

CPRI

## TEST REPORT



**Central Power Research Institute**

(A Govt. of India Society)

P.B.No. 8066, Sadashivanagar Post Office,  
Sir C.V. Raman Road,  
Bangalore - 560 080 (INDIA)



CPRI

SHORT CIRCUIT LABORATORY  
CENTRAL POWER RESEARCH INSTITUTE

(Member of STL)

P.B.NO.8066, SADASHIVANAGAR POST OFFICE  
SIR C.V.RAMAN ROAD, BANGALORE - 560 080 (INDIA)  
Phone : +91 (0) 80 - 23602662 Fax : +91 (0) 80 - 23601213



T-0010

Sheet 1 of 4

TEST REPORT

Test Report Number SC09392A Dated: 11<sup>th</sup> August, 2009

Name & Address of the Customer M/s. Krishnaa Energy Private Limited,  
DP-69, SIDCO Industrial Estate,  
Thirumudivakkam, Chennai - 600 044, Tamilnadu

Name & Address of the Manufacturer M/s. Krishnaa Energy Private Limited,  
DP-69, SIDCO Industrial Estate,  
Thirumudivakkam, Chennai - 600 044, Tamilnadu

Particulars of sample tested AC metal-enclosed switchgear and controlgear -  
11kV 1250A Vacuum Circuit-Breaker (VCB) Panel  
Condition of the sample on Receipt New

Type Indoor, Draw out  
Designation Metal Enclosed VCB Panel  
Serial Number ---  
Number of samples tested One  
Date (s) of test (s) 25<sup>th</sup> June, 2009  
CPRI sample code no(s). SC09S1231

Particulars of tests conducted Short-time withstand current and peak withstand current  
tests on main circuit  
Test in accordance with Standard / specification Sub-clause 6.6 a) of IEC 62271-200:2003-11  
Sampling plan Not applicable  
Customer's requirement 25 kA rms for 3.0 seconds & 62.5 kA peak on main  
circuit only  
Deviations if any None

Name of the witnessing persons

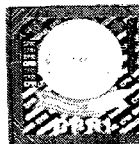
Customer's representative Mr. P. Ramachandran, Manager – R&D  
Mr. M. Venkatesan, Manager - QC  
Other than customer's representative None

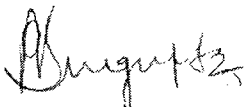
Test subcontracted with address of the laboratory None

Documents constituting this report (In words)

Number of sheets Four  
Number of oscillograms One  
Number of graphs Nil  
Number of photos Three  
Number of test circuit diagrams One  
Number of drawings Thirty

  
(G. Venkatesan)  
Test Engineer



  
(G. Sengupta)  
Additional Director

AUTHORISED SIGNATORIES



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Report Number: SC09392A

**Description of sample tested (rating as assigned by the manufacturer)**

Test sample	Vacuum Circuit-Breaker Panel
Type	Indoor, Draw out
Designation	Metal Enclosed VCB Panel
Serial number	---
Rated voltage	11 kV
Rated insulation level	28 / 75kV
Rated current	1250A
Rated frequency	50Hz
Number of phases	Three
Rated short-time withstand current & peak withstand current	25 kA rms for 3.0 seconds & 62.5 kA peak
Details of circuit breaker used	11kV 1250A VCB, M/s. Krishnaa Energy Private Limited make
Type of operating mechanism	
Closing	Motor operated spring charged, closing coil voltage: 110V ac
Opening	Spring charged, Trip coil voltage: 110V dc
Details of vacuum interrupter used	12kV 1250A 31.5kA Type : CH105F1, Make :Shandong Chenhong Electric Co. Ltd., Serial Nos.R – G099892, Y - G099881, B - G099912

**Documents attached to this report**

Oscillogram number (s)	SC09392A.S01
Photograph number (s)	SC09392A.PB1, SC09392A.PA1 & SC09392A.PA2
Test circuit diagram number (s)	CRTL/SC/STC-03A
Drawing number (s)	KE.0802150-00 SHEET 1 OF 2 REV. 0, KE.0802150-00 SHEET 2 OF 2 REV. 0, KE.0802151-00 REV. 0, KE.0802020-00 REV. 0, KE.0802027-00 REV. 0, KE.0802028-00 REV. 0, KE.0802036-00 REV. 0, KE.0802041-00 REV. 0, KE.0802052-00 REV. 0, KE.0802060-00 REV. 0, KE.0802093-00 REV. 0, KE.0802103-00 REV. 0, KE.0802103-01 REV. 0, KE.0802103-02 REV. 0, KE.0802103-03 REV. 0, KE.0802103-04 REV. 0, KE.0802103-05 REV. 0, KE.0802103-06 REV. 0, KE.0802103-07 REV. 0, KE.0802103-08 REV. 0, KE.0802103-09 REV. 0, KE.0802103-10 REV. 0, KE.0802104-00 REV. 0, KE.0802104-01 REV. 0, KE.0802104-02 REV. 0, KE.0802104-04 REV. 0, KE.0802152-00 REV. 0, KE.0802155-00 REV. 0, KE.0802157-00 REV. 0 & KE.0802158-00 REV. 0.

