ORMAZABAL
velatia

Medium voltage switchgear for
Substation Solutions

cpg.0 & cpg.1

Families of single and double busbar GIS-type cubicles

Up to 40.5 kV

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The quality of products designed, manufactured and installed by **Ormazabal** is backed by the implementation and certification of a quality management system, based on the international standard ISO 9001:2008.
Our commitment to the environment is reaffirmed with the implementation and certification of an environmental management system as laid down in international standard ISO 14001.

In view of the constant evolution in standards and design, the characteristics of the elements contained in this catalogue are subject to change without prior notification.

These characteristics, as well as the availability of components, are subject to confirmation by Ormazabal.

Introduction

Foreword

MV/MV and **HV/MV** substations are some of the most critical nodes in any electrical network.

The growing demand for electricity and the increased power in these substations requires a guaranteed maximum reliability and continuity of service in rated current levels in the **medium-voltage** cubicles.

After many years of experience in the design, development, manufacture and commissioning of gas-insulated switchgear (GIS) in secondary distribution, in 2005 **Ormazabal** launched the **cpg** system on the global markets:
High-performance, flexible and extensible GIS-type cubicles both single and double busbar.

In the last few years the **cpg** system has been extended with higher electrical values, such as up to 2500 A and up to 40.5 kV.

The **cpg** system has now been integrated into many applications for utilities, renewable energy, industry and major infrastructures. There are currently more than 6500 units of this system in service in more than 25 countries.

Ormazabal is the leading provider of customised solutions for utilities, energy end users, as well as for applications of renewable energy systems based on our own technology.

We promote the **development of the electric power sector** in relation to the challenges of future energy needs. We collaborate with the main local, regional and national companies in the electric power sector as part of our firm commitment to innovation in the field of **safety of people, reliability of networks, energy efficiency and sustainability**.

Our team of highly qualified professionals with a focus on innovation, has been developing in-house products and solutions throughout a consolidated history covering more than a century, always establishing a close relationship with our customers focusing on achieving mutual benefits in the long term.

Velatia is a family-run, industrial, technological and benchmark global group operating in the areas of electrical networks, electronics and communication networks, as well as in the consulting, security and aeronautics component sectors, where safety, efficiency and reliability are highly valued.

Our customer orientation has led to the development of our extensive network of factories in Spain, France, Germany, Poland, Brazil, Mexico and China, helping to meet our customers' needs in more than 50 countries.

The solutions of the companies that make up **Velatia** aim to create a world that is better connected, more sustainable, more intelligent, better communicated, safer, and more human.

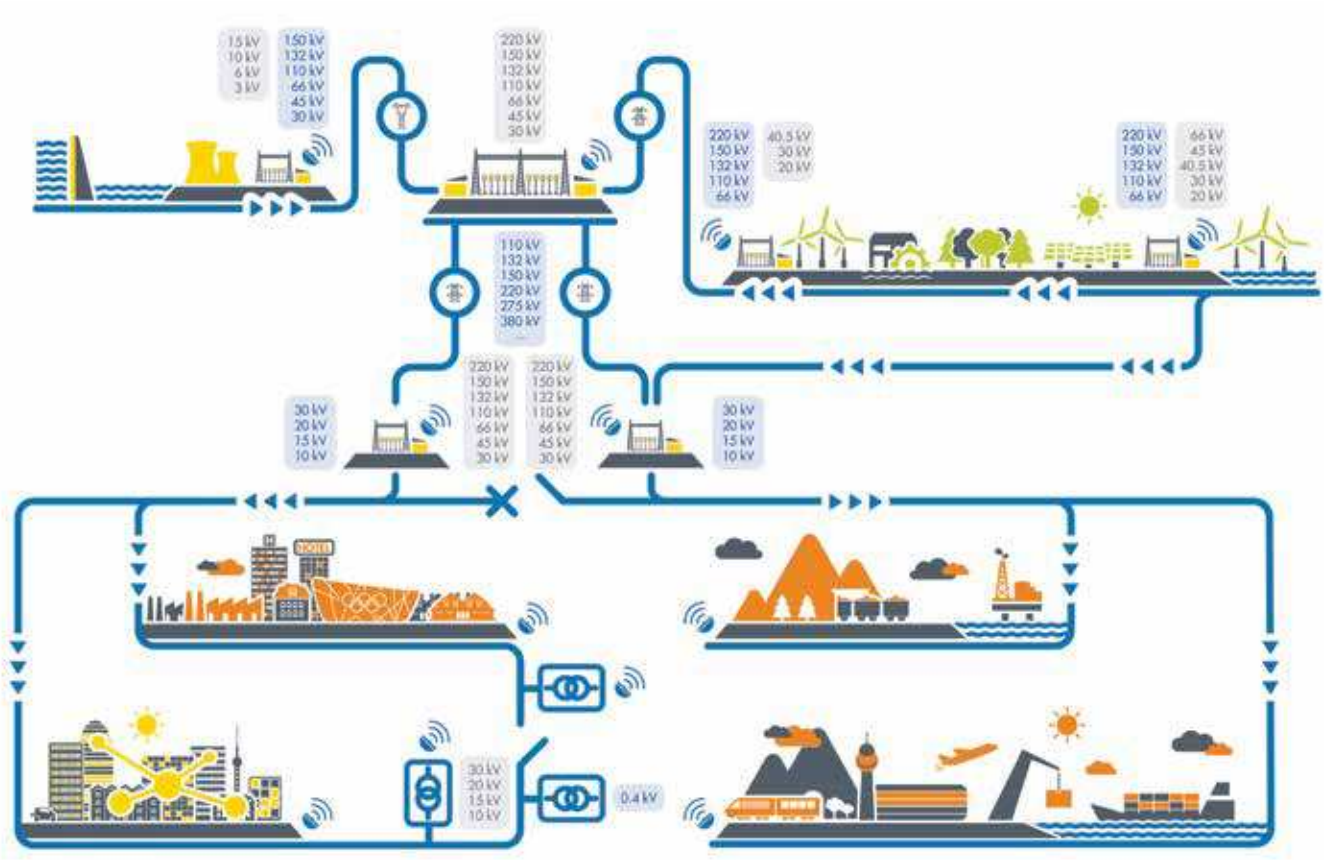
Cyberjaya data centre Kuala Lumpur (Malaysia)

UNAM: Mexico Autonomous National University Mexico City (Mexico)

Spanish electrical company substation (Spain)

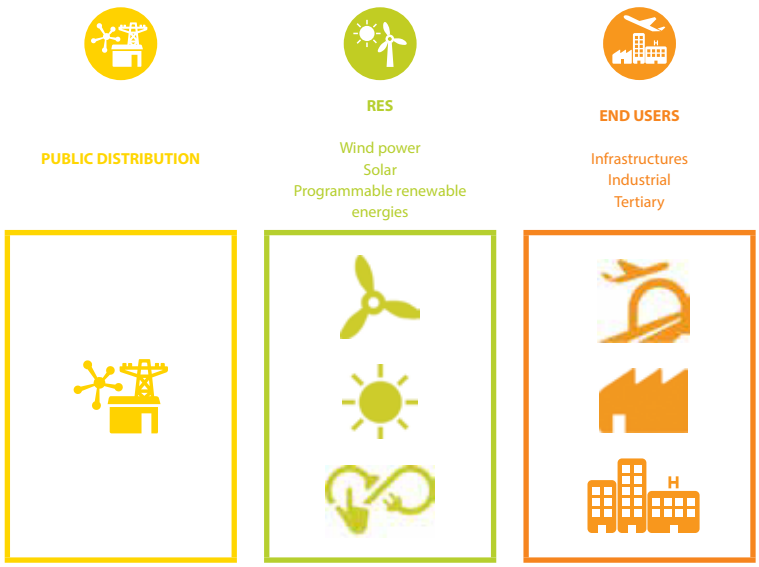
Its electric network

«Your trusted partner for reliable and intelligent electric power networks»



Your business and SSS applications

Our close relationship with our customers and our **in-depth knowledge** of the electric business are our keys to success, allowing us to offer **substation solutions (SSS)** based on of high added value products and services adapted to the needs of the utilities, end users of electricity and renewable energies.



Our product map (SSS and DNS)

We believe that **excellence** does not lie solely in offering **effective products and services**, but also in the ability to respond to **individual requirements** and **demands**.

We provide our customers with personalised projects for efficient energy distribution via **primary and secondary distribution equipment** and **solutions**.

Our lines of business

SSS: Substation solutions for primary distribution

DNS: Secondary distribution network solutions

Our products for your segment

SSS

cpg.1	cpg.0	gae1250kmax	cibor / nvl.cibor	transformа Power transformers	ormacontainer
					

DNS

cgm.3	gae	ga	cgmcosmos [IEC - ANSI/IEEE]	cgmcosmos [HN]
				

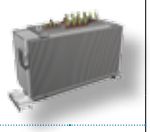
ekorsys family

Protection, automation and control

Advanced measurement, detection & analysis, monitoring and communications

Low-Voltage Board

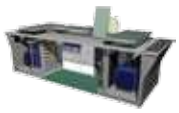
transformа **Distribution transformers**

	Conventional	Non-conventional: transforma.tpc	Non-conventional: transforma.fine	Non-conventional: Extended range of solutions
Oil				
Biodegradable natural dielectric liquid	**organic**			

Concrete prefabricated transformer substations (TS)

Underground	Indoor switching and surface	Compact
		

Concrete enclosures for transformer substations (TS)

Underground	Indoor switching and surface	Modular
		

Prefabricated metal TS	CEADS	Breaking substations
		
Metal enclosure for TS	**Photovoltaic substation**	**Portable substation**
		

Main characteristics

Security

Protection for people, the environment and their electrical installations.

Particular attention is paid to **personal safety** of operators and the general public, even **in fault conditions.**

Internal arc

The **cpg** cubicles have been designed to withstand the effects of an internal arc conforming to IEC 62271-200 (class IAC).

Gas-filled and screened

The cutting and connecting devices are housed in lifetime hermetically sealed stainless steel **gas tanks**. This provides resistance according to the **normal service conditions for indoor switchgear** referred to in IEC 62271-1.

The whole power circuit is fully insulated, including the cable terminals, and it is all screened, earthed and installed inside a metal enclosure.

Interlocks

The **cpg** cubicles come as standard with mechanical and electrical interlocks in accordance with IEC 62271-200, allowing safe and reliable operation.

The interlocks prevent unsafe operations:

- They prevent the feeder disconnector from opening if the circuit-breaker is closed
- They make it impossible to close the feeder disconnector and the earthing switch at the same time
- They allow the access cover to the medium voltage cable compartment to be opened when the earthing switch and circuit-breaker are closed

Padlocks, keyed and electrical interlocks are optionally available based on customer specifications

Indicators

Additional safety with the use of:

- **Position indicators** for the position of the connection switchgear: Visual indication in the mimic diagram, validated by the **kinematic chain test** in accordance with current standards (IEC 62271-102)
- **Capacitive** indicators of presence/ absence of voltage (IEC 61243-5). Permanent indication (multi-LED) and optional contacts for remote signalling and performing electromagnetic interlocks **cpg**.1)
- Signalling gas pressure inside each of the gas tanks in the cubicles, via volt-free contacts (**cpg**.1 family)

Reliability

Helps maintain the continuity of your mains electric supply

Lifetime sealtight insulation

Insulation inside a stainless steel gas tank provides an extended service life and requires no maintenance of the active parts.

