



ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION
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 E-mail : erda@erda.org, dir@erda.org



Certificate No. : T-0071

TEST REPORT

SHEET : 1 OF 12

NAME & ADDRESS OF CUSTOMER SILKAANS ELECTRICAL MANUFACTURING CO. PVT. LTD, PLOT NO. R-247,T.T.C INDUSTRIAL AREA, M.I.D.C,RABALE, NAVI MUMBAI - 400 701.		TEST REPORT NO. : PHV/07/576-3 DATE : 26.06.2008	
		CUSTOMER REF.NO: G 8696	DATE : 29.02.2008
		DATE OF SAMPLE RECEIPT 08.03.2008	DATE OF TESTING 12.04.2008 to 17.06.2008
		SAMPLE DESCRIPTION RESIN CAST WOUND PRIMARY CURRENT TRANSFORMER MFD.BY : Silkaans Electrical Mfg Co Pvt Ltd	
TEST DETAILS As per Sheet No. 2 of 12.		ENCLOSURES : Number of Oscillogram : Two Number of Photograph : One Number of Drawings : ONE Oscillogram No. : 1) 216/01 2)216/02 Photograph No : PHV 40/192 Drawing No : 3044	
TEST RESULTS : As per sheet : 3 to 12.			
REMARKS : 1) The sample CONFORMS to the requirements of the above mentioned ISS in the test nos.I,II,III,IV,V,VI,VIII & IX(mentioned on sheet 2 of 12.) 2) The observation made during test no.VII(mentioned on sheet 2 of 12) are recorded on sheet no.10 of 12.			
PREPARED BY		CHECKED BY	
		APPROVED BY	

- Note:
1. This report relates only to the particular sample received in good condition for testing at ERDA.
 2. This report can not be reproduced in part under any circumstances.
 3. Publication of this report requires prior permission in writing from Director, ERDA.
 4. Only tests asked for by the customer have been carried out .

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TEST REPORT NO. : PHV/07/576-3

SHEET : 2 OF 12

DATE : 26.06.2008

Sr No	TESTS (In sequence)	IS 2705/1992 & 11322/1985 CL.NO	PAGE NO.
I	a) Power Frequency Dry Withstand Test on Primary winding	9.3-Part 1- IS 2705/1992	3 of 12
	b) Partial Discharge Measurement	11322/1985	3 of 12
II	Lightning Impulse Voltage Withstand Test	9.8-Part 1- IS 2705/1992	4,5,6 of 12
III	a) Power Frequency Dry Withstand Test on Primary winding	9.3-Part 1- IS 2705/1992	7 of 12
	b) Partial Discharge Measurement	11322/1985	7 of 12
IV	Determination of Errors	Part 2 & 3 IS 2705/1992	7 of 12
V	Short Time Current Test	9.6 - Part 1-IS 2705/1992	8 of 12
VI	a) Power Frequency Dry Withstand Test on Primary winding	9.3-Part 1- IS 2705/1992	9 of 12
	b) Partial Discharge Measurement	11322/1985	9 of 12
VII	Temperature cycle Test	Customer's requirement	10 of 12
VIII	a) Power Frequency Dry Withstand Test on Primary winding	9.3-Part 1- IS 2705/1992	11 of 12
	b) Partial Discharge Measurement	11322/1985	11 of 12
IX	Determination of Errors	Part 2 & 3 IS 2705/1992	12 of 12

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TEST REPORT NO. : PHV/07/576-3

SHEET : 3 OF 12

DATE : 26.06.2008

TEST RESULTS :

Ia. Power Frequency Dry Withstand Test on Primary Winding.

The power frequency voltage of 28 kV (rms) was applied between the H.V. terminal & earth (All secondary windings & body connected together to earth) for 1 minute duration. The sample withstood the test voltage Satisfactorily.

Ib. Measurement of partial discharge .

The power frequency voltage was applied and raised to the pre-stress voltage level (0.8x1.3 Um) and maintained for < 10 seconds. The voltage was then reduced to partial discharge measuring level (1.1 Um/√3) and maintained for < 1 minute. The partial discharge magnitude measured at the measuring voltage level was **1 pC**.

Note : Limit of pd quantity = **50 pC**.


