

Easy Series

PIX Easy

Catalog 2021

Air Insulated Switchgear up to 17.5 kV

With middle rolling EasyPact EXE vacuum circuit breaker



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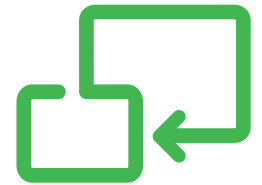
Installation and Connection

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Safety



Simplicity



Efficiency



Reliability



Safety

- Designed using the latest tools and techniques help ensuring that high level of operator safety are taken into consideration
 - Fully type tested according to latest IEC standards for 50 and 60 Hz
 - Internal arc tested up to 31.5 kA with AFLR
 - Full metal partition PM class switchgear
 - Mechanical and electrical interlock embedded to address operator safety
-

Simplicity

- PIX Easy has been designed for easy access to all compartments and provides ease of operations and maintenance
 - PIX Easy design provides easy rack-in/rack-out circuit breaker feature, circuit breaker operation with door closed, inspection window for knowing circuit breaker status
 - The intuitive HMI guides the operator to perform various operations while indicating at all times the different states of the components
 - VPIS on front low voltage compartment door will show the voltage presence on cable at a glimpse
 - Fast access to cubicles, breakers, relays documents through QR codes, stored in the "digital safe repository"
-

Efficiency

- Compact dimensions start with a 600mm wide cubicle for ratings up to 1250A and a 800mm wide cubicle for ratings up to 2 500A, for up to 17.5 kV rated voltage
 - The bus metering and earthing functions are coupled in a single cubicle to optimize space
 - The voltage transformer for the Middle rolling version (incomers function) is integrated into the standard cubicle with no additional space at the back needed
-

Reliability

- Maximizing service continuity to minimize down time thanks to LSC-2B IEC classification
- Busbar segregation between cubicles (option)
- It is designed for 30 years life time with respect of installation, operations and environmental conditions

Overview

Overview

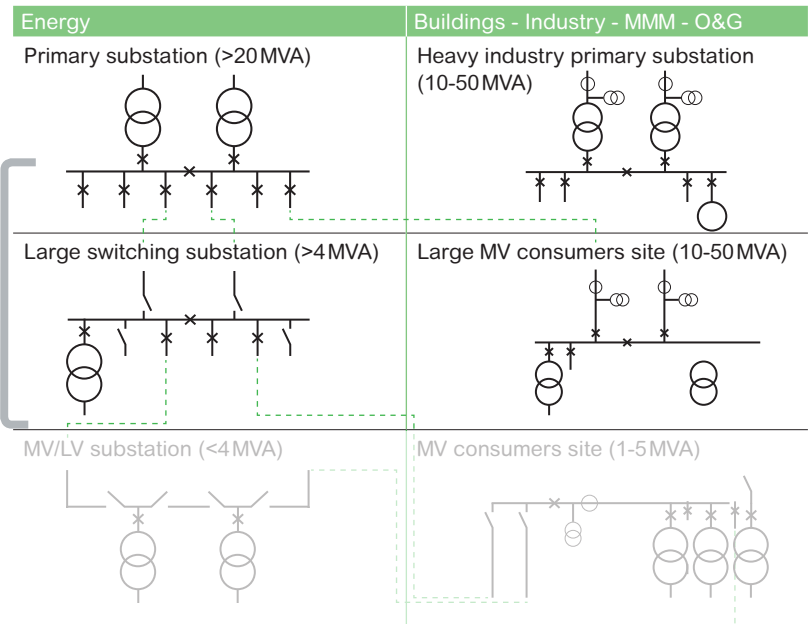
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PIX Easy offers you:

- An engineered solution tailored to your specific requirements
- A solution with a low cost of ownership thanks to reduced maintenance and the highest levels of service continuity
- Enhanced safety for your staff and operators
- Advanced control and monitoring options
- A network of our global support centers

A versatile solution

The PIX Easy Air Insulated Switchgear adapts to all electrical power distribution requirements up to 17.5 kV. It is an indoor metal enclosed switchgear intended for Medium Voltage applications such as those found in HV/MV or MV/MV substations, buildings and industries.

**Applications****Buildings**

- Healthcare
- Hotels
- Airports
- Banking & finance

Energy & Infrastructure

- Electrical utilities
- Smart cities

Industry

- Food & Beverage
- Automotive
- Water and wastewater
- Small industries
- Life sciences



Notes

LSC2B (Loss of Service Continuity IEC 62272-200)

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

IAC (Internal Arc Classification)

The metal enclosed switchgear is classified for internal arc protection as per IEC 62271-200: 2011 where AFLR is defined as follows:

Type of accessibility

- **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

Internal Arc tunnel for an AFLR high protection



The internal arc solution helps to protect the operator in the vicinity of the switchgear under normal operating conditions.

- The internal arc classification is an option in accordance with IEC 62271-200: 2011 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. Besides the internal exhaust solution pictured above, deflectors and external exhaust are also proposed; consult us for those options.
- As a reminder, metal-enclosed switchgear and controlgear are granted Internal Arc Classification if all the following criteria are met:
 - No 1: Correctly secured doors and covers do not open
 - No 2: No fragmentation of the enclosure occurs during the arc fault duration
 - No 3: Arcing does not cause holes by burning through the classified sides up to a height of 2000 mm
 - No 4: Indicators do not ignite due to the effect of hot gases
 - No 5: The enclosure remains connected to the earthing point
- Internal arc classification IAC has been conducted successfully for PIX Easy



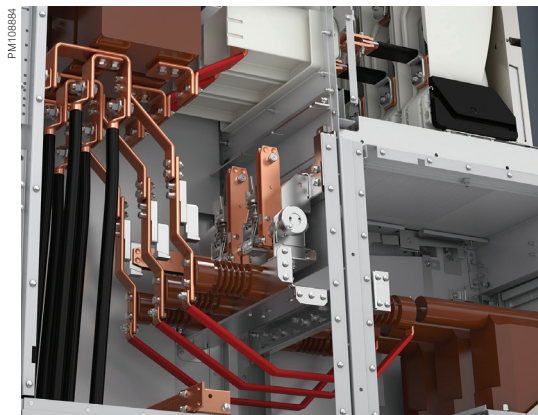
Pix Middle rolling

Operator safety

- Enhanced protection against unintended contact due to complete metal enclosure of all switchgear components
- PIX Easy, equipped with a digital bay controller, provides enhanced operator safety for control, monitoring and complete automation of the switchgear from a remote control room
- For safety reasons, the switchgear cubicle can only be operated with the enclosure door closed and the operator facing the front
- As protection against operating errors, the PIX Easy features a logically designed, continuous mechanical and electrical interlock system
- Capacitive voltage testing system for zero voltage verification
- PIX Easy has been tested for internal Arc classification AFLR in accordance with IEC 62271-200: 2011 up to 31.5 KA 1s

Simplicity

Easy operation for service continuity



Ease of installation

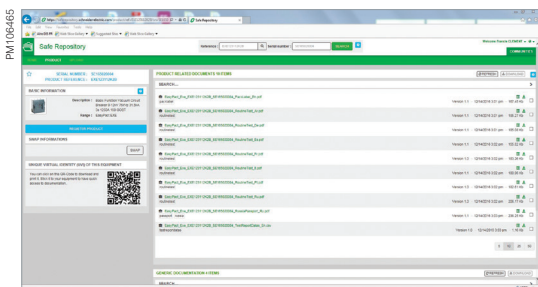
PIX Easy architecture has been designed to accommodate a diversity of installation requirements:

- Face to face
- Connections from bottom
- Ease of access and comfortable space for cable connect / termination of bulky and rigid 3 core cables:
 - 650 mm
 - 550 mm for 2000 and 2500 A when incorporating 2 sets of CTs



Ease of operation

- Intuitive single line diagrams on the front door of each functional units allow a clear understanding of the cubicle components and power flows. This leads to improving quality of operations
- With the EasyPact EXE breaker, PIX Easy features a direct access to mechanical open push button on the front door : quick action helps to ensure better service continuity
- Voltage Presence Indicators (VPIS) are present on the front low voltage compartment door of each functional unit : checking of energy presence of tens of cubicles is achieved within a glimpse !
- An easy breaker disconnection thanks to its middle rolling architecture



Safe repository

Ease of support

PIX Easy embarks the Schneider Electric digital innovation targeting to ease customer life:

- A QR code is present on the front door of each cubicle: scanning it provides access to a web page displaying technical information
- Safe repository : it also provides access to a "digital safe" containing customized data related to each cubicle : ex: manuals, brochures, reports, maintenance procedures, and routine tests

PM109803



PIX Easy:

Smaller footprint

Less volume

Compact design = space savings

- PIX Easy ingenious design allows various functions to be accommodated in very space optimized cubicles :
- Outgoing with currents up to 1250 A are accommodated in 600 mm width cubicles. 2000 and 2500 A are fitted in 800 mm cubicles
- Incomers up to 1250 A fits in 600 mm cubicle. 800 mm cubicles accommodate then beyond 1250 A, up to 2500 A
- Bus couplers and risers fit in 600 mm cubicles for ratings up to 1 250 A and 800 mm cubicle for beyond and up to 2500 A.
- The 2800 mm height of cubicles makes it fittable to any kind of buildings
- The busmetering and earthing functions are coupled in a single cubicle to optimize space
- All cubicles are providing energy with natural cooling with no need of forced ventilation
- Voltage transformers in incomers are accommodated in the cubicle, below the breaker compartment, optimizing the volume of the panel

PM109885



Arrangement example of a PIX Easy switchboard

Reliability

Systematic Testing

PIX108866



Loss of service continuity

The cubicle is a LSC2B (Loss of Service Continuity Category) type as defined by IEC standard 62271-200: 2011; 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, disconnecter truck or metering truck),
- The MV connections, earthing switch, current sensors and Voltage Transformers, as required
- The Low Voltage cabinet

PIX Easy contributes to a high level of protection of people; when a compartment containing a main circuit is open, the other compartments and/or functional units may remain energised.

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

Four basic cubicle layouts are offered:

- Incomer or feeder
- Busbar coupler
- Busbar riser
- Busbar metering and earthing

Strenght of experience

- Full IEC standards compliancy for AC metal enclosed switchgear for rated voltages above 1 kV and up to 52 kV
- More than 50 years in medium voltage switchgear design

High quality design

PIX Easy switchgear embarks only Schneider inhouse designed key components: full breaker (mechanisms, VI bottles), instrument transformers, relays.

A major asset

In each of its business units or manufacturing plants, Schneider Electric integrates a functional organization whose main role is to check quality and monitor compliance with standards.

This procedure is:

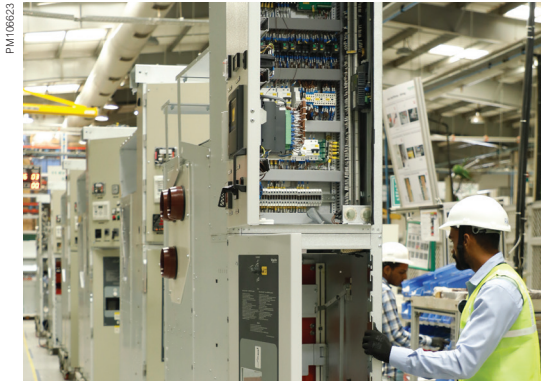
- Uniform throughout all departments
- Recognized by many customers and approved organizations

But above all, its strict application has allowed us to obtain the recognition of an independent organization as example: Bureau Veritas.

The quality system for the design and manufacture is certified to be in conformity with the requirements of the ISO 9001: 2008 standard for quality management systems.

Reliability

Systematic Testing



Strict and systematic checks

During manufacture, each functional unit is subject to systematic, routine testing with the aim of checking the quality and conformity of the following features:

- Measurement of the opening and closing speeds
- Dielectric test
- Testing of the interlocks
- Testing of the low voltage components
- Conformity with drawings and diagrams

The results obtained are recorded and approved by the quality control department on the test report of each device. This, therefore, ensures product traceability.



Type tested

The electrical and mechanical ratings of the PIX Easy switchgear and controlgear have been proven successfully by comprehensive type tests.

The type tests were performed in independent and accredited test laboratories in accordance with international norms and standards. The results are recorded in the appropriate test records and are made available on request.



EcoStruxure™ ready solutions

What is EcoStruxure™?