Installation, assembly on site, extension and replacement **with no need to handle gas**.

Environmental adaptation

Resistance to normal environmental conditions stipulated in standard IEC 62271-1 *.

(*) For other special conditions, please contact **Ormazabal**.

Routine tests 100%

All switchgear is 100% subjected to routine electrical and mechanical tests in accordance with the relevant standards. We also perform 100% water-tightness tests on our switchgear as a routine test in order to guarantee reliability throughout its service life.

- Water-tightness test
- Power frequency test
- Main circuit resistance measurement
- Mechanical operation test
- Partial discharge test

Other tests performed

- Seismic tests (optional)

Efficiency

High-value features that make your tasks easier

Modularity

The design **cpg** is totally modular. Provides flexibility in diagram configuration.

Extensibility and replacement

Single extensibility on both sides with no need to handle gas, allowing a fast and economical installation process, in a small space and without having to move contiguous cubicles to remove a central cubicle.

Ergonomics

cpg provides the following easy-to-use features:

- Front access for installation of medium voltage cables and fuses
- Connection and testing of single cables
- Simple interface with operators
- Horizontal fuse holder
- Effortless operations of the driving mechanisms
- Optimised dimensions
- Secure access to the control and signalling area
- Connection reliability of control and signalling circuits via connectors

Sustainability

Continuous efforts to reduce gas emissions

Environmentally friendly:

- Continued decrease in the use of greenhouse gases
- Emission of negligible SF_6 during the manufacturing processes
- Reduction of the rate of gas leakage in the switchgear
- SF_6 gas not used during the installation
- Ongoing measures to reduce our environmental footprint
- End of life management
- Use of highly recyclable materials.
- Continuous investment in research on alternative materials and in-house technology
- Reduced dimensions of the cubicle room, due to its front access and its design with no removable switchgear

Continuous innovation

Helps maintain the continuity of your mains electric supply

A team of professionals focused on innovation, provides a constant supply of new developments and updates, such as:

- New integral protection and automation functions
- Cable fault preventive diagnostics
- Partial discharge (PD) detection for network diagnostics

Technical details

Family

cpg.0
With single busbar

v

Circuit-breaker

vl

Circuit-breaker with side connection on the left

f

Fuse protection

fl

Fuse protection with side connection on the right

s

Disconnector

rb

Busbar rise

c

Busbar coupling

pt

Busbar earthing

cpg.1
With double busbar

v2

Circuit-breaker

f2

Fuse protection

s2

Disconnector

cl

Longitudinal busbar coupling

ct

Transversal busbar coupling

Applicable electrical standards

IEC	
IEC 62271-1	Common specifications for high-voltage switchgear.
IEC 62271-200	Alternating current metal-enclosed switchgear for rated voltages above 1 kV and up to and including 52 kV.
IEC 62271-103	Switches for rated voltages above 1 kV and below 52 kV.
IEC 62271-102	Alternating current disconnectors and earthing switches.
IEC 62271-105	High voltage alternating current switch-fuse combinations.
IEC 62271-100	High-voltage alternating current circuit-breakers.

For other regulations, contact **Ormazabal**.

Technical details

Electrical characteristics

			cpg.0			cpg.1		cpg.0		cpg.1	
Rated voltage	Ud	[kV]	**24**	**36**	**40.5**	**24**	**36**	**27**	**38**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60					60			
Rated current	Ir										
Busbars and cubicle interconnection		[A]	Up to 2500		Up to 1600	Up to 2500		Up to 2250[2]		Up to 2250[2]	
Outgoing line[1]		[A]	Up to 2500		Up to 1250	Up to 2000		Up to 2250	Up to 1200	Up to 2000	
Rated short-term withstand current											
with t_k = 1 s – 3 s	I_k	[kA]	25 / 31.5					25 / 31.5			
Peak value (Max)	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82					65 / 82			
Rated insulation level											
Industrial frequency rated withstand voltage [1 min]	U_d	[kV]	50 / 60	70 / 80	95 / 118	50 / 60	70 / 80	60 / 66	80 / 88	60 / 66	80 / 88
Lightning impulse rated withstand voltage	Up	[kV]	125 / 145	170 / 195	185 / 215	125 / 145	170 / 195	125 / 145	170 / 195	125 / 145	170 / 195
Internal arc classification in accordance with IEC 62271-200	IAC		AFL [R] 25 / 31.5 kA 1 s			AFL [R] 25 / 31.5 kA 1 s		AFL [R] 25 / 31.5 kA 1 s		AFL [R] 25 / 31.5 kA 1 s	
Protection grade			IP3X / IP65 (Gas tank)[2]								
Category of loss of service continuity		LSC	LSC2								
Compartmentalisation class			PM								

[1] Fuse protection cubicle = 200 A [2] For other values, contact **Ormazabal**

Driving mechanisms

		Vacuum circuit-breaker		Disconnector	
		cpg.0	cpg.1	cpg.0	cpg.1
Auxiliary circuits					
Tripping coil					
Rated voltage[3]	[V]	125 V_{dc}	125 V_{dc}	–	
Max. consumption	[W]	56	280	–	
Undervoltage coil					
Rated voltage[3]	[V]	125 V_{dc}		–	
Peak current	[A]	≤ 20	≤ 11	–	
Motorised units					
Rated voltage[3]	[V]	125 V_{dc}	125 V_{dc}	125 V_{dc}	
Average consumption	[W]	55	250	55	85
Motor operation time	[s]	< 15	< 15	< 10	< 10
Peak current	[A]	< 5	< 4.5	< 5	< 5

[3] For other configurations, please contact **Ormazabal**

Service conditions

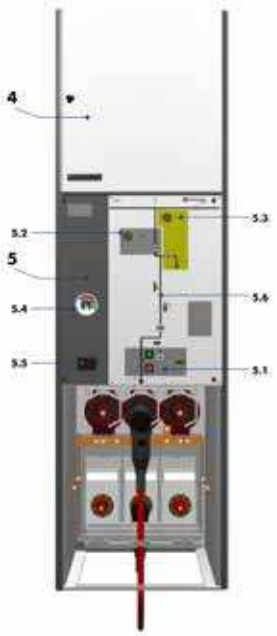
Type of switchgear	Indoor	
Ambient temperature		
Minimum | Maximum	- 5 °C[4] | + 40 °C[4]	23 °F[4] | 104 °F[4]
Maximum mean ambient temperature, measured over a 24-hour period	+ 35 °C	95 °F
Relative humidity		
Maximum mean relative humidity, measured over a 24-hour period	< 95 %	
Maximum height above sea level	1000 m[4]	3250 feet[4]
Solar radiation	Negligible	
Ambient air pollution (dust, smoke, corrosive and/or flammable gases, vapours or salt)	acc. to normal service conditions indicated in IEC 62271-1.	

[4] For other conditions, please contact **Ormazabal**.

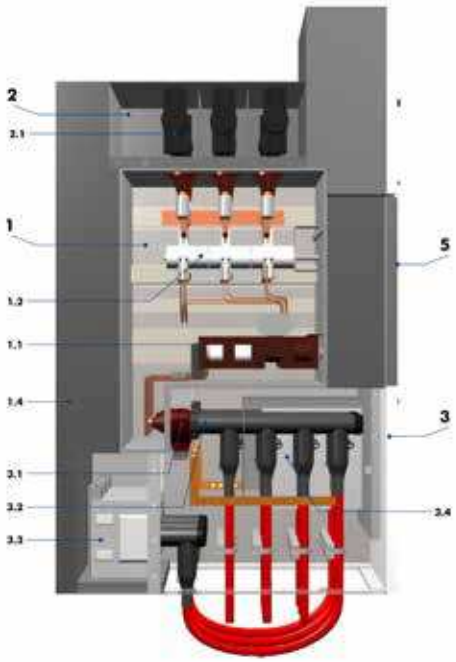
Construction structure

cpg.0

Front view

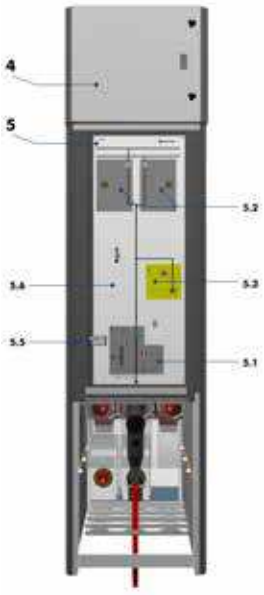


Side view

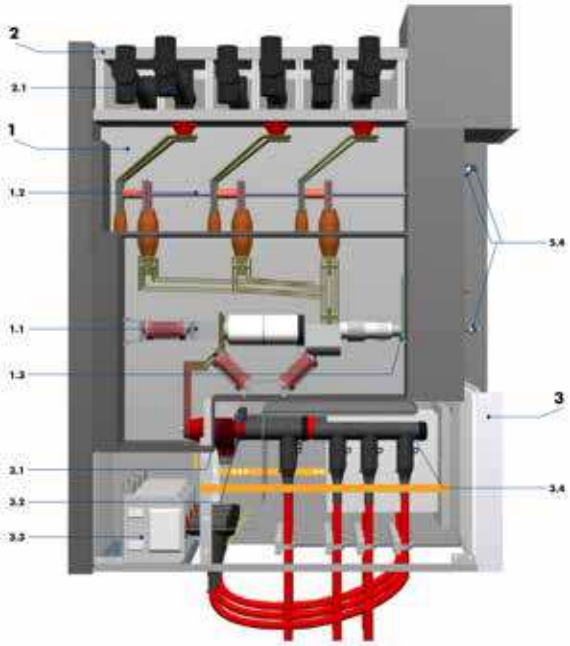


cpg.1

Front view



Side view



1. **Gas tanks**
   - 1.1. Vacuum circuit-breaker
   - 1.2. Three-position disconnector (**cpg**.0) / Feeder disconnector (**cpg**.1)
   - 1.3. Earthing switch (**cpg**.1)
   - 1.4. Gas pressure relief duct
2. **Busbar compartment**
   - 2.1. Main busbars
3. **Base:** Cable compartment
   - 3.1. Bushing
   - 3.2. Current transformers
   - 3.3. Voltage transformers
   - 3.4. Terminals
4. **Low-voltage compartment**
5. **Operation interface**
   - 5.1. Circuit-Breaker operation driving mechanism
   - 5.2. Driving mechanism for feeder disconnectors
   - 5.3. Earthing disconnector mechanism
   - 5.4. Pressure gauge: Pressure gauge(**cpg**.0) / Pressure switch(**cpg**.1)
   - 5.5. Voltage presence/absence indicator
   - 5.6. Mimic diagram

Design characteristics

Key components

Vacuum circuit-breaker

Compact circuit breaker with vacuum switching technology and excellent reliability, certified according to IEC 62271-100, including extended electrical endurance (class E2) with fast reclosing cycle and, as a result, maintenance-free for the whole of its service life.

