

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**

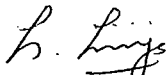
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P.B.NO.8066, SADASHIVANAGAR POST OFFICE
SIR C.V.RAMAN ROAD, BANGALORE - 560 080 (INDIA)
Phone : +91 (0) 80 - 23602662 Fax : +91 (0) 80 - 23601213

Sheet 1 of 5

TEST REPORT

Test Report Number	SC09623B	Dated: 13 th November, 2009
Name & Address of the Customer	M/s. Krishnaa Energy Private Limited, DP 69, SIDCO Industrial Estate, Thirumudivakkam, Chennai – 600 044	
Name & Address of the Manufacturer	M/s. Krishnaa Energy Private Limited, DP 69, SIDCO Industrial Estate, Thirumudivakkam, Chennai – 600 044	
Particulars of sample tested	Distribution Board	
Condition of the sample on Receipt	Good	
Type	---	
Designation	8 way 24 circuit sub distribution board	
Serial Number	Nil	
Number of samples tested	One	
Date (s) of test (s)	30 th September, 2009	
CPRI sample code no(s).	SC09S1832	
Particulars of tests conducted	Short-circuit breaking test	
Test in accordance with standard / specification	Customer's instructions	
Sampling plan	Not applicable	
Customer's requirement	Short-circuit breaking test ('O') at 25 kA rms to be conducted on incoming circuit (only MCCB)	
Deviations if any	---	
Name of the witnessing persons		
Customer's representative	Mr. P. Ramachandran – Manager R&D	
Other than customer's representative	None	
Test subcontracted with address of the laboratory	None	
Documents constituting this report (In words)		
Number of sheets	Five	
Number of oscillograms	Two	
Number of graphs	Nil	
Number of photos	Three	
Number of test circuit diagrams	One	
Number of drawings	Three	



(G. Girija)
Test Engineer





(B. R. Ravishankar)
Joint Director

AUTHORISED SIGNATORIES



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Sheet 2 of 5
Report Number: SC09623B

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

Test sample	Distribution Board
Type	---
Designation	8 way 24 circuit sub distribution board
Rated operational voltage (U_e)	415 V a.c
Rated insulation voltage (U_i)	690 V a.c.
Rated current (I_n)	100 A
Rated Frequency	50 Hz

Details of incoming circuit

MCCB	415 V, 100 A, 3 Pole, 25kA rms, type - DU 125 Make: L & T, Utilisation category: A Overload release settings: fixed at 100 A Short circuit release settings: Fixed
RCCB	415 V, 100 A, 300mA, 4 Pole, type - CST 16 Make: L & T hager

Details of outgoing circuit

MCB	415 V, C 16A, 3 Pole, 10kA rms, type - NC3 16N Make: L & T hager
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Documents attached to this report

Oscillogram number(s)	SC09623B.S01 & SC09623B.S02
Photograph number(s)	SC09623B.PB1, SC09623B.PA1 & SC09623B.PA2
Test circuit diagram(s)	CRTL/SC/13947-18A
Drawing number(s)	KEPL.01-002 REV.0, KEPL.01-001REV.0 & KEPL.01-003 REV.0


Test Engineer



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Sheet 3 of 5

Report Number: SC09623B

Schedule of test

1. RATED SHORT-CIRCUIT BREAKING CAPACITY

Test conditions

Source Short-circuit generator.
Phases Three
Neutral Isolated
Frequency 50 Hz

Sample

Condition of sample Good;
Connection Incoming circuit connected to source using 35 sq.mm PVC insulated copper cable of 0.75m (0.5+0.25m) long.

Test details

Test Duty O- test
Test circuit drawing number CRTL/SC/13947-18A
Short-circuit On the top terminals of the MCCB
Short-circuit point Grounded

Test results

Test duty / operation	Prospective		
Oscillogram number	SC09623B.S01		
Phase	R	Y	B
Applied voltage -V rms	268.51	257.17	262.54
Peak current -kA	---	---	54.67
Phase rms -kA	25.28	25.49	25.23
Average rms -kA	25.3		
Power-factor	0.22		

B. King
Test Engineer



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Sheet 4 of 5

Report Number: SC09623B

RATED SHORT-CIRCUIT BREAKING CAPACITY

Test duty/operation	O		
Oscillogram number	SC09623B.S02		
Applied voltage - V rms	---	---	---
Cut-off - kA	18.03	13.29	13.23
Operating time - (msec)	9.0	6.0	9.0
Total I ² t - A ² sec. x 10 ⁶	0.13	0.41	0.62
Recovery voltage - V rms	260.9	260.1	263.1
Between phases - V rms	452.7		
% rated voltage	109.1		
Duration (sec.)	>0.1		
Observations :			
During test	No abnormality		
After test	FWF intact		

