

ELSAFE INDIA

Leading The Way To Safety
Cochin - Chennai - Bangaluru - Hyderabad - UAE

www.elsafeindia.com, info@elsafeindia.com
Ph No: 0484-2575199-210, Fax: 0484-2575211

ALL INDIA TOLL FREE
NUMBER
1800-121-9092



QUOTATION

Project Name: LSG ESE PKG
Quote #: 1712121LSGESEQ
Company: Residential-Total Protection



These are Residential Packages for Houses at Kerala State only, ALL KERALA FREE DELIVERY, NO HIDDEN CHARGES, FIXED RATE

Revision:
Terms: ***
Ship via: Land Cargo
FOB: Ex-Factory
Weight: *** As applicable

LSG Protect-TGD30

Supply of External Lightning Protection System LSG PROTECT – Thunderguard® ESEs are made of non-corrosive materials, utilize advance and sustainable technologies, maintain a 15 Yrs warranty, are independently tested certified to NFC 17102 and UNE 21186 standards. Level IV 75 mtrs by capturing dangerous lightning discharges and safely channelling it to earth. All mouting mast connected with FRP mast for Protection of Side Flash Lightning Current and Test link Joint Kit IP 55/65 weather proof enclosure for testing the earth pit. Insulation material should be used to electrically isolate the panels, The lightning air terminal shall be maintenance free type & frequent testing should not be necessary for ensuring the working of it. The central finial shall be elevated above the spheroid and it should be sharp pointed & made-up of stainless steel material for long and reliable operations. An air gap shall be provided between the individual electrically isolated 4 panels and the finial tip of the central rod.

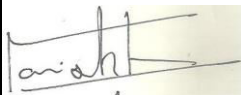
Number	Item	Description	Qty.	Unit	Unit Cost	Total Cost
		Lightning Protection System			(in INR)	(in INR)
1	ThunderGuard 30	LSG ThunderGuard 30 Lightning Arrester with SS ADAPTOR	1	No	INR 39,000	INR 39,000
2	Earthing	Maintenance free Earthing For Lightning Arrestor: Using 2 no's of 2 Mtr long / 250 micron, 14.2mm Dia DOLPHIN UL Listed Copper bonded Steel Rod & TEKSO ELECTRON Fill , a low resistivity ,RoHS certified & Maintenance free Grounding Enhancement backfill Compound Model:-TEKSO ELECTRON FILL(8Kg Bag 4No's) with tester clamp fixings	1	Set	INR 7,000	INR 7,000
3	Elevation Mast	Specially designed 3 mtrs GI mast Setting , and 1 mtr FRP top section insulation mast; Roof top/Tower side mounting arrangement & fixing accessories (anchoring rope & anchoring plate, Base -for roof top installation). The mast coated with paint for additional protection,Cable connector Adaptor	1	Set	INR 8,000	INR 8,000
4	Down Conductor	50 Sq MM V Guard HRFr Insulated Copper Cable with tester cables for ESE Lightnig Arrester tester	20	Mtrs	INR 550	INR 11,000
5	SPD	Imported Class B+C Combicontrol LSG/Phoenix	1	No	Complementary	Complementary
6	Installation	Installation of ESE Lightning Protection System, tester system, SPDs with Down conductor routing from the LA terminal to the earth pit. Earth termination, fixing & Backfilling	1	Job	INR 4,900	INR 4,900
Quotation Valid For 20 days			GRAND TOTAL			INR 69,900.00

Terms & Conditions

- 1 Price Landed at site
- 2 Customers Scope: Material safety will be customer scope after delivery
- 3 Approvals /Permission of work/storage of tools & equipment/safety etc : At customers scope

Thank you,

Best Regards



ELSAFE PROTECTION & CONTROL SYSTEMS

**Ph No 0484-2575199, Toll free
1800-121-9092**



Doc. No. : ES19200407

Rev. No. :

Rev. Date :

Sales and Service Provider of ALLTEC USA / LSG FRANCE/ TEKSAI-INDIA, Lightning Arresters, Surge Arresters, Maintenance free Earthing

THUNDER **GUARD®**



**TAKE
THE
EXTRA
STEP
TO
SAFETY**





ESE LIGHTNING ARRESTERS **THUNDERGUARD**

ThunderGuard series ESE Lightning Arresters Developed and designed in our highly advanced labs is specially designed with unique design philosophy as per NFC-French Standard.

Thunderguard adopts synthesis techniques of leader discharge, impedance to limit current, air-gap discharge etc to produce leader channel in advance, improve lightning effect, reduce discharge voltage and change the discharge process of lightning current.

Thus it broaden the lightning wave, flatten the leading wave, decrease the amplitude and enlarge the scope of protection avoiding side striking and shielding failure then finally actively suppress the damage of Ground Potential Counter attack. Therefore it is an ideal device to prevent direct lightning.

ThunderGuard Series ESE lightning Arresters come in with widest Protection coverage area. Find Our protection radius coverage table for reference.



LSG THUNDERGUARD PROTECTION RADIUS			
	H(m)	ThunderGuard 30	ThunderGuard 60
LEVEL 1	2	20	32
	3	30	48
	4	40	65
	5	50	79
	6	50	79
	8	51	79
LEVEL 2	10	51	81
	2	23	38
	3	35	55
	4	47	74
	5	58	89
	6	58	90
LEVEL 3	8	59	92
	10	60	92
	2	27	42
	3	40	62
	4	53	82
	5	66	99
LEVEL 4	6	66	99
	8	68	101
	10	69	101
	2	30	45
	3	45	65
	4	59	87
LEVEL 5	5	74	108
	6	74	108
	8	76	110
	10	77	111



ESE LIGHTNING ARRESTERS **THUNDER GUARD**

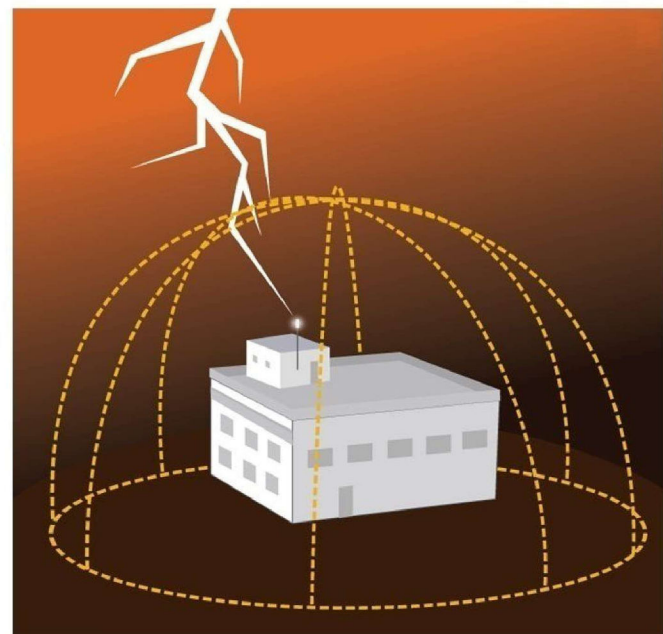
Product Structure:

