Embracing Challenge

Self-regulating Ex-Heater

HEX4-135, HEX4-180
HEX4-SS-135, HEX4-SS-180
Ⓔx II 2 G Ⓔx II 2 D

Instruction Manual
Version 1.06.01

Dear customer,

Thank you for buying our product. In this instruction manual you will find all necessary information about this M&C product. The information in the instruction manual is fast and easy to find, so you can start using your M&C product right after you have read the manual.
If you have any question regarding the product or the application, please don't hesitate to contact M&C or your M&C authorized distributor. You will find all the addresses in the appendix of this manual.
For additional information about our products and our company, please go to M&C's website www.mc-techgroup.com. There you will find the data sheets and manuals of our products in German and English.

With the release of this version all older manual versions will no longer be valid. The German instruction manual is the original instruction manual. In case of arbitration only the German wording shall be valid and binding.

Version: 1.06.01

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1 DECLARATION OF CONFORMITY

CE - Certification

The product described in this operating manual complies with the following EU directives:

ATEX-Directive

The product described in this manual is produced in accordance with the EU directive for devices and protection systems for appropriate use in hazardous areas 2014/34/EU appendix II.

RoHS Directive

The requirements of the RoHS2 ('Restriction of Hazardous Substances 2') directive 2011/65/EU and its annexes are met.

EMC-Instruction

The requirements of the EU directive 2014/30/EU "Electromagnetic compatibility" are met.

Low Voltage Directive

The requirement of the EU directive 2014/35/EU "Low Voltage Directive" are met.
The compliance with this EU directive has been examined according to DIN EN 61010.

Declaration of conformity

The EU Declaration of conformity can be downloaded from the **M&C** homepage or directly requested from **M&C**.

Manufacturer : **M&C** Tech**Group** Germany GmbH
Rehhecke 79
40885 Ratingen – Germany
Tel.: 02102/935-0
E-Mail: info@mc-techgroup.com
www.mc-techgroup.com

2 SAFETY INSTRUCTIONS: DESCRIPTION OF INTENDED USE

Observe the following basic safety precautions when using the instrument:

- Read the operating instructions before commissioning and using the device! The instructions and warnings given in the operating instructions must be followed.
- The Certificate of Conformity (see Appendix) must absolutely be observed.
- Work on electrical equipment is only to be carried out by qualified personnel as per the regulations currently in force.
- Attention must be paid to the requirements of VDE 0100 when installing high-power electrical units with nominal voltages of up to 1000V as well as to the associated standards and stipulations.
- For use in hazardous areas, the relevant national and international standards and regulations must be heeded.
- When connecting the equipment, attention must be paid to the correct supply voltage according to the indications on the type plate.

Warning

- Protection against touching dangerously high electrical voltages:
  Before opening the equipment, it must be switched off and hold no voltages. This also applies to any external control circuits that are connected.
- The equipment is only to be used within the permitted range of temperatures.
- Check that the location is weather-protected. It should not be subject to either direct rain or moisture.
- A residual current protective device (RCD) with a rated value of the fault current of not more than 100 mA **must** be used.
- The heating radiator must be covered by a metal protection cover.
- Installation, maintenance, control and eventual repairs may only be done by authorized personnel with respect to the relevant stipulations.
- For installation in zone 21:
  To prevent electrostatic discharge due to operational processes, for example by contacting flowing media, the device has to be installed in an area
  protected from any kind of flowing media.

3 INFORMATION FOR USE IN HAZARDOUS AREAS

The identification of both variants is as follows:

Ⓔx II 2 G Ex eb mb IIC T4/T3 Gb
Ⓔx II 2 D Ex tb IIIC 135°C / 180°C

A certification has been executed by EXAM BBG Prüf- und Zertifizier GmbH.
Detailed information and a copy of the EG Type Examination Certificate und IECEx Certificate of conformity are attached as appendix to this operating manual. Installation and operation must be carried out in accordance with the conditions and installation instructions specified in the Ex certificate (see appendix). Only then, a safe operation and function in hazardous areas is guaranteed.

All changes of the standard configuration with parts which are not specified or approved by **M&C** as well as repair and service works with not specified parts means a loss of the Ex-Certificate.

- In case of any doubt, please contact M&C directly or your M&C representative.

4 WARRANTY

In case of a device failure, please contact immediately M&C or your M&C authorized distributor.

We have a warranty period of 12 months from the delivery date. The warranty covers only appropriately used products and does not cover the consumable parts. Please find the complete warranty conditions in our terms and conditions.

The warranty includes a free-of-charge repair in our production facility or the free replacement of the device. If you return a device to M&C, please be sure that it is properly packaged and shipped with protective packaging. The repaired or replaced device will be shipped free of delivery charges to the point of use.

5 USED TERMS AND SIGNALS

Danger

The 'Danger' warning sign indicates that death, serious injury and/or significant material damage will be the consequence, if the appropriate precautions should not be taken.

Warning

The 'Warning' warning sign indicates that death, serious injury or damage to property may occur if the relevant precautionary measures are not observed.

Caution

The 'Caution' warning sign indicates that slight personal injury can occur if the appropriate safety precautions are not observed.

Caution

'Caution' indicates that damage to property can occur if the appropriate safety precautions are not observed.

Attention

'Attention' indicates that an unintended result or situation can occur if the corresponding information is not taken into account.

'Ex' indicates important information about the product or about the corresponding parts in the instruction manual, relating to usage in potentially explosive atmospheres.

Qualified personnel

'Qualified personnel' are experts who are familiar with the installation, commissioning, maintenance and operation of these types of products. The following knowledge is at least required for the work:

- Instructed person in EX-protection
- Trained person in the electrotechnical field
- Detailed knowledge of the manual and the applicable safety regulations

High voltages!
Protect yourself and others against damages which might be caused by high voltages.