DIELECTRIC WITHSTAND

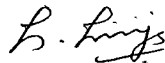
Condition of the sample: As after short circuit breaking capacity

Test procedure	Observations
Power frequency voltage of 1890 V rms for 5.0 seconds was applied between	
1. All live parts of all the pole connected together and the frame with MCCB in closed condition	Withstood
2. Each pole and all the other poles connected to enclosure with MCCB in closed condition	Withstood
3. All incoming terminals connected together and all outgoing terminals connected together with MCCB in open condition	Withstood

Physical Inspection

Condition of MCCB : Pitting & erosion observed on contact; soot formation & metal deposits noticed on arc chute.

Condition of Distribution board : No visible damage.


Test Engineer



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Sheet 5 of 5

Report Number: SC09623B

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 / erasings 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.

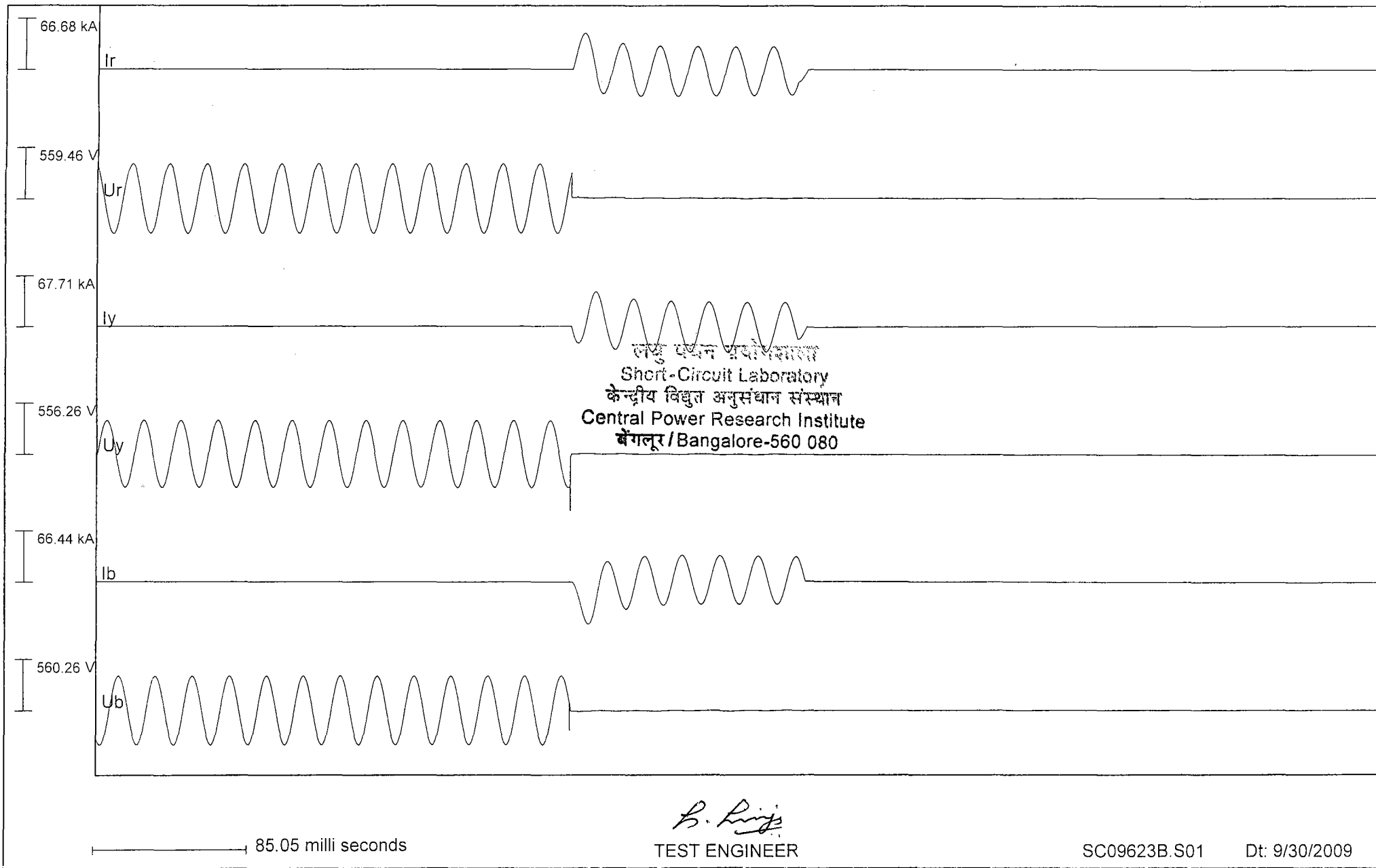
Sealed Certificate:

