

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)**



**HEAT RUN TEST LABORATORY
DIAGNOSTIC, CABLES & CAPACITORS DIVISION
CENTRAL POWER RESEARCH INSTITUTE**
P.B.NO.8066, SADASHIVANAGAR SUB P.O
PROF.SIR.C.V.RAMAN ROAD, BANGALORE - 560 080, INDIA
Phone: + 91 (0) 80-2360 4435 Fax: 080 – 2360 4435



NABL Accredited
Laboratory
Cert. No. T- 0010

CPRI

Sheet 1 of 4

TEST REPORT

Test Report Number : DCCD – 11939 **Dated: 25.02.2011**

Name & Address of the Customer : M/s. Krishnaa Energy Private Limited,
DP # 69, SIDCO Industrial estate,
Thirumudivakkam,
Chennai-600 044
Ref: Mail Dated: 11.12.2010

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

Particulars of sample tested : 11kV, 630Amps, 16KA Outdoor VCB Panel
Condition of the Sample on Receipt : After STC test
Type : Nil
Designation : 11kV, 630Amps Outdoor VCB Panel,
Breaker details: 12kV, 630Amps, 50HZ,
Vacuum interrupter make: ABB

Serial Number : Vacuum interrupter serial no.: R – 00088539, Y - 00088551
B - 00088553
Panel serial no.: Nil

Number of samples tested : One
Date(s) of Test(s) : 22.02.2011
CPRI sample code no : SC11R1S0155
Particulars of tests conducted : Temperature rise test at 630 Amps & Measurement of the
Resistance of main circuit.

Test in accordance with standard/specification : IS 3427:1997 / IEC 60298:1990 & IEC 62271:100-2008
Sampling plan : Nil
Customers requirement : Temperature rise test at 630 Amps & Measurement of the
Resistance of main circuit.

Deviations if any : Nil

Name of the witnessing persons
Customers representatives : Mr. P.Ramachandran (Manager R&D)
Other than Customers representatives : Nil
Test subcontracted with address of the laboratory : NA

Documents constituting this report (in words)
Number of Sheets : Four
Number of oscillograms : Nil
Number of graphs : Nil
Number of photos : Nil
Number of Test Circuit Diagrams : Nil
Number of Drawings : Two: 1) KE – JVVNL - 65, Rev. 0
2) Name plate detail

(G.P.VITTAL)
Test Engineer



(A.SUDHINDRA)
Additional Director

AUTHORISED SIGNATORIES



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TEST REPORT

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TEST RESULTS

Measurement of resistance of the main circuit: As per Cl. 6.4 of IS 3427:1997 / IEC 298:1990 & IEC 62271-100-2008/ IEC 62271-1-2007

Magnitude of current passed: 100Amps DC across the terminals of breaker in closed condition.

Test condition: At room temperature

| Specified Values as per cl. 6.4 of IEC 62271-1-2007 | | Before Temperature rise test | After Temperature rise test | Results/ Remarks |
|---|--------------------------|------------------------------|-----------------------------|------------------|
| The measured values before & after temperature rise test shall not differ by more than 20%. | Ambient Temperature (°C) | 26.0 | 26.0 | |
| | R phase (mV) | 19.39 | 18.91 | Within limits |
| | Y phase (mV) | 18.79 | 19.03 | Within limits |
| | B phase (mV) | 18.20 | 19.03 | Within limits |

Temperature Rise Test: As per Clause 6.3 of IS 3427:1997 / IEC 298:1990 & Clause 6.5 of IEC 62271-100-2008 / IEC 62271-1- 2007

Temporary connections:

| Connections | Material | Quantity (Numbers) | Length (mm) | Section mm ² | Remarks |
|---------------|---------------------------------|--------------------|-------------|-------------------------|----------------------|
| Incoming side | Copper flexible braids | One | 2000 | 400 | Each Phase |
| | Copper cable | Two | 1500 | 185 | Each Phase |
| Outgoing side | Copper cable | Two | 1500 | 185 | Each Phase |
| | Copper Busbar (Shorting Busbar) | One | 500 | 40X10 | Across R Y & B Phase |

