

ANNEXURE-01

TECHNOCRAFTS JOB ID - 3287.01

CLIENT: M/s. G V Reserch Centers Pvt Ltd

PROJECT: INNOPOLIS FACILITY

CONSULTANT : M/S. AEVITOS PHARMAGROTECH PVT. LTD.

36kV, 1250A, 25kA/1SEC INDOOR VCB ICOG PANEL

PANEL S.NO & TYPE	BREAKER SR NO	VAJH13, TRIPPING RELAY TRIP CIRCUIT SUPERVISION RELAY (ALSTOM)	MF (SECURE)	MICOM P111 (SCHNEIDER)	AMMETER & VOLTMETER (ELMEASURE)	ANNUNCIATOR & HOOTER (ALAN)	CT (STRATON)	PT (STRATON)
PNLNO: 21093287-01 OUTDOOR VCB ICOG PANEL	1VYN020221003466	VAJH13 35399209 VAX31 35345448	X1313140	50025449	AMMETER 1724984 VOLTMETER 4752165	ANNUNCIATOR 180213150 HOOTER EH210806505	9D2581 9D2580 9D2579	9B3013 9B3015 9B3014

ROUTINE TEST CERTIFICATE

Purchaser's Name : TECHNOCRAFTS SWITCHGEARS PVT LTD

Sale Order No. 4202384303

Type of Breaker	VD4/W 36.12.32
Serial Number of Breaker	1VYN020221003466
Rated Voltage	36 kV
Insulation Level	70/170 kV/kVpk
Rated Current	1250 A
Breaking Capacity	31.5 kA
Rated Frequency	50 Hz
Mass	300 Kg
Rated Control Voltage for Trip Coil	24 V DC
Rated Control Voltage for Close Coil	24 V DC
Rated Control Voltage for Motor	230 V AC
Year of Manufacture	2021

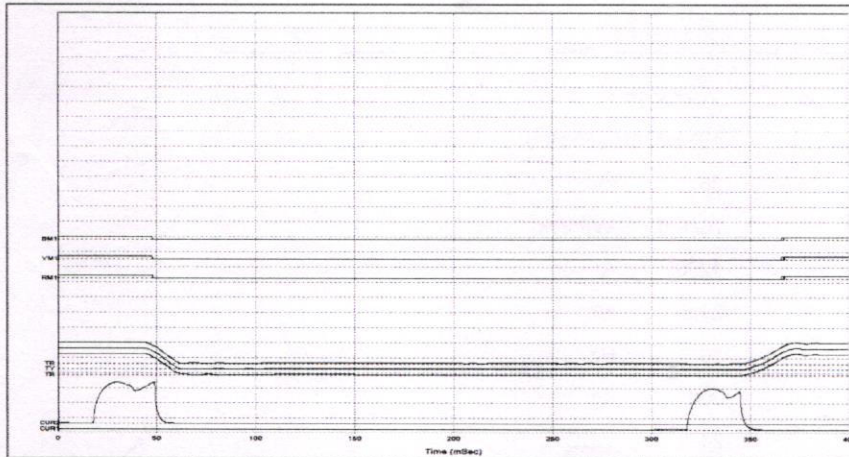
ROUTINE TESTS ACCORDING TO IEC 62271-100

1. MECHANICAL OPERATION TESTS : Satisfactory.
- 1.1 5 closing and 5 opening operations at 110% of control voltage
- 1.2 5 closing and 5 opening operations at 85% of control voltage
- 1.3 5 closing and 5 opening operations at rated control voltage
- 1.4 5 opening operations at 70% control voltage
- 1.5 5 closing - opening operations at 100% of control voltage
- 1.6 5 opening - 0.3 sec- closing operations at 100% control voltage

P.T.O.

1.7 Opening - 0.3 sec - closing operation at rated control voltage.

1.7.1 Travel and contact diagrams 1 DIV = 10mm



1.7.2 Operating Speed (m/s)			
Parameter	R	Y	B
Open	1.36	1.39	1.37
Close	1.22	1.28	1.24

1.7.3 Operating time (ms)			
Pole	R	Y	B
Open	47.9	47.8	47.8
Close	65.8	65.8	65.7

1.7.4 Travel (mm)			
	R	Y	B
Total Travel	21.13	21.35	21.05
Max. Over Travel on Opening	18.85	18.75	18.6
Max. Over Travel on Closing	4.82	4.46	4.52
Max. Bounce on Opening	0.33	0.22	0.2
Contact Spring Travel	3.75	3.6	3.72

2. RESISTANCE OF MAIN CIRCUIT : Satisfactory Resistance in micro Ohms measured at 100A DC.

R - Pole =	26	Y - Pole =	26	B - Pole =	26
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3. DIELECTRICAL TESTS : Satisfactory

