



Translation

(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

TÜV 99 ATEX 1447

(4) Equipment or Protective System: Transmitter type 2100/2X*

(5) Manufacturer: Mettler Toledo GmbH

(6) Address: CH-8902 Urdorf, Im Hackacker 15

(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) The TÜV Hannover/Sachsen-Anhalt e.V., TÜV Certification Body N° 0032 in accordance with Article 9 of the Council Directive 94/9/EC of March 23, 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 N° 99/PX12991.

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

EN 50 014:1997

EN 50 020:1994

(10) If the sign "X" is placed after the certification 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 and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

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



II 2 (1) G EEx ib [ia] IIC T6

TÜV Hannover/Sachsen-Anhalt e.V.
TÜV CERT-Zertifizierungsstelle
Am TÜV 1
D-30519 Hannover

Hannover, 1999-06-23

U. Krüger

Head of the
Certification Body





SCHEDULE

(13)

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 99 ATEX 1447**

(15) Description of equipment or protective system

The transmitter type 2100/2X* is used for the recognition and processing of electrochemical quantities.

The maximum permissible ambient temperature is 55°C.

Electrical data

Current loop.....in type of protection "Intrinsic Safety" EEx ib IIC
(terminals 10, 11) only for the connection to a certified intrinsically safe circuit with the following maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 100 \text{ mA}$$

$$P_i = 0.8 \text{ W}$$

$$\text{effective internal capacitance } C_i = 20 \text{ nF}$$

$$\text{effective internal inductance } L_i = 0.2 \text{ mH}$$

pH-measuring loop.....in type of protection "Intrinsic Safety" EEx ia IIC
(terminals 1/2, 4, 5) Maximum values:

$$U_o = 10 \text{ V}$$

$$I_o = 12 \text{ mA}$$

$$P_o = 15 \text{ mW}$$

$$R_i = 450 \text{ } \Omega$$

Characteristic: linear

$$\text{effective internal capacitance } C_i = 50 \text{ nF}$$

The effective internal inductance is negligibly small.

$$\text{max. permissible external capacitance } C_o = 3 \text{ } \mu\text{F}$$

$$\text{max. permissible external inductance } L_o = 200 \text{ mH}$$

Temperature measuring loop....in type of protection "Intrinsic Safety" EEx ia IIC
(terminals 7, 8) Maximum values:

$$U_o = 5 \text{ V}$$

$$I_o = 3 \text{ mA}$$

$$P_o = 4 \text{ mW}$$

$$R_i = 1900 \text{ } \Omega$$

Characteristic: linear

$$\text{effective internal capacitance } C_i = 250 \text{ nF}$$

The effective internal inductance is negligibly small.

$$\text{max. permissible external capacitance } C_o = 100 \text{ } \mu\text{F}$$

$$\text{max. permissible external inductance } L_o = 1 \text{ H}$$



Schedule EC-type examination certificate N° TÜV 99 ATEX 1447

EP for the connection to the equipotential bonding system
(Terminal 9)

The current loop is safely separated from the measuring loops up to a voltage of 60 V. The pH-measuring loop and the temperature measuring loop are galvanically connected.

(16) Test documents are listed in the test report No. 99/PX12991.

(17) Special condition for safe use

none.

(18) Essential Health and Safety Requirements

no additional ones

Translation

1. SUPPLEMENT to

EC-TYPE EXAMINATION CERTIFICATE No. TÜV 99 ATEX 1447

Equipment: transmitter type 2100/2X*
 Manufacturer: Mettler Toledo GmbH
 Address: CH-8902 Urdorf
 Im Hackacker 15

In the future, the transmitter type 2100/2X* may also be operated according to the test documents listed in the test report.
 The changes refer to the electrical data of the transmitter.

Electrical data

Current loop in type of protection "Intrinsic Safety" EEx ia IIC
 (Terminals 10, 11 or 14, 15) only for connection to a certified intrinsically safe circuit
 maximum values:
 $U_i = 30 \text{ V}$
 $I_i = 100 \text{ mA}$
 $P_i = 0,8 \text{ W}$
 effective internal capacitance $C_i = 20 \text{ nF}$
 effective internal inductance $L_i = 0,2 \text{ mH}$

Supply/ISFET-circuit in type of protection "Intrinsic Safety" EEx ia IIC
 (Terminals 17, 18, 19) maximum values:
 $U_o = 10 \text{ V}$
 $I_o = 14 \text{ mA}$
 $P_o = 35 \text{ mW}$
 $R_i = 712 \text{ } \Omega$
 characteristic line: linear
 effective internal capacitance $C_i = 25 \text{ nF}$
 The effective internal inductance is negligibly small.
 max. permissible external capacitance $C_o = 3 \mu\text{F}$
 max. permissible external inductance $L_o = 150 \text{ mH}$

EP for connection to the equipotential bonding system
 (Terminal 9 or 16)

The current loop is safely galvanically separated from the measuring loops and from the Supply/ISFET-circuit up to a voltage of 60 V. The pH-measuring loop, the temperature measuring loop and the supply/ISFET-circuit are galvanically connected.

1. Supplement to EC-Type Examination Certificate No. TÜV 99 ATEX 1447

The transmitter type 2100/2X* incl. of this 1. supplement also meets the requirements of
EN 50 014:1997 +A1+A2 EN 50 020:2002

All other details remain unchanged for this 1. supplement.

(16) The test documents are listed in the test report N° 05 YEX 551993.

(17) Special conditions for safe use
none

(18) Essential Health and Safety Requirements
no additional ones

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Hannover, 2005-05-23

A handwritten signature in black ink, appearing to read "St. Ceeth".

Head of the
Certification Body