Magnitude of current passed:

| | | |
|-------------------------------|-------------------|-------------------|
| R Phase: 630 Amps | Y Phase: 630 Amps | B Phase: 630 Amps |
| Frequency: 49.5 Hz to 49.9 Hz | | |

(G.P.VITTAL)
Test Engineer



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Average ambient temperature: 26.5°C

Temperature rise of the various parts at steady state:

| Parts of Assemblies | Temperature rise at ambient air temperature not exceeding 40°C (as per Table 3 & Cl. 4.4.2 of IEC 62271-1-2007) (K) | Temperature rise (K) | | | Results / Remarks | | |
|--|---|----------------------|---------|---------|-------------------|--------------|--------------|
| | | R Phase | Y Phase | B Phase | R Phase | Y Phase | B Phase |
| Connection, bolted or the equivalent Tin Coated – In Air | | | | | | | |
| Joints | 65 | 40.9 | 39.3 | 36.2 | Within limit | Within limit | Within limit |
| Busbar | 65 | 26.0 | 29.2 | 29.1 | Within limit | Within limit | Within limit |
| Terminals for connection to external conductors by screws or bolts | | | | | | | |
| - Tin Plated Incoming Panel Terminal | 65 | 39.1 | 33.8 | 37.4 | Within limit | Within limit | Within limit |
| Outgoing Panel Terminal | 65 | 30.0 | 39.7 | 28.1 | Within limit | Within limit | Within limit |
| - Silver Plated Incoming Breaker Terminal | 65 | 42.9 | 42.6 | 35.9 | Within limit | Within limit | Within limit |
| Outgoing Breaker Terminal | 65 | 27.8 | 28.5 | 32.2 | Within limit | Within limit | Within limit |