*Ken*  
Test Engineer



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Report Number: SC09392A

Schedule of tests

SHORT-TIME WITHSTAND CURRENT AND PEAK WITHSTAND CURRENT TESTS

Test conditions

Source

Short-circuit generator  
Number of phases Three, connected to the incoming terminals of the VCB Panel  
Frequency 50 Hz

Test sample

Condition before test In clean and new condition; VCB operable on no-load  
Number of poles Three  
Mounting Vertical

Test details

Test circuit number CRTL/SC/STC-03A  
Short-circuit applied On the outgoing terminals of the panel including VCB  
Short-circuit point Grounded

Test results

Test on phase bus-bars of the panel including the VCB

Oscillogram Number	Current (kA)		Duration - seconds	Ambient Temp.- °C	Observations
	Peak	RMS			
SC09392A.S01	63.35	R - 26.25 Y - 27.32 B - 26.59 Average:26.72	3.13	29	<b>During test:</b> No abnormality <b>After test :</b> VCB operable on no-load at the first attempt

Measurement of resistance of the main circuit

Condition of the sample	Test current (A) d.c.	Ambient Temperature °C	Resistance - $\mu\Omega$		
			R	Y	B
Before short-time withstand current & peak withstand current tests	100	29	102.7	101	101
After short-time withstand current & peak withstand current tests	100	30	109	106.3	103.8

High voltage power frequency withstand test after short-time withstand current & peak withstand current tests

Test procedure	Observations
Power frequency voltage of 28kV rms for 1.0 min. was applied with VCB in closed condition between each pole & all other poles connected together and earthed	Withstood
Power frequency voltage of 32kV rms for 1.0 min. was applied with VCB in open condition between all incoming terminals connected together & all outgoing terminals connected together	Withstood

Physical Inspection

Condition of bus-bars : No visible damage or deformation  
Condition of support insulators : No visible damage  
Condition of vacuum interrupters : No visible external damage

Remarks: The sample tested complies with the sub-clause of the standard referred to.

*Handwritten Signature*  
Test Engineer



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Report Number: SC09392A

**NOTE**

- a) This is not a certificate of rating. A certificate of rating is not issued as only limited tests as requested by the customer were carried out.
- b) The test results relate only to the item(s) tested.
- c) Publication or reproduction of this report in any form other than by complete set of the whole report and in the language written, is not permitted without the written approval of CPRI.
- d) Corrections / erasing invalidate the test report.
- e) Any anomaly / discrepancy in the test report should be brought to our notice within 45 days from the date of issue.

Additional Information:

CPRI issues following types of reports/certificates:

**Test Report:**

The test 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 report is issued when partial tests are performed as against the complete test requirement for proving specific ratings.

