

HIGH POWER LABORATORY

TEST REPORT



Central Power Research Institute

(A Govt. of India Society)

Prof. Sir C. V. Raman Road,

Sadashivanagar S.P. Road P.B. No. 8066,

Bangalore - 560 080

CENTRAL POWER RESEARCH INSTITUTE



TEST REPORT

Test Report Number : CPRI BLRHPL1819T0181 **Dated:** 28th September, 2018

Name & Address of the Customer : M/s. Padmavahini Transformers Pvt. Ltd.,
S.F. No 353/1, Door no. 7/140, Ruby matriculation
school road, Keeranatham, Saravanampatti,
Coimbatore- 641035

Name & Address of the Manufacturer : M/s. Padmavahini Transformers Pvt. Ltd.,
S.F. No 353/1, Door no. 7/140, Ruby matriculation
school road, Keeranatham, Saravanampatti,
Coimbatore- 641035

Particulars of sample tested : 5.3 MVA, 33 kV/4 x 0.415 kV, three phase transformer
Condition of sample on receipt : New
Type : Inverter duty transformer
Description of sample tested : Refer sheet No. 2 of 10
Serial number : C-1756/4
Number of samples tested : One

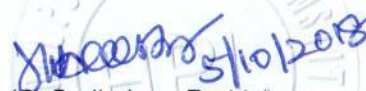
Date(s) of Test(s) : 29th August, 3rd & 4th September, 2018
CPRI Sample Code No. : HPL1819S0377
Particulars of tests conducted : Ability to withstand the dynamic effects of short circuit.
Test in accordance with Standard/Specification : Clause 4.2 of IS-2026 (Part 5): 2011
Sampling Plan : Nil
Customer's requirement : Nil
Deviation if any : Nil

Name of the witnessing persons
Customer's representative : Mr. N. Karthik, Service- Incharge &
Mr. G. Srinivasan.
Other than Customer's representative : None
Test subcontracted with address of the laboratory : Nil

Documents constituting this report (in words)
Number of Sheets : Ten
Number of Oscillograms : Nine
Number of Graphs : Nil
Number of Photos : Three
Number of Test circuit diagrams : Two
Number of Drawings : Six
Number of Documents : Nil




(Rajaramamohanarao chennu)
Test Engineer


(S. Sudhakara Reddy)
Head of Division
Approved by

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report No. CPRI BLRHPL1819T0181

Dated: 28th September, 2018

DESCRIPTION OF SAMPLE TESTED

(As assigned by the manufacturer)

Sample	: Three phase transformer
Rated power KVA	: 5300
Rated voltage HV (Volts)	: 33000
LV (Volts)	: 415-415-415-415
Rated current HV (Amps)	: 92.73
LV (Amps)	: 1843.35-1843.35-1843.35-1843.35
Number of phases	: Three
Connection symbol	: Dy11y11y11y11
Type of cooling	: ONAN
Rated frequency (Hz)	: 50
Temperature rise of oil	: 45 °C
Tapping range	: +5% to -5% in steps of 2.5%
Tap No.	: 1 3 5
% tap variation	: +5 0 -5
Tap Voltage (Volts)	: 34650 33000 31350
% impedance @ 75°C	: 6.87 6.88 6.96
X/R Ratio	: 9.22 9.23 8.32
Apparent short circuit power behind transformer (MVA)	: 1000
Winding material	: Copper
Insulation level	
H.V. Winding	: 170 kV Peak / 70 kV rms
L.V. Winding	: 3 kV rms
Guaranteed no-load loss in watts	: 6000 + IS Tolerance
Guaranteed load loss at 75°C (On principal tapping in watts)	: 50000 + IS Tolerance
Guaranteed % impedance at 75° C (On principal tapping)	: 7.01 + IS Tolerance


(Rajaramamohanarao chennu)
Test Engineer

ULR-TC5452180HPLT0181F

HIGH POWER LABORATORY
P. B.NO. 8066, SADASHIVANAGAR,
PROF. SIR.C.V. RAMAN ROAD, BENGALURU-560 080, INDIA
PHONE: + 91- (0) 80-22072511

Sheet No. 2 of 10

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report No. CPRIBLRHPL1819T0181

Dated: 28th September, 2018

SUMMARY OF TEST

- 1.0 Test conducted : Ability to withstand the dynamic effects of short circuit
- 2.0 Rating for which tested : Short-circuit currents determined as per Clause 4.1.2 and 4.2.3 of IS 2026 (Part 5):2011 using the percentage impedance and X/R ratio as measured at CPRI, Bengaluru.

Tapping position	% Z at 75° C	% X at rated frequency	X/R	Required short-circuit current on each LV (phase) with rated voltage applied to HV*	
				kA peak	kA rms
Highest (1)	6.702	6.65	8.14	60.31	25.34
Principal(3)	6.698	6.64	8.13	59.86	25.15
Lowest (5)	6.797	6.74	7.97	58.53	24.59

* Considering the source impedance based on fault level of 1000 MVA and highest system voltage of 36 kV as per standard.

- 3.0 Schedule of routine test results : As per Sheet No. 5, 6 & 7 of 9
- 4.0 Schedule of short-circuit test results : As per Sheet No. 8 & 9 of 10
- 5.0 Oscillogram numbers : CPRIBLRHPL1819T0181S005, S006, S007
CPRIBLRHPL1819T0181S009, S010, S012
CPRIBLRHPL1819T0181S014, S015, S016
- 6.0 Test circuit number : CRTL/HPL/TR19E, CRTL/HPL/TR19F


(Rajaramamohanarao chennu)
Test Engineer

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report No. CPRIBLRHPL1819T0181

Dated: 28th September, 2018

LIST OF DRAWINGS AND PHOTOGRAPHS

Drawings of the sample tested

The manufacturer has guaranteed that the sample submitted for the test has been manufactured in accordance with the following drawings. It is verified that these drawings adequately represent the sample tested.

Sample drawing numbers

Sl. No.	Drawing Number	SHEET NO.	Rev. No.
1	PAT-TT-005-01	--	0
2	PAT-TT-005-04	--	0
3	PAT-TT-005-05	--	0
4	PAT-TT-005-06	--	0
5	PAT-TT-005-00	--	0
6	PAT-TT-005-02	--	0

Total drawings: Six

Photographs of the sample tested

Mounting arrangement before short-circuit test : 339

Condition of conductor, core etc., after short circuit test,
View from HV terminal side : 347

Condition of conductor, core etc., after short circuit test,
View from LV terminal side : 348

Total Photographs : Three


(Rajaramamohanarao chennu)
Test Engineer

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



Test Report No. CPRI BLRHPL1819T0181

Dated: 28th September, 2018

SCHEDULE OF ROUTINE TEST RESULTS

Results of routine tests were conducted to verify condition of transformer prior to & after short-circuit test.

1. Measurement of Insulation Resistance

	Before short-circuit test at 30°C	After short-circuit test at 31°C
HV to Earth @ 5.0 kV/1 min	4.23 GΩ	4.31 GΩ
HV to LV1 @ 5.0 kV/1 min	11.9 GΩ	10.8 GΩ
HV to LV2 @ 5.0 kV/1 min	11.0 GΩ	11.3 GΩ
HV to LV3 @ 5.0 kV/1 min	11.9 GΩ	11.0 GΩ
HV to LV4 @ 5.0 kV/1 min	11.3 GΩ	11.4 GΩ
LV1 to Earth @ 1.0 kV/1 min	6.94 GΩ	6.25 GΩ
LV2 to Earth @ 1.0 kV/1 min	7.14 GΩ	7.05 GΩ
LV3 to Earth @ 1.0 kV/1 min	6.59 GΩ	6.39 GΩ
LV4 to Earth @ 1.0 kV/1 min	6.85 GΩ	6.87 GΩ
LV1 to LV2 @ 1.0 kV/1 min	14.0 GΩ	13.07 GΩ
LV3 to LV4 @ 1.0 kV/1 min	14.4 GΩ	13.01 GΩ

LV* = LV1 + LV2 + LV3 + LV4

2. Measurement of Winding Resistance: [Clause 10.2 of IS 2026-1 (2011)]

	Before short-circuit test at 30°C						
	LV winding resistance (μΩ)				HV winding resistance (Ω)		
	LV1	LV2	LV3	LV4	Highest	Principal	Lowest
u - v	714.20	793.00	720.05	787.70	1.3754	1.3038	1.2353
u - w	745.90	799.00	750.10	790.65	1.3756	1.3039	1.2353
v - w	733.90	782.10	741.40	777.10	1.3762	1.3045	1.2358
	After short-circuit test at 31°C						
	LV winding resistance (μΩ)				HV winding resistance (Ω)		
	LV1	LV2	LV3	LV4	Highest	Principal	Lowest
u - v	725.15	797.90	728.35	793.65	1.3938	1.3213	1.2518
u - w	756.65	806.20	759.15	799.50	1.3938	1.3212	1.2518
v - w	744.95	786.15	750.70	782.15	1.3945	1.3218	1.2520

3. Measurement of Voltage ratio and Check of phase displacement:

[Clause 10.3 of IS 2026-1 (2011)]

(a) LV1

Tap Number	Before short-circuit test			After short-circuit test		
	U	V	W	U	V	W
1	72.352	72.352	72.352	72.363	72.352	72.352
2	70.650	70.635	70.635	70.650	70.650	70.635
3	68.932	68.923	68.932	68.932	68.932	68.932
4	67.233	67.224	67.224	67.233	67.224	67.224
5	65.522	65.513	65.513	65.522	65.522	65.513

(Rajaramamohanarao chennu)

Test Engineer

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report No. CPRIBLRHPL1819T0181

Dated: 28th September, 2018

(b) LV2

Tap Number	Before short-circuit test			After short-circuit test		
	U	V	W	U	V	W
1	72.352	72.327	72.327	72.363	72.337	72.327
2	70.650	70.625	70.611	70.650	70.625	70.625
3	68.932	68.909	68.909	68.946	68.909	68.909
4	67.224	67.202	67.202	67.233	67.202	67.202
5	65.522	65.492	65.492	65.522	65.492	65.501

(c) LV3

Tap Number	Before short-circuit test			After short-circuit test		
	U	V	W	U	V	W
1	72.352	72.352	72.352	72.389	72.352	72.352
2	70.650	70.635	70.635	70.699	70.635	70.635
3	68.932	68.946	68.946	68.946	68.946	68.946
4	67.224	67.233	67.233	67.233	67.233	67.233
5	65.522	65.522	65.522	65.522	65.522	65.522

(d) LV4

Tap Number	Before short-circuit test			After short-circuit test		
	U	V	W	U	V	W
1	72.378	72.352	72.337	72.378	72.352	72.337
2	70.660	70.650	70.625	70.660	70.650	70.625
3	68.955	68.946	68.923	68.955	68.946	68.923
4	67.246	67.233	67.211	67.246	67.233	67.224
5	65.535	65.535	65.501	65.543	65.535	65.513

Transformer connection symbol verified before and after short-circuit test and found to be Dy11y11y11y11.

4. Measurement of No Load loss & current:

[Clause 10.5 of IS: 2026 (Part 1): 2011]

	Applied rms voltage in volts (average)	Frequency* (Hz)	Current in amps				No load loss in Watts
			I _u	I _v	I _w	I _{avg.}	
Before short-circuit test	415.13	50.01	11.502	8.113	10.363	9.807	4965.8
After short-circuit test	415.07	50.01	11.22	7.804	10.084	9.707	4870.5

* Test conducted at available network frequency.


