

ELECTRICAL DISTRIBUTION SOLUTIONS



Connecting People and Energy



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About Us

Since
1910

CAHORS GROUP, an international group specialized in designing, manufacturing of medium & low voltage electrical equipment and providing solutions for the electricity, water and gas and communication industries for over 110 years.

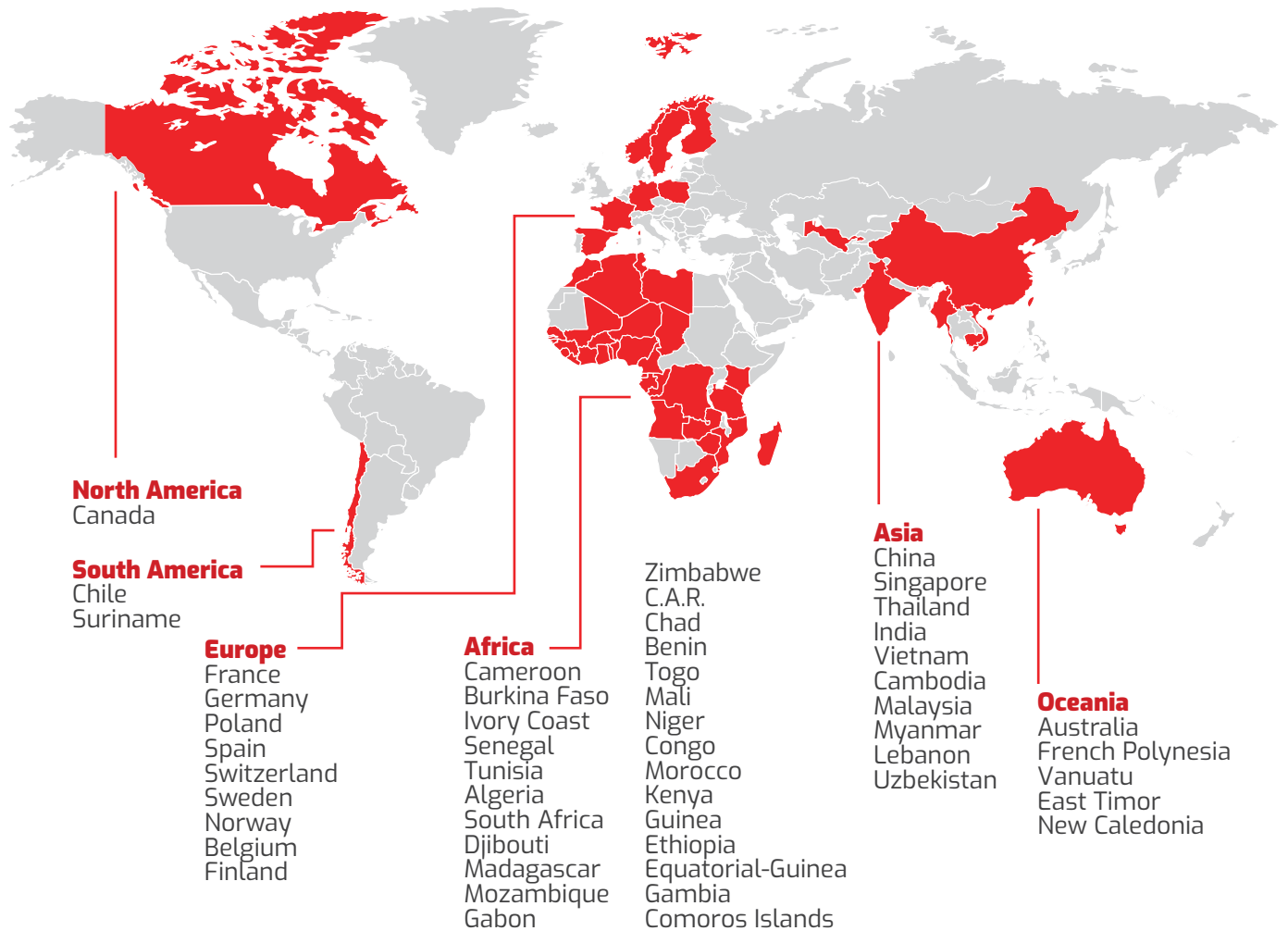
Cahors adapts to the dynamic environment through continual innovation and product development to meet the ever changing needs of distribution networks, smart grids and digital transformation.