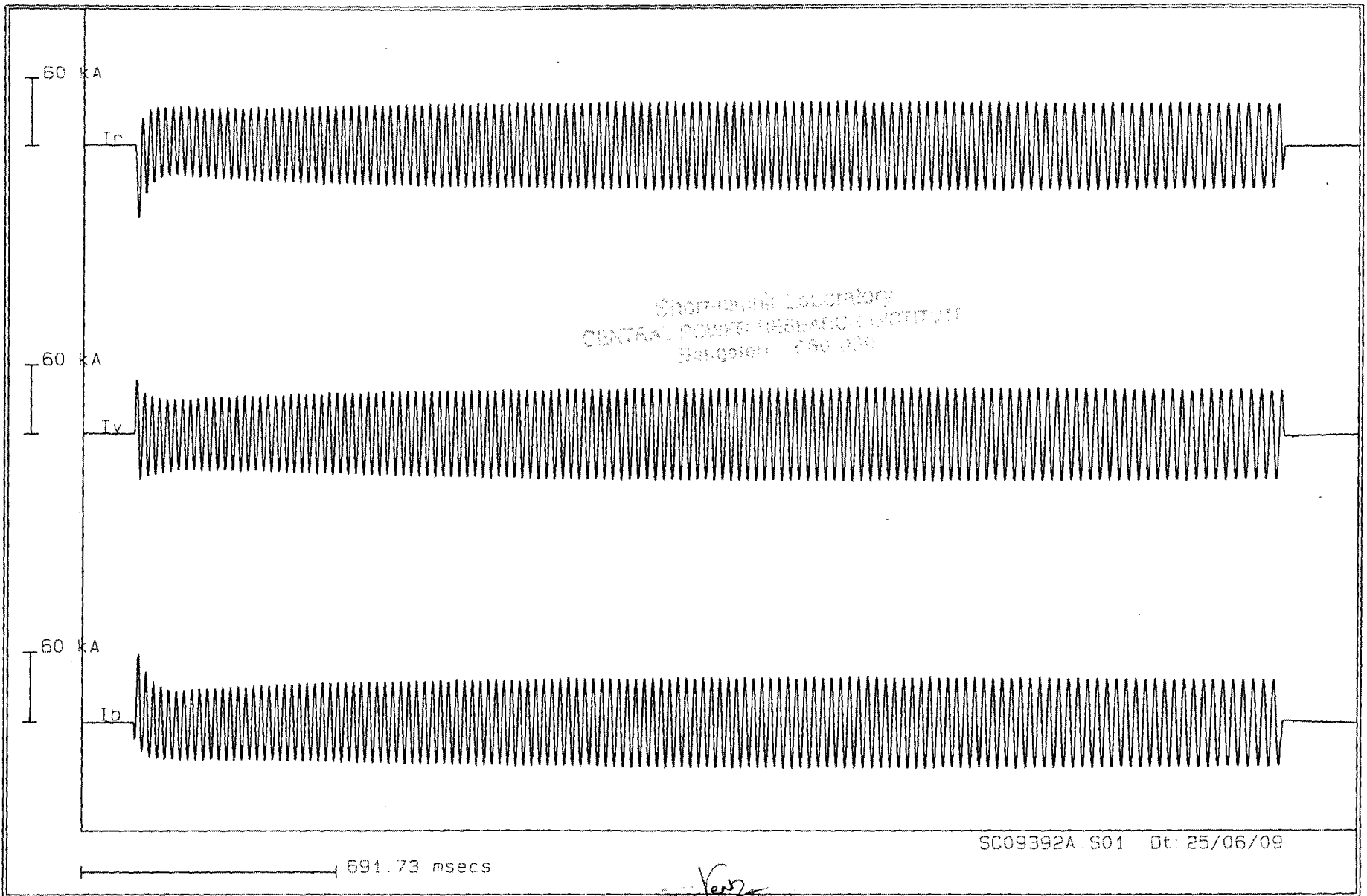
**Sealed Certificate:**

The sealed certificate is issued, on request and payment of the prescribed charges thereof only when the sample of particular type and rating has satisfactorily passed all the specified tests in compliance with the condition stipulated in a published National / International standard.

**CPRI issues the following type test certificates based generally on STL Guidelines:**

- I. Type test certificate of Short Circuit Performance.
- II. Type test certificate of Switching Performance.
- III. Type test certificate of Temperature Rise Performance.
- IV. Type test certificate of Dielectric Performance.
- V. Type test certificate of complete type test.

