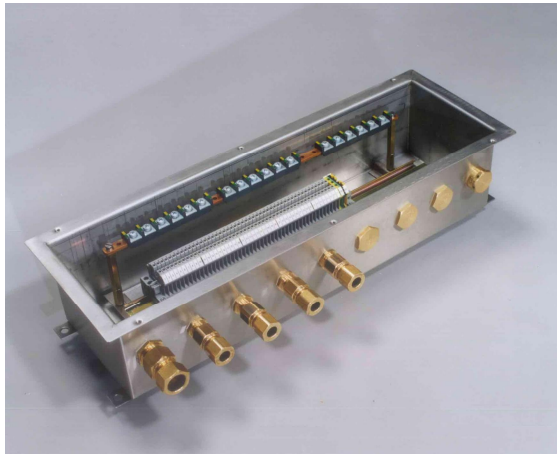


# OPERATING INSTRUCTIONS

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## TERMINAL BOX KKE (ATEX)



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## APPLICATION

Terminal boxes type KKE are explosion-protected and suitable for fixed mounting. They distribute electrical energy in hazardous areas.

They are manufactured from sheet or stainless steel in a range of sizes.

## PURPOSE OF THESE INSTRUCTIONS

Working in hazardous areas, the safety of personnel and plant depends on complying with all relevant safety regulations.

Assembly and maintenance staff working on installations therefore have a particular responsibility. They require precise knowledge of the applicable standards and regulations.

These instructions give a brief summary of the most important safety measures. They supplement the corresponding regulations which the staff responsible must study.

Subject to alteration.

# 1 SAFETY INSTRUCTIONS

Use the terminal box only for its permitted purpose..

Incorrect or impermissible use or non-compliance with these instructions invalidates our warranty provision.

Any alterations and modifications to the box impairing its explosion protection are not permitted.

Use the terminal box only if it is clean and undamaged.

Observe the following when using the enclosures:

- national safety regulations;
- national accident prevention regulations;
- national installation regulations;  
(e.g. IEC 60079-14)
- generally recognized technical regulations;
- safety guidelines in these operating instructions;
- characteristic values, rated operating conditions, temperature class and explosion protection on the rating and data plates;
- additional instruction plates on the enclosures.

Any damage can invalidate the Ex-protection.

The inactive metal parts are insulated in accordance with EN 60439 Part 1 (IEC 60439-1) and are not linked to the earthing system (PE).



If required, we will provide a copy of the EC Type-Test Certificate with the relevant annex.



The fitting of additional terminals, isolating terminals, fuses or cables gland is only permitted when the individual components are certified to Directive 94/9/EC and thus, have an EC prototype test certificate. When carrying out this type of modification to the terminal box the type and data plates must be observed!

## 1.1 CONFORMITY TO STANDARDS

Each box complies with the following standards and regulations:

Directive 94/9/EC

EN 60079-0, 1, 7, 11, 31

EN 60947-1/A11

EMC Directive No.: 89/336/EC

Terminal boxes type KKE are suitable for use in hazardous areas zones 1, 2, 21 and 22.

## 2 TECHNICAL DATA

Explosion protection

a) Fitted with terminals

 II 2G Ex e II T

Ex e ia/ib II T. , Ex ia/ib IIC T.

b) Fitted with isolating terminals

 II 2G Ex ed IIC T.

c) Fitted with terminals and fuses

 II 2G Ex em II T.

d) Fitted with terminals, isolating terminals and fuses

 II 2G Ex edm IIC T.

e) Terminal boxes for dust environment

 II 2D Ex tb IIIA T.

Test certificate

KEMA 03 ATEX 2139

Degree of protection to IEC/CEI 60529

max.  $\geq$  IP 66

Terminal box Ex e type KKE

Rated operating voltage

Max. 1100 V

Cross-section for connection

Max. 300 mm<sup>2</sup>

Terminal box Exi type KKE

The electrical data depend on the rated operating values of the intrinsically safe circuits installed.

Temperature range

Standard

- 33 °C ... + 40 °C

Special

- 33 °C ... + 55 °C, -50°C ... + 200°C

Ambient temperature range for terminal boxes without fuses fitted

T6: - 33 °C ... + 40 °C

T5: - 33 °C ... + 55 °C

T3: + 200 °C

If your application requires the ambient temperature range to be extended at the lower end, Electromach can supply special designs.



When fitting fuses, the ambient temperature values for the following temperature classes apply:

Fuse current value  $\leq 4$  A corresponds to T6

4 A > Fuse current value  $\leq 5$  A corresponds to T5

5 A > Fuse current value  $\leq 6,3$  A corresponds to T4



The devices fitted to type KKE enclosures differ according to customers' requirements. Please also observe the operating instructions for these.



Please consult the manufacturer if operating conditions are non-standard.

# 3 DIMENSIONS SKETCH

## 4 INSTALLATION

Mains connection:

- The conductors must be carefully connected.
- The conductor insulation must reach to the terminal. The conductor itself must not be damaged (nicked) when removing the insulation.
- Ensure that the maximum permissible conductor temperatures are not exceeded by suitable selection of cables and means of running them.
- Please also refer to the terminal details in the technical data.

Earth connection:

The earth connection must be made in all circumstances.

