

TECHNICAL SPECIFICATIONS –SAFETY HELMET MOUNTED VOLATGE INDUCTION TESTER

- 1)The product is powered by 2 LR 44 ,3v batteries
- 2) The product provides sensing output through BUZZER at 60-75dB.
- 3)The products voltage sensing range is 1-2 feet for 220 v and 6 feet for 11Kv .
- 4)The product has ABS material covering cabinet .
- 5)There is a positive antenna and negative antenna,the red wire is one antenna and black wire is the other antenna .
- 4) The red wire is attached to the aluminium tape ,touching the forehead ,acting as ground to close the circuit and the black antenna is attached to the copper tape beneath the reflective tape ,acting as the flux interceptor.
- 5) Any A.C. electrical component ,emit electromagnetic waves ,the product voltage induction tester can sense the voltage of the A.C. system through electromagnetic waves ,the copper tape (black wire soldered to copper tape) acts as a flux interceptor and red wire soldered to aluminium tape ,when in contact with forehead acts as ground connect .
- 6)Thus when circuit is closed voltage is sensed and output of voltage sensing is given out through a GOLI BUZZER in the voltage induction tester .
- 7)Two varients of helmets are used
 - a) HDPE helmet-used commonly or regularly by workers.
 - b)FRP- fibre reinforced polymer with added mechanical strength to bear 2.5Kn of pressure and electrical insulation of 20Kv .

The helmets have a nape strap band adjustable for any size and sweat bands,and plastic harness and cushion for safety .

For further understanding and information of the product ,please find the CPRI ,ERDA,REPORT and working instruction manual ,attached below

BY HAND



केन्द्रीय विद्युत अनुसंधान संस्थान
(भारत सरकार की सोसाइटी, विद्युत बंगलुरु)
प्री. सर. सी. पी. रामन रोड, सुजाट/विजयगर पी.ओ., पी. ए. नं. 5006, बंगलुरु - 560 080
CENTRAL POWER RESEARCH INSTITUTE
(A Govt of India Society under Min. of Power)
Prof. Sir C.V. Raman Road, Sulasthi/Vijayager P.O., P.S. No. 5006, Bangalore - 560 080, India
Website: <http://www.cpri.in>

TELEFAX 23604335

Email: mallik@cpri.in

DIAGNOSTIC, CABLES & CAPACITORS DIVISION

No. DCCD/CAP/366/2015

Date: 07.07.2015

M/s. MINCHU,
No.149, 4th Floor, 36th Cross, 7th Main
8th Block, Jayanagar
Bangalore- 560 041

Dear Sir,

Kind Attn.: Mr. Ravi kumar

SUB: TEST REPORT FOR ELECTRONIC INDUCTION TESTER FITTED INSIDE AN HDPE SAFETY HELMET.

Kindly refer to customer request Form dated 03.06.2015 regarding tests on Electronic Induction Tester fitted inside an HDPE safety helmet as per your requirement.

As requested, the tests have been completed and our Test Report No DCCD - 14620 dated: 06.07.2015 is enclosed.


In order to prevent tampering of test report, CPRI has introduced Hologram on the first page of the test report (original copy) w.e.f 01.10.2007.

Any discrepancies in the test reports may please be brought to the notice of the undersigned within forty five days from the date of issue of the test report.

The receipt of the test report may please be acknowledged.

Thanking you,

Yours faithfully,


(K.MALLIKARJUNAPPA)
Joint Director

Encl.: Test report

CENTRAL POWER RESEARCH INSTITUTE



CPRI

TEST REPORT

Test Report Number : DCCD - 14620 Dated : 06.07.2015

Name & Address of the Customer : M/s. MINCHU,
No.149, 4th Floor, 36th Cross, 7th Main
5th Block, Jayanagar
Bangalore- 560 041
Ref. No. Customer request Form dated 03.06.2015

Name and Address of the Manufacturer : M/s. MINCHU,
No.149, 4th Floor, 36th Cross, 7th Main
5th Block, Jayanagar
Bangalore- 560 041

Particulars of sample tested : ELECTRONIC INDUCTION TESTER FITTED INSIDE AN HDPE SAFETY HELMET.