  
Test Engineer



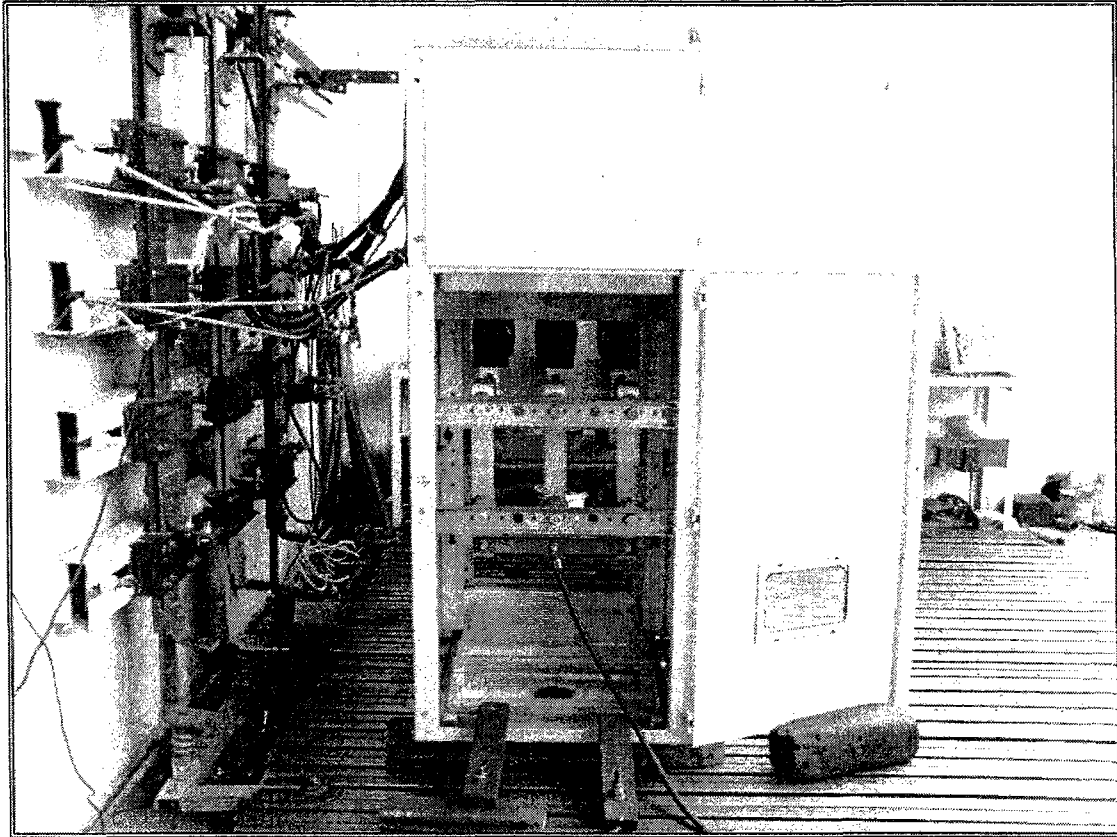


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Mounting arrangement (Before test)

SC09392A.PB1

*Perb*  
Test Engineer

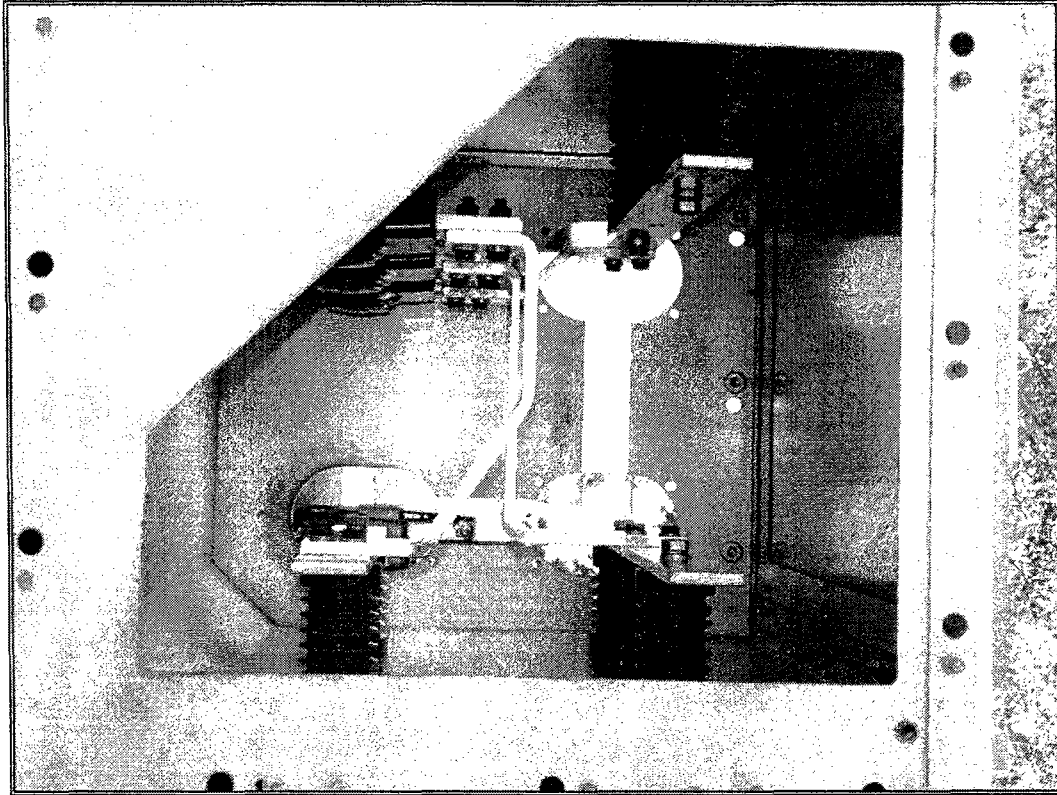


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Condition of the samples (After test)

