Declaration of Conformity

Manufacturer
Adixen Scandinavia AB
Westmansgatan 49
SE-582 16 Linköping
Sweden
Phone: +46 (0)13-355900
Fax: +46 (0)13-355901

Product	**Brand Name**
Hydrogen Leak Detector	Extrima®

The manufacturer declares conformity with the following directives

EMC	Electromagnetic Compatibility (89/336/EEC).
ATEX	Equipment intended for use in potentially Explosive Atmospheres (94/9/EC)
ROHS	Restriction of the use of certain Hazardous Substances in electronic equipment (2002/95/EC).
WEEE	Waste electrical and electronic equipment (2002/96/EC).
LVD	Electrical safety - Low Voltage (2006/95/EC) *.

* Relevant only for battery charger (CE marked). Manufacturers declaration provided on request

Harmonized European standards which have been applied

No.	**Issue**	**Subject**
SS-EN 61000-6-1	2	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments.
SS-EN 61000-6-3	2	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments.
SS-EN 61000-4-6	1	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conduct disturbances, induced by radio-frequency fields.
EN 60079-0	4	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
EN 60079-11	5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i".
EN 60079-26	2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga.
SS-EN 13980	1	Potentially explosive atmospheres - Application of quality systems.

Test institutes / notified bodies

EMC	**ATEX quality assurance**	**ATEX product certificate**
BK CE Services AB Datalinjen 5A 583 30 Linköping Sweden Phone: +46 (0)13 21 26 50 Fax: +46 (0)13 99 13 025	SP Technical Research Institute of Sweden Box 857 50115 Borås, Sweden Phone: +46 (0) 10 516 50 00 Fax: +46 (0) 33 13 55 02 Notified body number 0402	Sira Certification Service Rake Lane, Eccleston, Chester, CH4 9JN England Phone: +44 (0) 1244 670900 Fax: +44 (0) 1244 681330 Notified body number 0518

Report and Certificate reference numbers

No.	**Issue**	**Subject**
Sira 07ATEX2117X	3	EC type-examination certificate
TR_ADI070827EMC001	-	EMC Test Report Extrima

For Adixen Scandinavia AB, December 29, 2010

Fredrik Enquist
R&D Manager

EN

1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 07ATEX2117X** Issue: **3**

4 Equipment: **Extrima® Hydrogen Leak Detector**

5 Applicant: **Adixen Scandinavia AB**

6 Address: Westmannsgatan 49
SE-582 16 Linköping
Sweden

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC 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 intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0: 2006 EN 60079-11: 2007 EN 60079-26: 2004

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 and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 1G
Ex ia IIC T3 (Ta = -20°C to +50°C)

Project Number 23373 and 23526
C. Index 14

C Ellaby
Certification Officer

Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com

SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 07ATEX2117X**
Issue 3

13 **DESCRIPTION OF EQUIPMENT**

The Extrima Hydrogen Leak Detector is a portable device used to detect hydrogen leaks and is powered by a rechargeable Lithium ion battery. The equipment has a main housing (which is referred to as the detector), interconnected by a pluggable cable to a PX50 series probe unit. The interconnecting cable is fitted with a Lemo connector at each end enabling it to be removed from both the probe and detector.

The detector housing, is made from extruded aluminium, which is anodized and protected by conductive rubber face seals fitted to the front and rear panels. The side panels and corners of the enclosure are fitted with protective rubber ribs. The front and rear panels are secured to the main detector housing by four fasteners.

The front panel is fitted with the following; glass LCD, piezo speaker, four rubber pushbuttons, two LEDs and a Lemo connector for connecting to the probe. On the outside, the back panel has a socket for connecting to the battery charger/barcode reader and a Gortex seal. The battery charger has the following maximum parameters, 12.6V, 770 mA.

Internally the equipment comprises a potted lithium battery pack fitted to the rear of the back panel, and the following PCBs:

- Main
- Keyboard
- Backlight
- LCD

Externally, the probe comprises a conductive plastic enclosure with a single switch and two LEDs. The nozzle, which varies in length and type, is fitted into the end of the probe. A hydrogen sensor fits inside the nozzle and plugs into a connector that is wired back to the probe electronics. The probe is fully encapsulated, however, the switch, two LEDs and the hydrogen sensor are located ouside of the encapsulation.

Internally, the probe comprises a single circuit board. The sensor wires are fitted at one end of the board and the Lemo connector at the other.

The Extrima® Hydrogen Leak Detector has an Ingress Protection rating of IP67 (1 m, for 30 minutes).

