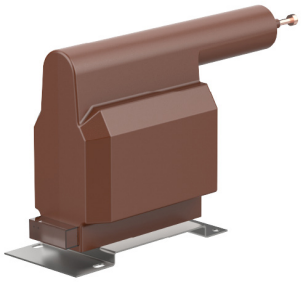
- With one insulated MV terminal, for connection between neutral and phase conductors in three-phase systems with withdrawable MV fuses.

PM110982

Note: Images are for reference only.

Other recommended manufactures by Schneider Electric (DIN Type)
ALCE (Turkey)
TRAFINDO (Indonesia)
Narayan Powertech (India)
DYH (China)
Note: If no requirement from customer, Schneider Electric will be free to select the VT of SE or other manufacture.

PM111491



Recommended manufactures by Schneider Electric (Gun Type)
Narayan Powertech (India)
Note: If no requirement from customer, Schneider Electric will be free to select the VT of SE or other manufacture.

Voltage Transformers for MCSeT

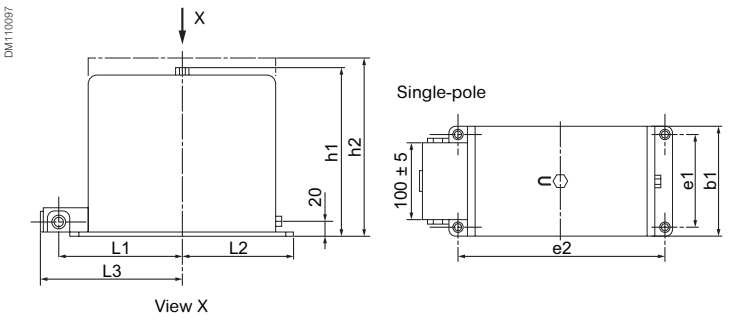
For cubicles IF-BSC

Voltage Transformer

- Single pole insulated
- Block type DIN standard design optional for fixed VT
- Standard: IEC 61869-3, VDE, ANSI
- Gun type optional for withdrawable VT

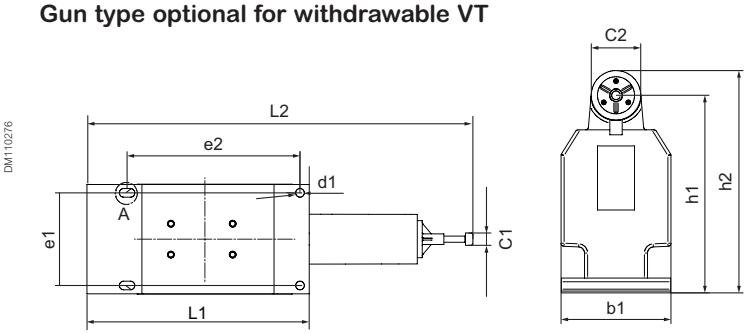
Type	Specifications
Operating voltage (Max.)	Up to 24 kV
Test voltages (Max.)	50/125 kV
Rated frequency	50 or 60 Hz
Rated primary voltage Un (Max.)	Ur √3 kV
Secondary voltage	100/√3 or 110/√3 or 120/√3 V
Rated Burden in class 0.2-0.5-1.0	5 - 10 - 15 - 20 - 30 - 40...VA
Rated Burden for protection purpose in class 3P/6P (Max.)	Max. 120 (2.5 x Ith)
Thermal limiting current for earth fault detection winding	6 A
Rated voltage factor (8 h)	1.9 Un
Weight (approx.)	Up to 35 kg

DIN standard design optional for fixed VT



Un (kV)	Type	b1 max.	d1 min.	e1	e2	h1 ± 5	h2 max.	L1 ± 15	L2 ± 15	L3 ± 15
Up to 12	Single-pole	148	11	125	270	220	260	165	150	185
24	Single-pole	178	14	150	280	280	320	175	160	195

Gun type optional for withdrawable VT



Un (kV)	Type	b1 max.	d1 min.	e1	e2	h1	h2 max.	L1	L2	c1	e2
24	Single-pole	178	14	150	280	320	360	360	625	20	80

Voltage Transformers for MCSeT

Low Power Voltage Transformers LPVT

PM105566

Functions

Function	Allows protection or metering with the same product
Protection, Metering & Feeder Automation	Medium Voltage instrument transformers Low power transformers
Low power voltage Transformers (LVPT)	–
Max. short-circuit current	–
Highest voltage for the equipment	24 kV
Max. rated primary current	–
Max. rated primary voltage	20 kV
Technology	MV insulation technology for MV application
Main characteristics	Rated nominal secondary voltage 3.25 / √3V
Insulation	Class E (Insulation realized by vacuum casting epoxy resin with MV Cone interface type C)
Standards	IEC60044-7

Benefits

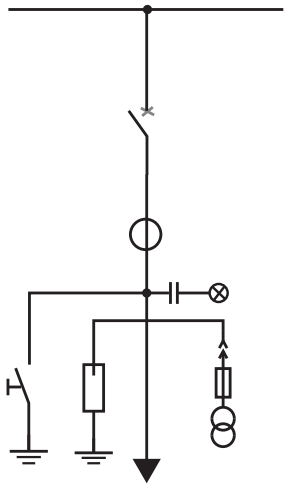
- Enhanced safety in the event of any accidental opening of the secondary circuit.
- Can be installed in 12 kV, 17.5 kV, 24 kV, 36 kV or 40.5 kV networks without any specific MV insulation.
- Enhanced safety in the event of any accidental short-circuit of the secondary circuit.
- Resistive divider insensible to ferroresonance.
- Proper to measure energy in secondary MV loops.