(G.P.VITTAL)
Test Engineer



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Sheet 4 of 4

TEST REPORT

Test Report No.: DCCD – 11939

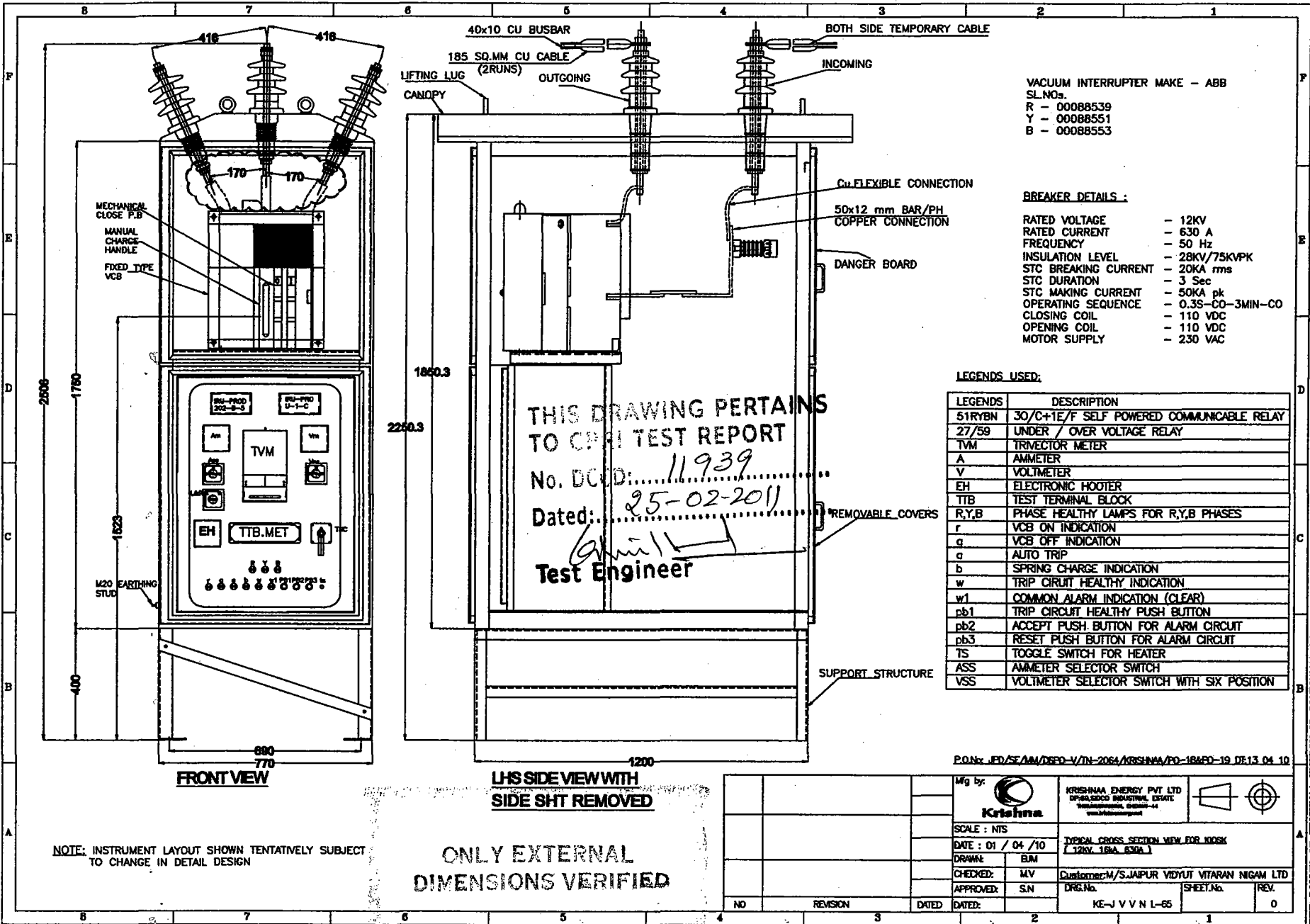
Dated: 25.02.2011

NOTE

- a) The test results relate only to the item(s) tested.
- b) Publication or reproduction of this test report in any form other than by complete set of the whole report and in the language written, is not permitted with out the written consent of CPRI
- c) Any correction/erasure invalidates this test report.
- d) Any anomaly/discrepancy in this test report should be brought to our notice within 45 days from the date of issue.

(G.P.VITTAL)
Test Engineer

THIS DRAWING IS THE PROPERTY OF KRISHNAA ENERGY AND MUST NOT BE COPIED OR REPRODUCED WITHOUT THEIR CONSENT.



VACUUM INTERRUPTER MAKE - ABB
 SL.NOs.
 R - 00088539
 Y - 00088551
 B - 00088553

BREAKER DETAILS :

RATED VOLTAGE - 12KV
 RATED CURRENT - 630 A
 FREQUENCY - 50 Hz
 INSULATION LEVEL - 28KV/75KVPK
 STC BREAKING CURRENT - 20KA rms
 STC DURATION - 3 Sec
 STC MAKING CURRENT - 50KA pk
 OPERATING SEQUENCE - 0.3S-CO-3MIN-CO
 CLOSING COIL - 110 VDC
 OPENING COIL - 110 VDC
 MOTOR SUPPLY - 230 VAC

THIS DRAWING PERTAINS
 TO CPRI TEST REPORT
 No. DC/D: 11939
 Dated: 25-02-2011
 Test Engineer

