



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx MSC 14.0002X Issue No: 1 Certificate history:  
Status: **Current** Issue No. 1 (2017-05-11)  
Date of Issue: **2017-05-11** Issue No. 0 (2014-05-05)  
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Applicant: **STS Sensortechnik Simach AG**  
Rüthhofstrasse 8  
CH-8370 Sirmach  
**Switzerland**  
Equipment: **Pressure sensing device**  
Optional accessory: *ATM.xxx/Ex, ATM.xxx/IS and ATM.xxx/N/Ex*  
Type of Protection: **Intrinsic safety "ia"**  
Marking:  
Only versions with cable outlet (cable jacket with metal mesh) or metallic plug.  
Ex ia IIC T3 ... T6 Ga  
Ex ia III C T145 °C Da  
Ex ia I Ma  
For all other versions.  
Ex ia IIB T3 ... T6 Gb  
Ex ia III C T145 °C Da  
Ex ia I Mb  
Refer to Annex for the applicable Ambient and Medium temperatures

Approved for issue on behalf of the IECEx  
Certification Body:

Geoff Slater

Position:

Manager

Signature:  
(for printed version)

Date:

  
11/5/2017

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**MSTC Mine Safety Technology Centre**  
8 Hartley Drive  
Thomton NSW 2322  
PO Box 343  
Hunter Region Mail Centre NSW 2310  
Australia



**Department  
of Industry**  
Resources & Energy



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Manufacturer: **STS Sensortechnik Sirmach AG**  
Rütihofstrasse 8  
CH-8370 Sirmach  
**Switzerland**

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended.

## STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0  
**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0  
**IEC 60079-26 : 2014-10** Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga  
Edition:3.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

### Test Report:

CH/SEV/ExTR10.0003/02 CH/SEV/ExTR10.0003/01

### Quality Assessment Report:

CH/SEV/QAR10.0001/03 CH/SEV/QAR10.0001/00 CH/SEV/QAR10.0001/01



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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Addition of the ATM.1ST/IS and ATM.ECO/IS types to the range of equipment. These added types are identical to the ATM.1ST/Ex and ATM.ECO/Ex.

Update of the IEC 60079-26 standard to the latest edition (3<sup>rd</sup> Edition).



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The sensor series ATM... are pressure sensors for gasses or liquids designed to the requirements of Ex ia.

The Type designation ATM.xxx/ stands for Type "ATM.1ST/..." or "ATM.ECO/..." and the Type designation "ATM.xxx/Ex" and "ATM.xxx/IS" stand for the screwed pressure connection type and the ATM.xxx/N/Ex stands for the cable suspended into the medium type.

The pressure transmitters STS type ATM.xxx/Ex, ATM.xxx/IS and ATM.xxx/N/Ex measure the signal of a piezo-resistive pressure measurement bridge and converts it into a representative signal. Both the power and the pressure representative signal are fed via an intrinsically safe three-wire 4-20 mA current loop circuit.

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

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

This certificate covers the pressure sensing device types:

ATM.1ST/IS, ATM.1ST/Ex, ATM.1ST/N/Ex,  
ATM.ECO/IS, ATM.ECO/Ex, ATM.ECO /N/Ex

For more Information see Annexe to this certificate.

This issue of the certificate replaces and supersedes issue 0 of this certificate.

### SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to the attached Annex for the conditions of certification.



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**Additional information:**

Refer to the attached Annex.

**Annex:**

[Annex of IECEx MSC14.0002-01.pdf](#)



## IECEX Certificate of Conformity Annex

**Annex for Certificate No.: IECEx MSC 14.0002X Issue No:1**

**Condition of certification pertaining to Issue 1 of this Certificate:**

Pressure transmitters made with titanium housing must be adequately protected by appropriate measures in addition to mechanically generated impact and friction sparks.