3.1 Main circuit : 70 kV, 50Hz for 60s

Breaker Position	Test Voltage connected to	Earth connected to
Close	R and B-poles	Frame and Y-pole
Close	Y - pole	Frame, R and B-pole
Open	Top Terminal	Frame and Bottom terminal
Open	Bottom Terminal	Frame and Top terminal

3.2 Auxiliary circuits : 2 kV, 50 Hz, for 60 s (Motor disconnected)

4. VISUAL INSPECTION : Satisfactory

The Circuit Breaker has been successfully tested and accepted as described above

Digitally signed by ABB
Date: 2021.08.20 13:33:58 +05:30
Location: Nashik

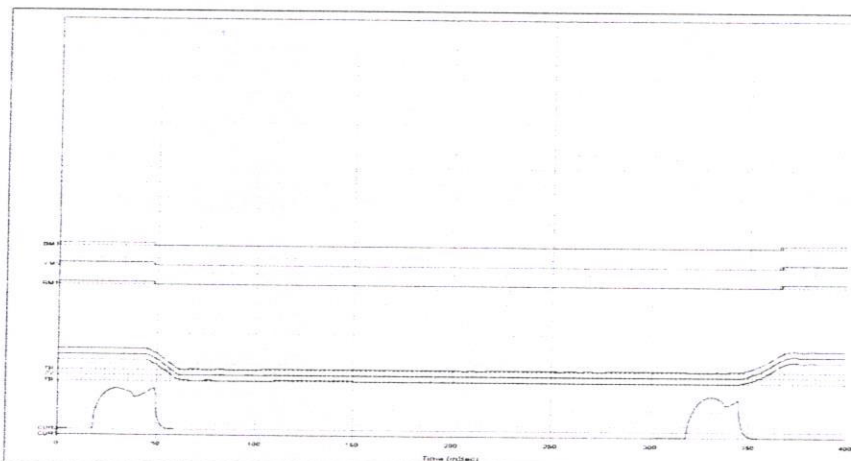
INBT-007

Toll Free no: 18004200707
Email:ppmvsupport@in.abb.com

Note: This is Computer generated RTC. No Signature is required.

1.7 Opening - 0.3 sec - closing operation at rated control voltage.

1.7.1 Travel and contact diagrams 1 DIV = 10mm



1.7.2	Operating Speed (m/s)			
Parameter	R	Y	B	
Open	1.36	1.39	1.37	
Close	1.22	1.28	1.24	

1.7.3	Operating time (ms)			
Pole	R	Y	B	
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The Circuit Breaker has been successfully tested and accepted as described above

✓ Digitally signed by ABB
Date: 2021.08.20 13:33:58 +05:30
Location: Nashik

INBT-007

Toll Free no: 18004200707
Email: ppmvsupport@in.abb.com

Note: This is Computer generated RTC. No Signature is required.