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:

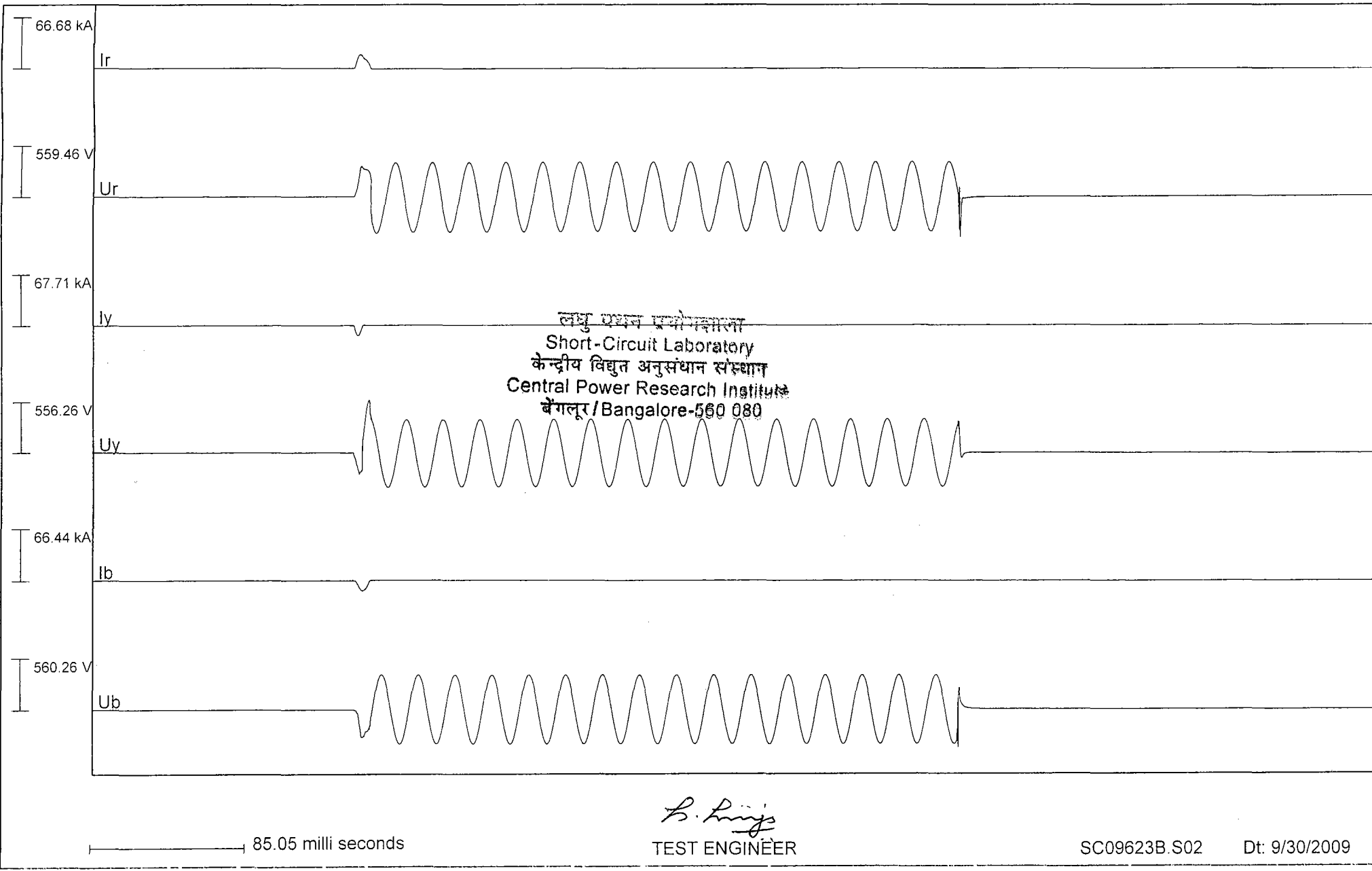
- I. Type test certificate of Short Circuit Performance.
- II. Type test certificate of Switching Performance.
- III. Type test certificate of Temperature Rise Performance.
- IV. Type test certificate of Dielectric Performance.
- V. Type test certificate of complete type test.