Variation 1 - This variation introduced the following changes:

i. To prolong the battery life, the probe power generation and protection circuit on the MAIN PCB in the Detector Unit has been redesigned. The circuit contains voltage enhancement and controlled semiconductor voltage shunts. These changes give increased output parameters to the probe.
ii. PX50x Series Probe Assembly now uses a housing made from an alternative plastic material and may incorporate a hydrogen sensor that is not component approved. The circuit has been modified to provide increased power to the sensor to improve its sensitivity.
iii. The applicant's name was changed from Adixen Sensistor AB to that currently shown.

Sira Certification Service
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Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com

SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 07ATEX2117X**
Issue 3

Variation 2 - This variation introduced the following changes:

i. The LCD module for the Extrima® Hydrogen Leak Detector was modified and now includes components with a surface area of less than 20 mm².
i. The bill of material drawings, KK1012-BOM-1H-CERT and KK1018-BOM-R7-CERT, were amended to:
   - Bring them into line with Sira report number R20666A/01.
   - Remove the manufacturer's name from the specification of various safety resistors.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	10 October 2007	R52A16411B	The release of the prime certificate.
1	18 December 2009	R20666A/00	The introduction of Variation 1 (Note: the date was revised by Issue 3 to correct a typographical error).
2	30 April 2010	R20666A/01	Issued to allow report R20666A/01 to replace report R20666A/00
3	20 October 2010	R23373A/00 R23526A/00	The introduction of Variation 2.

15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

15.1 As aluminium is used at the accessible surface of this equipment, in the event of rare incidents, ignition sources due to impact and friction sparks could occur. This shall be considered when the Extrima® Hydrogen Leak Detector is being used in locations that specifically require group II, category 1 equipment.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF CERTIFICATION**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The battery pack shall be constructed from three, series connected SAFT type MP174865IS or type MP174865 Lithium ion rechargeable cells all encapsulated in Wacker Elastosil RT675.

17.4 The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.

Sira Certification Service
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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 SP 07.0002X issue No.:2

Status: **Current**

Date of Issue: **2010-12-10** Page 1 of 4

Certificate history:
Issue No. 2 (2010-12-10)
Issue No. 1 (2010-6-7)
Issue No. 0 (2007-9-21)

Applicant: **Adixen Scandinavia AB**
Westmansgatan 49
Box 76
SE-581 02 Linköping
Sweden

Electrical Apparatus: **Hydrogen Leak Detector type Extrima**
Optional accessory:

Type of Protection: **Intrinsic safety "ia"**

Marking: **Ex ia IIC T3**
Ta: -20 ºC to +50 ºC

Approved for issue on behalf of the IECEx Certification Body: Peter Bremer

Position: Certification Officer

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:

SP Technical Research Institute of Sweden
Box 857
SE-501 15 Boras
Sweden

IECEx Certificate of Conformity

EN

Certificate No.: IECEx SP 07.0002X

Date of Issue: **2010-12-10** Issue No.: **2**

Page 2 of 4

Manufacturer: **Adixen Scandinavia AB**
Westmansgatan 49
Box 76
SE-581 02 Linköping
Sweden

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 electrical 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 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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:

GB/SIR/ExTR07.0085/00
GB/SIR/ExTR09.0206/01
GB/SIR/ExTR10.0252/00
SE/SP/ExTR07.0001/00

Quality Assessment Report:

SE/SP/QAR07.0002/00

EN

IECEx Certificate of Conformity

Certificate No.: IECEx SP 07.0002X

Date of Issue: **2010-12-10** Issue No.: **2**

Schedule

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

The detector is a hand held device used to detect hydrogen leaks and is powered by a rechargeable Lithium ion battery. The device consists of a main unit interconnected by a pluggable cable to a PX50 series probe unit.

The housing of the main unit is made from aluminium which is anodized and protected by conductive rubber face seals fitted to the front and rear panels. The side panels and corners of the enclosure are fitted with protective rubber ribs. The back panel has a Gortex seal and a socket intended to be used outside hazardous areas, for connecting to the battery charger/barcode reader. The battery charger has the following maximum parameters, 12.6 V, 770 mA.

The probe has a conductive plastic enclosure and a nozzle which varies in length and type. Inside the nozzle fits a hydrogen sensor (Ex component according to ExTR SE/SP/ExTR07.0001/00 and ATEX certificate SP07ATEX3636U). The probe is fully encapsulated, however, a switch, two LEDs and the hydrogen sensor are located outside the encapsulation.

The detector has an ingress protection rating of IP67.

CONDITIONS OF CERTIFICATION: YES as shown below:

Conditions of Certificate and Manufacture
The applicant (manufacturer) shall note the following:

1. The permitted battery pack is constructed from 3 series connected SAFT type MP174865IS or type MP174865 Lithium ion rechargeable cells all encapsulated in Wacker Elastosil RT675.