Current Transformers for MCSeT

DM107637

Current metering on cable side

CT DIN type, 1 or 2 sets of CT available



Conventional current transformers provide a power signal for:

- Protection devices
- Measuring, metering and monitoring devices

They measure the value of the primary current from 10–4000 A. They are based on the inductive principle according to IEC 61869-2: 2012.

They are installed at the bottom of the cubicle for current metering on the cable side If a second set of current transformers is needed, they are installed at the rear side of the cable compartment.

They are offered with the following models:

- Block type, epoxy resin insulated
- Ring type or toroidal type

Ring type current transformers can be used to measure both the current per phase or to detect an earth fault by comparing three phases. They can be epoxy resin insulated or foil insulated.

Conventional Current Transformers

Conventional current transformers are used to provide power to metering, measuring or control devices. They measure the value of primary current from 10–4000 A.

Schneider Electric has drawn up a list of current transformers which are appropriate for use with digital protection devices in order to make it easier to determine accuracy characteristics. This list is available in the selection guide.

Other recommended manufactures by Schneider Electric (DIN Type)	
Up to 3150 A (DIN Type)	ALCE (Turkey)
	TRAFINDO (Indonesia)
	Narayan Powertech (India)
	DYH (China)

PM110983

Note: Images are for reference only.

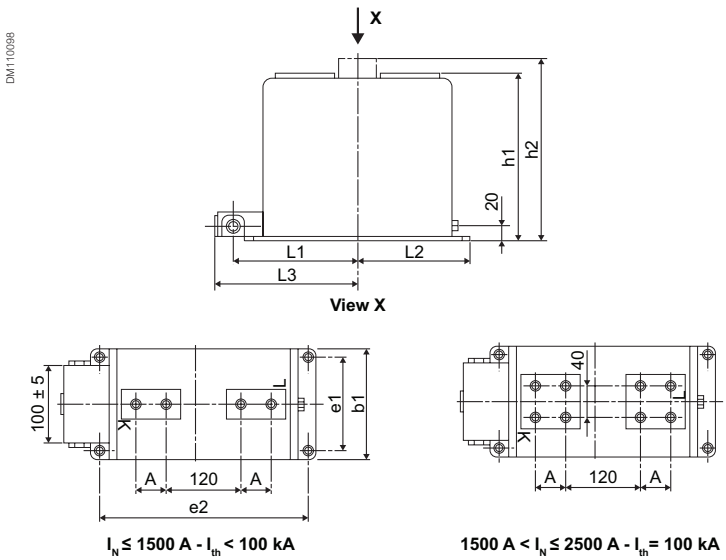
For cubicles IF-BSC

Current Transformer

- Narrow type design
- Standard: IEC 61869-2, VDE, ANSI
- On request with capacitive layer

Type	Specifications
Operating voltage (Max.)	Up to 24 kV
Test voltages (Max.)	50/125 kV
Rated frequency	50 or 60 Hz
Rated primary current (Max.)	3150 A
Secondary rated current	1 or 5 A
Rated short-time thermal current Ith (1s) (Max.)	60 kA (1.2 x In)
Rated dynamic current Idyn (Max.)	120 kA (2.5 x Ith)
Weight (approx.)	30–35 kg

Current Transformers for MCSeT



Un (kV)	I_N (A)	Connection		b1 max.	d1 min.	e1	e2	h1 ± 5	h2 max.	L1 ± 15	L2 ± 15	L3 ± 15
		Quantity of holes	A									
Up to 17.5	≤1500	4	32	148	11	125	270	220	260	165	150	185
		4	32	148	11	125	270	220	260	165	150	185
	> 1500	8	32	148	11	125	270	220	260	165	150	185
	≤ 2500	8	32	148	11	125	270	220	260	165	150	185
24	≤1500	4	32	178	14	150	280	280	320	175	160	195
		4	40	178	14	150	280	280	320	175	160	195
	> 1500 ≤ 2500	8	32	178	14	150	280	280	320	175	160	195
		8	40	178	14	150	280	280	320	175	160	195

E28678

Zero Sequence Core Balance CT (CSH type)

Zero Sequence Core Balance Current Transformers (CSH Type)

CSH 120 and CSH 200 core balance CTs, provide more sensitive protection by direct measurement of earth fault currents.

Specifically designed for the Sepam range, they can be directly connected to the Sepam **residual current** input.

They are only different in terms of their diameter:

- CSH 120 - 120 mm internal diameter
- CSH 200 - 200 mm internal diameter

Protection of Persons and Property

The devices used to equip the MCSeT range of functional units have outstanding features:

- Long service life
- Maintenance-free live parts
- High electrical endurance
- Enhanced operating safety
- Insensitivity to the environment

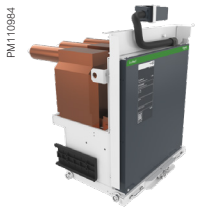
Devices

- The circuit breaker and the metering truck
- The mechanism for racking in-out
- Interlocks to fix the withdrawable parts onto the fixed part

EvoPacT HVX Circuit Breaker

EvoPacT HVX Circuit breaker

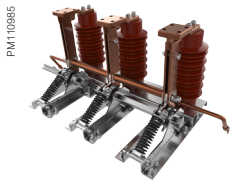
The vacuum circuit breaker is the main device for switching the rated current and helps to protect against overcurrent and short circuit current.
Installed in the MCSeT cubicle it helps to protect all components situated downstream during a short-circuit. The live parts are housed in an insulating enclosure. It is tested according to IEC 62271.



