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EU-Type Examination Certificate

(1)

(2) Equipment or protective system intended for use in potentially explosive atmospheres **- Directive 2014/34/EU**

(3) Certificate number: **SEV 14 ATEX 0168 X**

(4) Product: pH sensors
Type InPro 2XXX, InPro 3XXX, InPro 4XXX, InPro X1 ***-****-****

(5) Manufacturer: Mettler-Toledo GmbH

(6) Address: Im Hackacker 15, 8902 Urdorf, Switzerland

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

(8) Eurofins, notified body No. 1258, in accordance with article 17 of Directive 2014/34/EU of the European parliament and of the council, dated 26 February 2014, certifies that this product has been found to comply with the essential health and safety requirements relating to the design and construction of products 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 20CH-01077.X05

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018
EN 60079-11:2012
EN 60079-26:2015

Except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign «X» is placed after the certificate number, it indicates that the product is subjected to special conditions for safe use specified in the schedule to this certificate. The sign "U" is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

(11) This EU type examination certificate relates only to design and construction of the specified product. Further requirements of this directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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

II 1/2G Ex ia IIC T6/T5/T4/T3 Ga/Gb

Eurofins Electric & Electronic Product Testing AG
Notified Body ATEX

Martin Plüss
Product Certification

(13) # Appendix

(14) **EU-Type Examination Certificate no. SEV 14 ATEX 0168 X**

(15) **Description of product**

Intrinsically safe pH sensors types InPro2XXX, InPro3XXX, InPro4XXX and InPro X1 are used for simultaneous measurement of pH and temperature, in industrial processes.
They are connected with a rugged connector to the intrinsically safe circuits of a separately certified measuring system. The mechanical protection of the equipment is ensured by an independent fitting from METTLER TOLEDO type InFit Type 76 * - *** or InTrac type 77 * - ***, or other appropriate fitting.

pH ISM qualification Kit is a set of 5 different sensor plug-in heads, than can be used for the simulation of pH sensors, quick checks and loop trouble shooting.

Ratings:	Ui ≤ 16 V, Ii ≤ 30 mA, Pi ≤ 50 mW, or Ui ≤ 16 V, Ii ≤ 190 mA, Pi ≤ 200 mW, Ci = 900 pF, Li = 0
Classification of installation and use:	stationary
Ingress protection:	IP20
Rated ambient temperature range (°C):	refer to ''conditions of use'
Rated ambient temperature range (°C) for Ex Components	N/A

Ratings

Analogue pH sensor pH measurement circuit, temperature measurement circuit and data chip circuits	With type of protection intrinsic safety Ex ia IIC. Only for connection to certified intrinsically safe circuits. Maximum values: U_i ≤ 16 V I_i ≤ 30 mA P_i ≤ 50 mW or U_i ≤ 16 V I_i ≤ 190 mA P_i ≤ 200 mW L_i = 0 (effective internal inductance) C_i = 900 pF (effective internal capacitance)

The values above apply, each as the sum of all the individual circuits of the associated intrinsically safe supply and evaluation unit (transmitter).

Digital pH sensor Two-wire current circuit	With type of protection intrinsic safety Ex ia IIC. Only for connection to certified intrinsically safe circuits. Maximum values: U_i ≤ 16 V I_i ≤ 30 mA P_i ≤ 50 mW L_i = negligible C_i = negligible

Part number code:

	InPro X1 ***-****-***
Example of type designation	H L S – N 1 0 0 – K 120 (1)(2)(3) (4)(5)(6)(7) (8) (9) (10)

(1) Certifications
H Hygienic and hazardous areas certifications
X Hazardous areas certifications
G General applications

(2)* Reference system
L Liquid Electrolyte Pre-Pressurized Friscolyt
P Polymer Electrolyte Xerolyte Extra
D Double-gel-electrolyte chamber

(3) Tip design
S Standard design with HA pH glass
L Standard design with LoT pH glass
F Standard design with HF pH glass

(4)* Redox measurement
N No
R Redox

(5) Tip material
1 Stainless steel
2 Titanium
3 PEEK

(6) Shaft material
0 PEEK
1 Stainless steel
2 Titanium

(7) O-ring material
0 PFA
1 FPM
2 Silicon
3 EPDM

(8) Connector
K K8SD
V VP

(9)* length
xxx length in mm

(10)* Special features
Empty -> standard

*) The numerical type keys can be extended with values not named here in the sense of the basic test. These extensions have no effect on the explosion protection and general safety.

(16) **Specific conditions of use / Schedule of limitations**

1. The relationship between the maximum permissible ambient or media temperature and temperature class is shown in the following table:
   With analog pH sensor:
   For Ui ≤ 16 V, Ii ≤ 30 mA, Pi ≤ 50 mW;
   pH measuring circuit, temperature measurement circuit, and data chip circuit:

temperature class	maximum ambient or media temperature
T6	62 °C
T5	74 °C
T4	102 °C
T3	154 °C

   or
   For Ui ≤ 16 V, Ii ≤ 190 mA, Pi ≤ 200 mW;
   pH measuring circuit, temperature measurement circuit, and data chip circuit:

temperature class	maximum ambient or media temperature
T6	51 °C
T5	63 °C
T4	91 °C
T3	143 °C

   or
   With digital pH sensor:
   For Ui ≤ 16 V, Ii ≤ 30 mA, Pi ≤ 50 mW;
   two-wire current circuit:

temperature class	maximum ambient or media temperature
T6	62 °C
T5	74 °C
T4	102 °C
T3	131 °C

2. The pH sensor Types InPro® 327x, InPro® 427x, and InPro® 487x are constructed from plastic. To prevent the risk of electrostatic sparking, the plastic surface should only clean with a damp cloth.

3. The enclosures of pH sensor types InPro® 328x, InPro® 428x, and InPro® 488x containing titanium constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

4. For safe working and to prevent explosion, the minimum conductivity of media must be higher than 1 nS/cm when the pH sensor types of InPro® 327x, InPro® 427x, and InPro® 487x are used.

5. The capacitance and inductance of the connecting cable has to be considered.

6. The pH sensors types InPro 2XXX, InPro 3XXX, InPro 4XXX and InPro X1 can be used in/with the fittings InFit 76*-*** or InTrac 7**-***, or in/with other suitable fittings in potentially explosive areas.

The metal body of the pH sensors, or the fitting InFit76 * - *** or InTrac7 ** - ***, or other appropriate fitting is optionally included in the routine pressure test of the system.

The independent fitting used for installation of pH electrodes must be conductively connected to the equipotential bonding system.

(17) **Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	**Subject**
None	

(18) **Drawings and Documents**

See test report "Manufacturer's Documents"