- Central bar
- Reflector
- Trigger gear
- Exciter
- Dead plate of exciter
- Trigger gear, reflector and central bar all are insulating
- Reflector and central bar show good electrical connection to the earth
- The base of exciter is made up of synthetic resin thus applicable to any corrosion environment



Advantages:

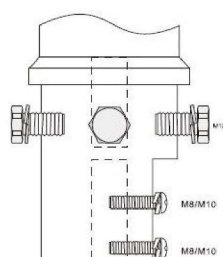
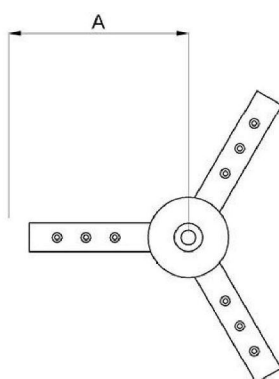
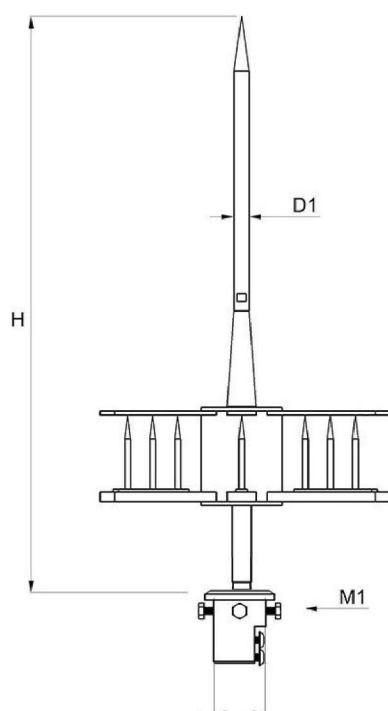
- Non-electronic type, long life.
- Guaranteed electrical continuity and sustainability after repeated lightning strike.
- High radius of protection for user selection.
- Non-electrical system, will not be effected by surge impact.
- Only self-activated during lightning strike and initiative intervene the lightning protection system.



ESE LIGHTNING ARRESTERS

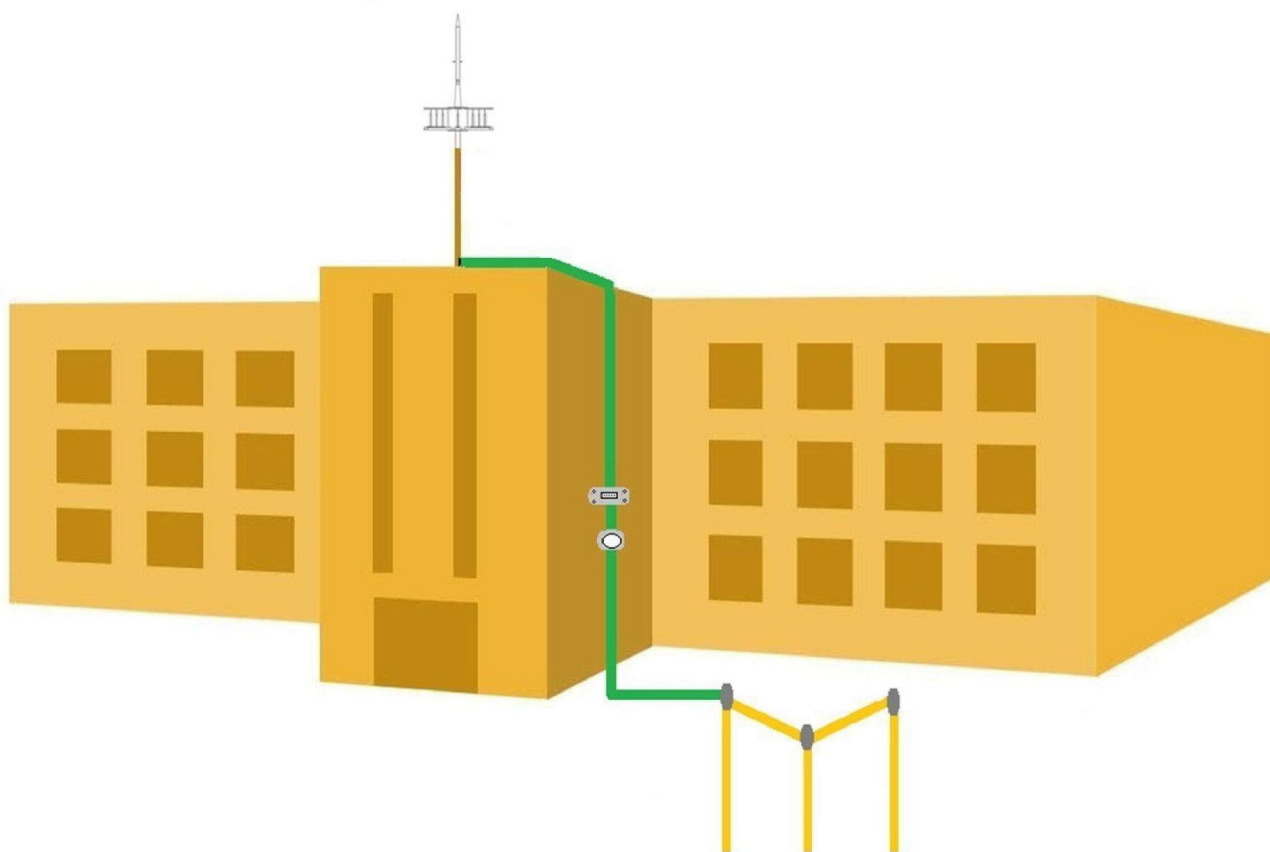
THUNDERGUARD

Thunderguard 30



LSG TGD30[®] protection (UNE 21.186:2011, NFC 17.102:2011 and NP 4426:2013)

Content No	Material	Hight (mm)	Dimension (mm)	Weight (mm)
232111	Stainless Steel	650	18	3700



LSG PROTECT

No.1 avenue de Luxembourg, Europa tower, 94320 Thiais, France
www.lsgprotect.com, cs@lsgprotect.com
Contact No 0033-7-61-52-75-00

CPRI

TEST REPORT



Central Power Research Institute

**(A Govt. of India Society,)
P.B. No. 8066, Sadashivanagar, P.O.
Prof. Sir. C.V. Raman Road,
Bangalore - 560 080**



केन्द्रीय विद्युत अनुसंधान संस्थान

(भारत सरकार की सोसाइटी, विद्युता मंत्रालय)

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

CENTRAL POWER RESEARCH INSTITUTE

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

Prof. Sir C.V. Raman Road, Sadashivanagar Post Office, P.B. No. 8066, Bengaluru - 560 080 India

वेब साइट / website : <http://www.cpri.in>

सं./No. CPRI BLRHVDMISC19T0151

दिनांक/Date: 07-03-2019

सेवामें /To

म/एस. एनरटेक पावर सॉल्यूशन,
15/513 (59), पहली मंजिल, तीन सितारा प्लाजा,
स्टेडियम बायपास, पलक्कड़, केरल- 678013.