Circuit-breaker

		cpg.0	cpg.1
Opening capacity			
Short-circuit (asymmetry)	[kA]	25 / 31.5	25 / 31.5
DC		< 40 %	< 40 %
No-load cable-charging breaking capacity (I4a)	[A]	31.5 (24 kV) 50 (36 / 40.5 kV cpg.0)	
Capacitor banks breaking capacity	[A]	400	
Electrical endurance		E2	
Automatic reclosing sequence		O-0.3"-CO-15"-CO	
Mechanical endurance		M2	
Rated current	[A]	Up to 2500 (24 / 36 kV) Up to 1250 (40,5 kV)	Up to 2000
Rated short-time withstand current	[kA / 1 s - 3 s]	25 / 31.5	
Opening time	[ms]	< 45	

Characteristics:

- Vacuum switching
  - Manual operation by push button (lockable)
- Motorised driving mechanism
  - Spring charging time <15 seconds
- Operational coils:
  - Voltage release opening coil. Second optional opening coil.
  - 1 closing coil
  - 1 undervoltage coil (optional)

Disconnector

High-performance disconnector designed and developed by **Ormazabal**.

Disconnector and earthing switches

		cpg.0	cpg.1
Disconnector			
Mechanical endurance		M1	M1
Rated current	[A]	24 / 36 kV: Up to 2500 40.5 kV: Up to 1600	Up to 2000 A
Short-time current	[kA –1 / 3 s]	25 31.5	
Earthing disconnector			
Making capacity	[kA]	62.5 (50 Hz) / 65 (60 Hz)	62.5-80 (50 Hz) / 65-82 (60 Hz)
Electrical endurance		E2*	

In combination with circuit breaker

Characteristics:

- Independent drive and levers for the operations:
  - Connection - disconnection [option of motorised driving mechanism]
  - Disconnection- earth connection [option of motorised driving mechanism]
  - cpg.0-f: 3 positions (connection - disconnection - earth connection)

Main busbars

The function of the main busbars is the electrical connection between cubicles.

They have a single-phase arrangement and are located on the upper sealed gas tank. This allows modularity and future extensibility with no need to handle gas on site.

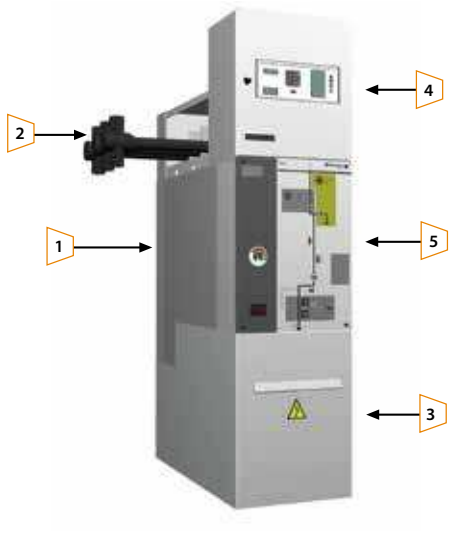
This upper busbar assembly is composed of three independent, cylindrical, shielded, solid-insulated, copper conductors (6 conductors in double busbar configurations). The cubicles are connected using a busbar section and "T" or "L" shaped connectors.

The whole set is protected against dirt and condensation; in addition, it has a metal cover to protect it against impacts.

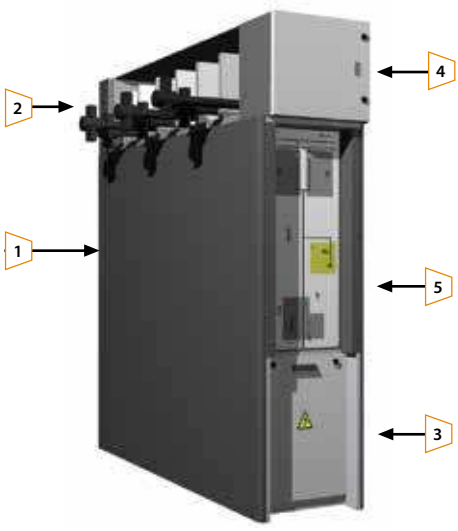
Busbars are designed to withstand thermal and dynamic stress from rated short-time currents (25-31.5 kA / 1 or 3 s) and rated current permanently up to 2500 A.

Main compartments

The **cpg** system presents a structure divided into independent compartments:



cpg.0



cpg.1

1. Gas tanks
   Circuit-breaker/disconnector compartments
2. Busbar compartment
3. Base: Cable compartment
4. Low-voltage compartment
5. Operation interface

Driving elements compartment

The **lifetime sealed driving elements compartment**, houses the switching and operation switchgear, where the insulating medium is gas SF_6.

cpg.0 contains a single gas tank, while **cpg.1** is characterised by having one gas tank for the circuit breaker and the earthing switch, and a gas tank for each feeder disconnector.

Made of stainless steel, it is designed and tested to withstand an internal arc. The gases generated as a result of an internal arc are cooled and can optionally be channelled through a duct located at the rear.

The following elements are located inside, depending on their functionality:

- Feeder disconnector and earthing switch
- Vacuum circuit-breaker
- Fuse holders

Using upper and lower bushings it is possible to connect to the main busbar and medium voltage cables, respectively.

The gas pressure is tested in each cubicle by means of a pressure switch with a volt-free contact, allowing it to be used as a remote alarm.

Characteristics:

- **Lifetime sealed** insulation system
- **Tested** against internal arc
- **Stainless steel – IP65 rating**
- **Main circuit**, breaking **and connecting device**
- **Plug-in terminal for external bushings** acc/ EN 50181
- **Pressure indicator:**
- **Relief diaphragm**

Driving mechanism

The **driving mechanism** is used to perform opening and closing operations on the medium voltage circuits.

The front distribution of the driving mechanisms and the use of levers allows safe, comfortable and simple operations with minimum effort.

The front **mimic** diagrams include the position indicating devices. Maximum reliability verified by kinematic chain test of the signalling mechanism in accordance with IEC 62271-102.

Characteristics:

- **Mimic** and push-buttons
- **Position signalling (kinematic chain)**
  - Breaking and connection elements
  - Fuse trip
- Voltage capacitive indicator
- **Interlocks (electrical and mechanical)**
- Optimised operator interface

Main busbar compartment

Located at the top of the cubicle, it is used to house the busbar (electrical connection between the medium voltage cubicles).

Each of the phases that make up the busbar incorporates solid and shielded insulation, earthed by means of the compartment's specific earthing bar.

Due to this single-phase arrangement, the cubicle is very reliable in terms of service continuity.

The installation of an optional phase segregation assembly using earthed metal plates allows it to withstand internal arcs.

Optionally, toroidal current transformers and plug-in voltage transformers can be installed in this compartment, which do not require metering cubicles.

Characteristics:

- Single-phase screening arrangement (optional)
- Solid and screened busbars
- External assembly
- Optional: Toroidal current transformers and plug-in voltage transformers

Cable compartment

The **cable compartment**, located in the lower front section of the cubicle, has a cover interlocked with the earthing switch, thus allowing front access to the medium voltage cables.

The external cone type bushings allow the toroidal current transformers and the connection of insulated medium voltage cables to be installed on them.

Characteristics:

- Up to 4 * screened terminals with reinforced connection (bolted) per phase
- Clamping flanges for medium voltage cables
- Earthing bars
- Effortless connections
- Optional: Toroidal current transformers, plug-in voltage transformers and auto-valves

(*) Up to 6 terminals in **cpg.0** (2000 / 2500 A)

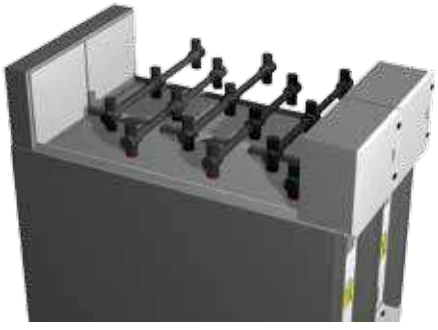
Low-voltage compartment

The **low voltage compartment**, located at the top of the cubicle and independent from the medium voltage compartments.

Characteristics:

- Compartment independent **from the medium voltage**
- Ready **for the installation of protection relays, as well as control and measurement equipment**
- Factory assembled and tested, **according to the customers requirements**
- **Standard, compact design** for the installation of **Ormazabal** protection relays and automation units, as well as **great adaptability** for protection relays, control and measurement units from other manufacturers, as well as equipment provided by the customer
- **Custom size and design**

Optionally, connectable low-voltage compartments can be supplied for the location of signalling elements and intervention of motorised functions.



Protection and automation

cpg is used in a wide variety of areas in primary distribution, which generally include protection and control systems to provide related functions for each application.

cpg is suitable for use in substations with conventional protection relays as well as where a combination of several protection relays and control systems is required. The devices are installed in the cubicles' low voltage compartment. The indicators and controls are integrated in the front door of the low voltage compartment.

Protection

- Protection functions such as:
  Differential protection
  Remote protection
  Instant overcurrent protection
  Earth fault protection
  Overload protection
  Protection against over/under voltage
  Protection against over/under frequency
  Power directional protection
  Protection against load imbalance
  Automatic restart, etc.
- Substation protection
- Supply to customers of medium voltage
- Protection of switching substations and industrial customers
- Generator set protection unit

Automation

- Automation and control
- Remote control
- Automatic transfer
- Earth-fault detection

Communication

A wide variety of interfaces and protocol structures are available for communication with the control system, depending on the type of device used. The connection is made using a data cable or an optical fibre cable, depending on the system.

ekorsys family

ekorsys family is the generic name of all protection units, automation, control and communication elements and systems designed, developed and manufactured by **Ormazabal**.

The basic products and systems that can be integrated into the **cpg** cubicles are given below:

Protection:

ekor.rpg

Meterings

- Current: Ammeter function

Protection Functions

- Phase overcurrent: 50 / 51
- Earth overcurrent: 50N / 51N
- Ultra-sensitive earth leakage protection. 50Ns/51Ns
- Thermometer (external trip): 49T
- Recloser 79

Communications

- Front port configuration: DB9 RS232
- Remote control of port at the rear RS485 (5 kV) – RJ45
- Protocol: MODBUS (RTU)
- Adjustment and monitoring program **ekor**.soft (optional)

ekor.rps-tcp

Communications

- Ports: RS-232, RS-485, FOC
- Protocols:
  MODBUS, PROCOME, IEC-60870-5-101, IEC-60870-5-103, DNP3.0, IEC-61850

Protection **ekor**.rps-cc and **ekor**.rps-dd

- Phase overcurrent: 3 x 50 / 51
- Earth overcurrent: 50N / 51N
- Inverse sequence currents / current imbalance: 46-46FA
- Switch fault 50BF
- Second harmonic braking
- Ultrasensitive earth overcurrent: 50Ns / 51Ns
- Ultrasensitive earth overcurrent: 3 x 67
- Directional fault and sensitive earth fault: 67N, 67Ns
- Isolated neutral directional (67N) 67NA
- Controlled voltage overcurrent: 51 V
- Fuse fault
- Thermal image: 49

To view more characteristics, go to the next page

Additional protection **ekor**.rps-dd

- Maximum frequency / minimum frequency / frequency derivative: 81M / 81m / 81R
- Directional power: 32
- Overvoltage phase / minimum voltage phase / negative sequence overvoltage: 3 x 59 / 3 x 27 / 47
- Neutral overvoltage: 59N / 64

Control functions

- Three-phase recloser: 79
- Recloser for single-phase trips due to overcurrent: 79
- Supervision of the closing/tripping coil: 74
- Recloser for restart after trip due to frequency trip: 79
- Synchronism control: 25
- Self-diagnosis of the state of protection

Metering

- Phase, neutral and sensitive neutral current.
- Power factor
- Single and compound voltages.
- Current maximeter.
- Energies
- Inverse sequence
- Powers
- Total harmonic distortion (THD)

Data gathering

- Chronological incident record.
- Log of maximum and minimum meterings.
- Chronological fault record.
- Disturbance recorder

ekorsys: Automation and control

- Remote control
  - **ekor**.uct
  - **ekor**.ccp
  - **ekor**.rci
- Automatic transfer
  - **ekor**.stp
  - **ekor**.ccp
  - **ekor**.rtk
- Fault detection
  - **ekor**.rci

Advanced metering communication and management

- **ekor**.gid

Dispatching centre

Software

- **ekor**.soft

For more information, please contact **Ormazabal** or visit www.ormazabal.com

Type of modules

cpg.0-v

Single busbar circuit-breaker cubicle

Includes a vacuum circuit-breaker and a three-position disconnector in series with it. Both components are inside the operation elements compartment.