Cahors built its first factory in France in 1910 and has grown to a group consisting of 14 subsidiaries and 12 production facilities all around the world.

Qingdao Cahors Electrical Equipment Co., Ltd (QCEE) is subordinate to Cahors Group, professional transformer designer and manufacturer, provides engineered power distribution solutions and personalized services in many segments. QCEE is dedicated to helping customers to offer the best transformer solutions and products.

Footprint & Application Sectors

QCEE has supplied equipment to over 58 countries
in the various sectors and industries:



Utility Distribution



Industry



Services



Infrastructure



Transportation



Mining



Port Facilities



Residential Areas



Oil, Gas, &
Chemical



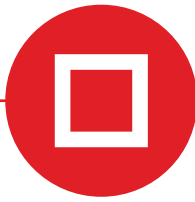
Renewable
Energy

Design & Manufacture Process



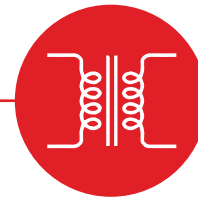
Design

Hundred years of design experience
Self-developed design software:
EXPERT and PHOENIX
3D parametric design



Core

High-quality Cold-Rolled Grain
Oriented silicon steel.
Self-designed automatic cutting
lines and stacking machines
Complete tracking documents from
steel sheet to core assembly



Coil

High-quality copper or aluminum
Self-designed winding machines
High mechanical strength and short
circuit withstand ability
Complete tracking documents from
raw material to coil assembly



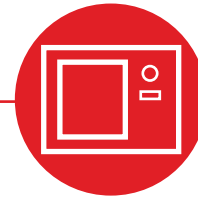
Tank Surface Treatment and Leakage Test

Anti-corrosion level: at least C5M
100% double leakage tests with
fatigue test process



Hermetical Sealing with Integrated Vacuum Oil Filling (IVOF)

Elimination of bubble, dust and
moisture inside of transformer
Guarantee of insulation system's
service life.