EvoPacT MTX Metering Truck

Metering truck

The metering truck carries a voltage transformer to measure the busbar voltage. It is installed instead of a circuit breaker and it has similar interlock possibilities.



Earthing Switch

Earthing switch

The earthing switch earths the main current paths with a fast closing mechanism in accordance with IEC 62271-102.

CVX7-C Contactor

CVX7-C Contactor

Withdrawable type of CVX7-C equipped with fuse holders (DIN or BS standard) up to 12 kV.

Note: The images shown here are for illustration purposes only.

Protection, Monitoring, and Control

Protection Relays

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 the enhanced solutions that fit 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.

		Catalog
PowerLogic P1		
	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 protective 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 protective devices 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, Monitoring and Control

Protection Relays

Easergy Sepam Protection

Easergy Sepam Series 60

For complex distribution systems, Easergy Sepam Series 60 has 8 dedicated types of protection relay application.
It consists of a simple base unit with connectors for voltage & current measurement, power supply, relay outputs, communication port and a removable memory cartridge (firmware, settings and language). A range of module or options can be applied to easily extend HMI, Communication or I/O.

Easergy Sepam Series 80

Protection Relays for Custom Applications: 16 types of digital current or voltage protection for any distribution system, each one dedicated to a single application: Easergy Sepam S80, S81, S82, S84, T81, T82, T87, M81, M87, G88, B80, B83, C86. A ready to use Easergy Sepam includes: one base unit, two 20 pin connectors, one current, one current and one voltage connector, one memory cartridge, one application, one language, logipam firmware option, TCP/IP option, optional modules, comm. interfaces or core balance CT.

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 helps 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 elective control with I/O modules.
It provides high performance with inputs for current measurement and communication to supervision solutions.

VIP Relay

VIP40/45 VIP400/410

Our latest range of integrated self-powered relays requiring no auxiliary power supply.
Self-powered protection relays increase the availability of the MV network and are suited to most applications.

- Designed to respond to voltage drop
- Not dependent on UPS systems
- Less dependent on the external environment (EMC, LV over voltages) because they require no external connections

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.

Flair Fault Passage Indicators

Fault Passage Indicators for Underground Networks

The Flair range offers cost-effective fault passage indicators (FPI) that can be fully integrated in the cubicle.
In addition to the Flair 21D/22D self-powered FPIs, the range includes the Flair 23DM, a device incorporating FPI, Voltage detection relay and Modbus communication.

Protection, Monitoring, and Control

PowerLogic A1, A3 Relay, and V321

Application

- Feeder
- Motor and voltage and frequency
- Distance
- Line differential
- Transformer

The PowerLogic Arc range can be deployed in a single MV cubicle where three sensors can help secure the arc protection up to medium size application with numbers of MV switchgears or LV switchboards.

The connection flexibility and the easy logic built for common protection schematics, makes this range accessible and easy to use for more applications.

Selecting the right device becomes simple and helps to avoid any error.

PowerLogic A1 and A3

PM110622

PM110623

The PowerLogic Arc range for small to medium size applications is composed by:

- PowerLogic™ A1: stand-alone device for cubicle protection.
- PowerLogic™ A3: can be used as stand-alone device or associated to other A3 devices and build a system solution. PowerLogic A3 devices could be connected through a high-speed bus to perform high performance protection at system construction.

PowerLogic A1

- Models available: **A125/V125**
- Dedicated unit for each bay - versatile and independent device for each bay
- Designed for partners with optimized, cost effective solutions of panel builders and OEMs.

V321

PM106632

Arc flash protection minimizes material damage to the installation in most hazardous power system fault situations.

Minimized damage also means limited need for repair work and enables rapid restoration of the power supply.

Protection, Monitoring, and Control

Arc Fault Protection

The arc protection unit detects an arc flash in an installation and trips the feeding breaker

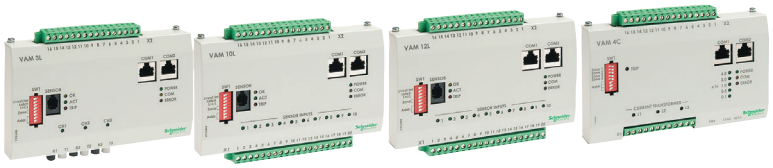
An arc flash protection system minimizes material damage caused by arc faults.

Arc flash protection helps to minimize material damage to the installation in the most hazardous power system fault situations.

Minimized damage also means limited need for repair work and enables rapid restoration of the power supply.

Vamp Arc Flash Range

Vamp 321



Advantages

Enhanced people safety

The shorter the operating time of the arc flash protection unit, the smaller will be the damage caused by the arc fault and the shorter the possible power outage.

Extended switchgear life cycle

Arc protection unit increases the life-cycle expectancy of switchgear installations, so that decisions to invest in new switchgear installations can be postponed and money can be saved by re-Vamping existing switchgear systems.