 (Rajaramamohanarao chennu)
Test Engineer

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report No. CPRI BLRHPL1819T0181

Dated: 28th September, 2018

5. Measurement of S.C Impedance & Load Loss:

[Clause 10.4 of IS: 2026 (Part 1): 2011]

	Before short-circuit test			After short-circuit test		
Taping position	Highest	Principal	Lowest	Highest	Principal	Lowest
% Impedance at 75° C	6.702	6.698	6.797	6.755	6.749	6.854
Load loss at rated current at 75° C in Watts	44419.5	44592.3	46318.9	44136.1	44842.2	46255.0

6. Dielectric tests:

(a) Separate source AC withstand voltage test:

[Clause 11.0 of IS: 2026 (Part 3): 2009]

	Test voltage (kV rms)					Duration (seconds)	Remarks
	Between LV ₁ & LV ₂ +LV ₃ +L V ₄ +HV+Ear th	Between LV ₂ & LV ₁ +LV ₃ +L V ₄ +HV+Ear th	Between LV ₃ & LV ₁ +LV ₂ +L V ₄ +HV+Ear th	Between LV ₄ & LV ₁ +LV ₂ +L V ₃ +HV+Ear th	Between HV & LV ₁ +LV ₂ +L V ₃ +LV ₄ +Ear th		
Before short-circuit test	3	3	3	3	70	60	Withstood
After short-circuit test	3	3	3	3	70	60	Withstood

(b) Induced voltage withstand test:

[Clause 12.0 of IS: 2026 (Part 3): 2009]

	Test voltage (V rms)	Frequency (Hz)	Duration (seconds)	Remarks
Before short-circuit test	830	120	50	Withstood
After short-circuit test	830	120	50	Withstood


 (Rajaramamohanarao chennu)
Test Engineer

ULR-TC5452180HPLT0181F

HIGH POWER LABORATORY
 P. B.NO. 8066, SADASHIVANAGAR,
 PROF. SIR.C.V. RAMAN ROAD, BENGALURU-560 080, INDIA
 PHONE: + 91- (0) 80-22072511

Sheet No. 7 of 10

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



Test Report No. CPRI BLRHPL1819T0181

Dated: 28th September, 2018

CPRI

SCHEDULE OF SHORT CIRCUIT TEST RESULTS

Test conducted	: Ability to withstand the dynamic of short circuit.
Test source	: Short Circuit Generator & Station Transformers
- Number of phases	: Three
- Frequency	: 50 Hz
Condition of sample before test	: New
Test connections – HV terminals	: Connected to source.
– LV terminals	: Shorted
Type of short circuit	: Preset
Short-circuit applied	: On the LV terminals of the transformer under test and short-circuit point grounded through the protection current transformer.
Transformer tank	: Isolated & grounded through the protection current transformer.

TEST RESULTS

ABILITY TO WITHSTAND THE DYNAMIC EFFECTS OF SHORT CIRCUIT									
Oscillogram Number	Short-circuit current on secondary side (kA)					Phase Voltage (kV) rms			Duration (seconds)
		Peak	RMS			U ₁	U ₂	U ₃	
			I1	I2	I3				
Highest tapping maximum peak on 2U,4U									
CPRIBLRHPL1819 T0181S005	LV1	60.5	27.1	27.3	26.9	19.2	19.2	19.0	0.260
	LV3	60.7	27.0	27.4	26.9				
CPRIBLRHPL1819 T0181S006	LV1	60.0	26.3	26.6	26.2	18.6	18.7	18.6	0.260
	LV3	60.1	26.3	26.7	26.3				
CPRIBLRHPL1819 • T0181S007	LV1	62.9	26.2	26.5	26.2	18.5	18.6	18.5	0.260
	LV3	63.0	26.2	26.6	26.2				
Principal tapping, maximum peak on 2V,4V									
CPRIBLRHPL1819 T0181S009	LV1	61.2	24.9	25.6	25.1	17.0	17.3	16.8	0.260
	LV3	61.3	24.9	25.7	25.2				
CPRIBLRHPL1819 T0181S010	LV1	61.0	25.3	25.5	25.2	17.2	17.3	16.9	0.260
	LV3	61.3	25.3	25.6	25.3				
Principal tapping, maximum peak on 3V,5V									
CPRIBLRHPL1819 T0181S012	LV2	58.0	24.8	25.2	24.8	17.4	17.5	17.2	0.260
	LV4	58.1	24.7	25.2	24.9				
Lowest tapping, maximum peak on 3W,5W									
CPRIBLRHPL1819 T0181S014	LV2	58.6	24.5	24.8	24.5	16.3	16.7	16.4	0.260
	LV4	58.7	24.5	24.8	24.6				
CPRIBLRHPL1819 T0181S015	LV2	58.7	24.5	24.8	24.5	16.3	16.8	16.4	0.260
	LV4	58.8	24.5	24.8	24.6				
CPRIBLRHPL1819 T0181S016	LV2	59.1	24.5	24.8	24.5	16.3	16.8	16.4	0.260
	LV4	59.1	24.5	24.8	24.6				

Observation during test: No abnormalities


 (Rajaramamohanarao chennu)
Test Engineer

ULR-TC5452180HPLT0181F

HIGH POWER LABORATORY
 P. B.NO. 8066, SADASHIVANAGAR,
 PROF. SIR.C.V. RAMAN ROAD, BENGALURU-560 080, INDIA
 PHONE: + 91- (0) 80-22072511

Sheet No. 8 of 10

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report No. CPRI BLRHPL1819T0181

Dated: 28th September, 2018

Reactance values after cooling to ambient:

Maximum change in %X after S.C. test : 0.873 %

Routine tests after short-circuit test

: Conducted & found in order

Observation after untanking the transformer: The transformer was untanked and the active part was inspected after short circuit test. Following are the observations:

Condition of Core and Clampings	: Intact
Condition of Windings, Support blocks and Spacers	: Intact
Condition of Oil	: Clear

Remarks: The performance of the sample tested complies with the requirements of clause 4.2 of IS 2026 (Part 5): 2011 for the tests conducted.


(Rajaramamohanarao chennu)
Test Engineer

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report No. CPRI BLRHPL1819T0181

Dated: 28th September, 2018

NOTE

- The Test results relate only to the item(s) tested.
- Publication or reproduction of this certificate / report in any form other than by complete set of the whole test certificate / report and in the language written is not permitted without the written consent of CPRI.
- Any Corrections / erasure invalidate the test certificate / report.
- NABL has Accredited this laboratory as per ISO 17025-2005 standard, vide certificate no.TC-5452 for the tests carried out.
- CPRI is member of STL (Short circuit testing liaison)
- Any anomaly / discrepancy in the test certificate / report should be brought to notice of CPRI within 45 days from the date of issue.

Additional Information:

CPRI issues following types of reports/certificates:

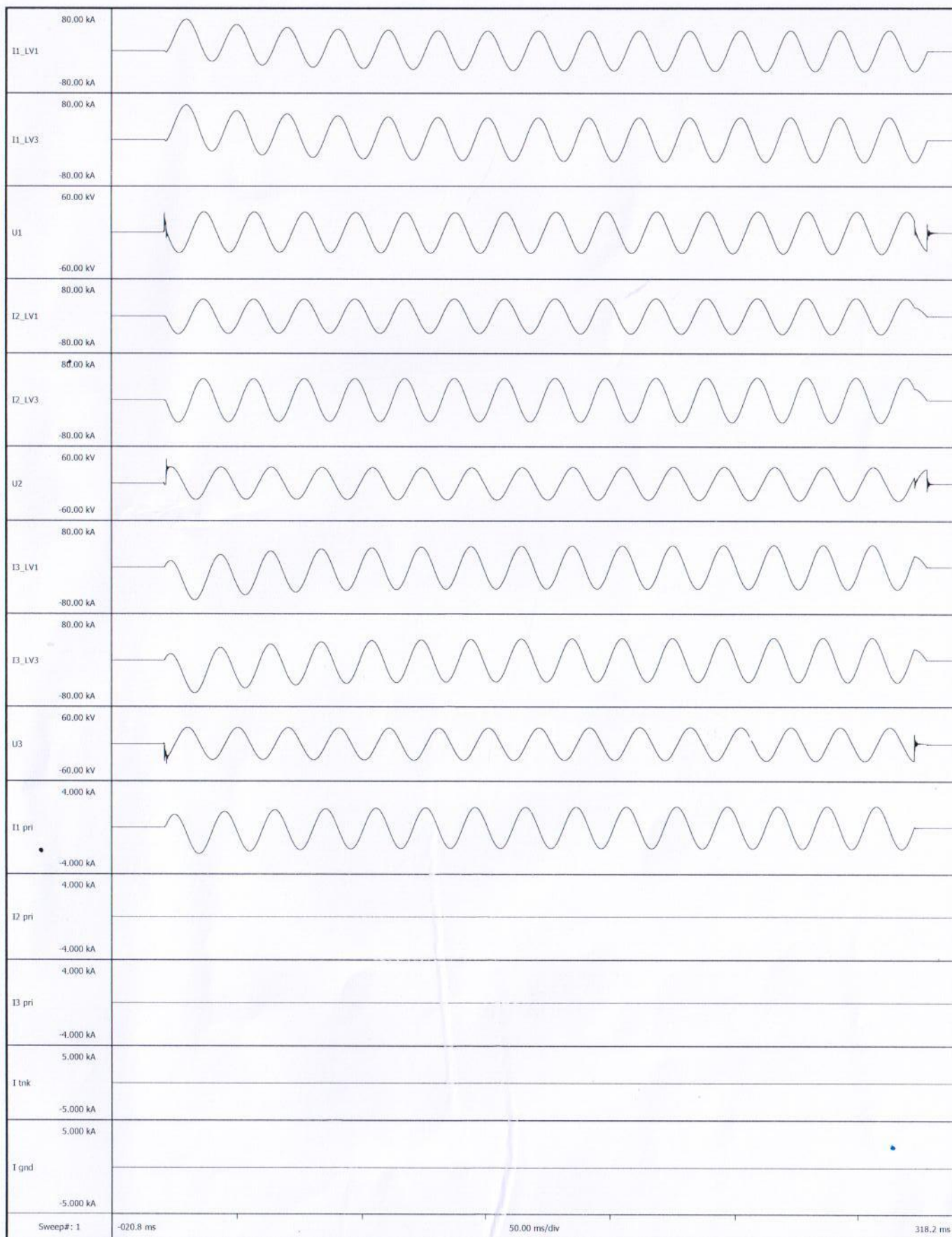
Test Certificate / Report:

The test certificate / report contains the record of the values of test parameters as obtained during testing, the physical condition of the sample during / after the test(s) and copy of oscillogram(s).

Test certificate is issued when a sample of a particular type and rating has satisfactorily passed all the specified routine tests or type tests or routine & type tests in compliance with the conditions stipulated in a published National / International standards.

Test report is issued when partial tests are performed as against the complete test requirement for Proving specific ratings as per National / International standards or Customer's specific requirements.