Test Engineer



लघु घटन प्रयोगशाला
Short-Circuit Laboratory
केन्द्रीय विद्युत अनुसंधान संस्थान
Central Power Research Institute
बंगलूर / Bangalore-560 080

B. Rishi
TEST ENGINEER



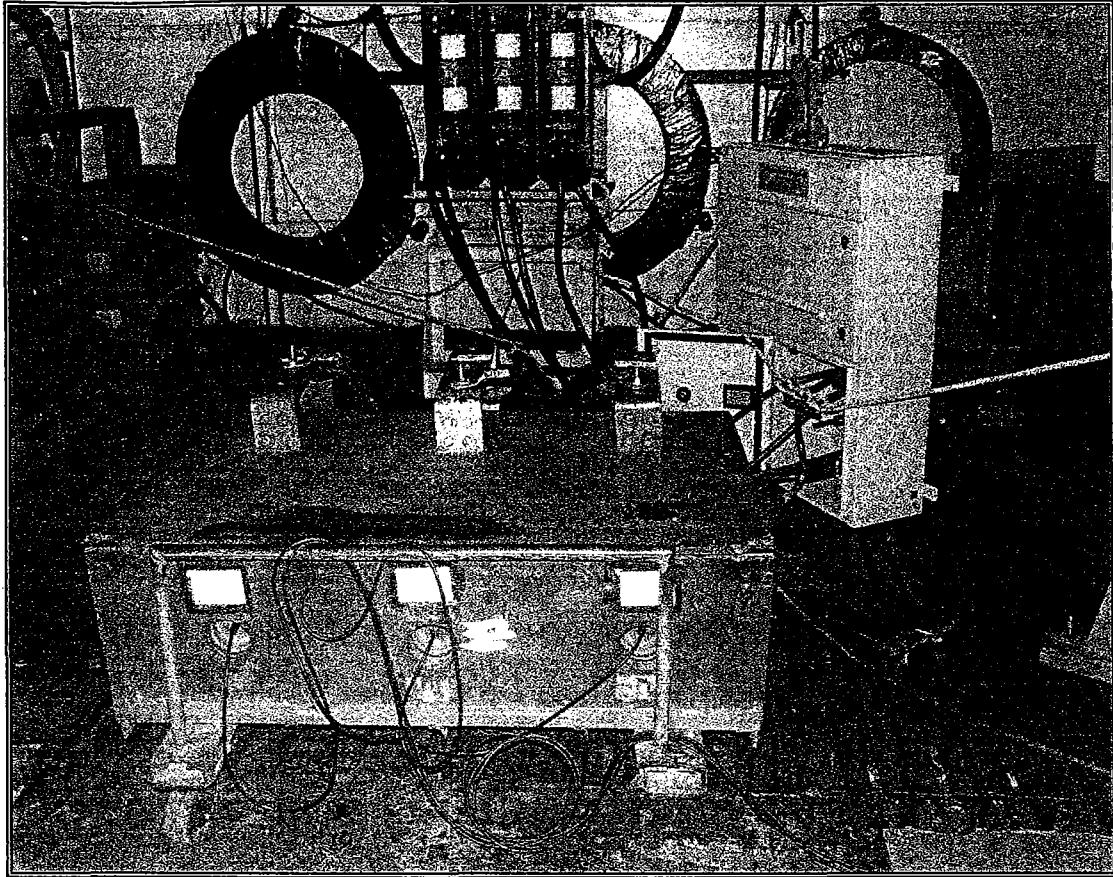


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Mounting arrangement (Before test)