Reduced insurance costs

The faster and better the protection system of a power installation, the more generous will be the insurance terms and costs.

Low investment costs and fast installation

A comprehensive arc protection system is characterized by low investment costs and fast installation and commissioning times. One successful operation of the arc flash protection units provides an immediate investment payoff.

Enhanced operation reliability

Operation is based on the appearance of light or alternatively on the appearance of light and current from an external device. Immune to nuisance tripping due to dual tripping criteria; light and current.

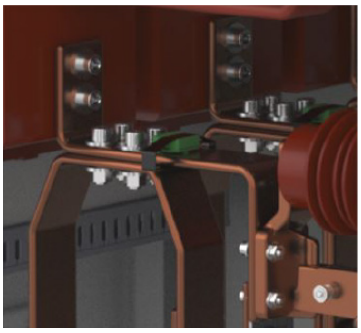
Protection, Monitoring, and Control

Thermal Monitoring PowerLogic TH110

Key benefits

- Battery free
- Wireless communications
- High performances
- In contact measuring point
- Easy installation
- Compact footprint
- Remote monitoring and alarming

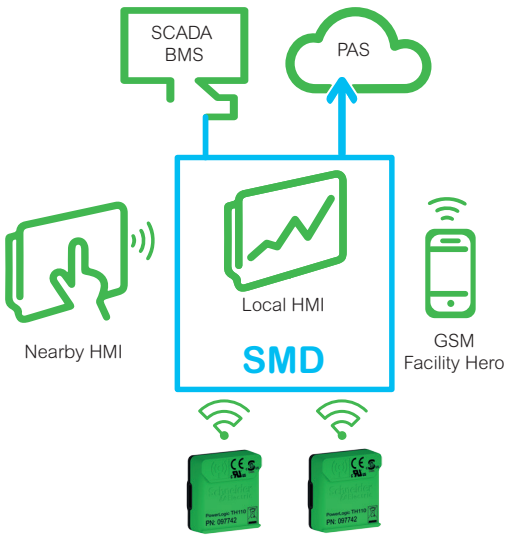
PM110986



PowerLogic TH110

PM109830

DM105320b



Wireless Smart Sensors

Continuous Thermal Monitoring

The power connections in the Medium Voltage products are one of the most critical points of the substations especially for those made on site like:

- MV Cable connections

Loose and inappropriate connections cause an increase of resistance in localized points that will lead to thermal runaway until the complete failure of the connections.

Preventive maintenance can be complicated in severe operating conditions also due to limited accessibility and visibility of the contacts.

The continuous thermal monitoring is the most appropriate way to early detect a compromised connection.

PowerLogic TH110 Thermal Sensor

PowerLogic TH110 is part of the **new generation of wireless smart sensors** that helps ensuring the continuous thermal monitoring of all the critical connections made on field allowing to:

- Helps to prevent unscheduled downtimes
- Enhanced safety for operators and equipment
- Optimize and predictive maintenance

Thanks to its very **compact footprint** and its **wireless communication,** PowerLogic TH110 allows an easy and widespread installation in every possible critical points without impacting the performance of the MV Switchgears.

By using **Zigbee Green Power** communication protocol, PowerLogic TH110 enables a communication with enhanced reliability and robustness, that can be used to create interoperable solutions evolving in the **Industrial Internet of Things** (IIoT) age.

PowerLogic TH110 is **self powered** by the network current and it helps to ensure **high performances** providing accurate thermal monitoring being in **direct contact** with the measured point.

Substation Monitoring Device

PowerLogic TH110 is **connected** to the Substation Monitoring Device (SMD) that harvests the data for local signaling, data analyses and nearby control.

Specific **monitoring algorithms** allow to detect drifts from the threshold based on the specific installation characteristics also in regards of the variable loads or abnormal behaviors coming from phases comparison.

The **remote monitoring and alarming** helps ensure full peace of mind thanks to remote connection for SCADA or Services, access to Cloud-based Apps and digital services and alarming through SMS or EcoStrxure Power Device App.

Characteristics	
Power supply	Self powered. Energy harvested from power circuit.
Minimum activation current	5 A
Accuracy	± 1 °C
Range	-25 °C/+115 °C
Wireless communication	ZigBee Green Power 2.4 GHz
Dimension - Weight	31 x 31 x 13 mm - 15 g

Protection, Monitoring, and Control

Wireless Environmental Monitoring
PowerLogic CL110

Key benefits

- Long battery life expectation
- Wireless communications
- High performances
- In contact measuring point for temp.
- Easy installation with magnets
- Compact footprint
- Remote monitoring and alarming

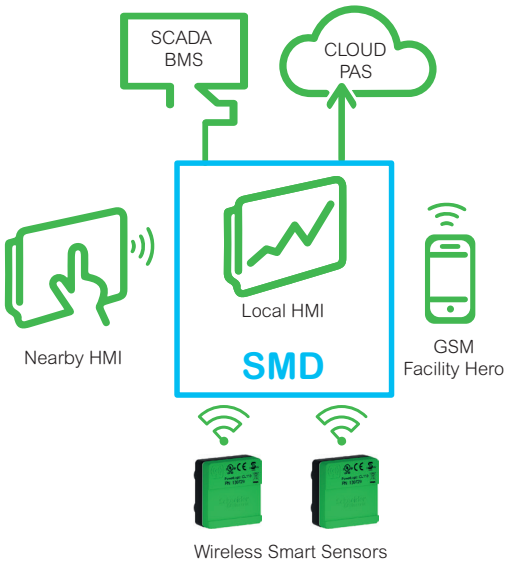
PM109828

PowerLogic CL110

Characteristics

Temperature Accuracy	± 1 °C in a range from -25 °C to 90 °C
Relative Humidity Accuracy	2% in a range from 10% to 98%
Wireless Communication	ZigBee Green Power 2.4 GHz
Protection degree	IP54
Dimension - weight	40 x 40 x 21 mm – 34 g
Power supply	3 V battery