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

Greater efficiency with **predictive** maintenance helping to reduce downtime



24/7 connectivity

Real-time data **everywhere anytime** to make better-informed decisions



Increased safety

Proven design and experience combined with fast **embedded arc detection** to enhance people's safety and equipment's protection

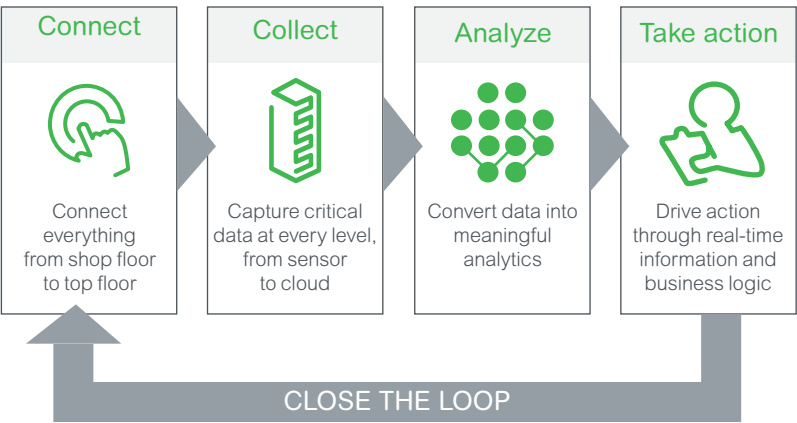
EcoStruxure™ is our open, interoperable, IoT-enabled system architecture and platform. EcoStruxure delivers enhanced value around **safety**, **reliability**, **efficiency**, **sustainability**, and **connectivity** for our customers. EcoStruxure leverages advancements in IoT, mobility, sensing, cloud,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

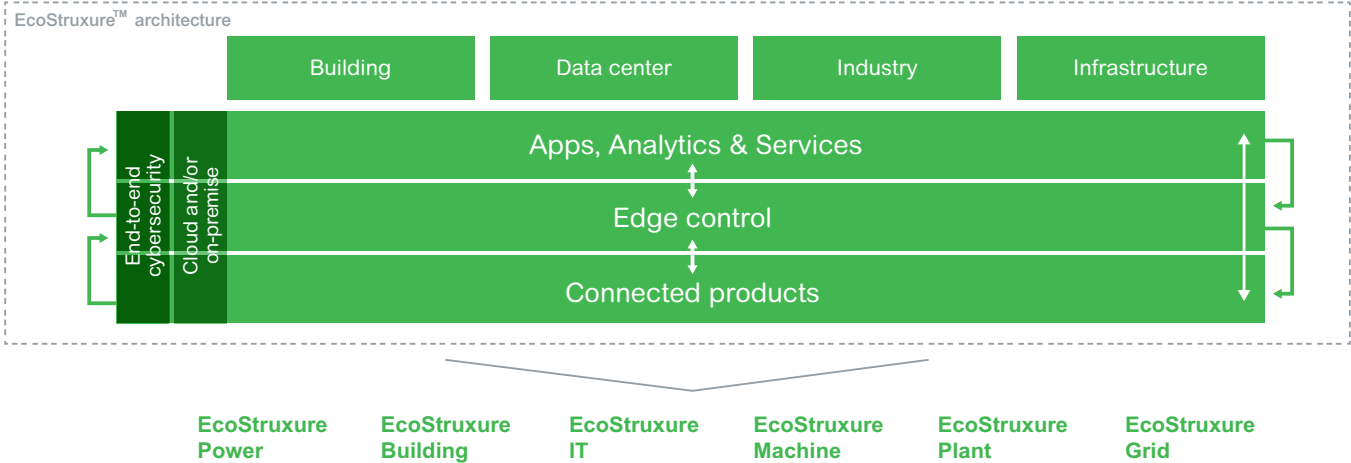
EcoStruxure™ architecture lets customers maximize the value of data.

Specifically, it helps them:

- Translate data into actionable intelligence and better business decisions
- Take informed decisions to 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



DM107233

EcoStruxure™ Ready Solutions

Core technologies for embedded connectivity and intelligence

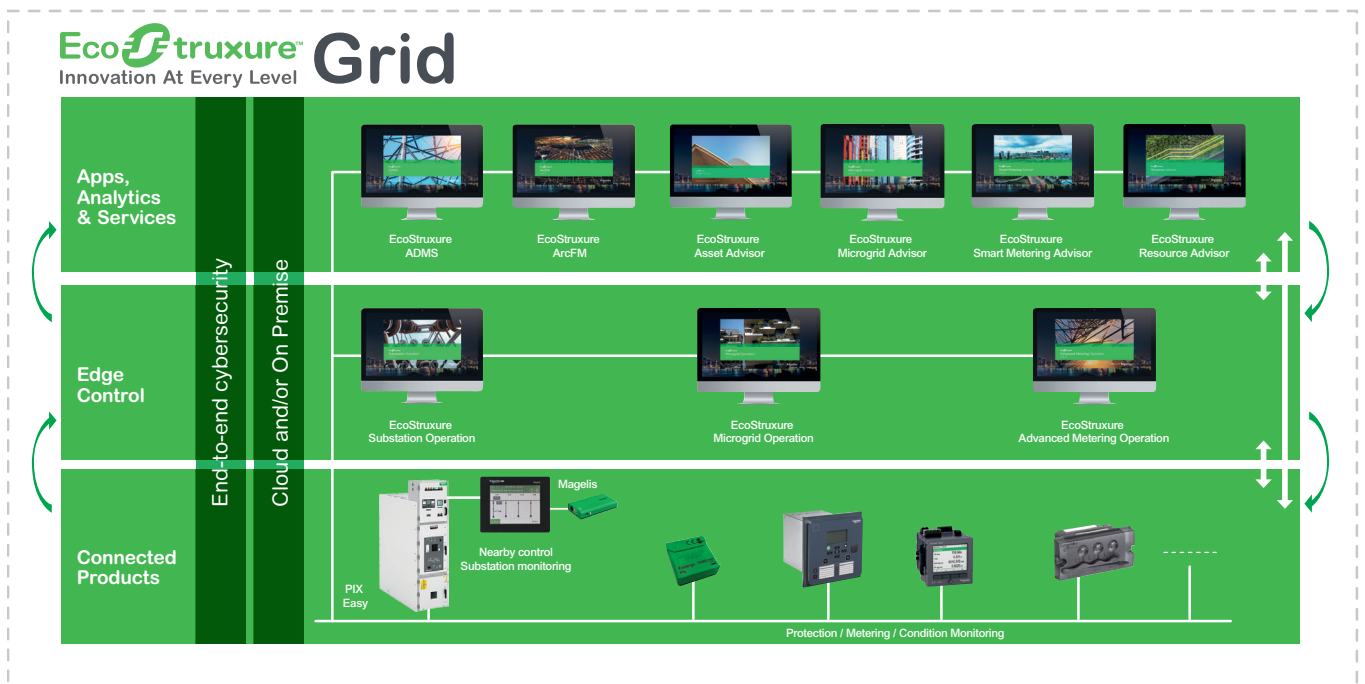
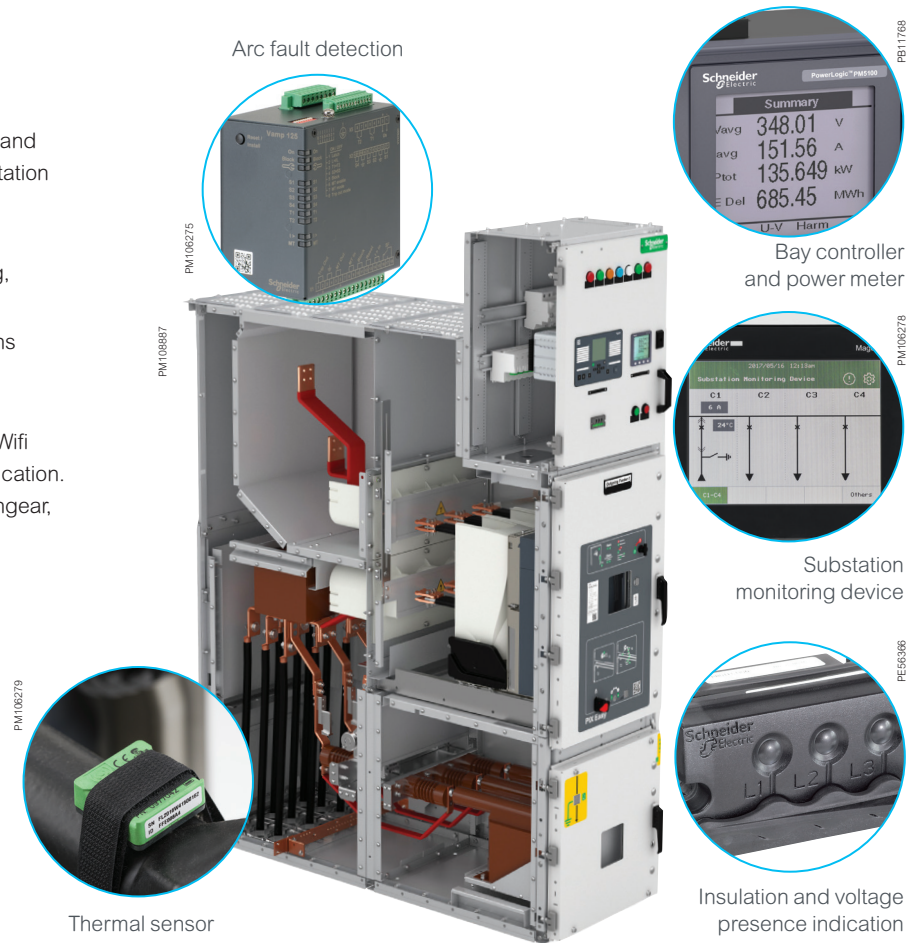
Enable nearby control, enhance safety and uptime

All the Schneider Electric protection, metering and control devices can be connected to our Substation monitoring device.

The HMI can be installed anywhere within the substation to allow local control and monitoring, independent of any external systems.

The monitoring information and control functions can be scaled to the needs of each customer.

Optionally the Magelis control and monitoring functions can be mirrored on a tablet through Wifi connection thanks to our Vijeo Design Air application. The technician can operate remotely the switchgear, while keeping visual contact with it.



Easergy P3

Easergy P3 protection relay family has been developed to cover standard protection needs for industrial and commercial building applications. Thanks to its cost-effective and flexible design, Easergy P3 provides an excellent alternative for various protection applications.

User-friendliness has always been a value of Schneider Electric products, and the Easergy P3 is not an exception, with the unique possibility to operate through your smartphone or tablet with “Easergy SmartApp”.

The rapid setting is achieved with the unique “eSetup Easergy Pro” setting software which improves usability.

Easergy P3 standard

Universal application



- Feeder and Transformer
- Motor
- Voltage
- Frequency
- Capacitor

Easergy P3 advanced

Advanced applications with arc flash fault detection



- **P3F30** Feeder and Transformer
- **P3M30** Motor
- **P3G30** Generator
- **P3L30** Line differential and Distance
- **P3T32** Transformer differential
- **P3M32** Motor differential
- **P3G32** Generator differential

Easergy Sepam

Easergy Sepam series digital protection relays take full advantage of Schneider Electric's experience in electrical network protection.



Easergy Sepam range

They provide the necessary functions:

- Effective fault diagnosis and protection planning
- Accurate measurements and detailed diagnosis
- Integral equipment control
- Local or remote indication and operation
- Easy upgrading: communication, digital I/O, analog outputs, or temperature acquisition systems can be added, due to its modular design

Easergy MiCOM

Offers scalable levels of functionality and hardware options to suit your protection requirements, and allows you to choose a cost-effective solution for your application.



Easergy MiCOM range

The versatile hardware and common relay management software (Easergy MiCOM S1 Studio) allows simple configuration and installation in different applications. A standard and simple user interface across the entire range makes Easergy MiCOM ideal in any environment, from the more complex bay level control with mimic, to the most simple LCD display with menu interrogation.

EcoStruxure™ Ready Solutions

Extend the safety with the arc fault mitigation relays

Modern society heavily depends on an uninterrupted supply of electric power. Prolonged power outages may cause important damages, causing potential human injuries and interruption of service continuity.

An arc flash protection unit is a protective device used to enhance power system availability and assets.

Schneider Electric's range covers a wide range of application, from stand alone protection to a complete system.