SC09623B.PB1

B. Linga
Test Engineer

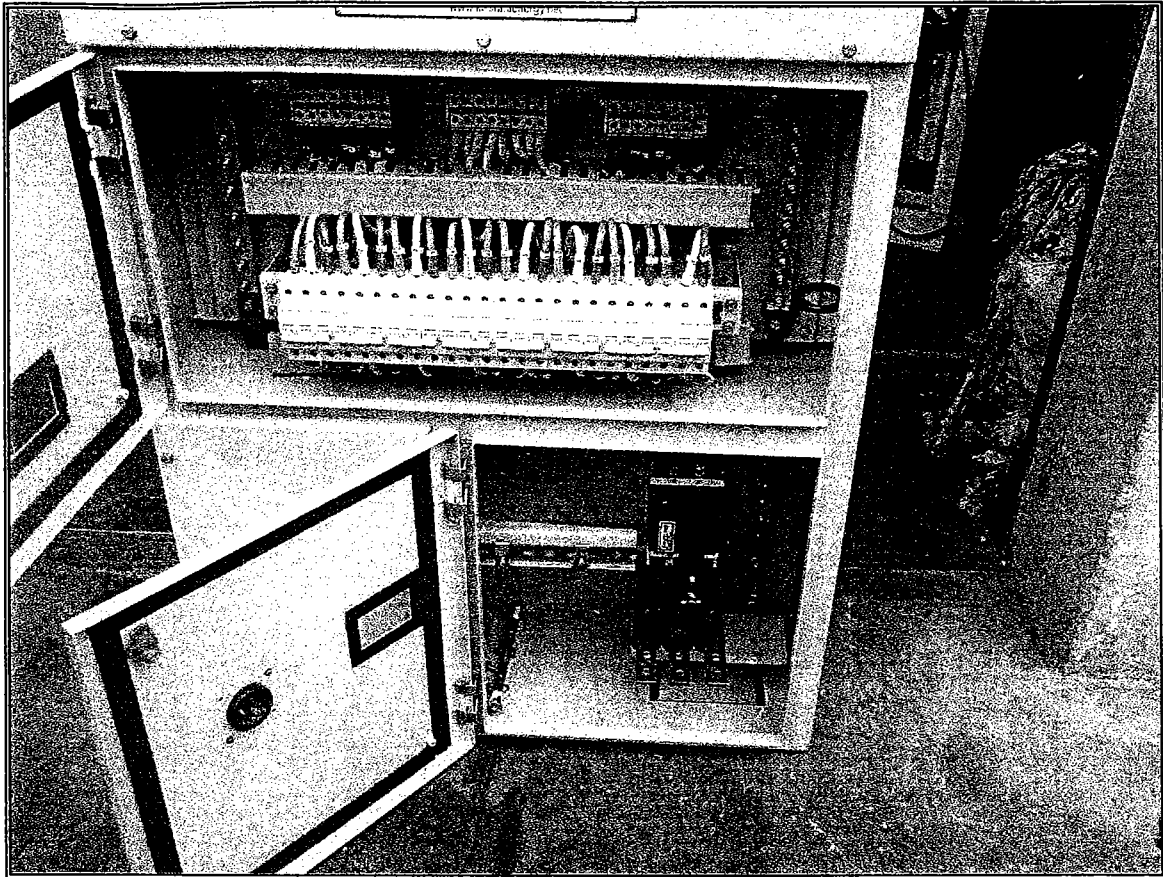


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Condition of the sample (After test)