SC09392A.PA1

*Kaly*  
Test Engineer



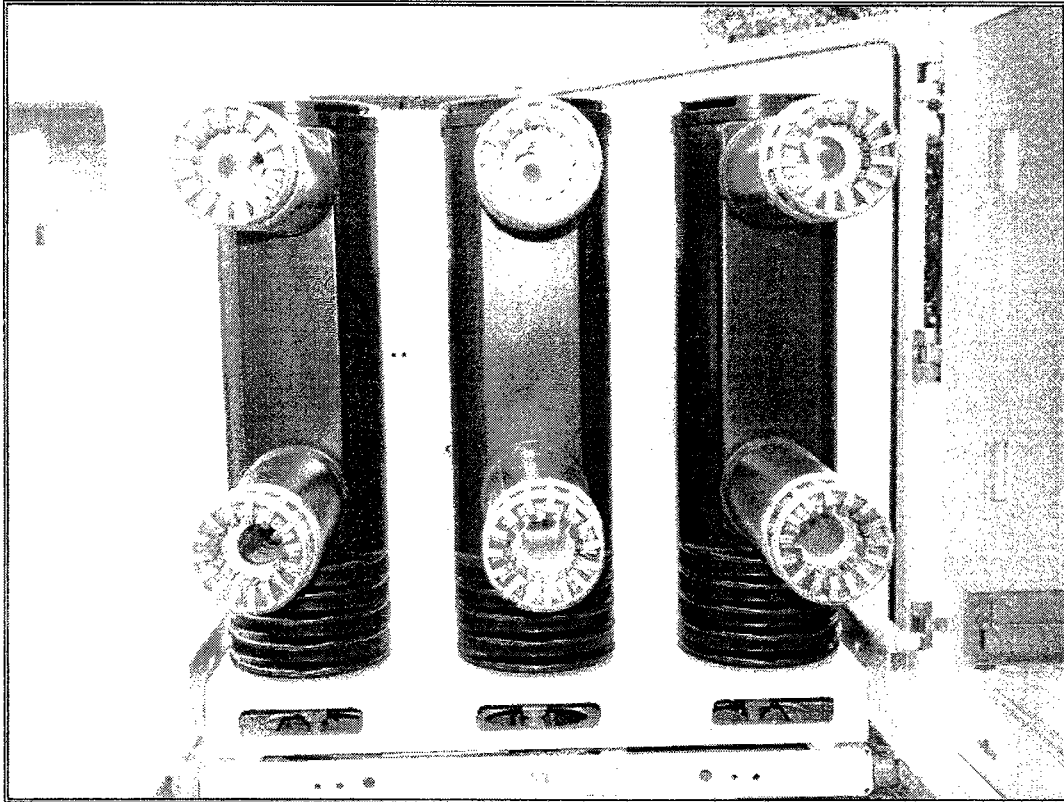


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Condition of the sample (After test)