Integrated

Protection relay with arc interface



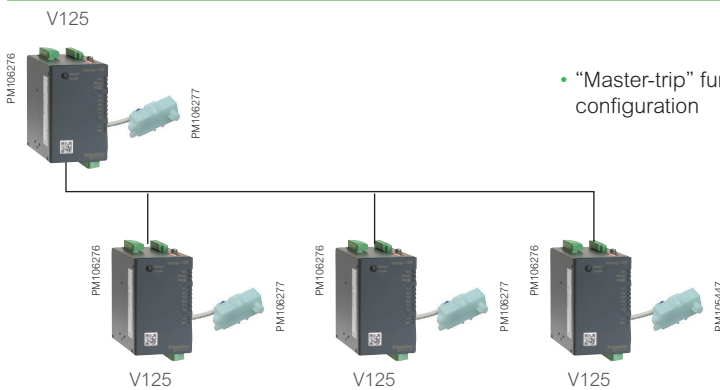
- Integrated arc detection in 1-box solution with protection relay
- Openness to SCADA via the protection relay
- Less foot-print

Standalone



- Single stand-alone VAMP125 unit, helps protecting busbar connection, circuit breaker, CTs

Simple system



- "Master-trip" function, to allow simple selectivity in arc detection without strong configuration

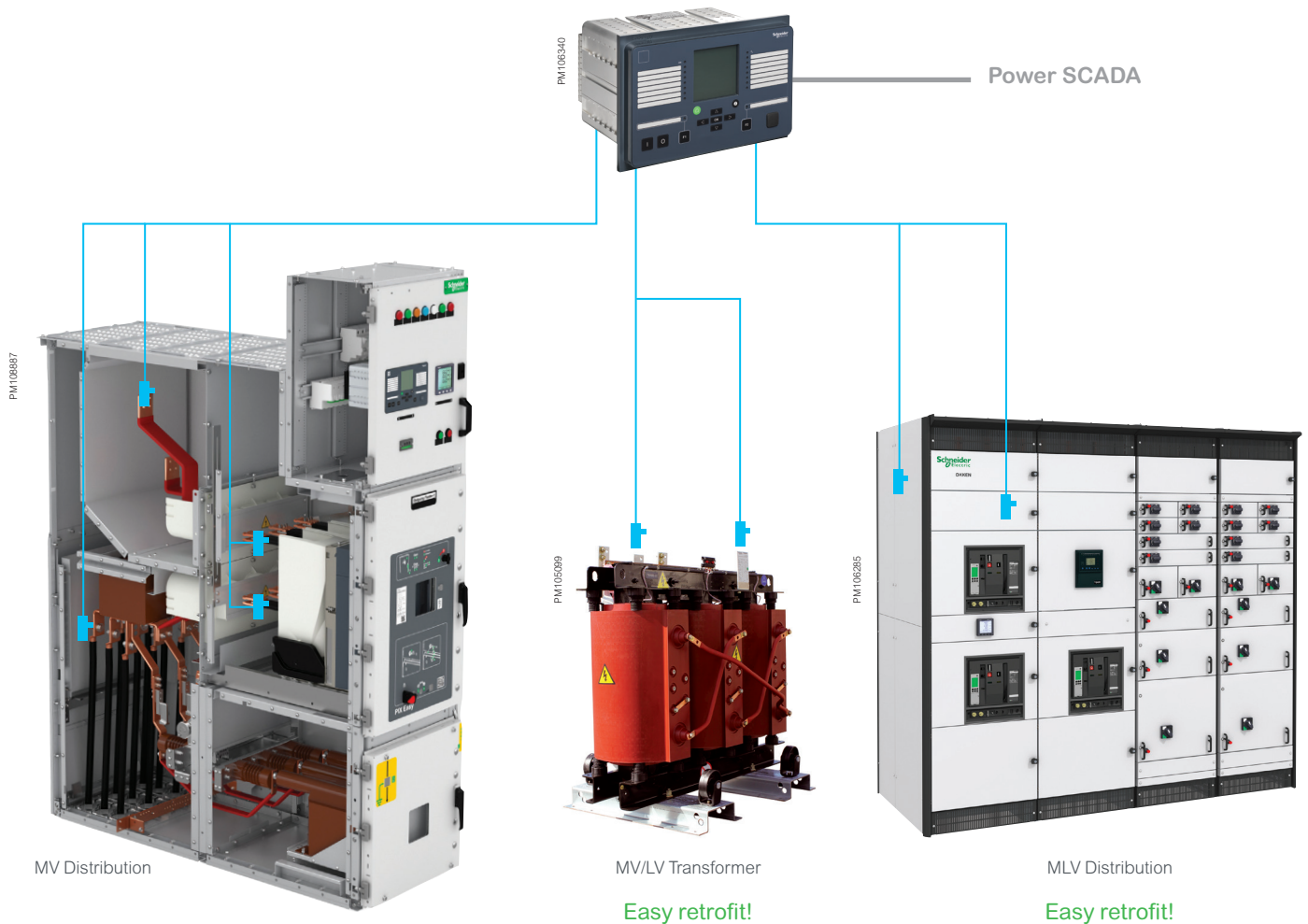
High-end system

- Scalable and Customized Arc Detection system tailored to your needs
- Extended possibilities (number of inputs/outputs, logics, selectivity, etc.)
- Openness to several serial & Ethernet communication protocols, including IEC 61850: 2012
- Multiple technologies (point sensors, loop sensors, fiber optic, etc.)

EcoStruxure™ Ready Solutions

Extend protection to the entire substation

- Possible to retrofit non-arc-resistant installations
- Integration in all products for new projects
- Connected to upper levels or stand alone system



EcoStruxure™ Ready Solutions

Real-time condition monitoring to optimize assets availability

Easergy CL110 ambient monitoring

Schneider Electric ambient monitoring system will continuously:

- Monitor ambient moisture and pollution which are detrimental to the switchgear
- By automatically calculating the condensation cycle, and combining it with the declared mission profile conditions, the system will recommend maintenance and cleaning frequency adjustment in order to maintain the switchgear in its nominal status

Easergy TH110 thermal monitoring

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

- Help preventing unscheduled downtimes
- Increase operators and equipments safety
- Optimize and predictive maintenance

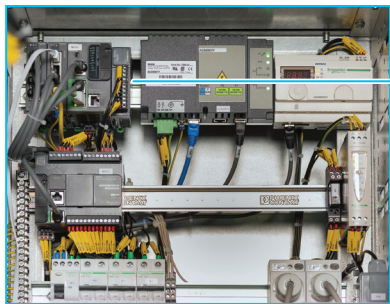
Thanks to its very compact footprint and its wireless communication, Easergy TH110 allows an easy and widespread installation in a wide variety of critical points without impacting the performance of the MV Switchgears.

By using Zigbee Green Power communication protocol, Easergy Th110 provides a robust communication that can be used to create interoperable solutions evolving in the Industrial Internet of Things (IIoT) age.

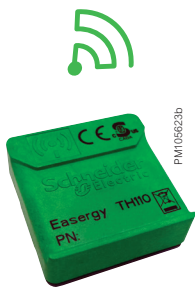
Easergy TH110 is self powered by the network current and it can ensure high performances providing accurate thermal monitoring.

Characteristics

Power supply	Self powered. Energy harvested from power circuit.
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



TH110



TH110



CL110

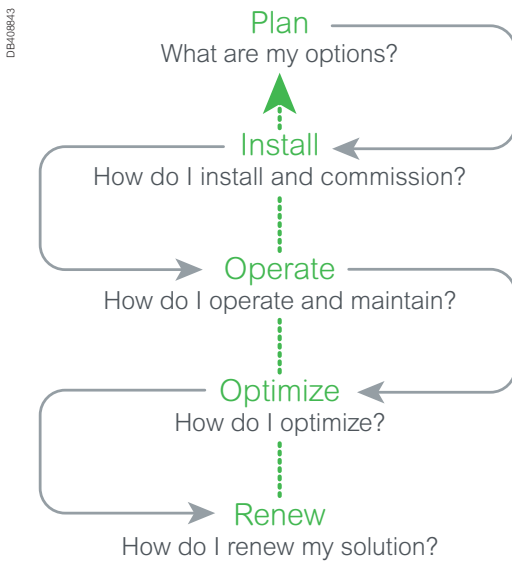
Schneider Electric Services

Greater peace of mind
throughout your installation lifecycle

How can you reduce costs and improve performance at the same time?

When it comes to your electrical distribution infrastructure, the answer is straightforward: get professional expertise.

Life Cycle Services



When it comes to your electrical distribution installation, we can help you:

- Mitigate risk and limit downtime
- Keep equipment up to date and extend lifespan
- Reduce cost and increase savings
- Improve your return on investment

CONTACT US!

<https://www.se.com/en/work/services/>

Plan

Schneider Electric helps you plan the full design and execution of your solution, looking at how to make your process more dependable and optimize time:

- **Technical feasibility studies:** Design a solution in your environment
- **Preliminary design:** Accelerate turnaround time to reach a final solution design

Install

Schneider Electric will help you to install more efficient, more reliable and safer solutions based on your plans.

- **Project management:** Complete your projects on time and within budget
- **Commissioning:** Help ensuring your actual performance matches the design, through on-site testing and commissioning, and tools and procedures

Operate

Schneider Electric helps you maximize your installation uptime and control your capital expenditures through its services offering.

- **Asset operation solutions:** Provide the information you need to enhance installation performance, and optimize asset maintenance and investment
- **Advantage service plans:** Customize service plans that include preventive, predictive and corrective maintenance
- **On-site maintenance services:** Deliver extensive knowledge and experience in electrical distribution maintenance
- **Spare parts management:** Help ensuring availability of spare parts and an optimized maintenance budget for your spare parts
- **Technical training:** Build necessary skills and competencies to properly operate your installations

Optimize

Schneider Electric proposes recommendations to help with availability, reliability and quality.

- **MP4 electrical assessment:** Define an improvement and risk management program

Renew

Schneider Electric's solutions extend the original life of your system, while providing upgrades.



Green Premium™

An industry leading portfolio of offers delivering sustainable value



More than 75% of our product sales offer superior transparency on the material content, regulatory information and environmental impact of our products:

- RoHS compliance
- REACH substance information
- Industry leading # of PEP's*
- Circularity instructions



Discover what we mean by green
Check your products!

The Green Premium program stands for our commitment to deliver customer valued sustainable performance. It has been upgraded with recognized environmental claims and extended to cover all offers including Products, Services and Solutions.

CO₂ and P&L impact through... Resource Performance

Green Premium brings improved resource efficiency throughout an asset's lifecycle. This includes efficient use of energy and natural resources, along with the minimization of CO₂ emissions.

Cost of ownership optimization through... Circular Performance

We're helping our customers optimize the total cost of ownership of their assets. To do this, we provide IoT-enabled solutions, as well as upgrade, repair, retrofit, and remanufacture services.

Peace of mind through... Well-being Performance

Green Premium products are RoHS and REACH compliant. We're going beyond regulatory compliance with step-by-step substitution of certain materials and substances from our products.

Improved sales through... Differentiation

Green Premium delivers strong value propositions through third-party labels and services. By collaborating with third-party organizations we can support our customers in meeting their sustainability goals such as green building certifications.

Range description

Range description

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Technical characteristics

Rated voltage	(kV)	17.5
Rated power frequency withstand voltage	(kV rms)	38
Rated lightning impulse withstand voltage	(kV peak)	95
Rated frequency	(Hz)	50/60
Rated short time withstand current ⁽¹⁾	(kA/3 s)	25 - 31.5 ⁽¹⁾
Rated peak withstand current	(kA peak)	65 - 82
Rated continuous current		
Busbar	(A)	Up to 2500 ⁽²⁾
Cubicle	(A)	Up to 2500
Earthing switch making capacity	(kA peak)	82
Internal arc classification according to IEC 62271-200: 2011 AFLR	(kA/1 s)	31.5
Degree of protection		
		IP4X

⁽¹⁾ The short time withstand current capability of the current transformers should be considered separately.

⁽²⁾ Other values available on request.

Dimensions and weights

Rated current (1)	(A)	800 - 1250	2000 - 2500
Width	(mm)	600	800
Depth	(mm)	1660 (4)	
Height	(mm)	2300 (Low voltage cabinet 735 mm) (3)	
Feeder panel with vacuum circuit breaker & Bus Coupler with vacuum circuit breaker			
Panel width	(mm)	600	800
Weight approx. (2)	(kg)	800	1200
Bus Riser Panel			
Panel width	(mm)	600	800
Weight approx. (2)	(kg)	650	1000
Busbar Metering Panel			
Panel width	(mm)	600	
Weight approx. (2)	(kg)	650	

