



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

(2) Equipment and Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 02 ATEX 2163 X



(4) Equipment: Measuring transducer, type IFC 110 F/...-EEx

(5) Manufacturer: Krohne Messtechnik GmbH & Co. KG

(6) Address: Ludwig Krohne Straße 5, 47058 Duisburg, Germany

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council 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 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 the confidential report PTB Ex 02-22121.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50 014:1997 +A1 +A2 **EN 50 020:1994**

(10) 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.

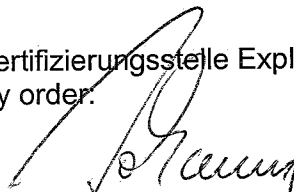
(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

 **II (2) G [EEx ib] IIC**

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, November 08, 2002


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 2163 X**

(15) Description of equipment

The measuring transducer, type IFC 110 F/...-EEx is used for flow rate measurement of electroconductive liquids. The apparatus is installed outside the hazardous area.

The permissible range of the ambient temperature is: -20 °C bis 55 °C (standard version)
resp. -40 °C bis 55 °C (special version).

Electrical data

Auxiliary power
dependent on variant
(terminals 11 and 12)

24/100 ... 230 V AC +10% -15%, 25 VA
 $U_m = 253 \text{ V}$
24 V DC +30% -25%, 15 W
 $U_m = 253 \text{ V}$

Input/output circuits
(active / passive)

for connection to functional extra low voltage with
safe electrical isolation (PELV)
 $U_N \leq 25 \text{ V AC}$
 $U_N \leq 50 \text{ V DC}$
 $U_m = 253 \text{ V}$

Field circuit
(terminals 7, 8)

$U_N \leq \pm 40 \text{ V}$ (switched-mode direct voltage)
 $I_N \leq 160 \text{ mA}$ (internal fuse)

Electrode circuit
(terminals 1, 2, 3, 20, 30)

type of protection Intrinsic Safety EEx ib IIC
Maximum values:
 $U_o = 18 \text{ V}$ ($\pm 9 \text{ V}$ against ground)
 $I_o = 40 \text{ mA}$
 $P_o = 80 \text{ mW}$
kinked characteristic
 $L_o = 5 \text{ mH}$
 $C_o = 225 \text{ nF}$ (C_i considered)

The electrode circuit is safely electrically isolated from all other circuits up to a peak value of the nominal voltage of 375 V.

sheet 2/3

(16) Test report PTB Ex 02-22121

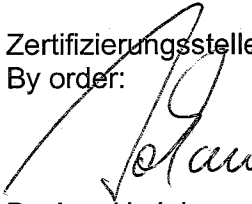
(17) Special conditions for safe use

1. Equipotential bonding has to be installed along the entire cable run of the intrinsically safe circuit.
2. The terminal for the equipotential bonding conductor has to be connected to equipotential bonding conductor of the hazardous area.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

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