M/s. Enertek Power Solution,
No 15/513(59), 1st Floor, Three Star Plaza,
Stadium Bypass, Palakkad, Kerala- 678013.

विषय/ Sub:-परीक्षणरिपोर्ट/ Test Report

महोदय /Dear Sir(s),

आपके दिनांक 18-12-2018 के अनुरोध पर रिपोर्ट सं CPRI BLRHVDMISC19T0151 दिनांक 07-03-2019 इसके साथ संलग्न है।

With Reference to your request dated 18-12-2018 we are enclosing herewith report No./s CPRI BLRHVDMISC19T0151 dated 07-03-2019 कृपया पावती भेजे / kindly acknowledge the receipt of the same.

कृपया ध्यान दें कि संलग्न परीक्षण रिपोर्ट में विषमताएँ/विसंगतियाँ, यदि कोई पाई गई तो इस पत्र की प्राप्ति के 45 दिनों के अंदर सीपीआरआई के ध्यान में लाएँ।

Please note that anomalies/discrepancies in the test report enclosed, if any, shall be brought to the notice of CPRI within 45 days of receipt of this letter.

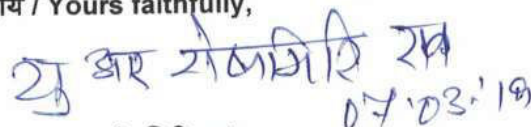
साथ ही, कृपया ध्यान दें कि इस पत्र के जारी दिनांक से 15 दिनों के भीतर परीक्षण के लिए लाए गए नमूने तथा उनके साथ लाई गई अतिरिक्त सामग्री उच्च वोल्टता प्रयोगशाला के परिसर से हटा दी जाएँगी। उपरोक्त अवधि के बाद किसी भी दावे पर विचार नहीं किया जाएगा तथा कुछ और दिनों के लिए नमूनों को रखने के लिए इस अवधि के अंदर कोई लिखित अनुरोध की अनुपलब्धि पर सीपीआरआई के मानकों के अनुसार नमूनों का निपटारा किया जाएगा।

Also, please note that the samples and any additional material brought along with them for the testing shall be removed from the High Voltage Laboratory premises within 15 days from the date of issue of this letter. No claims will be entertained after the above period and samples will be disposed off as per CPRI norms, unless written request is received within this period for retaining the samples for a few more days.

भविष्य में भी हमारी सर्वोत्तम सेवाओं का आश्वासन तथा धन्यवाद के साथ।

Thanking you and assuring you of the best of our services in the future also.

भवदीय / Yours faithfully,


(यू.आर.शेषगिरिराव)

U. R. SHESHAGIRI RAO

संयुक्त निदेशक और एचओडी / JOINT DIRECTOR & HOD

उच्चवोल्टताभाग / HIGH VOLTAGE DIVISION

CENTRAL POWER RESEARCH INSTITUTE
(MEMBER STL)



TEST REPORT

Test Report Number : CPRIBLRHVDMISC19T0151 **Dated:** 07-03-2019

Name & Address of the customer : Enertek Power Solution,
No 15/513(59), 1st Floor, Three Star Plaza,
Stadium Bypass, Palakkad, Kerala-678013.
Ref: e-mail **Dated:** 18-12-2018

Name & Address of the Manufacturer : LSG Protect India,
#204, Lake view complex Nallasopara,
Palghar, Mumbai, Maharashtra 401209.

Particulars of Samples tested
Condition of the sample on Receipt : New.

Type : Thunderguard 60 ESE Lightning Arrester.
Description : Nil.
Serial Number : TGD 60/001.
Number of samples tested : One.
Date(s) of Test(s) : 18-12-2018 & 20-02-2019.
CPRI Sample Code Number : HVD18S0243.

Particulars of tests conducted : **Lightning Impulse Current withstand Test 8/20 μ s (60kA).**

Test in accordance with standard/ Specification : As per Customer's Request.
Sampling Plan : Not Applicable
Customer's requirement : As per the Test Procedure declared by the Customer (See Page 2).

Deviations if any : Nil.

Name of the witnessing persons
Customer's representatives : Shri. Sreenath .S.
Shri. Manish. J.

Other than customer's representatives : None.
Test subcontracted with Address of the laboratory : None.

Documents constituting this report (in words)
Number of sheets : Five.
Number of oscillogram/s : Six (Plus Two Sheets of Oscillograms).
Number of graphs : Nil.
Number of photo/s : Nil.
Number of Test Circuit Diagrams : Nil.
Number of drawings : One (1812001 REV 0).


(PRABHAKAR C.)
Test Engineer




(U. R. SHESHAGIRI RAO)
Joint Director/HOD
Approved By

CENTRAL POWER RESEARCH INSTITUTE
(MEMBER STL)

TEST REPORT



Test Report No. CPRIBLRHVDMISC19T0151

Dated: 07-03-2019

TEST PROCEDURE

Three positive & Three negative lightning impulse current shots of 8/20 μ s wave shape with a magnitude of 60kA (less than one pulse for three minutes) shall be applied through the input. The Sample should be checked for any physical deformation or discoloration after testing. The test was conducted as per the above procedure and the results are tabulated below.

Lightning Impulse Current Withstand Test:

Sl. No.	Polarity	Current Applied (kA)	Osc. No
1	+Ve	61.0	58400
2		59.0	58401
3		59.3	58402
4	- Ve	60.5	58403
5		59.4	58404
6		60.3	58405

(PRABHAKAR C.)
Test Engineer

CENTRAL POWER RESEARCH INSTITUTE
(MEMBER STL)