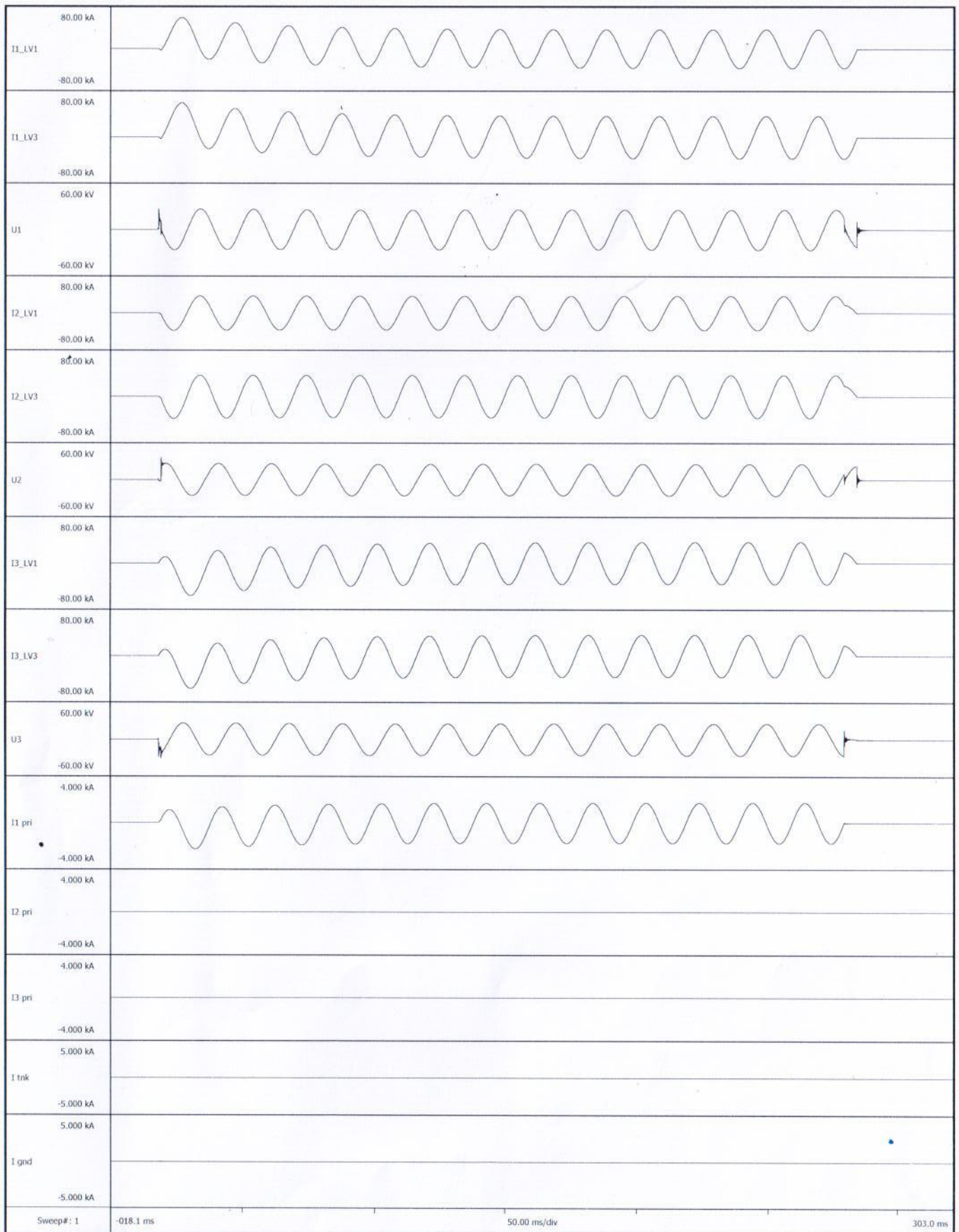

(Rajaramamohanarao chennu)
Test Engineer



High Power Laboratory
CPRI, Bangaluru

CPRI
Test Engineer

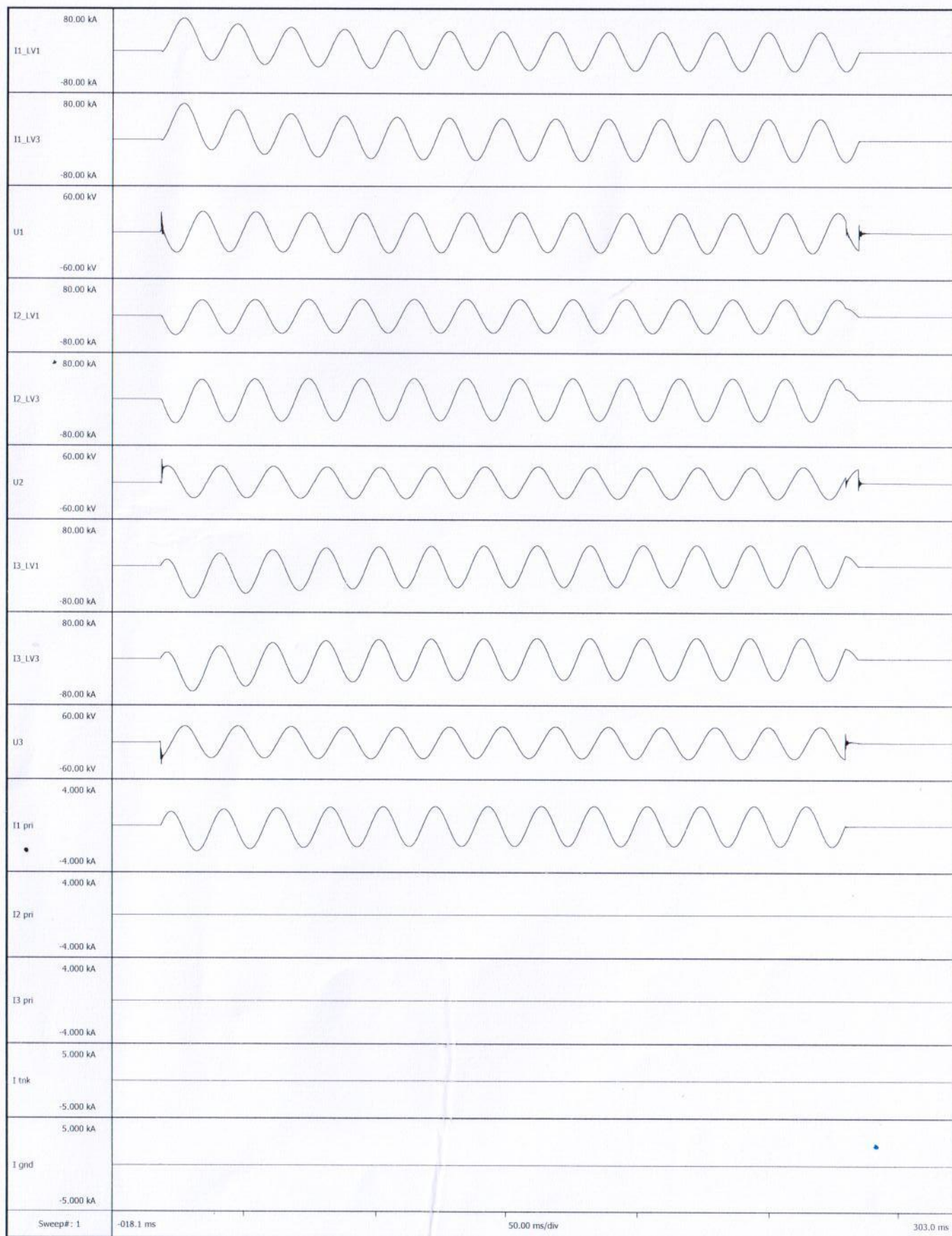
CPRI BLRHPL1819
T0181S005
03-09-2018



High Power Laboratory
CPRI, Bangaluru

Chun
Test Engineer

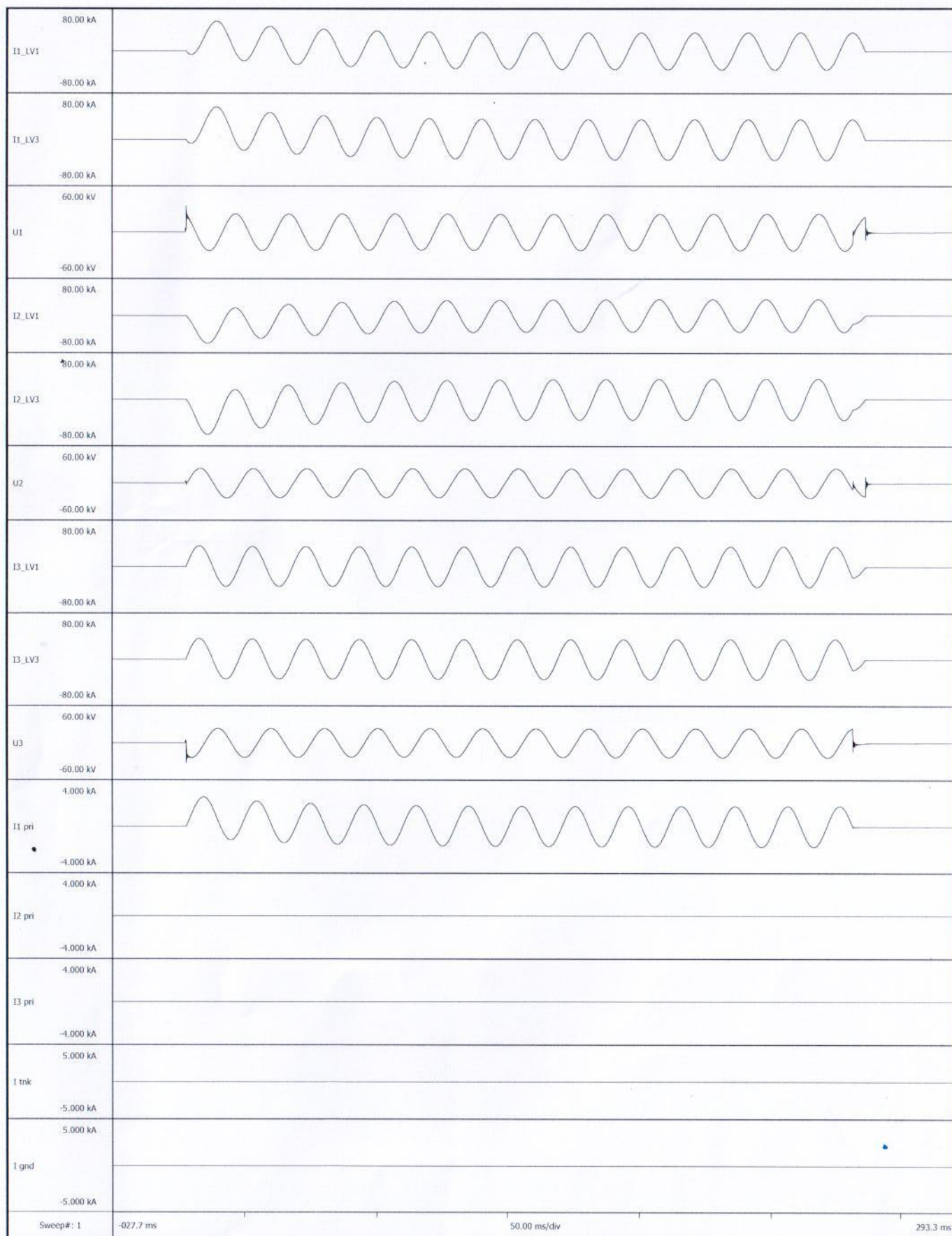
CPRIBLRHPL1819
T0181S006
03-09-2018



High Power Laboratory
CPRI, Bangaluru


Test Engineer

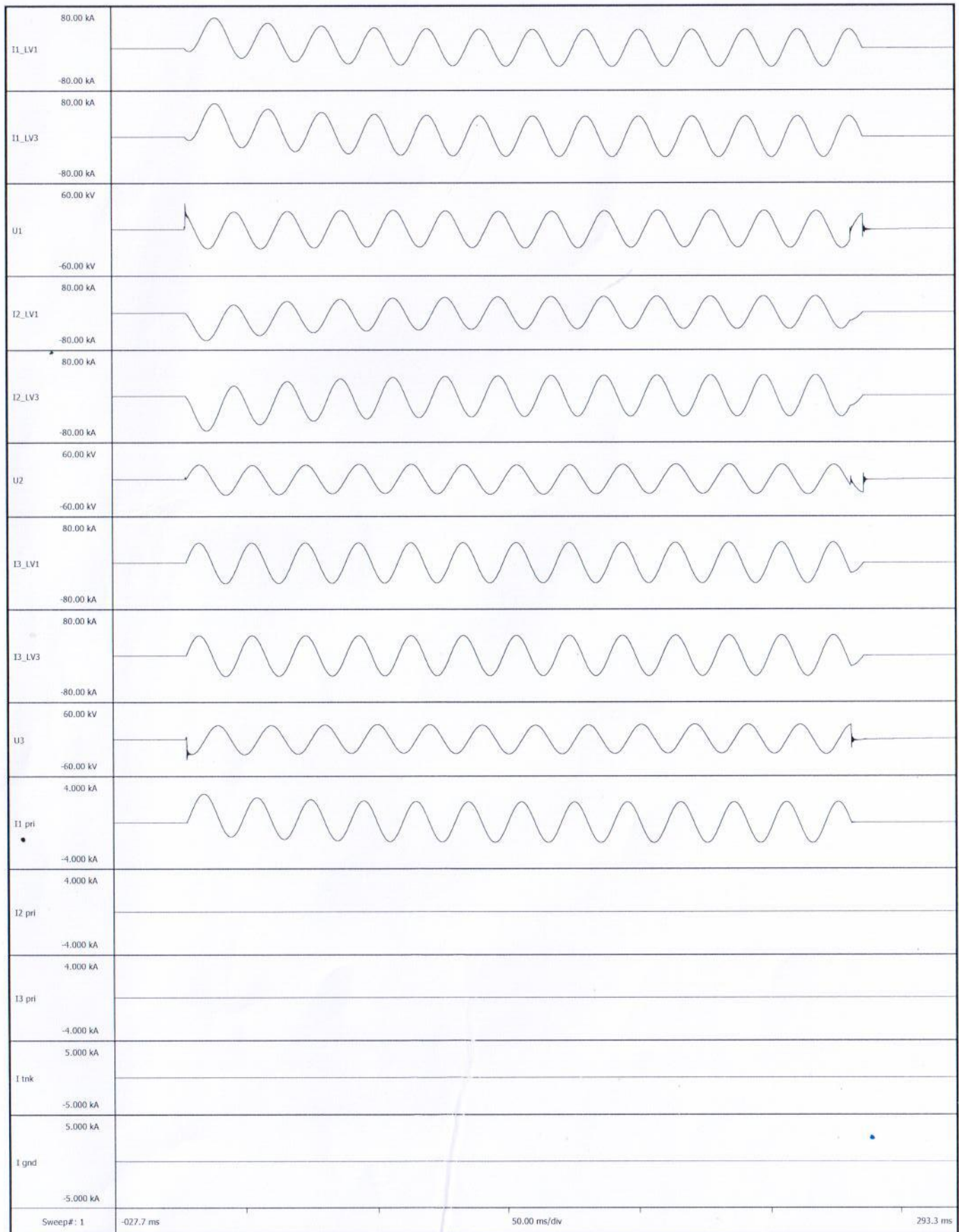
CPRIBLRHPL1819
T0181S007
03-09-2018



High Power Laboratory
CPRI, Bangaluru


Test Engineer

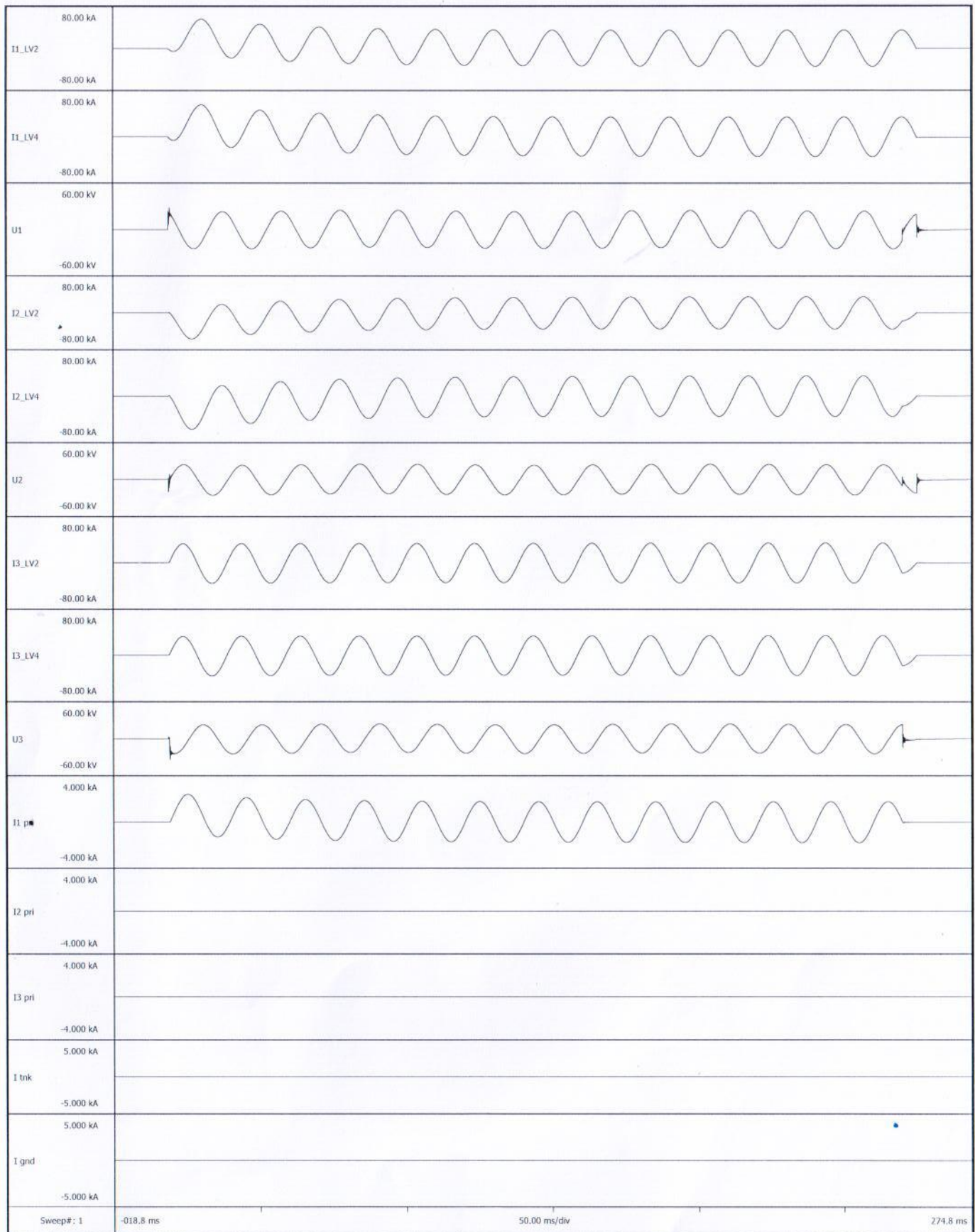
CPRIBLRHPL1819
T0181S009
03-09-2018



High Power Laboratory
