



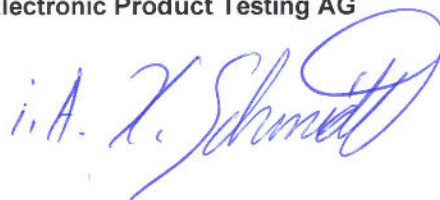
(1) **EU-Type Examination Certificate**

- (2) Equipment or protective system intended for use in potentially explosive atmospheres - **Directive 2014/34/EU**
- (3) Certificate number: **SEV 19 ATEX 0322 X**
- (4) Product: Pressure sensing device  
Type SATM.1ST/Ex, SATM.1ST/N/Ex
- (5) Manufacturer: SAT Anlagentechnik GmbH
- (6) Address: 25578 Daegeling, Germany
- (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 19CH-00093.X73
- (9) Compliance with the essential health and safety requirements has been assured by compliance with:
- EN 50303:2000**  
**EN 60079-0:2012+A11:2013**  
**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:



**Eurofins Electric & Electronic Product Testing AG**  
**Notified Body ATEX**

Martin Plüss  
Product Certification



(13)

## Appendix

(14)

**EU-Type Examination Certificate no. SEV 19 ATEX 0322 X**

(15) **Description of product**

The sensor series SATM... are pressure sensors for gasses or liquids designed according to requirements Ex ia.

Type designation SATM.xxx/ stands for both types "SATM.1ST/..." or "SATM.ECO/..."

Type SATM.xxx/Ex: Types with screwed pressure connection.

Type SATM.xxx/N/Ex: Type with cable suspended into the medium.

The temperature class depends on ambient-temperature and medium-temperature on the sensor.

This relation are shown in the following tables:

Classification of installation and use: stationary  
 Ingress protection: IP6x  
 Rated ambient temperature range (°C): see table below

Type SATM.xxx/Ex	Temperature class	T6	T4	T3
	Ambient temperature [°C]	50	85	125
	Medium temperature [°C]	50	110	150
Type SATM.xxx/N/Ex	Temperature class	T6	T4	
	Ambient temperature [°C]	50	80	
	Medium temperature [°C]	50	80	

The relationship between the max. ambient temperature and surface temperature for dust environment is shown in the following table:

Ambient temperature [°C]	125
Surface temperature [°C]	145






See also Operating- and Safety- instructions 10.88.0508. for SAT Anlagentechnik GmbH costumer document from STS.






Sensors with plug connection are delivered without the cable and the connector's counterpart. The end-user must install correct connector type and cable for the appliance and must check that no additional ignition risks occur with these parts.

The manual contains information about the risks of materials of the connector.



## Type description

Type	SATM.xxx/Ex		
Material enclosure	Stainless steel or titanium		
Connection	Cable	Metallic connector***	Non-metallic connector****
Output signal	4-20 mA without or with OVP (Over Voltage Protection)		
Protection cap	No		
Options	Not Ex-protection relevant		
Ex-marking Gas	 II 1 G Ex ia IIC T* Ga		 II 2 G Ex ia IIB T* Gb
Ex-marking Dust	 II 1D Ex ia IIIC T145°C Da		
Ex-marking mining	 I M1 Ex ia I Ma		 I M2 Ex ia I Mb

Type	SATM.xxx/N/Ex		
Material enclosure	Stainless steel or titanium		
Connection	Cable	Metallic connector***	Non-metallic connector****
Output signal	4-20 mA without or with OVP (Over Voltage Protection)		
Protection cap	Yes or no		
Options	Not Ex-protection relevant		
Ex-marking Gas	 II 1 G Ex ia IIC T** Ga		 II 2 G Ex ia IIB T* Gb
Ex-marking Dust	 II 1D Ex ia IIIC T145°C Da		
Ex-marking mining	 I M1 Ex ia I Ma		 I M2 Ex ia I Mb

**Legend:**

T* =	Temperature class for SATM/Ex could be T3, T4 or T6. Dependencies see separate table.
T** =	Temperature class for SATM/N/Ex could be T4 or T6. Dependencies see separate table.
Metallic connector*** =	e.g. M12 connector, M16 connector or Mil C26482 connector
Non-metallic connector**** =	ISO 4400 connector also named DIN 43650 connector or rectangle connector
Note:	Not relevant for Ex-marking is following options: pressure range, sort of pressure, pressure connection, accuracy.

**Cross list**

The type designation between the designations of "SAT Anlagentechnik GmbH" and "STS Sensor Technik Sirmach AG" can be found in the document "Cross list"

**Additional information:**

The pressure transmitter type SATM.xxx/Ex, SATM.xxx/N/Ex measures the signal of a piezo-resistive pressure measurement bridge and converts it into a standard signal. Input and signal transmission takes place via an intrinsically safe three-wire 4-20 mA current loop circuit. SATM.xxx/Ex are types featuring a screw-in flange, SATM.xxx/N/Ex represent dive probes.

**Type Description**

Placeholders "xxx" stand for the accuracy level the sensor exhibits. They do not have any impact on explosion protection and general security.

**Assessment data**

Measurement and power supply circuit of the ignition protection type intrinsic security Ex ia IIC, Ex ia IIIC and Ex ia I is only for connection to a certified and intrinsically safe electric circuit.

**Maximum ratings:**

$$\begin{aligned}
 U_i &\leq 28 \text{ V} \\
 I_i &\leq 93 \text{ mA} \\
 P_i &\leq 0.65 \text{ W}
 \end{aligned}$$

Effective internal capacitance  
plus per meter length of connecting  
cable

$$\begin{aligned}
 C_i &= 12 \text{ nF} \\
 C_K &= 0.12 \text{ nF}
 \end{aligned}$$

Effective internal inductance  
plus per meter length of connecting  
cable

$$\begin{aligned}
 L_i &= 1.25 \text{ mH} \\
 L_K &= 0.001 \text{ mH}
 \end{aligned}$$

or alternative:

Verification of intrinsically safe circuit:

The pressure transmitter type SATM.xxx/Ex, SATM.xxx/N/Ex can be connected to the Zener barrier "HART010". With the usage of the STS sensor cable types "cable relative PUR" and "cable relative FEP" a maximum cable length up to 300 m is allowed even the abovementioned values of maximum permissible capacitance and inductance are greater than mentioned. This type of installation with cables up to 300 m was assessed as complete intrinsically safe system itself.

(16) **Specific conditions of use**

- Protect pressure transmitters with titanium housing against impact and friction.

(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"