

# Our Solution. Your Transformers.

## Amorphous Core Transformers

- Oil immersed up to 14 MVA, 36 kV
  - Corrugated tank design
  - or
  - Rigid tank with bolt on radiators
- Dry-type up to 5 MVA, 36 kV

## Reference Standards

- IEC 60076-1
- BS standards

**Reduce Your Energy Losses & The Environmental Impact!**

## Amorphous Core Transformers

All transformers have two types of energy losses; *load losses* and *no-load losses*. The load losses arise in the windings of the transformer and are depending on the loading condition. The no-load losses are depending on the construction and the material used in the magnetic core.

The magnetic core of an amorphous core transformer is made of noncrystalline amorphous metal instead of traditional grain oriented silicon steel. The array of atoms is irregular arranged and it gives the material its specific properties, i.e. reduced eddy and hysteresis losses in the material resulting in low no-load losses of the transformer.

The no-load losses always exist when a transformer is connected to the network independent of loading condition. A reduction of the no-load losses has therefore a great impact over time. Using amorphous core transformers will contribute to sustainable developments in your energy distribution.



## General Standard Design

Our amorphous core transformers are electrically designed and tested in accordance with applicable IEC-standards. Other national standards are available upon request. A design which corresponds to the mechanical requirements of BS standard already exists.

Our transformers are manufactured to order and we can produce transformers that are designed according to your specific requirements.

## Energy Losses

The level of losses can be made according to the standardized energy loss series specified in the European Standard EN-50541-1 or tailor made to fit your specific requirements for your application and loading condition.

The no-load losses of our standard design are 40-50% lower compared to most efficient energy class Ao in European Standards EN-50541-1 (2012). In general amorphous core give up to 75% energy savings compared to conventional core steel materials (CRGO).

## Dry-type Transformers

Our standard dry-type transformers are made with aluminum conductors and with insulation according to class F. The insulation system is cast resin for high voltage windings and prepreg for low voltage windings. The transformers are equipped with bolted links for off-circuit voltage regulation in steps of  $\pm 2 \times 2.5\%$ .

Our standard dry-type cast resin transformers are naturally air cooled (AN) and IP00. Upon request can standard types of painted steel sheet enclosures be provided at different ingress protection classes (IP-class). The transformers fulfill E2-C2-F1 in terms of environmental, climatic and fire behaviour classifications.

## Oil Immersed Distribution Transformers

Our standard transformers are hermetically sealed and made with corrugated tank design. The flexible corrugated cooling will take up the oil expansion. Upon request can the transformer be made free breathing, which means adding an oil expansion/conservator tank equipped with a dehydrating breather. Our standard design is equipped with off-circuit tap changer for voltage regulation in steps of  $\pm 2 \times 2.5\%$ .

## Oil Immersed Power Transformers

Our oil-immersed power transformers are naturally air cooled (ONAN) and generally having top cover mounted bushings without cable boxes and rigid radiator tank with bolted cover. Upon request can the transformer be made with side mounted bushings.

Our standard design is equipped with off-circuit tap changer for voltage regulation in steps of  $\pm 2 \times 2.5\%$ . Upon request can our power transformer be equipped with on-load tap changer. We can also supply power transformers for different applications and with various methods of forced cooling.

*The factory used for BTB's amorphous core transformers is experienced and has delivered more than 77 000 amorphous core transformers since year 2000.*

*In year 2007 was the world's largest power transformer 12/15 MVA with amorphous core delivered.*



*BTB Plaza has served as the marketplace for transformers since 2004. Our Finnish entrepreneur-driven company is known for its speed, flexibility and reliability.*

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*The Transformer Marketplace*

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