

ABB AG, ELDS-L

Test Laboratories in Ratingen

Test Laboratories Ratingen

Overview

Basic Features

- Flexible
- Independent
- Well experienced in testing of medium and low voltage equipment (testing since 1954)
- Founding Member of PEHLA (1960)
- Founding Member of Short Circuit Testing Liaison (1969)
- Accredited by DAkkS since 1993
- Very efficient testing due to high automation standard
- Size of laboratories: 4200 m²
- Member of UL Client Test Data program 2015



Accredited areas

Testing laboratories

- High power testing laboratory
- Temperature rise testing laboratory
- High voltage testing laboratory
- Mechanical testing laboratory
- Calibration laboratory
- Material laboratory



Accreditation by DAkkS

DAkkS

DAkkS is the national accreditation body of the Federal Republic of Germany.

It acts in the public interest in accordance with Regulations (EC) No. 765/2008 and the German Accreditation Bodies Act (AkkStelleG) as the sole body providing accreditation in Germany

ILAC

DAkkS is a member of the international accreditation organizations European Co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC).



PEHLA

The members

PEHLA (Prüfung Elektrischer Hoch-Leistungs-Apparate) is an association of owners of high-power testing laboratories in Germany and Switzerland.

ABB	ABB AG Distribution Solution Deutschland
Hitachi	Hitachi Energy Switzerland Ltd
GE GRID	GE Grid GmbH
SCHNEIDER ELECTRIC	Schneider Electric Sachsenwerk GmbH
SIEMENS Energy	Siemens Energy (Berlin)
SIEMENS	Siemens Aktiengesellschaft (Frankfurt and Berlin)



Accredited areas

Information about Short Circuit Testing Liaison (STL)

The members of STL are organizations which deal with the testing of high-power electrical components and have testing facilities with a short-circuit capacity of at least 500 MVA (e.g. 12 kV, 25 kA) in a three-phase test circuit.

The members are expert testing organizations which are independent of manufacturers and cooperate actively within STL.

PEHLA is a founding member of STL.



High Power Testing Laboratory

Short-circuit making and breaking capacity

- Single-phase and three-phase
 - Up to 50 kA at 12 kV
 - Up to 31.5 kA at 17.5 kV
 - Up to 25 kA at 24 kV
 - Up to 16 kA at 40.5 kV

Switching capacity tests

- Capacitive, Inductive, Ohmic Load currents
- Peak withstand and short time current tests
- Up to 250 kApeak; 100 kA rms (1-3s)
 Internal arc fault tests
- internal arc fault tests
- Up to 50 kA -1s/63kA -0.5s



High Current Testing Laboratory

Two times up to 6300 A at 50 Hz and 60 Hz

Continuously and static measurement of:

- Temperatures and Temperature Rise, up to 240 thermocouples
- Test currents and frequency
- Gas pressure and airflow
- Magnetic fields

Safety system allows to carry out tests over night Currents automatically controlled Thermal imaging Airflow imaging



High Voltage Testing Laboratory

Power-frequency voltage tests

- Stationary up to 260 kV
- Mobile up to 230 kV

Standard lightning impulse voltage tests

• Up to 800 kV

Partial discharge tests

- Stationary up to 150 kV
- Mobile up to 230 kV
- Background level below 1 pC



Mechanical Testing Laboratory

Mechanical operating and endurance tests Mechanical Tests of interlocking systems Leakage and pressure tests IK rating tests Classification of auxiliary contacts Electrical continuity of earthed metallic parts test Support in execution of environmental tests Kinematic chain test on position indicating devices Tensile, cantilever load and compression tests



Environmental Testing Laboratory

Accessible Climatic-Chamber

- Dimensions 2 m (W) x 2 m (H) x 2 m (D)
- Temperature range: -70 °C +130 °C /1 K/min
- Humidity range: 10 98 %
- AC Test voltage (single phase): 100 kV

Accessible Climatic-Chamber

- Dimensions 2.4 m (W) x 3.5 m (H) x 3.2 m (D)
- Temperature range: -70 °C +150 °C /1 K/min
- Humidity range: 10 98 %
- AC Test voltage (3-phase): 100 kV

Climatic Shock-Chamber

- Dimensions 0.8 m (W) x 0.6 m (H) x 0.6 m (D)
- Temperature range: -85°C +220°C/<1min



