

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) EC-Type Examination Certificate Number: KEMA 02ATEX2337 X

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

(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. 2013099.

(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, 28 November 2002  
KEMA Quality B.V.



T. Pijker  
Certification Manager

\* This Certificate may only be reproduced in its entirety and without any change.

## SCHEDULE

(13)

(14)

to EC-Type Examination Certificate KEMA 02ATEX2337 X

(15) **Description**

The Ultrasonic Flow Transducer type CRL 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
Operating frequency .....	0,25 MHz to 2 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 connection 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.

(16) **Report**

KEMA No. 2013099.

(17) **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.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

	<u>dated</u>
1. Description No. 752-181, rev. B (6 sheets)	31.10.2002
2. Drawing No. 752-163, rev. B (4 sheets)	26.11.2002

## AMENDMENT 1

to EC-Type Examination Certificate KEMA 02ATEX2337 X

Manufacturer: **GE Panametrics Inc.**

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

### Description

In future the Ultrasonic Flow Transducer type CRL may also be constructed in accordance with the documentation stated below.

The modifications concern

- extension of the operation frequency with 0,2 MHz
- update of the test documentation

All other data remain unchanged.

### Test documentation

1. Drawing No. 752-163 (4 sheets), rev. D

dated

17.09.2003

Arnhem, 25 September 2003

KEMA Quality B.V.



T. Pijpker  
Certification Manager

## AMENDMENT 2

### to EC-Type Examination Certificate KEMA 02ATEX2337 X

Manufacturer: **GE Panametrics Inc.**

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

#### Description

In future the Ultrasonic Flow Transducer type CRL may also be constructed in accordance with the documentation stated below.

The modifications concern:

- extension of the range
- the construction of the feedthrough

The range now consists of the following models:

Model	Transducer no.	Frequency	Wedge angle
CRL-05-MB	304	500 kHz	45 °
CRL-10-MB	305	1 MHz	45 °
CRL-02-MB	306	200 kHz	45 °
CRL-20-MB	307	2 Mhz	45 °
CRV-05-MB	310	500 kHz	50 °
CRV-10-MB	311	1 MHz	50 °
CRV-02-MB	312	200 kHz	50 °

All other data remain unchanged.

#### Test documentation

dated

Drawing No. 752-163 (4 sheets), rev. E  
210-224, rev. B

16.11.2003  
08.10.2003

Arnhem, 21 November 2003  
KEMA Quality B.V.



T. Pijpker  
Certification Manager

## AMENDMENT 3

to EC-Type Examination Certificate KEMA 02ATEX2337 X

Manufacturer: **GE Panametrics Inc.**

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

### Description

The range of Ultrasonic Flow Transducers series CRL has been extended with series CRS.

The CRS transducer series consists of the following models:

Model	Transducer no.	Frequency
CRS-05-MB	401	500 kHz
CRS-10-MB	402	1 MHz
CRS-20-MB	403	2 Mhz

All other data remain unchanged.

### Test documentation

Drawing No. **752-218**, rev. B (4 sheets)

dated

**04.02.2004**

Arnhem, 11 February 2004  
KEMA Quality B.V.

  
C.G. van Es  
Certification Manager

### **C-RL, C-RS and C-RV 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 02ATEX2337 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 certified flameproof metal enclosure - C-RL, C-RS and C-RV 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 certified 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.

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, Utrechtseweg, 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





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To whom it may concern.

Regarding the ATEX certificate for the GE Panametrics ultrasonic transducer type CRL, namely KEMA 02 ATEX 2337, KEMA have confirmed to GE Panametrics that fuse F1 on printed circuit assembly 703-1244 used in the GC 868 flowmeter console meets the requirements of paragraph 17, Special requirements, of the above mentioned certificate.

For GE Panametrics  
Niall Ross  
Certification Engineer  
GE Panametrics Limited  
Shannon  
Ireland.