⁽¹⁾ The rated current refers to the feeder circuit

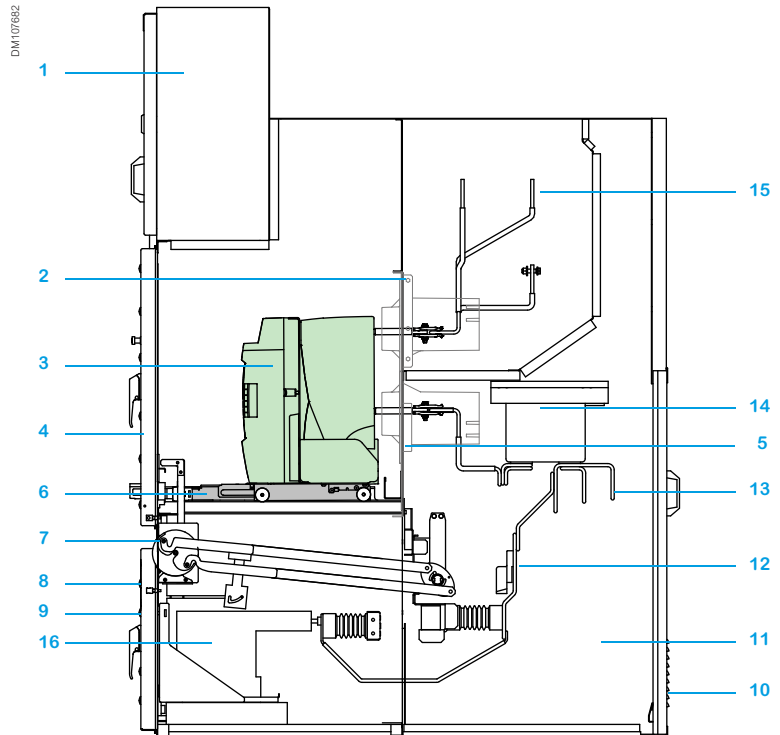
⁽²⁾ fully equipped

⁽³⁾ With internal arc tunnel with internal exhaust - 2800 mm

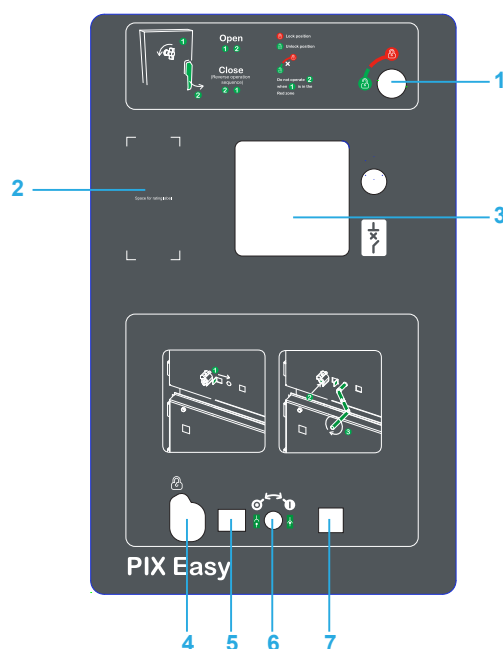
⁽⁴⁾ 2160 mm for 2CT variant

PIX Easy with middle rolling vacuum circuit breaker

1. Low-voltage cabinet with control device
2. Metallic shutter for bus bar side arm of breaker connecting to molded seal-off spouts
3. Easypact EXE Vacuum circuit breaker truck
4. Front door
5. Metallic shutter for line side arm of breaker connecting to molded seal-off spouts
6. Breaker guiding rails
7. Earthing switch position indicator
8. Insertion opening for operating lever of the earthing switch
9. Mechanical interrogation interlock of insertion port for the earthing switch
10. Cable compartment cover
11. Cable compartment
12. Earth switch with making capacity
13. Cable connections
14. Current transformers
15. Busbars
16. Voltage transformer with primary fuse



PIX Easy operating facia



1. Knob for door lock
2. Space for the panel rating label
3. Glass window to inspect circuit breaker
4. Push button with pad lock
5. Slider for rack-in-rack-out
6. Rack-in/Rack-out lever insertion
7. Breaker position indicator

Operating Conditions and Standards

PIX Easy has been developed to meet the following conditions:

- Ambient temperature up to 40° C, without derating and natural cooling
- Corrosive atmospheres (possible adaptation)
- Storage conditions

In order to retain all of the functional unit's qualities when stored for prolonged periods, we recommend that the equipment is stored in its original packaging, in dry conditions, and sheltered.

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 (other values available on request)
- Less than or equal to 35°C on average over 24 hours
- Greater than or equal to – 5°C

Altitude

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

Atmosphere

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

Humidity

- Average relative humidity over a 24 hour period ≤ 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 (please consult us).

Standards

The PIX Easy compact range meets the following international standards:



- **IEC 62271-1: 2017:** High voltage switchgear and controlgear: common specifications
- **IEC 62271-200: 2011:** AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kA
- **IEC 62271-100: 2017:** High voltage switchgear and controlgear - Alternating current circuit breakers
- **IEC 62271-103: 2011:** High voltage switchgear and controlgear - Switches for rated voltages above 1 kV up to and including 52 kV
- **IEC 62271-102: 2018:** High voltage switchgear and controlgear - Alternating current disconnectors and earthing switches
- **IEC 60255:** Measuring relays and protection equipment - Common requirements
- **IEC 61869-2: 2012:** Instrument transformers - Current transformers
- **IEC 61869-3: 2011:** Instrument transformers - Inductive voltage transformers
- **IEC 61869-2: 2012 and IEC 61869-3: 2011:** Instrument transformers - Electronic current transformers

Arc Fault

Internal arc fault withstand

Integrating many of the proven components of the PIX Easy range, it has all the intrinsic features of the standard version i.e. high reliability and quality.

PIX Easy has been fully tested according to the latest IEC 62271-100: 2017 and IEC 62271-200: 2011, by internationally accredited test laboratories.

Switchgear units of the PIX Easy series are:

- Metal-enclosed; loss of service continuity category according to IEC 62271-200: 2011: LSC 2B-PM
- Type-tested
- Tested for internal arc faults (Internal Arc Classification AFLR)
- Dimensioned for indoor installation

Internal arc gas exhaust solutions

An internal arc exhaust duct can be provided to discharge the hot gases inside the room in the controlled manner.

An external gas exhaust duct can also be implemented to discharge the hot gases outside of the building.

Notes

LSC2B (Loss of Service Continuity IEC 62272-200)

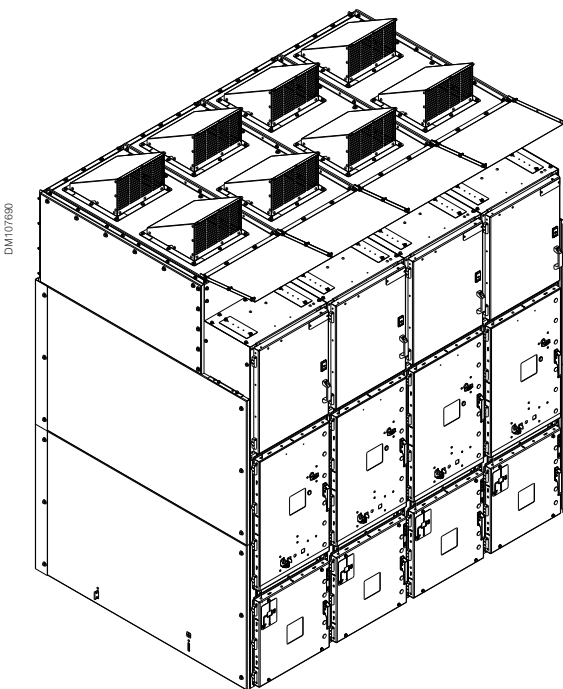
This category defines the possibility of keeping other compartments energised (in service) when opening a main circuit compartment.

IAC (Internal Arc Classification)

The metal enclosed switchgear is classified for internal arc protection as per IEC 62271-200: 2011 where AFLR is defined as follows:

Type of accessibility

- **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



Function/module description

Function/module description

Functional Overview	30
Choice of functional units	30
IC or FD type cubicle - Incomer or feeder	31
BC type cubicles - Bus section	33
BR type cubicle - Bus riser	34
BM type cubicles - Metering busbar earthing	35

PIX Easy with withdrawable vacuum circuit breaker has a comprehensive range of functions to suit all requirements for a lot of applications.

Selection guide

The following guide will help you to define the most appropriate protection corresponding to the type of applications you want to energize.

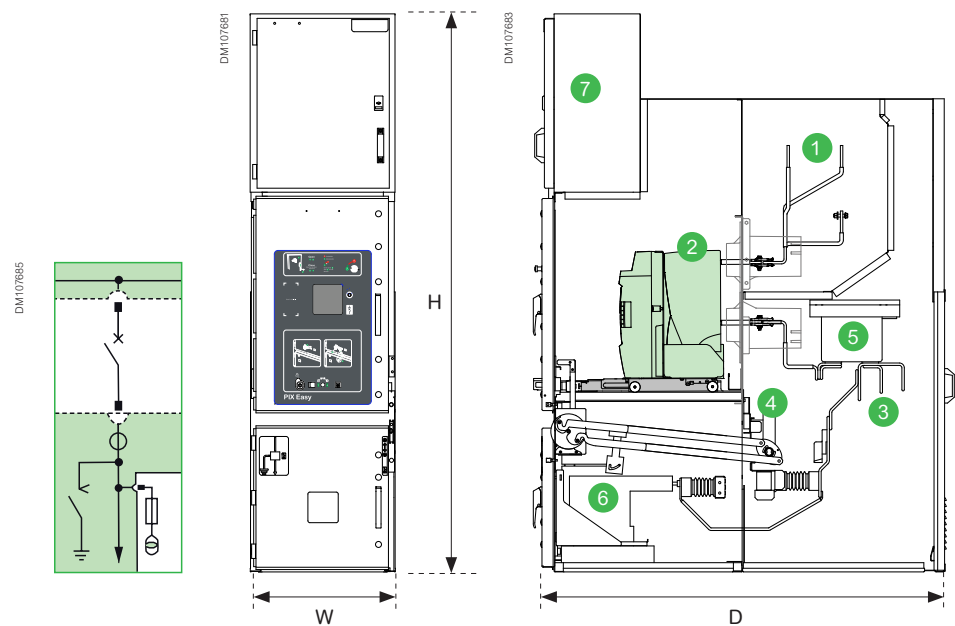
The equipments shown below are the main functions.

Additional functions are available upon request to answer specific requirements.

Function	Incomer	Feeder	Bus riser	Busbar coupler	Metering
Cubicle	IC	FD	BR	BC	BM
Device	Branch-circuit panel <ul style="list-style-type: none">• EasyPact EXE Vacuum Circuit - Breaker• Voltage transformers	Branch-circuit panel <ul style="list-style-type: none">• EasyPact EXE Vacuum Circuit - Breaker	Bus riser panel <ul style="list-style-type: none">• Optional voltage transformers	Bus section coupler panel <ul style="list-style-type: none">• EasyPact EXE Vacuum Circuit - Breaker• Optional current transformers• Optional earthing switch	Bus voltage transformer / bus earthing switch panel <ul style="list-style-type: none">• Voltage transformers• Bus earthing switch
Single line diagram	<div>DM107685</div>	<div>DM107687</div>	<div>DM107689</div>	<div>DM107688</div>	<div>DM107686</div>

Functional Overview

IC or FD type cubicle - Incomer or feeder



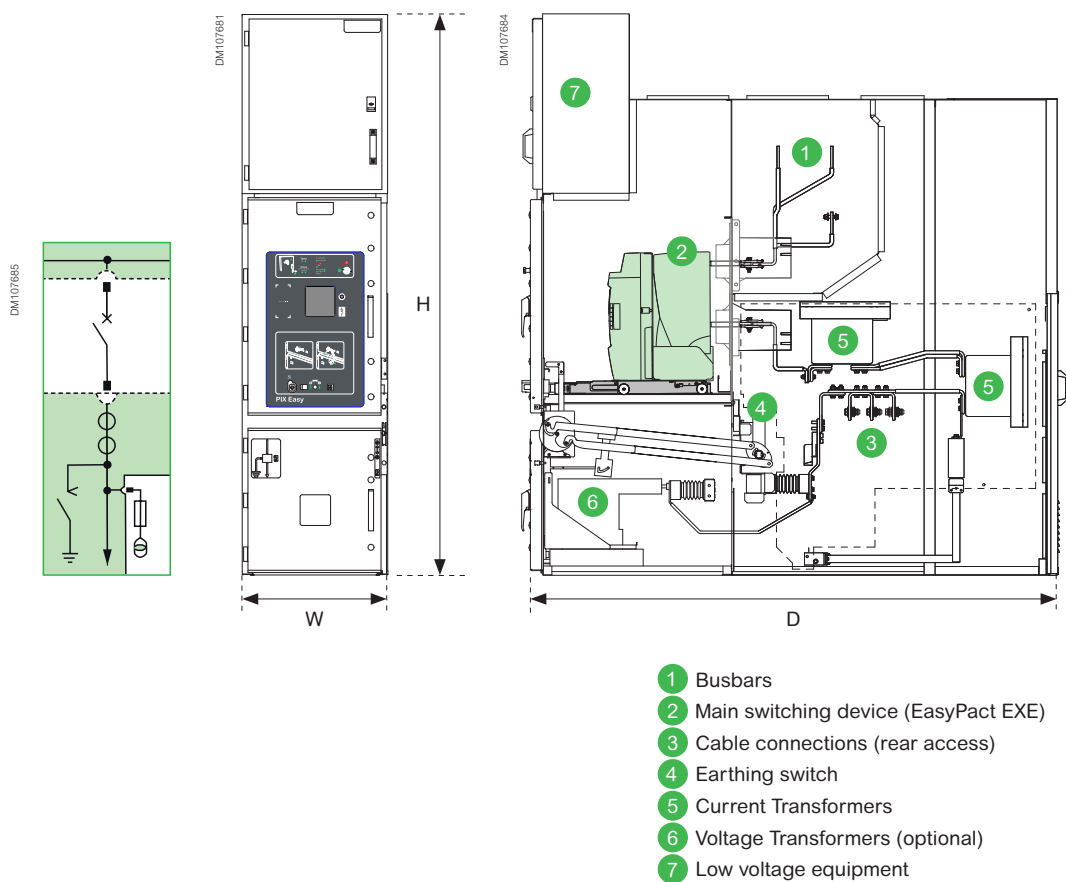
- 1 Busbars
- 2 Main switching device (EasyPact EXE)
- 3 Cable connections (rear access)
- 4 Earthing switch
- 5 Current Transformers
- 6 Voltage Transformers (optional)
- 7 Low voltage equipment

