



हिन्दी में काम देश का सम्मान
केन्द्रीय विद्युत अनुसंधान संस्थान

(भारत सरकार की सोसाइटी, विद्युत मंत्रालय)

प्रो. सर. सी. वी. रामन रोड सदाशिवनगर डाक घर, पो.बा.सं. 8066, बेंगलूर - 560 080

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
Accredited



UL
Approved



CSA
Approved

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,

Bangalore - 560 080 (INDIA)



CPRI

**HEAT RUN TEST LABORATORY
DIAGNOSTIC, CABLES & CAPACITORS DIVISION
CENTRAL POWER RESEARCH INSTITUTE**

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NABL Accredited
Laboratory
Cert.No.T- 0010

TEST REPORT

Sheet 1 of 3

Test Report Number	: DCCD-11084	Dated: 26.08.2009
Name & Address of the customer	: M/s. Crompton Greaves Ltd, S6 Division, D -2 MIDC Waluj Aurangabad-431136 Ref. No.:SGB/VSS-YPS Dated:25.08.2009	
Name & Address of the Manufacturer	: M/s. Crompton Greaves Ltd, S6 Division, D -2 MIDC Waluj Aurangabad-431136	
Particulars of sample tested	: 145kV, Current transformer, (1600/1) Core-1 :30VA 5P20, Core 2 :15VA 0.5, Core 3 :PX Class.	
Condition of sample on Receipt	: New	
Type	: IOSK :145/275/650,	
Designation	: Hermetically sealed.	
Serial Number	: 82624	
Number of samples tested	: One	
Date(s) of Test(s)	: 25.08.2009	
CPRI sample code No.	: DCCDHRT09S0060	
Particulars of test conducted	: Temperature Rise Test at 2400 Amps. 1.5 times the rated Primary current of 1600A	
Test in accordance with Standard/specification	: IEC-60044-1- 2003	
Sampling Plan	: NA	
Customers requirement	: 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.	
Deviations if any	: Nil	
Name of the witnessing persons		
Customer's representatives	: Mr. Yogesh P. Sonune (Executive- Design)	
Other than customer's representatives	: Nil	
Test subcontracted with address of the laboratory	: None	
Document consisting this report (in words)		
Number of Sheets	: Three	
Number of oscillograms	: Nil	
Number of graphs	: Nil	
Number of photos	: Nil	
Number of Test Circuit Diagrams	: Nil	
Number of drawings	: Three: (1) SX2683 CT3 GA, (2) SX2683CT3 RS, (3) SX2683CT3 SB	

(G.P.VITTAL)
Test Engineer



(S.RAMA PRASATH)
Joint Director

AUTHORISED SIGNATORIES



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Sheet 2 of 3

Test Report No.: DCCD -11084

TEST REPORT

Date: 26.08.2009

TEST RESULTS

1. Temperature Rise Test : As per Cl. 7.2 of IEC 60044-1-2003

Temporary connections:

- 3 Numbers of 500 sq. mm, Copper flexible braids of length 2000 mm connected from terminals P1 and P2 to the current source.
- 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

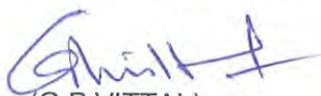
Measured frequency: Between 49.2 to 49.6 Hz.

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 Secondary Winding : 1S1 – 1S2, 2S1 – 2S2, 3S1 – 3S2	65 65 65 65	20.0 07.0 18.2 04.7	Within limits 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

