



EC TYPE-EXAMINATION CERTIFICATE

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

Certificate Number: Sira 04ATEX2269X

Equipment: ULTRAPROBE™ 2000MPH

Applicant: UE Systems, Inc

Address: 14 Hayes Street
Elmsford
New York 10523-2536
USA

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

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 confidential report number R52G10337A.

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 50014:1997 + Amendments 1 and 2
EN 50020:2002

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.

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.

The marking of the equipment shall include the following:



II 2 G
EEx ib IIC T3

D R Stubbings BA MIEE
Certification Manager

Project Number 52G10337
Date 15 November 2004
C. Index 12

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Sira Certification Service

Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900 Fax: +44 (0) 1244 681330
Email: exhazard@siratc.co.uk

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE DESCRIPTION OF EQUIPMENT

Sira 04ATEX2269X

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The ULTRAPROBE™ 2000 is a portable, handheld, battery operated leak detector. The ULTRAPROBE™ 2000 monitors ultrasonic signals such as those given off by steam traps, valves, bearings, pressure leaks, vacuum leaks and electrical corona discharge.

The ULTRAPROBE™ 2000 System comprises:

ULTRAPROBE™ 2000 MPH Pistol

The ULTRAPROBE™ 2000 MPH Pistol is the main component of the system and features intensity adjustment, battery level indicator, sensitivity selection, headset jack, trigger switch, frequency adjust dial, meter selection of log, linear or auxiliary positions and battery recharge jack. The circuitry for the ULTRAPROBE™ 2000 MPH Pistol is contained on two printed circuit boards that are mounted and housed in an extruded painted aluminium enclosure with plastic end-caps. A triple redundant active limiting circuit located on the encapsulated main circuit board limits the energy from internal sixteen-cell nickel metal hydride battery pack to the ULTRAPROBE™ 2000 MPH Pistol circuitry.

The enclosure affords a degree of protection of at least IP20, therefore, the ULTRAPROBE™ 2000 MPH Pistol may only be used in dry, clean and well controlled environments.

The permitted battery pack, BPA-2, comprises 16 Varta type V150H 150mAh nickel metal hydride cells.

Replacement or charging of the nickel metal hydride battery pack is permitted only in a non-hazardous area and by a charger having a maximum output voltage of 15 V d.c and a maximum output current of 60 mA. (e.g. The charger supplied by UE Systems Inc).

Trisonic Scanning Module

The Trisonic Scanning Module is a sensor array that attaches to the ULTRAPROBE™ 2000 MPH Pistol. This sensor array receives airborne ultrasounds through an array of three piezoelectric transducers. The module comprises three piezoelectric transducers mounted above a fully encapsulated printed circuit board containing electronic components all housed in an open ended plastic enclosure. Covering the open end of the enclosure is a wire mesh thus affording an ingress protection rating of not less than IP20, therefore, the Trisonic Scanning Module connected to the ULTRAPROBE™ 2000 MPH Pistol may only be used in dry, clean and well controlled environments.

A cone shaped rubber-focusing probe can be attached to the module to block out stray ultrasound.

Contact Module

The Contact Module is a sensor array that attaches to the Ultraprobe 2000 MPH Pistol. The Contact Module has a metal rod which is sensitive to ultrasound generated internal to the device being monitored. The contact module's encapsulated circuitry is the same as the trisonic scanning module.

Headset

The Headset connects to the ULTRAPROBE™ 2000 MPH Pistol and is designed to block out sounds found in the industrial environment and let the user hear only those produced by the Ultraprobe.

The inductance of the headset must not exceed 60µH measured at 1kHz.

The resistance of the headset must not be less than 6.4Ω measured at 20°C ± 2°C.

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Warbling Tone Generator

The tone generator is an ultrasonic transmitter used for leak tests and powered by an integrally mounted 4.8 volt nickel cadmium battery pack. It has a battery recharge jack and a switch that turns the generator off or selects a low or high amplitude signal. The tone generator can only be used with the BPA-1 battery pack assembly. The circuitry for the Warbling Tone Generator is contained on a single printed circuit board that is mounted and housed in an extruded painted aluminium enclosure with plastic end-caps. A current limiting resistor and an encapsulated fuse located in the battery pack limit the energy from the internal four-cell nickel cadmium battery to the Warbling Tone Generator circuitry.

The enclosure affords a degree of protection of at least IP20 and, therefore, the Warbling Tone Generator may only be used in dry, clean and well controlled environments.

The permitted battery pack, BPA-1, comprises 4 Sanyo type KR-600AE 600mAh nickel cadmium cells.

Replacement or charging of the nickel cadmium battery is permitted only in a non-hazardous area and by a charger having a maximum output of voltage of 15 V d.c and a maximum output current of 60 mA. (e.g. The charger supplied by UE Systems Inc).