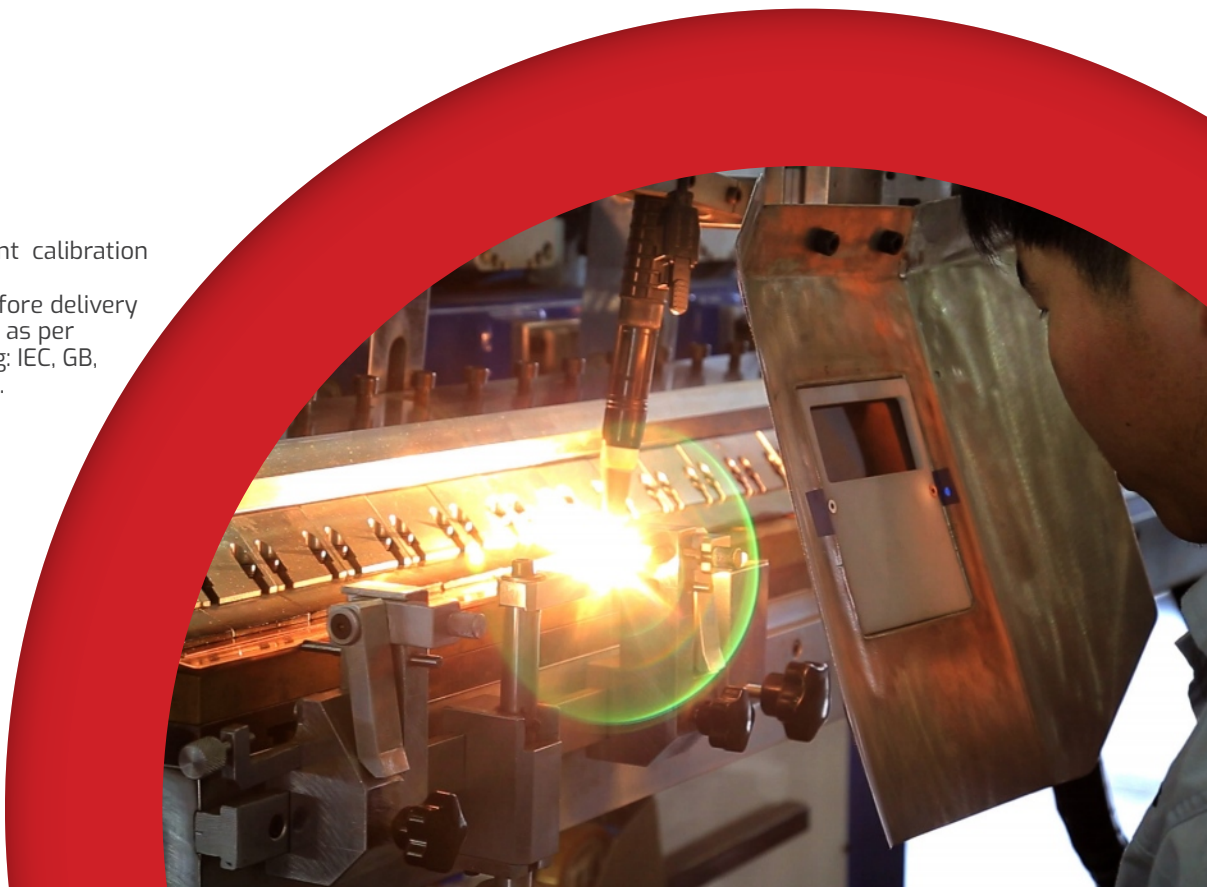
Dry Oven

Processing control of drying time
and temperature to remove the
moisture effectively and avoid the
insulation system ageing.

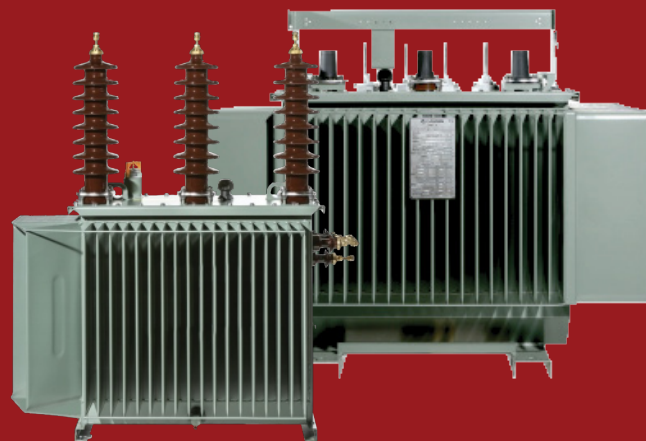


Test

In-time test equipment calibration
as per ISO 17025
100% routine test before delivery
for each transformer as per
different standard, eg: IEC, GB,
AS, IEEE, CSA, FM, etc.



CONVENTIONAL TRANSFORMER



ABOUT THE PRODUCT

Conventional distribution transformers are used outdoors or indoors on medium-voltage distribution systems. They are designed as step-up or step-down transformers. They are widely used for the residential, commercial, industrial, transportation, water treatment and renewable energy applications.

Cahors offers pad mounted transformers pole mounted transformers adapted to different installation requirements.

STANDARD EQUIPMENT

- High voltage bushings (Plug-in, Porcelain, Synthetic)
- Low voltage bushings (Porcelain, Busbar)
- Off-load tap changer
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base

OPTIONAL ACCESSORIES

- Thermometer pocket
- Oil level indicator
- Oil temperature indicator
- Pressure relief valve
- Multi-function protective device (DGPT2, DMCR)
- Winding temperature indicator
- CT
- Pressure vacuum gauge
- Sudden pressure relay
- Oil sampling valve
- Surge arrestors
- Arcing horns
- Junction box
- Terminal box (Or instrument junction box)
- Cable box
- Wheels
- Bund
- Enclosure
- Customized protection covers if required

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|---------------------------------------------------------------------------------------------------------|
| RATED POWER | 25kVA to 6300kVA |
| RATED VOLTAGE | - 0.4kV to 52kV - Dual Primary voltage or - Dual Secondary voltage |
| VECTOR GROUP | 3 phase: Dyn11, YNd11, Yzn11 Single phase: li0 |
| COOLING | ONAN, KNAN |
| INSULATION LIQUID | Mineral Oil, Less Flammable fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 AS 60076 AS 2374 GB 1094 NF EN 50464 NF EN 50588-1 HN 52-S-20 HN 52-S-27 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Compact dimensions and weight;
- High thermal inertia to withstand load cycles with power variations;
- Cost effectiveness for overall installation cost;
- High reliability;
- High short-circuit resistance;
- Long lifespan;
- Maintenance free in normal service condition;
- Lower noise;
- Lower losses (According to client's requirement)

CONSERVATOR TYPE TRANSFORMER



ABOUT THE PRODUCT

For transformer above 4MVA, Cahors also offers conservator type transformer suitable for expansion of a large amount of oil.