IC or FD				
Rated voltage	Ur	(kV)	17.5	
Breaking capacity		(kA)	25	31.5
Rated current - Vacuum circuit breaker		(A)		
	Ir	800	● (2)	● (2)
	Ir	1250	● (2)	● (2)
	Ir	2000	● (3)	● (3)
	Ir	2500	● (3)	● (3)
Rated peak withstand current	Ip	(kA)	66	82
Short-time withstand current	Ik	(kA)	25	31.5
	Duration	(s)	3	3
Dimensions	H (1)	(mm)	2300	
	D	(mm)	1660	
Approximate mass		(kg)	800(4) - 1000(5)	

- (1) With the standard LV cabinet
(2) Width 600 mm
(3) Width 800 mm
(4) For rated current up to 1250 A
(5) For rated current above 1250 A

Functional Overview

IC and FD type cubicle - Incomer or feeder

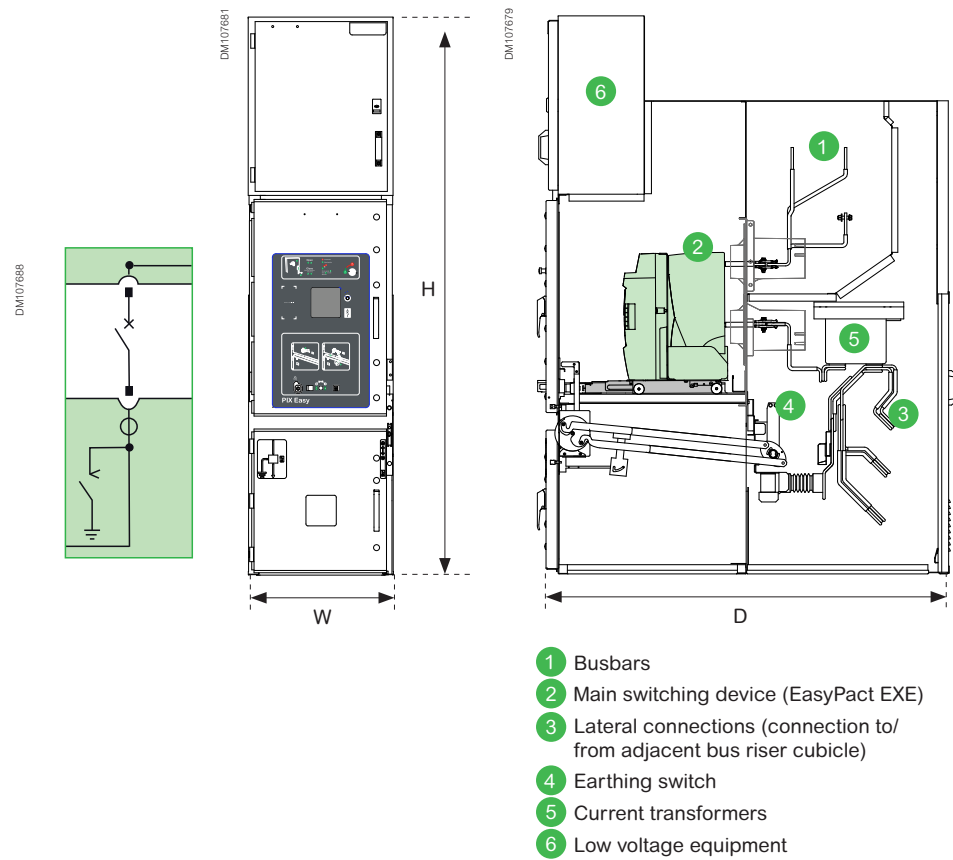


IC and FD				
Rated voltage	Ur	(kV)	17.5	
Breaking capacity		(kA)	25	31.5
Rated current - Vacuum circuit breaker		(A)		
	Ir	800	● (3)	● (3)
	Ir	1250	● (3)	● (3)
	Ir	2000	● (4)	● (4)
	Ir	2500	● (4)	● (4)
Rated peak withstand current	Ip	(kA)	66	82
Short-time withstand current	Ik	(kA)	25	31.5
	Duration	(s)	3	3
Dimensions	H ⁽¹⁾	(mm)	2300	
	D	(mm)	2160	
Approximate mass		(kg)	900 ⁽⁵⁾ - 1200 ⁽⁶⁾	

(1) With the standard LV cabinet
(3) Width 600 mm
(4) Width 800 mm
(5) For rated current up to 1250 A
(6) For rated current above 1250 A

Functional Overview

BC type cubicles - Bus coupler



BC				
Rated voltage	Ur	(kV)	17.5	
Breaking capacity		(kA)	25	31.5
Rated current - Vacuum circuit breaker		(A)		
	Ir	800	● (3)	● (3)
	Ir	1250	● (3)	● (3)
	Ir	2000	● (4)	● (4)
	Ir	2500	● (4)	● (4)
Rated peak withstand current	Ip	(kA)	66	82
Short-time withstand current	I _k	(kA)	25	31.5
	Duration	(s)	3	3
Dimensions	H ⁽¹⁾	(mm)	2300	
	D	(mm)	1660	
Approximate mass		(kg)	650 ⁽⁵⁾ - 850 ⁽⁶⁾	

(1) With the standard LV cabinet

(2) Contact us for the availability

(3) Width 600 mm

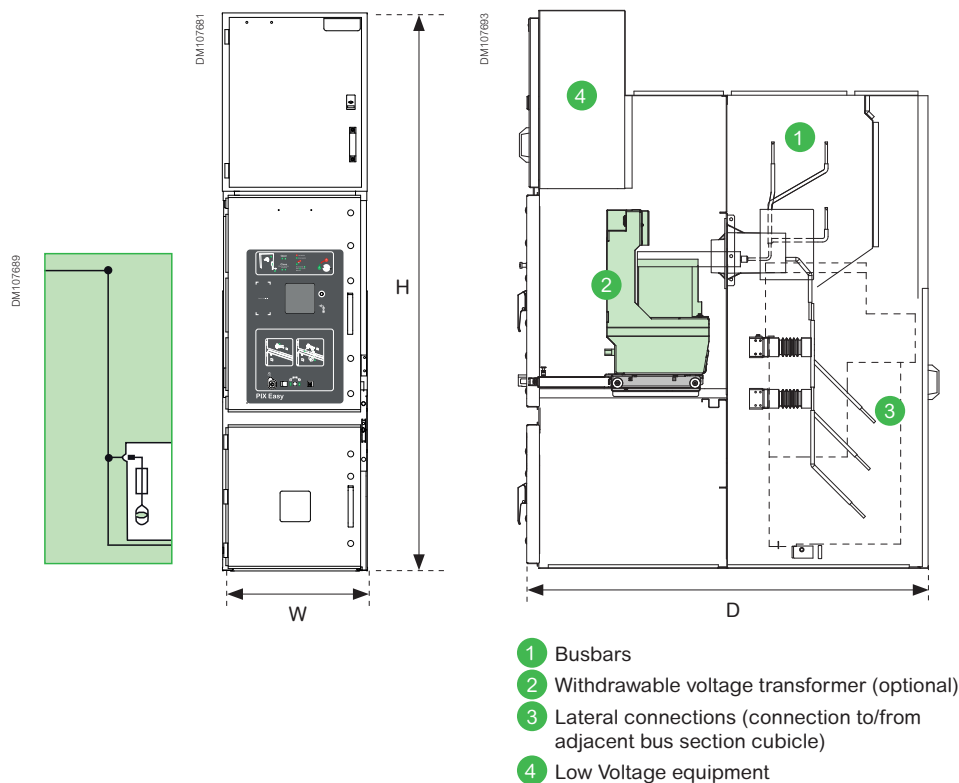
(4) Width 800 mm

(5) For rated current up to 1250 A

(6) For rated current above 1250 A

Functional Overview

BR type cubicle - Bus riser



BR				
Rated voltage	Ur	(kV)	17.5	
Breaking capacity		(kA)	25	31.5
Rated current - Vacuum circuit breaker		(A)		
	Ir	800	● (3)	● (3)
	Ir	1250	● (3)	● (3)
	Ir	2000	● (4)	● (4)
	Ir	2500	● (4)	● (4)
Rated peak withstand current	Ip	(kA)	66	82
Short-time withstand current	Ik	(kA)	25	31.5
	Duration	(s)	3	3
Dimensions	H ⁽¹⁾	(mm)	2300	
	D	(mm)	1650	
Approximate mass		(kg)	650 ⁽⁵⁾ - 850 ⁽⁶⁾	

(1) With the standard LV cabinet
(2) Contact us for the availability
(3) Width 600mm
(4) Width 800 mm
(5) For rated current up to 1250 A
(6) For rated current above 1250 A

Functional Overview

BM type cubicles - Busbar metering



BM				
Rated voltage	Ur	(kV)	17.5	
Breaking capacity		(kA)	25	31.5
Rated peak withstand current	Ip	(kA)	66	82
Short-time withstand current	I _k	(kA)	25	31.5
	Duration	(s)	3	3
Dimensions	H ⁽¹⁾	(mm)	2300	
	D	(mm)	1660	
	W	(mm)	600	
Approximate mass		(kg)	650	

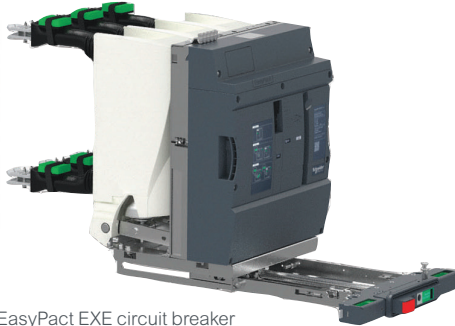
(1) With the standard LV cabinet
(2) Contact us for the availability
(3) Width 600mm
(4) Width 800 mm

Components and accessories

Components and accessories

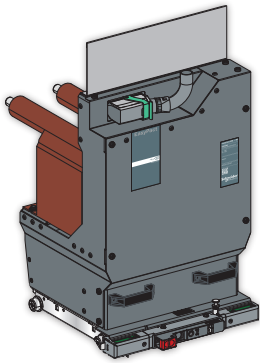
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PM108889



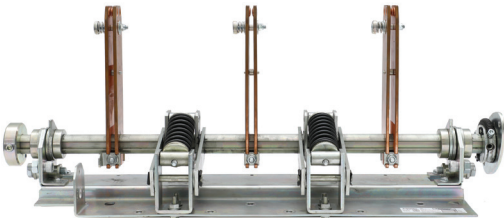
EasyPact EXE circuit breaker
(withdrawable)

PM108890



Metering device

PM108888



Earthing switch

The withdrawable parts:

- The circuit breaker, the disconnecter device or the metering device
- The lever-type propulsion mechanism for racking in-out
- Interlocks to fix the withdrawable parts onto the fixed part

Circuit breaker

A circuit breaker is a safety device enabling the switching and protection of electrical distribution networks. It helps to protect all components connected to the downstream network by opening the circuit during a fault.

The withdrawable EasyPact EXE vacuum circuit breaker is mounted on an integrated middle rolling truck enabling easy handling.

Metering device

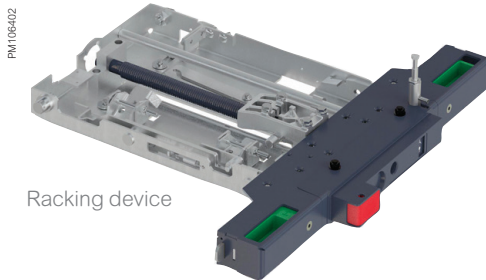
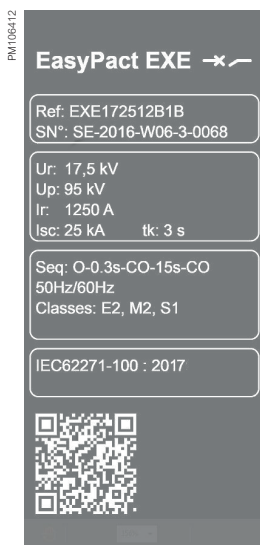
A withdrawable metering device with voltage transformers mounted on an integrated rolling trolley enables the measurement of the circuit voltage for metering purposes.

It can be disconnected from the main circuit by racking it out from the service position to the test position.

Earthing switch

The integrated earth switch with fault making capacity makes it possible to earth the cables or the Busbar (depending on the cubicle) and helps to ensure safety during maintenance.

As per IEC 62271-102: 2018 the integrated earth switch is E1 M0 Class.