DM105782



Continuous Environmental Monitoring

Harsh environment due to pollution, condensation and strong temperature drifts is one of the most critical failure cause due to accelerated aging.

In **MV Switchgears** an harsh environment generates dirt that, on the surface of not shielded insulators, can lead to surface partial discharges up to a complete flashover.

In **LV compartments** a harsh environment can generate rust on metallic parts and electronic contacts.

The continuous environmental monitoring is the most appropriate way to early detect installation issues optimizing maintenance with predictive information.

PowerLogic CL110 Environmental Sensor

PowerLogic CL110 is part of the **new generation of wireless smart sensors** that helps ensuring the continuous environmental condition monitoring allowing to perform, over a deenergized surface, the measurement of:

- Temperature of the surface in contact
- Relative humidity

By using proper algorithms, the above data can be computed to calculate the dew point and condensation occurrence.

Thanks to its c**ompact footprint** and its **wireless communication** PowerLogic CL110 allows an easy and widespread installation also providing IP54 degree of protection in indoor applications.

PowerLogic CL110 is **battery powered with life expectation >15 years** and it allows a simple fixing on magnetic metal surfaces thanks to its **high-strength magnets**.

By using **Zigbee Green Power** communication protocol, PowerLogic CL110 enables a communication with enhanced reliability and robustness, which can be used to create interoperable solutions evolving in the **Industrial Internet of Things** (IIoT) age.

PowerLogic CL110 provides accurate temperature monitoring of the metal surface being in **direct contact** with it.

Substation Monitoring Device

PowerLogic CL110 **is connected** to the Substation Monitoring Device (SMD) that harvest the data for local signaling, data analyses and nearby display.

Specific **monitoring algorithms** allow to detect drifts from the threshold based on the specific installation characteristics.

The remote **monitoring and alarming** helps ensure full peace of mind thanks to remote connection for SCADA or Services, access to Cloud-based Apps and digital services and alarming through SMS or EcoStrxure Power Device App.

Components and Accessories

Installation and Connection

Installation and Connection

Accessories and Extraction Withdrawable Parts

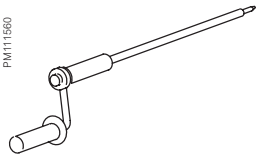
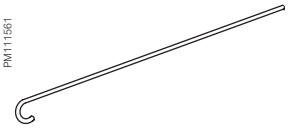
Accessories and Extraction Table for Circuit Breaker

Description	Illustration	Description	Illustration
ON/OFF Operating rod	PM110988 	Truck handle	PM110990 
Door locking key	PM110993 	Manual spring charging handle	PM111261 
Earthing switch handle	PM110992 	Extraction table for circuit breaker(1)	PM110987 

(1) Adaptable to three cubicle widths, this extraction table enables:

- The withdrawable part to be removed from the cubicle
- The withdrawable part to be fitted into the cubicle

Accessories and Extraction Table for Feeder with Contactor Cubicle

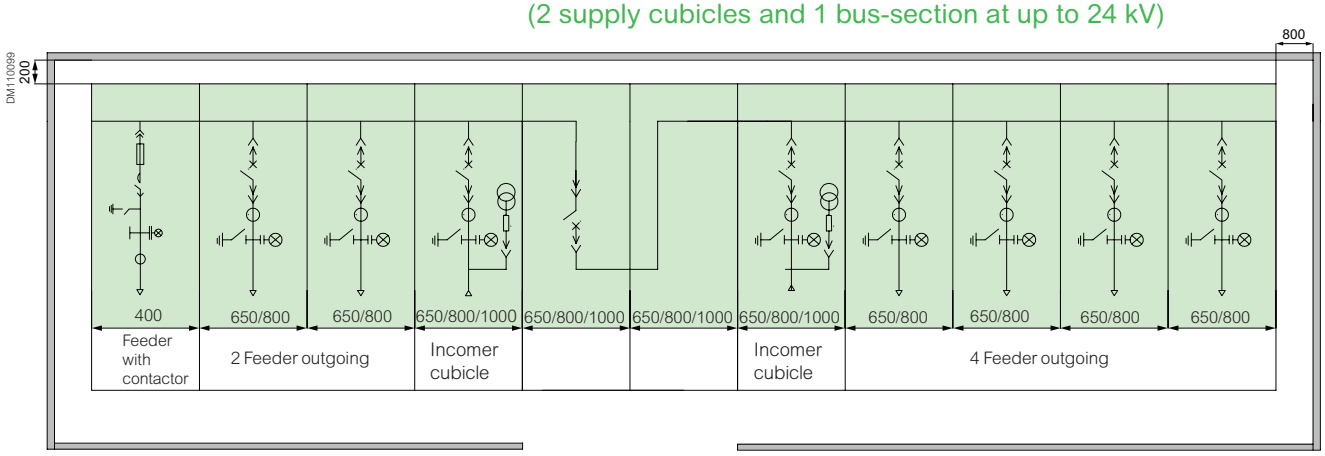
Description	Illustration	Description	Illustration
Extraction table for feeder with contactor cubicle	PM111558 	Rack-in/Rack-out handle	PM111560 
Earthing switch operation crank	PM111559 	Tripping stick (optional)	PM111561 