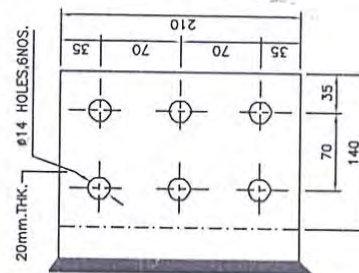
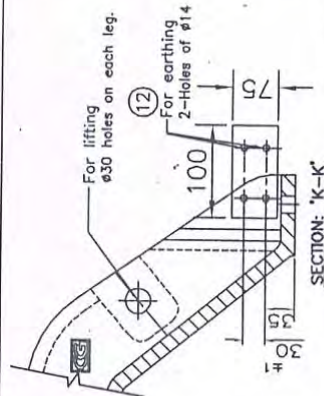
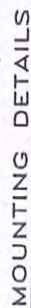
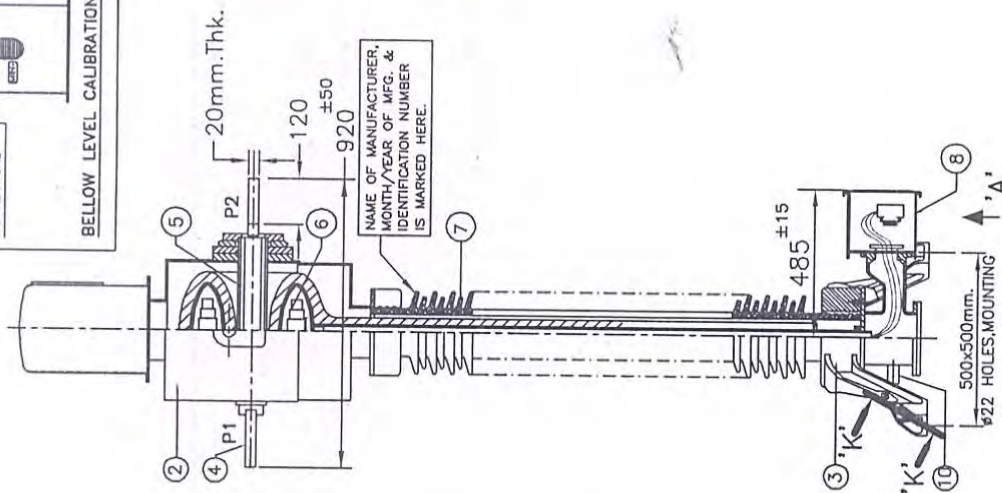
Test Report No.: DCCD -11084

Date: 26.08.2009

NOTE

- The test results relate only to the item(s) tested.
- 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
- Any correction/erasure invalidates this test report.
- 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.	QTY.	DESCRIPTION	MATERIAL
1	1	BELLOW LEVEL INDICATOR	ACRYLIC
2	1	HOUSING	ALUMINIUM
3	1	BASE	ALUMINIUM
4	2	PRIMARY TERMINAL-TYPE:NEMA SIZE-210x140X20mm.Thk.	ALUMINIUM
5	1	PRIMARY WINDING	ALUMINIUM
6	3	SECONDARY WINDING	COPPER
7	1	PORCELAIN INSULATOR	PORCELAIN-DARK BROWN COLOUR
8	1	SECONDARY TERMINAL BOX	DWG.NO.SX2683 CT3 SB
9	1	RATING & SCHEMATIC DIAGRAM	DWG.NO.SX2683 CT3 RS
10	1	BALL TYPE SAMPLING VALVE	STEEL PLATED
11	1	BELLOW	STAINLESS STEEL
12	1	EARTHING PAD-100x75x12Thk. ø14 Holes.2No's.	COPPER



TECHNICAL SPECIFICATIONS

SPECIFICATION	UNIT	RATING
HIGHEST SYSTEM VOLTAGE (Ph-Ph)	Kilo Volts	145
HIGHEST SYSTEM VOLTAGE (Ph-E)	Kilo Volts	145/√3
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 (±10%)	Kilogram	450
OIL VOLUME (±10%)	Litre	120
APPLICABLE STANDARDS	—	—

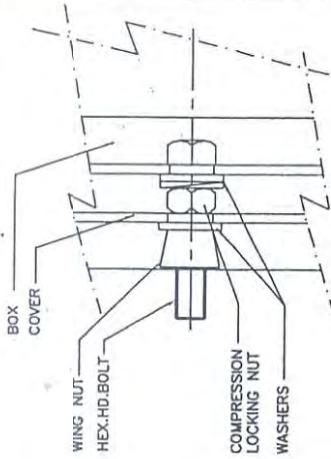
THIS DRAWING PERTAINS
TO CPRI TEST REPORT
No. DCCD.11084
Dated 26.08.2009

