CENTRADO
Distribution & Power Transformers
Introduction
CENTRADO is a transformer manufacturer, which established since 1976. CENTRADO has developed year to year and until now the product scope are:

Medium Voltage Transformer
- Distribution Transformer - 25 KVA up to 10.000 KVA ( 3 KV UP TO 24 KV )
- Generator Transformer
- Furnace Transformer
- Dual Voltage Transformer

Low Voltage Transformer
- Auto Transformer - 100 VA up to 1000 KVA (400/231 V ; 380/220 V ; 220/127 V ; 200/115 V )
  - Special order as inquiry
- Isolation Transformer
- Rectifier Transformer - 50 Amp up to 10.000 Amp
- K - Factor Transformer
- Starting Transformer - 3 HP up to 1500 HP

Production Facility
For product processing, our factory completed with high quality and sophisticated production machines, such as:
- Coil Winding Machine
- Guillotine Shear Machine
- Hydraulic Bending Machine
- Power Press Machine
- Hydraulic Press Brake Machine
- Drilling & Tapping Machine
- Welding Transformer
- Vacuum Oil Purifier
- Test Oil Machine
- Full Automatic Chain Hoist
**CENTRADO** transformer can handle dielectric test to high voltage 50Hz/60Hz and impulse voltage according to IEC Standard and Indonesia Standard (SPLN & SLI).

### Primary Voltage
Compatibility with voltage distribution system in Indonesia, i.e: 6 KV, 12 KV, 20KV and 24 KV. Primary voltage tapping had been done with comutator (Tap-Changer) with empty load on primary side. **CENTRADO** also serving special inquiry for other high voltage transformer according to costumer needs.

Tapping system is moved to appropriate +4%, +2.5% atau 5%. For transformer with capacity above 100 KVA can be made with 2 primary voltage comutator switch / construction voltage movement outside the tank makes usage with double function easier, can be locked for safety.

### Secondary Voltage
Secondary voltage side on empty load can be made 133 V/231 V (B1) and 231 V / 400 V (B2) or can be together with condition : on 133 V / 231 V only 75% and on 231 V / 400 V, so the power is : 100% from it’s normal power.

### Construction

**A. Transformer Core**
Transformer cores made from Grain Oriented Silicon Steel M4 0.27 mm designed to guarantee the mechanic power, reduce vibration and noises with low iron losses.

**B. Coils**
Coil made by high constructivity copper, coil on high voltage side made by enamel isolated copper wire, and on low voltage side made by paper isolated wire.

Note : If there is any special inquiry for higher isolation class, basic commodity will be provided.

* Cores and coils will then dry out with oven until is 2000 Mega Ohm.

**C. Terminal**
High voltage terminal using isolator porcelain or elastimold Synthetic Resin. Low voltage terminal using isolation porcelain with current above 1000A with syntehtic resin isolated copper.

**D. Tank**
Made by zinc plated steel (Electrogalvanized Zin Coated Steel ) or Mild Steel Plate. Construction designed with waterproff and airtight.

**E. Transformer Packing**
Transformer packing made by rubber that can hold high temperature and also has a good oil resistant.
F. Painting
Before painting process, has to vanish the oil and rust on steel sheet surface. Continue with last painting then heated on some temperature to gets a perfect result.

G. OIL
Minyak trafo mempunyai fungsi ganda yaitu sebagai isolasi dan pendingin. Sesuai standar PLN, olie trafo yang digunakan adalah : SHELL DIALA B atau sejenisnya.

Vector group
Generally for 25 KVA until 160 KVA, vector group that used is : YZN-11, YZN-5. And for above 200 KVA, vektor group that used is : DYN-5 atau DYN-11.

Transformer Equipment
Transformer equipment included on each transformer :
- Roller
- Oil drain/sampling valve
- Earthing terminal
- Thermometer pocket
- Oil Level Indicator
- Radiator
- Name plate and spesification diagram

Additional Equipment
- Buholz Relay or DGPT-2
- Dial thermometer with Alarm Contact & Tripping
- Elastimold
- Cable Box
- Pressure Relief Valve or Device
- Pressure Vacuum Gauge

Transformer Testing
- Ratio Test
- Insulation Test
- Iron Loses Test
- Copper Loses Test
- Impedance Test
- Resistance Winding Machine
- Dielectric Test 60 KV
- Over Voltage Test 350Hz
Quality Control

Quality control on Transformer, our factory equipped with test equipment as follows:
- Digital Low Resistance Ohm Meter
- Transformer Turn Ratio 3 Phase.
- Voltmeter, Amp Meter, Watt Meter
- Current Transformer
- Potential Transformer
- Induction Voltage Regulator
- Insulation Tester
- Oil Tester + Recorder
- High Voltage Test Set
- M - G Set (Induction Voltage Testing Device)

To increasing our service to costumer, we also give other service such as:
- Commissioning transformer
- Electrical installation
- Repair transformer
- Purifying oil transformer

For every transformer sales, CENTRADO gives **12 Month Warranty**.

Delivered transformer always followed by documents, ie:
- Certificate Test Transformer
- Certificate Warranty Transformer
- Manual /Maintenance Book
The values shown are subject to change without prior notice. The information is for reference only.