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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 02 ATEX 0233306X**
- [4] Equipment or Protective System: **BadgeRAE Models PGM-10XX Series and ToxiRAE II Models PGM-11XX Series**
- [5] Manufacturer: **RAE SYSTEMS INC.**
- [6] Address: **3775 North First Street, San Jose, CA 95134 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: **0402835**

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

**EN 50014:1997 E. incl. A1 + A2 EN 50020:2002 E EN 50284:1999**

- [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 1 G EEx ia IIB T5**

**⊕ II 2 G EEx ia IIC T5**

On behalf of UL International Demko A/S

Herlev, 2005-09-23

Karina Christiansen  
Certification Manager

**UL International Demko A/S**

Lyskaer 8, P.O. Box 514  
DK-2730, Herlev, Denmark  
Telephone: +45 44856565

Certificate 02 ATEX 0233306X

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entirety and without any change, schedule included



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# Schedule

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

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## EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 02 ATEX 0233306X

[15] Description of Equipment or protective system

The BadgeRAE Models PGM-10XX series and the ToxiRAE II Models PGM-11XX series gas detectors are portable, battery operated, hand-held toxic gas detectors. These gas detectors provide an audible, visual and vibrator alarm when a predetermined level of gas has been reached. They contain one electrochemical sensor designed to detect a specific type of toxic gas.

The BadgeRAE Models PGM-10XX series and the ToxiRAE II Models PGM-11XX series gas detectors may be marked:

 II 1 G EEx ia IIB T5 or  II 2 G EEx ia IIC T5

Gas Detected	BadgeRAE Model Number	ToxiRAE II Model Number
O	PGM-1000	PGM-1100
CO	PGM-1010	PGM-1110
H <sub>2</sub> S	PGM-1020	PGM-1120
SO <sub>2</sub>	PGM-1030	PGM-1130
NO	PGM-1040	PGM-1140
NO <sub>2</sub>	PGM-1050	PGM-1150
H <sub>2</sub>	PGM-1060	PGM-1160
HCN	PGM-1070	PGM-1170
HCHO	PGM-1080	PGM-1180
Cl <sub>2</sub>	PGM-1090	PGM-1190
NH <sub>3</sub>	PGM-1091	PGM-1191
PH <sub>3</sub>	PGM-1092	PGM-1192
C <sub>2</sub> H <sub>2</sub> O	PGM-1093	PGM-1193
SiH <sub>4</sub>	PGM-1094	PGM-1194
HCl	PGM-1095	PGM-1195
O <sub>3</sub>	PGM-1096	PGM-1196
C <sub>2</sub> H <sub>5</sub> OH	PGM-1097	PGM-1197
F	PGM-1098	PGM-1198
H <sub>2</sub> O <sub>2</sub>	PGM-1099	PGM-1199
MeOH	PGM-1081	PGM-1181
C <sub>3</sub> H <sub>6</sub>	PGM-1082	PGM-1182
Br <sub>2</sub>	PGM-1083	PGM-1183
HF	PGM-1084	PGM-1184
HBr	PGM-1085	PGM-1185
AsH <sub>3</sub>	PGM-1086	PGM-1186
ClO <sub>2</sub>	PGM-1087	PGM-1187

This Schedule has been updated to include an evaluation of the product to EN 60079-26:2004.

Temperature range and classification:

The ambient temperature range is -40°C to +55°C. The temperature class is T5.

### UL International Demko A/S

Lyskaer 8, P.O. Box 514  
DK-2730 Herlev, Denmark  
Telephone: +45 44856565  
Fax: +45 44856500

Certificate: 02 ATEX 0233306X  
Report: 06NK28987

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# Schedule

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## EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 02 ATEX 0233306X

### Electrical data

#### Intrinsically Safe Specifications:

For BadgeRAE Models PGM-10XX series and ToxiRAE II Models PGM-11XX series, one user replaceable 3.6V lithium battery, size 2/3 AA, Part No. TL-5955, manufactured by Tadiran or Part No. ER 14335 manufactured by Eve Battery.

### Routine tests

None.

### Performance Tests:

The measuring function of the BadgeRAE Models PGM-10XX series and ToxiRAE II Models PGM-11XX series 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.

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### Report No.

Project Report No.: 02NK33306 (Hazardous Location Testing)

Project Report No.: 04NK02835 (Hazardous Location Testing)

Project Report No.: 04NK31103 (Hazardous Location Testing)

Project Report No.: 05NK31049 (Hazardous Location Testing)

Project Report No.: 06NK28987 (Hazardous Location Testing)

### Drawings:

Description	Number	Date
Marking	045-4006-XXX	2005/06/20
Assembly	045-0903-000	2005/12/12
Schematics	045-1010-000	2006/10/26
Component and Trace Layout	045-1000-000	2
Parts List	045-ATX-BOM-1	2006/10/17
Sensor List	-	2004/01/06
Instruction Manual BadgeRAE	045-4001-000	D
Instruction Manual ToxiRAE II	045-4003-000	B

[17] Special conditions for safe use:

1. These products are to be used with the Instruction Manual.
2. These products are to be powered by one 3.6V lithium battery, size 2/3 AA, Part No. TL-5955 manufactured by Tadiran or Part No. ER 14335 manufactured by Eve Battery.
3. The battery and electrochemical sensor are replaceable only in a non-hazardous area.

