



Transformer substations

ormaset.p

Kiosk type prefabricated
transformer substation

Up to 24 kV - 630 kVA

Reliable innovation. Personal solutions.

www.ormazabal.com

Preface

Ormazabal ormaset.p transformer substation is a kiosk type substation designed for cable and overhead networks up to 24 kV, and may contain 630 kVA oil transformer. The dimensions of the substation as well as the electrical equipment can vary depending on customer's needs.

ormaset.p is used into several Distribution Network Solutions (DNS) for utilities (conventional generation, public distribution, smart grids...) and end users (industry).



Benefits

Safety

- » High personnel safety:
 - Optional arc proof: IAC Class-AB 21 kA 1 s
 - Tested according to IEC standards and requirements of IPH German institute
- » Same equipotential earthing throughout the whole structure
- » Transformer separation wall
- » Dielectric liquid collection pit
- » Non screwed roof to allow gas pressure relief in case of internal arc
- » Fire resistance: 90 minutes according to Polish REI 90 standard

Reliability

- » Configuration flexibility and partition adaptability
- » Industrialized uniform quality
- » Simple and quick installation, optimizing times and costs
- » Protection against strong external impacts and weather conditions
- » Painted with double coating layers on external / internal walls and cable cellar

Efficiency

- » Ventilation: natural air circulation through grilles on walls and doors and self-ventilating roof
- » MV and LV sealed cable entry systems
- » Transportability to difficult access areas

Sustainability

- » Long operational life
- » Reduction in manufacturing energy consumption and emissions
- » Doors and grilles made of galvanized steel or aluminium and powder varnished in colour
- » Research on mechanical properties and durability of the concrete

Continuous innovation

- » Capacity for aesthetic integration to the environment
- » Suitability for any MV diagram
- » Customized solutions according to individual needs

Design



ormaset.p is made up of two main components:

- 1 Prefabricated reinforced concrete enclosure
 - 1a Concrete cellar
 - Sealed cable entries
 - Oil collection pit
 - 1b Main body
 - Doors
 - Ventilation grilles
 - 1c Removable roof
 - 2 slope roof
 - Bath type roof
- 2 **Ormazabal** electrical equipment:
 - 2a Gas insulated MV switchgear
 - **cgmcosmos / ga-gae630** (up to 24-27 kV)
 - **cgm.3** (up to 40,5 kV)
 - 2b Distribution transformers
Up to 630 kVA
 - 2c Low voltage board
 - 2d Others
 - Cable connections
 - Earthing circuit
 - Lighting and auxiliary services circuit

ormaset.p can be divided in two or more compartments:

- » MV switchgear & LV board
- » Transformer
 - Each compartment usually has an individual door

Complexes

ormaset.p concrete housings can be combined to enable construction of complexes with two distribution transformers and switchgears.

Foundation of several housings combined with each other requires previous construction of properly levelled continuous footings. After the foundation of housings, gaps between them are sealed and their roofs are combined with ridge tiles.

Examples of modular solutions made of **ormaset.p**.

Technical details

Standards

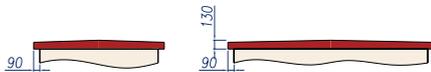
ormaset.p is designed in accordance with EN 62271-202 and applicable regulations.

Finishes

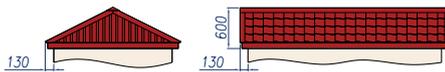
High capability of aesthetic harmonisation with the surroundings with our roof portfolio and surface adaptations.

Roof materials and different slope styles (bath or flat, gable or 2 slope, hip...) are available to meet any customer's needs.

Low hip roof; gradient: 1°



Ridge roof; gradient: 27°



Hip roof; gradient: 27°



Colours

| | Exterior | | |
|--------------|----------|----------|----------|
| | RAL 1013 | RAL 9003 | RAL 7032 |
| Doors & roof | | | |
| | | | |
| | | | |
| | | | |

🔗 Pipe: grey or brown

Transportation and installation

Due to small dimensions **ormaset.p** substations are transported to destination in one piece, ready for foundation.

