



MV/LV Transformer Substations for  
Distribution Network Solutions

**ctc**

Under pole prefabricated transformer  
substations

Up to 36 kV, 250 kVA

IEC 62271-202 Standard

Reliable innovation. Personal solutions.



## Preface

After decades producing different types of industrialised enclosures and prefabricated transformer substations, in 1994 **Ormazabal** developed the **ctc** as a solution for rural distribution networks up to 36 kV.

A **ctc** is a kiosk-type prefabricated transformer substation installed at ground level under pole and is the non-walk-in-type, for medium-voltage networks up to 36 kV. It is characterised by the fact that the inside of its enclosure houses the transformer and the low-voltage board and all auxiliary elements and interconnections, while the protection and MV operation remain in the pole.

**ctc** prefabricated transformer substations are used in a multitude of Distribution Network Solutions (DNS) for utilities (public distribution) and end-users of electrical energy (infrastructure, industry and tertiary). Its application is mainly aimed at rural environments, natural spaces, water catchment areas, high fire-risk forest areas and areas with restricted or reduced space.

Up to now close to 5,000 rural transformer substations have been installed all over the world.

## Safety

- » Products, standard-built, tested and supplied as a unit
- » Heightened safety for persons against accidental direct contact, step voltage and contact voltage.
- » Fire barrier protection components: layer of pebbles on the pit
- » Pedestrian access to the transformer through two side doors, and to the low-voltage board via a side door

## Reliability

- » Fully factory-assembled (transformer, and internal earthing circuit in the enclosure)
- » Elimination of problems associated with birds nests
- » Decreased alteration features due to solar radiation, pollution or atmospheric agents, compared to on-pole solutions
- » Protection against heavy external impacts

## Efficiency

- » Ventilation by natural circulation of air, class 10, via two grilles installed in the transformer compartment covers
- » Quick and simple replacement
- » Input/output of MV and LV cables through pre-punched orifices at the base of the building

## 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

### ctc

- » Concrete monoblock enclosure with removable cover.
- » MV/LV distribution transformer, oil filled in dielectric liquid up to 36 kV and up to 250 kVA.
- » LV Switchgear: Low-Voltage Board
- » Direct MV and LV cable interconnections.
- » Earthing circuit connection.
- » Lighting and auxiliary services.

### Technical specification

Rated voltage	[kV]	12/24/36*
Frequency	[Hz]	50
Transformer		
No. of transformers		1
Power	[kVA]	≤250
Low-Voltage Board		
Rated voltage	[V]	440
Rated current	[A]	630



Executing a **ctc** of 36 kV / 250 kVA under a customised study

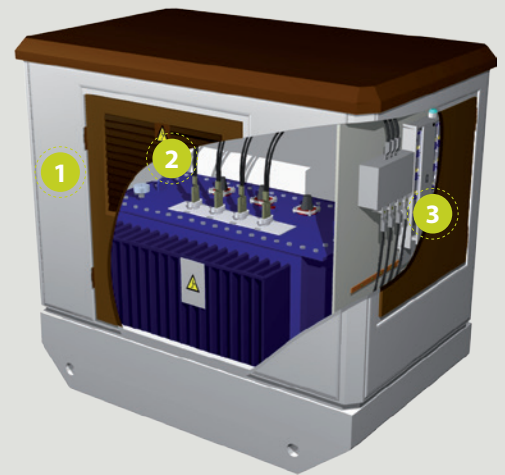
### Outer dimensions and weights

Length [mm]	1330
Width [mm]	2170
Height [mm]	2080
Visible height [mm]	1600
Weight [kg]	4600

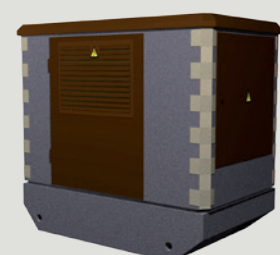
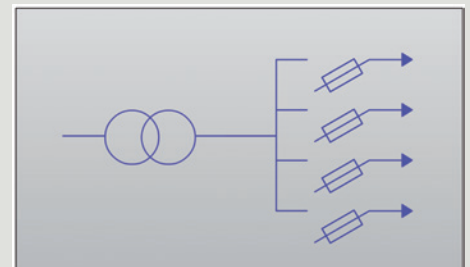


(\*) with a 250 kVA/36 kV transformer  
For other configurations and/or values consult **Ormazabal**

## Design



- 1 Concrete enclosure
- 2 Transformer and access door
- 3 Low-voltage board and access door



## Sustainability

- » Reduced environmental, visual and noise impact
- » Protection of birds as the transformer is under pole
- » Reduced dimensions
- » Low risk for discharges of the insulators to the public highway: dielectric liquid collection pit that is watertight and has resistant coating

## Continuous innovation

- » Great ability for aesthetic integration into its environment
- » Low-voltage auxiliary supply from cables from a generator set