Hyosung Oil Immersed Transformers,
Your Reliable Energy Partner

Product Arrangement

Ratings
- Single or 3 - Phase Unit
- Rated Frequency: 50Hz or 60Hz
- Thermal Insulation Class: A
- Winding Conductor: Copper or Aluminum
- kVA Range: From 100kVA up to 60MVA
- High Voltage: 3.3kV - 66kV (with taps, N.L.T.C. or O.L.T.C.)
- Low Voltage: 600V below
- Production Capacity: 12,000MVA/year
- Basic Insulation Level: 30kV BIL through 350kV BIL

Options and Accessories
- Oil temperature indicator
- Winding temperature indicator
- Oil level indicator
- Buchholz relay
- Pressure relief device
- Sudden pressure relay
- Thermometer pocket
- Skid base or bi-directional rollers
- Cooling fan and fan control panel
- Various oil preservation system
- Other accessories are available upon request

Transformer for Special Applications
- For Rectifiers
- For Harmonic Distortion
- For Arc Furnaces
- For Variable Speed Drives
- For Reactors
- For Inverter and Converters
- Earthing Transformers
- Excitation Transformers
- High Efficiency Transformers
- Earthing Transformers
- Hyosung offers customized solution for individual customer’s needs

For Petrochemical & Chemical Plants

Petrochemical and chemical plants are processing industries, and operate continuously 24/7. If one facility stops, everything else must be gradually stopped. Moreover once this happens, petrochemical and chemical raw materials become solid and transmute, it should be burned and purified before the facilities start to operate again, so the damage is huge. By thinking from the customer’s point of view, Hyosung ensures the Stability of transformers. We have been actively engaged in large-scale petrochemical and chemical projects around the world.

Main Service Areas
- Naphtha Cracking Complexes
- Aromatics Complexes
- Fertilizer & Pesticide Complexes
- Chemical Plants
- Fine Chemical Plants
For Oil & Gas Plants

Different from the past, most oil and gas plants accept electric furnaces for the production process. These types of facilities use an immense amount of electricity. Because the quality of electricity is directly related to the quality of oil and gas, Stability and Lasting Quality are key factors for transformers.

Hyosung has supplied high and secure stability transformers for fields of oil and gas facilities, such as oil production, refinery, and gas processing facilities.

Main Service Areas
- Oil and Gas Production Facilities
- Oil Refinery Facilities
- HOU (Heavy Oil Upgrading) Facilities
- FCC (Fluidized Catalytic Cracking) Facilities
- Gas Processing Facilities
- LNG Facilities

For Power Plants & Substations

Electricity is vital for most everyday activities. Power plants connect to a huge network of people, electric lines, and generating equipment. Because of this network, transformers in power plants and substations are very important.

Power plants need to generate high-quality power and very stable loads, so the top element of a transformer is Efficiency. With Hyosung transformer’s top-class efficiency, Hyosung has supplied products to various power plants, such as nuclear and thermal power plants and substations. With extensive experience records and accumulated experience, Hyosung offers high-quality transformers to the power sectors.

Main Service Areas
- Combined Cycle Power Plants
- Thermal Power Plants
- Cogeneration Power Plants
- Diesel Engine Power Plants
- Geothermal Power Plants
- Hydropumped Storage Power Plants
- Wind Power Plants
- Transmission, Substation & Distribution
- Nuclear Facilities
**Product Arrangement**

Hyosung offers three-phase and single-phase Cast Resin Transformers in the following ratings:

- **Rated Frequency**: 50Hz or 60Hz
- **Thermal Insulation Class**: B, F
- **Winding Conductor**: Aluminum or Copper
- **Capacity Available**: From 100kVA up to 40MVA
- **High Voltage**: 36kV, 24kV, 12kV, 6.6kV
- **Low Voltage**: 6.6/3.3kV, 600V below

- **Coil Temperature Rise**: Primary: 80°C, 100°C
  Secondary: 80°C, 100°C

- **Applied Standards**: IEC, ANSI, NEMA, DIN, JEC

- **Basic Lighting Impulse Insulation Level (BIL)**: up to 1.7kV

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Voltage Class</td>
<td>30kV</td>
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<tr>
<td>MVA</td>
<td>145/170kV</td>
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</tbody>
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**Specification**

- **Classification**: Indoor, Outdoor
- **Installation Area**: Indoor, Outdoor
- **Rated Voltage (kV)**
  - 1st Voltage and Tap Voltage: F23.9-R22.9-21.9-20.9-19.9
  - 2nd Voltage: 6.6/3.3 0.38/0.22 0.22/0.11 0.38/0.22
  - Phase: 3ph 3ph 1ph 3ph 3ph
  - Standard Winding: △-△, △-Y, Y-Y, 3-winding
- **Rated Capacity (kVA)**
  - 1500 1500 1500 1500 1500
  - 3000 3000 3000 3000 3000
  - 1000 1000 1000 1000 1000
  - 500 500 500 500 500
  - 400 400 400 400 400
  - 300 300 300 300 300
  - 200 200 200 200 200
  - 150 150 150 150 150
  - 100 100 100 100 100
  - 50 50 50 50 50
  - 25 25 25 25 25

**Application**

- **Location with installation restrictions** (non-flammability is important)
- **Location where fire-prevention is required**
- **Location where high-reliability is required**
- **Location where environmental friendliness and resistance against hard conditions are required**

**General and public buildings**
- Hospitals
- Other public buildings
- Shopping centers
- Subways

**Industrial plants**
- Vehicle plants
- Semi-conductor plants
- Chemical plants
- Electric Arc Furnaces

**Marine and new energy generation facilities**
- LNG vessels and electric-driven vessels
- Wind Turbines
- Photovoltaic generation

**Special space**
- Inverter & Converter
- UPS Systems
- Electric Arc Furnaces
- Adjustable Speed Drives
- Electric Welding Equipment
- Industrial Process Controls

**Special load transformers**
- Power plants (atomic, hydroelectric, thermal, wind, tidal)
- Airports
- Container cranes
- Tunnel excavation

**Wolseong atomic power plant**
- 7.5/10MVA (supplied in 1995, currently in preparation of replacement)

**Incheon International Airport (1999~)**