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EC-TYPE EXAMINATION CERTIFICATE

Equipment or Protective System intended for use
in Potentially explosive atmospheres
Directive 94/9/EC



[3] EC-Type Examination Certificate Number: DEMKO 05 ATEX 0518222

[4] Equipment or Protective System: Portable Single Gas Monitor

[5] Manufacturer: Industrial Scientific Corporation

[6] Address: 1001 Oakdale Road
Oakdale, PA 15071 USA

[7] This equipment or protective system and any acceptable variation there to is specified in the schedule to this certificate and the documents therein referred to.

[8] UL International Demko A/S, notified body number 0539 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 design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no: 0518222


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

EN50014: 1997 + A1-A2 EN50020: 2002

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


[11] This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of this Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

[12] The marking of the equipment or protective system shall include the following:

 II 2 G/ IM EEx ia I/IC T4

On behalf of UL International Demko A/S

Herlev, 2006-01-10


Karina Christiansen
Certification Manager

Certificate 05 ATEX 0518222

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Report: 0518222

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UL International Demko A/S

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[15] Description of Equipment or protective system

The GasBadge Pro instrument is a portable single gas monitor, powered by one user-replaceable, non-rechargeable lithium battery. The instrument is capable of monitoring the concentration of oxygen or one toxic gas. The Gas Badge Pro provides audible, visual and vibration alarms when a preset concentration of gas is detected.

These devices have also been evaluated as Category 1 to EN 50284:1999 and may be marked

 II 1 G / I M2 EEx ia I/IIC T4.

Nomenclature for type:

Gasbadge Plus, Part No. 18100060 - I

I - Sensor

- 1 - Carbon Monoxide (CO)
- 2 - Hydrogen Sulfide (H₂S)
- 3 - Oxygen (O₂)
- 4 - Sulfur Dioxide (SO₂)
- 5 - Nitrogen Dioxide (NO₂)
- 6 - Ammonia (NH₃)
- 7 - Chlorine (Cl₂)
- 8 - Chlorine (ClO₂)
- 9 - Phosphine (PH₃ -Low Range)
- A - Hydrogen Chloride (HCl)
- B - Hydrogen Cyanide (HCN)
- C - Hydrogen (H₂)
- D - Nitric Oxide (NO)
- E - Phosphine (PH₃ -High Range)
- F - Ethylene Oxide (EtO)

Temperature range

The ambient temperature range of the device is -40 °C to +60 °C.

Electrical data

The device has been certified for use with one of the following lithium manganese dioxide batteries:

Manufacturer	Part No.
Panasonic	CR2
Sanyo	CR2
Duracell Ultra	CR2/DLCR2
Kodak	CR2/KCR2
Energizer e ²	1CR2/EL1CR2/CR2
Varta/Power One	CR2/CR2NP

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Accessories comprised by the certificate:

The device may be provided with one of the following electrochemical sensor cells, which have been evaluated to EN 50020: 2002 when used in this device:

Industrial Scientific Part No.	MFR. Part No.	Manufacturer	Gas Detected
1712-0973	3-1000	Industrial Scientific	CO
1712-2268	MCO	Industrial Scientific	CO
1705-1638	4CF	City Technology	CO
1711-7854	CO-AF	Alpha Sense	CO
1707-7983	3E 1	Sensoric	CO
1712-0981	3E-500	Industrial Scientific	H ₂ S
1712-2334	MHS	Industrial Scientific	H ₂ S
1705-1636	4H/LM	City Technology	H ₂ S
1217-2276	4HS/LM	City Technology	H ₂ S
1706-0575	4S	City Technology	SO ₂
1706-0591	4ND	City Technology	NO ₂
1707-7595	3E 50	Sensoric	NO ₂
1712-2326	MOX	Industrial Scientific	O ₂
1709-3758	4OX-2	City Technology	O ₂
1711-7730	02-A2	Alpha Sense	O ₂
1706-0617	4CL	City Technology	Cl ₂
1707-7330	3E 50	Sensoric	Cl ₂
1707-7488	3E 1	Sensoric	COCl ₂
1711-6948	4ETO	City Technology	EtO
1708-0003	4HYT	City Technology	H ₂
1706-6374	3E 30	Sensoric	HCL
1707-0186	3E 30F	Sensoric	HCN
1707-7421	3E 10S	Sensoric	HF
1707-7504	3E 100SE	Sensoric	NH ₃
1707-1242	4NT	City Technology	NO
1711-7763	NO-A1	Alpha	NO
1706-0591	4ND	City Technology	NO ₂
1707-7595	3E 50	Sensoric	NO ₂
1707-7579	3E 1	Sensoric	O ₃
1707-7355	AsH3 3E 1	Sensoric	PH ₃

Performance testing:

The measuring function of the GasBadge Pro for explosion protection, according to Annex II clause 1.5.5, 1.5.6 and 1.5.7 of the Directive 94/9/EC, is not covered in this certificate.