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## Schedule

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### EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 02 ATEX 0233306X

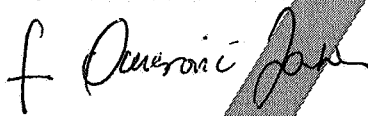
[18] Essential Health and Safety Requirements

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

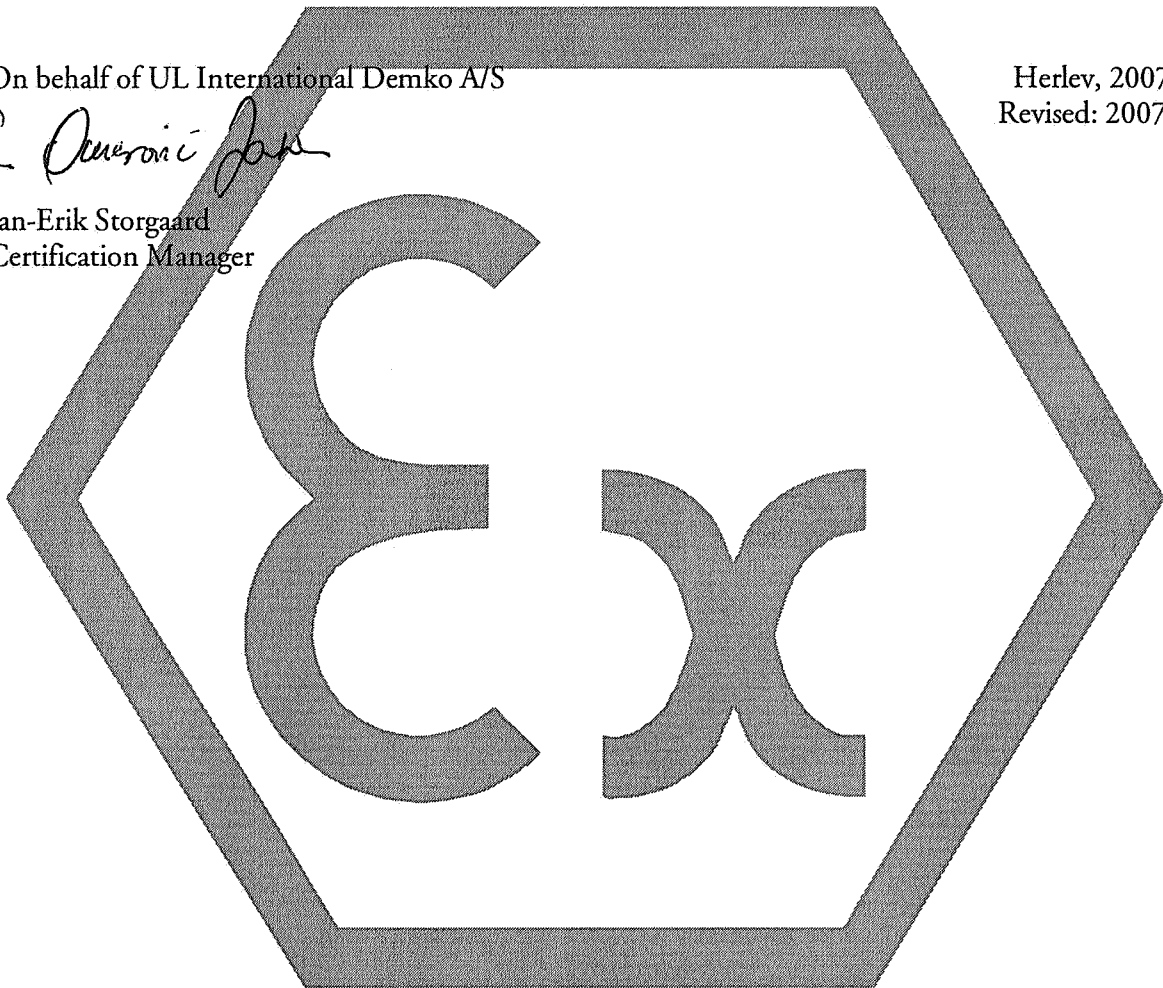
The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

On behalf of UL International Demko A/S

Herlev, 2007-03-30  
Revised: 2007-07-03



Jan-Erik Storgaard  
Certification Manager



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