Condition of Sample on receipt : Good
Type : Nil
Designation : ELECTRONIC INDUCTION TESTER
Description/Name plate details : ELECTRONIC INDUCTION TESTER FITTED INSIDE AN HDPE SAFETY HELMET.
Sl.No. MINCHU-HELMET-01
Rating : 110V ac to 11kV ac

Serial Number : MINCHU-HELMET-01
Number of samples tested : One
Date(s) of Test(s) : 06.07.2015
CPRI Sample code No(s). : DCCDCAPMSC15S0069

Particulars of tests conducted : 1. Measurement of distance from the bare energized metal plate from where the electronic induction tester starts sensing the voltage by way of audible sound of the buzzer. This distance (d) is measured for 110Vac, 220Vac, 440Vac & 11kVac from bare energized metal plate to flat front surface of the helmet
2. Sound Level (dB level) measurement of the buzzer in Electronic Induction Tester at 440V ac from the outer surface of the helmet on the buzzer placement side.

Test in accordance with Standard/Specification : As per Customer's requirement
Sampling Plan : Not Applicable

Test in accordance with Standard/Specification
Sampling Plan

(T.BHAVANI SHANKER)



(K.MALLIKARJUNAPPA)



CPRI

TEST REPORT

Test Report Number: DCCD-14620

Date: 06.07.2015

Customer's Requirement : 1. To measure the distance from the bare energized metal plate from where the electronic induction tester starts sensing the voltage by way of audible sound of the buzzer. This distance is to be measured for 110Vac, 220Vac, 440Vac & 11kVac from bare energized metal plate to flat front surface of the helmet
2. To measure sound Level (dB level) measurement of the buzzer in Electronic Induction Tester at 440V ac from the outer surface of the helmet on the buzzer placement side.

Deviations if any : Nil

Name of the witnessing persons : Mr. Ravi kumar, Mr. Pranav C.M and Mr. V. Ravi Shankar

Customers representative : M/s MINCHU

Other than customer's representatives : None

Test subcontracted with address of the laboratory : None;

Documents constituting this report (in words):

Number of sheets : Four

Number of oscillogram/s : Nil

Number of graphs : Nil

Number of photos : Nil

Number of Test circuit Diagrams : Nil

Number of Drawings : TWO

1) MINCHU-01-EIT-2015 Rev.00 Sheet 1 of 2 date: 27.06.2015 - Schematic illustration of Electronic Induction Tester.

2) MINCHU-01-EIT-HELMET-2015 Rev.00 Sheet 2 of 2 date: 27.06.2015 - Schematic illustration of Electronic Induction Tester.

TEST RESULTS

Description of the Test sample:

The Electronic Induction Tester fitted inside an HDPE Safety Helmet with its antenna wire running on top side of the helmet, with return wire grounded manually by touching with hand. Voltage will be sensed by way of audible sound by a buzzer which forms a part of the Electronic Induction Tester as shown in enclosed drawings 1) MINCHU-01-EIT-2015 Rev 00 Sheet 1 of 2 Date: 27.06.2015 – Schematic illustration of Electronic Induction Tester and 2) MINCHU-01-EIT-HELMET-2015 Rev.00 Sheet 2 of 2 date 27.06.2015 Schematic illustration of Electronic Induction Tester.

TESTS (AS PER CUSTOMER'S REQUIREMENT:

- 1) Measurement of distance from the bare energized metal plate from where the electronic induction tester starts sensing the voltage by way of audible sound of the buzzer. This distance (d) is measured for 110Vac,220Vac,440Vac & 11kVac from bare energized metal plate to flat front surface of the helmet (As per customers request):

Test results are as follows

Ambient Temperature: 27°C


Sl.No.	Voltage on the bare energized metal plate (Volts ac)	Measured distance between bare energized metal plate and the flat front surface of the helmet (d) (in millimeters)
1.	110	170
2.	220	360
3.	440	1220
4.	11000	2280

- 2) Sound Level (dB level) measurement of the buzzer in Electronic Induction Tester at 440V ac from the outer surface of the helmet on the buzzer placement side. (As per customer's request):

Ambient Temperature: 27°C

Sl No.	Voltage on the bare energized metal plate (Volts ac)	Measured distance between bare energized metal plate and the flat front surface of the helmet (in millimeters)	Measured sound level dB (A)
1.	440	1220	68
2.	440	570	74

Note: Materials used for Helmet and Electronic induction tester not verified.