STANDARD EQUIPMENT

- High voltage bushings (Plug-in, Porcelain, Synthetic)
- Low voltage bushings (Porcelain, Busbar)
- Off-load tap changer
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base
- Conservator
- Rubber bag
- Oil level indicator
- Pressure relief valve
- Gas relay

OPTIONAL ACCESSORIES

- Thermometer pocket
- Oil temperature indicator
- Multi-function protective device (DGPT2, DMCR)
- CT
- Pressure vacuum gauge
- Winding temperature indicator
- Sudden pressure relay
- Oil sampling valve
- Surge arrestors
- Arcing horns
- Junction box
- Cable box
- Fans
- Control box for auxiliary cooling equipment
- Wheels
- Bund
- Enclosure

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|---------------------------------------------------------------------------------------------------------|
| RATED POWER | 4000kVA to 8000kVA |
| RATED VOLTAGE | 3.6kV to 52kV |
| VECTOR GROUP | Dyn11, YNd11, Yzn11 |
| COOLING | ONAN/ONAF, KNAN/KNAF |
| INSULATION LIQUID | Mineral Oil, Less Flammable fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 AS 60076 AS 2374 GB 1094 NF EN 50464 NF EN 50588-1 HN 52-S-20 HN 52-S-27 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Compact dimensions and weight;
- High thermal inertia to withstand load cycles with power variations;
- Cost effectiveness for overall installation cost;
- High reliability;
- High short-circuit resistance;
- Long lifespan;
- Maintenance free in normal service condition;
- Lower noise;
- Lower losses (According to client's requirement)



Featured Product

GST (Green, Safe Transformer)

ENHANCED PROTECTION



ABOUT THE PRODUCT

GST (Green, Safe Transformer) is fire protection transformer type with FM Approved certification.

GST is designed as per FM Approval 3990 Standard and its electrical data design can be customized in accordance with the Standards like IEC/ AS/ IEEE etc. to meet more application requirement.

GST is excellent on increased fire safety with high flash and fire points of >300°C and several protective devices, it's widely used in defense, infrastructure, industrial, mining and limit space installation applications with higher safety protection, cost and environmental benefits.

STANDARD EQUIPMENT

- High voltage bushings
- Low voltage bushings
- Off-load tap changer
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base
- FM approval plate
- Pressure relief valve
- DGPT2
- Junction box (above 300KVA)
- Pressure vacuum gauge (from 750KVA)
- Neutral CT (I ≥1000A)

OPTIONAL ACCESSORIES

- Winding temperature indicator
- Oil sampling valve
- Surge arrestors
- Sudden pressure relay
- Arcing horns
- Wheels
- Bund
- Cable box
- Enclosure

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| RATED POWER | 25kVA to 3150kVA |
| RATED VOLTAGE | Up to 36kV |
| VECTOR GROUP | 3 phase: Dyn11, YNd11 |
| COOLING | KNAN |
| INSULATION LIQUID | FM Approved Less Flammable Fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | FM3990 IEC 60076 AS 60076 AS 2374 GB 1094 IEEE C57.12.00 CAN/CSA C2.1 HN 52-S-20 HN 52-S-27 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Fire protection;
- Reduced clearance and transformer installation footprint
- Increased transformer overloading limits above nameplate
- High durability and reliability;
- Cost effectiveness;
- Less environmental impact;
- High biodegradability;
- High short-circuit resistance;
- Long lifespan;
- Maintenance free under normal service conditions;
- Lower noise;
- Lower losses (According to client's requirement)

SELF-PROTECTED TPC TRANSFORMER

with Breaker Protection



ABOUT THE PRODUCT

Cahors offers self-protected TPC transformers combined with MV fuses and disconnect switch in the transformer tank. Designed and patented by Cahors, TPC transformers provide a built-in cut off protection feature within the transformers to protect people and the environment from transformer internal failures. This kind of transformer is widely used in rural area in Europe.

