



हिन्दी में काम देश का सम्मान
केन्द्रीय विद्युत अनुसंधान संस्थान

(भारत सरकार की सोसाइटी, विद्युत मंत्रालय)

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CENTRAL POWER RESEARCH INSTITUTE

(A Govt of India Society, Min. of Power)

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DIAGNOSTIC, CABLES AND CAPACITORS DIVISION

No.2/140/DCCD/HRT/09

Dated: 26.08.2009

M/s. Crompton Greaves Ltd,
S6 Division, D -2 MIDC Waluj
Aurangabad-431 136

Sub: Temperature Rise Test on 145kV, 1600 Amps Current Transformers

Ref. No.: SGB/VSS-YPs Dated: 25.08.2009

Kind Attention: Mr. Yogesh P.Sonune Executive- Design.

Dear Sir,

With reference to the above letter, Temperature rise test has been completed on the above Current Transformers. Kindly find enclosed herewith the Test reports bearing No. DCCD-11084 Dated: 26.08.2009.

In order to prevent tampering of test report, CPRI has introduced hologram on the first page of the test report (Original Copy) with effect from 01.10.2007.

Any discrepancy in the test report may please be brought to the notice within 45 days from the date of dispatch of the test report.

Receipt of the Test Report may please be acknowledged.

Best Regards,

Yours Sincerely,

(S.RAMA PRASATH)
JOINT DIRECTOR



Member - STL



**ASTA BEAB
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**UL
Approved**



**CSA
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CPRI

TEST REPORT



Central Power Research Institute
(A Govt.of India Society,)
P.B. No.8066, Sadashivanagar Post Office
Prof. Sir.C.V. Raman Road,
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**CPRI**

HEAT RUN TEST LABORATORY
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Cert.No.T- 0010

TEST REPORT

Sheet 1 of 3

Test Report Number**Name & Address of the customer****Name & Address of the Manufacturer****Particulars of sample tested****Condition of sample on Receipt**

Type

Designation

Serial Number

Number of samples tested

Date(s) of Test(s)

CPRI sample code No.

Particulars of test conducted**Test in accordance with
Standard/specification**

Sampling Plan

Customers requirement

Deviations if any

Name of the witnessing persons

Customer's representatives

Other than customer's representatives

Test subcontracted with address of the
laboratory**Document consisting this report (in
words)**

Number of Sheets

Number of oscillograms

Number of graphs

Number of photos

Number of Test Circuit Diagrams

Number of drawings

: DCCD-11084

Dated: 26.08.2009

: M/s. Crompton Greaves Ltd,
S6 Division, D -2 MIDC Waluj
Aurangabad-431136

Ref. No.:SGB/VSS-YPS Dated:25.08.2009

: M/s. Crompton Greaves Ltd,
S6 Division, D -2 MIDC Waluj
Aurangabad-431136: 145kV, Current transformer, (1600/1) Core-1 :30VA
5P20,Core 2 :15VA 0.5, Core 3 :PX Class.

: New

: IOSK :145/275/650,

: Hermetically sealed.

: 82624

: One

: 25.08.2009

: DCCDHRT09S0060

: Temperature Rise Test at 2400 Amps. 1.5 times the rated
Primary current of 1600A

: IEC-60044-1- 2003

: NA

: Temperature Rise Test at 2400 Amps. 1.5 times the rated
Primary current. Measure the temperature rise values of
porcelain insulator and secondary box also.

: Nil

: Mr. Yogesh P. Sonune (Executive- Design)

: Nil

: None

:

: Three

: Nil

: Nil

: Nil

: Nil

: Three: (1) SX2683 CT3 GA, (2) SX2683CT3 RS,
(3) SX2683CT3 SB

(G.P.VITTAL)
Test Engineer



(S.RAMA PRASATH)
Joint Director

AUTHORISED SIGNATORIES

**CPRI**

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Sheet 2 of 3

Test Report No.: DCCD -11084

Date: 26.08.2009

TEST REPORT**TEST RESULTS****1. Temperature Rise Test : As per Cl. 7.2 of IEC 60044-1-2003****Temporary connections:**

- (i) 3 Numbers of 500 sq. mm, Copper flexible braids of length 2000 mm connected from terminals P1 and P2 to the current source.
- (ii) Secondary terminals 1S1 – 1S2, 2S1 – 2S2 were connected with rated burden of 30VA & 15 VA, at unity power factor and terminals 3S1 – 3S2 is shorted.