LEGENDS USED:

| LEGENDS | DESCRIPTION |
|---------|---|
| 51RYBN | 30/C+1E/F SELF POWERED COMMUNICABLE RELAY |
| 27/59 | UNDER / OVER VOLTAGE RELAY |
| TVM | TRIVECTOR METER |
| A | AMMETER |
| V | VOLTMETER |
| EH | ELECTRONIC HOOTER |
| TTB | TEST TERMINAL BLOCK |
| R.Y.B | PHASE HEALTHY LAMPS FOR R,Y,B PHASES |
| r | VCB ON INDICATION |
| q | VCB OFF INDICATION |
| a | AUTO TRIP |
| b | SPRING CHARGE INDICATION |
| w | TRIP CIRCUIT HEALTHY INDICATION |
| w1 | COMMON ALARM INDICATION (CLEAR) |
| pb1 | TRIP CIRCUIT HEALTHY PUSH BUTTON |
| pb2 | ACCEPT PUSH BUTTON FOR ALARM CIRCUIT |
| pb3 | RESET PUSH BUTTON FOR ALARM CIRCUIT |
| TS | TOGGLE SWITCH FOR HEATER |
| ASS | AMMETER SELECTOR SWITCH |
| VSS | VOLTMETER SELECTOR SWITCH WITH SIX POSITION |

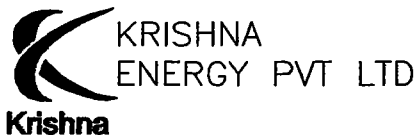
NOTE: INSTRUMENT LAYOUT SHOWN TENTATIVELY SUBJECT TO CHANGE IN DETAIL DESIGN

ONLY EXTERNAL DIMENSIONS VERIFIED

P.O.No. /FD/SE/MN/DEPD-V/IN-2064/KRISHNAA/PO-18APD-19 DT:13.04.10

| | | | | | |
|---------------------|----------|---|--------|-----------------|------|
| Mg by: | | KRISHNAA ENERGY PVT LTD DESAI SIDDH INDUSTRIAL ESTATE WALUNDWADI, CHENNAI-60 www.krishnaenergy.com | | | |
| SCALE : NTS | | TYPICAL CROSS SECTION VIEW FOR 100SK (12KV, 18KA, 630A) | | | |
| DATE : 01 / 04 / 10 | | DRAWN : EJM | | | |
| CHECKED : MV | | Customer: M/S.JAI PUR VIDYUT VITARAN NIGAM LTD | | | |
| APPROVED : SN | | DRE.No. | | SHEET.No. | REV. |
| NO | REVISION | DATED | DATED: | KE-J V V N L-65 | 0 |

THE POLICY OF KRISHNAA ENERGY IS CONTINUAL IMPROVEMENT & DEVELOPMENT.



METALCLAD VACUUM SWITCHGEAR

RATING TO IS:3427-1997 / IEC - 60298-1-1990/IEC - 62271-100 & 1

| | | | | |
|------------|-------|-----------------------------------|-----|------|
| PANEL TYPE | KIOSK | CIRCUIT CURRENT | 400 | AMPS |
| SR.NO | **** | BUSBAR CURRENT | 630 | AMPS |
| VOLTAGE | 12000 | FREQUENCY | 50 | Hz |
| YEAR | 2010 | ONLY EXTERNAL DIMENSIONS VERIFIED | | |

THIS DRAWING PERTAINS TO CPRI TEST REPORT

No. DCCD: 11939
Dated: 25-02-2011

Test Engineer

PO.No-JPD/SE/MM/SPO-V/TN-2064/P.O-18 & P.O-19 DT 13/04/2010

| | | | |
|-------------------|--|-----------------|--------------|
| NAME OF SUPPLIER | KRISHNAA ENERGY PVT LTD., | | |
| ADDRESS | DP:69 SIDCO IND EST, THIRUMUDIVAKKAM, CHENNAI-44 | | |
| TEL.NO: | 044-42852092 | FAX.NO: | 044-42852092 |
| MONTH OF DISPATCH | | WARRANTY EXP.DT | |

| | |
|-------------------|-------------------------------------|
| NAME OF PURCHASER | M/S JAIPUR VIDYUT VITARAN NIGAM LTD |
| TN. NO: | TN-2064 |