Toxic!
Acute toxicity (oral, dermal, inhalation)! Toxic when in contact with skin, swallowed or inhaled.

Corrosive!
These substances destroy living tissue and equipment upon contact.
Do not breathe vapors; avoid contact with skin and eyes.

Hot surface!
Contact may cause burn! Do not touch!

Note

'Note' indicates important information relating to the product or highlights parts of the documentation for special attention.

Wear protective gloves!
Working with chemicals, sharp objects or extremely high temperatures requires wearing protective gloves.

Wear safety glasses!
Protect your eyes while working with chemicals or sharp objects. Wear safety glasses to avoid getting something in your eyes.

Wear protective clothes!
Working with chemicals, sharp objects or extremely high temperatures requires wearing protective clothes.

Use foot protection

Use safety helmet and full protective goggles

6 APPLICATION

The electrical heater **HEX 4** has been developed for the heating of metal bodies (eg. **M&C** Gas sample probe **SP3000/SP3100..**, **M&C** Filter **FT-H..**).
The heater is suitable for the use in hazardous areas of zone 1 or 21 (combustible dusts or combustible gases) Ex *II 2 GD*
The indicated maximum surface temperatures are never exceeded even in case of faults according to category 1 which are very rare. This means that the heater **HEX4** can also be used for those applications where the heating energy has an effect to areas of zone 0 or 20 through a dividing wall.
The mounting onto the object to be heated is executed by **M&C**.

Ex The heating radiator must be covered with a metallic protection shield.

7 DESCRIPTION

The probe heater type **HEX4** is designed for two temperature areas. It has got a heating plate with two self-regulating heating cartridges, and a terminal box.

Version	Operating temperature °C [°F] at 0 to 60 °C [32 to 140 °F] ambient temperature	Max. surface temperature °C [°F]
HEX4-180	120 to 160 [248 to 320]	180 [356]
HEX4-135	90 to 120 [194 to 248]	135 [275]

Table 1 Temperature ranges of the probe heater HEX4

An alarm contact is available for monitoring the temperature at the probe (low temperature):

- Switch temperature for version **HEX4-180** > 100 °C [212 °F]
- Switch temperature for version **HEX4-135** > 60 °C [140 °F]

8 TECHNICAL DATA

Electrical Heater Type HEX4	
Mains connection **HEX4**	100-230 V 50/60 Hz 400 W Rated current 5 A *at start-up*
Electrical connection **HEX4**, Temperature status alarm **HEX4** and Back purge **RS**	Terminals; max. 4 mm^2, 3 x M20 screwed cable gland Terminal range 7-12 mm
Identification of heating: **Electrical-Heater HEX4-180** **Electrical-Heater HEX4-135**	Ⓔx II 2 G Ex eb mb IIC T3 Gb Ⓔx II 2 D Ex tb IIIC 180°C Db Ⓔx II 2 G Ex eb mb IIC T4 Gb Ⓔx II 2 D Ex tb IIIC 135°C Db BVS 04 ATEX E 253 IECEx BVS 15.0060 *The maximum surface temperatures indicated in the identification are never exceeded even in case of faults according to category 1 which are very rare.*
Operating temperature **HEX4-180** Operating temperature **HEX4-135**	120 to 160 °C [248 to 320 °F] at ambient temperature 0 to 60 °C [32 to 140 °F] 90 to 120 °C [194 to 248 °F] at ambient temperature 0 to 60 °C [32 to 140 °F]
Ready for work **HEX4**	after 2 h
Temperature status alarm **HEX4-180** Temperature status alarm **HEX4-135**	> 100 °C [212 °F] > 60 °C [140 °F]
Alarm contact capacity (Option) **HEX4**	250 V 1.5 A AC, 0.5 A DC
Ambient temperature	-20 to 60 °C [-4 to 140 °F], SS-Version: -20 to 90 °C [-4 to 194 °F]
IP rating	IP66 (EN 60529)
Following standards have been used	IEC 60079-0: 2018 IEC 60079-7: 2015+A1:2018 IEC 60079-18: 2015/A1:2017 IEC 60079-31: 2014
Following standards have been used	IEC 60079-0:2017; Ed. 7.0 ISH1:2019 + ISH2:2019, COR1:2020 IEC 60079-7:2017 Ed. 5.1 IEC 60079-18:2017, Ed. 4.1 IEC 60079-31:2013, Ed. 2.0

Table 2 Technical Data HEX4

9 RECEIPT OF MARCHANDISE AND STORAGE

- Inspect the instrument for any damages during transport and, if necessary, inform your shipping insurance immediately of the damage found.

Note

The instrument should be stored in a weatherproof frost-free area!

10 PREPARATION FOR INSTALLATION

Warning

First of all, make sure that the local conditions correspond to the indications on the type plate.

- It must be assured that the limit temperature of the combustible dusts according to table 3 is above the maximum surface temperature of all used electrical equipment respectively that the temperature class corresponds to the inflammation temperature of the combustible gases/vapours, because it cannot be excluded that there could be some dust deposits.

Warning

For installation in zone 21:
To prevent electrostatic discharge due to operational processes, for example by contacting flowing media, the device has to be installed in an area protected from any kind of flowing media.

The actual operating parameters are to be checked according to the below table before the beginning of the mounting.

Operating parameters for sampling station: .....