STANDARD EQUIPMENT

- High voltage bushings (Plug-in, Porcelain, Synthetic)
- Low voltage bushings (Porcelain, Busbar)
- Off-load tap changer
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base
- MV fuses
- Disconnect switch

OPTIONAL ACCESSORIES

- Thermometer pocket
- Oil level indicator
- Oil temperature indicator
- Pressure relief valve
- Oil sampling valve
- Surge arrestors
- Arcing horns

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|----------------------------------------------------------------------------------|
| RATED POWER | - 25 to 160kVA for pole top mounted type - Up to 630 kVA for pad mounted type |
| RATED VOLTAGE | 3.6kV to 36kV |
| VECTOR GROUP | 3 phase: Dyn11, YNd11, Yzn11 Single phase: li0 |
| COOLING | ONAN, KNAN |
| INSULATION LIQUID | Mineral Oil, Less Flammable fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 NF EN 50464 NF EN 50588-1 HN 52-S-20 HN 52-S-27 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Protection-disconnection feature for improving the safety and quality of the supply;
- Risk of fire hazard and transformer explosion eliminated;
- Easy to locate the problem;
- Removal of all external manifestations of the device in case of an internal fault, ensuring the safety of goods, individuals, and the environment;
- Avifauna protection;
- High thermal inertia to withstand load cycles with power variations;
- Fast and easy installation;
- Cost effectiveness for overall installation cost;
- High reliability;
- High short-circuit resistance;
- Long lifespan;
- Maintenance free under normal service conditions;
- Lower noise;
- Lower losses (According to client's requirement)

EARTHING (AUXILIARY) TRANSFORMER



ABOUT THE PRODUCT

Earthing transformer is protection transformer to provide a physical neutral point in power system where the neutral connections are unavailable, it serves to limits the fault current when a single-phase fault occurs.

If load application is required for earthing transformer, Cahors offers Earthing auxiliary transformer for power supply.

STANDARD EQUIPMENT

- High voltage bushings
- Low voltage bushings for auxiliary supply use
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base
- Pressure relief valve
- DGPT2
- Junction box

OPTIONAL ACCESSORIES

- Thermometer pocket
- Terminal box (or instrument junction box)
- CT
- Winding temperature indicator
- Pressure vacuum gauge
- Sudden pressure relay
- Oil sampling valve
- Surge arrestors
- Off-load tap changer
- Junction box
- Cable box
- Enclosure
- Wheels
- Bund

ELECTRICAL CHARACTERISTIC

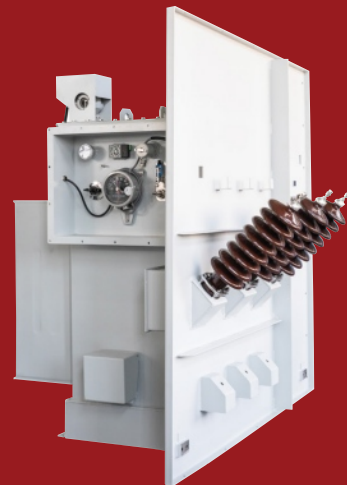
| | |
|-----------------------------------------------|---------------------------------------|
| RATED POWER | 100kVA to 2000kVA for auxiliary power |
| RATED VOLTAGE | Up to 36kV |
| RATED SHORT FAULT CURRENT AND DURATION | Up to 2500A 10S |
| VECTOR GROUP | ZN11, ZNyn11, YNyn0d1 |
| COOLING | ONAN, KNAN |
| INSULATION LIQUID | Mineral Oil, Less Flammable fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 AS 60076 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Reduced potential faults without negatively impact
- Increased monitoring and safety of power system
- High durability and reliability;
- Cost effectiveness;
- High short-circuit withstand ability with NOMEX paper;
- Long lifespan;
- Maintenance free under normal service conditions;
- Lower noise;

AMERICAN TYPE TRANSFORMER



ABOUT THE PRODUCT

Cahors can provide combined American type transformers. This type of transformer is equipped with high-voltage load switch, fuses and other components inside the tank so that the structure is more compact.

STANDARD EQUIPMENT

- High voltage bushings
- Low voltage bushings
- Tap changer
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base
- Pressure relief valve
- Oil level indicator
- Oil temperature indicator
- Pressure vacuum gauge
- High-voltage load switch
- Fuses

OPTIONAL ACCESSORIES

- CT
- Sudden pressure relay
- Oil sampling valve
- Surge arrestors
- Winding temperature indicator
- Fans
- Auxiliary cooling equipment
- Controls box for auxiliary cooling equipment
- Auxiliary equipment power supply