CPRI, Bangaluru

Chiranjeev
Test Engineer

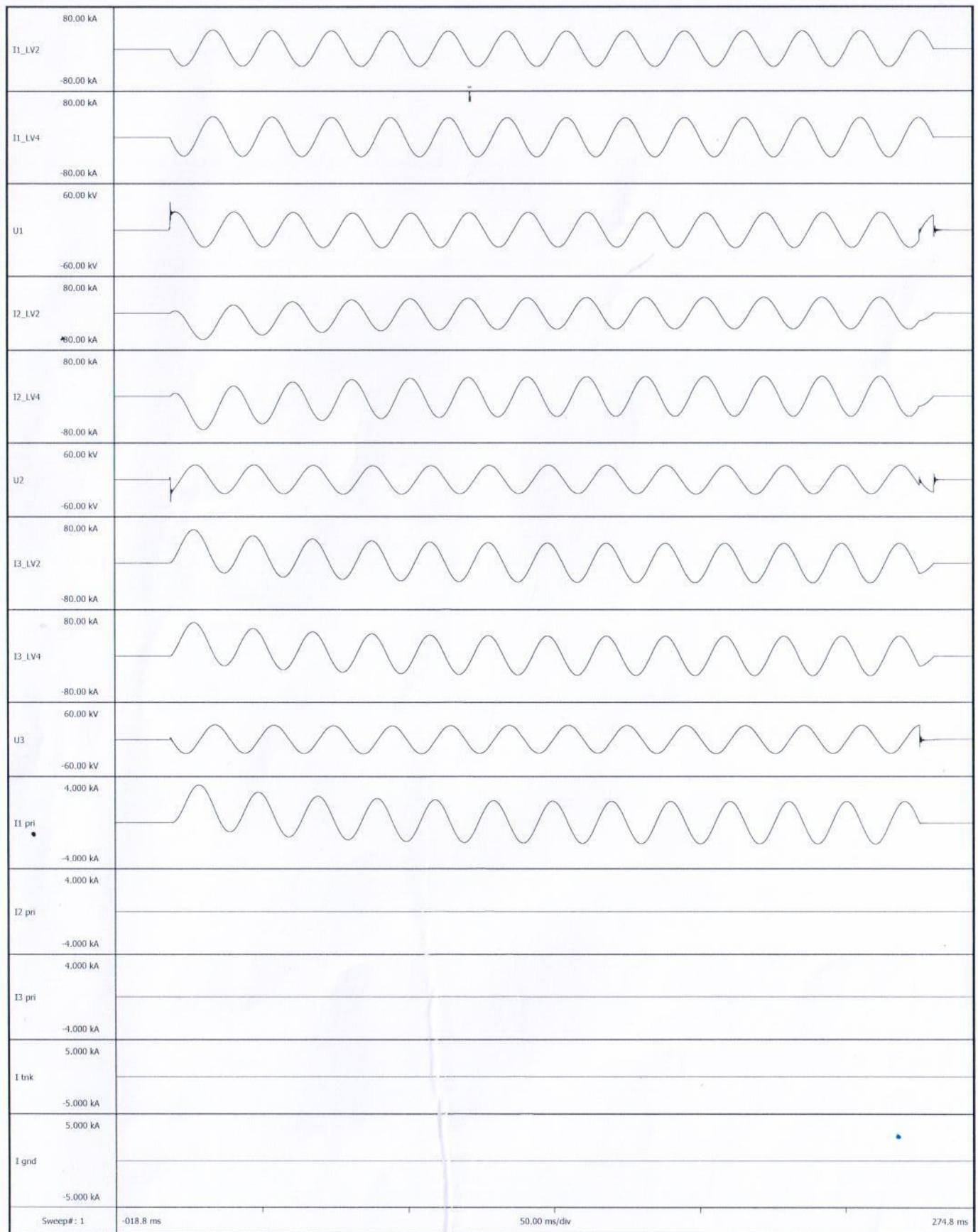
CPRIBLRHPL1819
T0181S010
03-09-2018



High Power Laboratory
CPRI, Bangaluru


Test Engineer

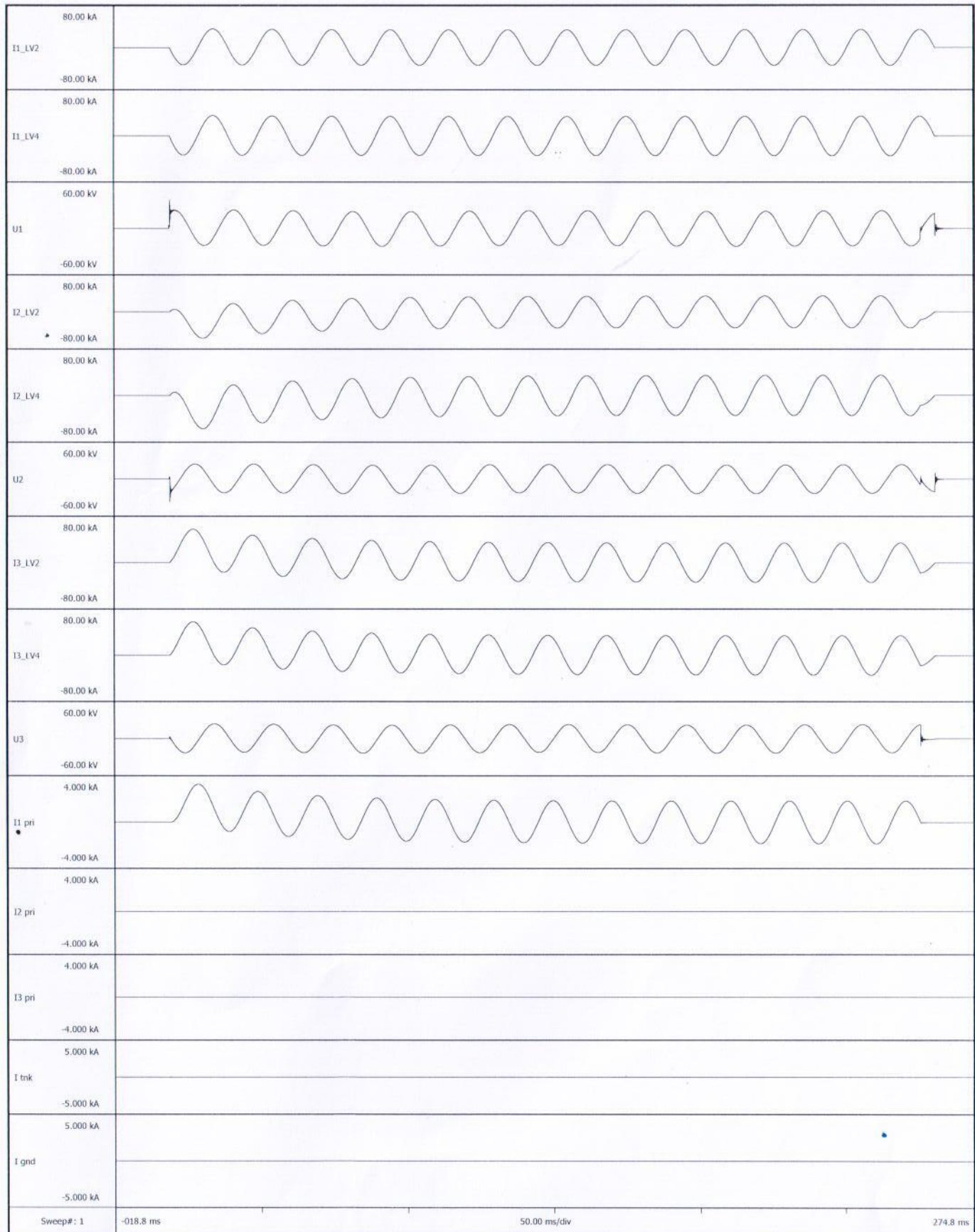
CPRI BLRHPL1819
T0181S012
03-09-2018



High Power Laboratory
CPRI, Bangaluru

Chun
Test Engineer

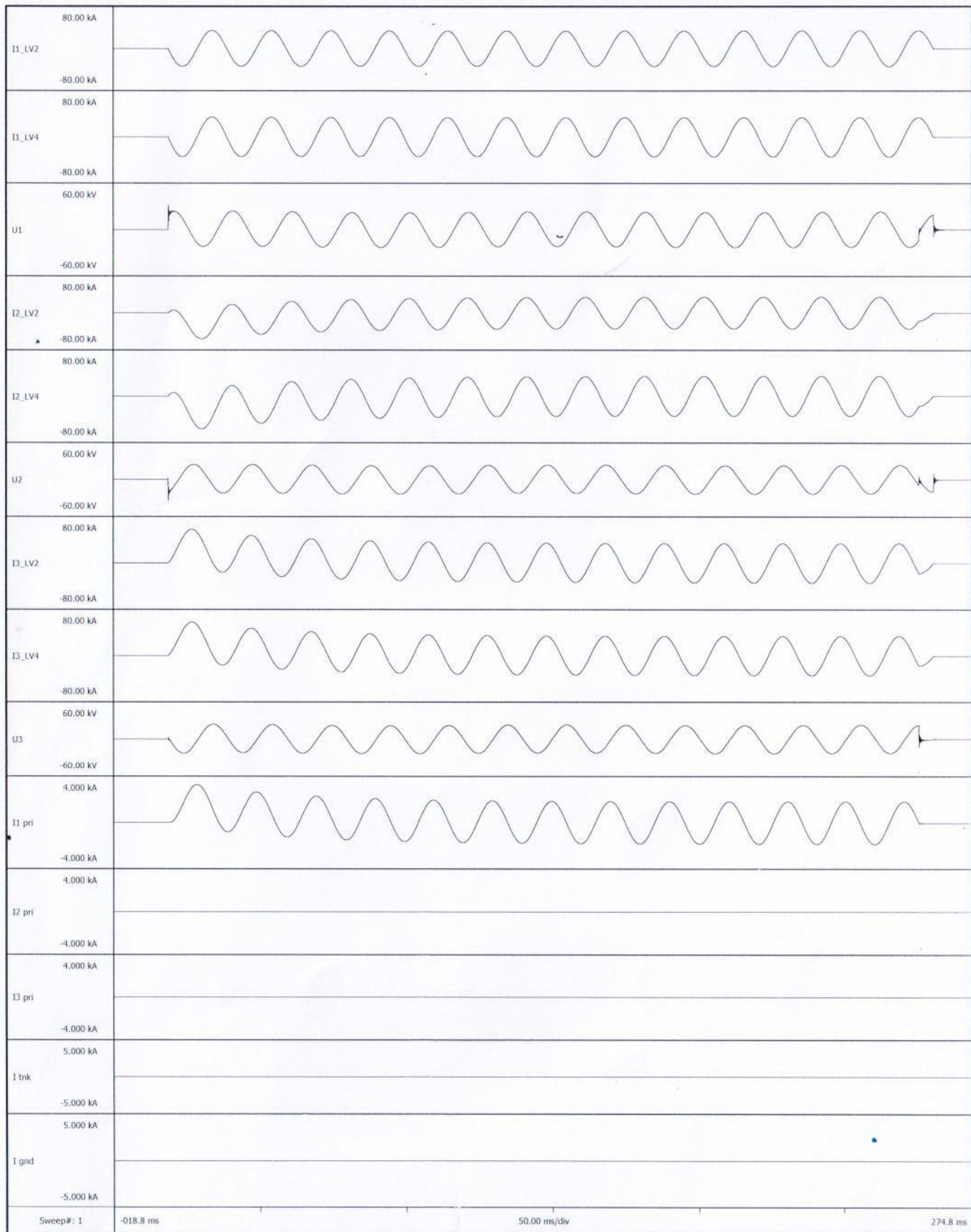
CPRIBLRHPL1819
T0181S014
03-09-2018



High Power Laboratory
CPRI, Bangaluru

Chyuz
Test Engineer

CPRIBLRHPL1819
T0181S015
03-09-2018



High Power Laboratory
CPRI, Bangaluru


Test Engineer

CPRIBLRHPL1819
T0181S016
03-09-2018

CENTRAL POWER RESEARCH INSTITUTE



CPRI

Test Report No. CPRI BLR HPL1819T0181



Photograph No. 339: Mounting arrangement before short-circuit test


(Rajaramamohanarao chennu)
TEST ENGINEER

HIGH POWER LABORATORY
P. B.NO. 8066, SADASHIVANAGAR
PROF. SIR.C.V. RAMAN ROAD, BENGALURU-560 080, INDIA
PHONE: + 91- (0) 80-22072511

CENTRAL POWER RESEARCH INSTITUTE



CPRI

Test Report No. CPRIBLRHPL1819T0181



Photograph No. 347: Condition of conductor, core etc., after short circuit test, View from HV terminal side


(Rajaramamohanarao chennu)
TEST ENGINEER

HIGH POWER LABORATORY
P. B.NO. 8066, SADASHIVANAGAR
PROF. SIR.C.V. RAMAN ROAD, BENGALURU-560 080, INDIA
PHONE: + 91- (0) 80-22072511