2. The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform SP of any modifications of the devices that may impinge upon the explosion safety design of their products.

3. The IECEx certificate number referred to in the Manufacturer´s Documents and in the Marking Plate, according to ExTR GB/SIR/ExTR07.0085/00, shall be "IECEx SP 07.0002X".

.

Conditions for Safe Use

As aluminium is used at the accessible surface of this equipment, in the event of rare incidents, ignition sources due to impact and friction sparks could occur. This shall be considered when the detector is being installed or used in locations that specifically require level of protection Ga (see IEC 60079-26).

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IECEx Certificate of Conformity

Certificate No.: IECEx SP 07.0002X

Date of Issue: **2010-12-10** Issue No.: **2**

Page 4 of 4

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

Issue 1 of the certificate

This issue of the certificate, introduces variation 1 of the Detector Unit and the Probe. The following modifications are introduced by this variation:

To prolong the battery life, the probe power generation and protection circuit on the MAIN PCB in the Detector Unit has been redesigned. The circuit contains voltage enhancement and controlled semiconductor voltage shunts. These changes give increased output parameters to the probe.

PX50x Series Probe Assembly now uses a housing made from an alternative plastic material. The circuit has been modified to provide increased power to the sensor to improve its sensitivity.

The name of the applicant and manufacturer, has been changed from Adixen Sensistor AB to Adixen Scandinavia AB. The introduced modifications have been assessed and tested according to ExTR GB/SIR/ExTR09.0206/01, which also include assessment and test of the HS85 sensor.

Issue 2 of the certificate

This variation - variation 2 - introduces the following modifications:
The LCD module has been modified and the bill of material drawings has been amended. New components on the LCD module, have affected the original thermal assessment. The modifications have been assessed according to ExTR GB/SIR/ExTR10.0252/00, which also introduces and confirm compliance with IEC 60079-26:2006 (ed 2).

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EXPLOSION PROTECTION
CERTIFICATE OF CONFORMITY

Cert NO. GYJ081012

This is to certify that the product

Hydrogen Leak Detector

manufactured by **Adixen Scandinavia AB**
(**Address:** Westmannsgatan 49, SE-582 16 Linköping Sweden)

which model is **Extrima**

Ex marking **Ex ia II CT3**

product standard /

drawing number **500131 CERT**

has been inspected and certified by NEPSI, and that it conforms to **GB3836.1-2000 GB3836.4-2000**

This Approval shall remain in force until **2013.01.20**

Remarks [Modification I]: The manufacturer's name and the product structure are changed. Issue date: 2010/12/8.

1. The note for safe use specified in the attachment I to this certificate.

Director

National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation

Issued Date 2008.01.21

This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

103 Cao Bao Road
Shanghai 200233, China

http://www.nepsi.org.cn
Email: info@nepsi.org.cn

Tel:0086 21 64368180
Fax:0086 21 64844580

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防 爆 合 格 证

证 号： GYJ081012

由 **Adixen Scandinavia AB** 制造的产品：
(地址：Westmannsgatan 49, SE-582 16 Linköping Sweden)

名　　称　气体探测器

型号规格　**Extrima**

防爆标志　**Ex ia II CT3**

产品标准　/

图样编号　**500131 CERT**

经图样及技术文件的审查和样品检验，确认上述产品符合 **GB3836.1－2000、GB3836.4－2000** 标准，特颁发此证。

本证书有效期： **2008** 年 **1** 月 **21** 日 至 **2013** 年 **1** 月 **20** 日

备注 [更改Ⅰ]：制造厂名称及产品结构更改。签发日期：2010 年 12 月 8 日。
1. 产品使用注意事项见防爆合格证附件Ⅰ。

站长

国家级仪器仪表防爆安全监督检验站

颁发日期 二〇〇八 年 十二 月 二十一 日

本证书仅对与认可文件和样品一致的产品有效。

地址：上海市漕宝路103号　网址：www.nepsi.org.cn　电话:0086 21 64368180
邮编：200233　Email:info@nepsi.org.cn　传真:0086 21 64844580

EN

国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation

(GYJ081012) (Attachment Ⅱ)

GYJ081012防爆合格证附件Ⅱ

由Adixen Scandinavia AB生产的Extrima型气体探测器（以下简称探测器），经国家级仪器仪表防爆安全监督检验站(NEPSI)检验，符合下列标准：

GB3836.1-2000 爆炸性气体环境用电气设备 第1部分：通用要求

GB3836.4-2000 爆炸性气体环境用电气设备 第4部分：本质安全型“i”