(T.BHAVANI SHANKER)
TEST ENGINEER

SCHEMATIC ILLUSTRATION OF
ELECTRONIC INDUCTION TESTER
FITTED INSIDE THE HELMET

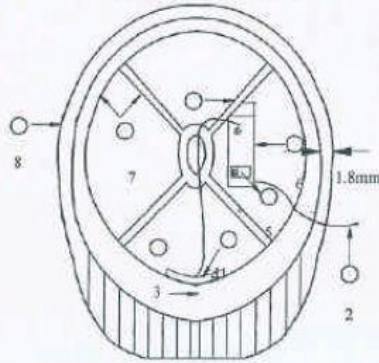
THIS DRAWING PERTAINS
 TO CPRI TEST REPORT
 NO. DCCD - 14620 Date
 06.0

(T. BHAWAN) SHARMA
 TEST ENGINEER

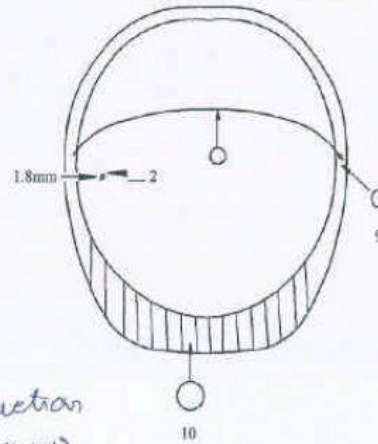
LEGEND

S NO	PARTICULARS
1	Fitting Screw
2	Black Wire (Antenna)
3	Rod Wire
4	Aluminium Foil
5	Switch
6	Electronic Induction Tester (Tester must be placed in such a way that it resides between helmet shell & anti Aluminium Adhesive Tape)
7	Anti Concussion Tape
8	Helmet Shell
9	Through side hole
10	Front Cap

INSIDE VIEW OF THE HELMET



TOP VIEW OF THE HELMET



NOTE: Materials used for Helmet and Electronic Induction Tester not verified
(T. BHAWAN) SHARMA
 DIAGRAM # 2

DIAGRAM # 3

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

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E-mail : erda@erda.org

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TEST REPORT

Sheet 1 of 2

NAME AND ADDRESS OF CUSTOMER

Concord Helmet & Safety Products
Pvt. Ltd.
115/6B, Devarayaneri
Asoor Post, Near Thuvakudi
Trichy - 620 015.
Tamil Nadu

REPORT No.

RP-1415-026688

DATE

12-12-2014

CUSTOMER REF No.

Nil

DATED

03-12-2014

DATE OF SAMPLE
RECEIPT

08-12-2014

DATES OF TESTING

11-12-2014

SAMPLE DESCRIPTION

Helmet - 1no.
Brand : Concord

SAMPLE IDENTIFICATION

ERDA Sample Code No.: ERDA-00068574

Sr.

No. TEST PARTICULARS

TEST SPECIFICATION

1. Electrical Insulation

ANSI/ISEA Z89.1-2009(for method of test)


PREPARED BY

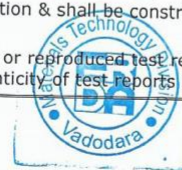

CHECKED BY


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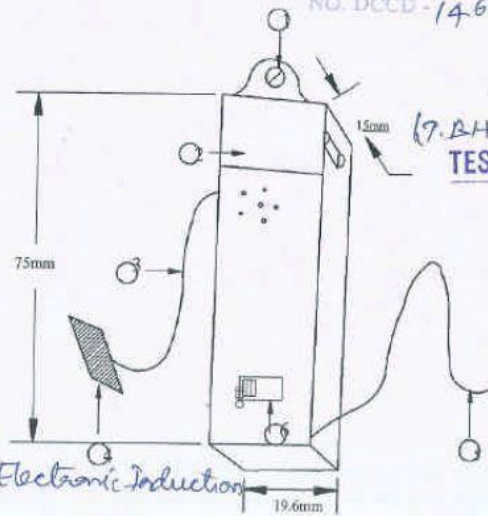
SCHEMATIC ILLUSTRATION OF ELECTRONIC INDUCTION TESTER

ELECTRONIC INDUCTION TESTER

THIS DRAWING PERTAINS TO CPRI TEST REPORT NO. DCCB-14620 Dated 06-07-2015

LEGEND

S NO	PARTICULARS
1	Fixing Screw
2	Black Wire (Antenna)
3	Red Wire
4	Aluminium Foil Adhesive tape
5	Black Wire
6	Switch



(T. BHAVAN) SHANKAR
TEST ENGINEER

Note: Materials used for Helmet and Electronic Induction Tester not verified.
(T. BHAVAN) SHANKAR

DIAGRAM # 1

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TEST REPORT

Sheet 1 of 2

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Concord Helmet & Safety Products
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CUSTOMER REF No.

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DATED

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08-12-2014

DATES OF TESTING

11-12-2014

SAMPLE DESCRIPTION

Helmet - 1no.
Brand : Concord

SAMPLE IDENTIFICATION

ERDA Sample Code No.: ERDA-00068574

Sr.