14 DESCRIPTIVE DOCUMENTS

14.1 Drawing No. Sheet Rev. Date Description

Ultraprobe UP2000 MPH

KEP 0914JD01	1 of 1	-	14 Sep 04	Identification of Parts for UP2000
KEP 0914JD02	1 of 1	-	14 Sep 04	UP2000MPH & WTG-1 General Assembly
KEP 0929901	1 of 1	-	09 Apr 04	Schematic, Main Board 821-5B, Aux. Board 821-4F
KEP 1210901	1 of 1	-	02 Aug 04	Battery Connector Sleeve Procedure
KEP 0521901	1 of 1	-	14 Sep 04	UP2000 Battery Pack Assembly, BPA-2, Ni-Mh
KEP 0929902	1 to 3	-	15 Sep 04	Parts List, Main Board 821-5B, Aux. Board 821-4F
KEP 0823304A	1 of 1	-	29 Sep 89	UP2000 MPH Board 821-4F Component Layout
KEP 0909302A	1 of 1	-	02 Oct 96	Artwork, UP2000 MPH 821-4F
KEP 0909303	1 of 1	-	02 Oct 96	Artwork, Main Board 821-5B
KEP 0823305	1 of 1	-	10 Apr 87	UP2000 MPH Board Layout
KEP 0102001	1 of 1	-	15 Sep 04	UP2000 Circuit Board Source Control Information
KEP 0114JD01	1 of 1	-	14 Jan 04	UP2000 MPH PCB Encapsulation Details
KEP 0825401	1 of 1	-	26 Dec 96	Mechanical Strain Relief
KEP 09210101	1 of 1	-	25 Mar 02	T1 Transformer Specs MPH
KEP 1220901	1 of 1	-	15 Dec 89	Handle Strap Retainer Piece
KEP 1220902	1 of 1	-	20 Dec 89	Handle End Cap Retaining Screw Details
KEP 0808JD01	1 of 1	-	08 Aug 04	Handle Rivet Insulation Details
KEP 1107501	1 of 1	-	09 Jan 04	Ultraprobe 2000 Pistol Housing Label

Module

KEP 0711301	1 of 1	-	12 Jul 03	UP2000 Module Board 821-1C Schematic
KEP 0711302	1 of 1	-	12 Jul 03	UP2000 Module Board 821-1C Parts List
KEP 0823301	1 of 1	-	18 Aug 04	UP2000 Module Board 821-1C Component Layout
KEP 0909301	1 of 1	-	28 Nov 01	UP2000 Module Board 821-1C Artwork
KEP 0407JB01	1 of 1	-	07 Apr 02	Piezoelectric Transducer Specifications

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14.1	Drawing No.	Sheet	Rev.	Date	Description
	KEP 0914JD03	1 of 1	-	20 Sep 04*	UP2000 Module Label
	Accessories				
	KEP 1220903	1 of 1	-	29 Nov 94	UP2000 Stethoscope Probe Detail drawing
	KEP 1104301	1 of 1	-	26 Mar 02	UP2000 Headphone Schematic
	Warble Tone Generator WTG-1				
	KEP 0112401	1 of 1	-	14 May 99	WTG-1 Board Revised Artwork Surface Mount
	KEP 0112401B	1 of 1	-	14 May 99	UP2000 Revised Tone Noise Generator-Component Layout
	KEP 0112402B	1 of 1	-	14 Jun 99	UP2000 Revised Tone Noise Generator-Schematic SRD-1
	KEP 0112403	1 and 2	-	28 Mar 02	SRD-1 Tone/Noise Generator Parts List
	KEP 0812701	1 of 1	-	15 Sep 04	WTG-1 Battery Retainer Board
	KEP 0427401A	1 of 1	-	14 Sep 04	WTG-1 Battery Pack Assembly
	KEP 0712JC01	1 of 1	-	12 Jul 03	Insulated Mounting of Recharge Jack
	KEP 09210102	1 of 1	-	26 Mar 02	T1 Transformer Specs WTG-1
	KEP 0802JD01	1 of 1	-	02 Aug 04	WTG-1 PCB Encapsulation Details
	KEP 0117502	1 of 1	-	01 Sep 04	UP2000 Warbling Tone Generator Label

* Date drawing stamped by Sira.

14.2 Report No. R52G10337A

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

- 15.1 The Battery Pack Part Number BPA-2, fitted to the Model 2000 MPH Pistol, shall only be replaced in an area that is known to be non-hazardous.
- 15.2 The Battery Pack Part Number BPA-2, fitted to the Model 2000 MPH Pistol, shall only be recharged in an area that is known to be non-hazardous and by a charger having a maximum output of voltage of 15 V d.c and a maximum output current of 60 mA. (e.g. The charger supplied by UE Systems Inc).
- 15.3 The nickel cadmium battery Pack Part Number BPA-1, fitted to the WTG-1 Warbling Tone Generator, shall only replaced in an area that is known to be non-hazardous.
- 15.4 The nickel cadmium battery Pack Part Number BPA-1, fitted to the WTG-1 Warbling Tone Generator, shall only recharged in an area that is known to be non-hazardous and by a charger having a maximum output of voltage of 15 V d.c and a maximum output current of 60 mA. (e.g. The charger supplied by UE Systems Inc).

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 Report No. R52G10337A.

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SCHEDULE

**EC TYPE-EXAMINATION CERTIFICATE
CONDITIONS OF CERTIFICATION**

Sira 04ATEX2269X

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- 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 permitted battery pack, BPA-2, comprises 16 Varta type V150H 150 mAh nickel metal hydride cells.
- 17.4 The permitted battery pack, BPA-1, comprises 4 Sanyo type KR-600AE 600 mAh nickel cadmium cells.
- 17.5 The inductance of the headset must not exceed 60 μ H measured at 1kHz.
- 17.6 The resistance of the headset must not be less than 6.4 Ω measured at 20°C $\pm$ 2°C

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