



(1) EC-Type Examination Certificate

(2) Equipment or protective system intended for use in potentially explosive atmospheres - **Directive 94/9/EC**

(3) Examination Certificate Number

SEV 05 ATEX 0106 X

(4) Equipment: Conductivity sensor; InPro725X /*//*

(5) Manufacturer: Mettler-Toledo GmbH, Process Analytics

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

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

(8) Electrosuisse SEV as notified body No. 1258 in accordance with article 9 of the Council Directive of the European Communities of 23 March 1994 (94/9/EC), 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 results of the examination are recorded in confidential report No. 04-IK-0212.01 incl. Extension 1

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

EN 1127-1:2007 EN 60079-0:2006 EN 60079-11:2007 EN 60079-26:2007

(10) If the sign «X» is placed after the certificate 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 examination certificate relates only to design and construction of the specified equipment in accordance to the directive 94/9/EC. Further requirements of this directive apply to the manufacturing process and the placing on the market of the equipment.

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

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

Electrosuisse SEV
Certification Body ATEX

Martin Plüss
Product Certification

Fehraltorf, 2008-07-16

Replaces certificates dated
2005-04-15

Extension 1; new issued Standards & modification

(13)

Appendix

(14)

EC-Type Examination Certificate SEV 05 ATEX 0106 X

(15)

Description of the equipment

The InPro725X /*/* conductivity sensor with integrated temperature sensor and data chip is used for the measurement of conductivities and substance concentrations in solutions. The sensors are designed for the measurement of medium and high conductivities.

The principle function of the sensors is based on inductive conductivity measurement. These sensors contain out of two toroidal coils which are totally encapsulated in a plastic material. When a current passes through the sensor transmitter coil, a voltage is induced in the measuring solution. This causes a flow of current in the measuring solution, which induces a voltage in the receiver coil. The current is directly proportional to the conductivity of the measuring solution.

The sensors can be installed with different process adapters (flanges, threaded bushes) permanently in pipes or tanks.

Also installed in the housing is a separately tested calibration and life data chip, type Maxim Dallas DS 2433 with a capacitance of 100 pF parallel to the data circuit.

Ratings:

Conductivity measuring circuit,
temperature measuring circuit and
data chip circuit

With type of protection intrinsic safety Ex ia IIC
only for connection to a certified intrinsically safe
circuit.

Maximum values:

$$U_i \leq 16 \text{ V}$$

$$I_i \leq 150 \text{ mA}$$

$$P_i \leq 155 \text{ mW}$$

$$L_i = 0 \text{ (the internal inductance is ineffective towards the outside)}$$

$$C_i = 900 \text{ pF (effective internal capacitance)}$$

The above values are each the total of all individual circuits of the associated intrinsically safe power supply and transmitter.

Notes:

1. According to Directive 94/9/EC (ATEX 95) Appendix I, InPro725X /*/* conductivity sensors are devices group II, category 1/2G and according to Directive 99/92/EC (ATEX 137) may be used in zones 0/1 or 0/2 and gas groups IIA, IIB and IIC that are potentially explosive due to flammable substances in the temperatures classes T1 to T6.

For use/installation, the requirements of EN 60079-14 must be observed.

2. The conductivity measuring circuit, temperature measuring circuit and data chip circuit are part of a common intrinsically safe system and are for operation connected to a separately certified transmitter.
3. The conductivity measuring circuit, temperature measuring circuit and data chip circuit as part of an intrinsically safe system are isolated from conductive housing parts up to a maximum rated voltage of 30 V.

Annex to EC-Type Examination Certificate SEV 05 ATEX 0106 X

(16) Test Report 04-IK-0212.01 incl. Extension 1

(17) Special conditions for safe use

1. The maximum permissible process temperatures are in accordance with the temperature classes shown in the table below:

Temperature class	Maximum permissible process temperature
T6	68 °C
T5	80 °C
T4	108 °C
T3	130 °C

2. The InPro725X /*/*/* conductivity sensors may only be used in suitable process terminals of METTLER TOLEDO or other manufacturers in potentially explosive atmospheres.
3. The capacitance and inductance of the connecting cable must be taken into account in the design.
4. The independent process terminal used for installation of the conductivity sensors must be connected to the equipotential bonding system of the installation.
5. The independent process terminal used for installation of the conductivity sensors must be included in the recurring pressure test of the installation if necessary.
6. The minimum conductivity of the media for safe working in potentially explosive atmospheres must be higher than 1 nS/cm.

(18) Fundamental essential health and safety requirements

Fulfilled by the standards applied

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