Routine tests

None.

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EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 05 ATEX 0518222

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Report No.

Project Report No.: 0518222 (Hazardous Location Testing)

0610861 (Hazardous Location Testing)

0622332 (Hazardous Location Testing)

Drawings:

Drawing Number	Rev	Date	Title
1810C0060-300	0	2004-10-18	Assembly – GasBadge Pro Monitor
1712A3043-600	-	2005-10-19	UL Markings GasBadge Pro
1712A3068-600	1	2005-11-29	ATEX Markings GasBadge Pro
17122995-600	2	2005-09-02	DTL Case Front GasBadge Pro
1712D3001-600	4	2005-10-21	DTL Case Back GasBadge Pro
1810A0060-000	0	2005-10-21	BOM – GasBadge Pro Monitor IS
1810B0060-450	1	2005-10-20	IS Schematic GasBadge Pro Monitor
1712B0007-400	8	2006-06-28	Schematic – PCB Lithium Single Gas
1712A0288-600	10	2006-07-27	PCB Trace Layout Lithium
1712B0007	4	2005-10-21	Assembly – PCB Lithium Single Gas
1712B0007-300	5	2006-07-27	Assembly – PCB Lithium Single Gas (alternate assy.)
1712A0007-000	5	2006-07-27	BOM – GasBadge Pro
1712A1476-600	2	2005-08-25	Board Flex GasBadge Pro
1712A3126-000	0	2005-10-20	BOM PCB Flex Tail GasBadge Pro
17123100	1.4	2005-10-02	Manual GasBadge Pro
1711A5726-000	0	2005-10-20	B/M: PCB, MODULE, DAS, OXYGEN
1711B5726-300	3	2005-03-28	ASSY: PCB, MODULE, DAS, OXYGEN
1711B5726-400	6	2005-06-14	SCH: PCB, MODULE, DAS, OXYGEN
1711A6963-600	4	2005-05-20	PCB: BOARD, MODULE, DAS, OXYGEN
1711A5759-000	0	2005-10-20	B/M: PCB, MODULE, DAS, 0MV, 750
1711B5759-300	5	2005-05-23	ASSY: PCB, MODULE, DAS, 0MV, 750
1711C5759-400	6	2005-06-01	SCHM: PCB, MODULE, DAS, 0MV, 750
1711A6971-600	5	2005-06-01	PCB: BOARD, MODULE, DAS, TOXIC
1712A0346-000	0	2005-10-20	B/M: PCB, MODULE, DAS, 200MV, 127K
1712B0346-300	2	2005-05-23	ASSY: PCB, MODULE, DAS, 200MV, 127K
1712C0346-400	3	2005-06-02	SCHM: PCB, MODULE, DAS, 200MV, 127K
1712A0353-000	0	2005-10-20	B/M: PCB, MODULE, DAS, 300MV, 1K
1712B0353-300	2	2005-05-23	ASSY: PCB, MODULE, DAS, 300MV, 1K
1712C0353-400	3	2005-06-01	SCHM: PCB, MODULE, DAS, 300MV, 1K
1712A0361-000	0	2005-10-20	B/M: PCB, MODULE, DAS, 0MV, 30K
1712B0361-300	2	2005-05-23	ASSY: PCB, MODULE, DAS, 0MV, 30K
1712C0361-400	3	2005-06-01	SCHM: PCB, MODULE, DAS, 0MV, 30K
1712A0841-000	0	2005-10-20	B/M: PCB, MODULE, DAS, 0MV, 340K
1712B0841-300	2	2005-05-23	ASSY: PCB, MODULE, DAS, 0MV, 340K
1712C0841-400	3	2005-06-01	SCHM: PCB, MODULE, DAS, 0MV, 340K
1712A2896-000	0	2005-10-20	B/M: PCB, MODULE, DAS, 0MV, 8.45K
1712B2896-300	1	2005-05-23	ASSY: PCB, MODULE, DAS, 0MV, 8.45K
1712C2896-400	2	2005-06-01	SCHM: PCB, MODULE, DAS, 0MV, 8.45K
1712A2912-000	0	2005-10-20	B/M: PCB, MODULE, DAS, 300MV, 30K
1712B2912-300	1	2005-05-23	ASSY: PCB, MODULE, DAS, 300MV, 30K
1712C2912-400	2	2005-06-02	SCHM: PCB, MODULE, DAS, 300MV, 30K

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[17] Special conditions for safe use:
None.

[18] Essential Health and Safety Requirements

Concerning ESR this Schedule verifies compliance with the Ex standards only. The manufacturer's Declaration of Conformity declares compliance with other relevant Directives.

Additional information:

The GasBadge Pro has in addition passed the tests for Ingress Protection to IP 64 in accordance with EN60529: 1991/A1 2001.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

On behalf of UL International Demko A/S

Herlev, 2006-12-22



Karina Christiansen
Certification Manager

UL International Demko A/S

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