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TEST REPORT NO : PHV/07/576-3						Sheet No: 4 OF 12
DATE : 26/06/2008						
II. LIGHTNING IMPULSE VOLTAGE WITHSTAND TEST: (IS:2705-1992 Cl. No.9.8)						
TEST PARAMETERS :-						
No.of shots applied						: 05 +ve & 05-ve Polarity
No.of shots recorded						: First & Last (for both polarity)
Sr. No.	Impulse Voltage Applied To.	Earth Connected To	Test voltage in kVp	Polarity	Remarks	Report Sheet No.
1.	Primary side	Secondary & Body	53.51 kVp	Positive	Calibration Pulse	5 of 12
2.	Primary Side	Secondary & Body	75 ±3 % kVp	Positive	Withstood	6 of 12
3.	Primary Side	Secondary & Body	75 ±3 % kVp	Negative	Withstood	6 of 12
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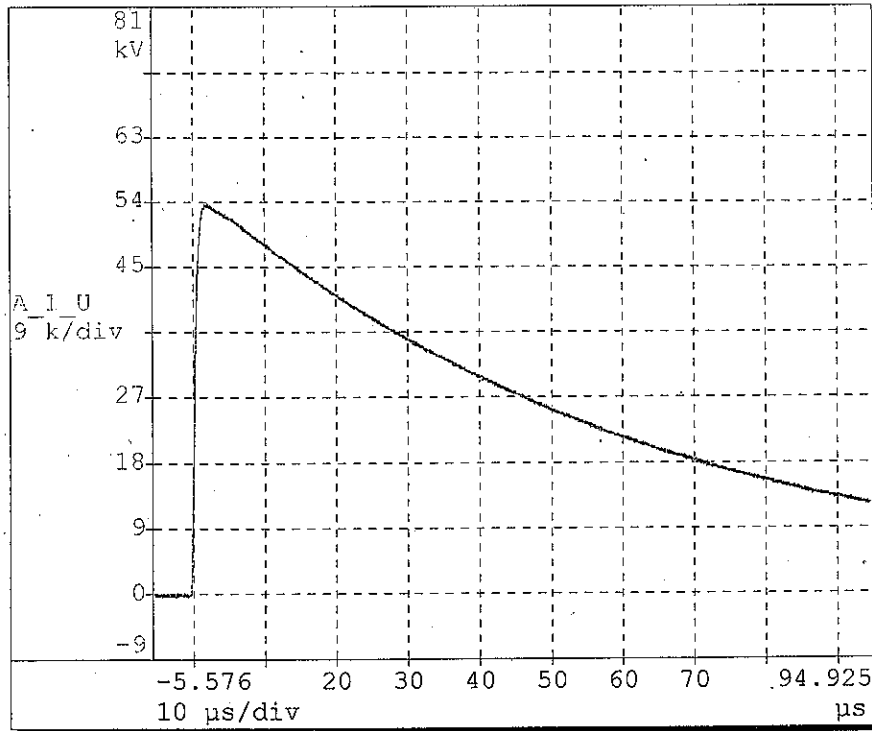


TEST REPORT NO. : PHV/07/576-3
 DATE : 26/06/2008

SHEET NO. : 5 OF 12

LIGHTNING IMPULSE VOLTAGE WITHSTAND TEST ON CURRENT TRANSFORMER

CALIBRATION PULSE



T1 : 1.3585 μs
 T2 : 47.152 μs
 kVp : 53.517 kVp

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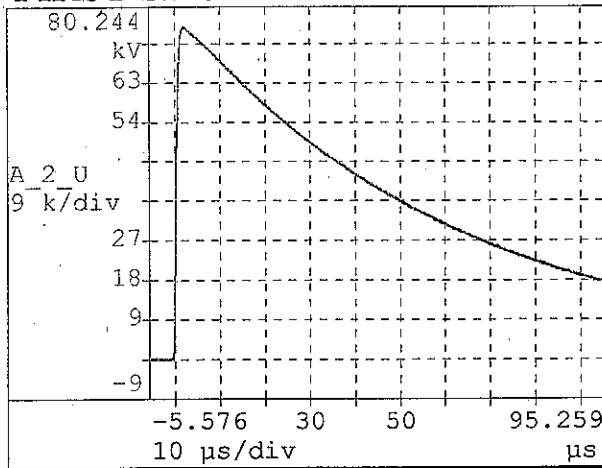
TEST REPORT NO. : PHV/07/576-3
DATE : 26/06/2008