CENTRAL POWER RESEARCH INSTITUTE



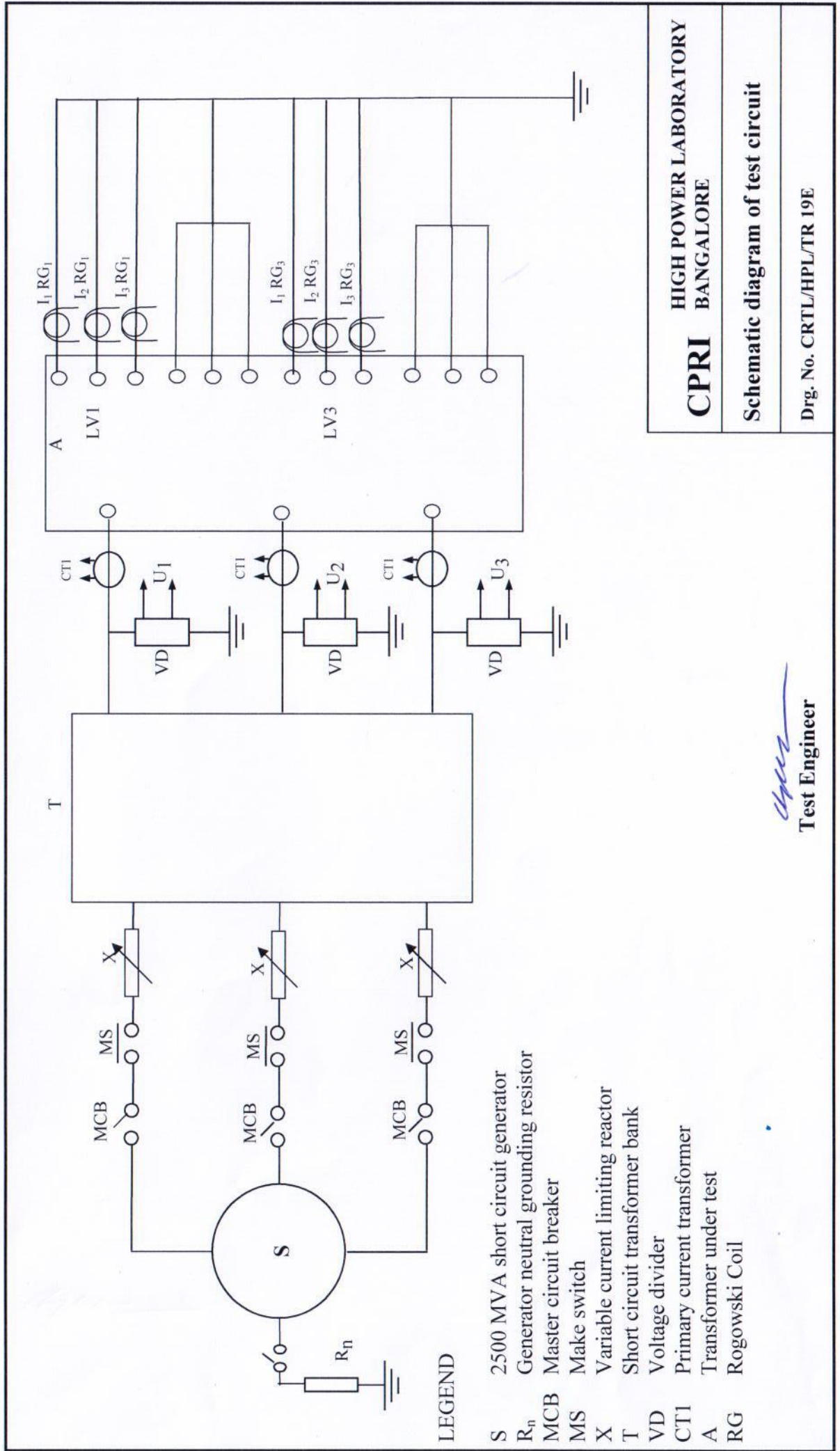
CPRI

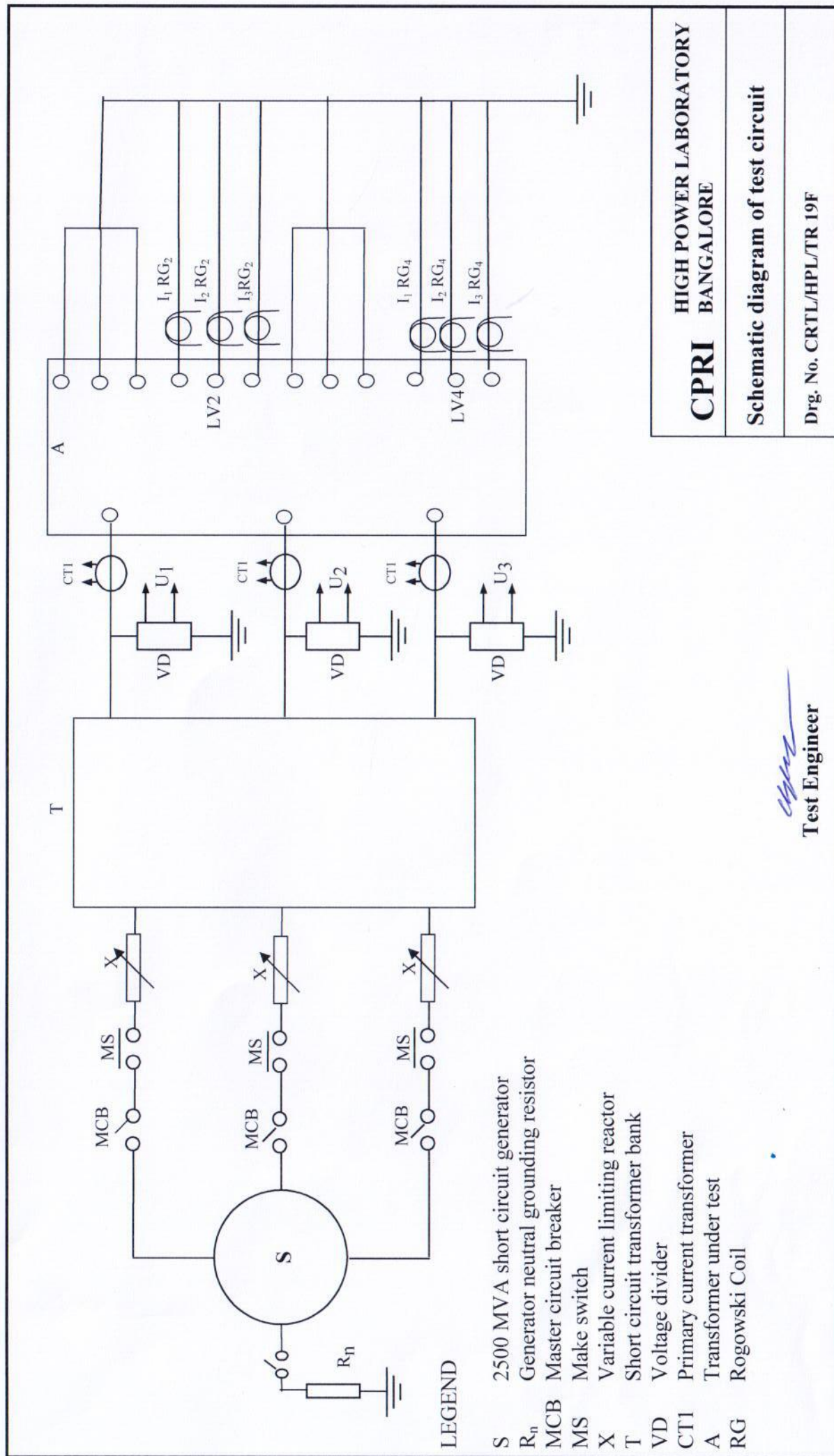
Test Report No. CPRI BLR HPL1819T0181



Photograph No. 348: Condition of conductor, core etc., after short circuit test, View from LV terminal side


(Rajaramamohanarao chennu)
TEST ENGINEER







PADMAVAHINI TRANSFORMERS PRIVATE LIMITED

(AN ISO 9001 : 2015 CERTIFIED COMPANY)

Coimbatore - 641 035. Mobile : +91 98430 35111, +91 99430 46222, +91 99430 49222

E-mail : info@padmavahini.in Website : www.padmavahini.in

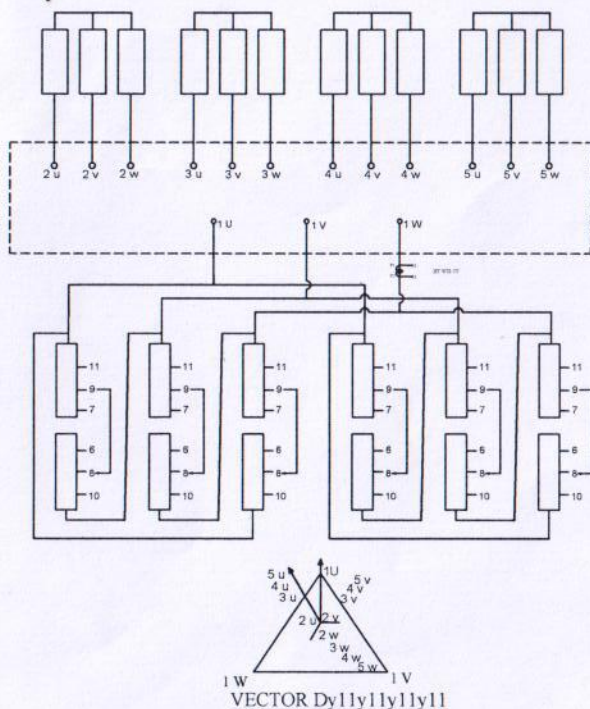
TRANSFORMER TO STANDARDS IS 2026

KVA	{ H.V. 5300 L.V. LV 1 -1325, LV 2 -1325, LV 3 -1325, LV 4 -1325	TYPE OF COOLING	ONAN
VOLTS AT NO LOAD	{ H.V. 33000 L.V. 415 - 415 - 415 - 415	FREQUENCY	50 Hz
AMPERE	{ H.V. 92.73 L.V. 1843.34 - 1843.34 - 1843.34 - 1843.34	IMPEDANCE VOLTS	6.749 %
PHASE	{ H.V. 3 L.V. 3 - 3 - 3 - 3	VECTOR GROUP	Dy11y11y11
BIL - IMPULSE	H.V. 170 KV L.V. 70 KV	CORE AND WINDING	8300 Kg
BIL - P.F.W/S VOLTAGE	H.V. 3 KV L.V. 3 KV	WEIGHT OF OIL	4400 Kg
MAKER'S REFERENCE No.	TT-005/18-19	TOTAL WEIGHT	15900 Kg
MAKER'S SERIAL No.	C-1756 / 4	OIL IN LTRS	5300 Ltr
		YEAR OF MANUFACTURE	2018
		MAKER'S DRAWING REFERENCE No.	PAT-TT-005-00

GURANTEED MAX. TEMP. RISE IN OIL /WDG. °C
OVER AN AMBIENT TEMPERATURE OF 50° C

Document Pertaining to Report 45/55
No. CPRI BLRHPL1819T0121

CONTRACTOR NAME



LV 1 VOLTS AT 2u,2v,2w	415 VOLTS	LV 1 AMPS	1843.34
LV 2 VOLTS AT 3u,3v,3w	415 VOLTS	LV 2 AMPS	1843.34
LV 3 VOLTS AT 4u,4v,4w	415 VOLTS	LV 3 AMPS	1843.34
LV 4 VOLTS AT 5u,5v,5w	415 VOLTS	LV 4 AMPS	1843.34
SWITCH POSITION	JOIN TAPS	HV VOLTS AT 1U,1V,1W	HV AMPS AT 1U,1V,1W
1	6 - 7	34650	88.31
2	7 - 8	33825	90.46
3	8 - 9	33000	92.73
4	9 - 10	32175	95.11
5	10 - 11	31350	97.61

CT DETAILS
HT CT RATIO : 100/5A
VA : 15 VA
CLASS : 1.0

CAUTION :

DE ENERGISE THE TRANSFORMER BEFORE
OPERATING OFF CIRCUIT TAP CHANGER SWITCH

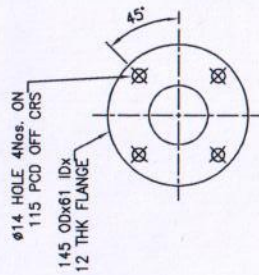
(COPPER WOUND TRANSFORMER)
MADE IN INDIA

परीक्षण अभियन्ता / Test Engineer
उच्च शक्ति प्रयोगशाला / H.P. LAB
आर. आई. / CPRI
बंगलुरु / Bengaluru

This document is a property of
Padmavahini Transformers Pvt Ltd. and
this should not be reproduced in any
form

Customer	Project	Drawn	U.S	06-07-2018	TITLE	5300 KVA TRANSFORMER RATING PLATE DETAILS
		Chk & App	R.V	06-07-2018	DRG.NO	PAT-TT-005-01 REV 0
		Sign	Date	Material		
Rev	Date	Desc				
AMENDMENTS			PADMAVAHINI TRANSFORMERS (P) LTD, COIMBATORE-641035			

Drawing - 5300 KVA, 33 KV / 4 x 415 V Transformer.



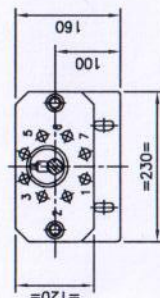
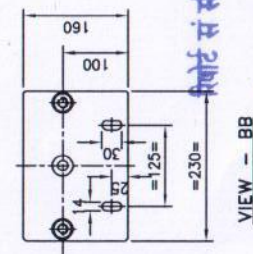
DET. OF MATING FLANGE
(NOT IN OUR SCOPE)

सीपीआरआई द्वारा इस रेखाचित्र का सत्यापन जाँच
कहाँ भी संभाव होसिर्फ विमीय जांच तक ही सीमित है ।
BY CPRI IS LIMITED TO DIMENSIONAL
CHECKS ONLY. WHEREVER POSSIBLE

Make: ALWAYS LOAD SELECTORS

NOTE:-

1. ALL DIMENSIONS ARE IN MM.
2. 'C' DIMNS. TO BE GIVEN BY CLIENT TO SUPPLY SUITABLE LENGTH OF CONN. ROD.



SECT. - AA (5 POSN.)
(WITH TAP POSN.)

SECT. - AA (7 POSN.)
(WITH TAP POSN.)

रिपोर्ट सं सी बी आर आई बी एल आर एच पी एल
1819 से संबंधी दस्तावेज
Document Pertaining to Report
No. CPRI/BLR/HPL/1819/IO/181

OVERALL DIMENSION TOLERANCE $\pm 1\%$

This document is a property of
Padmavahini Transformers Pvt Ltd.and
this should not be reproduced in any
form

ALL DIMENSION IN MM UNLESS SPECIFIED OTHERWISE

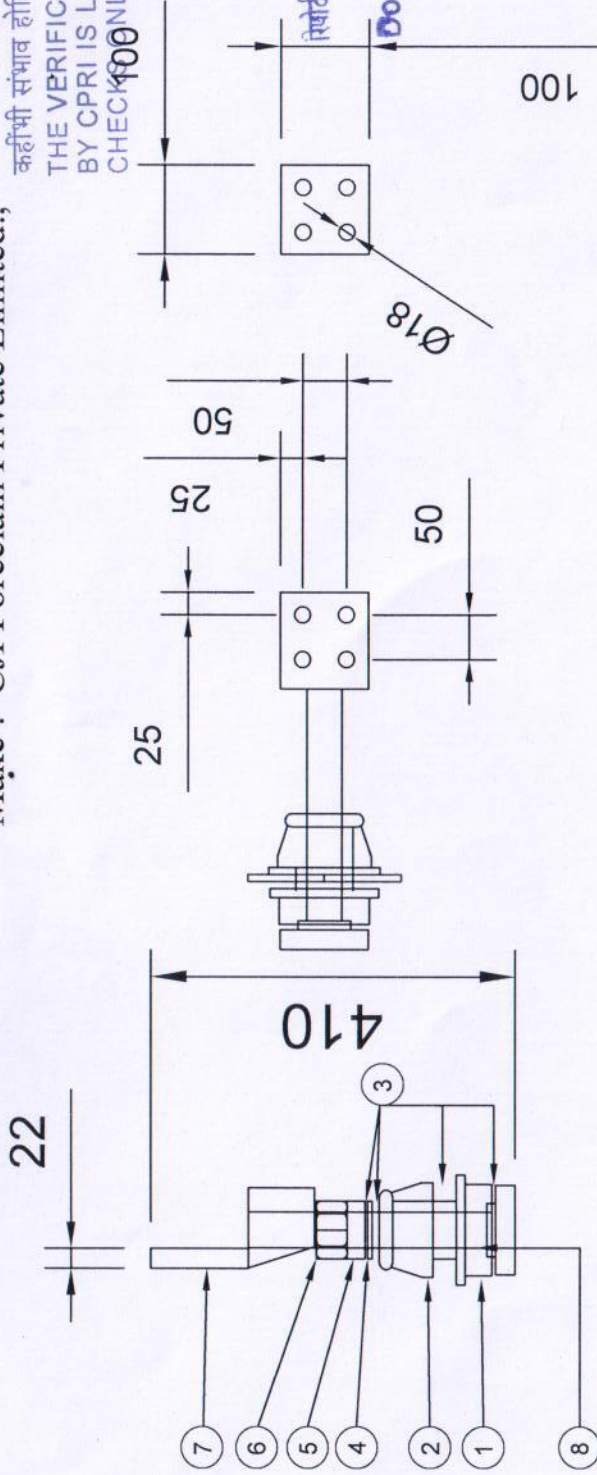
[illegible]