TEST REPORT



Test Report No. CPRIBLRHVDMISC19T0151

Dated: 07-03-2019

Photo 1. Before the Test

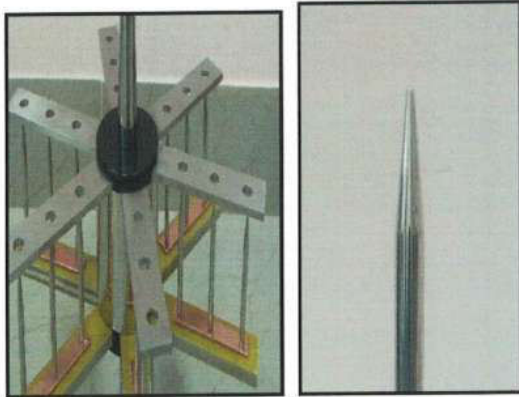


Photo 2. After the Test

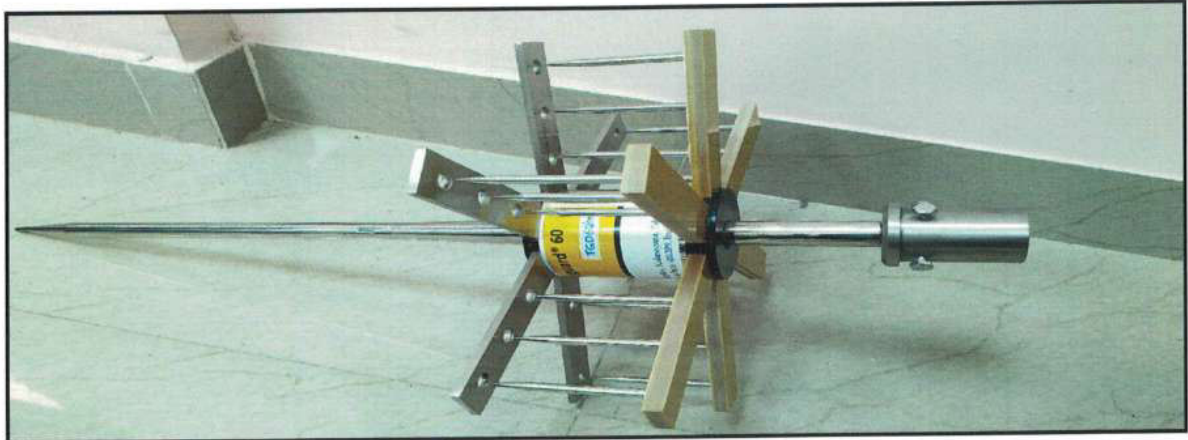
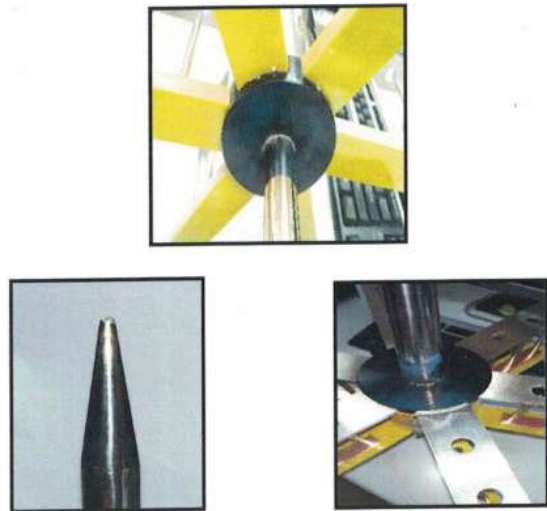


Photo 3.

(PRABHAKAR C.)
Test Engineer

CENTRAL POWER RESEARCH INSTITUTE
(MEMBER STL)

TEST REPORT



Test Report No. CPRIBLRHVDMISC19T0151

Dated: 07-03-2019

Observations: Sample is subjected to the required current impulses.

No physical deformation observed.

Laboratory Atmospheric conditions during the above tests.

Temperature in Degree Celsius			Atmospheric Pressure in mm of Hg.
Date	Dry Bulb	Wet Bulb	
18-12-2018	23.5	19.0	684.5
20-02-2019	28.0	22.0	683.5

(PRABHAKAR C.)
Test Engineer

CENTRAL POWER RESEARCH INSTITUTE
(MEMBER STL)

TEST REPORT



Test Report No. CPRI BLRHVDMISC19T0151

Dated: 07-03-2019

NOTE:

- a) The Test results relate only to the item(s) tested.
- b) Publication or reproduction of the test report /Certificate in any form other than by complete set of the whole test report /Certificate and in the language written is not permitted without the written consent of CPRI.
- c) Any Corrections/erasure invalidates the test Report/Certificate
- d) Any anomaly/discrepancy in the test report /Certificate should be brought to the notice of CPRI within 45 days from the date of issue.
- e) The verification of the sample drawings by CPRI is limited to dimensional checks only wherever possible.

(PRABHAKAR C.)
Test Engineer

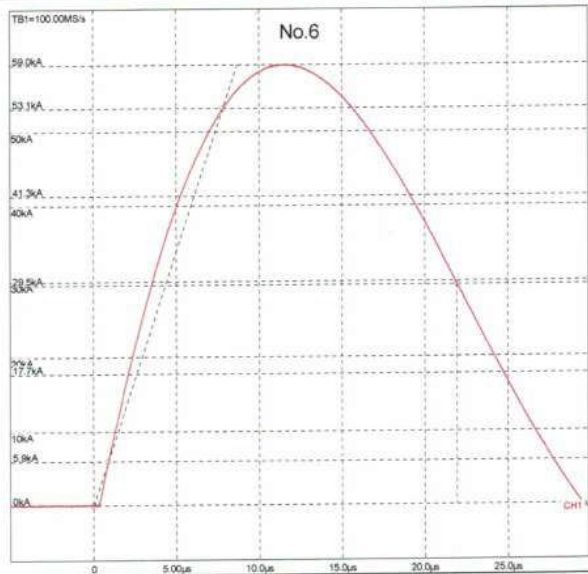


Lightning Impulse Current Withstand Test – Positive polarity



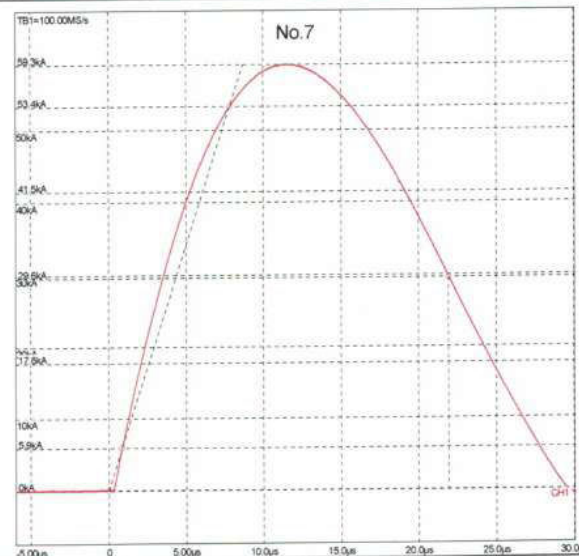
No.: 58400
CH1 No. 58400
Eval.: IC
Ip= 61kA
T1= 8.66μs
T2= 21.9μs
RESULTS
Q= 0.9872C

Shot No. 1



No.: 58401
CH1 No. 58401
Eval.: IC
Ip= 59kA
T1= 8.67μs
T2= 21.9μs
RESULTS
Q= 0.9582C