SHEET NO. : 6 OF 12

LIGHTNING IMPULSE VOLTAGE WITHSTAND TEST ON CURRENT TRANSFORMER

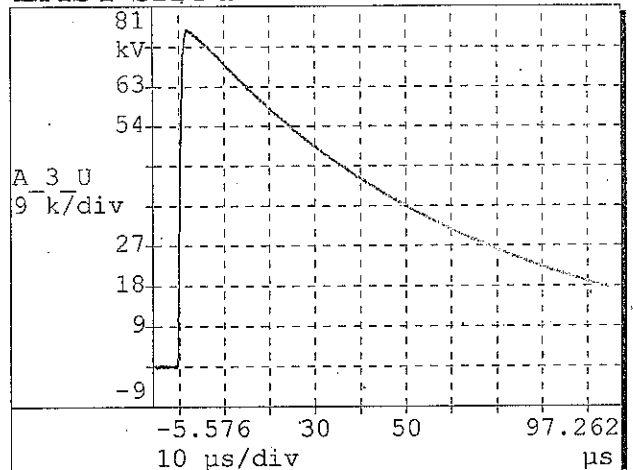
POSITIVE POLARITY

FIRST SHOT



T1 : 1.3559 μS
 T2 : 47.267 μS
 kVp : 75.583 kVp

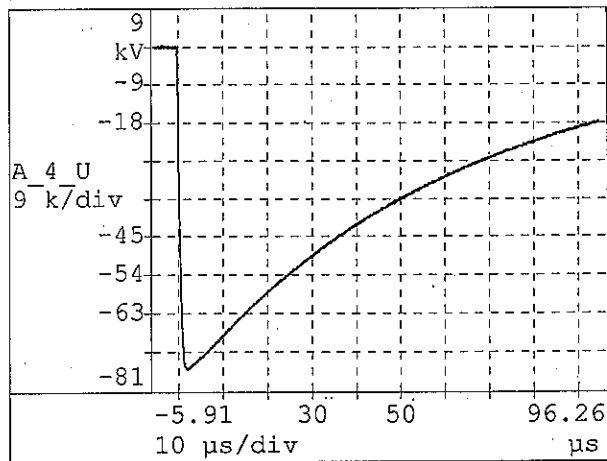
LAST SHOT



T1 : 1.3539 μS
 T2 : 47.187 μS
 kVp : 75.619 kVp

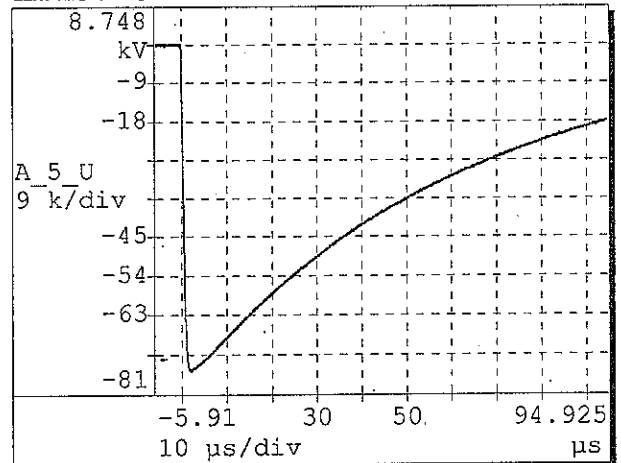
NEGATIVE POLARITY

FIRST SHOT



T1 : 1.3548 μS
 T2 : 47.051 μS
 kVp : -75.597 kVp

LAST SHOT



T1 : 1.3487 μS
 T2 : 47.055 μS
 kVp : -75.473 kVp

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TEST REPORT NO. : PHV/07/576-3

SHEET : 7 OF 12

DATE : 26.06.2008

TEST RESULTS :

IIIa. Power Frequency Dry Withstand Test on Primary Winding.