AMENDMENTS

BUSHING 1 KV/ 2000A_{ns}

Make : CJI Porcelain Private Limited.,

सीपीआरआई द्वारा इस रेखाचित्र का सत्यापन जहाँ कहीं भी संभाव होसिर्फ विमीय जांच तक ही सीमित है।
THE VERIFICATION OF THIS DRAWING BY CPRI IS LIMITED TO DIMENSIONAL CHECK ONLY. WHEREVER POSSIBLE



SR NO	DESCRIPTION	MATERIAL	QTY
1	BOTTOM INSULATOR	PORCELAIN	1
2	TOP INSULATOR	PORCELAIN	1
3	GASKET	CORK SHEET	1
4	GROOVE WASHER	BRASS	1
5	CAP	BRASS	1
6	HEX NUT	BRASS	1
7	TERMINATION GLAND	BRASS	1
8	STEM	COPPER	1

TECHNICAL DETAILS OF OIL FILLED PORCELAIN BUSHING

- INSULATION LEVEL : AS PER IS 3347
- RATED VOLTAGE : 1 KV
- RATED CURRENT : 2000 A
- FREQUENCY WITHSTAND VOLTAGE DRY : 3 KV (rms)
- FREQUENCY : 50 Hz
- MASS (APPROX.) (TOP & BOTTOM) : 1.25 kgs.
- THE BUSHING IS OIL COMMUNICATING TYPE
- PORCELAIN BUSHING & METAL PARTS CONFIRM TO IS : 3347 / PART 1 / SEC 1 & 2
- MAKE OF PORCELAIN : CJI

OVERALL DIMENSION TOLERANCE +/- 1%

ALL DIMENSION IN MM UNLESS SPECIFIED OTHERWISE

This document is a property of Padmavahini Transformers Pvt Ltd. and this should not be reproduced in any form

Customer	Drawn	U.S	TITLE	5300 KVA TRANSFORMER LV BUSHING DETAILS
Project	Chk & App	R.V	06-07-2018	GA DRG. NO. PAT-TT-005 - 05
Rev	Date	Sign	Date	Material
				REV 0
AMENDMENTS				
Drawing - 5300 KVA, 33 KV / 4 x 415 V Transformer.				
PADMAVAHINI TRANSFORMERS (P) LTD, COIMBATORE-641 035				

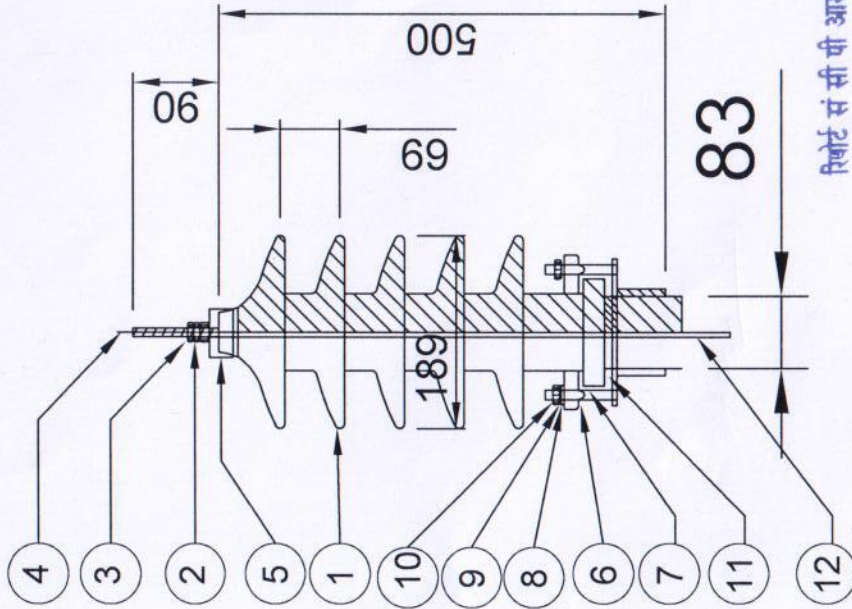
410

Ø18

100

रिपोर्ट सं सी पी आर आई की एल और एच पी एल
1819 से संबंधी दस्तावेज
Document Pertaining to Report
No. CPRI LRHPL1819T0181

परीक्षण अभियन्ता / Test Engineer
उच्च शक्ति प्रयोगशाला / H.P. LAB
सी. पी. आर. आई. / CPRI
बैंगलुरु / Bengaluru



BUSHING 36 KV **Make : CJI Porcelain Private Limited.,**

सीपीआरआई द्वारा इस रेखाचित्र का सत्यापन जहाँ कहीं भी संभाव होसिर्फ विमीय जांच तक ही सीमित है।
 THE VERIFICATION OF THIS DRAWING BY CPRI IS LIMITED TO DIMENSIONAL CHECKS ONLY. WHEREVER POSSIBLE

SR NO	DESCRIPTION	MATERIAL	QTY
1	INSULATOR	PORCELAIN	1
2	HEX NUT	BRASS	1
3	HEX LOCK NUT	BRASS	2
4	STEM	BRASS	1
5	CAP	BRASS	1
6	CLAMPING RING	GI	1
7	CLAMPING MEMBER	ALUMINIUM ALLOY	4
8	PLAIN WASHER	GI	4
9	SPRING WASHER	GI	4
10	HEX NUT	MS	4
11	GASKET	CORK SHEET	1
12	CONNECTION LEAD	COPPER	1

TECHNICAL DETAILS OF OIL FILLED PORCELAIN BUSHING

- INSULATION LEVEL : AS PER IS 3347/2099
- RATED VOLTAGE : 36 kV
- RATED CURRENT : 250 A
- FREQUENCY WITHSTAND VOLTAGE DRY : 70 kV (rms)
- DRY LIGHTNING IMPULSE WITHSTAND VOLTAGE : 170 kV (peak)
- FREQUENCY : 50 Hz
- MINIMUM CREEPAGE DISTANCE (HEAVILY POLLUTED) : 25 mm/kV
- MASS (APPROX.) : 10.3 kgs.
- THE BUSHING IS OIL COMMUNICATING TYPE
- PORCELAIN BUSHING & METAL PARTS CONFIRM TO IS : 3347 / PART 5 / SEC 1 & 2
- MAKE OF PORCELAIN : CJI

परिक्षण अभियन्ता / Test Engineer
 उच्च शक्ति प्रयोगशाला / H.P. LAB
 सी. पी. आर. आई. / CPRI
 बेंगलुरु / Bengaluru

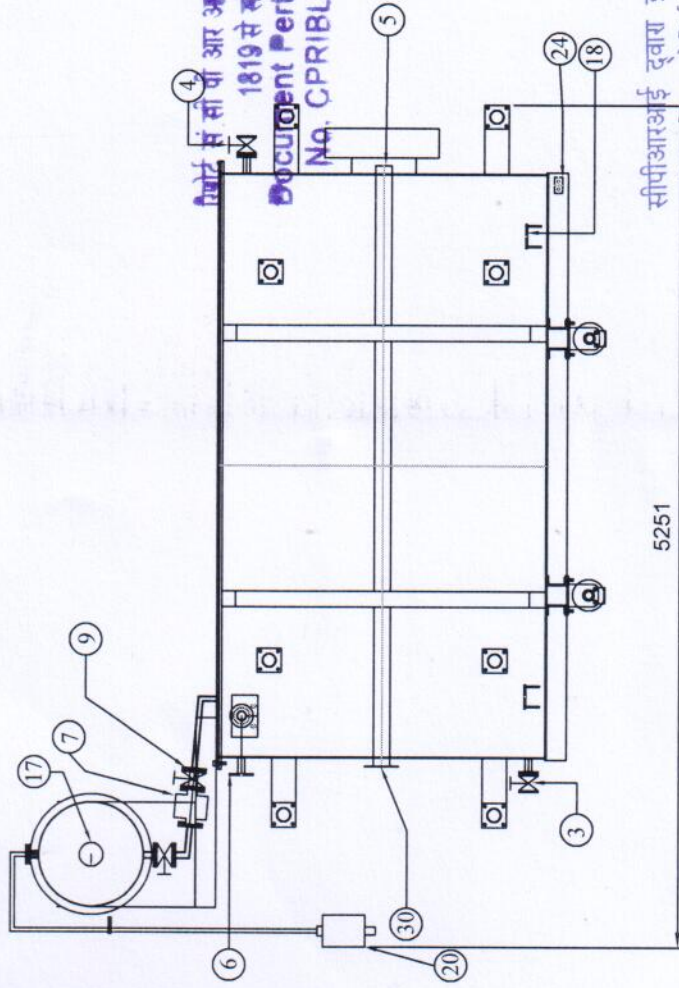
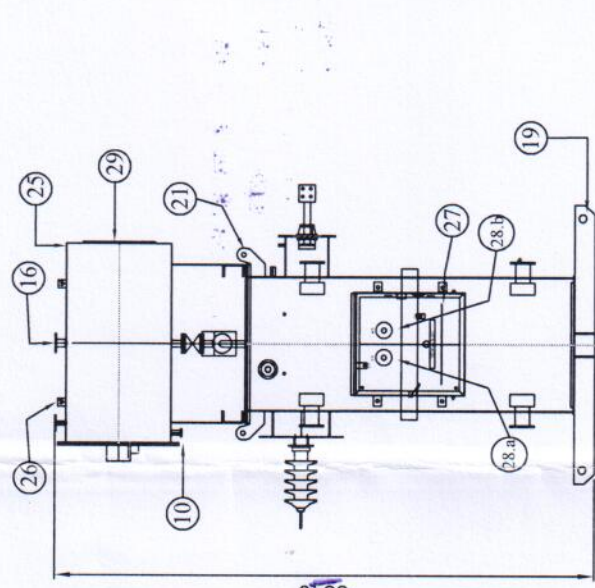
रिपोर्ट सं सी पी आर आई की एल आर एच पी एल
 1819 से संबंधी दस्तावेज
Document Pertaining to Report
No. CPRI/LR/HPL1819T0181

OVERALL DIMENSION TOLERANCE +/- 1%

This document is a property of
 Padmavahini Transformers Pvt
 Ltd. and this should not be reproduced
 in any form

ALL DIMENSION IN MM UNLESS SPECIFIED OTHERWISE

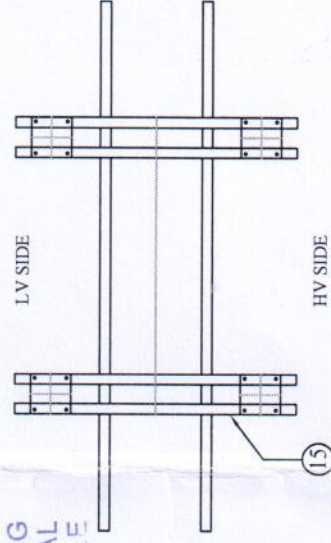
Customer	Drawn	U.S	06-07-2018	TITLE	5300 KVA TRANSFORMER HV BUSHING DETAILS
Project	Chk & App	R.V	06-07-2018	GA DRG. NO.	PAT-TT-005-04
Rev	Date	Sign	Date	Material	REV 0
AMENDMENTS					
Drawing - 5300 KVA, 33 KV / 4 x 415 V Transformer.					
PADMAVAHINI TRANSFORMERS (P) LTD, COIMBATORE-641 035					



सीपीआरआई द्वारा इस रेखाचित्र का सत्यापन जहाँ कहीं भी संभाव होसकिए विभीय जांच तक ही सीमित है ।
THE VERIFICATION OF THIS DRAWING BY CPRI IS LIMITED TO DIMENSIONAL CHECKS ONLY. WHEREVER POSSIBLE

5251

PLATFORM LOCATION



TANK SHEETS:

**Top & Bottom Sheet-8mm
**Side Sheet-6mm

CORE BOLT & TIE ROD DETAILS

Sl. No	ITEM NAME	A - SIZE	B - LENGTH	C - THREAD LENGTH	QUANTITY - I.CCA
1	CORE BOLT	3/4"	390	80	16 NOS
2	TIE ROD	1"	1345	90	4 NOS
3	TIE ROD	1"	1360	90	8 NOS
4	TIE ROD	1"	1720	90	4 NOS