Electrical characteristics								
Rated voltage	U_n	[kV]	**24**	**36**	**40.5**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60			60	
Rated current							
General busbar	Ir	[A]	Up to 2500		Up to 1600	Up to 2250**	
Feeder	Ir	[A]	Up to 2500		Up to 1250	Up to 2250*	Up to 1200
Short-time rated withstand voltage at industrial frequency (1 min)							
Between phases and earth	Ud	[kV]	50	70	95	60	80
Via the isolating distance	Ud	[kV]	60	80	118	66	88
Lightning impulse rated withstand voltage							
Between phases and earth	Up	[kV]	125	170	185	125	170
Via the isolating distance	Up	[kV]	145	195	215	145	195
Internal arc classification in accordance with IEC 62271-200	IAC		AFL[R] 25 / 31.5 kA 1 s				
Circuit-breaker							
Rated short-term withstand current (main circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Rated making and breaking capacity							
Mainly active current breaking capacity	I1	[A]	Up to 2500*		Up to 1250	Up to 2250	Up to 1200
Short-circuit breaking capacity.	I_{sc}	[kA]	25 / 31.5				
Capacitive current capacity. Capacitor bank		[A]	400				
Nominal operating sequence							
With no automatic reclosing			CO-15 s-CO / CO-3 min-CO				
With automatic reclosing			O-0.3 s-CO-15 s-CO / O-0.3 s-CO-3 min-CO				
Circuit-breaker category							
Mechanical endurance (operation class)			M2				
Electrical endurance (class)			E2				
Feeder disconnector							
Rated short-term withstand current (main circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Feeder disconnector category							
Mechanical endurance			M1				
Operating cycles (breaks in short-circuit)- class			E0				
Earthing switch							
Rated short-term withstand current (earthing circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	62.5 / 80 (50 Hz) - 65/82 (60 Hz)			65	
Main switch making capacity (peak value)	I_{ma}	[kA]	62.5 / 80 (50 Hz) - 65/82 (60 Hz)			65 / 82	
Earthing switch category							
Mechanical endurance			M1			M0	
Operating cycles (breaks in short-circuit)- class			E2 (in combination with circuit breaker)				

* With forced ventilation ** For other values, please contact **Ormazabal**

Applications

Main transformer protection, feeder protection, busbar coupling protection, capacitor bank protection and auxiliary services transformer protection.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Control pressure gauge with volt-free contact

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Three-position disconnector

- ☐ Motorised feeder disconnector
- ☐ Motorised earthing switch
- ■ Voltage presence indicator

Vacuum circuit-breaker

- ☐ Motor
- ■ Tripping coil
- ☐ 2nd tripping coil
- ■ Closing coil
- ☐ Undervoltage coil
- ☐ Blocking open/close push-button

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 4 cables per phase
- ☐ Toroidal current transformers
- ☐ Plug-in voltage transformer

Low-voltage compartment

Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.0-v

$I_{outgoing}$ [A]	a [mm] (inch)	h [mm] (inch)	h_p [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
630	[600] (23.6)	[2125] (83.7)	[665] (26.2)	[1015] (40.0)	[280] (617.3)
1250	[600] (23.6)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[850] (1873.9)
1600	[700] (27.6)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[900] (1984.2)
2000/2500	[1000] (39.4)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[1100/1200] (2425.1/2645.6)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.0-vl

Single busbar circuit-breaker cubicle with side connection on the right

Includes a vacuum circuit-breaker and a three-position disconnector in series with it. Both components are inside the switch compartment.

Electrical characteristics							
Rated voltage	U_n	[kV]	**24**	**36**	**40.5**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60			60	
Rated current							
General busbar	Ir	[A]	Up to 2500		Up to 1600	Up to 2250**	
Feeder	Ir	[A]	Up to 1250				
Side connection	Ir	[A]	Up to 1250				
Short-time rated withstand voltage at industrial frequency (1 min)							
Between phases and earth	Ud	[kV]	50	70	95	60	80
Via the isolating distance	Ud	[kV]	60	80	118	66	88
Lightning impulse rated withstand voltage							
Between phases and earth	Up	[kV]	125	170	185	125	170
Via the isolating distance	Up	[kV]	145	195	215	145	195
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s				
Circuit-breaker							
Rated short-term withstand current (main circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Rated making and breaking capacity							
Mainly active current breaking capacity	I1	[A]	Up to 2500*		Up to 1250	Up to 2250	Up to 1200
Short-circuit breaking capacity.	I_{sc}	[kA]	25 / 31.5				
Capacitive current capacity. Capacitor bank		[A]	400				
Nominal operating sequence							
Without reclosing			CO-15 s-CO / CO-3 min-CO				
With reclosing			O-0.3 s-CO-15 s-CO / O-0.3 s-CO-3 min-CO				
Circuit-breaker category							
Mechanical endurance (operation class)			M2				
Electrical endurance (class)			E2				
Feeder disconnector							
Rated short-term withstand current (main circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Feeder disconnector category							
Mechanical endurance			M1				
Operating cycles (breaks in short-circuit)- class			E0				
Earthing switch							
Rated short-term withstand current (earthing circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	62.5 / 80 (50 Hz) - 65 / 82 (60 Hz)			65 / 82	
Main switch making capacity (peak value)	I_{ma}	[kA]	62.5 / 80 (50 Hz) - 65 / 82 (60 Hz)			65 / 82	
Earthing switch category							
Mechanical endurance			M1			M0	
Operating cycles (breaks in short-circuit)- class			E2 (in combination with circuit breaker)				

* With forced ventilation ** For other values, please contact **Ormazabal**

Applications

Main transformer protection, feeder protection, busbar coupling protection, capacitor bank protection and auxiliary services transformer protection.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Control pressure gauge with volt-free contact

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Three-position disconnector

- ☐ Motorised feeder disconnector
- ☐ Motorised earthing switch
- ■ Voltage presence indicator

Vacuum circuit-breaker

- ☐ Motor
- ■ Tripping coil
- ☐ 2nd tripping coil
- ■ Closing coil
- ☐ Undervoltage coil
- ☐ Blocking open/close push-button

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 4 cables per phase
- ☐ Toroidal current transformers
- ☐ Plug-in voltage transformer

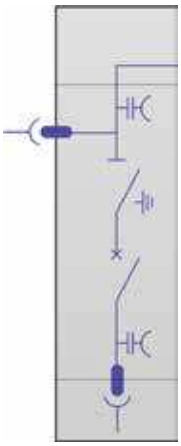
Low-voltage compartment

Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions



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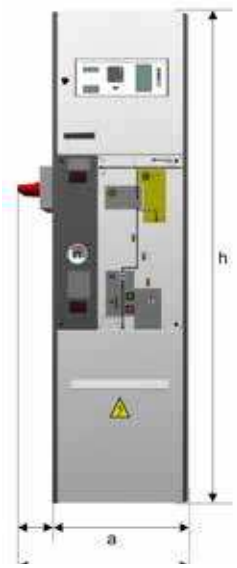


$I_{outgoing}$ [A]	a [mm] (inch)	ap [mm] (inch)	h [mm] (inch)	h_p [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
1250	[600] (23.6)	[789] (31.1)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[<1200] (<2645.6)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.0-f

Single busbar fuse protection cubicle

Fitted with a three-position switch-disconnector (closed / open / earthing), including fuse protection. The fuses are housed inside sealtight fuse holder tubes, which are in turn inside the switch compartment, reinforcing its level of insulation.

The three-core opening switch via combined action due to a fuse blowing can be motorised as an option.

Electrical characteristics

Rated voltage	U_n	[kV]	**24**	**36**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60		60	
Rated current						
General busbar	Ir	[A]	Up to 2500		Up to 2250	
Transformer outgoing line	Ir	[A]	200			
Short-time rated withstand voltage at industrial frequency (1 min)						
Between phases and earth	Ud	[kV]	50	70	60	80
Via the isolating distance	Ud	[kV]	60	80	66	88
Lightning impulse rated withstand voltage						
Between phases and earth	Up	[kV]	125	170	125	170
Via the isolating distance	Up	[kV]	145	195	145	195
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s			
Switch-disconnector						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Mainly active current breaking capacity	I1	[A]	630			
Main switch making capacity (peak value)	I_{ma}	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Switch category						
Mechanical endurance			M1			
Operating cycles (breaks in short-circuit)- class			E3		E2	
Combined switch-relay take-over current						
I_{max} breaking current according to $TD_{itransfer}$			> 800			
Earthing switch						
Rated short-term withstand current (earthing circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	1			
Value	I_p	[kA]	2.5 / 2.6		2.6	
Earthing switch making capacity (peak value)	I_{ma}	[kA]	2.5 / 2.6		2.6	
Earthing switch category						
Mechanical endurance (manual)			M0			
Operating cycles (breaks in short-circuit)- class			E2			

* For higher values, please contact **Ormazabal**.

Applications

Auxiliary services transformer protection.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Fuses combined with switch-disconnector
- ■ Control pressure gauge with volt-free contact

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Three-position switch-disconnector

- ☐ Motorised switch-disconnector
- ■ Voltage presence indicator

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 4 cables per phase
- ☐ Toroidal current transformers
- ☐ Plug-in voltage transformer

Low-voltage compartment

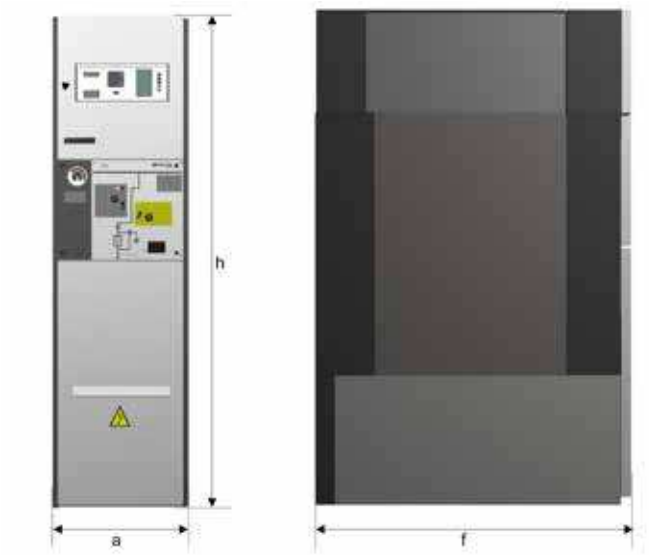
Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.0-f



$I_{outgoing}$ [A]	a [mm] (inch)	h [mm] (inch)	h_p [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
200	[600] (23.6)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[550] (1212.5)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.0-fl

Protection cubicle with single busbar fuses with side connection on the left

Fitted with a three-position switch-disconnector (closed / open / earthing), including fuse protection. The fuses are housed inside sealtight fuse holder tubes, which are in turn inside the switch compartment, reinforcing its level of insulation.