No. TEST PARTICULARS

TEST SPECIFICATION

1. Electrical Insulation

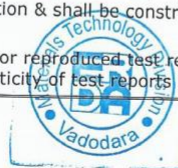
ANSI/ISEA Z89.1-2009(for method of test)

PREPARED BY

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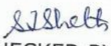
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Sr. No.	Particular of Tests & Cl. No.	Requirements as per specification	Obtained value	Remarks
1.	Electrical Insulation class E testing Cl. No. 9.7.4.2	- The helmet shall withstand 20 kV rms for 3 minutes. - Leakage current shall not exceed 9mA.	- The helmet withstood 20 kV rms for 3 min. - Leakage current measured 2.9mA.	Conforms
NOTE : 1) Only withstand voltage test conducted at the request of customer. 2) Frequency of applied test voltage : 50 Hz.				
PREPARED BY 		CHECKED BY 		



1566940

User guide

Helmet Mounted Induction Sensor

Make sure induction sensor Working before use Working test procedure

- 1) Inside the helmet harness on the induction sensor you will find ON/OFF switch slide the switch to ON position .
- 2) Hold the helmet, touch the aluminium foil in one hand, using other hand, touch the outer reflective tape edge near copper foil on the right side where you find the touch here sticker with thumb impression ,you will hear buzzer sound. The induction sensor is working satisfactorily.
- 3) wear helmet such that the aluminum foil touches forehead , other hand, touch the outer reflective tape edge near copper foil on the right side where you find the touch here sticker with thumb impression ,you will hear buzzer sound, sensor is working satisfactorily.
- 4) After step 1 to 3 if you go near live LT/HT conductor/line wearing the helmet mounted induction sensor, the induction sensor buzzes on detection of current flow .

Safety Keeps Every Body Happy

Switch OFF induction sensor when not in use ,repeat each time working test procedure for use.

OBSERVE ALL SAFETY PRECAUTIONS, GUIDE LINES ,AS PER RULES DURING WORK.

*This product works for A.C. (alternating current)

ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್ ಕಾರ್ಯನಿರ್ವಹಿಸುತ್ತಿರುವುದನ್ನು ಖಾತ್ರಿ ಪಡಿಸಿಕೊಳ್ಳಿ ಕಾರ್ಯನಿರ್ವಹಣೆ ಬಳಕೆ ವಿಧಾನ

- 1) ಶಿರಸ್ತ್ರಾಣದ ಒಳಮೈಯಲ್ಲಿರುವ ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್‌ನಲ್ಲಿ ON/OFF ಸ್ವಿಚ್ ಕಾಣಿಸಿ, ಸ್ವಿಚ್ ಅನ್ನು ON ಮಾಡಿ
- 2) ಶಿರಸ್ತ್ರಾಣದಲ್ಲಿರುವ ಅಲ್ಯುಮೀನಿಯಂ ಪಾಳೆಯನ್ನು ಎಡಬೆರಳಿನಲ್ಲಿ ಸ್ಪರ್ಶಿಸಿ, ಬಲಗೈ ಬೆರಳಿಂದ, ಶಿರಸ್ತ್ರಾಣದ ಬಲತುದಿಯಲ್ಲಿರುವ "TOUCH HERE" ಹೆಚ್ಚೆಚ್ಚಿನ ಅಂಚು ಚೀಟಿಯ ಬಳಿ (ಅಂದರೆ ತಾಮ್ರದ ತುದಿಯನ್ನು) ಸ್ಪರ್ಶಿಸಿ, ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್‌ನಿಂದ ರೈಂಕಾರ ಶಬ್ದ ಬರುತ್ತದೆ, ಇದರ ಅರ್ಥ, ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್ ಕಾರ್ಯನಿರ್ವಹಿಸುತ್ತದೆ.
- 3) ಶಿರಸ್ತ್ರಾಣದಲ್ಲಿರುವ ಅಲ್ಯುಮೀನಿಯಂ ಪಾಳೆ ಹಣೆಗೆ ತಾಕುವಂತೆ ಧರಿಸಿ, ಬಲಗೈ ಬೆರಳನ್ನು "TOUCH HERE" ಹೆಚ್ಚೆಚ್ಚಿನ ಅಂಚು ಚೀಟಿಯ ಬಳಿ ಸ್ಪರ್ಶಿಸಿ, ರೈಂಕಾರ ಶಬ್ದ ಬರುತ್ತದೆ, ಇದರ ಅರ್ಥ ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್ ಕಾರ್ಯನಿರ್ವಹಿಸುತ್ತಿದೆ ಎಂದು ಅರ್ಥ.
- 4) ಮೇಲಿನ 1 ರಿಂದ 3 ಹಂತದ ನಂತರ ನೀವು LT / HT ವಿದ್ಯುತ್ ಚಾಲನೆ ಇದೆಯೋ ಇಲ್ಲವೋ ನೋಡಲು ವಿದ್ಯುತ್ ಚಲಿಸುವ ವಾಹಕದ ಬಳಿ ನಿಂತರೆ, ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್ ರೈಂಕಾರದ ಶಬ್ದವನ್ನು ನೀಡುತ್ತದೆ, ಇದರಿಂದ ವಿದ್ಯುತ್ ಪರಿಮುಖಿತಿದೆ ಎಂದು ತಿಳಿಯುತ್ತದೆ. LT ಗೆ ಸುಮಾರು 1/2ರಿಂದ 1 ಆಡಿ, HT ಗೆ ಸುಮಾರು 5 ಆಡಿ ಅಂತರದ ವಿದ್ಯುತ್ ಪರಿವು ಪತ್ತೆಯಾಗುತ್ತದೆ.