OVERALL DIMENSION TOLERANCE +/- 5%

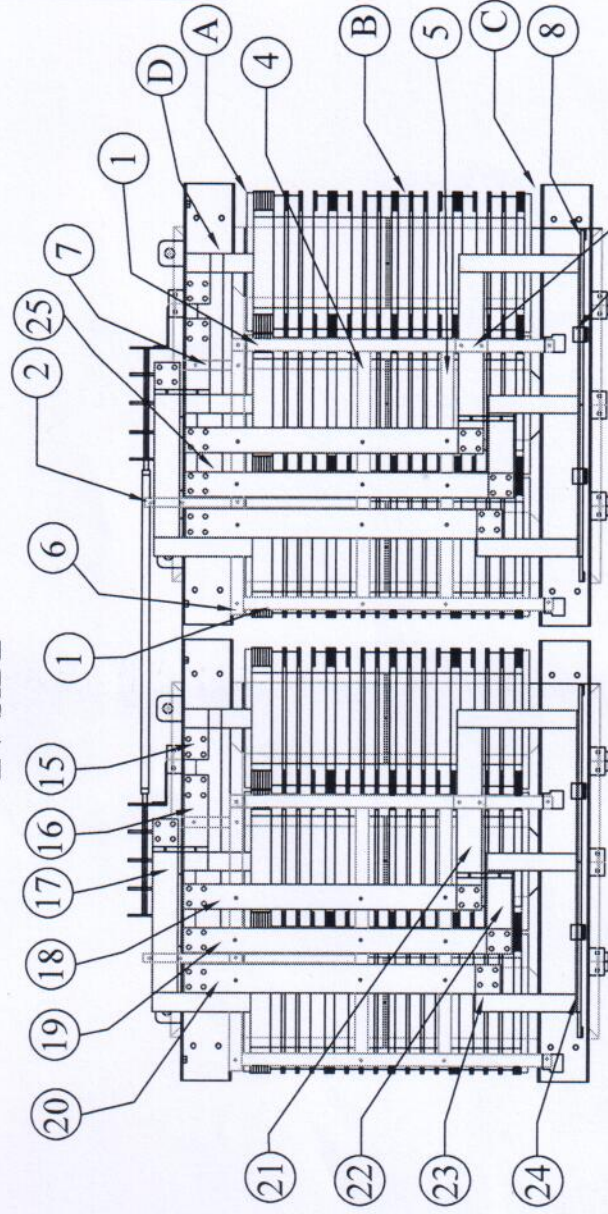
This document is a property of Padmavahini Transformers Pvt Ltd.and this should not be reproduced in any form

5300 KVA TRANSFORMER
GENERAL ARRANGEMENT DRAWING

Customer	Drawn	U.S	06-07-2018	TITLE	ALL DIMENSION IN MM UNLESS SPECIFIED OTHERWISE
Project	Chk & App	R.V	06-07-2018	GA DRG. NO. PAT-TT -005 - 00	REV 0
Rev	Date	Sign	Date	Material	MS
Drawing - 5300 KVA, 33 KV / 4 x 415 V Transformer.					
AMENDMENTS					

PADMAVAHINI TRANSFORMERS (P) LTD, COIMBATORE-641 035

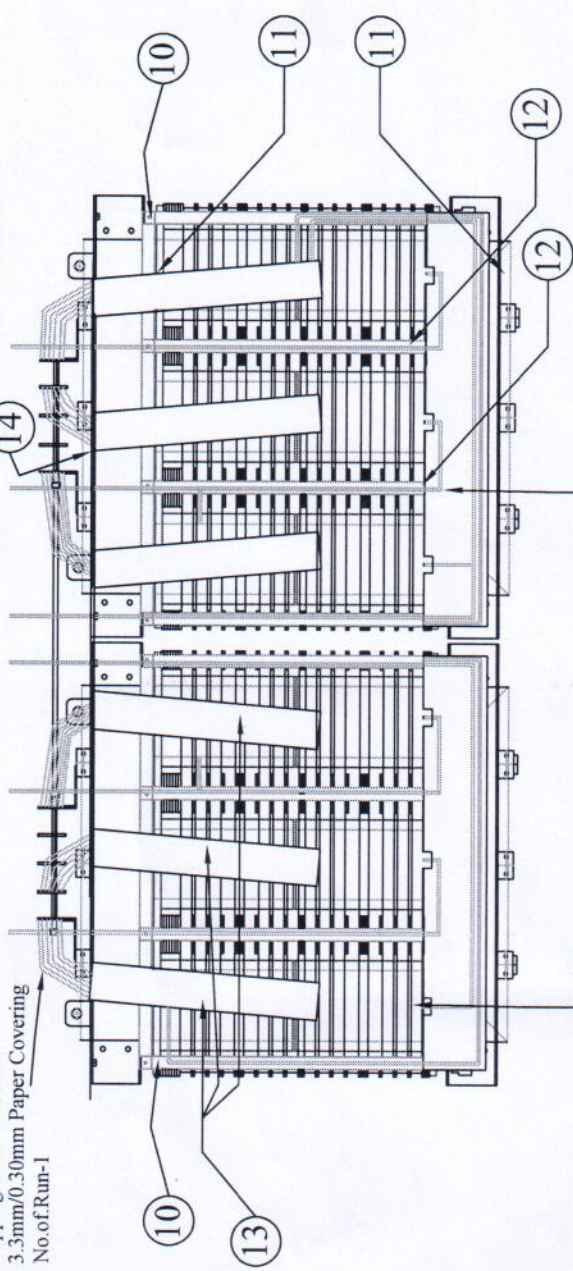
LV SIDE



रिपोर्ट सं सी पी आर आई की एल आर एच पी एल
1819 से संबंधी दस्तावेज
Document Pertaining to Report
No. CPRI/HRPL1819T0161

सीपीआरआई द्वारा इस रेखाचित्र का सत्यापन जहाँ
कहीं भी संभाव होसकिए विभीय जांच तक ही सीमित है।
THE VERIFICATION OF THIS DRAWING
BY CPRI IS LIMITED TO DIMENSIONAL
CHECKS ONLY. WHEREVER POSSIBLE

Tapping Lead Wire Size
3.3mm/0.30mm Paper Covering
No.of.Run-1

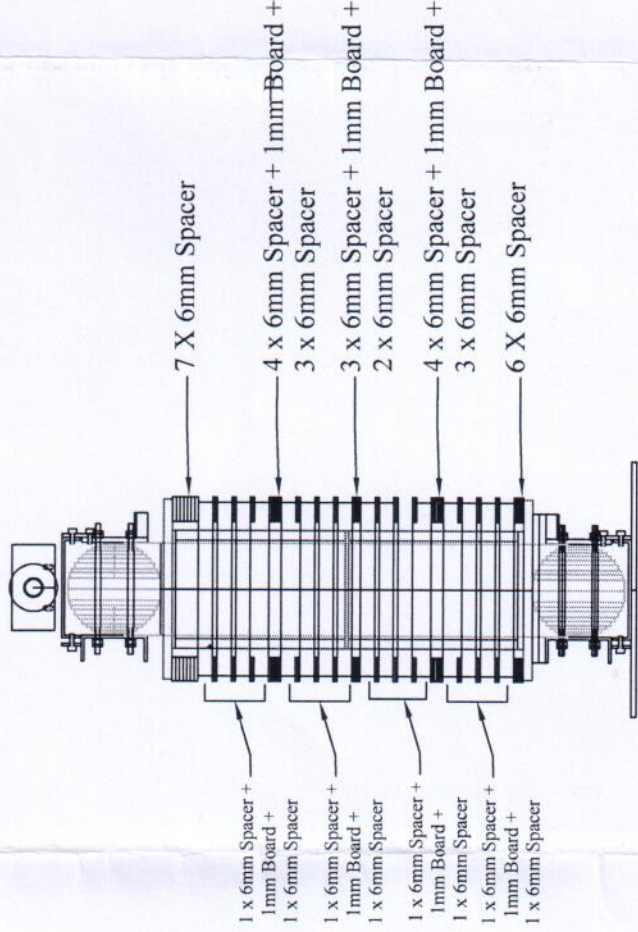
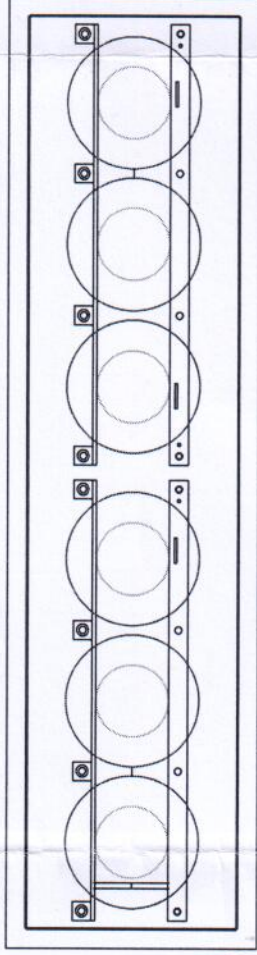


HV COPPER CONDUCTOR
2.642mm/ 0.10 Enamel + 0.25 paper covering
No.of.Run-1

Delta Lead Wire Size
5.8mm x 2.2mm / 0.5mm Paper Covering
No.of.Run-1

OVERALL DIMENSION TOLERANCE +/- 5%

This document is a property of
Padmavahini Transformers Pvt
Ltd.and this should not be
reproduced in any form



SR.NO	DESCRIPTION-CCA 1
15	Copper Flat Length-185mm
16	Copper Flat Length-405mm
17	Copper Flat Length-800mm
18	Copper Flat Length-1200mm
19	Copper Flat Length-1320mm
20	Copper Flat Length-1275mm
21	Copper Flat Length-800mm
22	Copper Flat Length-380mm
23	Copper Flat Length-200mm
24	Copper Flat Length-1235mm
25	Copper Flat Length-1210mm

FRP DETAILS

SR.NO	DESCRIPTION
1	FRP Length-1690mm, Size-60mm x 20mm-2 Runs
2	FRP Length-800mm, Size-60mm x 12mm-1 Run
3	FRP Length-180mm, Size-60mm x 12mm-1 Run
4	FRP Length-950mm, Size-60mm x 8mm-2 Runs
5	FRP Length-950mm, Size-60mm x 20mm-1 Run
6	FRP Length-950mm, Size-60mm x 20mm-1 Run
7	FRP Length-315mm, Size-60mm x 20mm-1 Run
8	FRP Length-1400mm, Size-75mm x 12mm-1 Run
9	FRP Length-185mm, Size-60mm x 12mm-1 Run
10	FRP Length-1345mm, Size-60mm x 8mm-2 Runs
11	FRP Length-1650mm, Size-60mm x 8mm- Top-1 Run & Bottom-1 Run
12	FRP Length-1345mm, Size-60mm x 3mm-2 Runs
13	FRP Length-1000mm, Size-180mm x 3mm-3 Runs
14	FRP Length-1560mm, Size-155mm x 12mm-1 Run

Phase Barrier Board Size(1100 x 575mm)-ImmBoard
No.of.Core Steps - 11steps
FRP Runner-(18 x 12 x 8mm Thickness)-Length-1010

- A — Channel to Coil Top-125 mm
(7 x 6mm Spacer-42 mm + FRP Ring-27mm +Channel to Ring-56mm)
- B — Intercoil Insulation-13 mm
(6 mm Spacer + Imm Board + 6 mm Spacer)
- C — Channel to Coil Bottom-119 mm
(Channel to Ring-56mm +FRP Ring-27mm+6 x 6mm Spacer-36 mm)

D
LV Conductor Wire Size
12.8mm x 3.8mm /0.15 Enamel + 0.35 Covering
No.of.Run:3 x 5 = 15

ALL DIMENSION IN MM UNLESS SPECIFIED OTHERWISE

Customer	U.S	Drawn	06-07-2018	TITLE	5300 KVA TRANSFORMER INTERNAL ARRANGEMENT
Project	R.V	Chk & App	06-07-2018	GA DRG . NO. PAT-TT -005 - 02	REV 0
Rev	Date	Desc	Sign	Date	Material

AMENDMENTS

Drawing - 5300 KVA, 33 KV / 4 x 415 V Transformer.

PADMAVAHINI TRANSFORMERS (P) LTD, COIMBATORE 641 035