SC09392A.PA2

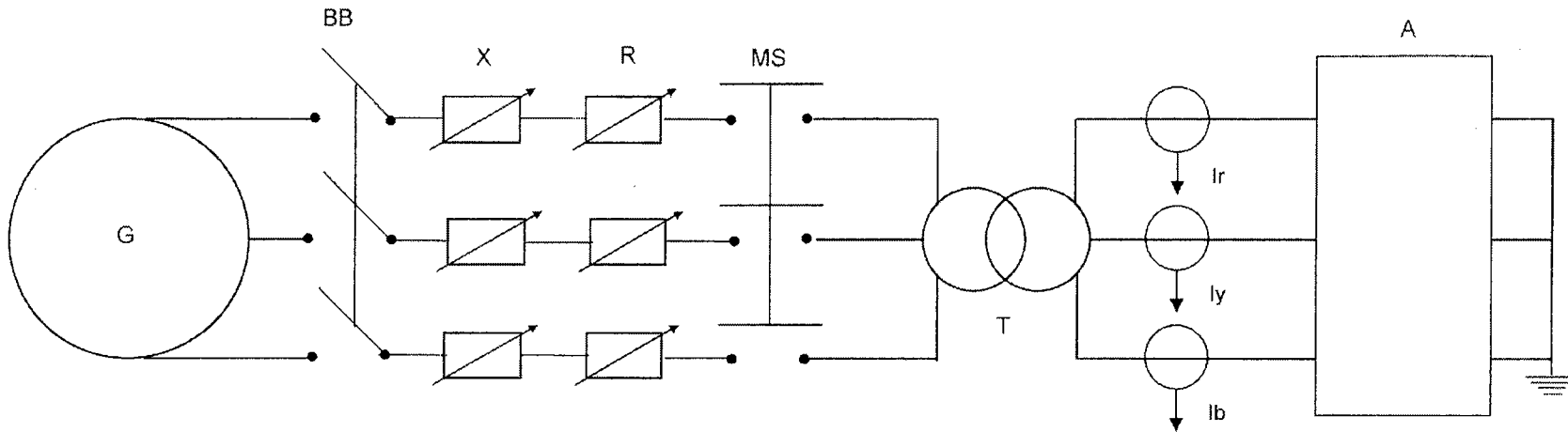
*Yash*  
Test Engineer



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### Schematic of main & measurement circuits - Three phase test

Circuit Number: CRTL/SC/STC-03A

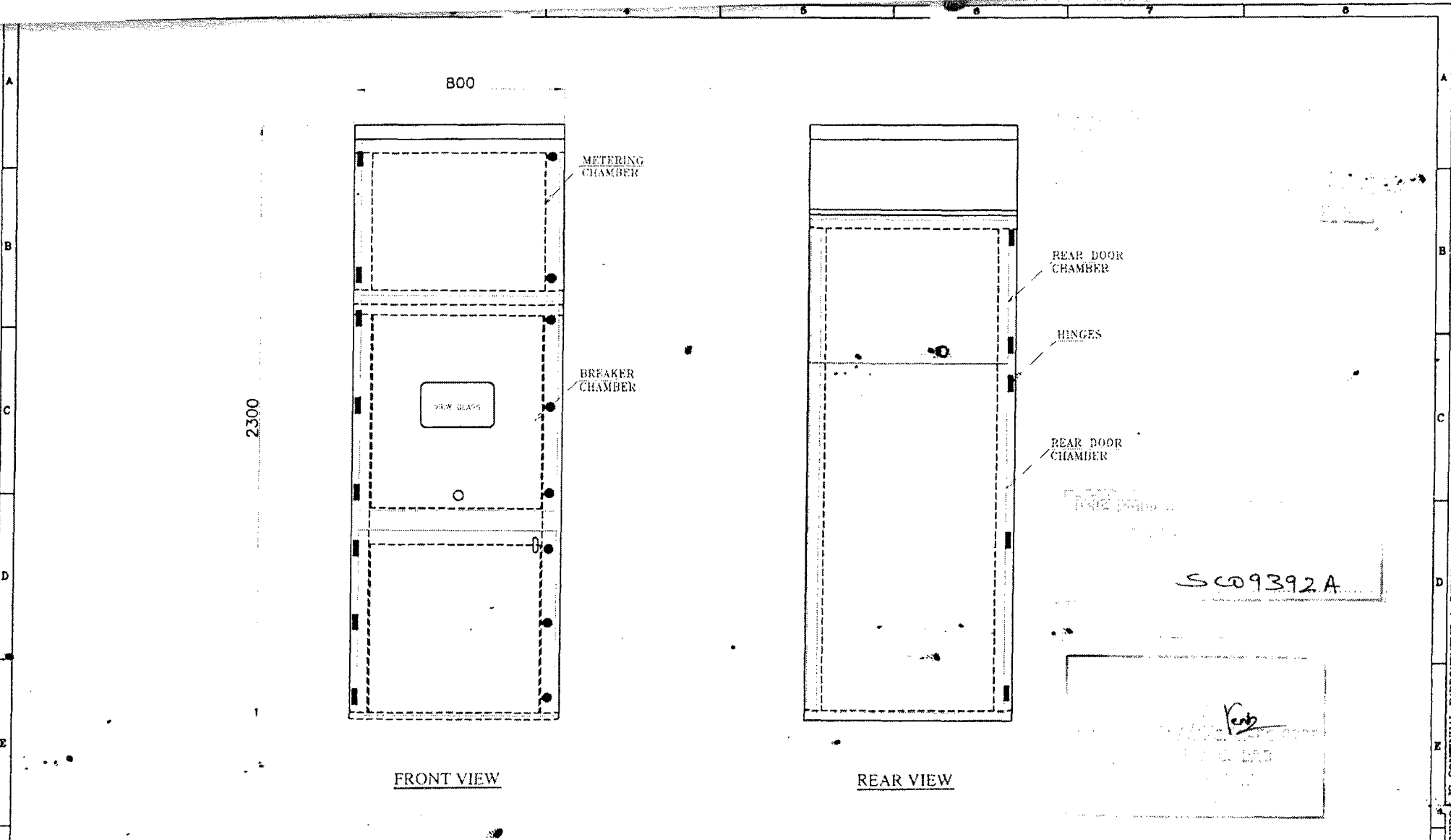


G Short-circuit Generator  
BB Back-up Circuit breaker  
X Reactor  
R Resistor  
MS Make switch

