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Electrotechnical Engineering and Production, joint-stock company
619 00 BRNO, Vídeňská 117

REPORT OF PERFORMANCE No: 82-0650

INDOOR INSTRUMENT VOLTAGE TRANSFOMERS DOUBLE POLE INSULATED TYPE VTD 25

ZKUŠEBNA EVIDOVANÁ VE SDRUŽENÍ ČESKÝCH ZKUŠEBEN
ivep
akciová společnost
BRNO
Zkušebny a laboratoře
019

Jaromír Mudra,Phd

Brno, November 20, 1998

ivep®	**TEST REPORT** No: 82 - 0650 Tested subject: Instrument Voltage Transformers Double pole insulated Indoor type	Page No.:1 Number of pages: 5

TYPE: VTD 25	KIND OF TEST: partial type test TESTING ACC. TO: ČSN 35 1360 IEC 186
RATED VALUES: Rated ratios 22 000/100V	TEST REQUEST ISSUED BY: KPB INTRA, s.r.o. Fučíkova 860 685 01 Bučovice
	ORDER NUMBER: Z-98005 of Nov. 16,1998
	TESTED SPECIMEN REG. NUMBER: Reg. No. 267-269/98 Prod. No. KPB 002497 to 002499 drawing No. KPB-0206001
	ENVIRONMENTAL CONDITIONS: TEMPERATURE: 21°C ATMOSPHERIC PRESSURE: 1008.7 hPa AIR HUMIDITY: 46 %

PRODUCT MANUFACTURER KPB Intra, s.r.o. Fučíkova 860 685 01 Bučovice	THIS TEST REPORT INCLUDES: TEXT PAGES: 5 TABLES: OSCILLOGRAMMES: DIAGRAMMES: DRAWINGS: PHOTOS:	DISTRIBUTION LIST: KPB INTRA 2x IVEP ŘZ 1x IVEP ŘT 1x Archives 1x
TESTED SPECIMENS DELIVERED ON: November 17, 1998		

TEST RESULT:

The indoor instrument voltage transformers double pole insulated of VTD 25 type, manufactured by KPB INTRA, s.r.o, designed as 22 000/100 V

c o m p l y

with the insulation tests of power frequency and impulse voltage by requirements according to the ČSN 35 1360 and IEC 186.

DATE OF TEST:	TEST PERFORMED BY:	MANAGER OF TEST LAB.
Nov.19 to 20 1998	Jaromír Mudra, PhD. Ladislav Dvořák	Jaromír Mudra, PhD.

ZKUŠEBNÍ EVIDOVANÁ ČLENSKÝCH ZKUŠEBEN ivep akciová společnost BRNO Zkušebny a laboratoře 019

On the days of November from 19 to 20, 1998, and based on the order No. KPB-Z-980075 KPB Intra, s.r.o., insulation tests by impulse and AC testing voltage was conducted on three pieces of indoor instrument voltage transformers double pole insulated of VTD 25 type, with transformer ratio 22000/100 V, at the testing laboratory of IVEP Brno s.s.

Testing equipment

Impulse generator 1.2 MV, manufactured by Haefely; 1.2/50 μs; 30 kJ, arranged for 400 kV
Two-beam impulse oscilloscope, Haefely, 72 E type
Imulse, peak oscilloscope, Haefely, 64 M type
Transformer cascade, 500 kV, 150 kVA, manufactured by Siemens
Capacitive voltage divider, 600 kV, Haefely, with Trüb-Taüber peak voltmeters

Test procedures and scope of the testing

Conformably to the ČSN 35 1360 and the IEC 186 standards the transformer was subjected to the 1.2/50μs lightning impulse test, performed as dry, with both polarities, by using a short-time AC 200/50 Hz voltage, during a time period of 30 sec./1 minute, respectively, with insulation test voltages applied across the windings.