Implementation Examples

MCSeT Line-up Switchboard

Line-up Switchboard

(2 supply cubicles and 1 bus-section at up to 24 kV)

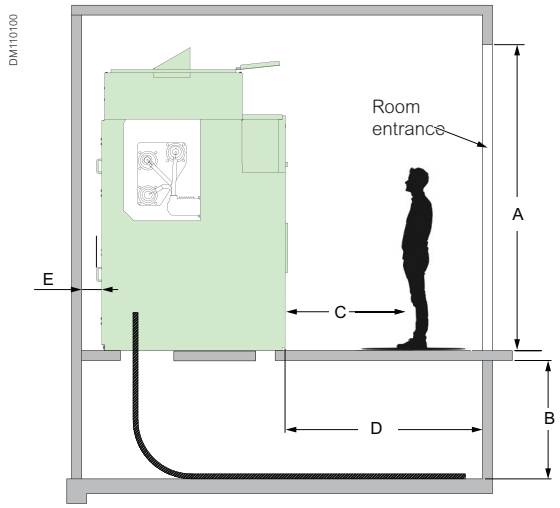


Note: The 650 mm cubicle design is applicable up to 17.5 kV.

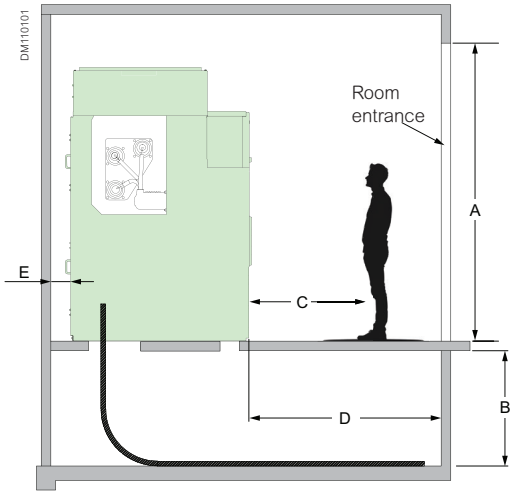
The 1000 mm cubicle design is also available for Feeder outgoing.

The Feeder with contactor cubicle with 400 mm design is applicable up to 12 kV.

Civil Engineering with Utility Space



Civil Engineering with Utility Space for MCSeT with Duct and Absorber



Civil Engineering with Utility Space for MCSeT with Duct

A Minimum dimensions to be complied with when installing the MCSeT switchboard with minimum LV box height*.

B Cable trench height should be maintained considering the bending radius of the cable as per the supplier's catalog.

C Maintain an operating distance of at least 1550 mm while extracting the circuit breaker or withdrawable VTs using trolley or extraction device.

D To extract a cubicle from switchboard lineup, a distance of 2500 mm** is required in front of the cubicle considering the movement of forklift or Extraction device for smooth extraction.

E The MCSeT switchboard distance for AFL should be 200 mm and for ALFR it should be minimum 800 mm.

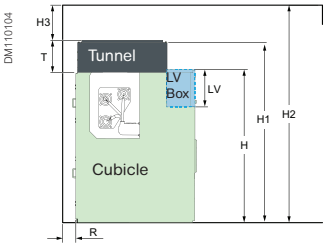
* The final height of the cubicle is as per the approved customer drawings.

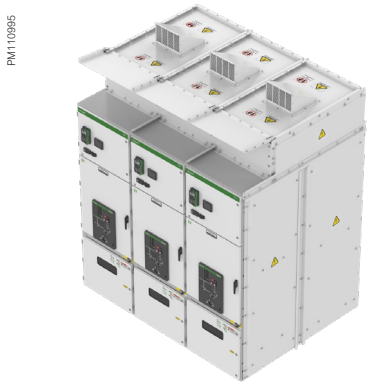
** In case of unavailability of the mentioned space, minimum distance of 1900 mm for 24 kV cubicle and 1700 mm for 12/17.5 kV cubicle is required on the front of the cubicle if extracted from the middle of Switchboard line-up.

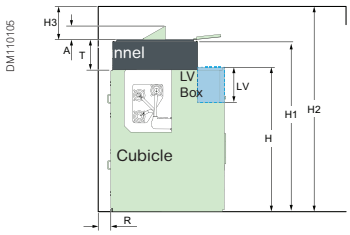
Note: Contact Schneider Electric for instructions on extractions of the cubicle.

Civil Engineering

Pressure relief	
Switchboard external exhaust	Switchboard internal exhaust
Tunnel	Tunnel and absorber







H	Basic cubicle height including standard LV box	
LV	LV box height	
H1	Height of the cubicle including tunnel	
T	Tunnel height	
H3	Distance between tunnel and ceiling	
H2	Height of ceiling	
A	Absorber height	
R	Distance to rear wall	200 mm (AFL) and minimum 800 mm (AFLR)

* Increased height of LV cabinet is available, without impact on the ceiling height.