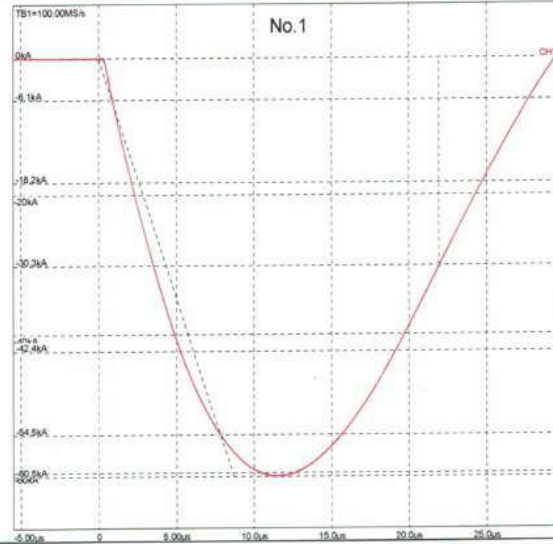
Shot No. 2



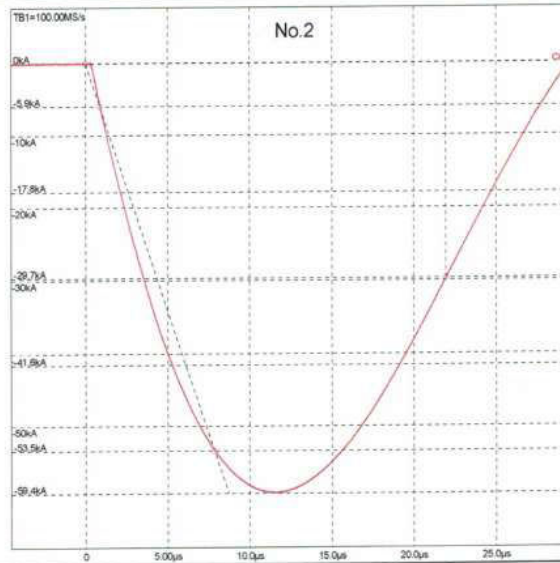
No.: 58402
CH1 No. 58402
Eval.: IC
Ip= 59.3kA
T1= 8.68μs
T2= 21.9μs
RESULTS
Q= 0.9611C

Shot No. 3

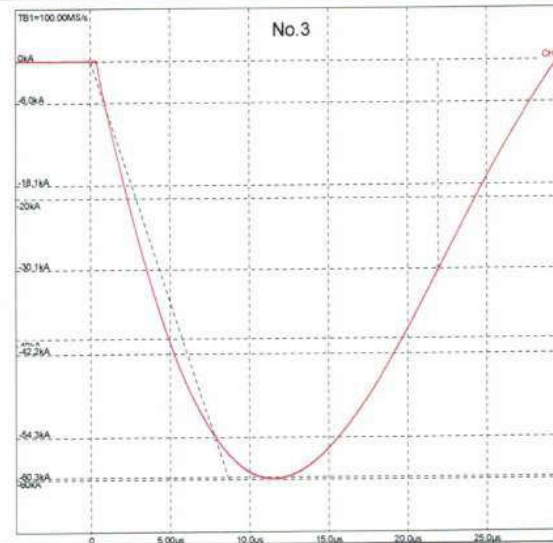
Prabha

**CPRI****Lightning Impulse Current Withstand Test – Negative polarity]**

No.: 58403
 CH1 No. 58403
 Eval.: IC
 Ip= -50.5kA
 T1= 8.68μs
 T2= 21.9μs
RESULTS
 Q= -0.9948C

Shot No. 1

No.: 58404
 CH1 No. 58404
 Eval.: IC
 Ip= -59.4kA
 T1= 8.7μs
 T2= 22μs
RESULTS
 Q= -0.9785C

Shot No. 2

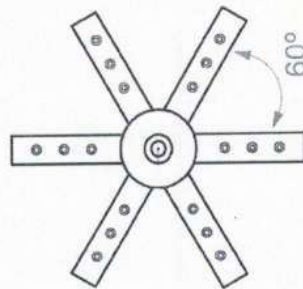
No.: 58405
 CH1 No. 58405
 Eval.: IC
 Ip= -60.3kA
 T1= 8.69μs
 T2= 22μs
RESULTS
 Q= -0.9902C

Shot No. 3

Model: THUNDERGUARD® 60

1. MATERIAL: Stainless steel-302
2. PRODUCT : Lightning Arrester

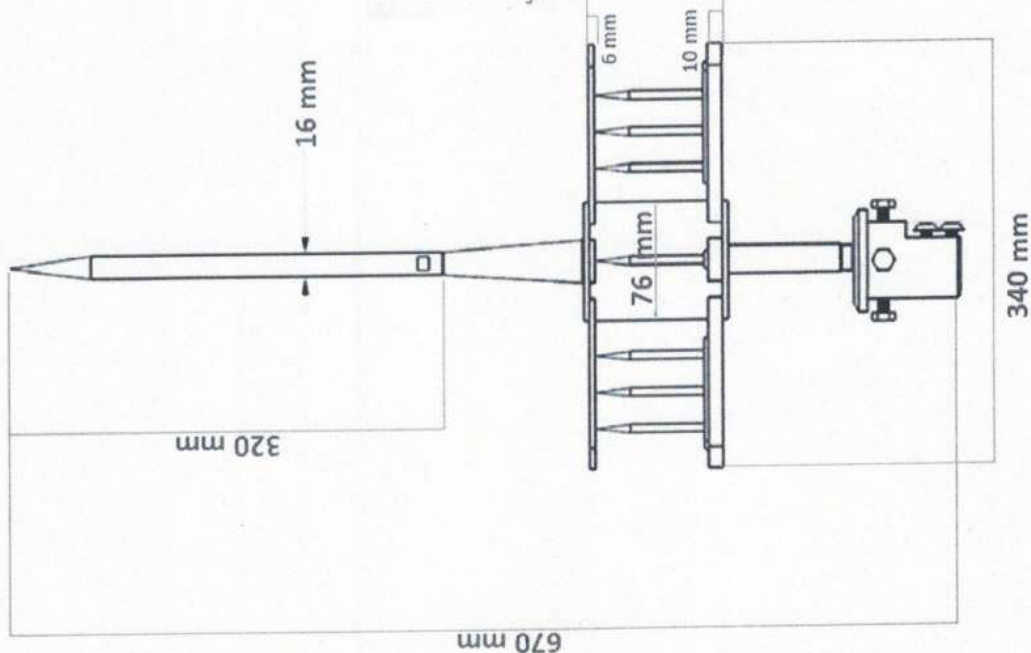
इस रेखाचित्र परीक्षण दस्तावेज
सं. सीआईआईएलआरएचवी.....से संबंधित है।
THIS DRAWING PERTAINS TO TEST REPORT
No. CPRI/BLRHV/PMS/CI9701/51.....
Dated.....07.03.2019.....



