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: **KEMA 03ATEX1540 X**

(4) Equipment or protective system: **Ultrasonic Flow Transducer type CRW**

(5) Manufacturer: **GE Panametrics Inc.**

(6) Address: **221 Crescent Street, Waltham, Massachusetts 02453, U.S.A.**

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

(8) KEMA Quality B.V., notified body number 0344 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 the 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. 2029875.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014 : 1997	**EN 50018 : 2000**
EN 50028 : 1987	**EN 50281-1-1 : 1998**

(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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:

II 2 GD **EEx md IIC T6**
T 80 °C

Arnhem, 15 December 2003
KEMA Quality B.V.

C.G. van Es
Certification Manager

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ACCREDITED BY THE DUTCH COUNCIL FOR ACCREDITATION

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 03ATEX1540 X**

Description

The Ultrasonic Flow Transducer type CRW is used for ultrasonic flow measurement. The transducer either converts a high frequency signal into a mechanical signal, transmitting it into the adjacent medium, or converts a mechanical signal (pressure wave) into an electrical signal.

Ambient temperature range -40 °C +75 °C.

The maximum surface temperature T 80 °C is based on a maximum ambient temperature of 75 °C.

Electrical data

Maximum input pulse voltage	200 Vpp, 5 mA
Operating frequency	200 kHz, 500 kHz and 1 MHz

Installation instructions

The transducer is provided with a male 3/4" NPT thread. For electrical connection, the transducer must be mounted to a certified metal enclosure in type of explosion protection flameproof enclosure "d", the assembly complying with the requirements of EN 50018 and providing a degree of protection of IP6X. Measures must be taken to ensure a good bonding and to prevent the connection from self-loosening.

Routine tests

The following routine tests must be carried out according to Clause 7 of EN 50028:
- Clause 7.1: Visual check.
- Clause 7.2: Electric strength tests of 2U + 1000 V for one minute between the electric circuit and the external metal parts.

Report

KEMA No. 2029875.

Special conditions for safe use

The transducer must be protected by a suitable fuse. The breaking capacity of the fuse must be in accordance with the prospective short circuit current of the supply.

The transducer must be installed in such a way that the front face of the transducer is protected against impact.

Essential Health and Safety Requirements

Covered by the standards listed at (9).

Test documentation

		dated
Drawing No.	752-211, rev. A (3 sheets)	05.12.2003
	210-224, rev. B	08.10.2003

C-RW Clamp-on Ultrasonic Flowmeter Transducers

Installation instructions for the apparatus when used in potentially hazardous areas.

The use of this apparatus is subject to the EU directive on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres, CD 1999/92/EC (ATEX 137). The installer is required to be familiar with this document or the National transposing legislation. At a minimum, the installation should comply with EN 60079-14.

Manufacturer : GE Sensing Inc, Billerica, MA 01821, USA.
QAN Licence Number : 0794
Notified Body for Quality Assurance Notification : Baseefa 2001
Notified Body Number : 1180

Certificate number KEMA 03ATEX1540 X

Apparatus markings II 2 G EEx md IIC T6 T80°C -40°C < Tamb < +75°C

- The certification covers the following following product types when fitted with a certifed flameproof metal enclosure - C-RW flow transducers.
- This apparatus is equipment category 2 and may be installed in zone 1 and 2 areas. It may not be used in a zone 0 area.
- This apparatus is certified for gas and dust hazards only. The maximum surface temperature T80°C is based on a maximum ambient temperature of 75°C.
- The apparatus certification is valid for the ambient temperature range listed above.
  This is not the operational temperature range of the apparatus - check supplied documentation for operational limits.
- Before installation, check that the transducer and enclosure are firmly locked together. An inspection of this joint should be added to the routine maintenance schedule.
- This apparatus must be securely attached to the site of the flow measurement. The prescribed installation will protect the front face of the transducer against impact.
- The required transducer protection fuse is in the flowmeter display console electronics.
- Each cover is fitted with a locking device. This device must be loosened before opening the cover. It must be tightened after the cover is replaced so as to preserve the protection provided by the enclosure.
- Modifications to the flameproof enclosure are not permitted.
- Cable entries of an approved flameproof design are required. These must be installed according to the manufacturer's instructions.
  The installer should confirm all cable entry devices are suitable for the enclosure volume, the gas group and the area classification.
- Unused cable entries must be sealed using a certifed flameproof metal threaded plug.
- Connecting cable shall be mounted securely and protected from mechanical damage, pulling and twisting.
- If the apparatus is dis-assembled, the transducer and enclosure must be firmly locked together on installation.
- There are no special assemblies fitted inside this unit and there are not restrictions on replacement parts.
  Always quote the apparatus serial number when ordering spares.
- This flameproof apparatus is designed to be installed in a potentially hazardous area. When installed in a safe area, it is subject to EU directive 2006/95/EC (LVD). However, no additional requirements apply. If in doubt, consult GE Sensing.

GE
Sensing

DECLARATION OF CONFORMITY

DOC-0029, Rev. A

We,

GE Sensing
1100 Technology Park Drive
Billerica, MA 01821
USA

declare under our sole responsibility that the

Models C-RL, C-RS, C-RV and C-RW Clamp-On Ultrasonic Flow Transducers

to which this declaration relates, are in conformity with the following standards:

- EN 60079-0: 2007
- EN 60079-1: 2004
- EN 50281-1-1: 1998
- II 2 G EEx md IIC T6 - **C-RL, C-RS, C-RV**: KEMA02ATEX2337X
  C-RW: KEMA03ATEX1540X
  (KEMA, Ultrechtseweg, 310 Arnhem, The Netherlands - NoBo 0344)
- EN 61326-1: 2006, Class A, Table 2, Industrial Locations
- EN 61326-2-3: 2006
- EN 61010-1: 2001, Overvoltage Category II, Pollution Degree 2

Other standards used:

- EN 50014: 1997 + A1, A2: 1999
- EN 50018: 2000
- EN 50028: 1987

following the provisions of the 2004/108/EC EMC, 2006/95/EC Low Voltage and 94/9/EC ATEX Directives.

Where products were initially assessed for compliance with the Essential Health and Safety Requirements of the ATEX Directive 94/9/EC using earlier harmonized standards, a subsequent review has determined that "technical knowledge" is unaffected by the current harmonized standards listed above.

The units listed above and any ancillary equipment supplied with them do not bear CE marking for the Pressure Equipment Directive, as they are supplied in accordance with Article 3, Section 3 (sound engineering practices and codes of good workmanship) of the Pressure Equipment Directive 97/23/EC for DN<25.

Billerica - August 2010
Issued

Mr. Gary Kozinski
Certification & Standards, Lead Engineer

CE

TÜV USA
Member of TÜV NORD Group