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|----------------------------------------------------------|
| RATED POWER | 100kVA to 2000kVA |
| RATED VOLTAGE | 12.3kV to 33kV |
| VECTOR GROUP | Dyn11 |
| COOLING | ONAN, KNAN |
| INSULATION LIQUID | Mineral Oil, Less Flammable fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 IEEE C57.12 IEEE C57.106 IEEE C57.147 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Compact dimensions and weight;
- High thermal inertia to withstand load cycles with power variations;
- Cost effectiveness for overall installation cost;
- High reliability;
- High short-circuit resistance;
- Long lifespan;
- Maintenance free in normal service condition;
- Lower noise;
- Lower losses (According to client's requirement)

RECTIFIER TRANSFORMER



ABOUT THE PRODUCT

The rectifier transformers designed by Cahors could be able to withstand frequent overcurrent and overvoltage caused by short circuits and/ or tripping of high-voltage circuit breakers. They are strong to withstand high cyclical loads and thermal stresses.

The rectifier transformers play an important role in many segments, especially for metallurgical plants and power supply to electric drives and traction.

STANDARD EQUIPMENT

- High voltage bushings (Plug-in, Porcelain, Synthetic)
- Low voltage bushings (Porcelain, Busbar)
- Off-load tap changer
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base

OPTIONAL ACCESSORIES

- Thermometer pocket
- Oil level indicator
- Oil temperature indicator
- Pressure relief valve
- Multi-function protective device (DGPT2, DMCR)
- Cable box
- CT
- Winding temperature indicator
- Sudden pressure relay
- Pressure vacuum gauge
- Oil sampling valve
- Junction box
- Cable box
- Wheels
- Bund
- Enclosure

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|---------------------------------------------------------------------------------------------------------|
| RATED POWER | 260kVA to 10,000kVA |
| RATED VOLTAGE | 3.6kV to 52kV |
| VECTOR GROUP | Dyn11, Dd0dy11 |
| COOLING | ONAN, KNAN |
| INSULATION LIQUID | Mineral Oil, Less Flammable fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 AS 60076 AS 2374 GB 1094 NF EN 50464 NF EN 50588-1 HN 52-S-20 HN 52-S-27 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Stable electrical performance with high insulation system;
- Strong overload capacity and overvoltage capacity;
- Good thermal stability with accurate temperature rise calculation;
- Reduced harmonics impact in power system;
- High reliability with high mechanical strength;
- High short-circuit resistance;
- Long lifespan;
- Maintenance free in normal service condition;
- Lower noise;
- Lower losses (According to client's requirement)

STEP UP TRANSFORMER

for ESP System



ABOUT THE PRODUCT

Cahors offers transformers connected with VSD used in electric-submersible pumping systems (ESP system) of oil & gas field with high mechanical strength to resist the VSD frequent startup and wild frequency range feature.

STANDARD EQUIPMENT

- High voltage bushings (Plug-in, Porcelain, Synthetic)
- Low voltage bushings (Porcelain, Busbar)
- Off-load tap changer
- Lifting lugs
- Earthing terminals
- Filling device
- Drain valve
- Rating plate
- Skid base

OPTIONAL ACCESSORIES

- Thermometer pocket
- Oil level indicator
- Oil temperature indicator
- Pressure relief valve
- Multi-function protective device (DGPT2, DMCR)
- Cable box
- CT
- Winding temperature indicator
- Sudden pressure relay
- Pressure vacuum gauge
- Oil sampling valve
- Junction box
- Cable box
- Wheels
- Bund
- Enclosure

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|---------------------------------------|
| RATED POWER | 130kVA to 1000kVA |
| RATED VOLTAGE | 1.12kV to 4.988kV |
| VECTOR GROUP | Dd0/YNd11 |
| COOLING | ONAN, KNAN |
| INSULATION LIQUID | Mineral Oil, Less Flammable fluids |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 IEEE Std C57.12.00 |

Note: Cahors offers customized dimension and cable connection structure design and products.

ADVANTAGES

- Stable electrical performance with high insulation system;
- Strong overload capacity and overvoltage capacity;
- Good thermal stability with accurate temperature rise calculation;
- Reduced harmonics impact in power system;
- High reliability with high mechanical strength;
- High short-circuit resistance;
- Long lifespan;
- Maintenance free in normal service condition;
- Lower noise;
- Lower losses (According to client's requirement)



Featured Product

IP67 GIT

(Gas Insulated Transformer)



ABOUT THE PRODUCT

Cahors' dry type transformer is designed with a fully sealed structure, named GIT (Gas Insulated Transformer). This kind of transformer is installed in a fully sealed enclosure to prevent contact with dust, moisture and other contaminants.