Chirli
Test Engineer

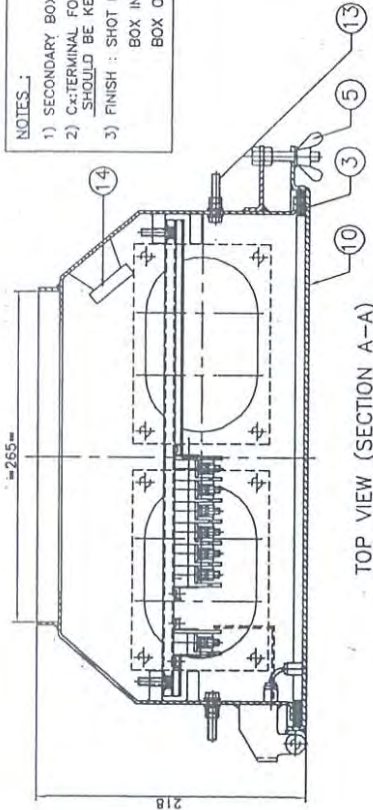
NOTE : PLEASE REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION OF CT.

ITEM NO. 4													
R6			R4				R2			SIGN	NAME	<div>Crompton Greaves EVERYDAY SOLUTIONS S6 DYN.-AURANGABAD.</div> <div>GENERAL ARRANGEMENT DRAWING FIG. 102 OF CURRENT TRANSMISSION TYPE-10SK-145/275/650</div>	
R5									DRN	STJ			
									CHD	DSJ			
									2.3.09	USS			
									APPD				
NO	REVISION	SIGN/DATE	NO	REVISION	SIGN/DATE	NO	REVISION	SIGN/DATE	SCALE	N.T.S.	DATE : 16.12.2008	ALL DIMENSIONS ARE IN mm	
<div>Crompton Greaves EVERYDAY SOLUTIONS S6 DYN.-AURANGABAD.</div>													
DRC NO.:- SX2683 CT3 GA													

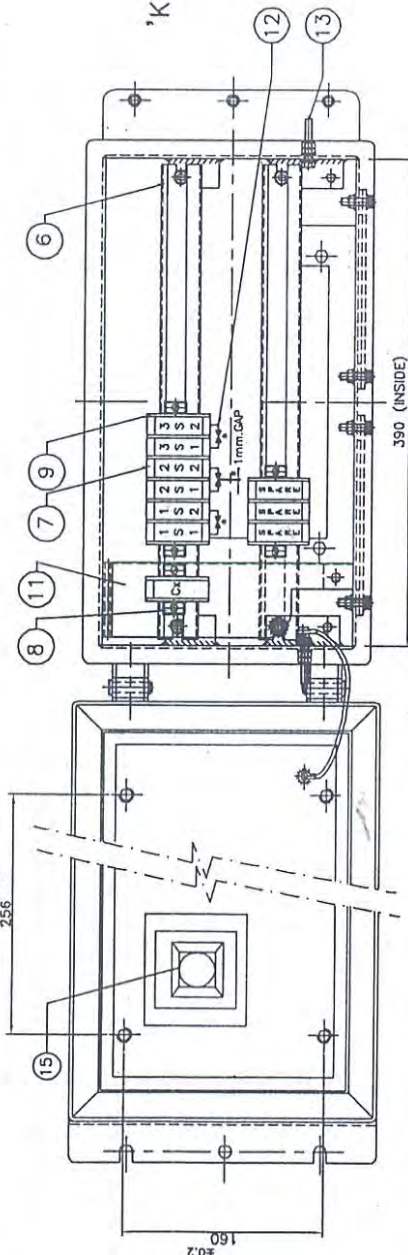
IF IN DOUBT ASK



DETAIL VIEW FROM 'K'



TOP VIEW (SECTION A-A)



