

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: TEK 1000 PKG
Quote #: 12121TEK Premium Pkg
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

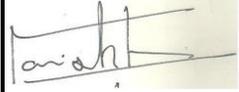
| Number | Item | Description | Qty. | Unit | Unit Cost | Total Cost |
|-----------------------------|----------------|---|------|------|--------------------|----------------------|
| | | Lightning Protection System | | | (in INR) | (in INR) |
| 1 | LA TERMINAL | TeksoPrevent MODEL : TEK1000 (Lightning Arrestor) Supply of Lightning arrestor Tekso Prevent Air terminal which is a Copper built lightning arrestor. 1. Large protection region; High performance 2. High quality 3. Strong anticorrosion and conductivity | 1 | No | INR 23,750 | INR 23,750 |
| 2 | Earthing | Model : TEKSAI Copper rod 2 Nos Spec : 2 Mtr Length x 14.2 mm dia x250 micron (ISO 9001-2008 Certified Company), CPRI Approved, Maintenance free Earthing. Model : TEKSAI - High Conductive Concrete (High Conductive & Anti Corrosive Compound) Application : Superior Choice & Reliable Performance for all Soil / Sandy / Rocky / Filled sand location - 25 KGS BAG | 1 | No | INR 5,000 | INR 5,000 |
| 3 | Down conductor | Vguard Lightning Arrestor GRADE ISI MARKED 50 Sqmm COPPER CABLE | 25 | Mtrs | INR 650 | INR 16,250 |
| 4 | Mast Section | Specially designed 3mtr GI mast, 1Feet FRP Mast with LA Base, adaptor, Anchoring rope if required and Accessories | 1 | set | INR 5,000 | INR 5,000 |
| 6 | COUNTER/SPD | LSG digital counter / LSG France Class 2 spd (*which ever these available) | 1 | No | complementary | complementary |
| 7 | Installation | Installation of Lightning Protection System | 1 | Job | INR 5,000 | INR 5,000 |
| Quotation Valid For 20 days | | | | | GRAND TOTAL | INR 55,000.00 |

Terms & Conditions

- 1 GST if applicable will be charged Extra
- 2 Customers Scope: Material safety will be customer scope after delivery
- 3 Height arrangement -customer scope.EXTRA CABLE 650/MTR
- 4 Pit digging-Normal soil condtion only.Extra fitting /work charged extra
- 5 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



**TEK1000
LIGHTNING ARRESTER**



TEK1000 is a Solid Copper Air terminal lightning protection device of 300 mm long, connecting feature of 25 x 3 mm / 70 Sq mm down conductor internally assembled with 100 mm Spherical gap Copper ball with 4 numbers of flash protection spikes (10mm diameter 100 mm long).

Teksai TEK1000 lightning arresters working on a simple principle of Benjamin Franklin which states lightning charges nature of finding easiest path to earth from a nearest sharpest conductor from cloud clubbed with air gap balls which gathers charges from connected earth making lightning attraction more effective.

One entire system of TEK1000 can protect a built-up area of 3500 Sq Ft

TEK1000 is fixed with 300 mm long isolated fiber glass - reinforced plastic (FRP) mast. The isolated down conductor internally connected to the air terminal inside the FRP, 3 Meter GI Mast and base Setting used for top area setting, down conductor used with insulation will be connected to chemical earthing.



Provides air terminal fitted to an isolated fiberglass-reinforced plastic (FRP) mast.



Our Specially designed Masts offer natural isolation properties, high strength for windy sites and low weight to minimize mast loading.



Features lower-cost and Best Results at the typical shorter installation requirements.

Maintenance free chemical earthing used for installation.

Complies with EN 50164-1 and EN 50164-2.

Approved By Central Power research institute-Bangalore (Govt. of India Lab).

5 Yrs Replacement warranty and 15 Yrs Service warranty

PROTECTION LEVEL EFFECTIVENESS OF LIGHTNING CONDUCTOR E

| | |
|-----|------|
| I | 0.98 |
| II | 0.95 |
| III | 0.90 |
| IV | 0.80 |



Particulars Specification

| | |
|---------------------------------|------------------|
| Material | Copper |
| Air Rod Height | 300 MM |
| Air Rod Diameter | 100 MM |
| Protection Angle | 65° |
| Corresponding Protection Radius | 2.14 h |
| Max Impulse Current Discharge | 50 KA |
| Average Discharge Current | 25 KA |
| Current Gradient Less Than | 40KA |
| Grounding Resistance | Less Than 10 Ohm |
| Resistible Wind Speed | Over 50m/s |





www.teksafeearththing.com

Marketing office kerala

ELSAFE PROTECTION AND CONTROL SYSTEMS
D10-4/60, Densons Building Marottichodu,
Edapally, Cochin, Kerala
Ph No : 0484 - 2575199
info@elsafeindia.com
www.elsafeindia.com