2. Magnitude of current passed:

Primary: 2400 Amperes

Secondary: Measured 1.5 Amps at 1S1 – 1S2, 2S1 – 2S2

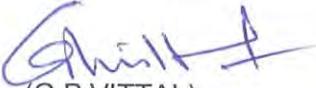
Measured frequency: Between 49.2 to 49.6 Hz.

Average Ambient temperature: 28.4°C

3. Temperature rise at steady state:

Points of Temperature measurement	Limits of Temperature rise of the windings as per Table 2 of IEC 60044-1:2003	Temperature rise (K)	Results / Remarks
All classes immersed in oil and hermetically sealed: Primary Winding : P1 – P2	65	20.0	Within limits
Secondary Winding : 1S1 – 1S2, 2S1 – 2S2, 3S1 – 3S2	65 65 65	07.0 18.2 04.7	Within limits Within limits Within limits
Top Body (Housing)	55	05.5	Within limits
External surface of the core and other metallic parts in contact with, or adjacent to : Primary terminal - P1 P2	65 65	46.0 20.5	Within limits Within limits
As per customer request -Porcelain Insulator -Secondary Box	----	0.1 0.4	----

Note: Temperature of Primary terminals & surface (Body) were measured by thermocouples and Primary & Secondary Windings temperature were determined by resistance method.


 (G.P.VITTAL)
 Test Engineer



CPRI

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Sheet 3 of 3

TEST REPORT

Test Report No.: DCCD -11084

Date: 26.08.2009

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 without 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**

NO.	ITEM NO.	DESCRIPTION	MATERIAL
1	1	LEVEL INDICATOR	ACRYLIC
2	1	HOUSING	ALUMINIUM
3	1	BASE	ALUMINIUM
4	2	PRIMARY TERMINAL-TYPE:NEMA SIZE-210x40x20mm.Thk.	ALUMINIUM
5	1	PRIMARY WINDING	ALUMINUM
6	3	SECONDARY WINDING	COPPER
7	1	PORCELAIN INSULATOR	PORCELAIN-DARK BROWN COLOUR
8	1	SECONDARY TERMINAL BOX	DRG.NO.:SX2683 CT3 SB
9	1	RATING & SCHEMATIC DIAGRAM	DRG.NO.:SX2683 CT3 RS
10	1	BALL TYPE SAMPLING VALVE	STEEL PLATED
11	1	BELOW	STAINLESS STEEL
12	1	EARTHING PAD-100x75x12thk.	COPPER
		Ø14 Holes, 2NO's.	

TECHNICAL SPECIFICATIONS			
1.3.2 KV CURRENT TRANSFORMER		UNIT	RATING
SPECIFICATION	HIGHEST SYSTEM VOLTAGE (Ph-Ph)	Kilo Volts	145/ $\sqrt{3}$
	HIGHEST SYSTEM VOLTAGE (Ph-E)	Kilo Volts	
	POWER FREQUENCY WITHSTAND VOLTAGE FOR 1 MIN. (DRY & WET)	Kilo Volts	275
	LIGHTNING IMPULSE WITHSTAND VOLTAGE	Kilo Volts(Peak)	650
	FREQUENCY	Hz	50
	TOTAL CREEPAGE DISTANCE(MINIMUM)	mm	3625
	TOTAL WEIGHT ($\pm 10\%$)	Kilogram	450
	OIL VOLUME ($\pm 10\%$)	Litre	120
	APPLICABLE STANDARDS	-	IEC:60044-1

MOUNTING DETAILS	
VIEW FROM 'A'	For mounting Ø22 holes on each leg.

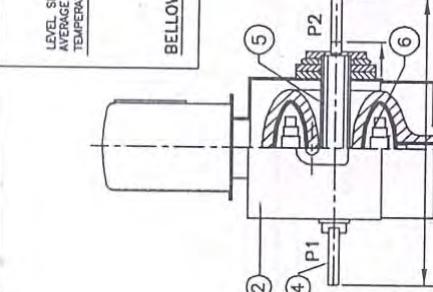
SECTION: 'K-K'	
For lifting holes on each leg. Ø30 holes on each leg.	For earthing 2-Holes of Ø14