ELEVATION

SL.NO.	QTY	ITEM	MATERIAL	RM. SIZE / SPECIFICATION
1	1	SECONDARY BOX ASSEMBLY	MS	DRG. NO. 3K27128
2	2	GLAND PLATE	MS	160x110x3mm. THK.
3	1	GASKET	NEOPRENE	---
4	2	GASKET	NEOPRENE	---
5	3	WING NUT	S-STEEL	STD-M8
6	2	DIN RAIL	STEEL	STD.
7	10	SECONDARY TERMINAL BLOCK WITH MARKER	MELAMINE	MAKE: CONNECTWELL/ELEMEX TYPE: CUTTS.-2K. 30amp. SUITABLE FOR TWO UNIT OF 45sq.mm. CABLE
8	6	END CLAMP	STEEL	MAKE: CONNECTWELL/ELEMEX
9	3	END PLATE	MELAMINE	MAKE: CONNECTWELL/ELEMEX
10	1	RATING & SCHEMATIC DIAGRAM	STAINLESS STEEL	---
11	1	BOX IN BOX ARRANGEMENT	MS	---
12	3	SPARK GAP	BRASS PLATED	---
13	2	EARTH TERMINAL	MB-BRASS	---
14	1	HEATER	---	40W. 230V. REPUTED CO. MAKE RANGE: 30°-80°.
15	1	THERMOSTAT/TEMPERATURE SENSOR (THERMOSTAT)	(HEATER CIRCUIT)	REPUTED CO. MAKE

R6
R5
R4
R3
R2
R1
R0

REVISION	SIGNATURE	NO.	REVISION	SIGNATURE	NO.

R2	Customer comments incorporated.	AAC	100320	SIGNATURE	NO.
R1	Customer comments incorporated.	CHD	2.3.09	SIGNATURE	NO.
R0	Customer comments incorporated.	USJ	16.12.2008	SIGNATURE	NO.

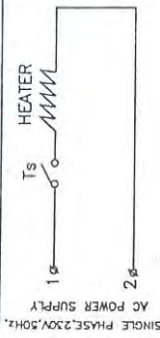
NAME	SIGN	DATE	SCALE	REVISION	SIGNATURE	NO.
STJ						
DSJ						
USJ						
SECONDARY BOX ASSEMBLY FOR 132KV CURRENT TRANSFORMER TYPE-10SK:145/275/650 56 DIN-AURANGABAD. DRG. NO.: SX2683 CT3 SB						

Crompton Greaves
EVERYDAY SOLUTIONS
56 DIN-AURANGABAD.

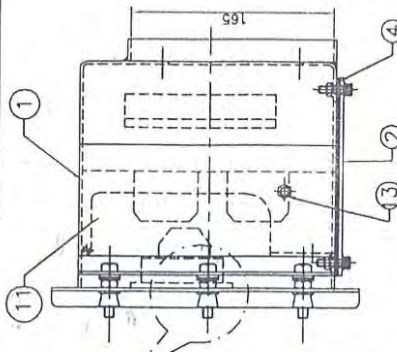
NOTES :

- 1) SECONDARY BOX ASSEMBLY TO CONFIRM IP65 AS PER IEC-60528-1999
- 2) C₂ TERMINAL FOR CAPACITANCE & TAN DELTA MEASUREMENT ONLY. SHOULD BE KEPT EARTHED WHEN NOT IN USE.
- 3) FINISH : SHOT BLASTED + HOT DIP GALVANIZED + PU PAINTED.
BOX INSIDE - EPOXY PAINT : SHADE-GLOSSY WHITE.
BOX OUTSIDE - POLYURETHANE PAINT SHADE : RAL 7032-SIEMENS GREY.

ELECTRICAL SCHEMATIC FOR HEATER & LIGHT CIRCUIT



SIDE VIEW



THIS DRAWING IS NOT VALID
TO CPRI TEST REPORT
No. DCCD 11084
Dated 26.08.2009
Amith

CT SR.NOS. : 82623 TO 82625
CODE NO. : 970048415

Note:- Since, heater ckt is secondary box is provided to avoid condensation & do not carry any importance on temp. rise, hence not connected during the test.

Material : Stainless Steel.
Material Thk. : 0.5 mm.Thk Plate.

CT SR.NO's. : 82623 TO 82625

THIS DRAWING PERTAINS

TO CPRI TEST REPORT

No. DCCD 11084

Dated... 26.08.2009

Chait

[illegible]