The external earth connection accepts a cable lug. The cable must be run and fixed near to the enclosure to prevent movement of the cable.

## 5 COMMISSIONING

Before commissioning the enclosure, ensure that

- it has been correctly installed;
- it is not damaged;
- it contains no foreign bodies;
- the connection chamber is clean;
- the connection is correctly made;
- the cables have been correctly brought in;
- all screws and nuts are fully tightened;
- the cable glands and stopping plugs are securely tightened  
unused cable entries are sealed with plugs certified to Directive 94/9/EC, and unused holes are sealed by stopping plugs certified to Directive 94/9/EC.

## 6 REPAIRS AND MAINTENANCE



Do not open enclosure when supply is switched on!

Do not open when non-intrinsically safe circuits are energized!

Exception: Enclosures with intrinsically safe and non-intrinsically safe circuits with the notice „Non-intrinsically safe circuits protected by IP 30 cover“ may be opened when supplied with power.

Repairs and maintenance work on the devices may only be carried out by appropriately authorized and trained personnel. Before work commences the devices must be disconnected from the mains.



Observe the relevant national regulations for your country!

The following points must be checked during maintenance:

- clamping screw holding the cable is securely seated;
- compliance with permitted temperatures (to EN 60079-0);
- damage to the housing;
- damage to the gaskets.

## 7 ACCESSORIES / SPARE



Use only original accessories and spare parts.



When fitting terminal blocks, please ensure that they comply with Directive 94/9/EC and have a EC-type test certificate.



To avoid build-up of condensation in the metal box, we recommend the use of a breathing gland. However, when using this breathing gland it should be noted that, depending on the location of the box a reduction in the level of protection to IEC 60529 results.

## 8 DISPOSAL


Observe the national standards for refuse disposal.



We are pleased to answer any special questions you may have.

Should you require the operating instructions in one of the other European Community languages, please feel free to contact Electromach.

# 9 EC-TYPE EXAMINATION CERTIFICATE

**(1) EC-TYPE EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) EC-Type Examination Certificate Number: KEMA 03ATEX2139

(4) Equipment or protective system: Terminal / Junction box, series KKE...

(5) Manufacturer: Electromach b.v., Member of the R. STAHL Technology Group

(6) Address: Hamerstraat 10, 7556 MZ Hengelo, The Netherlands

(7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential report no. 2026530.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014 : 1997	EN 50019 : 2000
EN 50281-1-1 : 1998	EN 50020 : 2002

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment or protective system according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:



II 2 GD EEx e... II. T6...T4 T 80 °C ... T 130 °C  
 or  
 EEx ia/b II. T6 T 80 °C

Amhem, 12 June 2003  
 KEMA Quality B.V.



T. Pijper  
 Certification Manager

\* This Certificate may only be reproduced in its entirety and without any change

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ACCREDITED BY THE  
 DUTCH COUNCIL FOR  
 ACCREDITATION



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# 10 DECLARATION OF CONFORMITY

**EG-Konformitätserklärung**  
*EC-Declaration of Conformity*  
*CE-Déclaration de Conformité*



**Wir (we; nous)**

ELECTROMACH BV, Jan Tinbergenstraat 193, 7559 SP Hengelo  
 Member of the R.STAHL Technology Group

**KKE**

**erklären in alleiniger Verantwortung, daß das Produkt**  
*hereby declare in our sole responsibility, that the product*  
*déclarons de notre seule responsabilité, que le produit*

**Klemmenkasten**  
*Terminal box*  
*Boîtier de raccordement*

**auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en) oder normativen Dokumenten übereinstimmt**  
*which is the subject of this declaration, is in conformity with the following standard(s) or normative documents*  
*auquel cette déclaration se rapporte, est conforme aux norme(s) ou aux documents normatifs suivants*

**Bestimmungen der Richtlinie**  
*terms of the directive*  
*prescription de la directive*

**Titel und/oder Nr. sowie Ausgabedatum der Norm**  
*title and/or No. and date of issue of the standard*  
*titre et/ou No. ainsi que date d'émission des normes*

**94/9 EG: Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen**  
*94/9 EC: Equipment and protective systems intended for use in potentially explosive atmospheres*  
*94/9 CE: Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles*

EN 60079-0 : 2007  
 EN 60079-1 : 2007  
 EN 60079-7 : 2007  
 EN 60079-11 : 2007  
 EN 60079-16 : 2004  
 EN 60079-31 : 2008

**89/336 EWG: Elektromagnetische Verträglichkeit**  
*89/336 EEC: Electromagnetic compatibility*  
*89/336 CEE: Compatibilité électromagnétique*

EN 60 947-1 (1999)

**EG-Baumusterprüfbescheinigung:**  
*EC-Type Examination Certificate:*  
*Attestation d'examen CE de type:*

**KEMA 03 ATEX 2139**


**Qualitätssicherung Produktion:**  
*Production Quality Assessment:*  
*Assurance Qualité Production:*

**KEMA 01 ATEX Q3201**

Hengelo,

**Ort und Datum**  
*Place and date*  
*lieu et date*

  
**J.F.W. Wijnen**  
**Geschäftsführer**  
*Managing Director*  
*Directeur Général*

  
**W.H. Moelard**  
**Leiter Qualitätsmanagement**  
*Head of quality management dept.*  
*Chef du dept. assurance de qualité*