Symbols used:

+U, -U - rated withstand voltage at the 1.2/50 μs lightning impulse test, with positive and negative wave (peak value)

The 15/0 and 5/0 records indicate 15 or 5 impulses, without flashover

~Us, - rated short-time AC withstand voltage, dry test 50 Hz/200 Hz (rms value)

Test results

1. Instrument voltage transformer, VTD 25 type,
prod. No. 002497, prod. year 1998, reg. No. 267/98,
transformer ratio 22000/100 V, 50 Hz, 500 VA, ČSN 35 1360

a) Impulse test
to the ČSN 35 1360 art.123 and the IEC 186 standards

a1) Testing voltage conduced to the terminal *A*, terminals *B*,*a* and *PE* were earthed, the terminal *b* was insulated

+ U = 125 kV/5/15/0 - test passed
- U = 125 kV/5/15/0 - test passed

a2) Testing voltage conduced to the terminal *B*, terminals *A*,*b* and *PE* were earthed, terminal *a* was insulated

+ U =125 kV/5/15/0 - test passed
- U =125 kV/5/15/0 - test passed

b) Power frequency withstand insulation test between the primary and secondary, to the ČSN 35 1360, Art.124 and the IEC 186 standards, performed as dry
Testing voltage conduced to the terminals *A* and *B* both connected, terminals *a* , *b* and *PE* were earthed.

~Us = 55 kV/50 Hz/1 min. - test passed

Note:
The IEC 186 standard requires test voltage
~Us = 50 kV/50 Hz/1 min.

c) Power frequency withstand insulation test on primary winding to the ČSN 35 1360, Art.125 and the IEC 186 standards.

~Us = 55 kV/200 H_z/30 s - test passed

Note:
The IEC 186 standard requires test voltage
~Us = 50 kV/200 Hz/30s

2. Instrument voltage transformer, VTD 25 type,
prod. No. 002498, prod. year 1998, reg. No. 268/98,
transformer ratio 22000/100 V, 50 Hz, 500 VA, ČSN 35 1360

a) Impulse test
to the ČSN 35 1360 art.123 and the IEC 186 standards

a1) Testing voltage conduced to the terminal *A*, terminals *B*,*a* and *PE* were earthed, the terminal *b* was insulated

+ U = 125 kV/5/15/0 - test passed
- U = 125 kV/5/15/0 - test passed

a2) Testing voltage conduced to the terminal *B*, terminals *A,b* and *PE* were earthed, terminal *a* was insulated

+ U =125 kV/5/15/0 - test passed
- U =125 kV/5/15/0 - test passed

b) Power frequency withstand insulation test between the primary and secondary, to the ČSN 35 1360, Art.124 and the IEC 186 standards, performed as dry
Testing voltage conduced to the terminals *A* and *B* both connected, terminals *a* , *b* and *PE* were earthed.

~Us = 55 kV/50 Hz/1 min. - test passed

Note:
The IEC 186 standard requires test voltage
~Us = 50 kV/50 Hz/1 min.

c) Power frequency withstand insulation test on primary winding to the ČSN 35 1360, Art.125 and the IEC 186 standards.

~Us = 55 kV/200 H_z/30 s - test passed

Note:
The IEC 186 standard requires test voltage
~Us = 50 kV/200 Hz/30 s.

3. Instrument voltage transformer, VTD 25 type, prod. No. 002499, prod. year 1998, reg. No. 268/98, transformer ratio 22000/100 V, 50 Hz, 500 VA, ČSN 35 1360

a) Impulse test
to the ČSN 35 1360 art.123 and the IEC 186 standards

a1) Testing voltage conduced to the terminal *A*, terminals *B,a* and *PE* were earthed, the terminal *b* was insulated

+ U = 125 kV/5/15/0 - test passed
- U = 125 kV/5/15/0 - test passed

a2) Testing voltage conduced to the terminal *B*, terminals *A,b* and *PE* were earthed, terminal *a* was insulated

+ U =125 kV/5/15/0 - test passed
- U =125 kV/5/15/0 - test passed

b) Power frequency withstand insulation test between the primary and secondary, to the ČSN 35 1360, Art.124 and the IEC 186 standards, performed as dry
Testing voltage conduced to the terminals *A* and *B* both connected, terminals *a* , *b* and *PE* were earthed.

~Us = 55 kV/50 Hz/1 min. - test passed

Note:
The IEC 186 standard requires test voltage
~Us = 50 kV/50 Hz/1 min.

c) Power frequency withstand insulation test on primary winding to the ČSN 35 1360, Art.125 and the IEC 186 standards.

~Us = 55 kV/200 H_Z/30 s - test passed

Note:
The IEC 186 standard requires test voltage
~Us = 50 kV/200 Hz/30 s.

Summary:
All the indoor instrument transformers double pole insulated of VTD 25 type, manufactured by KPB Intra, prod. No. 002497 to 002499, for the transformer ratio of 22000/100 V have passed the insulation tests to ČSN 351360 and IEC 186 standards.