[Signature]

संयुक्त निदेशक
Joint Director
उच्च वोल्टेज प्रभाग
High Voltage Division
केन्द्रीय विद्युत अनुसंधान संस्थान
Central Power Research Institute
पो. बा. सं. 8066
P.B. No. 8066
बेगलूर - 560 080
Bangalore-560 080

“यस विन को मायकाकन मयनगु”
आमापां को वीर को सीमित
“ATTESTATION OF THIS DRAWING IS
LIMITED TO THE CHECKING OF
IMPORTANT DIMENSIONS ONLY”



Material: SEE NOTES	This drawing and any information or data contained herein are the confidential and copyright property of LSG PROTECT INDIA and MUST NOT BE DISCLOSED, COPIED, LOANED in whole or part without written permission.	Description: THUNDERGUARD® 60 Lightning rod with ESE (Early Streamer Emission) system
Product: SEE NOTES	Drawn by: MANISH SINGH	Drawn Date: 18/12/2018
Height (H) 670 mm Width 340 mm	Checked/Approved by: KRISHNAKUMAR	Checked/Approved Date: 18/12/2018
Drawing Scale: 1:1	Document Type: Company Confidential	Part Number: 1
Approx. Weight: 5.20 KG	Legal Owner: LSG PROTECT INDIA	Drawing Number: 1812001
Projection Method: Sheet Size:	204, Lake View Complex, Nallasopara, Palghar, Mumbai	Revision: 1 of 1

Dimensional Tolerance:- +/- 5%



ACCREDIUM CERTIFICATIONS

ASSESSMENT SERVICES INTERNATIONAL



The American National Standards Institute (ANSI) supports its members and constituents to strengthen the U.S. marketplace position in the global economy while helping to assure the safety and health of consumers and the protection of the environment.

Certificate of Compliance

Appendix-I to Certificate No: AC1599

This Appendix shall be an integral part of the Certificate. All expressions and terms defined or used in the Certificate shall have the same meaning in this Addendum, unless the context clearly requires otherwise.

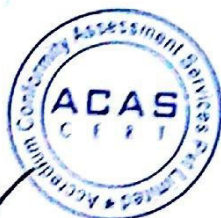
Manufacturer : LSG PROTECT
Brand Name : TGD
Product Group : LIGHTNING PROTECTION SYSTEM, SURGE PROTECTION-LOW, MEDIUM & HIGH VOLTAGE DEVICES.

This certificate referred to above covers the following products:

- TGD 20/40/60
- EPB SERIES
- LSC SERIES
- LSG - LOW VOLTAGE DIN RAIL (AC SERIES)
- LSG - LOW VOLTAGE DIN RAIL (DC SERIES)
- LSG - LOW VOLTAGE WALL MOUNT (AC SERIES)
- LSG - LOW VOLTAGE WALL MOUNT (DC SERIES)
- LSG - MEDIUM VOLTAGE SERIES
- LSG - DATA LINE SERIES

The CE mark as shown above can be used, under the responsibility of the manufacturer, after completion of an EC declaration of conformity & Compliance with all relevant EC Directives. The statement is based on a single evaluation of one sample of above mentioned product. It does not imply an assessment of the whole production.

This certificate is issued under the condition that the quality system maintained in the manufacture of above referenced Models/Products & it remains valid until the manufacturing conditions or the quality systems are changed is subject to continuous surveillance according to the CE Guidelines further. Certificate validity is conditioned by positive results of surveillance audits.



[Signature]
Authorised Signatory

This is an Accredited Certificate Authorized for issue by the Global Accrediting of Certification Bodies Europe Limited in accordance with "ISO17021 Conformity Assessment Requirement for Bodies provides certification of Management Systems. Certificate holders are listed in the Register of www.gacbe.eu & www.accert.com

Such Products, Processes or Services shall be manufactured or offered at or from only the addresses given above. This Certificate is granted subject to the organization making complete declaration of conformity with the conditions within which it is issued and to the fact that the certificate is valid only for the products and services for which it is issued.

This certificate is not intended to be used for accreditation, or other than approved purposes. Certificate holders must not use the word "certified" or "certification" in their name or logo, or in any other way, without the express written permission of Accredium Certifications.

This certificate is a non-permanent one. It shall be valid for one year. It shall be renewed only if the organization has been found to be in conformity with the requirements of the standard for which it is issued.



Test Certificate

Test report No. 7/1-3 from 07.01.2014

Applicant LSG PROTECT

Address No.1 Avenue de Luxembourg, Europa Tower, 94320
Thiais, France

Product EARLY STREAMER EMISSION TERMINAL

M/N ThunderGuard

TGD

Applied Standards: NF C 17-102-1995 (Appendix C)

Brand Name ThunderGuard

The products have been tested by us in conformity with a procedure required by NF C 17-102-1995 (Appendix C). The ESE Terminal TGD Series confirm such resultates:

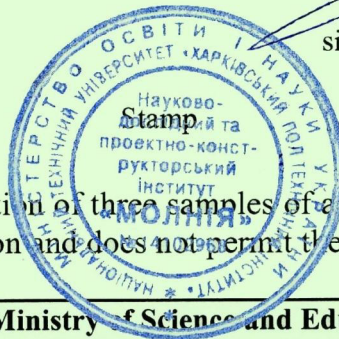
ESE Type	Average time-to-breakdown for the ESE arrester, T_{ESE} , μs	Average time-to-breakdown for the reference arrester FLR, T_{FLR} , μs	Difference between the average times $T_{FLR} - T_{ESE}$, μs	Triggering advance of the ESE, μs
LSG TGD 20	571,1	631,8	60,7	60,0
LSG TGD 40	589,9		41,9	41,0
LSG TGD 60	609,7		22,1	22,0

Note: Uncertainty associated to results $\pm 5 \mu s$

**Director R&D Institute “Molniya”,
Professor**

V. Kravchenk

signature



The statement is based on an evaluation of three samples of above mentioned products. It does not imply an assessment of the whole production and does not permit the use of the Test laboratory logo.



Ministry of Science and Education of Ukraine
National Technical University “Kharkiv Polytechnic Institute”
Research & Design Institute “Molniya”
47, Shevchenko Street, Krarkiv, 61013, Ukraine
Phone/Fax: +38 057 7076868; <http://www.kpi.kharkov.ua>



FORM NO : NTH/CHN/F5

347218

भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.)
NATIONAL TEST HOUSE (SR)

तरमणी, चेन्नई - 600 113. Taramani, Chennai - 600 113.
Phone : 22432374, 22431157 Fax : 22433158 email : nthsr@tn.nic.in

परीक्षण प्रमाण पत्र

TEST CERTIFICATE

INTERIM/FINAL REPORT

परीक्षण प्रमाण पत्र नं
Test Certificate No
NTH(SR)/EL(C)/2014/00176A

जारी होने की तिथि
Date of Issue
23/04/2014

कोड नं
Code No
1396938243840

पृष्ठ
Page
1

पृष्ठों की संख्या
No of Pages
2

जिसे जारी करना है
Issued To

TEKSAI POWER SECURE SOLUTION PVT.LTD.

पता
Address

3/860, BLUE STAR INDUSTRIES COMPOUND,
PUDUSSERY, KANJIKODE, PALLAKKAD, KERALA-678623

ग्राहक का सन्दर्भ सं एवं दिनांक
Customer's Ref. No.