ಸುರಕ್ಷತೆ ಎಲ್ಲರನ್ನೂ ಸಂರಕ್ಷಿಸುತ್ತದೆ.

ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್ ಉಪಯೋಗವಿಲ್ಲದಿದ್ದಾಗ ಶಿರಸ್ತ್ರಾಣದಲ್ಲಿರುವ ಇಂಡಕ್ಷನ್ ಸೆನ್ಸರ್ ಸ್ವಿಚ್‌ನ್ನು OFF ಮಾಡಿ.

ಪ್ರತಿ ಬಾರಿ ಉಪಯೋಗದ ಮೊದಲು ಮೇಲಿನಂತೆ ಪರಿಶೀಲಿಸಿ ಉಪಯೋಗಿಸಿ. ಸುರಕ್ಷತೆ ನಿಯಮಗಳನ್ನು ಮಾರ್ಗಸೂಚಿಯನ್ನು ಕೆಲಸ ಪ್ರಾರಂಭಿಸುವ ಮುನ್ನ ತಪ್ಪದೆ ಪಾಲಿಸಿ.

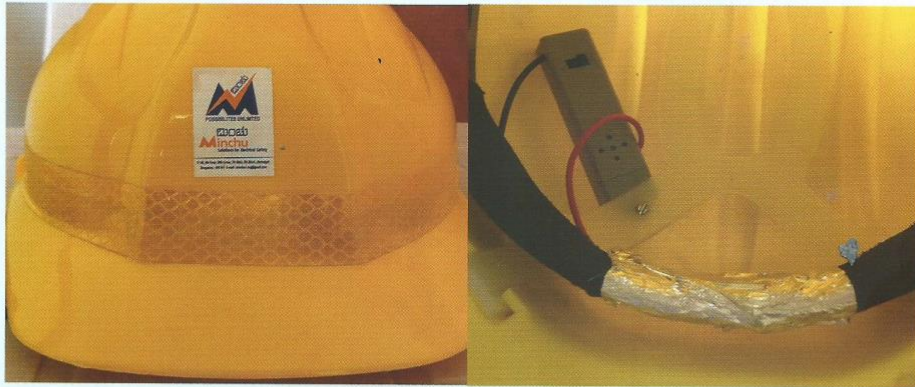
*ಈ ಯಂತ್ರವು A.C. (alternating current) ವಿದ್ಯುತ್‌ಗೆ ಮಾತ್ರ ಉಪಯೋಗಿಸಬಹುದು.



ಮಿಂಚು
Minchu

ABOUT US:- Minchu ,we believe in possibilities unlimited, we are an innovative company aimed at manufacturing next generation safety products in electrical, electronics and industrial engineering to provide electrical safety ,safe, innovative and better new era products which makes life safe, simpler, better. We are into R&D and to be pioneers and leaders in electrical /electronics technology.

PRODUCT PROFILE:- Helmet mounted –high voltage induction sensor a boon to the protection of electrical staff in transmission , distribution companies and industries our product is an innovative product in the electrical safety sector, saving lives and avoiding electrical related accidents.



- *The product can sense electromagnetic field and detect current, it notifies by buzzer sound on detection.
- *It can sense live voltages from 220v-11kv, range without contact and from a safe distance of 1 feet for 220v and 5-6 feet for 11 kv.
- *The product can be easily mounted on any safety helmet .
- *The product is available in two variants :
1) mounted in HDPE helmet 2) mounted in FRP helmet
- *The product can be mounted inside or outside along border as per requirements
- *The product uses LR44 button cell battery which can be replaced
- *The product has been successfully tested and certified at CPRI. Our products are used in bangalore electricity supply company limited.
- *The product has reflective tape applied outside providing easy visibility during night or low light conditions.