agea - kull

Cylinder Type Test Transformers and Transformer Cascades

THE ADVANCED SOLUTION FOR
HIGH VOLTAGE AC TESTING

agea – kull ag
Electric Apparatus, Meisenweg 1
CH-4552 ***Derendingen*** *Switzerland*

Fon: +41 32 681 54 24
Fax: +41 32 681 54 20

E-mail: info@agea-kull.ch
Web: www.agea-kull.ch

Cylinder Type Test Transformers and Transformer Cascades

Application

Cylinder type test transformer systems are used as high voltage source for dielectric testing of medium and high voltage components as

- Power and Distribution Transformers
- Cables, Terminations and Joints
- Instrument Transformers
- GIS/GIL and Switchgears
- Insulators and Bushings

as well as for research, development and education purposes.

On-Site Testing

Especially for on-site testing, the modular design with two or more stacked small transformer units is beneficial and reduces the effort for transportation and erection of the system. They can be mounted on a trailer or transported in a container.

Laboratory Use

In test laboratories, transformer cascades allow the generation of high voltages with low ground floor requirements. For higher output currents, the stacked transformers can be operated in parallel.

Partial Discharge Measurements

Different kinds of partial discharge measurements like conventional method, non-conventional method with integrated sensors or UHF-method can be applied. With a suitable mains and high voltage filtering, pd-levels of less than 2pC can be achieved.

Breakdown Tests

A suitable selection of the short circuit impedance limits the failure current and external damping elements protect the transformer against transient overvoltages.

Tailor-made Solutions

agea-kull designs and builds transformers and transformer cascades tailor made to your requirements. The following list represents therefore only an excerpt of our manufacturing range.

Example of a Test Set
including

- Control and compensation unit
- Regulating transformer
- High voltage test transformer
- Damping impedance
- Capacitive divider

→

Design of Components

High Voltage Transformers

agea-kull developed a special kind of cylinder type transformers. Starting with 150kV nominal voltage, they consist of two high voltage windings in series, mounted on an iron core at half potential. The complete active part is fixed in a steel middle potential tank and isolated by use of two reinforced cast resign cylinders.
Electrodes ensure a pd-free operation and protect the transformer in case of overvoltages.

Advantages:

- Shock-proof design, capable to withstand frequent transportation
- Protected against overvoltages
- Symmetrical active-part enables parallel operation of stacked transformers (if equipped with a tertiary winding)
- High ONAN cooling performance because of steel middle part

Compensation Reactors

Primary compensation reactors reduce the required input current. Cascade internal compensation reactors ensure a linear voltage distribution and reduce the load for the base transformer.
High voltage reactors can be used to extend the load range or to adapt it to the actual test object.

Regulating Transformers

An oil or air insulated column type regulating transformer of the ***agea-kull*** ST1-series with special collector design is used to adjust the test voltage.

Control Unit

Either robust relay based control units or modern computer controls can be delivered.
The latter provide the possibility of

- Automatic sequence testing
- Data storage and test protocol generation
- Setting of high voltage trips
- Adjustable flash detection

Typical High Voltage Transformers

Type	Voltage kV	max. Current A	On-Duty (On/Off/perDay) min	Diameter x Height mm	Weight kg
TEO10-100	100	0.2	60min On	Ø690x870	330
TEO25-150	150	0.53	15/60/6x	Ø900x1580	1400
TEO20-200	200	0.25	15/60/6x	Ø970x2100	1600
TEO125-250	250	1.0	15/60/5x	Ø1450x2500	3600
TEO150-300	300	1.0	15/60/6x	Ø1850x2700	4000
TEO200-400	400	1.0	15/60/6x	Ø1860x3100	4500

Other voltages, currents and duties on request!