TPSS/2014

Date: 25/01/2014

पंजिका सं एवं दिनांक
Register No & Date

00176/NTH(SR)/EL(C)/08/04/2014

परीक्षण सामग्री का विवरण
Description of Test Item

Earthing material

परीक्षण सामग्री का पहचान
Identification of Test Item

Printing marking on the bag: "Teksai-Ultra"

नमूना का विशिष्टि (यदि हों)
Product Specification (if any)

Electrical Resistivity test as per customer's specification

नमूना प्राप्ति की तिथि
Date of Receipt of the Test Item

08/04/2014

कार्य सम्पादन की तिथि
Date(s) of Performance of Tests

From: 08/04/2014 To: 23/04/2014

व्यावहृत प्रणाली का पहचान
Method(s) used for Test

Electrical Resistivity test as per customer's specification

नमूना प्रक्रिया वहाँ प्रासंगिक हों
Sampling Procedure where relevant

NA

Tested By

N. Joseph Kalaiselvan
Natarajan Joseph kalaiselvan

SO Electrical

Checked By

K. Jeyaraj
K. Jeyaraj

SO Electrical

Approved By

S.B. Nanda Kumar
S.B. Nanda Kumar

Scientist-SC(Electrical)

**ARBRO™**

PHARMACEUTICALS LIMITED

(ANALYTICAL DIVISION)

ISO 9001 : 2008 Certified

Govt. Approved Test House

4/9, Kirti Nagar Industrial Area, New Delhi-110 015

Tele : 011-45754575 Fax : 011-45754545

e-mail : arbrolab@arbropharma.com, Website : www.arbropharmaindia.com

CERTIFICATE OF ANALYSIS

P



Sample : **EARTHING BACKFILL COMPOUND** Report No. : NR-11060906
Supplied By : N.S. Received On : 09/06/2011
Submitted By : GENIUS PROTECTION SYSTEM. (P) LTD. Mfg.Lic.No. : N.S.
Address : 248A, RATI COMPLEX, RAMA MKT., MUNIRKA, N DELHI. Ref. No. : N.S.
Batch No. Mfg. Date Expiry Date Batch Size Sample Qty
N.S. N.S. N.S. N.S. 100GM.

RESULTS OF ANALYSIS

Date of start of analysis 10-06-11 Date of Completion of analysis 13-06-11.

Description :- Black powder.

<Sl.No.>	<Parameters>	<Results>	<Limit (MAX)>
B - TOXIC METALS		:	
1.	Mercury(as Hg)	:- 0.251ppm	1000.0ppm
2.	Lead(as Pb)	:- 8.225ppm	1000.0ppm
3.	Cadmium(as Cd)	:- 0.128ppm	100.0ppm
4.	Hexa-Chromium(as Cr)	:- Less than 1.0ppm	1000.0ppm

Remark :- Observed value for Pb,Cd,Hg & Cr+6 are very low from the max limit,
Hence sample complies the ROHS.

REMARKS : PARTY ASKED FOR THE ABOVE TESTS ONLY

Page 1 of 1

Date : Monday, June 13, 2011

Person In Charge



CPRI

CENTRAL POWER RESEARCH INSTITUTE
(Member of STL)

Sheet 1 of 4

TEST REPORT

Test Report Number	SC11376A	Dated: 29 th August, 2011
Name & Address of the Customer	M/s. Teksai Power Secure Solution Pvt. Ltd., 3/860, Blue Star Industrial Compound, Pudussery, Kanjikodu, Palaghat, Kerala - 678 029.	
Name & Address of the Manufacturer	M/s. Teksai Power Secure Solution Pvt. Ltd., 3/860, Blue Star Industrial Compound, Pudussery, Kanjikodu, Palaghat, Kerala - 678 029.	
Particulars of sample tested	GI Earthing Electrode	
Condition of the sample on Receipt	New	
Type	---	
Designation	Teksai	
Serial Number(s)	---	
Number of samples tested	One	
Date (s) of test (s)	10 th August, 2011	
CPRI sample code no(s)	SC11S1323	
Particulars of tests conducted	Short-Time current	
Test in accordance with	Customer's instruction	
Standard / specification	Not applicable	
Sampling plan	20 kA rms for 1.0 s	
Customer's requirement	---	
Deviations if any	---	
Name of the witnessing persons		
Customer's representative	Mr. Praveen.P.V	
Other than customer's representative	Mr. Jacob George	
Test subcontracted with address of the laboratory	None	
Documents constituting this report (In words)		
Number of sheets	Four	
Number of oscillograms	One	
Number of graphs	Nil	
Number of photos	Two	
Number of test circuit diagrams	One	
Number of drawings	One	


(N. Maheswara Rao)
Test Engineer




(Swaraj Kumar Das)
Joint Director

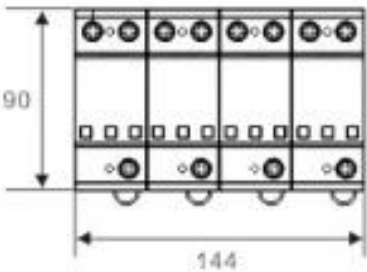
AUTHORISED SIGNATORIES

ALTERNATE CURRENT

LSGBC50



APPLICATIONS



Dimensions

- B+C class Surge Protective Device for AC Power System.
- Sensitive electronic equipment
- Telecom centers
- Automatic control centers
- Intelligent buildings
- Industrial enterprises
- Medical institutes

FEATURES:

- DIN rail mounting for easy installation
- Plug connectors for quick and easy connection or rewiring
- 50kA lightning impulse current Iimp
- Thermal disconnect device
- Status indicators visually verify protection level

TECHNICAL PARAMETER:

Model	LSGBC50
Electrical Parameter	
Nominal working voltage Un	50/60Hz 220/380V,
Max. continuous operating voltage Uc	385V
Nominal discharge current (8/20μs) In	50kA
Lightning impulse current(10/350μs) Iimp	15kA
Protection level @20kA , 8/20μs Up	2000V
Response time tA	100ns
Protection model	L1/L2/L3-N,N-PE
Mechanical characteristics	
Dimension	90 (H)×144 (W)×68(L)mm
Weight per unit	1200g
Mounting	35mm DIN rail
Connecting diameter	≥10mm ²
IP code	IP20
Working conditions	Temperature: -40 to 80℃ , Relative humidity: ≤95%
Approval	FCC, CE, ROHS



