KEMA

(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 02ATEX2038 X**

(4) Equipment or protective system: **Electromagnetic flowmeter primary head, types IFS 6000 F/...-EEx and MGS 6000 F/...-EEx**

(5) Manufacturer: **Krohne Altometer**

(6) Address: **Kerkeplaat 12, 3313 LC Dordrecht, The Netherlands**

(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. 2018114.

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

EN 50014 : 1997	**EN 50018 : 2000**	**EN 50019 : 2000**
EN 50020 : 1994	**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 in accordance with 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:

Ex **II 2 GD** **EEx me ib IIC T6...T3** or **EEx de ib IIC T6...T3**
T80...190 °C

Arnhem, 27 February 2002,
KEMA Quality B.V.

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Certification Manager

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ACCREDITED BY THE DUTCH COUNCIL FOR ACCREDITATION

(13)

SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2038 X**

(15) **Description**

The Electromagnetic flowmeter primary head, types IFS 6000 F/...-EEx and MGS 6000 F/...-EEx, is used to convert the flow of a conducting fluid into an electrical signal. An associated flowmeter transmitter is used to supply the field coils of the primary head and to convert the measured electrode signal into an output signal.

The field coils of the primary heads are in type of explosion protection encapsulation "m" (sizes DN2,5 - DN15) or flameproof enclosure "d" (sizes DN25 - DN80). The electrodes circuit is in type of explosion protection intrinsic safety EEx ib IIC and the terminal compartment is in type of explosion protection increased safety "e".

The maximum surface temperature T80...190 °C is based on an ambient temperature of 60 °C.

Electrical data

Field coil circuit ..... $U \leq 40$ V (pulsed)
$I \leq 125$ mA (fuse protected)

The field coils circuit is protected by two 160 mA fuses in the coil excitation circuit of the associated transmitter.

Electrodes circuit ..... in type of explosion protection intrinsic safety EEx ib IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 20$ V
$I_i = 170$ mA

The effective internal capacitance and inductance are negligibly small.

The signal circuit is operationally grounded.

Installation instructions

For use in potentially explosive atmospheres of flammable gases, fluids or vapours:
The cable entry device shall be in type of explosion protection increased safety "e", suitable for the conditions of use and correctly installed.

For use in the presence of combustible dust:
The cable entry device shall be in type of equipment Category II 2 D, suitable for the conditions of use and correctly installed.

Unused openings shall be closed with suitable certified closing elements.

Routine tests

- Each welded primary head of size DN25 - DN80 shall be submitted to the routine overpressure test according to EN 50018, Clause 16, at a test pressure of 13,5 bar during one minute.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2038 X**

Routine tests (continued)

- Each primary head shall withstand a test voltage of 1500 V during one minute without breakdown between the field coils circuit and the intrinsically safe sensor circuit. Each primary head of size DN2,5 - DN15 shall additionally withstand a test voltage of 1500 V during one minute without breakdown between the field coils circuit and the enclosure.

(16) **Report**

KEMA No. 2018114.

(17) **Special conditions for safe use**

The relation between temperature class, maximum surface temperature, maximum process temperature and ambient temperature is shown in following table:

Temperature class	Max. surface temperature	Max. process temperature		
		Ta ≤ 40 °C	Ta ≤ 50 °C	Ta ≤ 60 °C
T6	T 80 °C	70 °C	70 °C	70 °C
T5	T 95 °C	85 °C	85 °C	85 °C
T4	T 130 °C	120 °C	120 °C	120 °C
T3	T 190 °C	180 °C	180 °C	165 °C

Ambient temperature range -40 °C ... +60 °C.

A heat resistant cable with a continuous operating temperature of at least 120 °C must be used at the conditions as specified below:
- with Ta ≤ 50 °C and the process temperature ≥ 160 °C, or
- with Ta ≤ 60 °C and the process temperature ≥ 115 °C.

The breaking capacity of the primary fuse of the associated signal converter is 300 A (IFC 090, 24 V versions) resp. 1500 A (IFC090, 100-230 V and all IFC090i versions). Therefore, the signal converter may only be connected to a mains supply with a maximum prospective short circuit current of 300 A resp. 1500 A.

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

Covered by the standards listed at (9).

(19) **Test documentation**

1. Certificate of Conformity KEMA No. Ex-95.D.9699 X
   KEMA No. Ex-97.D.2886 X
   Component Certificate KEMA No. Ex-99.E.8128 U
   KEMA No. Ex-01.E.2036 U

		dated
2.	Description (22 pages)	19.02.2002 and 25.02.2002
3.	Drawings index sheet	19.02.2002