Test Results VAX 21,31			
Order No.: 10914349	Rating : 24/30-VX1DC,48/54-VX2DC	Serial No. : 35345448	
Model No. VAX31ZG0250BA	Date of test : 30 Apr 2021 12:08:31 PM		
Test Instruction VAX21/31,(For-----)			
1. Di-Electric Test			
The test voltage must be applied ,ramped up and maintained for 1second and ramped down to 0V as specified in IEC60255-27.			
Dielectric test voltages are applied at 50Hz.			
2.5kVrms for 1 second between all groups and case.	Pass/Fail	Pass	
2.5kVrms for 1 second between individual groups.	Pass/Fail	Pass	
2.5kVrms for 1 second between adjacent pair of contacts.	Pass/Fail	Pass	
1.25kVrms for 1 second between normally open contacts.	Pass/Fail	Pass	
2. Mechanical Setting: Contact Pressure,Gap,Follow Through Checked	Pass/Fail	Pass	
3. Functional Tests		VX1	VX2
Pick-up Voltage			
Apply 40% of LNV and check whether relay is operating satisfactorily - A/RL2	Operate	NA	OK
Apply 120 % of LNV and check whether relay is operating satisfactorily - A/RL2	Operate	NA	OK
Ramp up the voltage from 10% of LNV to until the relay picks-up - A/RL2	Measured	8.76 V / PASS	16.08 V / PASS
Apply 40% of LNV and check whether relay is operating satisfactorily - B/RL3	Operate	NA	OK
Apply 120% of LNV and check whether relay is operating satisfactorily - B/RL3	Operate	NA	OK
Ramp up the voltage from 10% of LNV to until the relay picks-up - B/RL3	Measured	9.12 V / PASS	16.8 V / PASS
Apply 80% of LNV and check whether relay is operating satisfactorily - C/RL1	Operate	NA	OK
Apply 120% of LNV and check whether relay is operating satisfactorily - C/RL1	Operate	NA	OK
Ramp up the voltage from 10% of LNV to until the relay picks-up - C/RL1	Measured	13.8 V / PASS	25.44 V / PASS
Drop-off Voltage:			
Operate the relay, Ramp down the voltage from 40% to 25%, measure at drops-off	Pass/Fail	NA	NA
Operate coil current Test			
Apply 120% of H.N.V. to the operating coil and check current for RL2	Measured	0.132 A / PASS	NA
Apply 120% of H.N.V. to the operating coil and check current for RL3	Measured	0.132 A / PASS	NA
Product Specific Tests			
Drop-off time			
Apply 80% of LNV to operate the relay and check Drop off time(A&C) (ms)	Measured	NA	597.1 ms / PASS
Apply 80% of LNV to operate the relay and check Drop off time(B&C) (ms)	Measured	NA	592.4 ms / PASS
Final Checks			
Contact Continuity			
Check all contacts N/O and N/C with a 10mA 12V continuity supply.	Pass/Fail	PASS	NA
Flag operation			
Check the flag operation when relay operates.	Pass/Fail	NA	NA
Note:	Overall Test Result		PASS
L.N.V. & H.N.V refers to Lower Nominal Volts&Higher Nominal Voltage respectively			
All measured values must be within the limits specified in the Test Specification.			
Tester Name : KUMAR		Tester Signature/Stamp : 3588	
T&D INDIA LIMITED			
3/1, GST Road,			
Pallavaram, Chennai-600 043, India			
Tel: 044 2264 8000			
ga.supportIND@ge.com		Page 1 of 1	

CERTIFICATE OF CONFORMITY AND TESTS



Manufacturer

Schneider Electric Power Monitoring
#12A, Attibele Industrial Ara,
Neralur (PO)
562107, Bangalore

Date of Issue

8/21/2021

The equipment detailed below has been manufactured, inspected and tested in accordance with a quality system certified to the requirements of ISO 9001:2008. Where appropriate, testing is in accordance with published data and relevant EN/IEC 60255-1.

Item Code	P111E1N0N91N1NN11N
Model	Model E
Vx	Vx=24-60V AC/DC 50/60Hz
In	In = 1A/5A (0,1In-40In)
Ion	Ion = 1A/5A (0,01Ion-2Ion)
Serial Number	SN50025449
Quantity	1

Test Summary

Results

1. Insulation Test
 - 1.1 3,11kV DC; 1s-Between each independent circuits
2. Functional Test
 - 2.1 Power Supply Test
 - 2.2 Checking for Errors
 - 2.3 Front Panel Test
 - 2.4 Front Panel Switch Test
 - 2.5 Output Contacts Test
 - 2.6 Inputs Test
 - 2.7 Current Accuracy Test
 - 2.8 Communication Test

Passed

Passed
Passed
Passed
Passed
Passed
Passed
Passed
Passed

Regd Office

Schneider Electric India Pvt. Ltd.,
Plot Bo. B-12, Ground Floor,
Phase-1, New Delhi - 110064



H.A. RELAY TEST SHEET

Model No. <u>VAJH13 YF0001BBA</u>	Order No. <u>1093 4171</u>	Serial No. <u>353992109</u>
Order Qty. <u>40</u>	Rating <u>24VDC</u> (LNV/HNV)*	Wiring Diagram <u>012VAJH13YF001</u>

1. Model Confirmation (VAJH 13 /23 only) Tick in the appropriate box
- ABA Suffix (Low Burden) - Without 25W resistor and Magnet Contact ☐
- BBA Suffix (High Burden) - With 25W resistor and Magnet Contact ☒

2. Di-electric Test

2.5kV 50Hz rms for 1 second (Between earth to each terminals) OK

1.25kV 50 Hz rms for 1 second (Across N/O Contacts) OK

3. Contact Setting

- 2.1 Contact Pressure / Gap / Follow Through : Checked OK ☒
- 2.2 When flag operated, gap between the armature head } Limit : 120 thou min
and lower long contact Checked OK ☒

4. Functional Test

Pick up Volts : Limit : 28% to 35% of LNV				
LH (Top) RL1	RH (Top) RL2	CTR	LH (Bottom) RL3	RH (Bottom) RL4
		<u>7.4v</u>		