The three-core opening switch via combined action due to a fuse blowing can be motorised as an option.

Electrical characteristics						
Rated voltage	U_n	[kV]	**24**	**36**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60		60	
Rated current						
General busbar	Ir	[A]	Up to 2500		Up to 2250	
Transformer outgoing line	Ir	[A]	200			
Feeder	Ir	[A]	Up to 1250			
Side connection	Ir	[A]	Up to 1250			
Short-time rated withstand voltage at industrial frequency (1 min)						
Between phases and earth	Ud	[kV]	50	70	60	80
Via the isolating distance	Ud	[kV]	60	80	66	88
Lightning impulse rated withstand voltage						
Between phases and earth	Up	[kV]	125	170	125	170
Via the isolating distance	Up	[kV]	145	195	145	195
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s			
Switch-disconnector						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Mainly active current breaking capacity	I1	[A]	630			
Main switch making capacity (peak value)	I_{ma}	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Switch category						
Mechanical endurance			M1			
Operating cycles (breaks in short-circuit)- class			E3		E2	
Combined switch-relay take-over current						
I_{max} breaking current according to $TD_{itransfer}$			> 800			
Earthing switch						
Rated short-term withstand current (earthing circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	1			
Value	I_p	[kA]	2.5 / 2.6		2.6	
Earthing switch making capacity (peak value)	I_{ma}	[kA]	2.5 / 2.6		2.6	
Earthing switch category						
Mechanical endurance (manual)			M0			
Operating cycles (breaks in short-circuit)- class			E2			
* For other values, please contact **Ormazabal**						

Applications

Auxiliary services transformer protection.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Fuses combined with switch-disconnector
- ■ Control pressure gauge with volt-free contact

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Three-position switch - disconnector

- ☐ Motorised switch-disconnector
- ■ Voltage presence indicator

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 4 cables per phase
- ☐ Toroidal current transformers
- ☐ Plug-in voltage transformer

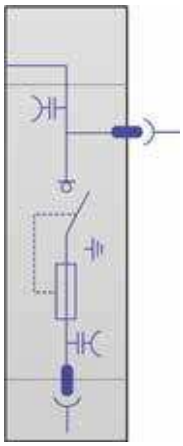
Low-voltage compartment

Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions



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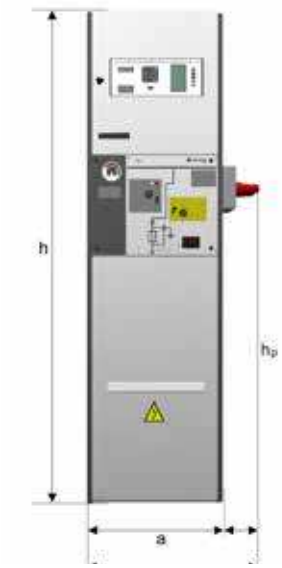


$I_{outgoing}$ [A]	a [mm] (inch)	h [mm] (inch)	h_p [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
200	[600] (23.6)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[850] (1873.9)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.0-s

Single busbar disconnector cubicle

Fitted with a three-position disconnector without load switching capability.

Electrical characteristics							
Rated voltage	U_n	[kV]	**24**	**36**	**40.5**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60			60	
Rated current							
General busbar	I_r	[A]	Up to 2500		Up to 1600	Up to 2250*	
Feeder	I_r	[A]	Up to 2500		Up to 1250	Up to 2250	Up to 1200
Short-time rated withstand voltage at industrial frequency (1 min)							
Between phases and earth	U_d	[kV]	50	70	95	60	80
Via the isolating distance	U_d	[kV]	60	80	118	66	88
Lightning impulse rated withstand voltage							
Between phases and earth	U_p	[kV]	125	170	185	125	170
Via the isolating distance	U_p	[kV]	145	195	215	145	195
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s				
Feeder disconnector							
Rated short-term withstand current (main circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Feeder disconnector category							
Mechanical endurance			M1			M1	
Operating cycles (breaks in short-circuit)- class			E0				
Earthing switch							
Rated short-term withstand current (earthing circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Main switch making capacity (peak value)	I_{ma}	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Earthing switch category							
Mechanical endurance			M1			M0	
Operating cycles (breaks in short-circuit)- class			E2				

* For other values, please contact **Ormazabal**

Applications

Feeder / transformer disconnection, riser for busbar coupling and busbar voltage metering.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Control pressure switch with volt-free contact

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Three-position disconnector

- ☐ Motorised feeder disconnector
- ☐ Motorised earthing switch
- ■ Voltage presence indicator

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 4 cables per phase
- ☐ Toroidal current transformers
- ☐ Plug-in voltage transformer

Low-voltage compartment

Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.0-s

$I_{outgoing}$ [A]	a [mm] (inch)	h [mm] (inch)	h_p [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
1250	[600] (23.6)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[550] (1212.5)
1600	[700] (27.6)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[600] (1322.8)
2000/2500	[1000] (39.4)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[1100/1200] (2425.1/2645.6)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.0-C

Single busbar coupling cubicle

Includes a vacuum circuit breaker and two three-position disconnectors in series with it, one upstream and the other downstream from the circuit breaker.

These elements are inside the operation elements compartment.

Electrical characteristics								
Rated voltage	U_n	[kV]	**24**	**36**	**40.5**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60			60	
Rated current							
General busbar	I_r	[A]	Up to 2500		Up to 1250	Up to 2250	
Short-time rated withstand voltage at industrial frequency (1 min)							
Between phases and earth	U_d	[kV]	50	70	95	60	80
Via the isolating distance	U_d	[kV]	60	80	118	66	88
Lightning impulse rated withstand voltage							
Between phases and earth	U_p	[kV]	125	170	125	125	170
Via the isolating distance	U_p	[kV]	145	195	145	145	195
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s				
Circuit-breaker							
Rated short-term withstand current (main circuit)							
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Rated making and breaking capacity							
Mainly active current breaking capacity	I1	[A]	Up to 2500		Up to 1250	Up to 2250*	Up to 1200
Short-circuit breaking capacity.	I_{sc}	[kA]	25 / 31.5				
Nominal operating sequence							
With no automatic reclosing			CO-15 s-CO / CO-3 min-CO				
With automatic reclosing			O-0.3 s-CO-15 s-CO / O-0.3 s-CO-3 min-CO				
Circuit-breaker category							
Mechanical endurance (operation class)			M2				
Electrical endurance (class)			E2				
Feeder disconnector							
Rated short-term withstand current (main circuit)							
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Feeder disconnector category							
Mechanical endurance			M1			M0	
Operating cycles (breaks in short-circuit)- class			E0				
Earthing switch							
Rated short-term withstand current (earthing circuit)							
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5			25 / 31.5	
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Main switch making capacity (peak value)	I_{ma}	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Earthing switch category							
Mechanical endurance			M1			M0	
Operating cycles (breaks in short-circuit)- class			E2				

* With forced ventilation

Applications

Longitudinal busbar coupling

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Control pressure switch with volt-free contact

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Three-position disconnector

- ☐ Motorised feeder disconnector
- ☐ Motorised earthing switch
- ☐ Voltage presence indicator

Vacuum circuit-breaker

- ☐ Motor
- ■ Tripping coil
- ☐ 2nd tripping coil
- ■ Closing coil
- ☐ Undervoltage coil
- ☐ Blocking open/close push-button

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ■ Lower busbar
- ☐ Toroidal current transformers

Low-voltage compartment

Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.0-c

$I_{outgoing}$ [A]	a [mm] (inch)	h [mm] (inch)	h_p [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
1250	[1200] (47.2)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[1300] (2866.0)
1600	[1400] (55.1)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[1550] (3417.2)
2000/2500	[2000] (78.7)	[2425] (95.5)	[665] (26.2)	[1365*] (53.7*)	[2300/2500] (5070.6/5511.6)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.0-rb

Single busbar rise cubicle

Allows side cable input or output connection to connect to the main cubicle busbar and its earthing.

Electrical characteristics

Rated voltage	U_n	[kV]	**24**	**36**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60		60	
Rated current						
General busbar	I_r	[A]	Up to 2500		Up to 2250*	
Feeder	I_r	[A]	Up to 1250		Up to 1200	
Short-time rated withstand voltage at industrial frequency (1 min)						
Between phases and earth	U_d	[kV]	50	70	60	80
Lightning impulse rated withstand voltage						
Between phases and earth	U_p	[kV]	125	170	125	170
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s			

* For other values, please contact **Ormazabal**

Applications

Side connection to the busbar.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Control pressure switch with volt-free contact
- ☐ Voltage presence indicator

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Cable compartment

- ☐ Toroidal current transformers

Low-voltage compartment

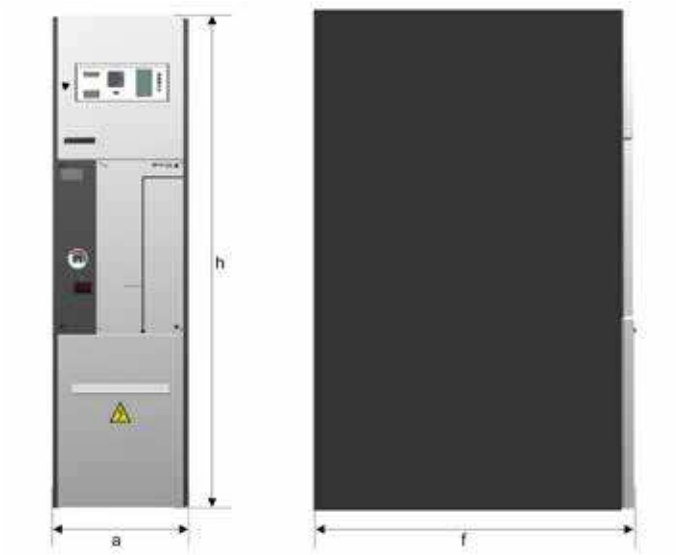
Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.0-rb



$I_{outgoing}$ [A]	a [mm] (inch)	h [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
1250	[600] (23.6)	[2425] (95.5)	[1365*] (53.7*)	[500] (1102.3)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.0-pt

Busbar earthing cubicle

Includes a vacuum circuit-breaker and a earthing switch in series with it. Both components are inside the operation elements compartment.

