

**Application:**

IEEE Standard C57.12.80 © defines a power transformer as a transformer that transfers electrical energy in any part of the circuit between the generator and the primary distribution circuits, and a distribution transformer as a transformer for transferring electrical energy from a primary distribution circuit to a secondary distribution circuit or consumer's service circuit.

Small power transformers manufactured by Magnetron are used mainly in industrial service loads, shopping malls, schools and educational institutions, and in utility substations.

**Scope of the offer**

Manufactured in compliance with NTC, IEC, ANSI and other applicable standards.

Three-phase transformer configuration is made in accordance with the connection required by the standard or the customer; the most common types are Dy, Yd, Dd, Yy, Dz, Yz.

**Ratings (kVA):**

Single Phase: 250 kVA to 500 kVA.

Three-phase: 630 kVA to 10,000 kVA.

**Basic Insulation Level:**

Single phase: Up to BIL 150 kV

Three-phase: Up to BIL 200 kV

Leveraging the expertise of our engineering team and the production capacity of its manufacturing plant, Magnetron can manufacture transformers with specific requirements determined by our customers within the ranges indicated herein.

**Typical construction mode:**

Transformers typically consist of an active part made up of the core (magnetic circuit), the coil (electric circuit) and the yoke clamp, which is determined in accordance with the type of transformer, placed in a tank that provides the equipment with specific features, depending on its intended application.

**Coils:**

- Rectangular section (single-phase from 250 kVA to 500 kVA, three-phase from 630 kVA to 1,250 kVA, circular section (three-phase from 1,500 kVA to 10,000 kVA), concentric with copper or aluminum windings.
- Insulation: High-quality paper with epoxy resin coatings.

**Cores:**

- Shell Type, wound (single-phase from 250 kVA to 500 kVA and three-phase from 630 kVA to 1,250 kVA); or Core Type, stacked (three-phase from 1,500 kVA to 10,000 kVA), step-lapped for easy assembly and disassembly without loss of dimensional characteristics, guaranteeing low losses and excitation currents.
- Materials: Cold-rolled grain-oriented silicon electrical steel sheet with insulating coating on both sides, low core loss and high permeability.



### Yoke clamps:

- Made of cold-rolled and hot-rolled steel (single-phase from 250 kVA to 500 kVA, three-phase from 600 kVA to 1,250 kVA and profiles from 1,500 kVA), they clamp the core, with individual bolted caps enabling easy disassembly for maintenance purposes.
- They guarantee high resistance to short circuit mechanical stresses, low noise levels and low excitation currents.

### Tanks:

- Single-phase transformers: Cylindrical made from Cold Rolled and Hot Rolled Steel.
- Three-phase transformers: Rectangular in shape, made of Cold Rolled or Hot Rolled steel with reinforcements capable of withstanding internal pressures resulting from temperature rise and mechanical stresses due to equipment installation and handling.
- Radiators attached to the tank or detachable from 2,500 kVA onward, in Cold Rolled steel.

### Accessories and protection devices:

MAGNETRON S.A.S. offers a variety of high voltage and low voltage protection systems, as well as control and alarm devices to control the basic functions of the transformers, such as pressure relief valves, temperature, oil level indicators, internal gas generation and moisture control devices, in accordance with the customer's requirements.

DESCRIPTION	
1	Lifting lug
2	External refrigerant liquid level indicator without contacts
3	Tank grounding device
4	Low voltage neutral grounding
5	High voltage bushings and terminal
6	Low voltage bushings and terminal
7	Pressure relief device without contacts
8	High- and low voltage bushings, rated power and grounding marking
9	Nameplate
10	Tap changer for no load operation
11	Refrigerant liquid recirculation and drainage device
12	Device to lift the cover of the main tank
13	Flat 90° rotating wheels
14	Butterfly valves for detachable radiators (for 2500 kVA and above)
15	Silica gel breather (for 2500 kVA and above)
16	Oil temperature thermometer without contacts
17	Expansion tank

**Optional accessories**

- Oil temperature thermometer with 2 contacts
- Pressure relief valve with 2 contacts
- Floating ball oil level indicator with 2 contacts
- Buchholz relay with two contacts
- Winding temperature thermometer
- Sudden pressure relay
- Vacuum pressure gauge without contacts
- Fans