



(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 00 ATEX 2191

(4) Equipment: pH-Transmitter type 2220X Opt. ...

(5) Manufacturer: Mettler Toledo AG

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

(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 00-20252.

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

EN 50014:1997 + A1 + A2

EN 50020:1994

(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 and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

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

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

Zertifizierungsstelle Explosionsschutz

Braunschweig, January 24, 2001

By order:

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2191**

(15) Description of equipment

The pH-transmitter type 2220X Opt. ... is used preferably for detecting and processing electrochemical quantities and is equipped with an input for the pH- resp. ORP-measurement and an input for the measurement of temperature.

The application occurs within the hazardous area.

The maximum permissible ambient temperature is 50 °C.

Electrical data

Loop measuring circuit..... type of protection Intrinsic Safety EEx ib IIC
(KL 9, 10) only for connection to a certified intrinsically safe circuit

maximum values:

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

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

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

$$C_i = 22 \text{ nF}$$

$$L_i \text{ negligibly low}$$

Output circuit 2 type of protection Intrinsic Safety EEx ib IIC
(KL 11, 12) only for connection to a certified intrinsically safe circuit

maximum values:

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

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

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

$$C_i = 48 \text{ nF}$$

$$L_i \text{ negligibly low}$$

pH-measuring circuit..... type of protection Intrinsic Safety EEx ia IIC
(KL 1, 3, 4, 5)

maximum values:

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

$$I_o = 11 \text{ mA}$$

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

$$R = 456 \text{ } \Omega$$

linear characteristic

$$C_o = 440 \text{ nF}$$

$$L_o = 5 \text{ mH}$$

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$C_i = 50 \text{ nF}$
 L_i negligibly low

Temperature measuring circuit type of protection Intrinsic Safety EEx ia IIC
(KL 6, 7, 8)

maximum values:

$U_o = 10 \text{ V}$
 $I_o = 3 \text{ mA}$
 $P_o = 4 \text{ mW}$
 $R = 1.6 \text{ k}\Omega$

linear characteristic

$C_o = 475 \text{ nF}$
 $L_o = 1.8 \text{ mH}$
 $C_i = 50 \text{ nF}$
 L_i negligibly low

PA only for connection to the equipotential bonding system

The loop measuring circuit is safely electrically isolated from the other intrinsically safe circuits up to a voltage of 60 V.

The output circuit 2 is safely electrically isolated from the pH- and from the temperature measuring circuit up to a voltage of 60 V.

The pH-measuring circuit and the temperature measuring circuit are electrically interconnected.

(16) Test report PTB Ex 00-20252

(17) Special conditions for safe use

none

(18) Essential health and safety requirements

met by the standards mentioned above

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