Electrical characteristics							
Rated voltage	U_n	[kV]	**24**	**36**	**40.5**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60			60	
Rated current							
General busbar	Ir	[A]	Up to 2500		Up to 1600	Up to 2250	
Short-time rated withstand voltage at industrial frequency (1 min)							
Between phases and earth	Ud	[kV]	50	70	95	60	80
Via the isolating distance	Ud	[kV]	60	80	118	66	88
Lightning impulse rated withstand voltage							
Between phases and earth	Up	[kV]	125	170	185	125	170
Via the isolating distance	Up	[kV]	145	195	215	145	195
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s				
Earthing switch							
Rated short-term withstand current (earthing circuit)							
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5				
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Main switch making capacity (peak value)	I_{ma}	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82			65 / 82	
Earthing switch category							
Mechanical endurance			M1			M0	
Operating cycles (breaks in short-circuit)- class			E2 in combination with circuit breaker				

* With forced ventilation ** For other values, please contact **Ormazabal**

Applications

Earthing the upper busbar

Configuration

Cubicle structure

Internal arc

- ☐ IAC 25 kA 1 s
- ☐ IAC 31.5 kA 1 s

Gas tank

- ■ Control pressure gauge with volt-free contact

Busbar compartment

- ☐ Up to 2500 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Earthing switch

- ☐ Motorised earthing switch
- ■ Voltage presence indicator

Vacuum circuit-breaker

- ☐ Motor
- ■ Tripping coil
- ☐ 2nd tripping coil
- ■ Closing coil
- ☐ Undervoltage coil
- ■ Blocking open/close push-button

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Low-voltage compartment

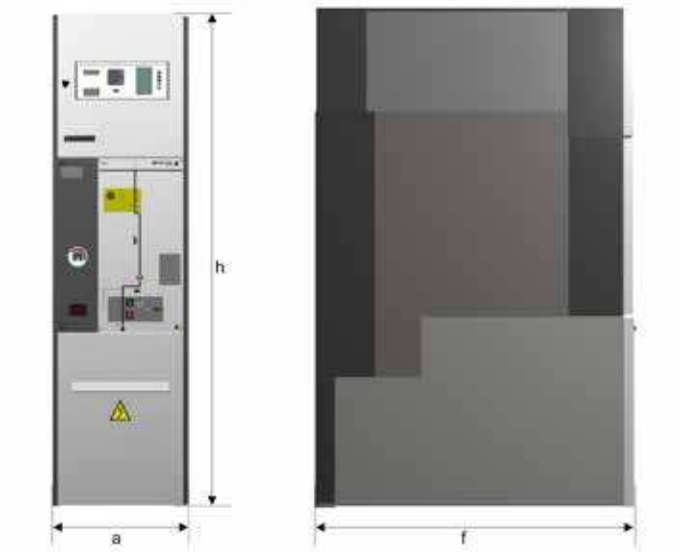
Cubicle height

- ■ 2425 mm
- ☐ 2245 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.0-pt



a [mm] (inch)	h [mm] (inch)	h_p [mm] (inch)	f [mm] (inch)	Weight [kg] (Lbm)
[600] (23.6)	[2125] (83.7)	[665] (26.2)	[1365*] (53.7*)	[850] (1873.9)

*1410 mm/55.5 Inch in the case of cubicles with IAC AFLR rating.

cpg.1-v2

Double busbar circuit-breaker cubicle.

It incorporates, in independent compartments, a vacuum switching circuit breaker and an earthing switch in series with it, as well as a feeder disconnector.

Electrical characteristics						
Rated voltage	U_n	[kV]	**24**	**36**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60		60	
Rated current						
General busbar	I_r	[A]	Up to 2000		Up to 2000	
Feeder	I_r	[A]	Up to 2000		Up to 2000	
Short-time rated withstand voltage at industrial frequency (1 min)						
Between phases and earth	U_d	[kV]	50	70	60	80
Via the isolating distance	U_d	[kV]	60	80	66	88
Lightning impulse rated withstand voltage						
Between phases and earth	U_p	[kV]	125	170	125	170
Via the isolating distance	U_p	[kV]	145	195	145	195
Internal arc classification	IAC		AFL[R] 25 / 31.5 kA 1 s			
Circuit-breaker						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Rated making and breaking capacity						
Mainly active current breaking capacity	I1	[A]	Up to 2000		2000	
Short-circuit breaking capacity.	I_{sc}	[kA]	25 / 31.5			
Capacitive current capacity (50 Hz). Capacitor bank		[A]	400			
Nominal operating sequence						
With automatic reclosing			O-0.3 s-CO-15 s-CO / O-0.3 s-CO-3 min-CO			
Circuit-breaker category						
Mechanical endurance (operation class)			M2			
Electrical endurance (class)			E2			
Disconnector						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Disconnector category						
Mechanical endurance			M1		M0	
Operating cycles (breaks in short-circuit)- class			E0			
Earthing switch						
Rated short-term withstand current (earthing circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Main switch making capacity (peak value)	I_{ma}	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Earthing switch category						
Mechanical endurance			M1		M0	
Operating cycles (breaks in short-circuit)- class			E0			

Applications

Main transformer protection, feeder protection, capacitor bank protection, auxiliary services transformer protection, longitudinal coupling with medium voltage cables.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 31.5 kA 1 s
- ☐ IAC 25 kA 1 s

Gas tank

- ■ Control pressure switch with volt-free contact

Busbar compartment

- ■ Up to 2000 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Feeder disconnector

- ☐ Motorisation

Earthing switch

- ☐ Motorisation
- ☐ Voltage presence indicator

Vacuum circuit-breaker

- ■ Motor
- ■ Tripping coil
- ☐ 2nd tripping coil
- ■ Closing coil
- ☐ Undervoltage coil
- ■ Blocking open/close push-button

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 4 cables per phase
- ☐ Toroidal current transformers
- ☐ Plug-in voltage transformer

Low-voltage compartment

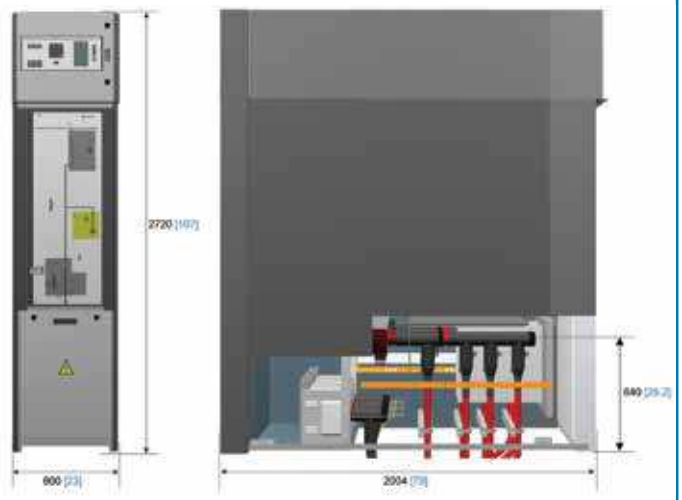
Cubicle height

- ■ 2720 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.1-v2



Configuration	Weight	
	kg	Lbm
cpg.1-v2	1400	3086

cpg.1-f2

Double busbar fuse protection cubicle.

It has a switchgear compartment with a three-position switch-disconnector (closed / open / earthed), including fuse protection, with two separate switchgear compartments with feeder disconnectors.

The fuses are housed inside sealtight fuse holder tubes, which are in turn inside the switchgear compartment, reinforcing its level of insulation. The combined action by blowing a fuse allows three-phase opening of the switch.

Electrical characteristics						
Rated voltage	U_n	[kV]	**24**	**36**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60		60	
Rated current						
General busbar	I_r	[A]	Up to 2000		Up to 2000	
Transformer outgoing line	I_r	[A]	200			
Short-time rated withstand voltage at industrial frequency (1 min)						
Between phases and earth	U_d	[kV]	50	70	60	80
Via the isolating distance	U_d	[kV]	60	80	66	88
Lightning impulse rated withstand voltage						
Between phases and earth	U_p	[kV]	125	170	125	170
Via the isolating distance	U_p	[kV]	145	195	145	195
Internal arc classification	IAC		AFL[R] 25 /31.5 kA 1 s			
Switch-disconnector						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Mainly active load-breaking current	I1	[A]	630			
Main switch making capacity (peak value)	I_{ma}	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Switch-disconnector category						
Mechanical endurance			M1			
Operating cycles (breaks in short-circuit)- class			E3			
Combined switch-relay take-over current						
I_{max} breaking according to TD $i_{transfer}$			> 800			
Earthing switch						
Rated short-term withstand current (earthing circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	1/3			
Peak value	I_p	[kA]	2.5		2.6	
Main switch making capacity (peak value)	I_{ma}	[kA]	2.5 / 7.5			
Earthing switch category						
Mechanical endurance			M0			
Operating cycles (breaks in short-circuit)- class			E3		E2	

Applications

Auxiliary services transformer protection.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 31.5 kA 1 s
- ☐ IAC 25 kA 1 s

Gas tank

- ■ Control pressure switch with volt-free contact
- ■ Fuses combined with switch-disconnector

Busbar compartment

- ■ Up to 2000 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Feeder disconnector

- ☐ Motorisation

Earthing switch

- ☐ Motorisation
- ☐ Voltage presence indicator

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 4 cables per phase
- ☐ Toroidal current transformers
- ☐ Plug-in voltage transformer

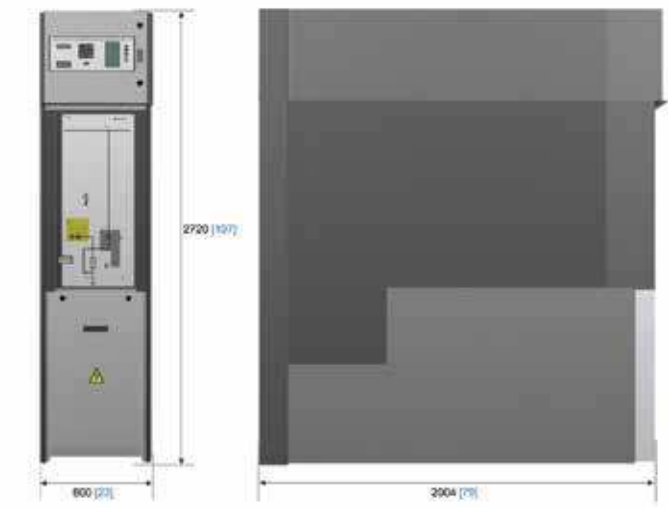
Low-voltage compartment

Cubicle height

- ■ 2720 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions



cpg.1-f2

Configuration	Weight	
	kg	Lbm
cpg.1-f2	1300	2866

cpg.1-s2

Double busbar disconnector cubicle

Incorporates feeder and earthing switches, located in independent compartments.