5. Satisfactory operation

Relay operated satisfactorily at 50% and 120% of LNV : Checked OK ☒

6. Contact Continuity Test : Checked OK ☒

Limits Reference

LNV	24 V	30 V	48 V	100 V	110 V	125 V	200V	220V	230V	240 V	250V
28% of LNV	6.72V	8.4V	13.44V	28V	30.8V	35V	55V	61.6V	64.4V	67.2V	70V
35% of LNV	8.4V	10.4V	16.8V	35V	38.5V	43.75V	70V	77V	80.5V	84V	87.5V
50% of LNV	12V	15V	24V	50V	55V	62.5V	100V	110V	115V	120V	125V
120% of LNV	28.8V	36V	57.6V	120V	132V	150V	240V	264V	276V	288V	300V

*(LNV – Lower nominal Voltage)

Tested By: [Signature]

Date : 15.7.21

T&D

GE T&D India Limited,
19/1, GST Road, Pallavaram, Chennai 600 043
Tel : +91 44 2264 8000
ga.supportIND@ge.com

VAJH/VAJHM13/23/33/53/MVAJM25/45

METER TEST CERTIFICATE



Serial number : x1313140

Accuracy Class : 0.2s Ref. Standard : IEC : 62053-22

1. AC VOLTAGE TEST
2. TEST OF NO LOAD CONDITION
3. TESTING OF STARTING CURRENT CONDITION
4. INSULATION RESISTANCE TEST
5. POWER CONSUMPTION TEST
6. TEST OF METER CONSTANT
7. LIMITS OF ERROR

:- PASS
:- PASS
:- PASS
:- PASS
:- PASS
:- PASS

- 7(a) Conditions-Vref = 57.7-240V Ib = 1-5A Amb. Temp. = 23°C +/- 2°C Relative Humidity < 70%.
7(b) Errors shown in the tables are given after accounting the error of reference meter.
7(c) Reference meter serial no. 31055 class 0.02S traceable to national & international standards.
7(d) Errors shown in the tables are taken at Ib = 1A(100%)

IMPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.05	0.01	0.00
500	0.07	0.02	0.04
100	-0.03	-0.02	0.03
50	0.03	0.02	0.00
10	0.00	-0.04	-0.03
5			-0.02
2	0.05	-0.07	
1			-0.15

(f) %Reactive Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead
1000	0.00	-0.04
500	0.03	0.07
100	0.00	0.04
50	-0.02	-0.05
10	0.00	0.00

EXPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.06	0.00	-0.01
500	0.08	0.04	0.05
100	-0.01	0.01	0.03
50	-0.12	-0.06	-0.06
10	0.04	-0.03	-0.03
5			0.00
2	-0.01	-0.06	
1			-0.12

Date :- 05/02/2020

This is a computer generated test certificate.No signature required.

Secure Meters Limited
F 373-380
Bhamashah Industrial Area
Kaladwas, Udaipur 313 003, India

p: +91 294 2650301-305
f: +91 294 2650310
e: udaipur@securemeters.com

Regd. & Head Office
"E" Class
Pratapnagar Industrial Area
Udaipur 313 003, India
CIN No.: U74899RJ1987PLC029106

p: +91 294 2492300-305
f: +91 294 2492310
e: mktg@securemeters.com
www.securemeters.com

ElMeasure India Pvt. Ltd.

P47, Bangalore Hardware Park, Huvinayakanahalli, Bangalore-562149



ELMEASURE

Possibilities...Infinite

www.elmeasure.com

TEST AND CALIBRATION CERTIFICATE

Model Number : ALPHA+3A
Meter Serial Number : 1724984AL0721

Accuracy Class : 0.5
Options :

Calibrated On : 29-Jul-2021
Calibration Due Date : 29-Jul-2023

Load	100%	20%
	Amps	Amps
Accuracy Claimed %	±0.5	±0.5
Accuracy Actual %	0.08	-0.01

Notes :1. Reference meter used is BOFA KP-P3003-C has valid calibration traceability to 20/526-01 with National Standards.

This is computer generated test certificate no signature is required.

WARRANTY AND REGISTRATION

ElMeasure extends a warranty of 18 months on all products from the date of invoice for manufacturing defects in materials and workmanship provided the products are used in normal specified conditions. The warranty is void when a product is damaged due to improper installation, improper handling, improper connections, neglect, misuse, accident, and abnormal conditions of operation and natural calamities or acts of God. Any unauthorized attempt to dismantle, repair or modify shall render the warranty null & void.

1. Failure of products during warranty In India

Any failure shall be reported to the nearest point of contact or dealer at the earliest once noticed. ElMeasure shall replace the products failed due to manufacturing defects in materials against receipt of failed product. Burnt, blown, damaged products are not covered under warranty and hence no replacements shall be given.

In the event a product is un-available for replacement at ElMeasure or the dealer, the same shall be arranged at the earliest. Replacement of product is solely at the discretion of the dealer or ElMeasure's representative who received the failed product.

Burnt, abused, damaged products shall be forwarded to ElMeasure's Service Center at Bangalore for investigation, transportation to be pre-paid. Upon investigation, if rectification is possible, an estimate for servicing will be sent to the customer. Rectification shall be done on receipt of approval for the charges with advance payment only.

2. Failure of products outside warranty In India

The defective products shall be forwarded to ElMeasure's Service Center at Bangalore for rectification, transportation to be pre-paid. Upon investigation, estimation for servicing will be sent to the customer. Rectification shall be done on receipt of approval for the charges with advance payment only.

ElMeasure, as a policy, does not provide replacement for products outside warranty.

For Distributor / Dealer's use only

Seal

Invoice No.:

Date:

support@elmeasure.com

+91 639-1010-320

www.elmeasure.com

Note: Please produce this warranty certificate with the defective in warranty product.

ElMeasure India Pvt. Ltd.

P47, Bangalore Hardware Park, Huvinayakanahalli, Bangalore-562149



ELMEASURE

Possibilities...Infinite

www.elmeasure.com

TEST AND CALIBRATION CERTIFICATE

Model Number : ALPHA+3V	Accuracy Class : 0.5	Calibrated On : 01-Jun-2021
Meter Serial Number : 4752165 AL0621	Options :	Calibration Due Date : 01-Jun-2023
Load	100%	20%
	Volts	Volts
Accuracy Claimed %	± 0.5	± 0.5
Accuracy Actual %	-0.40	-0.10

Notes :1. Reference meter used is BOFA KP-P3003-C has valid calibration traceability to 20/526-01 with National Standards.

This is computer generated test certificate no signature is required.

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For Distributor / Dealer's use only

Seal

Invoice No.:

Date:

support@elmeasure.com

+91 639-1010-320

www.elmeasure.com

Note: Please produce this warranty certificate with the defective in warranty product.

**Test report cum Warranty Certificate
for ELECTRONIC HOOTER**

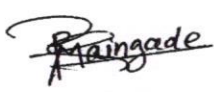
- 1) Model : AUH-01
 2) Serial Number/ Numbers : EH 210806488 to 6511 Qty : 24 Nos.
 3) Date Of Manufacturing : AUG - 2021
 4) Visual Inspection : O.K.
 5) Electrical Testing :

Input Voltage	Sound Level in dB at Nominal input Voltage (1 MTR distance)								
	Tone - 1			Tone - 2			Tone - 3		
	95 - 100	100 - 105	> 105	95-100	100-105	> 105	95-100	100-105	>105
18~285 V AC	☐	☒	☐	☐	☒	☐	☐	☒	☐
18~285 V DC	☐	☒	☐	☐	☒	☐	☐	☒	☐

It is hereby certified that the equipment / equipments mentioned above has been tested and found to meet it's specifications. This equipment / These equipments carries a warranty of twelve months from the date of Installation or eighteen months from the date of despatch, whichever is earlier against any manufacturing defects only . This warranty is limited to repair or replace unit at our works only, (Excluding battery if any).

The warranty shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, negligence, accident or any other abnormal conditions operation. Any attempt to tamper with the product as evidenced by disruption of warranty sticker and / or unauthorised repair / modification of the product shall render this warranty null & void.

For Alan Electronic Systems Pvt.Ltd.


 Mr.PANDURANG MAINGADE
 Tested By


 Mrs. YOGITA AKOLKAR
 Authorised Signatory
 (Quality Assurance)

NOTE : PLEASE MENTION SERIAL NO. OF THE UNIT IN ALL YOUR FUTURE CORRESPONDENCE

Equipments Used for Testing	Model / Make	Sr.No	Calibration Due
1) Sound Level Meter	SL-4010	150522611	08.02.2022
2) Multi Meter	RISH MULTI 13S	14149	19.01.2022

**TEST REPORT CUM WARRANTY CERTIFICATION
FOR
ALARM ANNUNCIATOR**

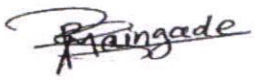
1 Model Number	: 1D 0B 6S P0000L	
2 Number of Windows	: 6 WINDOWS	
3 Serial Number	: AN 180213149 to 13158	Qty : 10 Nos
4 Date of Manufacturing	: FEB - 2018	
5 Visual Inspection	: O.K	
6 Supply Voltage	: 18-90VDC	
7 Window Configuration	: 4C X 4R	
8 Window Size	: SMALL SIZE: 34 X 32mm	
9 Operating Sequence	: M (MANUAL RESET)	
10 Fault Contact Selection	: NO	
11 Audible Selection	: TRIP/GROUP1 - ALL	
	: NON TRIP/GROUP2 -	
12 Panel Cutout	: 68mm(W) x 138mm(H)	
13 High Voltage Test	: NA	

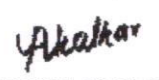
(2.5KVAC for 1 Minute between body
To all terminals shorted together.)

This equipment carries a warranty of twelve months from the date of Installation or eighteen months from the date of despatch, whichever is earlier against any manufacturing defects only. This warranty is limited to repair or replace unit at our works only. (Excluding battery if any).

The warranty shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, negligence, accident or any other abnormal conditions operation. Any attempt to tamper with the product as evidenced by disruption of warranty sticker and / or un authorised repair / modification of the product shall render this warranty null & void

For Alan Electronic System Pvt.Ltd.


Mr.PANDURANG MAINGADE
Tested By


Mrs.YOGITA AKOLKAR
Authorised Signature
(Quality Assurance)

Note : PLEASE MENTION SERIAL NO. OF THE UNIT IN ALL YOUR FUTURE CORRESPONDANCE

<u>Equipment Used for Testing</u>	<u>Model No-/Make</u>	<u>Sr.No</u>	<u>Calibration Due</u>
1)Multi Meter	RISH MULTI 13S	9980	20/06/2018

ROUTINE TEST REPORT

Designation: CURRENT TRANSFORMER	Type: 33KV INDOOR RESIN CAST CT	Month-Year of Mfg.: 08-2021
Customer: Technocrafts Switchgears Pvt Ltd	PO NO: P008211562A/11-08-2021	Site: Maharashtra
Ins Level: 36/70/170Kvp	HSV: 36KV	Qty: 3No's
Ratio: 100-50/1-1A	Class: 0.2S, 5P	Ins class: B
	Burden: 7.5VA, 7.5VA	ALF=20
		STC: 25kA/1sec

Current Transformer(s) were subjected to following (Routine) tests and were found to comply with the reference standard IS 2705.

Routine tests as per IS 2705 : 1992.	Test Result
1) Verification of terminal marking, Polarity and overall Dimensions.	OK
2) Power frequency High Voltage test on primary windings.	Withstood 70kV for 1min
3) Power frequency High Voltage (3 KV rms) test on secondary windings.	Withstood for 1min
4) Over Voltage Inter Turn test 1A on secondary.	Withstood for 1min
5) Determination of errors (Accuracy).	OK
6) Measurement of Composite Error.	OK
7) Partial Discharge test as per IS 11322: 1985.	Found <20pC @ 1.1Vm/1.732V

SERIAL NO: 9D2579

Determination of Errors:

Core No	Connection Terminals	Ratio (Amp)	Burden (VA)	Primary Current %	Ratio Error %		Phase Disp. (min)	
					Limit Value	Observed Value	Limit Value	Observed Value
1	1S1-1S2	50/1	7.5	120	± 0.2	-0.0396	± 10	-0.07
				100	± 0.2	-0.0427	± 10	0.03
				20	± 0.2	-0.0626	± 10	1.82
				5	± 0.35	-0.0655	± 15	3.13
				1	± 0.75	-0.0632	± 30	3.27
			1.875	120	± 0.2	-0.0130	± 10	0.32
				100	± 0.2	-0.0136	± 10	0.42
				20	± 0.2	-0.0063	± 10	1.22
	1S1-1S3	100/1	7.5	5	± 0.35	-0.0041	± 15	1.46
				1	± 0.75	-0.0014	± 30	1.46
				120	± 0.2	-0.0111	± 10	0.10
				100	± 0.2	-0.0116	± 10	0.12
				20	± 0.2	-0.0121	± 10	0.69
				5	± 0.35	-0.0092	± 15	0.86
			1.875	1	± 0.75	-0.0043	± 30	0.80
				120	± 0.2	-0.0018	± 10	0.15
				100	± 0.2	-0.0019	± 10	0.17
				20	± 0.2	0.0021	± 10	0.42
				5	± 0.35	0.0060	± 15	0.42
				1	± 0.75	0.0100	± 30	0.40

Determination of Errors:

Core No	Connection Terminals	Ratio (Amp)	Burden (VA)	Primary Current %	Ratio Error %		Phase Disp. (min)	
					Limit Value	Observed Value	Limit Value	Observed Value
2	2S1-2S2	50/1	7.5	100	±1	-0.467	±60	3.74
	2S1-2S3	100/1	7.5	100	±1	-0.289	±60	1.85

Measurement of Composite Error :

Core no	Connection Terminals	Ratio (A)	Rct @ 75°C(Ω)	SLV (V)	I exc (mA)	CE %
2	2S1-2S2	50/1	2.66	195	136	1.36
	2S1-2S3	100/1	5.42	246	12	0.12

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ROUTINE TEST REPORT

SERIAL NO: 9D2580								
Determination of Errors:								
Core No	Connection Terminals	Ratio (Amp)	Burden (VA)	Primary Current %	Ratio Error %		Phase Disp. (min)	
					Limit Value	Observed Value	Limit Value	Observed Value
1	1S1-1S2	50/1	7.5	120	± 0.2	-0.0532	± 10	0.97
				100	± 0.2	-0.0546	± 10	0.96
				20	± 0.2	-0.0657	± 10	2.35
				5	± 0.35	-0.0681	± 15	2.91
				1	± 0.75	-0.0672	± 30	3.00
			1.875	120	± 0.2	-0.0125	± 10	0.67
				100	± 0.2	-0.0126	± 10	0.72
				20	± 0.2	-0.0111	± 10	1.16
				5	± 0.35	-0.0088	± 15	1.27
				1	± 0.75	-0.0067	± 30	1.24
	1S1-1S3	100/1	7.5	120	± 0.2	-0.0202	± 10	0.39
				100	± 0.2	-0.0204	± 10	0.41
				20	± 0.2	-0.0222	± 10	0.73
				5	± 0.35	-0.0217	± 15	0.85
				1	± 0.75	-0.0146	± 30	0.83
			1.875	120	± 0.2	-0.0083	± 10	0.25
				100	± 0.2	-0.0085	± 10	0.27
				20	± 0.2	-0.0084	± 10	0.41
				5	± 0.35	-0.0063	± 15	0.41
				1	± 0.75	-0.0001	± 30	0.31
Determination of Errors:								
Core No	Connection Terminals	Ratio (Amp)	Burden (VA)	Primary Current %	Ratio Error %		Phase Disp. (min)	
					Limit Value	Observed Value	Limit Value	Observed Value
2	2S1-2S2	50/1	7.5	100	±1	-0.319	±60	3.64
	2S1-2S3	100/1	7.5	100	±1	-0.214	±60	1.40

Measurement of Composite Error :						
Core no	Connection Terminals	Ratio (A)	Rct @ 75°C(Ω)	SLV (V)	I exc (mA)	CE %
2	2S1-2S2	50/1	2.63	195	95	0.95
	2S1-2S3	100/1	5.41	246	11	0.11

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STRAN ELECTRICAL
HYD-55.
PVT. LTD.

ROUTINE TEST REPORT
SERIAL NO: 9D2581
Determination of Errors:

Core No	Connection Terminals	Ratio (Amp)	Burden (VA)	Primary Current %	Ratio Error %		Phase Disp. (min)	
					Limit Value	Observed Value	Limit Value	Observed Value
1	1S1-1S2	50/1	7.5	120	± 0.2	-0.0450	± 10	0.71
				100	± 0.2	-0.0464	± 10	0.78
				20	± 0.2	-0.0545	± 10	2.03
				5	± 0.35	-0.0567	± 15	2.64
				1	± 0.75	-0.0553	± 30	2.63
		1.875	1.875	120	± 0.2	-0.0097	± 10	0.60
				100	± 0.2	-0.0096	± 10	0.66
				20	± 0.2	-0.0053	± 10	1.03
				5	± 0.35	-0.0027	± 15	1.10
				1	± 0.75	-0.0013	± 30	1.09
	1S1-1S3	100/1	7.5	120	± 0.2	-0.0156	± 10	0.33
				100	± 0.2	-0.0159	± 10	0.38
				20	± 0.2	-0.0150	± 10	0.68
				5	± 0.35	-0.0118	± 15	0.75
				1	± 0.75	-0.0094	± 30	0.68
		1.875	1.875	120	± 0.2	-0.0053	± 10	0.25
				100	± 0.2	-0.0054	± 10	0.27
				20	± 0.2	-0.0025	± 10	0.40
				5	± 0.35	0.0012	± 15	0.36
				1	± 0.75	0.0030	± 30	0.31

Determination of Errors:

Core No	Connection Terminals	Ratio (Amp)	Burden (VA)	Primary Current %	Ratio Error %		Phase Disp. (min)	
					Limit Value	Observed Value	Limit Value	Observed Value
2	2S1-2S2	50/1	7.5	100	±1	-0.527	±60	4.70
	2S1-2S3	100/1	7.5	100	±1	-0.207	±60	2.03

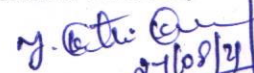
Measurement of Composite Error :

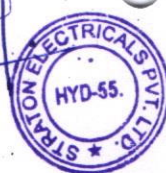
Core no	Connection Terminals	Ratio (A)	Rct @ 75°C(Ω)	SLV (V)	I exc (mA)	CE %
2	2S1-2S2	50/1	2.79	198	120	1.20
	2S1-2S3	100/1	5.66	250	12	0.12

*All the above test results were found within the limits as per IS 2705: 1992.

Date: 27-08-2021

Tested & Verified by



 M Kranthi Kumar
Testing Engineer


ROUTINE TEST REPORT

Designation: VOLTAGE TRANSFORMER			Type: 33KV INDOOR VT			Month-Year of Mfg.: 08-2021		
Customer: M/s. Technocrafts Switchgears Pvt Ltd			PO NO: P008211562A/11-08-2021			Qty:3No's		
Ins Level: 36/70/170Kvp			HSV: 36KV			Ins Class: B		
Ratio: 33KV/V3//110V/V3/110V/V3/110/V3			Class: 0.2, 3P, 3P			Burden: 30VA, 30VA,30VA		
Voltage Factor : 1.2 Conti & 1.9 for 8Hrs			Site: Maharashtra					
Voltage Transformer(s) were subjected to following(Routine) tests and were found to comply with the reference standard IS 3156.								
Routine tests as per IS 3156-1992.						Test Result		
1) Verification of terminal marking, Polarity and overall Dimensions.						OK		
2) Power frequency High Voltage (3 KV rms) test on primary windings.						OK WITHSTOOD 1MIN		
3) Induced Over Voltage Test 70KVrms voltage for one minute.						OK WITHSTOOD 1MIN		
4) Power frequency High Voltage (3 KV rms) test on secondary windings						OK WITHSTOOD 1MIN		
5) Determination of errors according to the appropriate accuracy class as per IS 3156-1992.						OK		
6) Partial Discharge test						<10pC @ 1.1Vm/1.732V		
DETERMINATION OF ERROR TEST								
SERIAL NO	Burden (VA)	Primary Voltage %	CORE I (METERING)		CORE II (PROTECTION)		CORE III(PROTECTION)	
			(a1-n1) 110V/V3		(a2-n2) 110V/V3		(a3-n3) 110V/V3	
			Ratio Error %	Phase Disp. (min)	Ratio Error %	Phase Disp. (min)	Ratio Error %	Phase Disp. (min)
9B3013	CORE I: 30VA CORE II: 30VA CORE III: 30VA	120	-0.154	1.09	-0.426	8.28	-0.436	9.14
		100	-0.139	0.62	-0.413	7.73	-0.423	8.56
		80	-0.122	0.06	-0.399	7.23	-0.410	8.07
		5	--	--	-0.406	7.27	-0.420	8.47
	CORE I: 7.5VA CORE II: 7.5VA CORE III: 7.5VA	120	0.116	1.04	0.0596	3.06	0.0586	3.29
		100	0.131	0.57	0.0721	2.56	0.0692	2.86
		80	0.148	0.04	0.0877	1.98	0.0834	2.31
		5	--	--	0.0787	2.01	0.0738	2.56
9B3014	CORE I: 30VA CORE II: 30VA CORE III: 30VA	120	-0.0943	1.29	-0.358	8.80	-0.370	9.89
		100	-0.0857	1.00	-0.353	8.50	-0.367	9.62
		80	-0.0785	0.80	-0.350	8.33	-0.362	9.40
		5	--	--	-0.328	8.71	-0.338	9.82
	CORE I: 7.5VA CORE II: 7.5VA CORE III: 7.5VA	120	0.144	0.45	0.0859	2.59	0.0855	2.94
		100	0.151	0.21	0.0887	2.40	0.0882	2.70
		80	0.158	0.01	0.0944	2.15	0.0924	2.50
		5	--	--	0.114	2.49	0.115	2.86
9B3015	CORE I: 30VA CORE II: 30VA CORE III: 30VA	120	-0.0970	-0.18	-0.371	7.36	-0.381	8.44
		100	-0.0842	-0.47	-0.362	7.07	-0.373	8.15
		80	-0.0791	-0.59	-0.356	6.91	-0.368	8.00
		5	--	--	-0.346	7.33	-0.355	8.49
	CORE I: 7.5VA CORE II: 7.5VA CORE III: 7.5VA	120	0.164	-0.14	0.101	2.00	0.0999	2.34
		100	0.176	-0.42	0.111	1.73	0.109	2.05
		80	0.182	-0.55	0.115	1.60	0.113	1.94
		5	--	--	0.124	1.95	0.125	2.37

*All the above test results were found within the limits as per IS 3156-1992.

Date: 27-08-2021

 Tested & Verified by
 M Kranthi Kumar
 Testing Engineer
