ABB

Technical Laboratory

TEST REPORT No. 1VLR 016394

issued by Technical laboratory in accordance with EN 17025

Test Object : **Current Instrument Transformer**

Type : **CTS 25 X**

Ratings:

Design: cast resin insulated for indoor use		
Serial number:		021666 / 2004
Rated primary current	[A]	600
Rated secondary current	[A]	5
Highest system voltage	[kV]	25
Power frequency withstand voltage	[kV]	50
Lightning-impulse withstand voltage	[kV]	125
Rated output	[VA]	15
Accuracy class		0,2S
Rated short - time thermal current	[kA]	31,5
Rated dynamic current	[kA]	65
Rated frequency	[Hz]	50
n		< 5

Manufacturer: KPB Intra s.r.o, BUČOVICE

Test performed : Dielectric tests according to requirements of customer:
Lightning impulse test on primary winding
Power - frequency withstand test on primary windings
Partial discharge measurement

Test specification: ČSN EN 60044 – 1 (2001), IEC 60044 – 1 (1997)
KPB Intra s.r.o, order Nr. 003000366/2005

Test results: The transformer CTS 25 X, serial number 021666 / 2004 has been tested in accordance with IEC 60044-1 and ČSN EN 60044 – 1 (2001). Transformer is considered to comply with the above standards.

ABB s.r.o. - organizační jednotka EJF

TECHNICKÁ LABORATOŘ S ČINNOSTÍ UZNANOU ČSZÚ 028

ABB s.r.o. Org. jednotka EJF Brno technická laboratoř

Date of test: 16. 5. 2005

23. 5. 2005
Date of issue

Test manager

Laboratory manager

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ISO 9001 ISO 14001

- The transformer CTS 25 X, serial number 021666 / 2004 has been subjected to the dielectric tests in compliance with Standard ČSN EN 60044-1(2001) and IEC 60044-1 (1997):

TEST PROGRAM:	standard
1. Verification of terminal markings	ČSN EN 60044-1, cl. 8.1 IEC 60044-1, cl. 8.1
2. Lightning impulse test	ČSN EN 60044-1, cl. 7.3 IEC 60044-1, cl. 7.3
3. Power - frequency withstand test on primary windings	ČSN EN 60044-1, cl. 8.2 IEC 60044-1, cl. 8.2
4. Partial discharge measurement	ČSN EN 60044-1, cl. 8.2 IEC 60044-1, cl. 8.2

Results of tests performed on transformer CTS 25 X:
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All tests and measurements have been performed in Technical laboratory ABB s.r.o EJF, Brno.

Ambient air conditions during tests:
Temperature: 22,2° C
Rel. humidity: 38%
Pressure: 1009 hPa

Devices and equipment used:

Test transformer 100 kV Nr. 93425
Measuring system and PD - detector TETTEX type 9124 Nr. 136810
Impulse generator TUR Dresden Nr. 94272
Digital Impulse Voltage Measuring System TR – AS 25-8 , Dr.STRAUSS

List of symbols used::

I_p	Rated primary current	[A]
I_s	Rated secondary current	[A]
P	Rated output	[VA]
U_m	Highest system voltage	[kV]
f	Rated frequency	[Hz]
I_{th}	Rated short - time thermal current	[kA]
I_{dyn}	Rated dynamic current	[kA]
U_{zk}	Test voltage	[kV]

Standard: ČSN EN 60044 – 1 (2001), IEC 60044 – 1 (1997)					
TYPE :	**CTS 25 X**			**Serial No. :**	021666/2004
RATINGS :					
I_p [A]	600	I_s [A]	5	**P** [VA]	15
Accuracy	0,2S	**n**	< 5	**ALF**	--
U_m/ U_{zk} [kV]	25 / 50 / 125	**f** [Hz]	50	I_{th} / I_{dyn}[kA]	50 / 125

1. Verification of terminal markings : ČSN EN 60044-1, cl. 8.1, IEC 60044-1, cl. 8.1

- It was verified that the terminal markings are correct and in accordance with drawings.

2. Lightning - impulse test: ČSN EN 60044-1, cl. 7.3, IEC 60044-1, cl. 7.3

- Test voltage applied between short-circuited primary winding and earth. The short-circuited secondary windings and the frame connected to earth.
- Voltage form was in accordance with IEC 60060-1

Test voltage	impulses	flashovers	Result:
+ 125 kV	15	0	has passed
– 125 kV	15	0	has passed

3. Power-frequency withstand test on primary windings: ČSN EN 60044-1, cl. 8.2, IEC 60044-1, cl. 8.2

- Test voltage applied between short-circuited primary winding and earth. The short-circuited secondary windings and the frame connected to earth:

Test voltage	frequency	test duration	Result:
50 kV	50 Hz	60 sec.	has passed

4. Partial discharge measurement: ČSN EN 60044-1, cl. 8.2, IEC 60044-1, cl. 8.2

- The test voltage applied between short- circuited primary winding and earth. The short-circuited secondary windings and the frame connected to earth:

Test voltage	Partial discharge level	Result:
$U_{zk} = 1,2\ U_m = 30$ kV	q = 26 pC	has passed
$U_{zk} = 1,2\ U_m / \sqrt{3} = 17,3$ kV	q < 1 pC	has passed