The power frequency voltage of 22.4 kV (80% of power frequency voltage) was applied between the H.V. terminal & earth (All secondary windings & body connected together to earth) for 1 minute duration. The sample withstood the test voltage Satisfactorily.

IIIb. Measurement of partial discharge.

The power frequency voltage was applied and raised to the pre-stress voltage level (0.8x1.3 Um) and maintained for < 10 seconds. The voltage was then reduced to partial discharge measuring level (1.1 Um/√3) and maintained for < 1 minute. The partial discharge magnitude measured at the measuring voltage level was **1 pC**.

Note : Limit of pd quantity = **50 pC**.

IV Determination of Errors according to the requirements of appropriate accuracy class.

CURRENT TRANSFORMER : BURDEN 15 VA, CLASS 1.0, CORE-I

% OF RATED BURDEN	% OF I RATED	RATIO ERROR IN %	PHASE ANGLE ERROR IN MIN.
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(A). RATIO: 300/1 A

100	120	0.571	1.60
100	100	0.553	1.53
100	20	0.401	6.93
100	5	0.207	15.27
25	120	0.883	5.01
25	100	0.883	4.37
25	20	0.871	6.39
25	5	0.770	11.87

CURRENT TRANSFORMER : BURDEN 15 VA, CLASS 5P, CORE-II

% OF RATED BURDEN	% OF I RATED	RATIO ERROR IN %	PHASE ANGLE ERROR IN MIN.
100	100	-0.237	1.52

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TEST REPORT NO. : PHV/07/576-3

SHEET : 8 OF 12

DATE : 26.06.2008

TEST RESULTS :

V. SHORT TIME CURRENT TEST

[Cl.No.9.6]

The short time current test was performed by connecting Copper cable to source as per test circuit diagram no.: OLSC/IT/13 and secondary winding short circuited through a copper link of negligible impedance.

Condition of the equipment under test: As after current error & phase displacement error

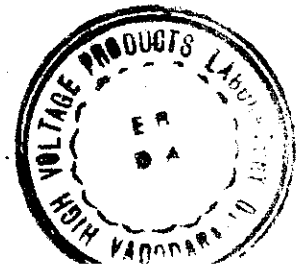
Test No.	Oscillogram No.	Short circuit current (kA)		Duration (sec.)	Remarks	Observation During test
		Peak	Rms.			
1.	216/01	65.508	-	0.074	Dynamic peak test	No abnormality observed
2.	216/02	-	26.210	1.021	Thermal Current test	No abnormality observed

Observation after test: - No visible damage was observed.
- CT body was intact.

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TEST REPORT NO. : PHV/07/576-3

SHEET : 9 OF 12

DATE : 26.06.2008

TEST RESULTS :

VIa. Power Frequency Dry Withstand Test on Primary Winding.

The power frequency voltage of 22.4 kV (80% of power frequency voltage) was applied between the H.V. terminal & earth (All secondary windings & body connected together to earth) for 1 minute duration. The sample withstood the test voltage Satisfactorily.

VIb. Measurement of partial discharge .

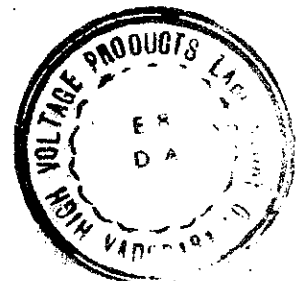
The power frequency voltage was applied and raised to the pre-stress voltage level (0.8x1.3 Um) and maintained for < 10 seconds. The voltage was then reduced to partial discharge measuring level (1.1 Um/√3) and maintained for < 1 minute. The partial discharge magnitude measured at the measuring voltage level was **1 pC**.

Note : Limit of pd quantity = **50 pC**.

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TEST REPORT NO. : PHV/07/576-3

SHEET : 10 OF 12

DATE : 26.06.2008

TEST RESULTS:

VII. TEMPERATURE CYCLE TEST

Sr. no.	Clause no.	Particulars of tests	Requirements as per specification	Obtained value	Remarks
1.0	As per customer's requirement	Temperature cycle test Sample was kept in the test chamber . Temperatures No. of cycle After 5 th cycle the chamber was stopped.	-25°C for 4 hours & + 80°C for 4 hours 5	-25°C for 4 hours & + 80°C for 4 hours 5	-----

Observation: No Physical damage observed on the sample after completion of temperature cycle test

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TEST REPORT NO. : PHV/07/576-3

SHEET : 11 OF 12

DATE : 26.06.2008

TEST RESULTS :

VIIIa. Power Frequency Dry Withstand Test on Primary Winding.