** Height of the tunnel is inclusive of flange (40 mm for 24 kV and 12 kV).

*** Minimum 200 mm.

Rating	Basic dimensions of cubicle		Pressure relief								
			Outside the building Tunnel				Inside the building Tunnel and absorber				
Ur	H (mm)	LV (mm)	H1 (mm)*	T (mm)**	H2 (mm)	H3 (mm)***	H1 (mm)*	T (mm)**	A (mm)	H2 (mm)	H3 (mm)
Up to 12/17.5 kV	2240	580	2710	470	3000	200	2710	470	260	3400	690
24 kV	2400	630	2950	550	3150	200	2850	450	220	3500	650

Connections

MCSeT Cable Pan

Cable bottom entry

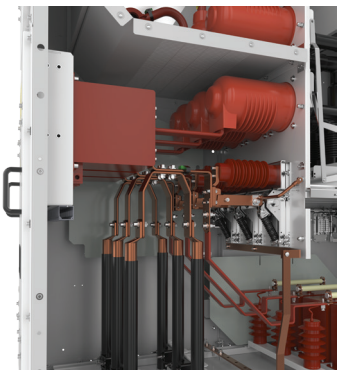
A Cable pan.

Note: Cable pan is a support structure added just below the cubicle base sheet to enhance the cable termination height. This is a subassembly to be attached below the cubicle base sheet by means of the fasteners.

P Cable trench height should be maintained considering the bending radius of the cable as per the supplier's catalog.

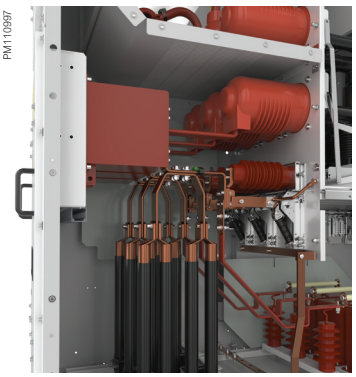
Note: The total cable termination height:
Cable termination height + Pan height

PM110996



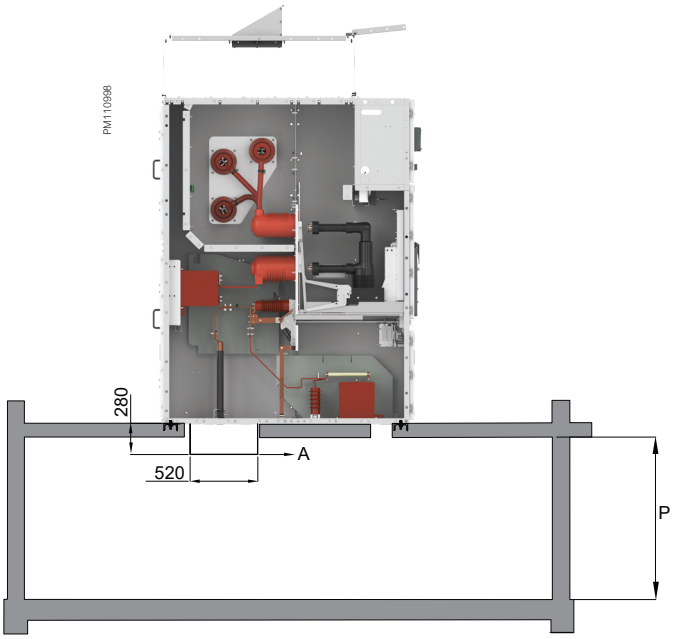
1 Core - 2 Cables Connection

PM110997



1 Core - 4 Cables Connection

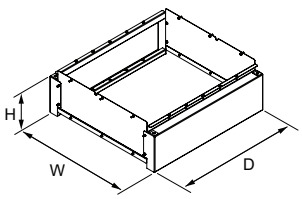
PM110998



1 Core - 1 Cable Connection with Cable Pan

Note: A - Cable pan below cubicle is optional and under customization.

DM110106



Cable Pan

MCSeT cable bottom entry - Cable pan			
Cubicle width (mm)	Depth(1) of Cable pan D (mm)	Height of Cable pan H (mm)	Width(1) of Cable pan W (mm)
650(2)	520	350	400
800	520	350	550
1000	520	350	750

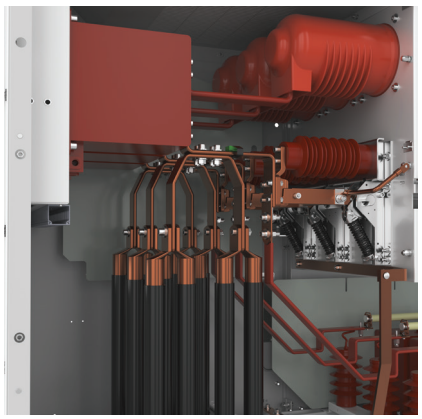
(1) Depth/Width of cable pan will vary based on the number cables per phase.
(2) The cubicle width 650 mm is applicable up to 17.5 kV.

Note: Comply with the cable bending guidelines as per the cable supplier catalog. For tightening torque values, refer to *User manual (BQT6904800)*.