SC09623B.PA1

B. Linga
Test Engineer

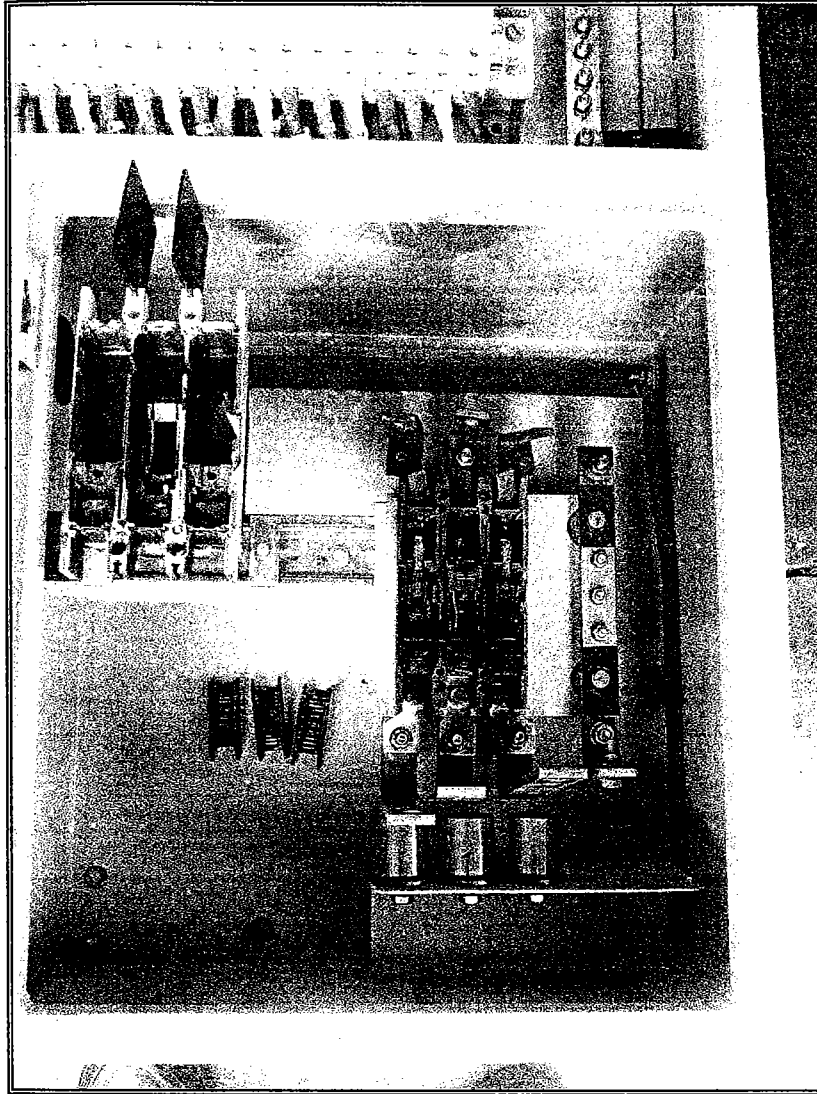


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Condition of the sample (After test)

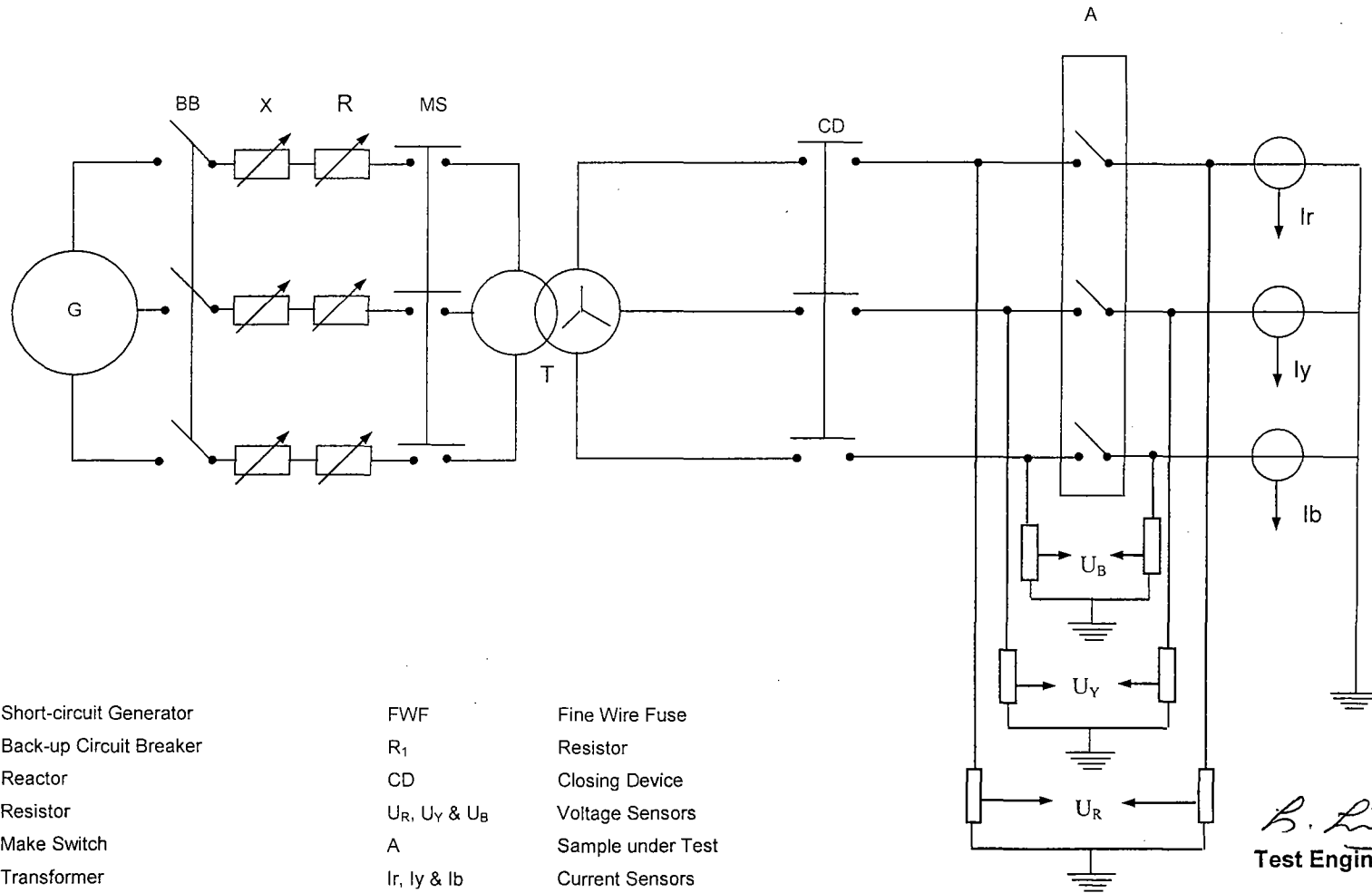
SC09623B.PA2

B. Ling
Test Engineer



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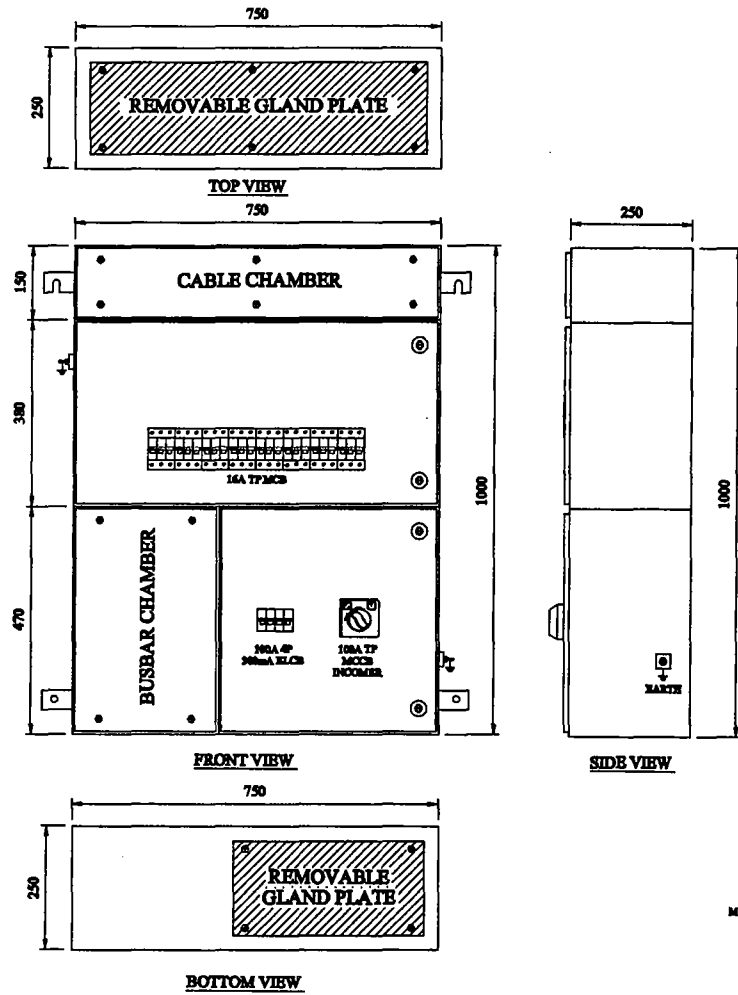
Schematic diagram of Main & Measurement circuit - Short-circuit breaking capacity test
CRTL/SC/13947-18A



- | | | | |
|----|-------------------------|----------------------------|-------------------|
| G | Short-circuit Generator | FWF | Fine Wire Fuse |
| BB | Back-up Circuit Breaker | R_1 | Resistor |
| X | Reactor | CD | Closing Device |
| R | Resistor | $U_R, U_Y \text{ \& } U_B$ | Voltage Sensors |
| MS | Make Switch | A | Sample under Test |
| T | Transformer | $I_r, I_y \text{ \& } I_b$ | Current Sensors |

B. Singh
Test Engineer

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रिपोर्ट क्रमांक.....
 से संबंधित दस्तावेज
 Document Pertaining to
 Report No.: S.10.9.62.3B.....

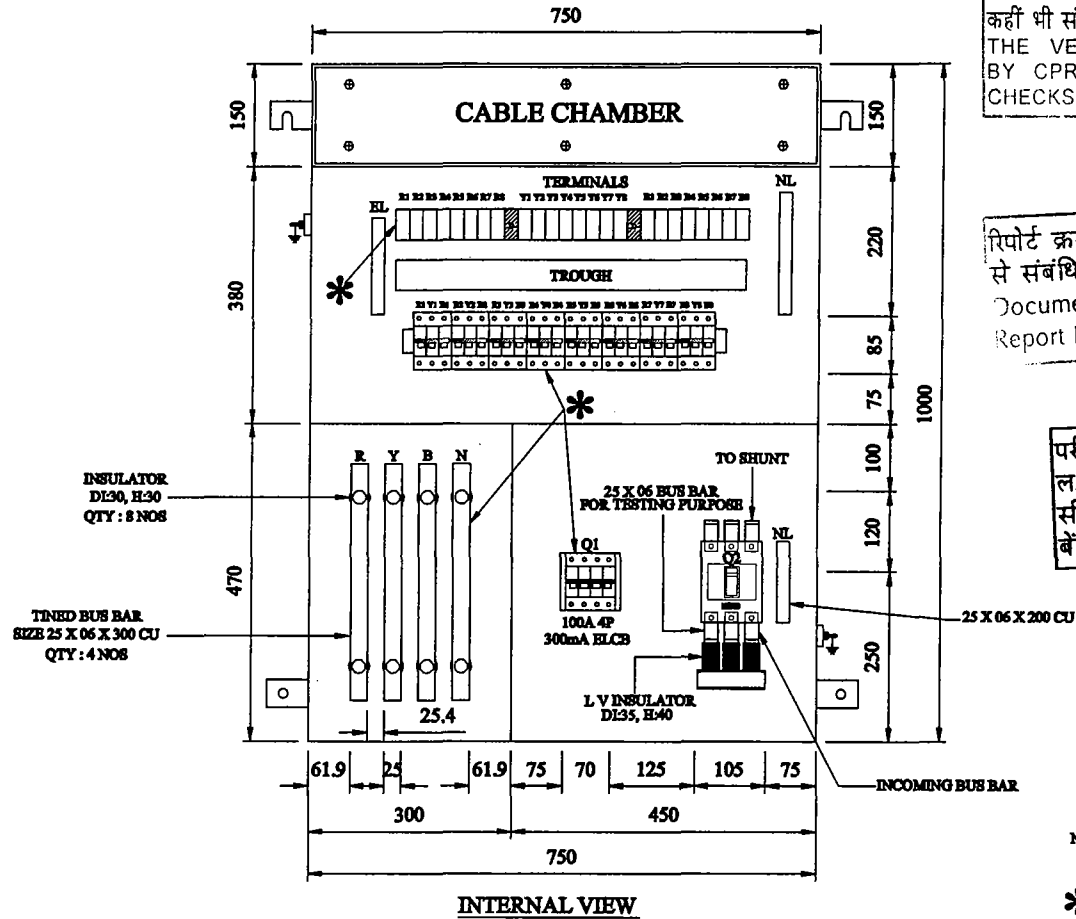
L. Linga
 परीक्षण अभियन्ता / Test Engineer
 ल.प. प्रयोगशाला / S. C. LAB
 सी. पी. आर. आई. / CPRI
 बेंगलूर / Bangalore

METAL ENCLOSURE - 2MM CRCA SHEET

TYPE: INDOOR		QTY: 1SET	ALL DIMENSION ARE IN mm				TITLE: 8WAY 24CIRCUIT SUB DISTRIBUTION BOARD (GA)		SCALE : NTS		
1							MFG BY:				
0	27.04.09	ELCB TP CHANGED AS 4P	SIMBU				KRISHNAA ENERGY PRIVATE LIMITED. DP 69, SIDCO Industrial Estate, Thirumudivakkam, Chennai-44		SHT.No.	DRAWING No.	
REV.	DATE	DESCRIPTION	DRAWN	CHD.	APPD.	SIGN	DATE.				
CUSTOMER : BHAVINI, KALPAKKAM			CONSULTANT :				JOB REF:			KEPL-01-002	
P.O.REF :											

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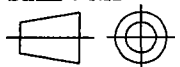


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B. Prinj
परीक्षण अभियन्ता / Test Engineer
ल.प. प्रयोगशाला / S. C. LAB
सी. पी. आर. आई. / CPRI
बेंगलूर / Bangalore

NOTE- Q2 = 100A TP MCCB
TYPE: DU125
MAKE: LET
* & Q1- THIS ITEMS SCT BREAKING TEST NOT CONDUCTED
METAL ENCLOSURE - 2.0MM CRCA SHEAT

TYPE: INDOOR		QTY: 1SET	ALL DIMENSION ARE IN mm.			TITLE: 8WAY 24CIRCUIT SUB DISTRIBUTION BOARD (INTERNAL DRAWING)		SCALE : NTS	
1						MFG BY:			
0	27.04.09	ELCB TP CHANGED AS 4P & BUSBAR CLEARANCE CHANGED	SIMBU			15.04.09	KRISHNAA ENERGY PRIVATE LIMITED. DP 69, SIDCO Industrial Estate, Thirumudivakkam, Chennai-44		SHT.No.
REV.	DATE	DESCRIPTION	DRAWN	CHD.	APPD.	SIGN	DATE.		DRAWING No.
CUSTOMER : BHAVINI, KALPAKKAM			CONSULTANT :			JOB REF:			KEPL-01-003
P.O.REF :									

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