Electrical characteristics						
Rated voltage	U_n	[kV]	**24**	**36**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60		60	
Rated current						
General interconnection of busbar and cubicles	I_r	[A]	Up to 2000		Up to 2000	
Feeder	I_r	[A]	Up to 2000		Up to 2000	
Short-time rated withstand voltage at industrial frequency (1 min)						
Between phases and earth	U_d	[kV]	50	70	60	80
Via the isolating distance	U_d	[kV]	60	80	66	88
Lightning impulse rated withstand voltage						
Between phases and earth	U_p	[kV]	125	170	125	170
Via the isolating distance	U_p	[kV]	145	195	145	195
Internal arc classification	IAC		AFL[R] 25 31.5 kA 1 s			
Disconnector						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Disconnector category						
Mechanical endurance			M0			
Operating cycles (breaks in short-circuit)- class			E3			
Combined switch-relay take-over current (ekorRPT)						
Earthing switch						
Rated short-term withstand current (earthing circuit)						
Value t_k = 1 s - 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Main switch making capacity (peak value)		[kA]	50 Hz: 62.5 / 80 60 Hz: 65 / 82		65 / 82	
Earthing switch category						
Mechanical endurance			M1		M0	
Operating cycles (breaks in short-circuit)- class			E0			

Applications

Longitudinal busbar coupling with medium voltage cables Busbar voltage metering with VT disconnection

Configuration

Cubicle structure

Internal arc

- ☐ IAC 31.5 kA 1 s
- ☐ IAC 25 kA 1 s

Gas tank

- ■ Control pressure switch with volt-free contact

Busbar compartment

- ■ Up to 2000 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Feeder disconnector

- ☐ Motorisation

Earthing switch

- ☐ Motorisation
- ☐ Voltage presence indicator

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Cable compartment

- ☐ Up to 3 + 3 cables per phase

Low-voltage compartment

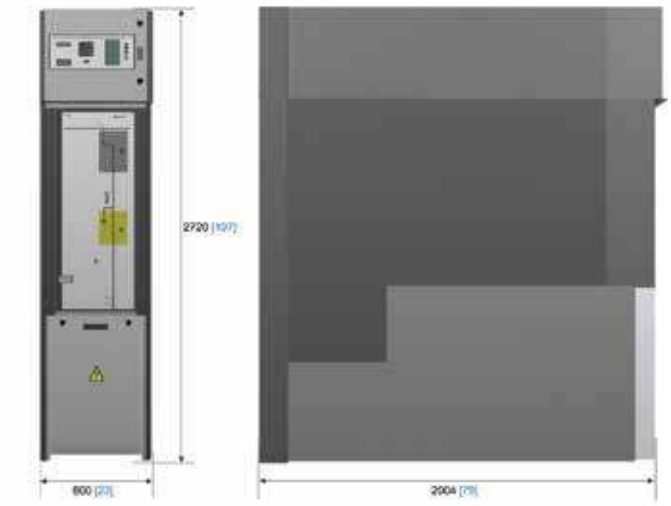
Cubicle height

- ■ 2720 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions

cpg.1-s2



Configuration	Weight	
	kg	Lbm
cpg.1-s2	1200	2645

cpg.1-c / cpg.1-cl

Single longitudinal busbar coupling cubicle (c) and double (cl)

Includes the following items for each busbar in separate compartments: A vacuum circuit breaker and earthing switches in series with it, in a switchgear compartment and two feeder disconnectors in their respective compartments.

Electrical characteristics						
Rated voltage	U_n	[kV]	**24**	**36**	**27**	**38**
Rated frequency	f_r	[Hz]	50 / 60		60	
Rated current						
General busbar	I_r	[A]	1250 / 1600 / 2000		2000	
Feeder	I_r	[A]	630 / 1250 / 1600 / 2000		2000	
Short-time rated withstand voltage at industrial frequency (1 min)						
Between phases and earth	U_d	[kV]	50	70	60	80
Via the isolating distance	U_d	[kV]	60	80	66	88
Lightning impulse rated withstand voltage						
Between phases and earth	U_p	[kV]	125	170	125	170
Via the isolating distance	U_p	[kV]	145	195	145	195
Internal arc classification	IAC		AFL[R] 25 kA 1 s AFL 31.5 kA 1 s			
Circuit-breaker						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)		65 / 85	
Rated making and breaking capacity						
Mainly active current breaking capacity	I1	[A]	630 / 1250 / 1600 / 2000		2000	
Short-circuit breaking capacity.	I_{sc}	[kA]	25 / 31.5			
Nominal operating sequence						
With reclosing			O-0.3 s-CO-15 s-CO / O-0.3 s-CO-3 min-CO			
Circuit-breaker category						
Mechanical endurance (operation class)			M2			
Electrical endurance (class)			E2			
Disconnector						
Rated short-term withstand current (main circuit)						
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5			
Peak value	I_p	[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)		65 / 85	
Disconnector category						
Mechanical endurance			M0			
Operating cycles (breaks in short-circuit)- class			E3			
Earthing switch						
Rated short-term withstand current (earthing circuit)						
Value t_k = 1 s or 3 s	I_k	[kA]	25/31.5			
Peak value	I_p	[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)		65 / 85	
Main switch making capacity (peak value)		[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)		65	
Earthing switch category						
Mechanical endurance			M1		M0	
Operating cycles (breaks in short-circuit)- class			E0			

Applications

Longitudinal busbar coupling

Configuration

Cubicle structure

Internal arc

- ☐ IAC 31.5 kA 1 s
- ☐ IAC 25 kA 1 s

Gas tank

- ■ Control pressure switch with volt-free contact

Busbar compartment

- ■ Up to 2000 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Feeder disconnector

- ☐ Motorisation

Earthing switch

- ☐ Motorisation
- ☐ Voltage presence indicator

Additional interlocks

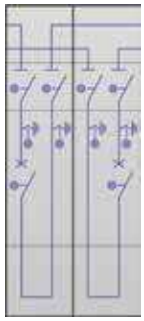
- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

Low-voltage compartment

Cubicle height

- ■ 2720 mm
- ☐ Signalling, control, automation and protection devices

Options



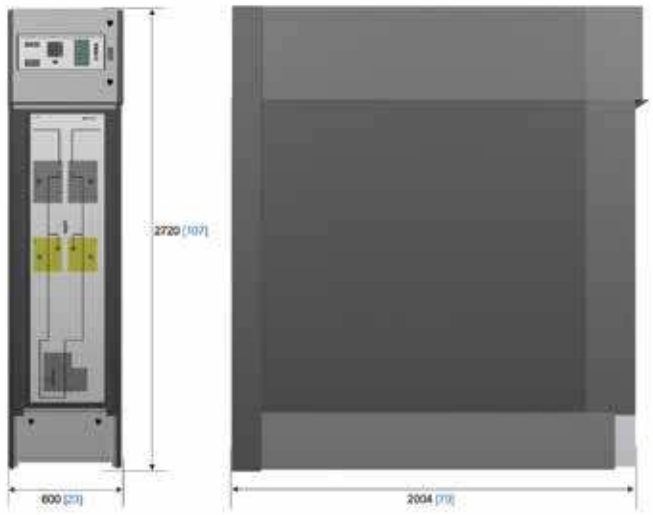
IEC
cpg.1-cl

ANSI/IEEE
cpg.1-c (type m)

■ Standard
☐ Optional

Dimensions

IEC
cpg.1-c



Configuration	Weight	
	kg	Lbm
cpg.1-c **cpg**.1-c (type c)	1400	3086
cpg.1-c (type m) **cpg**.1-cl	2800	6172

cpg.1-ct

Transversal busbar coupling cubicle

Includes the following elements in separate switchgear compartments:

A vacuum circuit breaker and two earthing switches in series with it, in the switchgear compartment and two feeder disconnectors in their respective compartments.

Electrical characteristics				
Rated voltage	U_n	[kV]	**24**	**36**
Rated frequency	f_r	[Hz]	50 / 60	
Rated current				
General interconnection of busbar and cubicles	I_r	[A]	1250 / 1600 / 2000	
Short-time rated withstand voltage at industrial frequency (1 min)				
Between phases and earth	U_d	[kV]	50	70
Via the isolating distance	U_d	[kV]	60	80
Lightning impulse rated withstand voltage				
Between phases and earth	U_p	[kV]	125	170
Via the isolating distance	U_p	[kV]	145	195
Internal arc classification	IAC		AFL[R] 25 kA 1 s AFL 31,5 kA 1 s	
Circuit-breaker				
Rated short-term withstand current (main circuit)				
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5	
Peak value	I_p	[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)	
Rated making and breaking capacity				
Mainly active current breaking capacity	I1	[A]	1250 / 1600 / 2000	
Short-circuit breaking capacity.	I_{sc}	[kA]	25 / 31.5	
Nominal operating sequence				
Without reclosing			CO-15 s-CO - CO-3 min-CO	
With reclosing			–	
Circuit-breaker category				
Mechanical endurance (operation class)			M2	
Electrical endurance (class)			E2	
Disconnector				
Rated short-term withstand current (main circuit)				
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5	
Peak value	I_p	[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)	
Disconnector category				
Mechanical endurance			M0	
Operating cycles (breaks in short-circuit)- class			E3	
Earthing switch				
Rated short-term withstand current (earthing circuit)				
Value t_k = 1 s or 3 s	I_k	[kA]	25 / 31.5	
Peak value	I_p	[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)	65 / 85
Main switch making capacity (peak value)	I_{ma}	[kA]	63 / 80 (50 Hz) - 65 / 85 (60 Hz)	65
Earthing switch category				
Mechanical endurance			M1	
Operating cycles (breaks in short-circuit)- class			E0	

Applications

Transversal busbar coupling.

Configuration

Cubicle structure

Internal arc

- ☐ IAC 31.5 kA 1 s
- ☐ IAC 25 kA 1 s

Busbar compartment

- ■ Up to 2000 A
- ☐ Current transformers
- ☐ Voltage transformers

Driving mechanism

Feeder disconnector

- ☐ Motorisation

Earthing switch

- ☐ Motorisation
- ☐ Voltage presence indicator

Additional interlocks

- ☐ Electric interlocks
- ☐ Locking with lock
- ☐ Locking with a padlock

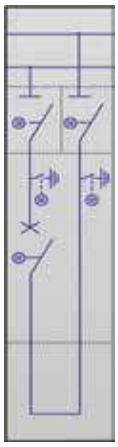
Low-voltage compartment

Cubicle height

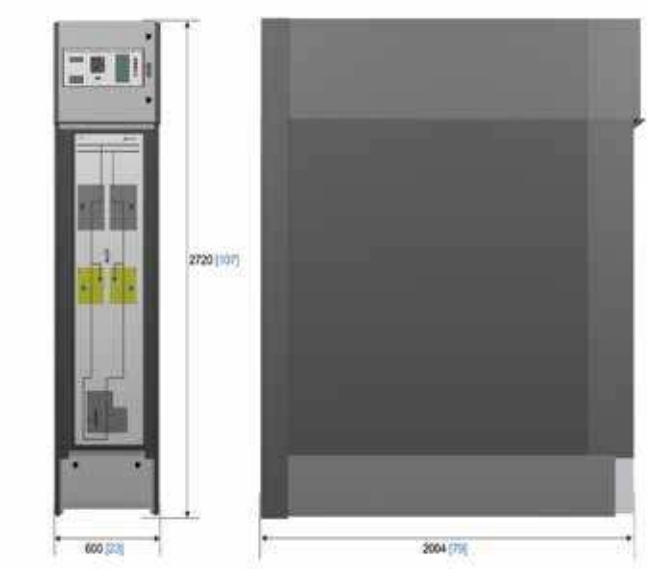
- ■ 2720 mm
- ☐ Signalling, control, automation and protection devices

■ Standard
☐ Optional

Dimensions



cpg.1-ct



Configuration	Weight	
	kg	Lbm
cpg.1-ct	2200	4850

Other components and accessories

Indicators

Voltage presence indicator

Each cubicle has a voltage presence/ absence detector with permanent illuminated signalling and, as an option, a volt-free auxiliary contact for remote signalling of the corresponding indication.

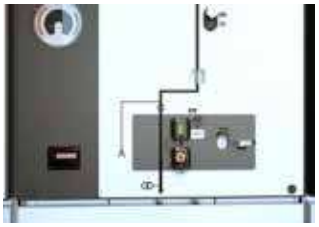
The fixed installation indicator has been designed in accordance with IEC 61243-5 and VDE 0682 Part 415.

Pressure monitoring

The gas pressure is tested in **cpg**.0 cubicles by means of a pressure gauge with a volt-free contact, allowing it to be used as a remote alarm.

cpg.1 cubicles incorporate pressure switches on each gas tank.

cpg.0



cpg.1

Cable connectors

Characteristics:

- For single-core and three-core cables.
- For dry or impregnated cables.
- Screened
- Elbow
- Up to 4 screw-in connectors per phase (6 for **cpg**.0 2000/2500 A)

TI and TT

Current transformers

Characteristics:

- Toroidal / oblong type
- Encapsulation
- Installed on the outside of the operating elements compartment, upstream of the medium voltage connectors
- Unaffected by environmental conditions
- Simple error-free assembly during installation (earth)

Installation:

- Busbar compartment and cable compartment

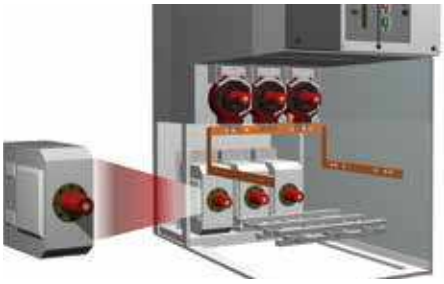
Voltage transformers

Characteristics:

- Plug-in type
- Single phase
- Insulated
- Reinforced
- Inductive type
- Installed outside the operating elements compartment.
- Unaffected by environmental conditions

Installation:

- Busbar compartment and cable compartment



HRC fuses

Short-circuit protection in the medium voltage network is performed via the fuse protection functions.

The fuse holder tubes reach a uniform temperature along the tube by placing them horizontally into the gas tank. With their cover closed they are completely sealtight against flooding and external contamination.

Characteristics:

- Horizontal fuse holder
- Front access
- Separate compartments per phase
- Protected inside the gas tank
- Insulation and water-tightness against external agents (contamination, temperature changes, adverse weather conditions, including flooding)
- Internal interlocks for safe access to the fuse holder area

Contact **Ormazabal** for more information about fuse selection.

Handling, installation and after-sales

Spares and accessories

Metal enclosure

- Side cover

- Front door of **cpg.1**

Driving levers

Protection with fuses

- Fuse holder carriage

Handling

- Smaller size and lower weight make handling and installation easier.
- Safe delivery of the cubicle:
  - Vertical position on pallet, packed in protective plastic with polystyrene corners

- Handling methods:
  - Elevation: Forklift truck or manual transpallet
    Alternative method: placing wheels underneath
  - Lifting: Slings and lifting beams

Regarding the handling and installation instructions, please request the corresponding **Ormazabal** manuals.

Connection between cubicles

The interconnection between cubicles is external to the operating elements compartment and is carried out via screened busbars with solid isolation, designed to allow the functional unit to be uninstalled without moving the adjacent units and without handling any gas.

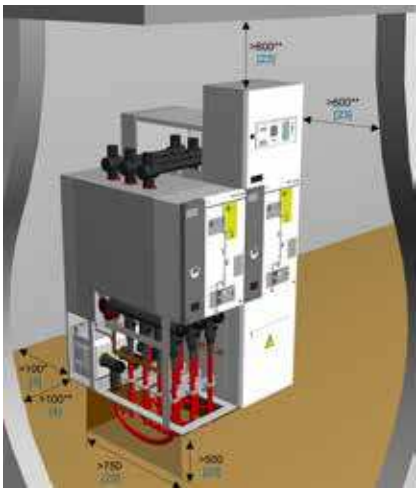
Phase segregation between busbars

Inside buildings

- Simple handling with transpallet
- Reduced dimensions and minimum space required for its location due to the precise design and use of SF_6 gas as an insulating medium
- Modularity and extensibility on both sides, allowing a fast and economical installation process, in a small space and without having to move contiguous cubicles to remove a central cubicle.
- Reduced dimensions of the cubicle room, due to its front access and its design with no removable switchgear and not requiring rear access passage
- Optimisation of installation costs and civil works due to the reduced dimensions and little need for manoeuvring space

The minimum distances [mm] (inches) recommended for correct installation, once located at their final location, are:

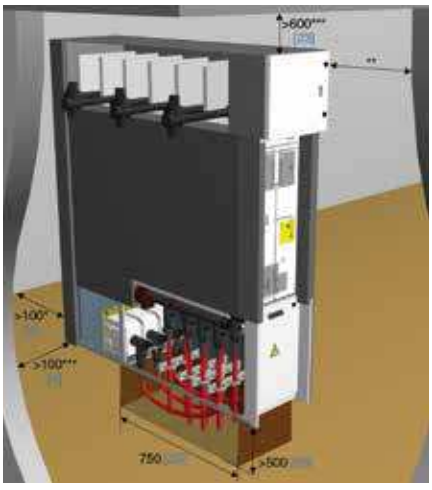
For **cpg**.0:



* Not required with gas expansion duct.
** According to Annex A of standard IEC 62271-200 (Depth of cable trench depending on the cable's radius of curvature).

For other installation conditions please contact **Ormazabal's Technical Department.**

For **cpg**.1



* Not required with expansion chimney.
** Extraction > 2100.
*** According to Annex A of standard IEC 62271-200 (Depth of cable trench depending on the cable's radius of curvature).

For other dimensions, please contact **Ormazabal.**

Inside moving substations

The **cpg** cubicles can also be installed inside moving substations.

Inside wind turbine generator system substation and wind farms

The **cpg** cubicles can also be installed inside wind turbine generator system and wind farm substations.

Commissioning and After-sales

Services


Technical support


Reception of products


Collection and delivery


Supervision & installation


Start up


Training


Warranty


Inspection and maintenance


Spares and accessories


Repair


Retrofitting


Recycling


Engineering


Purchase process


EPCM

Recycling and end of life

Ormazabal production centres have introduced the corresponding environmental management systems, according to the requirements of international standard ISO 14001 and endorsed by the Certificate of Environmental Management in force, among others.

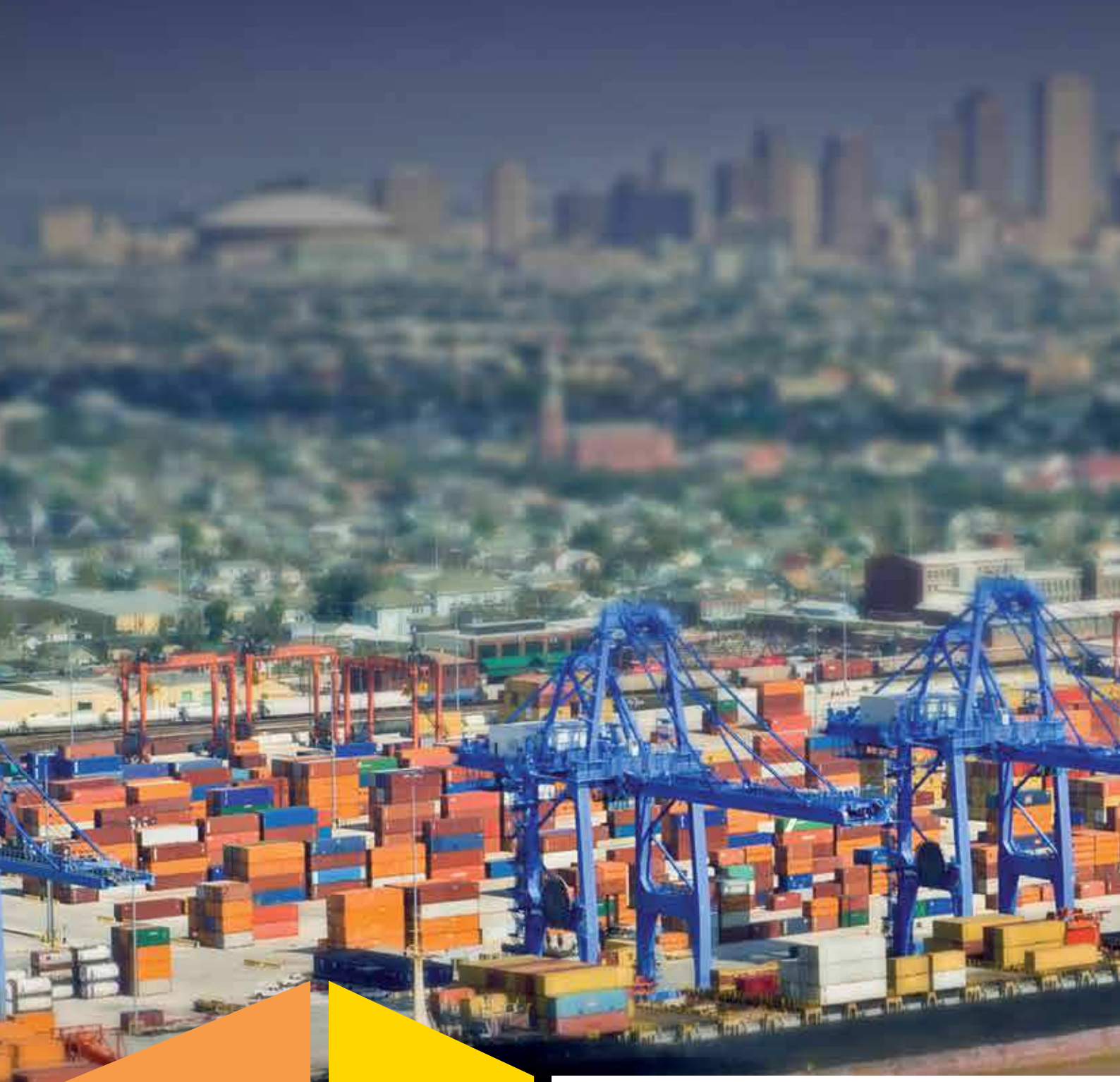
The cubicles of the **cpg** system have been designed and manufactured in accordance with the requirements of the corresponding IEC and IEEE international standards.

Thanks to the sealtight compartments, filled with SF_6, which allow the full operation of the switchgear unit over its service life (IEC 62271-200).

At the end of the product's life cycle, the SF_6 gas it contains must not be released into the atmosphere, but rather it must recovered and processed for reuse in accordance with the instructions given in IEC 62271-303, IEC 60480 and CIGRE 117. In order to respect the safety of people and the environment, **Ormazabal** will provide the additional information required to perform this task correctly.

Notes

Notes



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