Material Laboratory

Testing of

- Solid Materials (Insulation Materials and Metals)
- Liquids
- Gases

Destructive and Nondestructive mechanical tests

Thermal tests and ageing tests

Tests to verify the dielectric behavior of insulation materials

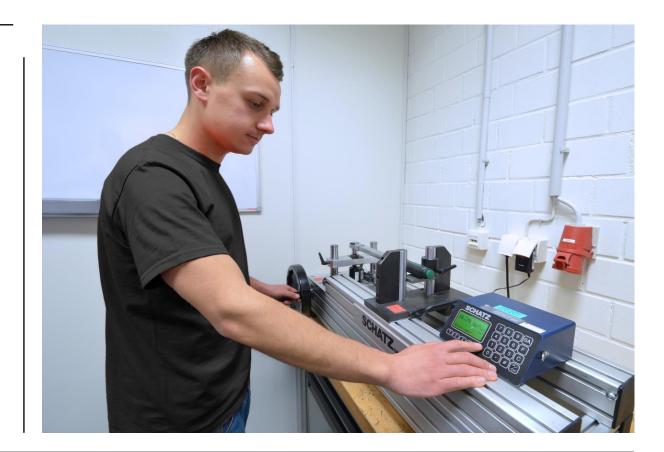
- Measurement of conductivity
- Measurement of tan d

Chemical and physical Analyses (RFX, FTIR, EDX)

Calibration Laboratory

Calibration of

- Electrical measuring instrument
- Force measuring instrument
- Length measuring instrument
- Torque wrenches
- Pressure measuring instrument



Workshop of Laboratories

Prototypes and test arrangements Assembly and installation services Repair services Mold manufacturing and machining Prototype assembly



Our main service

Available test documentation

- STL Type test certificates ٠
- Type Test certificates
- Test reports

Execution of development tests based on clients instruction Approval tests (also outside our laboratories)

Testing in an STL laboratory

Testing to obtain UL qualification for MV and LV products Testing to obtain Intertek (ETL) recognition for MV and LV products





GESELLSCHAFT FÜR ELEKTRISCHE HOCHLEISTUNGSPRÜFUNGEN Member of the SHORT-CIRCUIT TESTING LIAISON (STL)

TYPE TEST CERTIFICATE OF SWITCHING PERFORMANCE

PPARATUS:	Metal-enclosed, air-insulated switchgear with indoor vacuum circuit-breaker
ESIGNATION:	ZN1, width 600 mm with VInd 12.12.25
	Rated voltage: 12 kV Rated normal current: 1250 A Rated lequency till Hz-
ERIAL NUMBER:	1VYN010912000002 and 1VYN010912000007 (circuit-breakers) 1VYN01091000001 (switchgear)
IANUFACTURER;	ABB Ltd, Power Products Division, Medium Voltage Products, Nashik, India under Econe of ABB Technology Ltd., Zarich, Switzerland
LIENT:	ABB Technology Ltd., Zurich, Switzerland
ATE(S) OF TEST	19 ⁸¹ - 27 th June 2012
ESTED BY:	PEHLA-Testing Laboratory Ratingen

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this certificate has been subjected to the series of proving tests in accordance with

IEC 62271-100, Ed. 2.0, 2008-04, clause 6.111

This Type Test Certificate has been issued by PEHLA following exclusively the STL Guides. The results are shown in the Record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above standard(s) and to justify the ratings assigned by the manufacturer as listed on page No. 1.

The Certificate applies only to the apparatus tested. The responsibility for conformity of any apparatus having the same designations with that tested rests with the manufacturer.

This Certificate comprises 11 sheets in total.

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Available Accreditations

German Accreditation
Body
PEHLA – Testing Station
Ratingen

PEHLA

DAL.I.C.	
DAkkS	
AkkedBerungstalle	
Deutsche Akkreditier	rungsstelle GmbH
German Accreditatio	
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the beutsche Astreorderungstoen besting laboratory	le onder (demus Accreditation body) alleut in an the
PEHLA GBR	
PEHLA-Prüffeld Ratingen Oberhausener Straße 33, 404	172 Ratingen
is competent under the terms of D following Selds:	DHI EN ISO/NEC 17025-2005 to carry out betts in the
High-Voltage Switchgear and Con- Low-Voltage Switchgear and Con- Current and Voltage Transformer Power transformers and Bushar S	trolgear Assemblies, N,
with the accreditation mamber 0-FL-320	apply in connections with the maters of accorditation of 2012-00-00 1072-00 and in solid until 2012-05-00. It compones the cover alwest, the following arms with a total of 5 pages.
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Underwriters Laboratory

Underwriters Laboratory (UL) Member of Client Data Program (CTDP)



Intertek (ETL)

Intertek (ETL) Member of CTF (Customers Testing Facility Stage 3) at Intertek



Test Laboratories Ratingen

Why testing at our laboratories

- Over 67 years experience in testing of Medium Voltage and Low Voltage Switchgear and Controlgear
- Efficient support during project planning and execution will be provide by our test team
- Our workshop is specialized to support on a short time basis in case repair work or modifications on the test objects are required
- Short term availability of components for ABB products
- Whole range of mandatory type tests can be carried out in our test facility
- High Quality testing and flexible scheduling will be provided to our customers