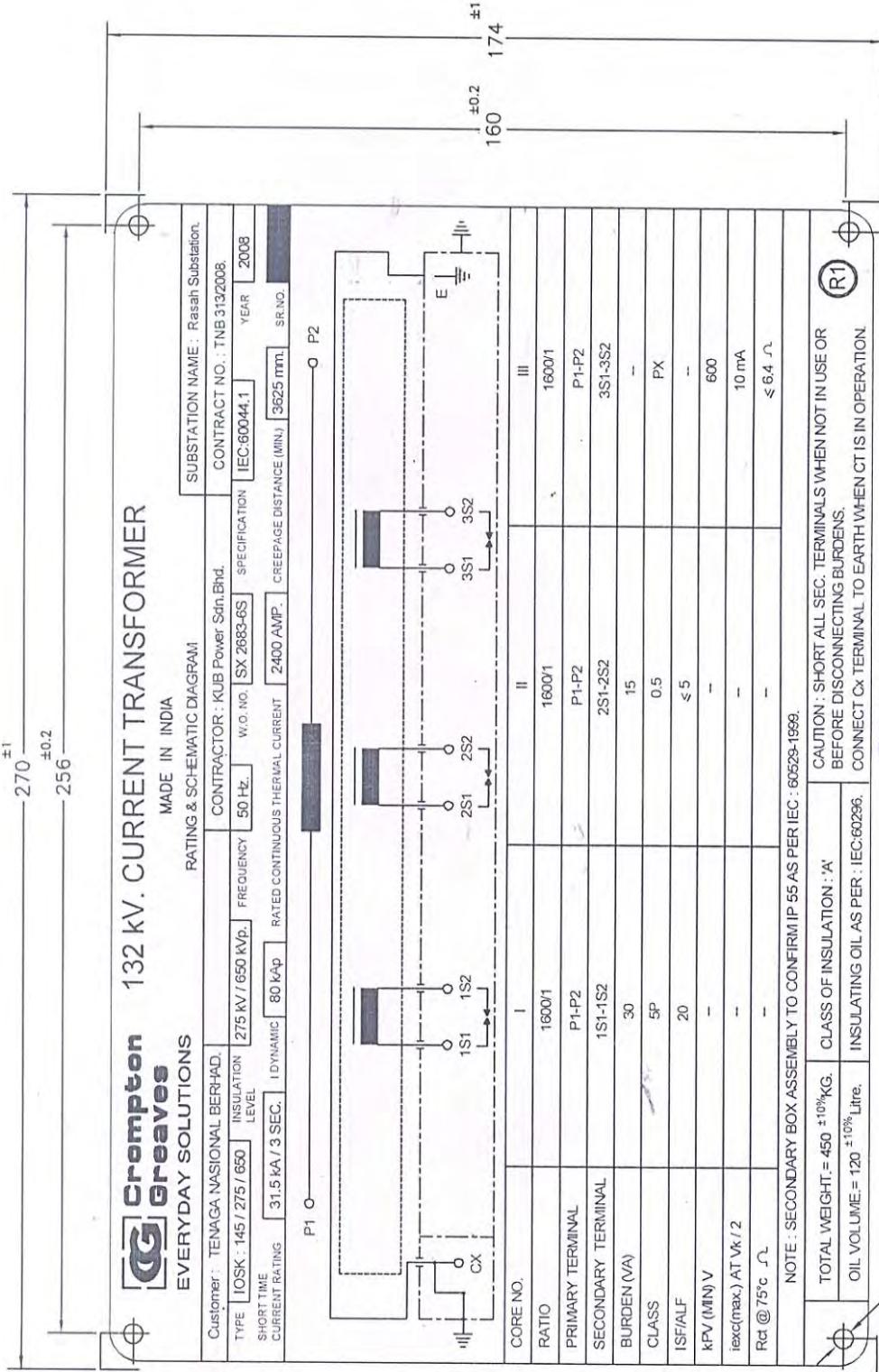
NEMA PRIMARY TERMINAL DETAILS	
ITEM NO.4	ITEM NO.4

THIS DRAWING PERTAINS
TO CPR TEST REPORT
No. DCCD 11084
Dated 26.08.2009

Amrit
Test Engineer

NOTE : PLEASE REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION OF CT.





R6	R4	R2	DRN	SIGN	NAME	RATING & SCHEMATIC DIAGRAM FOR 132 KV CURRENT TRANSFORMER TYPE - I0SK145/275/650
R5	R3	R1	CHD	STU	Customer comments	FOR 132 KV CURRENT TRANSFORMER TYPE - I0SK145/275/650
NO	REVISION	SIGN DATE NO	APPD	DSU	Incorporated	USS
NO	REVISION	REVISION	SIGN DATE NO	REVISION	SIGN DATE NO	ALL DIMENSIONS ARE IN mm.

DRG.NO:-SX2683 CT3 RS

CT SR.NO.'s. : 82623 TO 82625

IF IN DOUBT ASK