Connections

MCSeT Cable Specifications

PM110999



Cable cross section	24 kV Rated current (A)	
(mm^2)	1250	2500
630	4	6
Cubicle width (mm)	800/1000	1000

Types of cable	Cable cross section	12/17.5 kV, Copper Rated current (A)					
	(mm^2)	630	1250	2000	2500	3150	4000
Armoued/Unarmoued	240	2	4	6/4	6	8	–/8
Armoued/Unarmoued	400	2	4/2	4	6/4	6	8
Armoued/Unarmoued	630	2	2	4	4	6	8/6
Cubicle width (mm)		650/800	650/800	800	1000	1000	1000

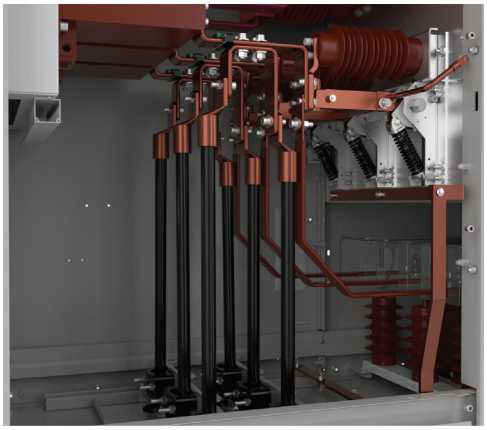
Types of cable	Cable cross section	12/17.5 kV, Aluminium Rated current (A)					
	(mm^2)	630	1250	2000	2500	3150	4000
Armoued/Unarmoued	240	2	4	6	8	–/8	–
Armoued/Unarmoued	400	2	4	6/4	6	8	–/8
Armoued/Unarmoued	630	2	4/2	4	6	6	8
Cubicle width (mm)		650/800	650/800	800	1000	1000	1000

Note:

- Maximum cable cross section is 630 mm^2.
- For cable cross section above 630 mm^2 and three core cable configurations, contact Schneider Electric.
- Length of the cable also must be taken into account when selecting a suitable cable cross-section.
- For 24 kV, eight cable runs are subject to customization.

Connections

PM111001



Switchgear Resistance to Ageing in a Substation Depends on 3 Key Factors

- **The need for correctly performed connections**
  New cold connecting technologies offer easy installation and favor durability in time. Their design means they can be used in polluted environments with harsh atmospheres.
- **The impact of relative humidity**
  The installation of a heating element is essential in climates with high relative humidity and significant temperature differentials.
- **Ventilation control**
  The dimensions of air vents should be appropriate for the dissipated energy in the substation.

Cold connected terminals

Schneider Electric's experience has led it to favour this technology wherever possible for optimum durability.

The maximum acceptable cable cross-section for standard assemblies,
refer "Connections", page 93.

Access to the compartment is only possible when the earthing switch is closed and no voltage in the system.

Tightening torque values for copper connection to be as per manufacturer's specification.

Dry, Single Pole Cable

Short end piece, cold connectable

Performance	12 kV, 630–4000 A
	17.5 kV, 630–4000 A
	24 kV, 630–3150 A
Cross section	240–630 mm^2
Supplier	All suppliers of cold connectable terminals: Silec, 3M, Pirelli, Raychem, and so on.
Number of cables	1–8
Comments	For a higher cross-section and number of cables, contact Schneider Electric

Dry, Three-Pole Cable

Short end piece, cold connectable

Performance	12 kV, 630–4000 A
	17.5 kV, 630–4000 A
	24 kV, 630–3150 A
Cross section	240–400 mm^2
Supplier	All suppliers of cold connectable terminals: Silec, 3M, Pirelli, Raychem, and so on.
Number of cables	1–8
Comments	For a higher cross-section and number of cables, contact Schneider Electric

For cable size and cable pan information, refer to "Connections", page 93 and 94.

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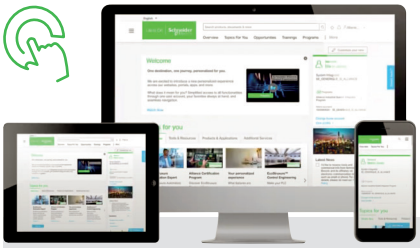

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PM107043

Get Support anytime

- Access 24/7 self-service, mobile catalog & access to expert help
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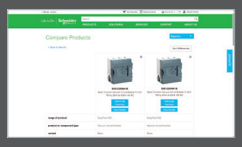
- Get trainings, Advanced support

Collaborate, find solution and make business

- Get to Schneider Electric Exchange find solution develop business
- Schneider Electric Exchange is an online community where individuals can do business
- Whether you're seeking find Solutions or have products, services, and advice to share
- We'll help you connect with peers, technology partners, and experts to gain a competitive edge

PM107044



Select and Design

Advanced WEB functionalities that help to:

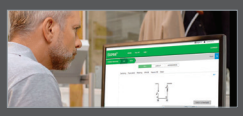
- Select and compare components
- Build easily your technical documentation with ready to use tools (CAD, export files…)

Manage your installed base

Digital Logbook, where you can find all of the documents you'll need during your circuit breakers' manufacturing, installation, operation, and maintenance from anywhere, in a single, well secured paperless environment.

- User manuals
- Design drawings
- Single-line drawings
- Factory and site acceptance tests
- Spare parts lists
- Maintenance records, schedules, and more

PM107046



Configure and Quote

Simplified and validated configuration

- Always updated technical content
- Ready to use data and documentation for your projects
- Last minute changes
- Manage and track your orders

Notes

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