产品防爆标志Ex ia Ⅱ CT3，防爆合格证号GYJ081012。

本附件将代替2008年1月21日签发的GYJ081012防爆合格证附件Ⅰ。

一、产品使用注意事项

1. 探测器的使用环境温度范围为：－20℃～＋50℃。
2. 探测器采用3块MP174865型锂电池（Saft公司生产）串联的电池组供电。为确保安全，严禁在危险场所更换电池及充电。
3. 用户不得随意更换探测器内部元器件，以免影响其防爆安全性能。
4. 探测器在现场使用过程中，严禁干擦清洗，以防静电危险；探测器壳体为铸铝材质，应防止冲击，以免产生的火花成为潜在点燃源。
5. 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-1997“爆炸性气体环境用电气设备 第13部分：爆炸性气体环境用电气设备的检修”、GB3836.15-2000“爆炸性气体环境用电气设备 第15部分：危险场所电气安装（煤矿除外）”、GB3836.16-2006“爆炸性气体环境用电气设备 第16部分：电气装置的检查和维护（煤矿除外）”、GB50257-1996“电气设备安装工程爆炸和火灾危险环境电气装置施工及验收规范”、GB15577-2007“粉尘防爆安全规程”。

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(GYJ081012) (Attachment Ⅱ)

二、制造厂责任

1、产品制造厂必须将上述使用注意事项纳入产品使用说明书；

2、制造厂必须严格按照NEPSI认可的文件资料生产；

3、产品铭牌中应至少包括下列内容：

a) NEPSI认可标志（见防爆合格证书）

b) 产品防爆标志

c) 防爆合格证号

d) 使用环境温度

国家级仪器仪表防爆安全监督检验站

二〇一〇年十二月八日

EN

CSA INTERNATIONAL

Certificate of Compliance

Certificate: 1981011 **Master Contract:** 241576

Project: 2360055 **Date Issued:** October 25, 2010

Issued to: **Adixen Scandinavia AB**

P.O. Box 76
Linkoping, 581 02
Sweden
Attention: Fredrik Enquist

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

C US

Ron Wildish

Issued by: Ron Wildish

PRODUCTS

CLASS 2258 83 - PROCESS CONTROL EQUIPMENT-Intrinsically Safe and Non-Incendive - Systems-For Hazardous Locations-Certified to U.S. Standards

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non - Incendive Systems - For Hazardous Locations

Exia IIC:

AExia IIC:

Hydrogen Leak Detector System; portable, consisting of Model Extrima Detector, battery operated, 11.25 Vnominal (three Lithium-Ion non-field-replaceable Batteries); intrinsically safe and providing intrinsically safe circuits to Model PX50x Probe, via P/N CX21 Connection Cable; Temperature Code T3; –20 ºC ≤ Tamb. ≤ +50ºC; IP 67.

Note: the suffix “x” in the PX50x model number denotes minor variations in the physical characteristics of the Probe nozzle (not affecting safety).

CSA INTERNATIONAL

EN

Certificate: 1981011 **Master Contract:** 241576

Project: 2360055 **Date Issued:** October 25, 2010

SPECIAL CONDITIONS FOR SAFE USE "X"

Battery Charger must be CSA Certified (or equivalent), with a maximum charging voltage of 12.6 V and a maximum charging current of 770 mA.

Notes:

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-M91 - General Requirements – Canadian Electrical Code, Part II

CAN/CSA-C22.2 No. 60079-0:07 - Electrical apparatus for explosive gas atmospheres - Part 0: General Requirements

CAN/CSA-E60079-11:02 - Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic Safety "i"

CAN/CSA-C22.2 No. 60529:05 - Degrees of protection provided by enclosures (IP Code)

ANSI/UL 60079-0:05 - Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements

ANSI/UL 60079-11:07 - Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"

ANSI/IEC 60529:2004 - Degrees of Protection Provided by Enclosures (IP Code)

EN

CSA INTERNATIONAL

Supplement to Certificate of Compliance

Certificate: 1981011 **Master Contract:** 241576

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
2360055	October 25, 2010	Update of report 1981011 to cover minor revisions to the LCD circuitry and to the Bill of Materials.
2308810	June 28, 2010	Update to cover evaluation of probe generation and protection circuitry; alternative probe material; company name change to "Adixen Scandinavia AB".
2016205	March 3, 2008	Update to include the US Certification as AEx ia IIC.
1981011	December 20, 2007	Model Extrima Hydrogen Leak Detector with Model PX50x Probe and P/N PX21 Connection Cable; I.S. for Zone 0 Hazardous Locations.