The power frequency voltage of 22.4 kV (80% of power frequency voltage) was applied between the H.V. terminal & earth (All secondary windings & body connected together to earth) for 1 minute duration. The sample withstood the test voltage Satisfactorily.

VIIIb. Measurement of partial discharge .

The power frequency voltage was applied and raised to the pre-stress voltage level (0.8x1.3 Um) and maintained for < 10 seconds. The voltage was then reduced to partial discharge measuring level (1.1 Um/√3) and maintained for < 1 minute. The partial discharge magnitude measured at the measuring voltage level was **1 pC**.

Note : Limit of pd quantity = **50 pC**.


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TEST REPORT NO. : PHV/07/576-3

SHEET : 12 OF 12

DATE : 26.06.2008

TEST RESULTS :

IX Determination of Errors according to the requirements of appropriate accuracy class.

CURRENT TRANSFORMER : BURDEN 15 VA, CLASS 1.0 , CORE-I

% OF RATED BURDEN	% OF I RATED	RATIO ERROR IN %	PHASE ANGLE ERROR IN MIN.
(A). RATIO: 300/1 A			
100	120	0.509	2.24
100	100	0.486	2.84
100	20	0.282	11.06
100	5	0.052	21.40
25	120	0.878	6.00
25	100	0.874	6.44
25	20	0.863	11.02
25	5	0.842	19.35

CURRENT TRANSFORMER : BURDEN 15 VA, CLASS 5P , CORE-II

% OF RATED BURDEN	% OF I RATED	RATIO ERROR IN %	PHASE ANGLE ERROR IN MIN.
100	100	-0.205	2.87

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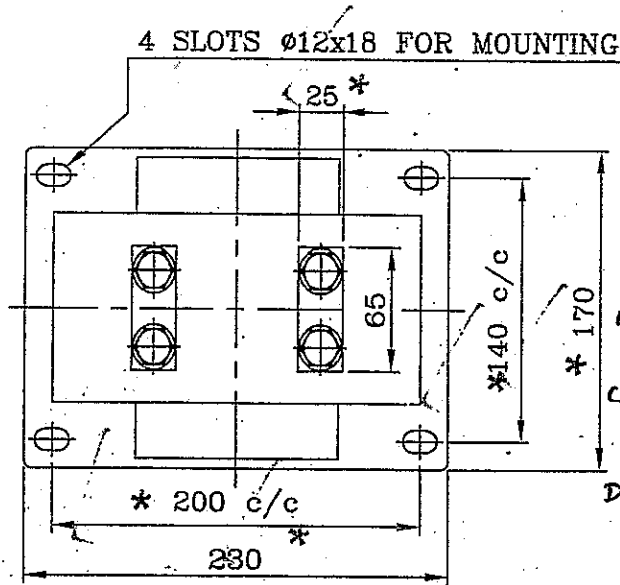
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REF: DRG. NO. : 3044/3045/3046