Operating parameters for the combustible dust			
Inflammation temperature of the dust according EN50281-2-1 1999-08	...°C Procedure **A** (layer)	....°C Procedure **B** (cloud)	Limit temperature corresponds to the lowest value out of *A* –75 [°C] and 2/3 x *B* [°C] ..... (> max. surface temp. out of table 1)
Conductive dust	Yes	No	
Classification of areas process side			
Classification of areas ambiance			
Dust composition – Lowest grain size > 2µm	µm		
Dust load	g/m³		

Operating parameters for the combustible gas			
Gas composition	☐ corrosive	☐ toxic	☐ explosive
Classification of areas process side			
Classification of areas ambiance			
Inflammation point of the gases or vapours	°C (>max. surface temp. out of table 1)	Corresponds to temperature class	
Explosion group	☐ IIA	☐ IIB	☐ IIC

Process conditions			
Low pressure/ Overpressure situation	mbar	mbar	
Process temperature	°C, min.	°C max.	
Which parameters shall be measured, e.g. O_2, CO, SO_2, NOX,..,	vol%	mg/Nm³	ppm
Required gas quantity	l/h, min.	l/h, max.	
Required T90 time	Sec.		

Table 3 Operating parameters

11 MOUNTING

Due to the fact that the heater **HEX4** is already mounted to the instrument to be heated, the operating instructions of the instrument to be heated must also be observed.

Warning

Works on the heater must only be carried out as far as the process and the ambience have been declared to be a non-hazardous area, free of explosive atmosphere.

Warning

The instrument must be connected to earth. The leak resistance must be < 10^6 Ω everywhere.

12 ELECTRICAL CONNECTION

Caution

Wrong power supply can destroy the instrument. When connecting the equipment, please ensure that the supply voltage corresponds to the indication on the type plate.

When setting power plants with nominal voltages of up to 1000 V, the requirements of VDE 0100 and its relevant standards and regulations must be observed!
We recommend to use always temperature-resistant cables.

Note

A main switch must be provided externally.

The electric supply circuit of the heater must be equipped with a slow 10 A fuse. The electrical indications are to be seen in the technical data.

A residual current protective device (RCD) with a rated value of the fault current of not more than 100 mA must be used.

We recommend using always the low temperature alarm contact in order to stop the gas flow through the probe and thus to protect the downstream components in case of alarm.

The following figure shows the connection possibilities inside the terminal box of the heater **HEX4-135/HEX4-180**.

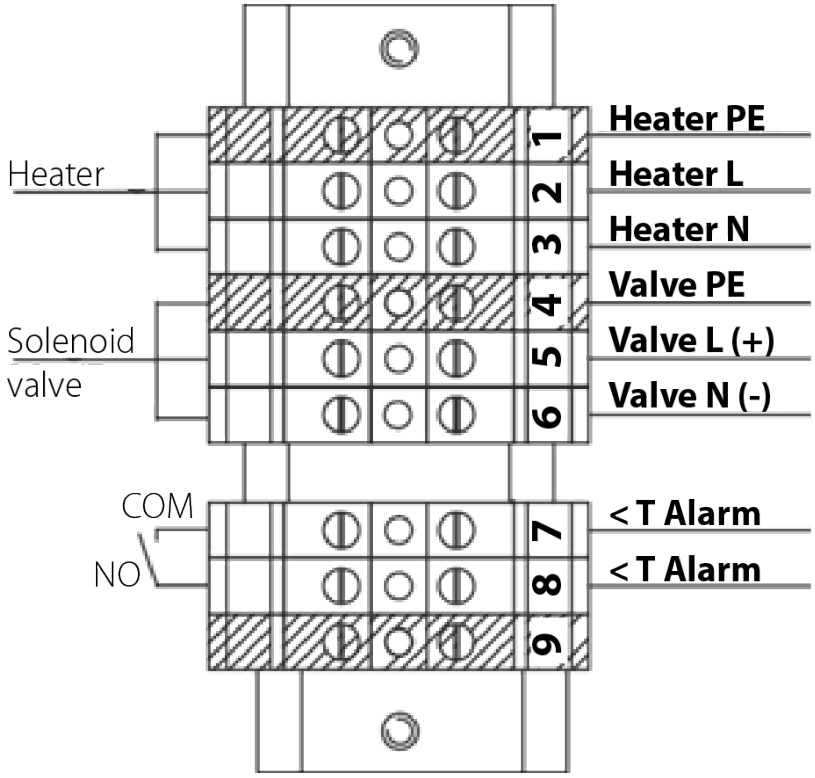


Figure 1 Terminal box HEX4-135/HEX4-180

The terminal box of the heater also contains the terminals for the backflushing valve of the gas sampling probe SP3xxx (option RS).

Note

The voltage required for the back purge valve of the gas sample probe can be found on the type plate of the solenoid valve.

To connect the electrical cables, proceed as follows:

1. Remove the cover of the connecting box;
2. Insert the mains cable for the heater (min. 3 x 1.5 mm^2) through the screwed cable gland and connect it to the respective terminals 1, 2, 3 (connecting plan inside the cover);
3. Insert the signal cable for the temperature control (<T Alarm) through the cable entry and connect it to the respective terminals 7, 8;
4. For option back purge (solenoid valve), connect the mains to terminal 4, 5 6;
5. Screw the cover on again.

Note

The function of the self-regulating heating cartridge with PTC effect cannot be checked with an ohmmeter.

13 PREPARATIONS FOR COMMISSIONING

Before initial startup, all plant- and process-specific safety measures must be observed. It is mandatory for the operator to complete the enclosed risk assessment of the product.
The gas exposure risk must be assessed by the operator with regard to the hazards posed by process and calibration gas and the setup at the installation site (e.g. tubing, system cabinet/container/plant). If the risk assessment reveals increased exposure hazards, further measures are required.
A visible label must be attached to the installation site in accordance with the risk assessment provided by the operator.

14 START-UP

When setting power plants with nominal voltages of up to 1000 V, the requirements of VDE 0100 as well as its relevant standards and regulations must be observed.

Note

A main switch must be provided externally.

The electrical supply circuit must be equipped with a slow fuse of 10 A. The electrical indications are in the technical data.
For option RS back purge:
The control circuit of the solenoid valve must be equipped with a slow fuse of 0.1 A.

A residual current protective device (RCD) with a rated value of the fault current of not more than 100 mA must be used.

The radiator must be covered by a metal protective cover.
(Put on the weather protection cover of the probe.)

Before starting, check that the mains voltage is identical with the indication on the type plate.

Warning

The heated equipment must be mounted tightly. Make sure that there is a minimum distance of 100 mm [approx. 3.9"] to other components in order to prevent an accumulation of heat.

Switch on the mains supply.

Attention! In case of ambient temperatures higher than 40 °C [104 °F], the temperature of the protective or isolation cover is higher than 60 °C [140 °F].

The total heating time is approx. 2 h. The signalling is carried out by the temperature status alarm.

15 MAINTENANCE

For works during operation:

Hot surface temperatures!

Touching may lead to burns. Wear protective gloves.

Warning

When setting and executing any maintenance work on power plants with nominal voltages of up to 1000 V, the requirements of VDE 0100 as well as its relevant standards and regulations must be observed!

Any work on the heater must only be carried out as far as the ambience has been declared to be a non-hazardous area, free from explosive atmospheres.

Before executing any maintenance work, the safety instructions relating to the installation and the process must be followed.

Any recommendation regarding a maintenance cycle cannot be given. A useful maintenance cycle must be determined in dependence on your specific process conditions.

Note

The function of the self-regulating heating cartridge with PTC effect cannot be checked with an ohmmeter.

15.1 CLEANING

The heater **HEX4** should be checked in suitable time intervals. Dust layers of more than 5 mm [approx. 0.2″] must be removed immediately.

Warning

To avoid static charges, always clean with a damp cloth.

16 PROPER DISPOSAL OF THE DEVICE

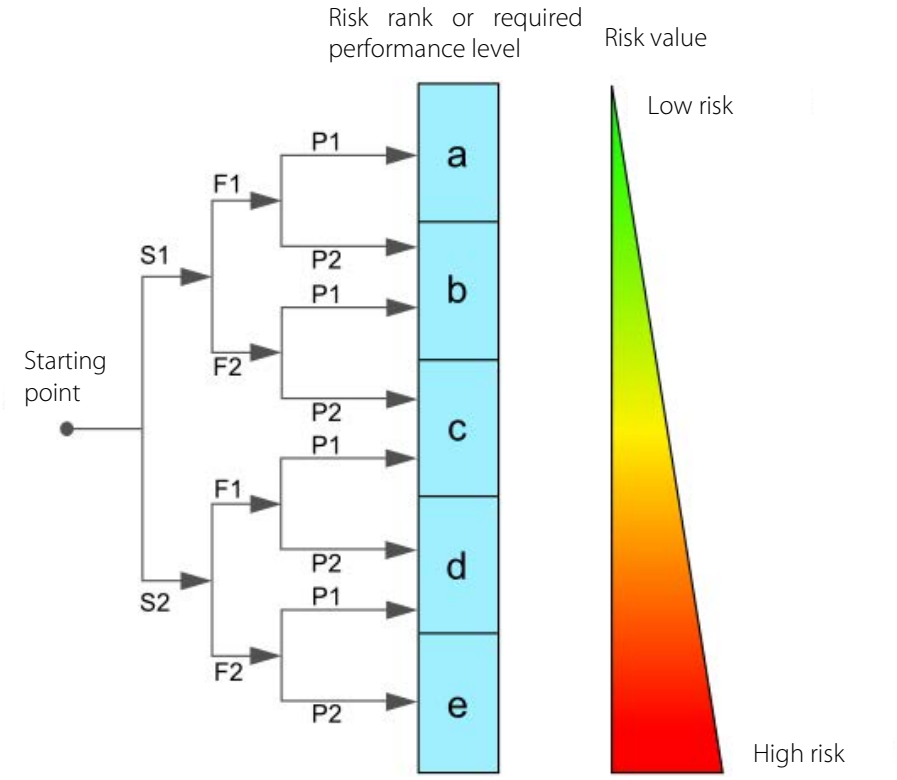
At the end of the life cycle of our products, it is important to take care of the appropriate disposal of obsolete electrical and non-electrical devices. To help protect our environment, please follow the rules and regulations of your country regarding recycling and waste management.

17 RISK ASSESSMENT

The risk assessment provided in this chapter is intended for all work activities on the product. The hazards can occur in the work steps of assembly, commissioning, maintenance, disassembly and in the event of a product fault. During normal operation, the product is protected by a system cabinet or appropriate covers.
Only qualified personnel is permitted to perform the work. The following minimum knowledge is required for the work:

- Employee instruction provided in process engineering
- Employee instruction provided in electrical engineering
- Detailed knowledge of the instruction manual and the applicable safety regulations

The product complies with the current regulations according to state-of-the-art science and technology. Nevertheless, not all sources of danger can be eliminated while observing technical protective measures. Therefore, the following risk assessment and the description of exposure hazards refer to the work steps mentioned above.



Severity of injury:
S1 = 1 = minor (reversible injury)
S2 = 2 = serious (irreversible injury, death)

Frequency and duration:
F1 = 1 = infrequent or short exposure to hazard
F2 = 2 = frequent (more than once per hour/shift)

Possibility of preventing or limiting the damage
P1 = 1 = possible
P2 = 2 = hardly possible

Figure 2 Overview risk assessment

Aggressive condensate possible

Risk rank group A
Chemical burns due to aggressive media possible!
This applies to all liquids in vessels and in the product.
In general, for electrical and mechanical work on the product, wear personal protective equipment (PPE) in accordance with the risk assessment.

Caution hot surfaces

Risk rank group A
The temperature inside the product can be higher than > 180 °C.
The hot parts are shielded by mechanical devices. Before opening the products, they must be disconnected from the power supply and a cooling time of more than > 180 minutes must be observed. In general, for electrical and mechanical work on the product, wear personal protective equipment (PPE) in accordance with the risk assessment.

Caution electric shock

Risk rank group C
When installing high-power systems with nominal voltages of up to 1000 V, the requirements of VDE 0100 and their relevant standards and regulations must be observed!
This also applies to any connected alarm and control circuits. Before opening the products, they must always be disconnected from the power supply.

Gas hazard

Risk rank group A-B-C
The hazard potential mainly depends on the gas to be extracted.
If toxic gases, oxygen displacing or explosive gases are conveyed with the product, an additional risk assessment by the operator is mandatory.
In principle, the gas paths must be purged with inert gas or air before opening the gas-carrying parts.
The escape of potentially harmful gas from the open process connections must be prevented.
The relevant safety regulations must be observed for the media to be conveyed. If necessary, flush the gas-carrying parts with a suitable inert gas. In the event of a gas leakage, the product may only be opened with suitable PPE or with a monitoring system.
Furthermore, the work safety regulations of the operator must be observed.

Caution crushing hazard

Risk rank group A
The work must be performed by trained personnel only.
This applies to products weighing less than < 40 kg [≈ 88.2 lbs]:
The product can be transported by 1 to 2 person(s). The instructions for appropriate personal protective equipment (PPE) must be observed.
The weight specifications are contained in the technical data of this product.
Furthermore, the work safety regulations of the operator must be observed.

18 APPENDIX

- EC-Type Examination Certificate
- IECEx Certificate of Conformity

Further product documentation can be seen in our internet catalogue under:
www.mc-techgroup.com

TRANSLATION

EXAM
BBG Prüf- und Zertifizier GmbH

(1) # EC-Type Examination Certificate

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) **BVS 04 ATEX E 253**

(4) **Equipment:** **Heating type HEX4-***

(5) **Manufacturer:** **M & C Products Analysentechnik GmbH**

(6) **Address:** **40885 Ratingen-Lintorf, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of EXAM BBG Prüf- und Zertifizier GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment 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 the test and assessment report BVS PP 04.2178 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997 + A1 – A2	General requirements
EN 50019:2000	Increased Safety ´e´
EN 50028:1987	Encapsulation ´m´
EN 50281-1-1:1998 +A1	Dust explosion protection

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

II 2G EEx em II T4/T3
II 2D IP 66 T 135 °C/180 °C

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 13 December 2004

Signed: Dr Jockers
Certification body

Signed: Dr Eickhoff
Special services unit

Dinnendahlstraße 9, 44809 Bochum, Germany, Phone +49 (0) 201 172-39 47, Fax +49 (0) 201 172-39 48
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

TRANSLATION

EXAM
BBG Prüf- und Zertifizier GmbH

(13) Appendix to

(14) # EC-Type Examination Certificate

BVS 04 ATEX E 253

(15) 15.1 Subject and Type

Heating type HEX4-*
└ 180 – maximum surface temperature 180 °C
135 – maximum surface temperature 135 °C

15.2 Description

The heating HEX4 * serves for the heating of metallic bodies (e.g. gas-extraction probe type SP3000/SP3100, M&C inc.).
It consists of a terminal box in type of protection Increased Safety, a heating cartridge in type of protection Increased Safety and a temperature alarm in type of protection Encapsulation.
Heating and temperature alarm are always covered by a metallic hood.

15.3 Parameters

15.3.1	Electrical data			
15.3.1.1	Supply			
	Voltage	115/	230	V
	Frequency	50/	60	Hz
	Power		400	VA
15.3.1.2	Alarm contact	250 V, AC 1,5 A, DC	0,5	A
15.3.2	Thermal data			
15.3.2.1	Type HEX4-135			
	Ambient temperature	- 20 °C...	60	°C
	Temperature class			T4
	Maximum surface temperature T		135	°C
15.3.2.1	Type HEX4-180			
	Ambient temperature	- 20 °C...	60	°C
	Temperature class			T3
	Maximum surface temperature T		180	°C
15.3.3	Protection type according to EN60529			IP66

(16) Test and Assessment Report

BVS PP 04.2178 EG, as of 13 December 2004

(17) Special Conditions for Safe Use

None

Dinnendahlstraße 9, 44809 Bochum, Germany, Phone +49 (0) 201 172-39 47, Fax +49 (0) 201 172-39 48
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

TRANSLATION

EXAM
BBG Prüf- und Zertifizier GmbH

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, Germany, 21 June 2005
BVS-Hk/Sa E 0815

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

DEKRA

Translation

1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
BVS 04 ATEX E 253

Gerät:	**Heating type HEX4-***
Hersteller:	**M&C TechGroup Germany GmbH**
Anschrift:	**40885 Ratingen, Germany**

Description
The heating HEX4 * meets the requirements of the standards EN 60079-0:2006, EN 60079-7:2007 and EN 60079-18:2004, types of protections Increased safety „e“ and Encapsulation „m“ and the requirements of the standards EN 61241-0:2006 and EN 61241-1:2004, Protection by enclosures „tD“.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006	General requirements
EN 60079-7:2007	Increased safety ´e´
EN 60079-18:2004	Encapsulation ´m´
EN 61241-0:2006	General requirements
EN 61241-1:2004	Protection by enclosures

The marking of the equipment shall include the following:

II 2G Ex emb II T4/T3
II 2D Ex tD A21 IP66 T135°C/180°C

Special conditions for safe use
None

Test and assessment report
BVS PP 04.2178 EG as of 05.06.2008

DEKRA EXAM GmbH
Bochum, dated 05. June 2008

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com
(until 31.03.2007 EXAM BBG Prüf- und Zertifizier GmbH)

DEKRA

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 05. June 2008
BVS-Hk/Sz A 20080273

DEKRA EXAM GmbH

Certification body

Special services unit

Translation

(1) 2nd Supplement to the EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **BVS 04 ATEX E 253**

(4) Equipment: **Heater type HEX4-***

(5) Manufacturer: **M&C TechGroup Germany GmbH**

(6) Address: **Rehhecke 79, 40885 Ratingen, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment 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 the Test and Assessment Report BVS PP 04.2178 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 + A11:2013	**General requirements**
EN 60079-7:2007	**Increased safety "e"**
EN 60079-18:2009	**Encapsulation "m"**
EN 60079-31:2009	**Protection by enclosure "t"**

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

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

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

II 2G Ex emb IIC T4/T3 Gb
II 2D Ex tb IIIC T135°C/180°C Db

DEKRA EXAM GmbH
Bochum, dated 2015-06-15

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
Special services unit

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

(13) Appendix to

(14) **2nd Supplement to the EC-Type Examination Certificate**
BVS 04 ATEX E 253

(15) 15.1 Subject and type

Heater type HEX4-*
- 180 – maximum surface temperature 180 °C
- 135 – maximum surface temperature 135 °C

15.2 Description

The heater HEX4 * serves for the heating of metallic bodies (e.g. gas-extraction probe type SP3000/SP3100, M&C inc.).
It consists of a terminal box in type of protection Increased Safety, a heating cartridge in type of protection Increased Safety and a temperature alarm in type of protection Encapsulation.
Heating and temperature alarm are always covered by a metallic hood.
Reason for this supplement is the updating of the applicable standards.

15.3 Parameters

15.3.1	Electrical data		
15.3.1.1	Supply		
	Supply voltage	100-230	V
	Frequency	50/60	Hz
	Power	400	VA
	Rated current	5	A
15.3.1.2	Alarm contact		
	Voltage	250	V
	Current	AC 1,5	A
		DC 0,5	A
15.3.2	Thermal data		
15.3.2.1	Type HEX4-135		
	Ambient temperature	-20 °C...60	°C
	Temperature class		T4
	Maximum surface temperature T	135	°C
15.3.2.2	Type HEX4-180		
	Ambient temperature	-20 °C...60	°C
	Temperature class		T3
	Maximum surface temperature T	180	°C
15.3.3	Protection type according to EN60529	IP66	

(16) Test and Assessment Report

BVS PP 04.2178 EG as of 2015-06-15

(17) Special conditions for safe use

None

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 2015-06-15
BVS-Pe/Ru/Ma A 20150039

Certification body

Special services unit

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

Translation

1 # EU-Type Examination Certificate Supplement 3

Change to Directive 2014/34/EU

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 04 ATEX E 253**

4 Product: **Heater type HEX4-****

5 Manufacturer: **M&C TechGroup Germany GmbH**

6 Address: **Rehhecke 79, 40885 Ratingen, Germany**

7 This supplementary certificate extends EC-Type Examination Certificate No. BVS 04 ATEX E 253 to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. PP 04.2178 EU.

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

EN 60079-0:2012 + A11:2013	**General requirements**
EN 60079-7:2015	**Increased Safety "e"**
EN 60079-18:2015	**Encapsulation "m"**
EN 60079-31:2014	**Protection by Enclosure "t"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

Ⓔx **II 2G Ex eb mb IIC T4/T3 Gb**
II 2D Ex tb IIIC T135°C/180°C Db

DEKRA EXAM GmbH
Bochum, 2018-03-23

Signed: Jörg Koch
Certifier

Signed: Dr Franz Eickhoff
Approver

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, fax +49.234.3696-110, zs-exam@dekra.com

13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 04 ATEX E 253
Supplement 3

15 **Product description**

15.1 **Subject and type**

Heater type HEX4-**

- 180 – maximum surface temperature 180 °C
- 135 – maximum surface temperature 135 °C
- blank - aluminium terminal box
- SS - stainless steel terminal box

15.2 **Description**

The heater HEX4-** serves for the heating of metallic bodies (e.g. gas-extraction probe type SP3000/SP3100, M&C inc.).
It consists of a terminal box in type of protection Increased Safety, a heating cartridge in type of protection Increased Safety and a temperature alarm in type of protection Encapsulation.
Heating and temperature alarm are always covered by a metallic hood.

With this supplement the certificate is changed to Directive 2014/34/EU.
(Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

Reason for this supplement

- Change to Directive 2014/34/EU
- Updating of the standards
- Modification of the type code
- New type HEX4-SS* with stainless steel terminal box

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Terminals type UK	KEMA 98 ATEX 1651 U	EN 60079-0:2012 EN 60079-0:2007
Terminals type UT	KEMA 04 ATEX 2048 U	EN 60079-0:2012 EN 60079-0:2007

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, fax +49.234.3696-110, zs-exam@dekra.com

15.3	**Parameters**			
15.3.1	Electrical data			
15.3.1.1	Supply			
	Supply voltage		100-230	V
	Frequency		50/60	Hz
	Power		400	VA
	Rated current		5	A
15.3.1.2	Alarm contact			
	Voltage		250	V
	Current	AC	1.5	A
		DC	0.5	A
15.3.2	Thermal data			
15.3.2.1	Type HEX4-135			
	Ambient temperature		-20 °C...60 °C	
	Temperature class		T4	
	Maximum surface temperature T		135 °C	
15.3.2.2	Type HEX4-SS135			
	Ambient temperature		-20 °C...90 °C	
	Temperature class		T4	
	Maximum surface temperature T		135 °C	
15.3.2.3	Type HEX4-180			
	Ambient temperature		-20 °C...60 °C	
	Temperature class		T3	
	Maximum surface temperature T		180 °C	
15.3.2.4	Type HEX4-SS180			
	Ambient temperature		-20 °C...90 °C	
	Temperature class		T3	
	Maximum surface temperature T		180 °C	
15.3.3	Protection type according to EN60529		IP66	

16 **Report Number**

BVS PP 04.2178 EU, as of 2018-03-23

17 **Special Conditions for Use**

None

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, fax +49.234.3696-110, zs-exam@dekra.com

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
Bochum, dated 2018-03-23
BVS-Pe/Mu A 20170924

Certifier

Approver

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, fax +49.234.3696-110, zs-exam@dekra.com

Translation

1 EU-Type Examination Certificate Supplement 4

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 04 ATEX E 253**

4 Product: **Heater type HEX4-****

5 Manufacturer: **M&C TechGroup Germany GmbH**

6 Address: **Rehhecke 79, 40885 Ratingen, Germany**

7 This supplementary certificate extends EU-Type Examination Certificate No. BVS 04 ATEX E 253 to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 04.2178 EU.

9 The Essential Health and Safety Requirements are assured in consideration of:

EN IEC 60079-0:2018	**General requirements**
EN IEC 60079-7:2015 + A1:2018	**Increased Safety "e"**
EN 60079-18:2015/A1:2017	**Encapsulation "m"**
EN 60079-31:2014	**Protection by Enclosure "t"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

II 2G Ex eb mb IIC T4/T3 Gb
II 2D Ex tb IIIC T135°C/180°C Db

DEKRA Testing and Certification GmbH
Bochum, 2022-04-01

Signed: Jörg-Timm Kilisch

Managing Director

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 04 ATEX E 253
Supplement 4

15 **Product description**

15.1 **Subject and type**

Heater type HEX4-**

- 180 - maximum surface temperature 180 °C
- 135 - maximum surface temperature 135 °C
- blank - aluminium terminal box
- SS - stainless steel terminal box

15.2 **Description**

The heater HEX4-** is intended for heating metal bodies (e.g. gas-extraction probe type SP3000/SP3100, M&C inc.).
It consists of a terminal box in type of protection Increased Safety, a heating cartridge in type of protection Increased Safety and a temperature alarm in type of protection Encapsulation.
Heating and temperature alarm are always covered by a metallic hood.

Reason for this supplement

- Updating of the standards
- *Modification of the type code*

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Terminals type UK	KEMA 98 ATEX 1651 U	EN 60079-0:2012 EN 60079-0:2007
Terminals type UT	KEMA 04 ATEX 2048 U	EN 60079-0:2012 EN 60079-0:2007

15.3 **Parameters**

15.3.1 Electrical data

15.3.1.1 Supply

Supply voltage		100-230	V
Frequency		50/60	Hz
Power		400	W
Rated current		5	A

15.3.1.2 Alarm contact

Voltage		250	V
Current	AC	1.5	A
	DC	0.5	A

15.3.2 Thermal data

15.3.2.1 Type HEX4-T4

Ambient temperature		-20 °C...60 °C
Temperature class		T4
Maximum surface temperature T		135 °C

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

15.3.2.2	Type HEX4-SST4	
	Ambient temperature	-20 °C...90 °C
	Temperature class	T4
	Maximum surface temperature T	135 °C
15.3.2.3	Type HEX4-T3	
	Ambient temperature	-20 °C...60 °C
	Temperature class	T3
	Maximum surface temperature T	180 °C
15.3.2.4	Type HEX4-SST3	
	Ambient temperature	-20 °C...90 °C
	Temperature class	T3
	Maximum surface temperature T	180 °C
15.3.3	Protection type according to EN60529	IP66

16 **Report Number**

BVS PP 04.2178 EU, as of 2022-04-01

17 **Special Conditions for Use**

None

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2022-04-01
BVS-Pe/Mu A20201146

Managing Director

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BVS 15.0060 Issue No: 1

Certificate history:
Issue No. 1 (2018-04-03)
Issue No. 0 (2015-06-29)

Status: **Current**

Date of Issue: **2018-04-03**

Applicant: **M&C TechGroup Germany GmbH**
Rehhecke 79
40885 Ratingen
Germany

Equipment: **Heater type HEX4-***
Optional accessory:

Type of Protection: **Equipment protection by encapsulation "m", Equipment dust ignition protection by enclosure "t", Equipment protection by increased safety "e"**

Marking:
Ex eb mb IIC T4/T3 Gb
Ex tb IIIC T135°C/180°C Db

Approved for issue on behalf of the IECEx Certification Body: Jörg Koch

Position: Head of Certification Body

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
On the safe side.

IECEx Certificate of Conformity

Certificate No: IECEx BVS 15.0060 Issue No: 1

Date of Issue: **2016-04-03** Page 2 of 4

Manufacturer: **M&C TechGroup Germany GmbH**
Rehhecke 79
40885 Ratingen
Germany

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-18 : 2014 Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

DE/BVS/ExTR15.0051/01

Quality Assessment Report:

DE/BVS/QAR17.0009/00

IECEx Certificate of Conformity

Certificate No: IECEx BVS 15.0060 Issue No: 1

Date of Issue: **2016-04-03** Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description

The heater HEX4-** serves for the heating of metallic bodies (e.g. gas-extraction probe type SP3000/SP3100, M&C inc.).
It consists of a terminal box in type of protection Increased Safety, a heating cartridge in type of protection Increased Safety and a temperature alarm in type of protection Encapsulation.
Heating and temperature alarm are always covered by a metallic hood.

Subject and Type

See Annex

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

Certificate No: IECEx BVS 15.0060 Issue No: 1

Date of Issue: **2016-04-03** Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Annex:

BVS_15_0060_M&CTechGroup_Annex_issue1.pdf

IECEx Certificate of Conformity

DEKRA

Certificate No.: **IECEx BVS 15.0060 issue No.: 1**
Annex
Page 1 of 1

Subject and Type

Heater type HEX4-**

180	– maximum surface temperature 180 °C
135	– maximum surface temperature 135 °C
blank	- aluminium terminal box
SS	- stainless steel terminal box

Parameters

Electrical data

Supply		
Supply voltage		100-230 V
Frequency		50/60 Hz
Power		400 VA
Rated current		5 A
Alarm contact		
Voltage		250 V
Current	AC	1.5 A
	DC	0.5 A

Thermal data

Type HEX4-135	
Ambient temperature	-20 °C...60 °C
Temperature class	T4
Maximum surface temperature T	135 °C
Type HEX4-SS135	
Ambient temperature	-20 °C...90 °C
Temperature class	T4
Maximum surface temperature T	135 °C
Type HEX4-180	
Ambient temperature	-20 °C...60 °C
Temperature class	T3
Maximum surface temperature T	180 °C
Type HEX4-SS180	
Ambient temperature	-20 °C...90 °C
Temperature class	T3
Maximum surface temperature T	180 °C
Protection type according to EN60529	IP66

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Terminals type UK	IECEx KEM 06.0034 U	IEC 60079-0:2011 IEC 60079-7:2006
Terminals type UT	IECEx KEM 06.0027	IEC 60079-0:2011 IEC 60079-7:2006

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx BVS 15.0060**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2018-04-03) Issue 0 (2015-06-29)
Date of Issue:	2022-04-13		
Applicant:	**M&C TechGroup Germany GmbH** Rehhecke 79 40885 Ratingen **Germany**		
Equipment:	**Heater type HEX4-***		
Optional accessory:			
Type of Protection:	**Protection by Encapsulation "m", Protection by Enclosure "t", Increased Safety "e"**		
Marking:	Ex eb mb IIC T4/T3 Gb Ex tb IIIC T135°C/180°C Db		

Approved for issue on behalf of the IECEx Certification Body: **Dr Michael Wittler**

Position: **Deputy Head of Certification Body**

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
On the safe side.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 15.0060** Page 2 of 4

Date of issue: 2022-04-13 Issue No: 2

Manufacturer: **M&C TechGroup Germany GmbH**
Rehhecke 79
40885 Ratingen
Germany

Manufacturing locations: **M&C TechGroup Germany GmbH**
Rehhecke 79
40885 Ratingen
Germany

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-18:2014 Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”
Edition:4.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/BVS/ExTR15.0051/02

Quality Assessment Report:

DE/BVS/QAR17.0009/04

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 15.0060** Page 3 of 4

Date of issue: 2022-04-13 Issue No: 2

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Description

The heater HEX4-** serves for the heating of metallic bodies (e.g. gas-extraction probe type SP3000/SP3100, M&C inc.).
It consists of a terminal box in type of protection Increased Safety, a heating cartridge in type of protection Increased Safety and a temperature alarm in type of protection Encapsulation.
Heating and temperature alarm are always covered by a metallic hood.

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Terminals type UK	IECEx KEM 06.0034 U [1]	IEC 60079-0:2011 IEC 60079-7:2006
Terminals type UT	IECEx KEM 06.0027 U[1]	IEC 60079-0:2011 IEC 60079-7:2006

[1] No applicable technical differences

Subject and Type

See Annex

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 15.0060** Page 4 of 4

Date of issue: 2022-04-13 Issue No: 2

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Updating of the standards

Annex:

BVS_15_0060_M&CTechGroup_Annex_issue2_1.pdf

IECEx Certificate of Conformity

DEKRA

Certificate No.: **IECEx BVS 15.0060 issue No: 2**
Annex
Page 1 of 1

Heater type HEX4-**

180	- maximum surface temperature 180 °C
135	- maximum surface temperature 135 °C
blank	- aluminium terminal box
SS	- stainless steel terminal box

Parameters

Electrical data

Supply		
Supply voltage		100-230 V
Frequency		50/60 Hz
Power		400 W
Rated current		5 A
Alarm contact		
Voltage		250 V
Current	AC	1.5 A
	DC	0.5 A

Thermal data

Type HEX4-T4	
Ambient temperature	-20 °C...60 °C
Temperature class	T4
Maximum surface temperature T	135 °C
Type HEX4-SST4	
Ambient temperature	-20 °C...90 °C
Temperature class	T4
Maximum surface temperature T	135 °C
Type HEX4-T3	
Ambient temperature	-20 °C...60 °C
Temperature class	T3
Maximum surface temperature T	180 °C
Type HEX4-SST3	
Ambient temperature	-20 °C...90 °C
Temperature class	T3
Maximum surface temperature T	180 °C
Protection type according to EN60529	IP66