



EKARAT

Extraordinary As Standard



Dry Type Cast Resin Transformer

The Excellency



If you want the best,
Think Ekarat



With more than 40 years experience in transformer field experience, Ekarat Engineering Public Company Limited has become well known as the top company for quality transformers. Ekarat's manufacturing team of transformer specialists are pioneers in the development a new technology, which allows us to provide high quality products while being cost effective. In 1995, Ekarat became one of the first companies to introduce a dry type cast resin transformer to the market. Since then, our dry type cast resin transformers have been produced and installed in more than 1,000 locations across Thailand. With an eye on the future, our goal is to make our dry type cast resin transformers the best in the market. Our new industrial partnership with TMC (Europe) – the leader in design and manufacturing of dry type cast resin transformers has allowed us to broaden our global presence, gain access to new technologies, and assemble dry type cast resin with aluminum coil from TMC for more than 10 years. With these new developments, we produced and installed more than 1000 more transformers across Thailand.

Ekarat Engineering Public Company Limited is a secure company with high performance transformer specialist team that is always ahead of the curve when it comes to technology, design, and product execution in our industry. As we like to say, "If you want the best, think Ekarat!"

Production Process

Transformers Typically Consist of

- A silicon steel core, where the magnetic field lies. The core is made up by (vertical) columns and (horizontal) yokes ;
- One or more aluminum or copper secondary windings assembled coaxially to the core ;
- One aluminum or copper primary winding assembled coaxially around the secondary winding.

The main features of TMC transformers are described below



The magnetic core of TMC transformers is manufactured using magnetic grain-oriented silicon steel sheet. This type of steel is highly permeable by the magnetic field and its fluctuations, thus reducing losses. The joints between columns and yokes are Step-Lap inserted sheet, so that the magnetic stream flows more easily, no-load current and noise are reduced and the core has a good mechanical stiffness.



Primary Winding

The primary winding (medium voltage) is made up by a thin aluminum or copper plate conductor wound together with a polyester insulating film. The winding consists of more coils continuously wound by computerized machines which also execute connections between the coils and the tap welds. Once completed, the winding is vacuum insulated with quartz epoxy resins and then polymerized in a furnace. The process control ensures the highest mechanical homogeneousness of the winding. Great advantages are thus achieved in terms of resistance to thermal cycles, partial discharges and pollutants.

Secondary Winding

The secondary winding (low voltage) is made up by an aluminum or copper single-plate conductor wound in an epoxy resin-soaked insulation on automatic winders which guarantee perfect tension and compactness of the coil. The wound coil is then vacuum-soaked. Thanks to the high quality materials and the winding rigorous process, the coil optimizes heat dissipation and easily resists to electromechanical stress in case of short circuit.



Testing

Testing on transformers are regulated by standard IEC 60076-11 and are divided into routine tests, type tests and special tests.

Routine tests

- Measurement of the electrical resistance of windings;
- K transformation ratio measurement and vector group check;
- $U_{cc}\%$ short circuit voltage measurement;
- P_{cc} short circuit losses measurement;
- P_0 no-load losses and $I_0\%$ no-load current measurement;
- Applied voltage insulation tests;
- Induced voltage insulation tests;
- Partial discharges measurement;
- Dimensions check.

Type tests

- Lightning impulse test;
- Heating test.

Special tests

- Noise level measurement;
- Short circuit resistance test;
- Thermal shock test (C1-C2);
- Ambient test.



Project References



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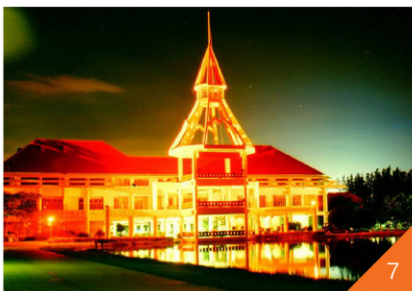
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1. Central Plaza Udonthani
2. The Coast
3. Holiday Inn
4. A-Link
5. Belle Condo
6. The Best
7. Thammasat University
8. IRCP Rayong
9. Phramongkutklao Hospital
10. Government Pharmaceutical Organization (GPO)

Certificates

Ekarat are Authorized Distributor by TMC



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