Racking device

EasyPact EXE is our latest range of state of the art vacuum circuit breaker. Its design is the result of more than 40 years of Schneider Electric experience in switching devices. Its wide geographical deployment makes it a key component of PIX Easy equipment.

It has been designed to suit particularly applications such as : Infrastructure, commercial and Industrial Buildings, Industrial plants Distribution sub-stations. The materials used to manufacture this circuit breaker have been selected and designed to operate 10000 cycles.

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

Racking device

The racking device moves the circuit breaker from the disconnected position to the service position and vice versa.

EasyPact EXE racking device has a robust interlocking system with the switchgear door, the LV plug, the circuit breaker and the earthing switch.

The materials used to manufacture EasyPact EXE racking trolley sub-assemblies have been selected and designed to operate 2000 cycles under the conditions defined by the IEC standard.

According to IEC 62271-100: 2017

		Cubicle widths integrated EasyPact EXE breaker	
		600 mm	800 mm
Rated normal current	Ir A	800	•
		1250	•
		2000	•
		2500	•

According to IEC 62271-100: 2017

Rated voltage	Ur	kV	12 ⁽¹⁾ 17.5
Rated frequency	fr	Hz	50/60
Rated short duration power frequency withstand voltage	Ud	kV	28 38
Rated lightning impulse withstand voltage	Up	kV	75 95
Rated short circuit breaking current	Isc	kA	20 25 31.5
Rated duration of short circuit	tk	s	3

⁽¹⁾ Contact us for the availability

Circuit Breaker

General characteristics



According to IEC 62271-100: 2017

Common characteristics		12 kV ⁽¹⁾	17.5 kV
Rated short-time withstand current (Ik/tk)	kA/3s (50/60 Hz)	= Isc	= Isc
Rated operating sequence	O-3 min - CO-3 min - CO	•	•
	O-0.3 s - CO-3 min - CO	•	•
	O-0.3 s - CO-15 s - CO	•	•
Operating times	Opening	< 51 ms	< 51 ms
	Breaking	< 66 ms	< 66 ms
	Closing	< 71 ms	< 71 ms
Mechanical endurance	Class	M2	M2
Electrical endurance	Class	E2	E2
Rated single capacitor bank breaking current	A-class at 1250 A 25 kA	400-C2	400-C1 ⁽¹⁾
	A-class at 1250 A 31.5 kA	400-C1	400-C1 ⁽¹⁾

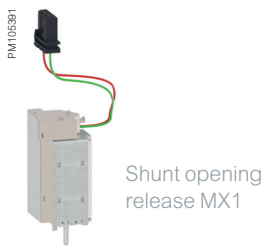
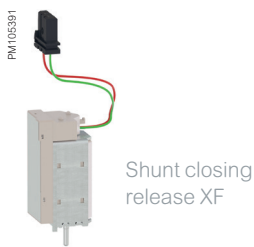
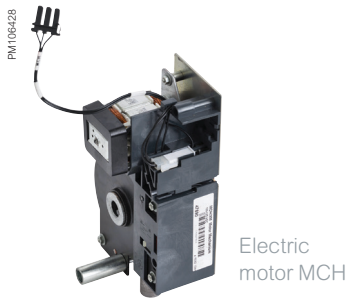
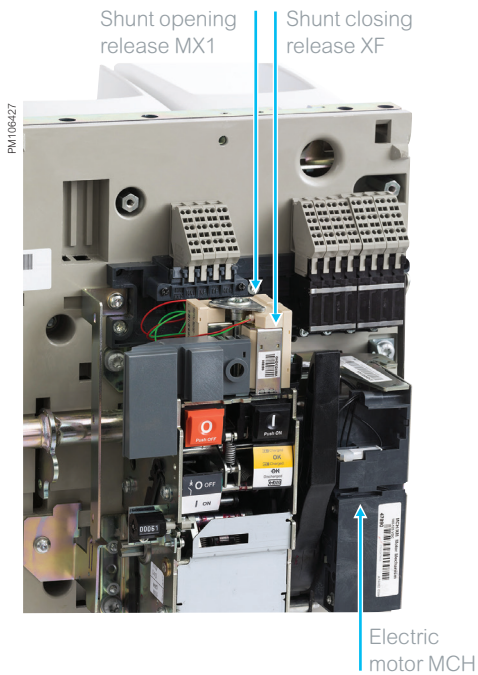
⁽¹⁾ Contact your Schneider Electric sales representative for more information.

Mechanical endurance

EasyPact EXE installed in normal service condition and with preventive maintenance program is designed up to :

Mechanical endurance	
Circuit breaker	M2 (IEC 62271-100: 2017) 10000 operating cycle
Racking trolley (disconnecting functions)	M1 (IEC 62271-102: 2018) 1000 operating cycle
MCH motor	10000 charging operations
MX/XF, MN releases	10000 operations

Circuit Breaker
 Remote control mandatory auxiliaries



The remote control auxiliaries comprises an electric motor (MCH) a shunt closing release (XF), and a shunt opening release (MX1)

Electric motor (MCH)

The electric motor operates to charge the closing spring as soon as it is connected to the auxiliary power supply. This allows the circuit breaker to close after opening according to the rated operating sequence.

A lever is located on the front of the circuit breaker that enables the closing spring to be charged manually if the auxiliary power supply is unavailable.

The electric motor is equipped with an electrical contact to indicate the «spring charged» status of the mechanism.

The electric motor includes a gear reducer.

Power supply	<ul style="list-style-type: none"> DC: 24-30 V, 48-60 V, 110-130 V, 200-250 V AC (50 Hz/60 Hz): 48-60 V, 100-130 V, 200-240 V
Operating range	0.85 to 1.1 Ua
Consumption (VA or W)	180
Motor overcurrent	2 to 3 In for 0.1 s
Charging time	≤7 s
CH contact	10 A/240 V

Shunt closing release (XF)

A shunt closing release operates to close the circuit breaker when the voltage at the terminals of the release is between 85% and 110% of its rated voltage. The closing release is designed to withstand permanent power supply.

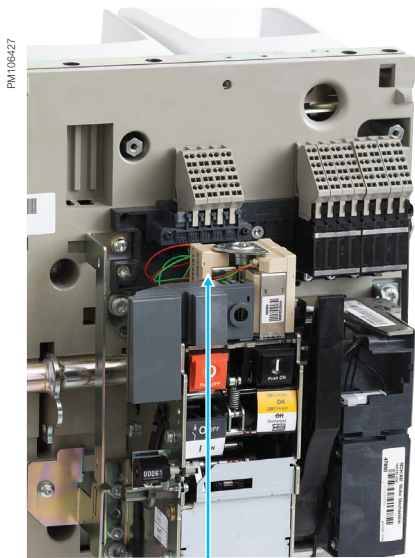
Power supply	<ul style="list-style-type: none"> DC: 24-30 V, 48-60 V, 100-130 V, 200-250 V AC (50Hz/60Hz): 24 V, 48 V, 100-130 V, 200-250 V 				
Operating range	0.85 to 1.1 Ua				
Consumption (VA or W)	<table> <tr> <td>Triggering</td> <td>200 (for 200 ms)</td> </tr> <tr> <td>Latched</td> <td>4.5</td> </tr> </table>	Triggering	200 (for 200 ms)	Latched	4.5
Triggering	200 (for 200 ms)				
Latched	4.5				

Shunt opening release (MX1)

A shunt opening release operates to 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 opening release is designed to withstand permanent power supply and to lock the circuit breaker in the «open» position as long as the voltage is maintained at its terminals.

Power supply	<ul style="list-style-type: none"> DC: 24-30 V, 48-60 V, 100-130 V, 200-250 V AC (50 Hz/60 Hz): 24 V, 48 V, 100-130 V, 200-250 V 				
Operating range	<ul style="list-style-type: none"> DC: 0.7 to 1.1 Ua AC: 0.85 to 1.1 Ua 				
Consumption (VA or W)	<table> <tr> <td>Triggering</td> <td>200 (for 200 ms)</td> </tr> <tr> <td>Latched</td> <td>4.5</td> </tr> </table>	Triggering	200 (for 200 ms)	Latched	4.5
Triggering	200 (for 200 ms)				
Latched	4.5				

EasyPact EXE can be equipped with a second opening release that can be either a shunt opening release or an undervoltage release.



Shunt opening release MX2 or Under voltage release MN



Shunt opening release MX2



Undervoltage release MN

Second shunt opening release (MX2)

The second shunt opening release operates to 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 opening release is designed to withstand permanent power supply and to lock the circuit breaker in the "open" position as long as the voltage is maintained at its terminals.

Power supply	<ul style="list-style-type: none"> DC: 24-30 V, 48-60V, 100-130 V, 200-250 V AC (50Hz/60Hz): 24 V, 48 V, 100-130 V, 200-250 V 	
Operating range	<ul style="list-style-type: none"> DC: 0.7 to 1.1 Ua AC: 0.85 to 1.1 Ua 	
Consumption (VA or W)	Triggering	200 (for 200 ms)
	Latched	4.5

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, and the undervoltage release might operate to open the circuit breaker.

The closing of the circuit breaker is possible when the voltage at the terminals of the release is equal to or exceeds 85% of its rated voltage. On the other hand, the closing of the circuit breaker is impossible as long as the voltage at the terminals is below 35% of the rated supply voltage.

Power supply	<ul style="list-style-type: none"> DC: 24-30 V, 48-60 V, 100-130 V, 200-250 V AC (50Hz/60Hz): 24 V, 48 V, 100-130 V, 200-250 V 	
Operating range	Opening	0.35 to 0.7 Ua
	Closing	0.85 Ua
Consumption (VA or W)	Triggering	200 (for 200 ms)
	Latched	4.5

Release combination table

MCH	•	•	•
XF	•	•	•
MX1	•	•	•
MX2		•	
MN			•

PM106429



Rotary type
contacts (OC)

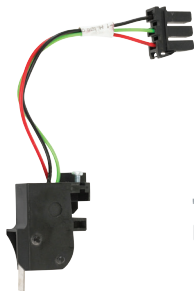
Position contacts (OC)

EasyPact EXE is equipped with one block of four position contacts as standard, and the Panel Builder may add one or two additional blocks of four contacts. The maximum number of position contacts is twelve.

Characteristics			
Standard delivery	1 (1 block of 4 contacts)		
Maximum quantity	3 (3 blocks of 4 contacts)		
Breaking capacity (A)	Standard	Min. load: 100 mA/24 V	
Cos φ: 0.3	V AC	240/380	10/6
	V DC	24/48	10/6 *
		125	10/6
		250	3

* standard contacts : 10A; optional contacts : 6A (temperature derating)

PM106430



"Ready to close"
PF contact

«Ready to close» contact (PF)

A «ready to close» contact (PF) indicates that the circuit breaker is ready to close in the following conditions:

- The circuit breaker contacts are open
- The operating mechanism closing spring is charged
- The opening pushbutton is not activated (by a keylock or manually)
- The opening shunt release is not energized
- The undervoltage release, if present, is energized

EasyPact EXE is always equipped with 1 «ready to close» contact (PF) for remote control.

Characteristics			
Standard delivery	1		
Maximum quantity	1		
Breaking capacity (A)	Standard	Min. load: 100 mA/24 V	
Cos φ: 0.3	V AC	240/380	5
	V DC	24/48	3
		125	0.3
		250	0.15

PM106431



Operation counter
(CDM)

Operation counter (CDM)

An operation counter counts the number of operating cycles (close-open) that the device has carried out.

EasyPact EXE is always delivered with an operation counter showing the number of close-open cycles that have been performed for the factory routine test (usually 50).

In order to maximize operator safety and minimize erroneous operations, PIX Easy provides a large number of integral interlocks. All the mandatory interlocks as per IEC are available and in addition, there are several optional interlocks that can be chosen for enhanced operatorsafety.

A list of basic interlocks to enhance operator safety are described below:

Interlock	Function of interlock	Method of operation of interlock
Between truck and low voltage plug	The truck cannot be actuated unless the low-voltage plug is inserted.	The rotary movement of the truck crank is blocked after one rotation. Do not apply force.
	The low voltage plug cannot be removed when the truck is not in disconnected position.	The low voltage plug is locked.
Between truck and earthing switch	The truck cannot be racked in if the earthing switch is ON.	The opening in the front door for the truck crank is locked.
	The earthing switch can no longer be switched on if the truck has left its disconnected position.	The interrogation slide below the earthing switch is locked. The insertion of the earthing switch lever is blocked.
Between the circuit breaker and the truck	Circuit breaker cannot be racked in or out while it is switched on.	Circuit breaker will be tripped once push button is pressed to insert Rack in handle.
	Circuit breaker cannot be switched on/off unless the truck is completely in its disconnected or service position.	The circuit breaker cannot be switched ON or OFF.
Between truck and cubicle	If the truck front frame is not locked in the cubicle, the truck cannot be actuated.	The crank cannot be inserted to the truck if both truck handles in the front frame are not moved outwards. Rotation of the crank not possible if both truck handles in the front frame are not moved outwards
	If the truck has left its disconnected position the truck front frame cannot be unlocked in the cubicle.	Both truck handles in the front frame are locked.
Between the truck and the front door (optional)	The front door can only be opened if the truck is in its test position.	The door lock knob can not be turned. Provision available in the front door to open the inerlock
	If the front door is opened, the truck cannot be moved into service position. This interlock is standard.	The crank cannot be inserted to the truck if the front door is opened.
	If the front door is not interlocked by the door lock knob, the truck cannot be actuated.	The opening in the front door for the truck crank is locked.
For the truck disconnected position (optional lock)	CB can be moved to service position only when key is inserted in the lock. Key is blocked in the lock when circuit breaker is in service position.	Crank access is available only after insertion of the key. Low Voltage plug cannot be disconnected when circuit breaker is in service position.

