

# EC-TYPE EXAMINATION CERTIFICATE

[1]  
[2]

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/II C 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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entirety and without any change, schedule included

**UL International Demko A/S**

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## Schedule

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### EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 05 ATEX 0518222

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#### 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.

#### Nomenclature for type:

Gasbadge Plus, Part No. 18100060 - I

#### I - Sensor

- 1 - Carbon Monoxide (CO)
- 2 - Hydrogen Sulfide (H<sub>2</sub>S)
- 3 - Oxygen (O<sub>2</sub>)
- 4 - Sulfur Dioxide (SO<sub>2</sub>)
- 5 - Nitrogen Dioxide (NO<sub>2</sub>)

#### Temperature range:

The ambient temperature range of this 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:

<b>Manufacturer</b>	<b>Part No.</b>
Panasonic	CR2
Sanyo	CR2
Duracell Ultra	CR2/DLCR2
Kodak	CR2/KCR2
Energizer e <sup>2</sup>	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
1712-0981	3E-500	Industrial Scientific	H <sub>2</sub> S
1712-2334	MHS	Industrial Scientific	H <sub>2</sub> S
1705-1636	4H/LM	City Technology	H <sub>2</sub> S
1217-2276	4HS/LM	City Technology	H <sub>2</sub> S
1706-0575	4S	City Technology	SO <sub>2</sub>
1706-0591	4ND	City Technology	NO <sub>2</sub>
1707-7595	3E 50	Sensoric	NO <sub>2</sub>
1712-2326	MOX	Industrial Scientific	O <sub>2</sub>
1709-3758	4OX-2	City Technology	O <sub>2</sub>
1711-7730	02-A2	Alpha Sense	O <sub>2</sub>

### Routine tests

None.

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### Report No.

Project Report No.: 0518222 (Hazardous Location Testing)

### Drawings:

Drawing Number	Rev	Date	Title
1810C0060-300	0	2004-10-18	Assy – GasBadge Pro Monitor
1712A3043-600	-	2005-10-19	UL Markings GasBadge Pro
1712A3068-600	-	2005-10-21	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	6	2005-10-11	Schematic – PCB Lithium Single Gas
1712A0288-600	6	2005-10-11	PCB Trace Layout Lithium
1712B0007	4	2005-10-21	Assy – PCB Lithium Single Gas
1712A0007-000	3	2005-10-24	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	0.2	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

Certificate: 05 ATEX 0503099

Report: 0503099

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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

[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 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.

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, 2006-01-10

  
Karina Christiansen  
Certification Manager

Certificate: 05 ATEX 0503099  
Report: 0503099

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