For excavation and installation, please ask **Ormazabal** for the necessary technical documentation.

🔗 It is the installer's responsibility to calculate and create the external earthing network.

Family

ormaset.p range

ormaset.p-173: 1730 mm width series

ormaset.p-210: 2100 mm width series



ormaset.p-173/283



ormaset.p-210/240



ormaset.p-210/290

Technical data

Dimensions and weights

| ormaset.p | | 173/283 | 210/240 | 210/290 |
|----------------|------|---------|---------|---------|
| Width | [mm] | 1730 | 2100 | 2100 |
| Length* | [mm] | 2830 | 2400 | 2900 |
| Depth | [mm] | 800 | 800 | 800 |
| Height | [mm] | 2415 | 2415 | 2415 |
| Visible height | [mm] | 1615 | 1615 | 1615 |
| Total weight | [t] | 6.9 | 7.2 | 7.2 |
| Roof weight | [t] | 1.5 | 1.7 | 1.7 |

ormaset.p enclosures are characterized by its constructional flexibility which allows customized dimensions.
* Any other length under consultation.

Electrical configurations

ormaset.p enclosures are designed to house **Ormazabal** MV switchgear, such as, gas insulated **cgmcosmos** cubicles and **ga-gae** cubicles up to 24 kV.

| ormaset.p | 173/283 | 210/240 | 210/290 |
|--|---------|---------|---------|
| Typical MV configurations [#] | 2LP | 3LP | 3LP |
| LV Board [max outputs] | 16 | 16/8 | 16/13/9 |
| Transformer (oil type) [kVA max] | 630 | 630 | 630 |

[#] According to gas insulated **cgmcosmos** cubicles up to 24 kV.

[#] According to air insulated EA cubicles up to 24 kV.

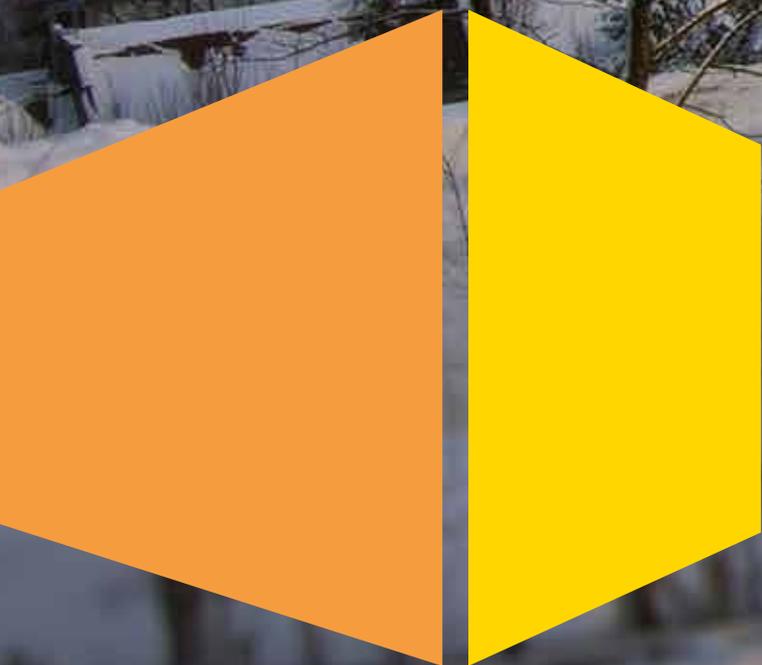
Note: For other cubicle systems such as **ga-gae** up to 24 kV, please consult **Ormazabal**.

Note: For other configurations, please consult **Ormazabal**.

Where:

L = Cubicle/feeder function

P = Cubicle/fuse protection function



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