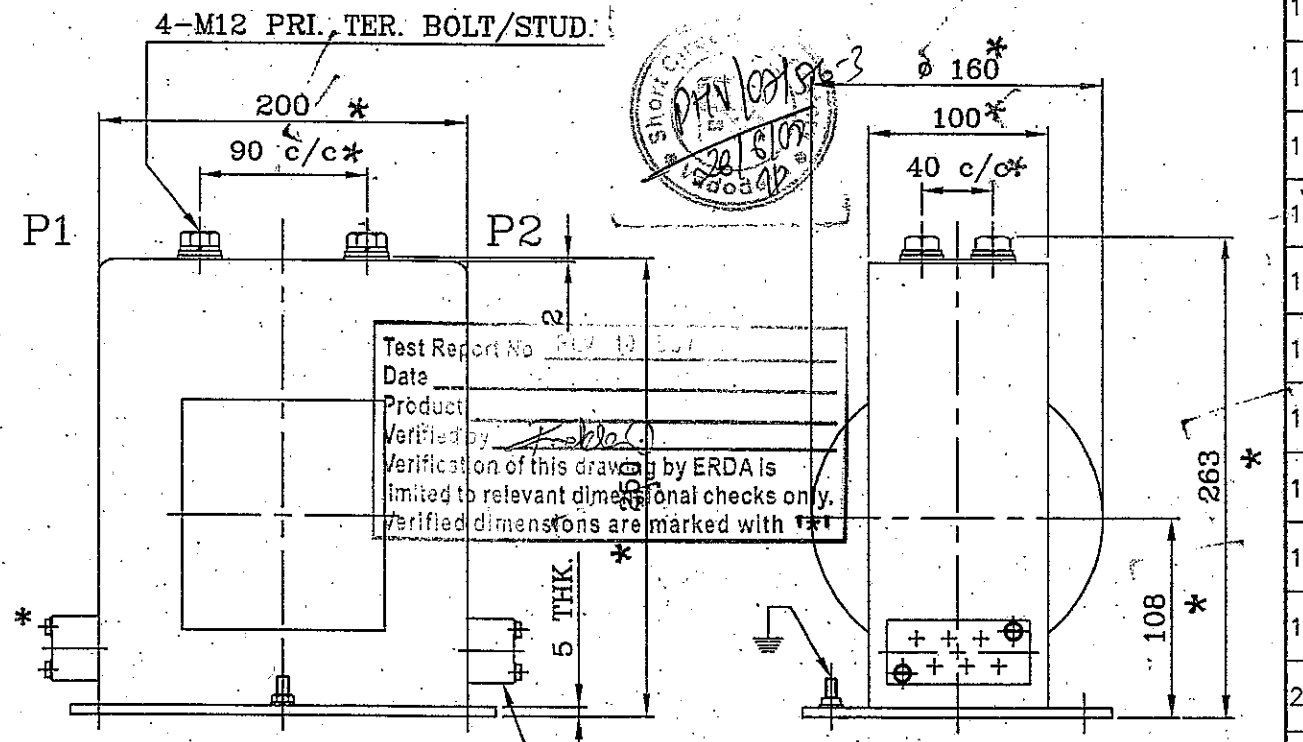
FILE NAME : C:\R13\INDOOR\RCWPHTCT\3044.DWG DT:16/06/2004.

A B C D E F G H I J K L M N O P Q R S



DRG.NO	3044	
SR.NO	CT02089388	
RATIO	300/1-1 Amp.	
RATED BURDEN	15VA	15VA
ACC. CLASS	1.0	5P
I.S.F/A.L.F	-	10
S.T.C	26.2 KA FOR 1 SEC.	
INS.LEVEL	12/28/75 KV	

PRIMARY NO.OFTURNS: 2
 SECONDARY CORE I: 600
 CORE II: 600
 CROSS SECTIONAL AREA: 204.83mm²
 CORE I: 0.5189mm²
 CORE II: 0.6567mm²
 DIAMETER: 0.3mm CORE I: 0.813mm
 CORE II: 0.914mm



Test Report No. _____
 Date _____
 Product _____
 Verified by _____
 Verification of this drawing by ERDA is limited to relevant dimensional checks only. Verified dimensions are marked with *

SEC. TER. WITH CAP.

CONTROLLED COPY

* : PROVISION ON THIS SIDE TO BE MADE ONLY IF ABSOLUTELY NECESSARY.

SCALE	N. T. S.	SURFACE FINISH	QTY.	WEIGHT
REF.	-	-	1NO.	Kgs.
DATE	16/06/2004	-	EACH.	APPROX.
CHECK	<i>atit</i>	MATRL : -		
DRAWN	VIJAY.	R.M.SIZE : -		

NOTE : TOLERANCE WHEREVER NOT MENTIONED ± 3MM.



Silkaans Electrical Mfg.Co.Pvt.Ltd.,
 NAVI MUMBAI. - 400 701.

