



MV/LV Transformer Substations for
Distribution Network Solutions

cms

Switching and breaking substations

Up to 24 kV

IEC Standards

Reliable innovation. Personal solutions.

Preface

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

After the success of its predecessor, in 2007 **Ormazabal** developed the **cms**, an evolved and updated version.

The **cms** is a kiosk-type **Switching and Breaking Substation** installed at ground level and is the non-walk-in-type, standard-built, tested and supplied from the factory as a single unit for medium-voltage networks up to 24 kV.

The **cms** are used in many distribution network solutions (DNS) 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.

Safety

- » Heightened safety for persons against accidental direct contact, step voltage and contact voltage
- » Testing carried out individually and conjointly in **cms**
- » Double door with fastening in place at 90° and 180°

Reliability

- » Alternative to the crossing overhead lines
- » Easy implementation
- » Locally operable
- » Coordination between feeders
- » Fully factory assembled
- » Quick and simple installation, optimised time and costs

Efficiency

- » Remote controllable
- » Quick and simple replacement
- » Input/output of MV and LV cables through pre-punched orifices at the base of the building (front/side)

Sustainability

- » Reduced environmental, visual and noise impact
- » Low height and reduced dimensions
- » Long service life in aggressive environmental conditions

Continuous innovation

- » Integrable remote control: Because of its importance or strategic location within a network, **cms** requires a faster control and operation than what can be achieved in a non-remote controlled **cms**
- » Great ability for aesthetic integration into its environment

Standards

IEC / UNE-EN 62271-202

High voltage/low voltage prefabricated transformer substations

On request:

Specific regulations of the Utility.
Applicable local regulations.

Technical data

cms

- » Concrete monoblock enclosure (base and walls) with a removable cover.
- » Fully gas insulated MV switchgear: **cgmcosmos** system (up to 24 kV).
- » Direct MV and LV cable interconnections.
- » Earthing circuit.
- » Lighting and auxiliary services circuit.
- » Remote control equipment (in **cms.15** model)

Standard configurations:

- » 3 or 4 feeder functions (3l or 4l)
- » 2 feeder functions and up to 2 fuse protection functions (2lp or 2l2p)



(*) In accordance with the specifications of the utility, one of the feeder functions can have a base for a double cable, which enables the installation of an outgoing supply to a voltage transformer.

Configuration optional for remote control (cms.15):

- » **ekor.rci** integrated control unit with switch monitoring and control functions.
- » Voltage transformer for supplying the remote control unit.

Electrical characteristics

Rated voltage	[kV]	12	24
Frequency	[Hz]	50	50
Rated current	[A]	400/600	400/630
Short time current	[kA]	16/20	
Insulation level			
Power frequency	[kV]	28/32	50/60
Lightning impulse	[kV] _{PEAK}	75/85	125/145



Optionally with internal arc characteristics (IAC class)

Outer dimensions

	cms.15	cms.17	
Length [mm]	1700	2170	
Width [mm]	1600	1310	
Height [mm]	1975	2080	
Visible height [mm]	1500	1600	

Weight

[kg]	cms.15		cms.17	
	(1)	(2)		
3l	3120	3220	3250	3400
4l	3220	3320	3350	3500
2lp	3150	-	3300	3450
2l2p	-	-	-	3600



(1) Approximate weight with remote control
(2) Approximate weight with remote control and with voltage transformer



For other configurations and/or values, in addition to alternative switching and breaking substations in enclosure-type and underground buildings, consult **Ormazabal**

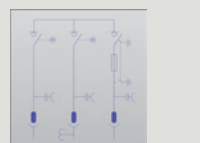
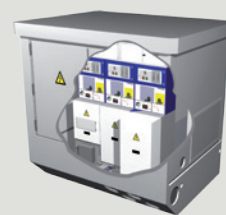
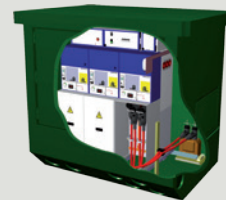
Design



- 1 Concrete enclosure
- 2 MV Switchgear: **cgmcosmos** up to 24 kV
- 3 Protection, metering and control units

Family

cms.15



cms.17