STANDARD EQUIPMENT

- High voltage bushings
- Low voltage bushings
- Tap changer
- Lifting lugs
- Earthing terminals
- Rating plate
- Skid base

OPTIONAL ACCESSORIES

- Winding temperature indicator
- Arching detector (Alarm/Trip)
- Fans
- Instrument protection covers
- Junction box
- Cable box

ELECTRICAL CHARACTERISTIC

| | |
|---------------------------------|----------------------------------|
| RATED POWER | 50kVA to 4000kVA |
| RATED VOLTAGE | 1.1kV to 22kV |
| VECTOR GROUP | Dyn11 |
| COOLING | ANAN, ANAF |
| SURFACE PROTECTION | Powder painted |
| IP RATING | IP67 |
| DESIGN AND TEST STANDARD | IEC 60076 AS 60076 AS 2374 |

ADVANTAGES

- Safety due to High Fire Rating with F1 and on-time failure detection
- Reduced clearance and transformer installation footprint
- High resistance to flame and moisture
- Cost effectiveness for overall installation cost;
- High reliability;
- High short-circuit resistance;
- Longer service life
- Maintenance free in normal service condition;
- Lower noise;
- Lower losses

Transformer Accessories



Winding Temperature Indicator

Reliable and accurate temperature measurement ensures a longer lifetime of a transformer and is crucial to maintaining the overall health of the asset. Winding temperature indicator provides alarm and control signals that are used to activate cooling control systems on a transformer. Maintaining proper cooling controls can extend the lifetime of the transformer.



Protection Relay

The Detection- Gas and Pressure Temperature (DGPT) is a protection relay for hermetically sealed oil-filled transformers. The DGPT detects the emissions of gasses, the internal overpressure and monitors the temperature of the oil.



Oil Sampling Valve

The sampling valve is used to draw a fluid sample from the transformer tank and allow for trouble-free service over a long period of time. It is recommended that the fluid sample is taken on a yearly basis to ensure the equipment runs safely and efficiently.



Junction Box

The transformer junction box is an enclosure that houses electrical cables that are joined together and safely protects the connections.



Gas Relay

The transformer gas relay is a protective device that provides an early indication of faults occurring in a transformer. It detects the accumulation of gases, providing an alarm after a given amount of gas has been collected.



Arching Horn

The transformer gas relay is a protective device that provides an early indication of faults occurring in a transformer. It detects the accumulation of gases, providing an alarm after a given amount of gas has been collected.



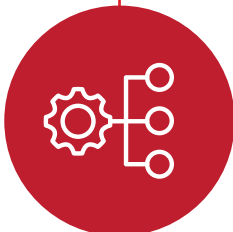
Current Transformer (CT)

Current transformers (CTs) are sensors that measure alternating current (AC). It is used to transform the current from a higher value to a lower value.



Self Bunded Enclosure

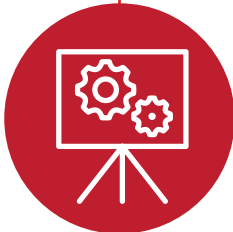
Specialised self bunded enclosure, with a removable cover to enable 360° access to the transformer. The enclosure is vented to control the temperature inside and allow heat to escape from the transformer. There is an oil containment built into the enclosure, as well as integrated fork pockets for convenience.



Spare Parts



Repair & Maintenance



Training
(Onsite & factory)



Customer Claim Evaluation

Service & Support

Cahors continues to support you and service of your transformers after delivery and commissioning with our service team. Our service allows our customers to maximize the return on transformer investment by ensuring a high reliability and efficiency, reducing life cycle costs and ensuring optimized performance.

In addition to installation and commission services, our professionals provide maintenance and repair services. We also provide technical trainings for our customers.

Why QCEE?



RELIABLE

More than 50 years design and manufacture experiences; Processing quality management;



EFFICIENT

Cost-Effective Solution with High Performance
Optimized Resource Use and Lower Energy Consumption
Less Maintenance Requirement



INNOVATIVE

Intensive R&D Investment
Customized Design
Product Diversity



SUSTAINABLE

Eco-Friendly Manufacturing
Technology advancement

Projects Gallery

Oil & Gas



Mining



Factory



Solar Farm



Utility





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Connecting People and Energy

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