Distributor / Dealer



Certificate of Quality

Test Details

| | | | |
|---------------|-------------------|-------------------------------|----------------|
| Serial Number | : 16021025 | Volume resistivity, IEC60093 | : 1E13/1E9 Ω*m |
| Product Name | : TEKSOPREVENT | Surface resistivity, IEC60093 | : * / 1E10 Ω |
| Model Number | : TEK1000 | CTI, solution A, IEC60112 | : 600 |
| Date | : 03-28-2016 | | |

Technical specification

| | |
|---------------------------------|--------------------------------|
| Melting temperature, | : 1001 °C |
| ISO3146 Density, ISO1183 | : 1.16 g/cm ³ |
| Melt volume rate MVR 275/5, | : 140 cm ³ /10 min. |
| ISO1133 Molding shrinkage, Test | : 0.8% |
| box 1.5mm Moisture absorption, | |
| equilibrium-23°C/50% r.h. ISO62 | : 2.6 – 3.2% |

Thermal properties

| | |
|--|-----------|
| Deflection temperature 1.8MPa, ISO75-2 | : 800 °C |
| Deflection temperature 0.45 MPa, ISO75-2 | : 1600 °C |
| RTI electrical (thickness 1.5mm), UL746B | : 1050 °C |

Flammability

| | |
|---|-----------------|
| UL94 rating | : V-0 (>=0.4) |
| Hot wire ignition, ASTM D 3874- | : 2 (>=1.5) |
| 88 High current arc ignition, | : 0 (>=0.4) |
| UL746A, Fire/ignition performance- | |
| (UL94+HA+HWI), UL746C | : 1.5 mm |
| GWFI, IEC60695-2-12 | : 1400 °F |
| GWIT, IEC60695-2-13 | : 1350 °F |
| Limiting Oxygen index LOI ISO4589-2 | : > 35 % |
| Spec. optical density of smoke Ds,- | |
| 25kW/m ² , EN ISO5659-2 | : 60 |
| Conventional index of toxicity | |
| CIT, - 25kW/m ² , EN ISO5659-2 | : 1 |

Electrical properties

| | |
|---------------------------------------|------------|
| Dielectric constant at 1MHz, IEC60250 | : 3.6/6 |
| Dissipation factor at 1MHz, IEC60250 | : 200/3000 |

| | |
|-------------------------------|----------------|
| Volume resistivity, IEC60093 | : 1E13/1E9 Ω*m |
| Surface resistivity, IEC60093 | : * / 1E10 Ω |
| CTI, solution A, IEC60112 | : 600 |

Mechanical properties

| | |
|--|--------------------------|
| Tensile modulus, ISO527-2 | : 3500/1500 MPa |
| Yield stress, ISO527-2, | : 75/45 MPa |
| Yield strain, ISO527-2, | : 4/20 % |
| Strain at break, ISO527-2 | : 6/250 % |
| Charpy V-notch impact strength,-ISO179/1eU | : 80/N kJ/m ² |

Technical specification of Ball Enclosure

| | |
|---------------------------|----------------------|
| Durometer Range A | : 25 -85 |
| Tensile, Max. psi (Mpa) | : 1300 lbf (10.5kN) |
| Elongation, max % | : 800 |
| Specific Gravity | : 1.1 |
| Continuous Temp Max | : 800 °C |
| Compression set | : Excellent |

Environmental and Immersion Properties

| | |
|--------------------------------------|--------------|
| Electrical Resistivity | : Excellent* |
| Flame Resistance | : Good* |
| Impact resistance | : Good* |
| Tear Resistance | : Fair |
| Continuous Temp Max | : 1472 °F |
| Intermittent Temp Max | : 1122 °F |
| Weather change tolerance | : Excellent* |
| Oxidation Resistance | : Excellent* |
| Ozone Resistance | : C |
| 300°F Steam Resist. | : Good* |
| Temperature and Environment stress - | |
| Screening tests | : Good* |
| Salt water dipping test | : Good* |
| UV test | : Good* |
| Vibration Endurance test | : Excellent* |
| Impulse Current Test (40KA-240KA) | : Good* |

(Equipment are tested only on one piece in a lot of 100 pieces*)



Stamp & Signature
 Kent
 Head, Quality Control

Quality Check Result: PASSED





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

347218

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

ब्याबद्धत प्रणाली का पहचान
Method(s) used for Test : Electrical Resistivity test as per customer's specification

नमूना प्रक्रिया जहाँ प्रासंगिक हों
Sampling Procedure where relevant : NA

Tested By

N. Joseph Kalai & C
Natarajan Joseph kalaiselvan

SO Electrical

Checked By

K. Jeyaraj

SO Electrical

Approved By

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

[Signature]
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, Pudukkottai, Kanjikodu, Palaghat, Kerala - 678 029. | |
| Name & Address of the Manufacturer | M/s. Teksai Power Secure Solution Pvt. Ltd., 3/860, Blue Star Industrial Compound, Pudukkottai, 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

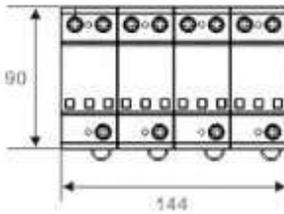



(Swaraj Kumar Das)
Joint Director

AUTHORISED SIGNATORIES

ALTERNATE CURRENT

LSGBC50



Dimensions

APPLICATIONS

- 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°C, Relative humidity: ≤95% |
| Approval | FCC, CE, ROHS |