T Transformer  
A Sample under test  
Ir, Iy & Ib Current sensors

*Yash*  
Test Engineer

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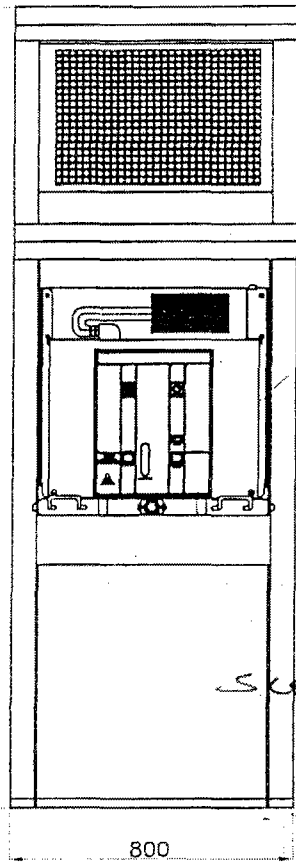


THE POLICY OF MARUTHI ENERGY IS CONTINUAL IMPROVEMENT & DEVELOPMENT.

MATL:-		QTY: 1NO.		ALL DIMENSIONS ARE IN mm		DESCRIPTION: GA FOR 11KV,1250A,25KA/3sec INDOOR METAL ENCLOSED VCB PANEL		BRAND		DRAWING NO.:	
FINISH:-						MFG BY:		KRISHNA		KE.0802150-00	
						KRISHNAA ENERGEY PVT LTD.,		SCALE : N.T.S.		SHEET.No.	
						DP-00, SIDCO INDUSTRIAL ESTATE THIRUMADIVAKKAM, CHENNAI - 44				1 OF 2	
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REV. DATE	REMARKS	DRAWN	CHD.	APPD.	SIGN	DATE.					
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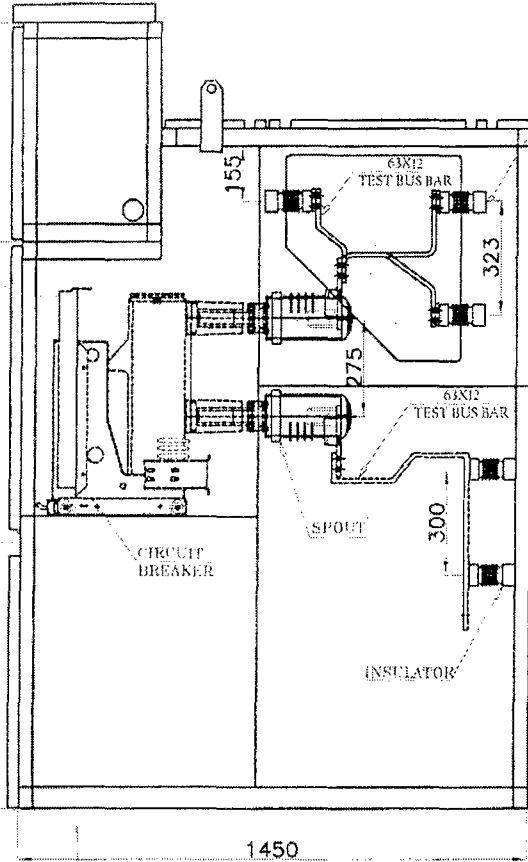
FRONT VIEW

SK 93924

640

850

750

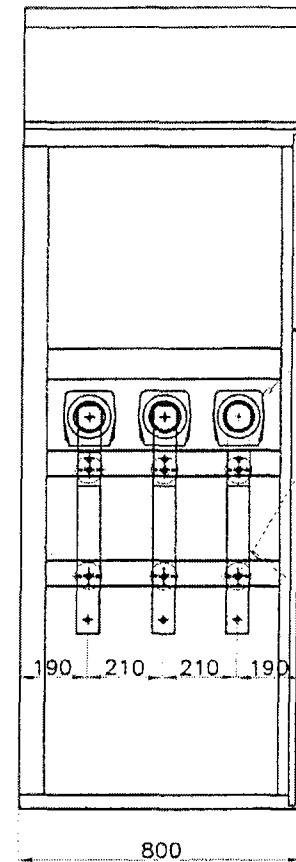


SECTIONAL VIEW

INSULATOR

570

1353



REAR VIEW

SPOUT

INSULATOR

63X12 TEST BUS BAR

190 210 210 190

*Hand*

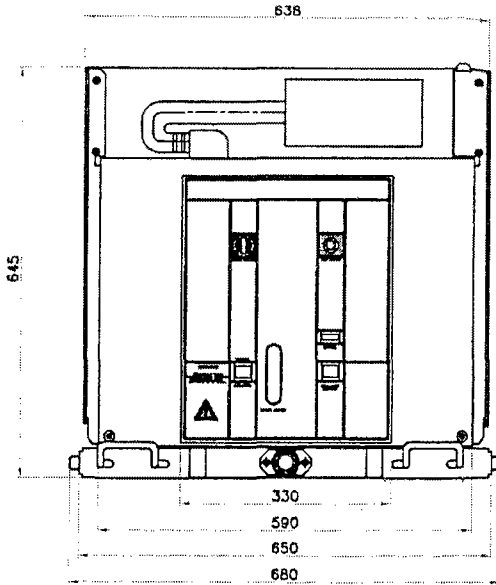
MATL:-		QTY: 1NO.		ALL DIMENSIONS ARE IN mm		DESCRIPTION: GA FOR 11KV, 1250A, 25KA/3sec INDOOR METAL ENCLOSED VCB PANEL		BRAND		DRAWING NO:	
FINISH:-						MFG BY:		KRISHNA		KE.0802150-00	
						KRISHNAA ENERGY PVT LTD.,		SCALE: N.T.S.		SHEET.No.	
0		D.JAI		P.R		S.S		DP-00, SIDCO INDUSTRIAL ESTATE		2 OF 2	
REV. DATE		REMARKS		DRAWN		CHD.		THIRUMUDRAKKAM, CHENNAI - 44		REF.No-	
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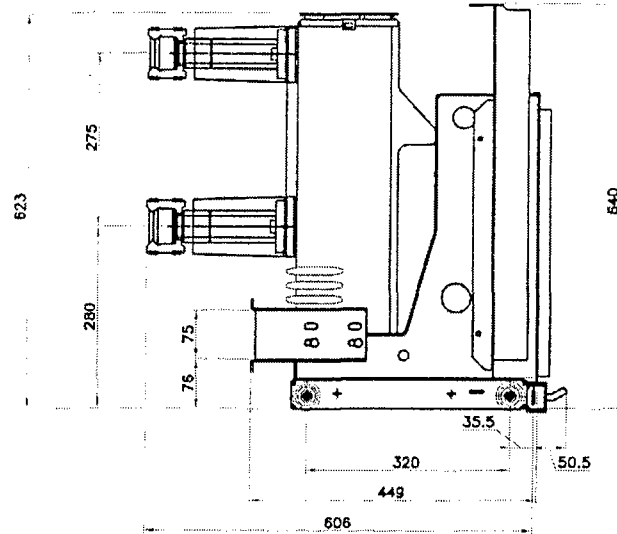
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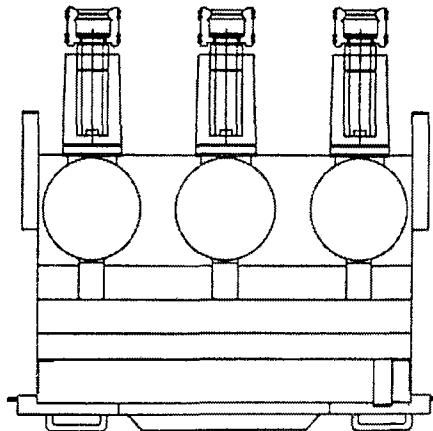
FRONT VIEW



SIDE VIEW



TOP VIEW



SC09392A

*Ken*  
 10/17  
 10/17  
 10/17

MATL:		QTY: 1NO.		ALL DIMENSIONS ARE IN mm				DESCRIPTION: GA FOR 11KV,1250A,25KA/3sec BREAKER ASSEMBLY		BRAND		DRAWING NO:	
FINISH:								MFG BY:		KRISHNA		KE.0802151-00	
								KRISHNAA ENERGEY PVT LTD.,		SCALE : N.T.S.		SHEET.No.	
								DP-00, SIDCO INDUSTRIAL ESTATE		REF.No-			
								THIRUMUDIVAKKAM, CHENNAI - 44					
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