Protection, Monitoring and Control

Easergy P3 protection relays

Easergy P3 standard Universal applications



P3U10/20/30 = Universal protection

- Feeder and Transformer
- Motor
- Voltage
- Frequency
- Capacitor

Easergy P3 advanced Advanced applications with arc flash fault detection



- **P3F30** Feeder and Transformer
- **P3M30** Motor
- **P3G30** Generator
- **P3L30** Line differential and Distance
- **P3T32** Transformer differential type
- **P3M32** Motor differential
- **P3G32** Generator differential type

Solid protection meets unparalleled efficiency

The Easergy P3 protection relay family is based on proven technology concepts developed in close cooperation with customers. Easergy products have been designed around user-friendliness, a feature which is proven in our customer feedback day after day.

The Easergy P3 feeder manager has been developed to cover basic protection needs for OEMs, utilities and industrial applications. Thanks to its cost-effective and flexible design, the Easergy P3 provides an excellent alternative for various protection applications.

Easergy P3 combines further protection functions such as directional earth fault for feeder and motor protection.

Unparalleled efficiency

- Simple selection and ordering with EcoReal MV
- Faster delivery with on-the-shelf availability of standard configurations
- Simplified configuration with the new eSetup Easergy Pro setting tool

Better Connectivity

- Simpler operation and maintenance with the Easergy P3 SmartApp
- All communication protocols included natively, including IEC 61850: 2012
- Possibility to use two active communication protocols in the same time
- Increased number of inputs and outputs for more possibilities

Enhanced safety

- Embedded arc protection
- Built-in virtual injection testing
- Compliant to international standards (i.e. IEC 60255-1)

Ease of use

User-friendliness is a key benefit of Easergy P3, made to save time at every step of the project's life-cycle.

A great deal of effort has gone into designing the operational aspects of the new products. Setting and download/upload are much faster thanks to the unique eSetup Easergy Pro setting software which dramatically improves usability.

The informative human machine interface shows the information the user needs, with the support of customized legend texts.

Enhanced usability

The Easergy P3 protection relay concept has been extended with a number of features that make installation and testing of the relays even more efficient and user-friendly, like the virtual injection testing accessible with eSetup Easergy Pro setting software.



Protection, Monitoring and Control

Easergy Sepam protection system



Each functional unit can be equipped with a comprehensive protection, monitoring and control system comprising:

- Instrument transformers to measure the necessary electrical values (phase current, residual current, voltages, etc.)
- Protection relays, providing functions adapted to the part of the network to be protected
- Metering equipment, to inform operators
- Low voltage relaying, to provide control of the breaking device and of the withdrawable part
- Various auxiliaries: secondary circuit test units, etc.

Easergy Sepam: protection digital relays

Easergy Sepam is a range of digital monitoring protection and control units.

Easergy Sepam is the centre of the protection, monitoring and control system functional units: all the necessary protection, metering, control, monitoring and signalling functions are carried out by Sepam.

The Easergy Sepam range is a range of units defined to provide an optimal solution for each application, and includes (e.g.):

- Easergy Sepam S, substation incomer and feeder
- Easergy Sepam B, bus sectioning
- Easergy Sepam T, transformer feeder
- Easergy Sepam M, motor feeder
- Easergy Sepam G, generator feeder
- Easergy Sepam C, capacitor feeder

The Easergy Sepam range consists of the Easergy Sepam series 20, series 40, series 60 and series 80, a range of modular protection relays to adapt precisely to your needs.

Protection chain

The Easergy Sepam protection units combined with innovative current sensors, provide a comprehensive measurement, protection and energy management chain.*

A high-performance, economical solution

The modular Easergy Sepam offer provides a cost-effective solution tailored to every requirement.

Easy to order and install

All the components of the protection chain are referenced and can be delivered very quickly.

The power of a multi-functional digital unit

Easergy Sepam is more than a simple protection relay; it is a truly multi-functional unit offering, in particular:

- Circuit breaker diagnosis functions (switching counter and time, rearming time, cumulated broken A2)
- Direct circuit breaker control, whatever the type of release unit
- Remote equipment operation using the communication option

(*) Please check in the Sepam catalogue the sensor to use with each Sepam version.

Protection, Monitoring and Control

Easergy MiCOM protection system

PM108625



Easergy MiCOM offers varying levels of functionality and hardware

- **Series 30** is designed to meet the rigorous requirements of MV & HV applications with particular focus on feeder and transformer protection and control.
- **Series 40** fulfills the protection requirements for a wide market of utility and industrial systems and offers a complete range of protection functions.

Easergy MiCOM protection relays

Easergy MiCOM protection provides the user with a choice of cost-optimised solutions for specific protection requirements within the distribution network.

The Easergy MiCOM relay series offers comprehensive protective function solutions for all power supply systems, as well as for the various functional and hardware project stages.

With their modular design, the Easergy MiCOM device platforms provide the user with multifunctional equipment that can act as :

- Grid protection equipment, and
- Combined protection and control systems
- Easergy MiCOM devices integrate most standard communication protocols used in station control systems and SCADA systems
- Due to the continuous further development of these products, compatibility with technical progress in the field of switchgear and controlgear communication is enhanced

Protection, Monitoring and Control

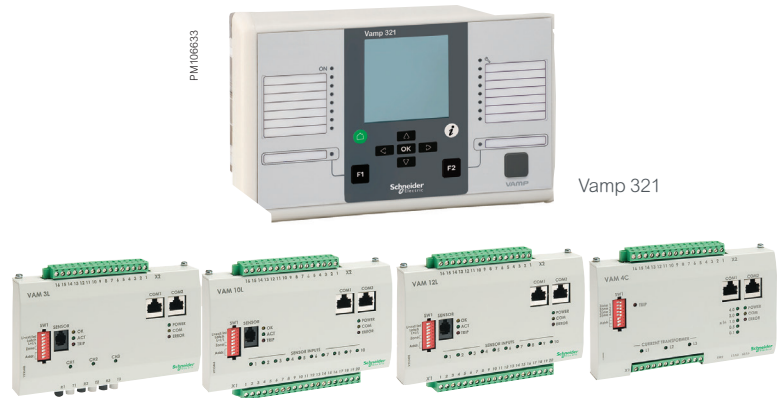
Arc fault protection

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 minimizes material damage to the installation in 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



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 operational 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 trippings due to dual tripping criteria; light & current.

Protection, Monitoring and Control

Arc fault protection

Arc fault detectors selection guide

Vamp 125	Vamp 121	Vamp 321 (+I/O units)*
 <p>PM106411</p>	 <p>PE90502</p>	 <p>PM106632</p>

Functions

The arc protection unit detects an arc flash in an installation and trips the feeding breaker.
An arc flash protection maximises personnel safety and minimises material damage caused by arc faults.

System features

- Typical operation on light only principle
 - Input for current criteria for I> and L> operation
 - Integrated 19 - 256 V AC/DC aux. supply
- Optimised for wind power and other small applications
- Up to 4 arc sensors
- Selective trip for 2 zones
- Operation time 1 ms with high speed output and 8 ms with a trip relay
- Non-volatile trip status
- Self-supervision
- Straightforward installation
- Cost efficient solution
- Operation on light only
- Up to 10 arc or smoke sensors
- Single trip contact
- Straightforward installation
- Operation time 9 ms (including the output relay)
- Cost efficient solution
- Self-supervision
- Binary input for blocking or resetting the unit (programmable)
- Possibility for double arc channel activation trip criteria
- BIO light transfer possibility to other device
- Flexible and modular system can be adapted to different targets requiring arc protection
- Central unit and modular units engineer a scheme to your requirements
- Continuous system self-supervision
- 3-phase current, zero-sequence voltage and current
- Event logs, disturbance recording and real-time clock
- Operation on simultaneous current and light or on light only
- Direct connection of arc sensors in the central unit without using I/O units
- 7 ms operation time with trip contact and 2 ms with high speed output (HSO)
- Programmable operation zones
- Communication protocol support for SCADA and automation interfacing
- Supports maximum 6 Digital Inputs and 8 Digital Outputs for object (CB) status and control (order option dependent)

Sensors

Point sensor - surface

- Arc detection from two compartments simultaneously
- Self-monitored
- Cable length adjustable from 6 m to 20 m down

Point sensor - pipe

- Self-monitored
- Cable length adjustable from 6 m to 20 m down

Loop sensor

- Monitors various compartments
- Small bending radius for easy installation

Benefits

- Reduces production losses
- Extended switchgear life cycle
- Reduced insurance costs
- Low investment costs and fast installation
- Enhancing people safety

IEC standards

* I/O units: 4 references available (VAM 3L, VAM 10L/LD, VAM 12L/LD, VAM 4C/CD). The choice is to be made according to the needs concerning the type and number of sensors. Please contact us.

Current and Voltage Transformers



Block Din type current transformers

- Single, Double or Triple primary
- 1 A or 5 A secondary current
- Class 0.2, 0.5 or 1 for measurement
- 5P10, 5P15 or 5P20 for protection

For specific burdens, or accuracy class please consult us.



Voltage transformers

- Primary voltage from $3/\sqrt{3}$ up to $15/\sqrt{3}$ kV
- First secondary voltage available in different ratios with burden up to 100 VA and accuracy class 0.5
- Secondary voltage available with burden up to 50 VA and protection class 3P

For specific burdens, or accuracy class please consult us.



Installation and Connection

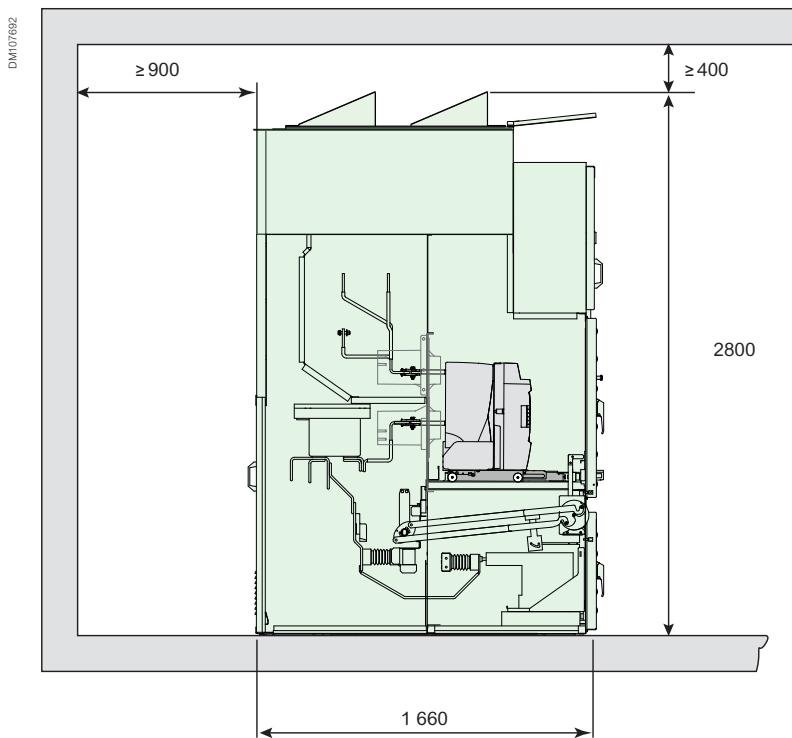
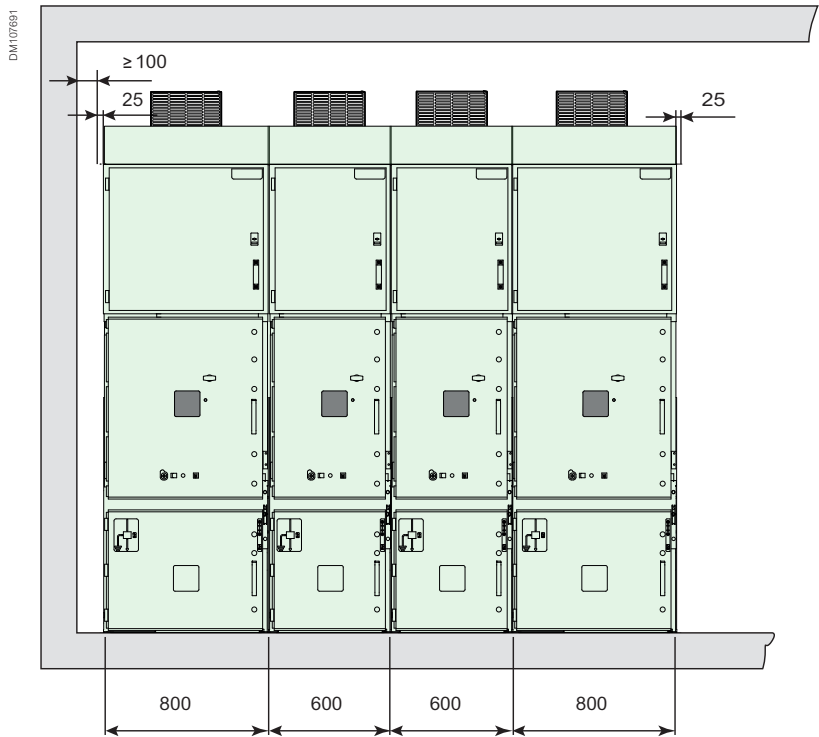
Installation and Connection