PHOENIX CONTACT GERMANY

CTRL 1.5 Surge Arrester - Flashtrab FLT 35 CTRL 1.5



Features:-

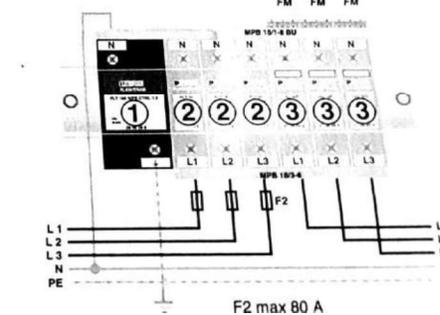
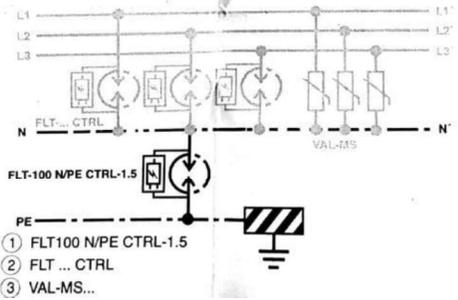
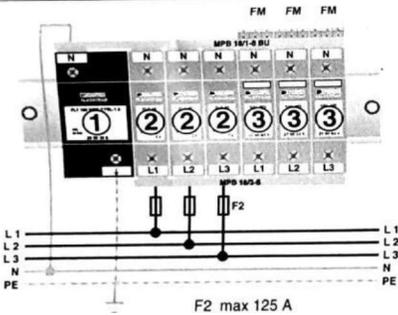
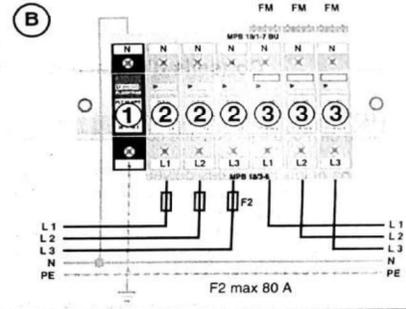
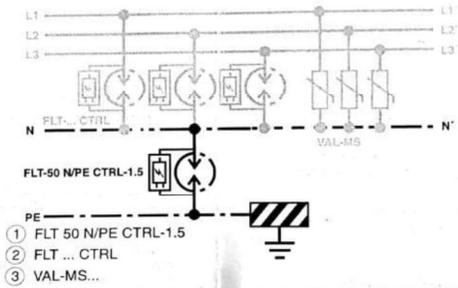
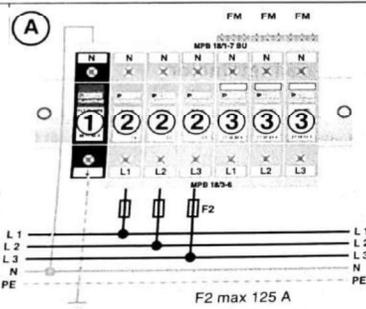
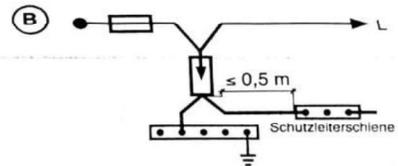
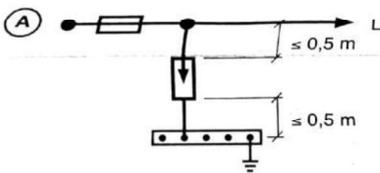
- Lighting current arrester with encapsulated N-PE spark gap and ignition electronics
- 2 Channel Protection level 1.5 KV
- Housing width 40 mm (3 Div)

Specification:-

| | |
|------------------|--------------|
| Un | 230 V |
| Uc | 440 V, 260 V |
| Up | ≤1.5 kV |
| I _{imp} | 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. work-
ing group Assessment of Contractors confirms

VGB
PowerTECH

Phoenix Contact Group

valid for the sites

Phoenix Contact GmbH & Co. KG
Flachmarktstraße 8, D-32825 Blomberg
Phoenix Contact Electronics GmbH
Dringenauer Straße 30, D-31812 Bad Pyrmont
Phoenix Contact Deutschland GmbH
Flachmarktstraße 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 docu-
ments of the VGB PowerTech e.V. working group Assessment of Contrac-
tors 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 con-
ditions on which the assessment was based have not been changed.

Vattenfall Europe
Nuclear Energy


VATTENFALL

Hanover, April 29th, 2016

i.v. [Signature]

E.ON Kernkraft GmbH

i.v. [Signature]

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
Flachmarkstraße 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

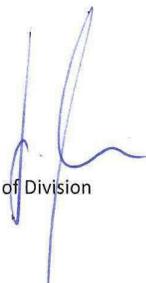
The accreditation certificate shall only apply in connection with the notice of accreditation of 24.01.2018 with the accreditation number D-K-12161-01 and is valid until 23.02.2020. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 7 pages.

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



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