PROJECTION	NAME : RESIN CAST WOUND
	PRIMARY CURRENT TRANSFORMER.
	DRG. NO. : 3044

A B C D E F G H I J K L M N O P Q R S



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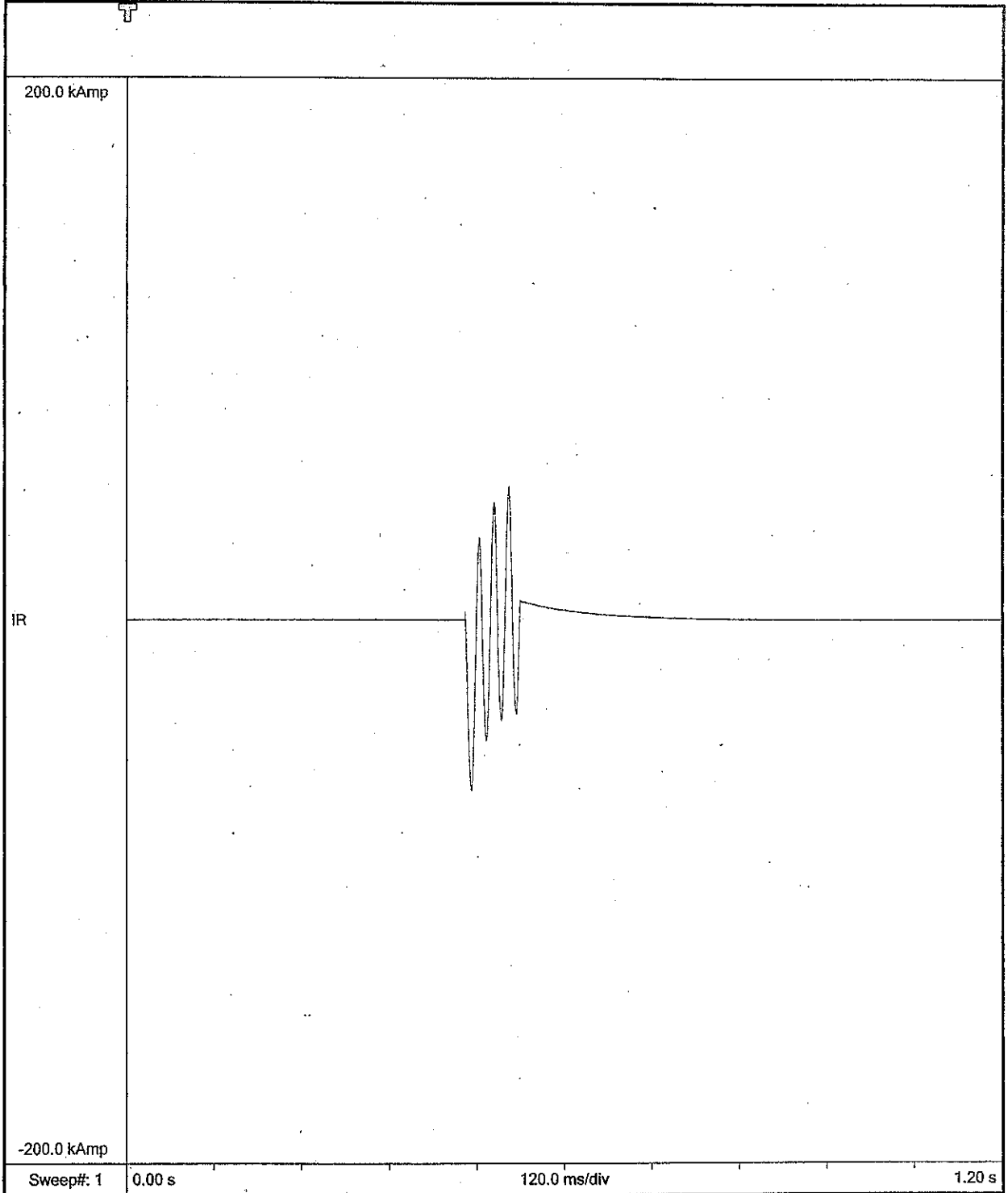
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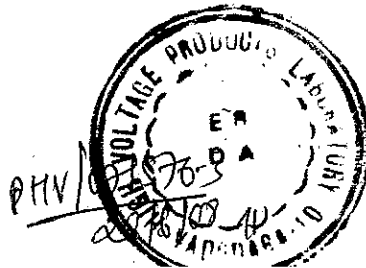


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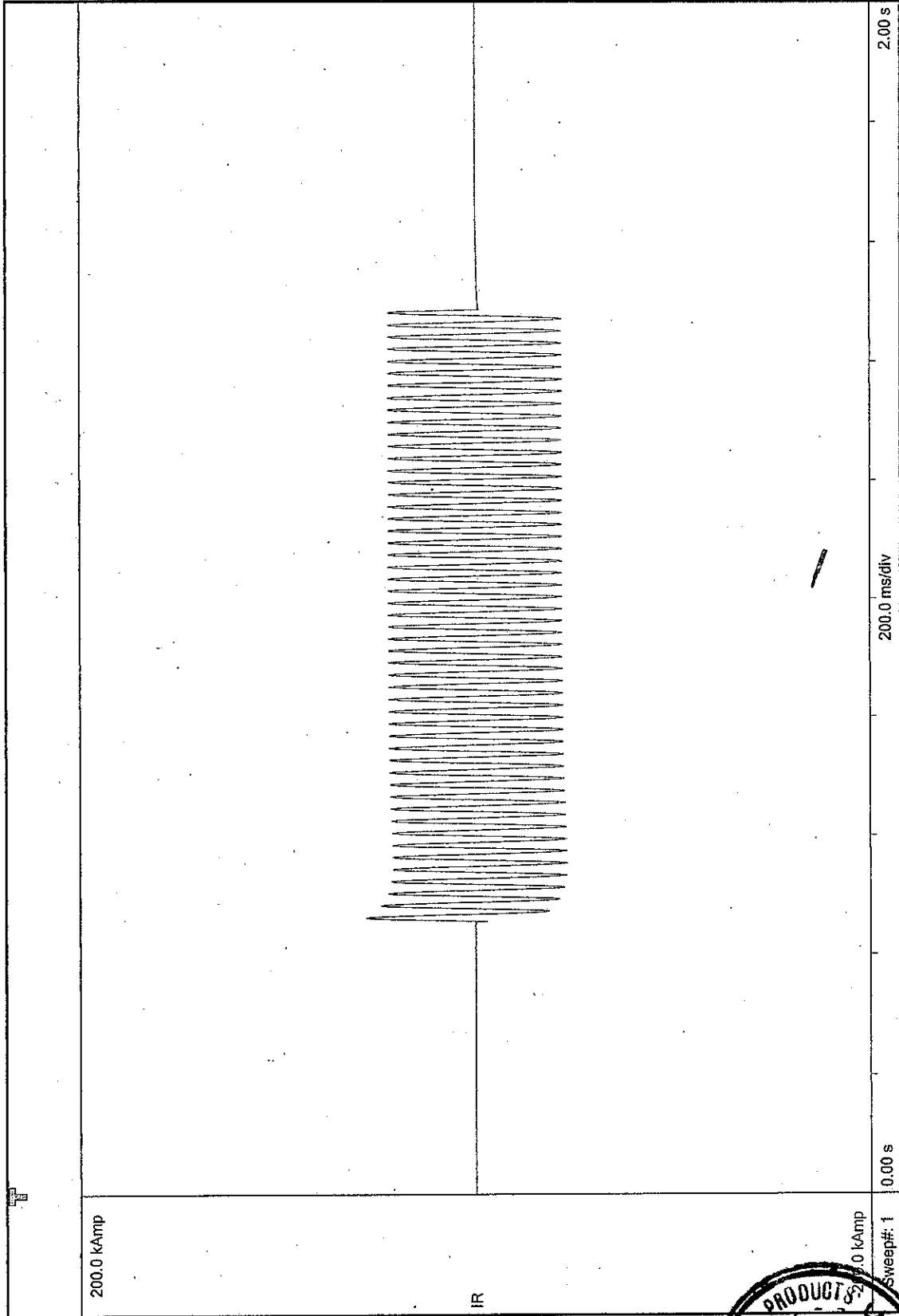
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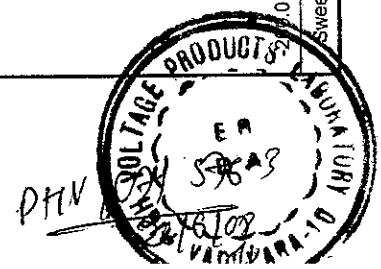


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