PHOENIX CONTACT GERMANY

CTRL 1.5 Surge Arrester - Flashtab FLT 35 CTRL 1.5



Features:-

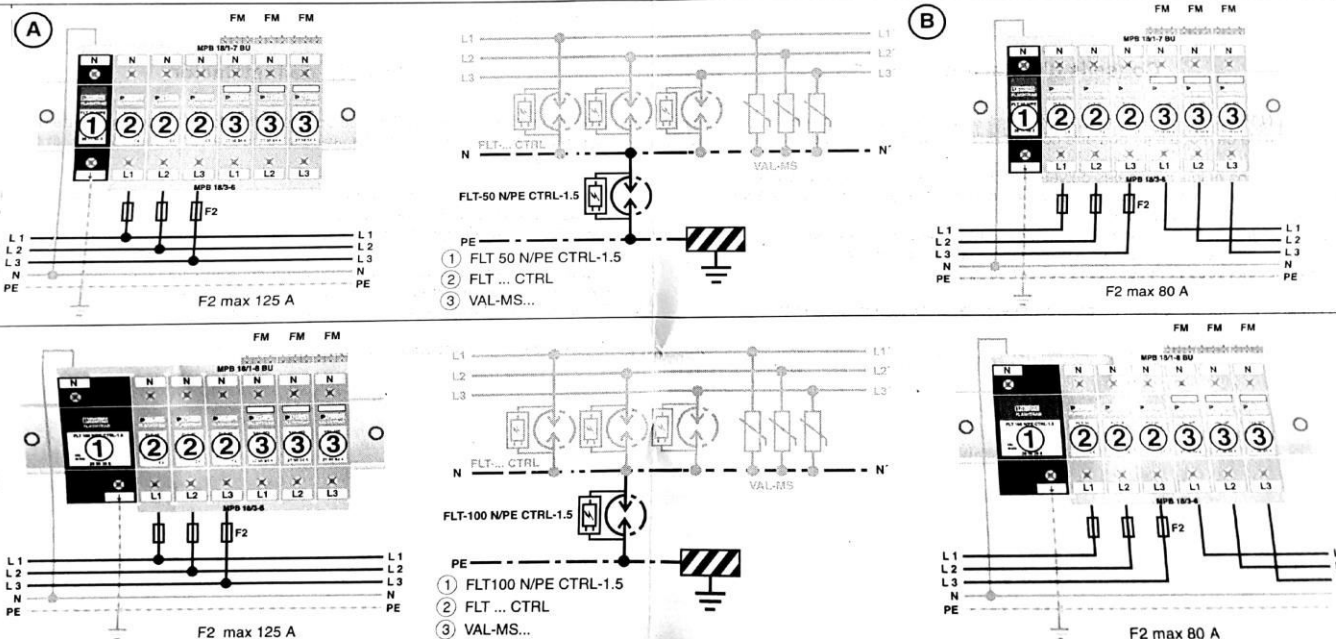
- Lighting current arrester with encapsulated N-PE spark gap and ignition electronics
- 2 Channel Protection level 1.5 KV
- Housing width 40 mm (3 Div)

Specification:-

Un	230 V
Uc	440 V, 260 V
Up	≤1.5 kV
I _{mp}	100 kA
T°C	-40...+85

TN / TT 3+1

DIN V VDE 0100-534:1999-04; IEC 60364-5-534



Confirmation on quality assurance according to nuclear standard KTA 1401

On behalf of the German nuclear power plant operators,
E.ON Kernkraft GmbH as a partner of the VGB PowerTech e.V. working group Assessment of Contractors confirms

VGB
POWERTECH

Phoenix Contact Group

valid for the sites

Phoenix Contact GmbH & Co. KG
Flachsmarktstraße 8, D-32825 Blomberg
Phoenix Contact Electronics GmbH
Dringenauer Straße 30, D-31812 Bad Pyrmont
Phoenix Contact Deutschland GmbH
Flachsmarktstraße 8, D-32825 Blomberg
Phoenix Contact Power Supplies GmbH
Oberes Feld 1, 33106 Paderborn

— **EnBW**

and the scope of supply and services

**Design, manufacturing and sale of electrical and electronic
connecting elements, power supply and surge voltage
protection modules, as well as electronic interface systems**

e-on
Kernkraft

the qualification for system- and product related quality assurance.

The assessment was performed on **April 20th and 21st, 2016** by

EUROCERT®
Gesellschaft zur Qualifizierung von Unternehmen mbH

RWE
The energy to lead

based on the standard **KTA 1401** as well as on the assessment documents of the VGB PowerTech e.V. working group Assessment of Contractors in consideration of product related requirements.

Details of the assessment are given in the report Eurocert 2016/02.

This confirmation is valid until **March 08th, 2019** provided that the conditions on which the assessment was based have not been changed.

Vattenfall Europe
Nuclear Energy

Hanover, April 29th, 2016


VATTENFALL

i.v. J. G. J.

E.ON Kernkraft GmbH

i.v. Bliedau

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV

Signatory to the Multilateral Agreements of
EA, ILAC and IAF for Mutual Recognition

Accreditation



The Deutsche Akkreditierungsstelle GmbH attests that the calibration laboratory

Phoenix Contact GmbH & Co. KG
Flachsmarkstraße 8, 32825 Blomberg

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out calibrations in the following fields:

Dimensional quantities

Length

- Length measuring instruments
- Diameter
- Thread

Electrical quantities

DC and low frequency quantities

- Voltage
 - DC voltage
 - AC voltage
- Current
 - DC current
 - AC current
- DC resistance

Time and frequency

- Frequency
- Time interval

The accreditation certificate shall only apply in connection with the notice of accreditation of 24.01.2018 with the accreditation number D-K-12161-01 and is valid until 23.02.2020. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 7 pages.

Registration number of the certificate: **D-K -12161-01-00**

Braunschweig,
24.01.2018

Dr. Heike Manke
Head of Division

Translation issued:
03.04.2018



Head of Division

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf.



C E R T I F I C A T E

awarded to

Phoenix Contact GmbH & Co.KG
Flachsmarktstr. 8
32825, Blomberg
Germany

DQS GmbH

confirms, as an IRIS CertificationTM approved certification body, that the Management System of the above organization has been assessed and found to be in accordance with the

IRIS CertificationTM rules:2017
and based on
ISO/TS 22163:2017

for the activities of Design and Development and Manufacturing
for the scopes of certification: 12 (Electrical wiring), 19 (Single railway components)
electromechanical and electrical connecting elements, plug connectors, surge voltage protection, cable assembly, tools and components for electrical engineering

Certificate valid from: 04/03/2018

Certificate valid until: 03/03/2021*

Current date: 06/03/2018
Certificate-Register-No: 239330

* Providing that the subsequent surveillance audits are successful before the validity date of the previous audit.

Certification body address: August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany



Enclosure 1 of Certificate No.: 239330

Phoenix Contact GmbH & Co.KG
Flachsmarktstr. 8
32825, Blomberg
Germany

The location is supported by the following remote locations:

Address	Scope/Process
Phoenix Contact GmbH & Co. KG Bahnhofstr. 9 32816 Schieder-Schwalenberg, Germany	Logistics, Professional Education

Current date: 06/03/2018
Certificate-Register-No: 239330

* Providing that the subsequent surveillance audits are successful before the validity date of the previous audit.

Certification body address: August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany