



Physical Technical Testing Institute
Ostrava-Radvanice



EC-Type Examination Certificate

- (1)
- (2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**
- (3) EC-Type Examination Certificate Number:
FTZÚ 06 ATEX 0134X
- (4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**
- (5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**
- (6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**
- (7) This equipment or protective system and any of acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) The Physical Technical Testing Institute, notified body number 1026 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 N°
06/0134 dated 26. 06. 2006
- (9) Compliance with Essential Health and safety requirements has been assured by compliance with:
EN 50014:1997 + A1,+A2 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 testing of the specified equipment or protective system in accordance 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 following:

 **II 2G EEx ia IIC T4**

This EC-Type Examination Certificate is valid till: **26. 06. 2011**

Responsible person:

Dipl. Ing. Šindler Jaroslav

Head of certification body



Date of issue: **26.06.2006**

Number of pages: **3**

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(14) **EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of Equipment or Protective System:

The "Altair Pro" portable single gas detector is initially available in three gas models e.g. O₂, CO and H₂S. The gas sensing cells are of the electro-chemical type. The instrument is powered by a replaceable CR2 type lithium cell which must be of type listed in (17.1). The LCD display panel on the front displays an indication of the detected gas level or the alarm range when in alarm mode. A push button allows users to select the information viewed on the LCD display. Audible and visual alarm indicators are located on the front of the apparatus, and an imbalanced motor produces an optional vibration alert when in alarm mode. All electronic components are mounted on one printed circuit board and housed in an antistatic plastic enclosure.

Ambient temperature: T_a = -20°C to +50°C

(16) Report No. 06/0134

(17) Special conditions for safe use:

17.1 Only the lithium batteries of Panasonic CR-2PA/1B; Energizer CR2 EL1CR2BP; Varta CR2 6206 and Varta (Power One) CR2 CR15H270, 6206 can be used in the apparatus.

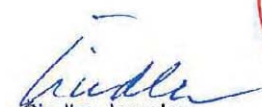
17.2 The battery must not be replaced in hazardous location.

17.2 The ATEX Oxygen performance evaluation is not a subject of this certificate.

(18) Essential Health and Safety Requirements:

Essential health and safety requirement of Directive 94/9/EC are covered by the standard mentioned in (9), according which the product was verified and in the manufacturer's instruction for use.

Responsible person:


Dipl. Ing. Sindler Jaroslav

Head of certification body



Date of issue: 26.06.2006

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(14) **EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(19)

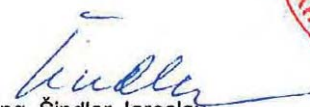
LIST OF DOCUMENTATION

<i>Documentation:</i>	<i>Date:</i>
Drawings No..	
SK3098-1012-00 Altair Pro Marking Details (sheet 1 of 7)	16.06.2006
SK3098-1012-00 Altair Pro Assembly Details (sheet 2 of 7)	16.06.2006
SK3098-1012-00 Schematic, Single Gas, Altair Pro (sheet 3 of 7)	16.06.2006
SK3098-1012-00 Altair Pro Parts List (sheet 4 of 7)	16.06.2006
SK3098-1012-00 PCB Artwork, (Altair Pro PCB) (ref. 10073836) (sheet 5 of 7) & attachment B, 10 sheets	16.06.2006
SK3098-1012-00 PCB Artwork, (Altair Pro O2 PCB) (ref. 10066405) (sheet 5 of 7) & attachment C, 10 sheets	16.06.2006
SK3098-1012-00 Special Component Requirements (sheet 6 of 7)	16.06.2006
SK3098-1012-00 Altair Pro Overview (sheet 7 of 7)	16.06.2006

Responsible person:



Date of issue: 26.06.2006


Dipl. Ing. Šindler Jaroslav

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Physical Technical Testing Institute
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(1) **Supplement No. 1 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - new model (variant), **ALTAIR PRO-R O₂**

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced into service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 50014:1997 + A1,+A2; EN 50020:2002

(11) Marking of equipment shall contain symbols:

 **II 2G EEx ia IIC T4**


(12) This type examination certificate is valid till: **26. 06. 2011**

Responsible person:

Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: **13. 12. 2006**



Number of pages: **3**

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**Supplement No. 1 to
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(15) Description of variation to the Equipment or Protective System:

Variation one.

To permit mechanical changes to the O₂ sensor arrangement and thus forming an ALTAIR PRO-R oxygen detector. The O₂ sensor is connected via a connector jack and 10 feet long cable.

The variation does not affect intrinsic safety.

(16) Report No. : 06/0134/1

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

Responsible person:

Dipl. ng. Šindler Jaroslav

Head of certification body



Date of issue: 13.12.2006

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Supplement No. 1 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X

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LIST OF DOCUMENTATION

<i>Documentation:</i>	<i>Date of FTZÚ verification:</i>
• SK3098-1012-01 Marking Details (sheet 1 of 9)	updated 12.12.2006
• SK3098-1012-01 Assembly Details (sheet 2 of 9)	updated 12.12.2006
• SK3098-1012-01 Schematic (sheet 3 of 9)	no-change 12.12.2006
• SK3098-1012-01 Parts List (sheet 4 of 9)	updated 12.12.2006
• SK3098-1012-01 PCB Artwork (sheet 5 of 9) Attachments B, C, & C.1 as follows: B: Altair Pro, Main, ref. 10073836 C: Altair Pro O2, Main, ref. 10066405 C.1: Altair Pro-R O2, Connector, ref. 10075555	updated 12.12.2006 no-change no-change new 12.12.2006
• SK3098-1012-01 Special Component Requirements (sheet 6 of 9, and sheet 7 of 9)	updated 12.12.2006
• SK3098-1012-01 Altair Pro Overview (sheet 8 of 9)	updated 12.12.2006
• SK3098-1012-01 Revision History (sheet 9 of 9)	new 12.12.2006

Responsible person:


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Date of issue: 13.12.2006

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Physical Technical Testing Institute
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(1) **Supplement No. 2 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - modification of certified apparatus
- application of new standards

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are place on market or introduce in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0 : 2006; EN 60079-11 : 2007

(11) Marking of equipment shall contain symbols:

Ex II 2G Ex ia IIC T4

(12) This type examination certificate is valid till: **26. 06. 2011**

Responsible person:

Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: **13.03.2008**

Number of pages: 3

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**Physical Technical Testing Institute
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**Supplement No. 2 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System.

Variation two, to permit the following:

1. Some capacitors to be added to the schematic diagram for the microcontroller reset circuit to enhance ESD immunity. Changes to the PCBs, added revision 2 and 3 of PCB 10066405 and revision 2 of PCB 10073836 (added some capacitors as well)
2. A Minor change to the Remote O2 version (AltairPro-R, PVBA 10075813) to enhance immunity to ESD at the cable (replacement of the protecting element).
3. Some software changes.

These changes do not affect the safety assessment.

New standards mentioned in (10) do not make different requirements on the product.

(16) Report No. : 06/0134/2

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

Responsible person:

Date of issue: 13.03.2008


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Supplement No. 2 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X

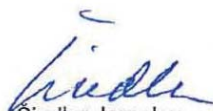
(19)

LIST OF DOCUMENTATION

<i>Documentation:</i>	<i>Date:</i>
• Drawings No.:	
SK3098-1012_02 (sheets 1/9 to 9/9)	1/11/2008
SK3098-1012_02 Attachment C (Altair Pro O2 PCB: 10066405 rev. 2)	2/15/2008
SK3098-1012_02 Attachment C (Altair Pro O2 PCB 10066405 rev. 3)	2/15/2008
SK3098-1012_02 Attachment B (Altair Pro O2 PCB 10073836 rev. 2)	2/15/2008

Responsible person:

Date of issue: 13.03.2008


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Physical Technical Testing Institute
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Supplement No. 3 to EC-Type Examination Certificate

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - modification of certified apparatus

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced into service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0 : 2006; EN 60079-11 : 2007

(11) Marking of equipment shall contain symbols:

Ex II 2G Ex ia IIC T4


(12) This type examination certificate is valid till: **26. 06. 2011**

Responsible person:

Date of issue: 27.05.2008


Dipl. Ing. Šindler Jaroslav
Head of certification body




Number of pages: 2
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**Supplement No. 3 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System:

Variation three, to permit:

1. The use of an alternative case overmold material with the similar mechanical and electrostatic dissipative properties.
2. Minor drawing changes.

The changes do neither affect the intrinsic safety nor the ingress protection of apparatus.

(16) Report No. : 06/0134/3

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

(19) List of documentation:

Drawing No.: SK3098-1012, Revision 3 (1 page, sheet 6)

06 May 2008

Responsible person:

Dipl. Ing. Šindler Jaroslav

Head of certification body



Date of issue: 27.05.2008

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Physical Technical Testing Institute
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(1) **Supplement No. 4 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - **performance tests**


(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

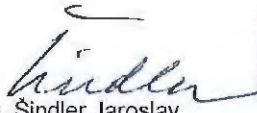
EN 50271 : 2001, EN 50104 : 2002 + EN 50104 : 2002/A1 : 2004, EN 50270 : 1999

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4**

(12) This type examination certificate is valid till: **26. 06. 2011**

Responsible person:


Dipl. Ing. Sindler Jaroslav
Head of certification body



Date of issue: 19.09.2008

Number of pages: 2

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**Supplement No. 4 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System:

The apparatus Altair Pro has been subjected to tests prescribed in standards listed in (10) for O₂ over the temperature range of -10°C to 40°C, over the humidity range of 10% to 90% r.h. and complies with their requirements. Technical description has not been changed.

(16) Report No. : 06/0134/4

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

(19) List of documentation:

- [1] Altair Pro, EN50271 Safety Discussion, V 1.9, Rev. 01, Date: 22.07.2008 – 9 pages
- [2] Operating Manual, Altair Pro Single Gas Detector, No. 10079352 – 46 pages
- [3] Software Verification Test Report for Altair Pro v 1.9, Date: 15.05.2008 – 5 pages
- [4] Altair Pro – Software documentation, Date: 09.08.2006 – 11 pages
- [5] Drawing SK3098-1012, Date: 11.01.2008 – 9 pages
- [6] Drawing SK3098-1112, Date: 25.07.2008 – 3 pages
- [7] Altair Pro Software Update Summary, Date: 23.7.2008 – 3 pages
- [8] Altair Pro Software Information, Date: 21.07.2008 – 1 page
- [9] Source codes *.c and *.h for Altair Pro

Date of verification of documentation [1] to [9] by FTZÚ: 19.09.2008

Responsible person:

Dipl. Ing. Sindler Jaroslav

Head of certification body



Date of issue: 19.09.2008

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Physical Technical Testing Institute
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(1) **Supplement No. 5 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - **modification of certified apparatus software**

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:


EN 50271:2001, EN 50104:2002 + EN 50104:2002/A1:2004

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4**

(12) This type examination certificate is valid till: **26. 06. 2011**

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 19.11.2008

Number of pages: 2

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**Physical Technical Testing Institute
Ostrava-Radvanice**

(13) **Schedule**

(14) **Supplement No. 5 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System:

The software code of the apparatus was changed. These changes don't have influence on the safety of the apparatus, or the Oxygen detection performance.

Variation five, to permit:

a) Some changes of the software code prescribed in the documentation in the point (19).

Technical description has not been changed.

(16) Report No. : 06/0134-d5 dated 18.11.2008 - 2 pages

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

(19) List of documentation:

- [1] Drawing SK3098-1112, rev.1, date: 09.10.2008 – 3 pages
- [2] Firmware Verification Report, v 2.1, rev. 3, date: 15.09.2008 5 pages
- [3] Source codes *.c and *.htm with comparison of changes

Date of verification of documentation [1] to [3] by FTZÚ: 19.11.2008

Responsible person:


Dipl. Ing. Šindler Jarosláv
Head of certification body



Date of issue: 19.11.2008

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(1) **Supplement No. 6 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Minc Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - modification of certified apparatus

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 (Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are place on market or introduce in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0:2006 EN 60079-11:2007


(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4**


(12) This type examination certificate is valid till: **26.06.2011**

Responsible person:

Date of issue: 01.12.2008


Dipl. Ing. Šindler Jaroslav
Head of certification body




Number of pages: 2
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Physical Technical Testing Institute
Ostrava-Radvanice

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(14)

Supplement No. 6 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X

(15) Description of variation to the Equipment or Protective System:

Variation six. to permit:

- a) The use of an alternative any color case overmold material with the similar mechanical and electrostatic dissipative properties.

The changes do neither affect the intrinsic safety nor the ingress protection of apparatus.

(16) Report No. : 06/0134/6, date 28.11.2008 - 2 pages

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

(19) List of documentation:

[1] Drawings No.: SK3098-1012, Revision 4, date: 26.11.2008 - 9 pages

Date of verification of documentation by FTZÚ: 28.11.2008

Responsible person:

Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 01.12.2008

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(1) **Supplement No. 7 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - modification of certified apparatus

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 (Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0:2006 EN 60079-11:2007

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4**

(12) This type examination certificate is valid till: **26.06.2011**

Responsible person:

Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 11.01.2010



Number of pages: 2
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(14)

Supplement No. 7 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X

(15) Description of variation to the Equipment or Protective System:

Variation seven, to permit:

- a) Added -40°C as alternate minimum ambient temperature.
- b) Minor changes to text for clarification purposes in documentation.

The changes do neither affect the intrinsic safety nor the ingress protection of apparatus.

(16) Report No. : 06/0134/7, date 11.01.2010 - 2 pages

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

(19) List of documentation:

[1] Drawings No.: SK3098-1012, Revision 5, Date: 24.11.2009 - 9 pages

Date of verification of documentation by FTZÚ: 11.01.2010

Responsible person:

Date of issue: 11.01.2010

Dipl. Ing. Šindler Jaroslav
Head of certification body



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(1) **Supplement No. 8 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - **modification of certified apparatus software**


(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

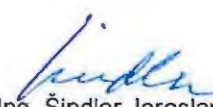
EN 50271:2001, EN 50104:2002 + EN 50104:2002/A1:2004

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4**

(12) This type examination certificate is valid till: **26. 06. 2011**

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: **21.04.2010**

Number of pages: 2

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**Physical Technical Testing Institute
Ostrava-Radvanice**

(13)

Schedule

(14)

**Supplement No. 8 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System:

The software code of the apparatus was changed. These changes don't have influence on the safety of the apparatus, or the Oxygen detection performance.

Variation eight, to permit:

a) Some changes of the software code prescribed in the documentation in the point (19).

Technical description has not been changed.

(16) Report No. : 06/0134/8 dated 21.04.2010 - 2 pages

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

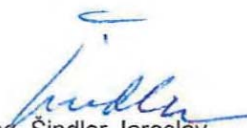
(19) List of documentation:

- [1] Drawing SK3098-1112, rev.2, date: 08.04.2010 – 3 pages
- [2] Firmware Verification Report, v 2.6, rev. 0, date: 03.11.2009 – 4 pages
- [3] Source codes *.c with comparison of changes

Date of verification of documentation [1] to [3] by FTZÚ: 21.04.2010

Responsible person:

Date of issue: 21.04.2010


Dipl. Ing. Šindler Jaroslav
Head of certification body



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Physical Technical Testing Institute
Ostrava-Radvanice



(1) **Supplement No. 9 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - **modification of certified apparatus software**

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

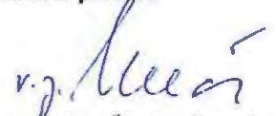
EN 50271:2001, EN 50104:2002 + EN 50104:2002/A1:2004

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4**

(12) This type examination certificate is valid till: **26.06.2011**

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body




Date of issue: 01.02.2011

Number of pages: 2

Page: 1/2

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**Physical Technical Testing Institute
Ostrava-Radvanice**

(13) **Schedule**

(14) **Supplement No. 9 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System:

The software code of the apparatus was changed. These changes don't have influence on the safety of the apparatus, or the Oxygen detection performance.

Variation nine, to permit:

a) Some changes of the software code prescribed in the documentation in the point (19).

Technical description has not been changed.

(16) Report No. : 06/0134/9 dated 01.02.2011 - 2 pages

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

(19) List of documentation:

- [1] Drawing SK3098-1112, rev.3, date: 17.01.2011 – 3 pages
- [2] Source codes safety.c and sensor.c with comparison of changes

Date of verification of documentation [1] to [2] by FTZÚ: 01.02.2011

Responsible person:

Dipl. Ing. Šindler Jaroslav

Head of certification body



Date of issue: 01.02.2011

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(1) **Supplement No. 10 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for: - **modification of certified apparatus software**

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are placed on market or introduced in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:


EN 50271:2001, EN 50104:2002 + EN 50104:2002/A1:2004

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4**

(12) This type examination certificate is valid till: **26.06.2011**

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 13.04.2011

Number of pages: 2

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**Physical Technical Testing Institute
Ostrava-Radvanice**

(13)

Schedule

(14)

**Supplement No. 10 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System:

The software code of the apparatus was changed. These changes don't have influence on the safety of the apparatus, or the Oxygen detection performance.

Variation ten, to permit:

a) Some changes of the software code prescribed in the documentation in the point (19).

Technical description has not been changed.

(16) Report No. : 06/0134/10 dated 13.04.2011 - 2 pages

(17) Special conditions for safe use: see the basic certificate

(18) Essential Health and Safety Requirements: see the basic certificate

(19) List of documentation:

[1] Drawing SK3098-1112, rev.4, date: 25.03.2011 – 3 pages

[2] Source code sensor.c with comparison of changes

Date of verification of documentation [1] to [2] by FTZÚ: 13.04.2011

Responsible person:

Dipl. Ing. Šindler Jaroslav

Head of certification body



Date of issue: 13.04.2011

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(1) **Supplement No. 11 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**

(6) Address: **1000 Cranberry Township PA 16066-5207, U.S.A.**

(7) This supplement of certificate is valid for:

- application of new standards
- modification of certified apparatus marking
- prolongation of certificate validity

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains other requirements, which manufacturer shall fulfil before products are place on market or introduce in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

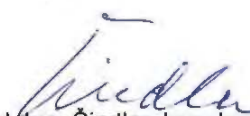
EN 60079-0:2009, EN 60079-11:2007

(11) Marking of equipment shall contain symbols:

Ex II 2G Ex ia IIC T4 Gb

(12) This type examination certificate is valid till: **18.05.2016**

Responsible person:


Dipl. Ing. Šindler Jaroslav

Head of certification body



Date of issue: **18.05.2011**

Number of pages: 2

Page: 1/2

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Physical Technical Testing Institute
Ostrava-Radvanice

(13)

Schedule

(14)

**Supplement No. 11 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of variation to the Equipment or Protective System:

Variation eleven, to permit:

- a) Evaluation according to new standard EN 60079-0:2009.
- b) The marking was updated according to new standard.
- c) The validity of the certificate is prolonged till 18.05.2016.

The changes are listed in verified manufacturer's document mentioned in clause (19) of this supplement. The changes do not affect the intrinsic safety. Technical description has not been changed.

(16) Report No. : 06/0134/11 dated 18.05.2011

(17) Special conditions for safe use: remain unchanged

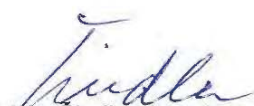
(18) Essential Health and Safety Requirements: Covered by standards mentioned in (10) of this Supplement.

(19) List of documentation:

[1] Drawing SK3098-1012, rev.6, date: 04.05.2011 – 9 sheets

Date of verification of documentation [1] by FTZÚ: 18.05.2011

Responsible person:


Dipl. Ing. Sindler Jaroslav
Head of certification body



Date of issue: 18.05.2011

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(1) **Supplement No. 12 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 94/9/EC)**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Company**

(6) Address: **1000 Cranberry Woods Drive, Cranberry Twp, PA 16066, U.S.A.**

(7) This supplement of certificate is valid for: - modification of certified apparatus
- modification of name and address of manufacturer


(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains another requirements, which manufacturer shall fulfil before products are place on market or introduce in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0:2009, EN 60079-11:2007

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4 Gb**

(12) This type examination certificate is valid till: **18.05.2016**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 26.07.2012

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Physical Technical Testing Institute
Ostrava – Radvanice

(13)

Schedule

(14)

**Supplement No. 12 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X**

(15) Description of Equipment or Protective System:

Variation twelve, to permit:

- a) Revised Altair Pro PCB with changes of the elements C8, R3 and U2.
- b) Due to company restructuring, manufacturer will no longer be recognized at their manufacturing facility as the "Instrument Division" and can just be shown as Mine Safety Appliances Company. Also, the "P.O. Box 427, Pittsburgh, PA 15230" address will no longer be used.

The changes are listed in verified manufacturer's document mentioned in clause (19) of this supplement. The changes do not affect the intrinsic safety.

(16) Report No.: 05/0250/6, dated 26.07.2012

(17) Special conditions for safe use: remain unchanged

(18) Essential Health and Safety Requirements:

Covered by standards mentioned in (10) of this supplement.

(19) List of Documentation:

[1] Drawings No. SK 3098-1012, Rev. 6, Date: 18.05.2012 – 28 sheets

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 26.07.2012

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(1) **Supplement No. 13 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 94/9/EC)**

(3) EC-Type Examination Certificate Number:

FTZÚ 06 ATEX 0134X

(4) Equipment or protective system: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Company**

(6) Address: **1000 Cranberry Woods Drive, Cranberry Twp, PA 16066, U.S.A.**

(7) This supplement of certificate is valid for: - prolongation of certificate validity

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains another requirements, which manufacturer shall fulfil before products are place on market or introduce in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0:2012, EN 60079-11:2012

(11) Marking of equipment shall contain symbols:

 **II 2G Ex ia IIC T4 Gb**

(12) This type examination certificate is valid till: **19.05.2021**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 19.04.2016

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Physical Technical Testing Institute
Ostrava – Radvanice

(13)

Schedule

(14)

Supplement No. 13 to
EC-Type Examination Certificate N° FTZÚ 06 ATEX 0134X

(15) Description of Equipment or Protective System:

Variation thirteen, to permit:

- a) The equipment has been evaluated according to newest standards as mentioned in clause (10).
- b) The certificate validity has been prolonged for next five years.

Parameters:

Ambient temperature: -20°C to +50°C

(16) Report No.: 06/0134/13

(17) Special conditions for safe use: updated

17.1 The equipment shall only be opened in a non-hazardous area.

17.2 There are possible to use the one cell type Panasonic CR-2, CR-2PA/BE, CR-2PA/BOEM or Energizer EL1CR2, EL1CRBP or Varta (Power One) CR2, 6206, CR15H270 in the equipment.

17.3 The equipment enclosure includes accessible metal parts. The end user shall determine suitability in the specific application. The measured capacitance of the equipment exceeds the values of EN 60079-0:2012 Table 9.

17.4 The performance tests of the equipment are not a subject of this supplement.

(18) Essential Health and Safety Requirements:

Covered by standards mentioned in (10) of this supplement.

(19) List of Documentation:

Document No.	Rev:	Sheets:	Date:
SK3098-1012	9	21	19.04.2016

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 19.04.2016

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(1) **Supplementary EU - Type Examination Certificate No.14**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 2014/34/EU)**

(3) EU - Type Examination Certificate number:

FTZÚ 06 ATEX 0134X

(4) Product: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Company**

(6) Address: **1000 Cranberry Woods Drive, Cranberry Twp, PA 16066, U.S.A.**

(7) This supplementary certificate extends EC - Type Examination Certificate No. FTZÚ 06 ATEX 0134X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) The Physical-Technical Testing Institute, Notified Body number 1026, in accordance with Articles 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014, certifies that this product, as modified by this supplementary certificate, 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.

(9) 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 (20.04.2016) 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 20.04.2016.

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

EN 60079-0:2012+A11:2013, EN 60079-11:2012

(11) The marking of the product shall include the following:

 **II 1G Ex ia IIC T4 Ga**

(12) The certificate is valid till: **19.05.2021**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 19.05.2016

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Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **Supplementary EU - Type Examination Certificate No. 14
to FTZÚ 06 ATEX 0134X**

(15) Description of the variation to the Product:

The subject of this supplementary certificate is:

- Modification of certified apparatus marking.

The product has been newly evaluated as an equipment category 1. The marking has been changed.
The specific conditions of use have been updated.

Parameters:

Ambient temperature: -20°C to +50°C

(16) Report Number.: 06/0134/14

(17) Specific Conditions of Use:

updated

1. The equipment shall only be opened in a non-hazardous area.
2. There are possible to use the one cell type Panasonic CR-2, CR-2PA/BE, CR-2PA/BOEM or Energizer EL1CR2, EL1CRBP or Varta (Power One) CR2, 6206, CR15H270 in the equipment.
3. The equipment enclosure includes accessible metal parts. The end user shall determine suitability in the specific application. The measured capacitance of the equipment on the item back clip is 40pF.
4. The performance tests of the equipment are not a subject of this supplement.

(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (10) of this supplementary certificate.

(19) Drawings and Documents:

Number:	Rev:	Sheets:	Date:
SK3098-1012	10	21	10.05.2016

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 19.05.2016

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(1) **Supplementary EU - Type Examination Certificate No.15**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 2014/34/EU)**

(3) EU - Type Examination Examination Certificate number:

FTZÚ 06 ATEX 0134X

(4) Product: **Altair Pro Portable Single Gas Detector**

(5) Manufacturer: **Mine Safety Appliances Company**

(6) Address: **1000 Cranberry Woods Drive, Cranberry Twp, PA 16066, U.S.A.**

(7) This supplementary certificate extends EC - Type Examination Certificate No. FTZÚ 06 ATEX 0134X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) The Physical-Technical Testing Institute, Notified Body number 1026, in accordance with Articles 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014, certifies that this product, as modified by this supplementary certificate, 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.

(9) 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 (20.04.2016) 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 20.04.2016.

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

EN 60079-0:2012+A11:2013, EN 60079-11:2012

(11) The marking of the product shall include the following:

 **II 1G Ex ia IIC T4 Ga**

(12) The certificate is valid till: **19.05.2021**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 21.09.2017

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Physical-Technical Testing Institute
Ostrava - Radvanice

(13)

Schedule

(14) **Supplementary EU - Type Examination Certificate No. 15
to FTZÚ 06 ATEX 0134X**

(15) Description of the variation to the Product:

The subject of this supplementary certificate is:

- Modification of certified apparatus.

The minimum ambient temperature has been changed from -20°C to -40°C. The approval documentation has been updated.

Parameters:

Ambient temperature: -40°C to +50°C

(16) Report Number.: 06/0134/15

(17) Specific Conditions of Use:

None additional to those listed previously.

(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (10) of this supplementary certificate.

(19) Drawings and Documents:

Number:	Rev:	Sheets:	Date:
SK3098-1012	11	21	08.09.2017

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 21.09.2017

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