



MV/LV transformer substations
for distribution network solutions

cms

Prefabricated concrete-enclosed switchgear
and controlgear substation

Up to 40.5 kV

IEC Standards

Reliable innovation. Personal solutions.

www.ormazabal.com

Preface

In 1996 **Ormazabal** launched **pf.15** as the first specific switchgear and controlgear substation within its product range.

After the success of its predecessor, in 2007 **Ormazabal** developed **cms**, an evolved and updated version. In 2016 it incorporated the **cms.21** model, allowing configurations of up to 40.5 kV.

cms is a kiosk-type **prefabricated concrete-enclosed switching and breaking substation** installed at ground level and non-walk-in-type, standard-built, tested and supplied from the factory as a single unit for medium-voltage networks up to 40.5 kV.

cms are used in many distribution network solutions for utilities (conventional generation, public distribution, etc.), end-users of electrical energy (infrastructure, industry, tertiary) and renewable energy (wind farms and photovoltaic solar power plants).

Currently more than 3000 switching and breaking substations have been installed in a great many countries.



Benefits

Safety

- » High personnel safety
- » Double door with fastening in place at 90° and 180°
- » Voltage presence indicator via **ekor.vpis** o **ekor.ivds** unit
- » Internal arc protection: IAC-AB class testing in accordance with IEC 62271-202 (optional for **cms.21**)
- » Insulating external switching platform (optional)
- » Alternative to the crossing overhead lines

Reliability

- » Fully factory-assembled
- » Product tested as a unit
- » Quick and simple installation, optimised time and costs
- » Locally operable
- » Phase coordination between feeders

Efficiency

- » Easy and quick replacement of the medium-voltage switchgear
- » Input/output of medium and low-voltage cables through blanked holes at the base of the building (front/side)
- » Possibility of installing a voltage transformer to supply control elements and auxiliary services

Sustainability

- » Reduced visual and environmental impact
- » Reduced dimensions
- » Long service life in aggressive environmental conditions

Continuous innovation

- » Great ability for aesthetic integration into its environment
- » Protection, control and measuring elements for automation of the switchgear (optional)

Standard

IEC

IEC 62271-202

On request:

Specific regulations of the Utility.
Applicable local regulations.

Technical data

Construction characteristics

- » Prefabricated reinforced concrete monoblock enclosure (base and walls) with a removable cover.
- » Medium-voltage switchgear with integrated insulation in gas: **cgmcosmos** (up to 24 kV) and **cgm.3** systems (up to 40.5 kV)
- » Earthing circuit
- » Lighting and auxiliary services circuit (optional).
- » External antenna mount for locations with weak communications coverage (optional)

	cms.15	cms.21
IP rating	IP 23D	
IK protection against impacts	IK 10	
IAC internal arc protection:	-	IAC-AB 16 kA – 0,5 s IAC-AB 20 kA – 1 s
External finish colour	RAL 9002*	

* For other colour and finish options, please check with **Ormazabal**.

Technical characteristics

System		cgmcosmos	cgm.3
Rated voltage	[kV]	hasta 24	hasta 40,5
Frequency	[Hz]	50/60	
Rated current	[A]	400/630	
Short-time current	[kA/1 s]	16/20/25	
Insulation level			
Power frequency	[kV]	50	95
Lightning impulse	[kV]	125	185

For other values of assigned voltages and standards, please check with **Ormazabal**.

Design



cms.15



cms.21

- 1 Medium-voltage switchgear
- 2 Prefabricated concrete enclosure

External dimensions and weights

		cms.15	cms.21
Length	[mm]	1700	2305
Width	[mm]	1600	1370
Height	[mm]	1975	2496
Visible height	[mm]	1500	1920
Maximum weight including switchgear	[kg]	3220	4900

Available configurations

cms is available in three models with different dimensions. The medium voltage schematics available in each case are as follows:

cgmcosmos

	cms.15*	cms.21**
2lp	o	o
2lv	x	o
2l2p	x	o
3l	o	o
3lp	x	o
3lv	x	o
4l	o	o
4lp	x	o
5l	x	o

* Only available with the switchgear range with a height of 1300 mm.

** Available with switchgear ranges with heights of 1300 and 1740 mm.

cgm.3

	cms.21*
2lp	o
2lv	o
2l2p	o
3l	o
3lp	o
3lv	o
4l	o

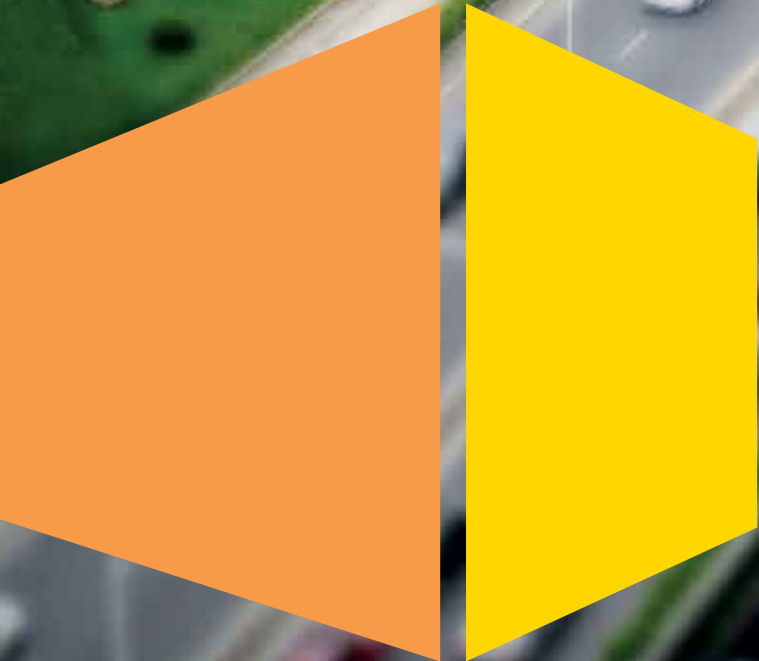
* Available with switchgear ranges of 1400 and 1745 mm in height.

In which:
>> l = feeder function
>> p = fuse protection function
>> v = circuit-breaker protection function

(o) Available
(x) Not available

➔ For other configurations and/or values, in addition to alternative switching and breaking substations in enclosure-type and underground buildings, please check with **Ormazabal**.





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