



(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 01 ATEX 2056

(4) Equipment: pH-transmitter, type pH2800X-... Opt. ...

(5) Manufacturer: Mettler Toledo AG

(6) Address: 8902 Urdorf, SCHWEIZ

(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 01-20326.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 +A1 +A2 EN 50019:1994 EN 50020:1994 EN 50028:1987

(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 em ib [ia] IIC T6

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, Mai 16, 2001

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2056

(15) Description of equipment

The pH-transmitter, type pH2800X-... Opt. ... is used for the detection and processing of electro-chemical quantities. The power supply unit is designed in the type of protection "m". The maximum permissible ambient temperature is 40 °C for T6 and 50 °C for T4.

Electrical data

Auxiliary power circuit (terminals 26, 27, 28, 29)	type of protection Increased Safety EEx e
	230 V AC -15% +10%, approx. 8 VA
	115 V AC -15% +10%, approx. 8 VA
	100 V AC -15% +10%, approx. 8 VA
	24 V AC/DC -15% +10%, approx. 8 VA resp. -15% +20%, approx. 8 W

pH-measuring circuit (pH, pH/pH) 1(A) (terminals 1, 2, 3) and 2(B) (terminals 3, 4, 5)	type of protection Intrinsic Safety EEx ia IIC
	Maximum values per circuit:
	linear characteristic
	$U_o = 12 \text{ V}$
	$I_o = 13 \text{ mA}$
	$P_o = 20 \text{ mW}$
	$R_i = 478 \text{ } \Omega$
	$C_i = 24 \text{ nF}$
	$L_i = \text{negligibly low}$

maximum permissible external capacitance $C_o = 440 \text{ nF}$
 maximum permissible external inductance $L_o = 5 \text{ mH}$

LF-measuring circuit (pH/LF) (terminals 3, 4, 5)	type of protection Intrinsic Safety EEx ia IIC
	Maximum values:
	linear characteristic
	$U_o = 6.2 \text{ V}$
	$I_o = 12 \text{ mA}$
	$P_o = 19 \text{ mW}$
	$R_i = 520 \text{ } \Omega$
	$C_i = 1.2 \text{ } \mu\text{F}$
	$L_i = \text{negligibly low}$

maximum permissible external capacitance $C_o = 500 \text{ nF}$
 maximum permissible external inductance $L_o = 2 \text{ mH}$

sheet 2/5

Conductivity measuring circuit (Cond)
(terminals 1, 2, 3, 4, 5) type of protection Intrinsic Safety EEx ia IIC
Maximum values:
linear characteristic

$U_o = 12 \text{ V}$
 $I_o = 180 \text{ mA}$
 $P_o = 106 \text{ mW}$
 $R_i = 34.8 \text{ } \Omega$
 $C_i = 30 \text{ nF}$
 $L_i = \text{negligibly low}$

maximum permissible external capacitance $C_o = 440 \text{ nF}$
maximum permissible external inductance $L_o = 0.5 \text{ mH}$

Temperature measuring circuit
(terminals 6, 7, 8) type of protection Intrinsic Safety EEx ia IIC
Maximum values:
linear characteristic

$U_o = 12 \text{ V}$
 $I_o = 5 \text{ mA}$
 $P_o = 8 \text{ mW}$
 $R_i = 1.22 \text{ k}\Omega$
 $C_i = 55 \text{ nF}$
 $L_i = 0.22 \text{ mH}$

maximum permissible external capacitance $C_o = 475 \text{ nF}$
maximum permissible external inductance $L_o = 1.8 \text{ mH}$

Output circuit 1
(terminals 9, 10)

type of protection Intrinsic Safety EEx ib IIC
Maximum values:
trapezoidal characteristic

$U_o = 14.3 \text{ V}$
 $I_o = 89 \text{ mA}$
 $P_o = 380 \text{ mW}$
 $R_i = 190 \text{ } \Omega$
 $C_i = 100 \text{ nF}$
 $L_i = \text{negligibly low}$

maximum permissible external capacitance $C_o = 580 \text{ nF}$
maximum permissible external inductance $L_o = 5 \text{ mH}$

or

rectangular characteristic

$U_o = 14.3 \text{ V}$
 $I_o = 30 \text{ mA}$
 $P_o = 360 \text{ mW}$
 $C_i = 100 \text{ nF}$
 $L_i = \text{negligibly low}$

maximum permissible external capacitance $C_o = 62 \text{ nF}$
maximum permissible external inductance $L_o = 0.5 \text{ mH}$

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2056

Output circuits 2, 3
(terminals 11, 12 and 13, 14)

type of protection Intrinsic Safety EEx ib IIC
only for connection to certified intrinsically safe circuits

Maximum values:

$U_i = 30 \text{ V}$
 $I_i = 100 \text{ mA}$
 $P_i = 0.8 \text{ W}$
 $C_i = 50 \text{ nF}$
 $L_i = \text{negligibly low}$

Interface circuit
RxD and screen
(terminals 15, 16, 19)

type of protection Intrinsic Safety EEx ib IIC
only for connection to certified intrinsically safe circuits

Maximum values:

$U_i = 30 \text{ V}$
 $I_i = 47.5 \text{ mA}$
 $P_i = 175 \text{ mW}$
 $C_i = 25 \text{ nF}$
 $L_i = \text{negligibly low}$

Interface circuit
TxD and screen
(terminals 17, 18, 19)

type of protection Intrinsic Safety EEx ib IIC
only for connection to certified intrinsically safe circuits

Maximum values:

$U_i = 30 \text{ V}$
 $I_i = 100 \text{ mA}$
 $P_i = 350 \text{ mW}$
 $C_i = 25 \text{ nF}$
 $L_i = \text{negligibly low}$

Switching circuits 1, 2, 3
(terminals 20, 21 and 22, 23
and 24, 25)
(functional group)

type of protection Intrinsic Safety EEx ib IIC
only for connection to certified intrinsically safe circuits

Maximum values:

$U_i = 60 \text{ V}$
 $I_i = 500 \text{ mA}$
 $P_i = 10 \text{ W}$
 $C_i = \text{negligibly low}$
 $L_i = \text{negligibly low}$

PA-terminal

for connection to the equipotential bonding conductor

The auxiliary power circuit is safely electrically isolated from the intrinsically safe circuits up to a peak value of the nominal voltage of 375 V. The pH-measuring circuits, the LF-measuring circuit and the temperature measuring circuit are electrically interconnected. The other intrinsically safe circuits are safely electrically isolated from the circuits mentioned above and from each other up to a peak value of the nominal voltage of 60 V.

(16) Test report PTB Ex 01-20326

(17) Special conditions for safe use

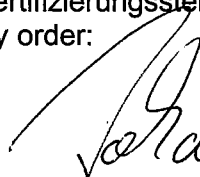
none

(18) Essential health and safety requirements

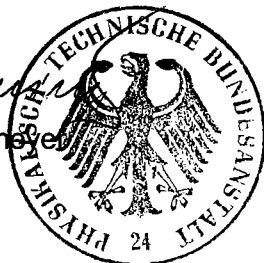
met by the standards mentioned above

Zertifizierungsstelle Explosionsschutz

By order:



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