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Room Planing

Installation IAC internal tunnel

Switchgear room

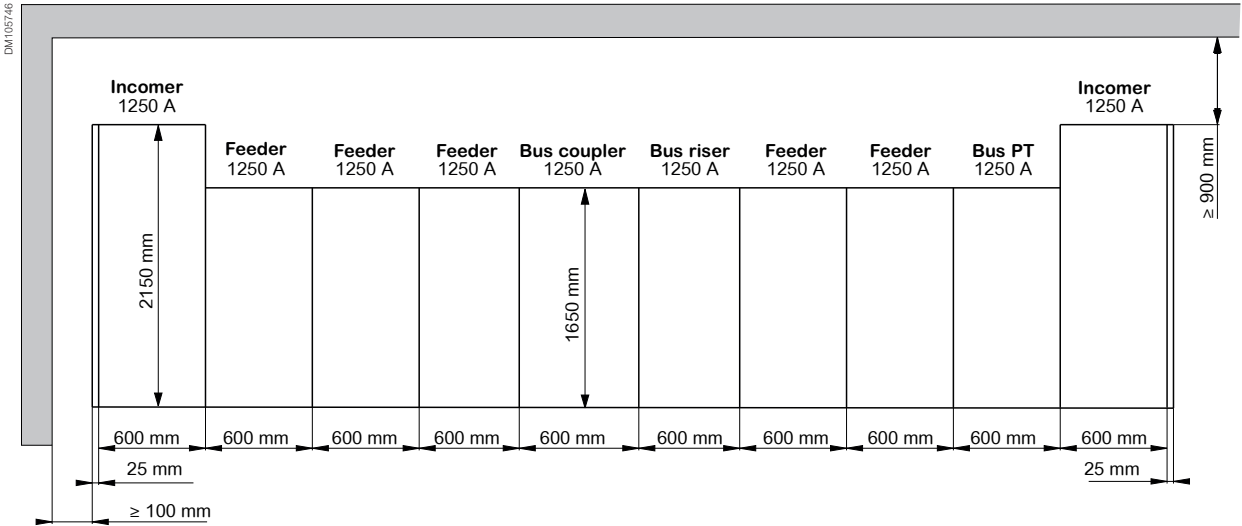


All dimensions are in 'mm'

Space allocation plan

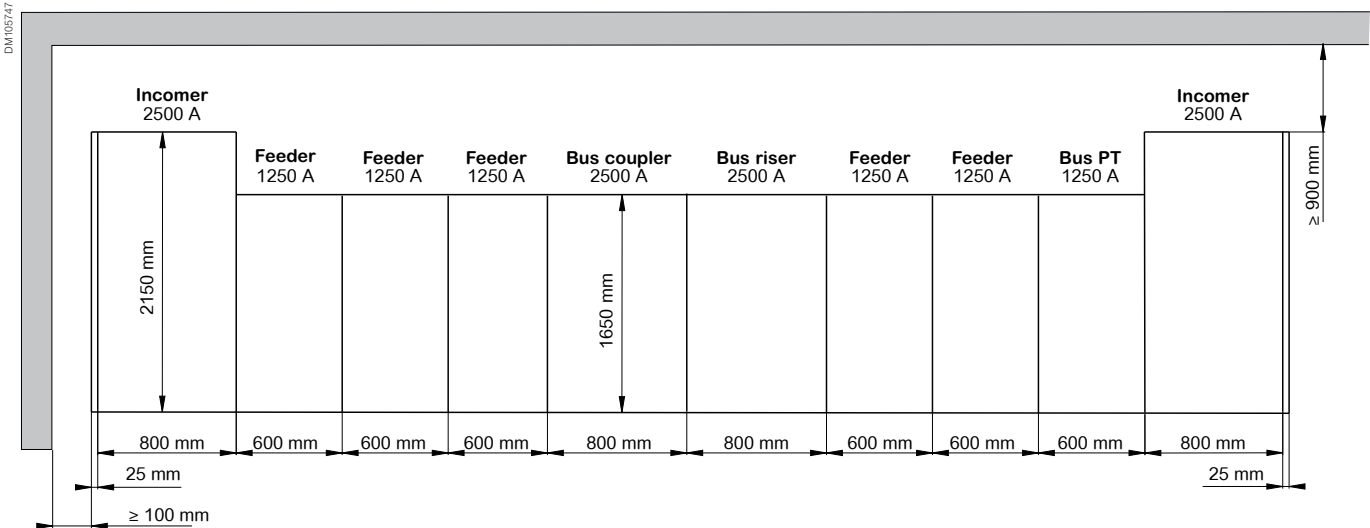
Installation example top view

PIX Easy with 2 incomers, 1 bus coupler, 1 bus riser, 1 metering, 5 feeders up to 1250 A:



Installation example top view

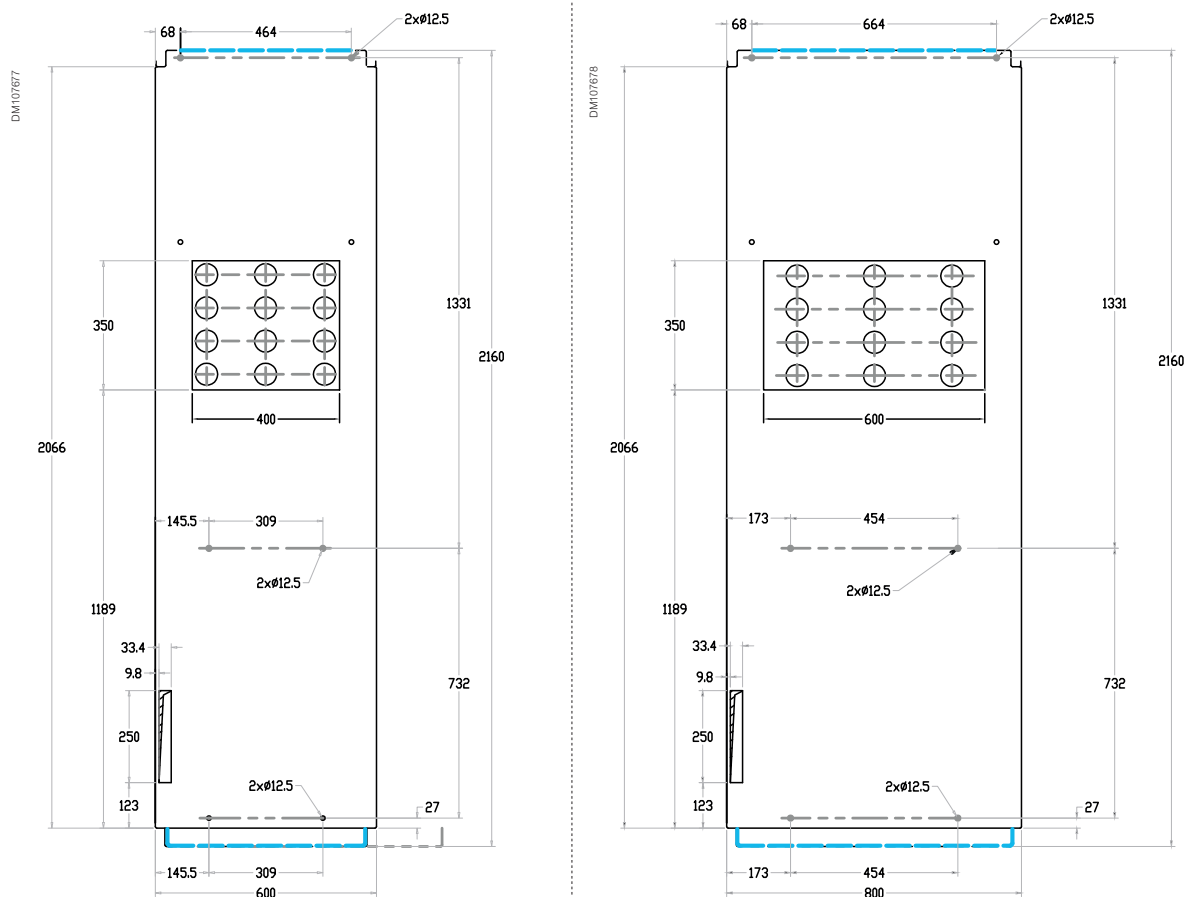
PIX Easy with 2 incomers, 1 bus coupler, 1 bus riser up to 2500 A, 5 feeders up to 1250 A and 1 bus voltage metering panel:



1 CT



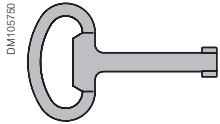
2 CTs



Operation accessories

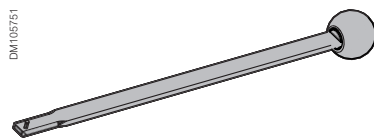
These accessories are supplied with the switchboard.

The switchgears in switchboard may be operated by the mean of the accessories.



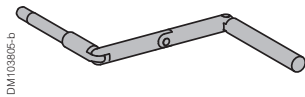
Double-bit key

- Standard double-bit key is provided to lock/unlock the door of the low-voltage cabinet where applicable



Operating lever for the earthing switch

- Operating lever to operate the earth switch of the switchgear from front of panel
- Ergonomical design offer the handle helps to ensure minimum effort by the operator to operate the earth switch



Crank for EasyPact EXE breaker trolley

- This crank is provided along with switchboard to rack-in and rack-out Easypact EXE breaker along with trolley inside the switchgear.
- The operation of racking-in and racking-out iof breaker s performed with the door closed, by inserting the crank in the respective slot,provided on the front door of each switchgear



TOOLS

schneider-electric.com

This international web site allows you to access all the Schneider Electric solutions and product information via:

- Comprehensive descriptions
- Range datasheets
- A download area
- Product selectors

You can also access information dedicated to your business and contact your Schneider Electric country support.

Web selector

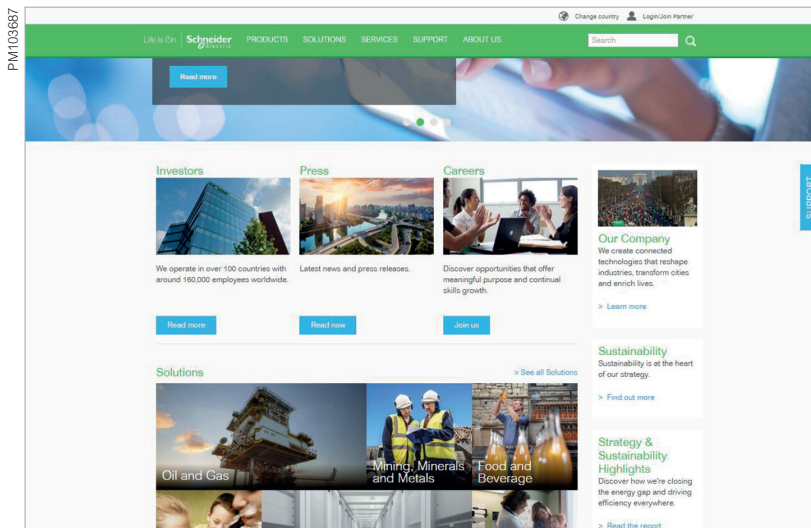
This site allows you to access the Schneider Electric products in just two clicks via a comprehensive range of datasheets, with direct links to:

- Complete libraries: technical documents, catalogs, FAQs, brochures
- You will also find illustrated overviews, news to which you can subscribe, and a list of country contacts

Training

Training allows you to acquire the expertise (installation design, work with power on, etc.) to increase efficiency and improve customer service.

The training catalog includes beginner's courses in electrical distribution, knowledge of MV and LV switchgear, operation and maintenance of installations, and design of LV installations to give a few examples.



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Schneider Electric Industries SAS
35, rue Joseph Monier - CS 30323
F92506 Rueil-Malmaison Cedex