**Special conditions of use pertaining to Issue 1 of this Certificate:**

- 1 Pressure transmitter versions with cable outlet used in Group I application shall use Type A or Type B cable.
- 2 Where plug in connector sensors are being used, the correct connector and cable shall be used to ensure none of the parts is an ignition risk.
- 3 The following relationship between the Temperature Class one hand and the maximum ambient temperature and medium temperature on the other hand shall be observed during installation:

For the gas and liquids environment, this relationship is shown in the following two tables:

Type ATM.xxx/Ex	Temperature class	T6	T4	T3
Or ATM.xxx/IS	Ambient temperature [°C]	50	85	125
Medium temperature [°C]		50	110	150

Type ATM.xxx/N/Ex	Temperature class	T6	T4	T3
Ambient temperature [°C]		50	80	80
Medium temperature [°C]		50	80	80

For the dust environment is shown in the following table:

Ambient temperature [°C]	50	60	125
Surface temperature [°C]	70	80	145

- 4 The following parameters are to be taken into account during any installation:

Terminals	Pins 4 & 2 to 1
Maximum Input Voltage $U_i$	28 V
Maximum Input Current $I_i$	93 mA
Maximum Input Power $P_i$	0.65 W
Maximum Internal Capacitance $C_i$	12 nF
Connecting Cable Maximum Capacitance per Meter $C_k$	0.12 nF
Maximum Internal Inductance $L_i$	1.25 mH
Connecting Cable Maximum Inductance per Meter $L_k$	1 $\mu$ H

Note: See also Risk-analysis and Operating- and Safety- instructions 6.60.0867.A.EX01 from STS.

**Drawing list pertaining to Issue 1 of this Certificate:**

Manufacturer's Documents				
Drawing/Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
<b>Drawings remaining valid from Issue 0</b>				
4.30.0139 .A	1	P ATMOS Endstufe 2L 4..20mA Ex Schema ( <i>Schematic drawing</i> )	-	2009/04/06

Certificate issued by:





## IECEX Certificate of Conformity Annex

**Annex for Certificate No.: IECEx MSC 14.0002X Issue No:1**

Manufacturer's Documents				
Drawing/Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
6.31.0798.A	3	P ATMOS Endstufe 2L 4..20mA Ex (BOM)	-	2009/04/30
02730827	1	P ATMOS Endstufe 2L 4..20mA Ex	A	2009/02/26
02730827.07	1	P ATMOS Endstufe 2 – Letter (Nutzen)	A	2009/04/06
02730827.18	1	P ATMOS Endstufe 2L 4..20mA Ex (PCB Stack)	A	2009/02/27
4.32.0139.A	1 of 2	P ATMOS Endstufe 2L 4..20mA Ex (PCB Bottom Overlay)	-	2009/04/06
4.33.0139.A	2 of 2	P ATMOS Endstufe 2L 4..20mA Ex (PCB Top Overlay)	-	2009/04/06
4.34.0139.A	1 of 6	P ATMOS Endstufe 2L 4..20mA Ex (PCB Bottom Layer)	-	2009/04/06
4.43.0139.A	2 of 6	P ATMOS Endstufe 2L 4..20mA Ex (PCB Inner Layer4)	-	2009/04/06
4.42.0139.A	3 of 6	P ATMOS Endstufe 2L 4..20mA Ex (PCB Inner Layer3)	-	2009/04/06
4.41.0139.A	4 of 6	P ATMOS Endstufe 2L 4..20mA Ex (PCB Inner Layer2)	-	2009/04/06
4.40.0139.A	5 of 6	P ATMOS Endstufe 2L 4..20mA Ex (PCB Inner Layer1)	-	2009/04/06
4.35.0139.A	6 of 6	P ATMOS Endstufe 2L 4..20mA Ex (PCB Top Layer)	-	2009/04/06
4.49.0139.A	1 of 2	P ATMOS Endstufe 2L 4..20mA Ex (PCB Bottom Solder Paste Mask)	-	2009/04/06
4.48.0139.A	2 of 2	P ATMOS Endstufe 2L 4..20mA Ex (PCB Top Solder Paste Mask)	-	2009/04/06
4.47.0139.A	1 of 2	P ATMOS Endstufe 2L 4..20mA Ex (PCB Bottom Solder Mask)	-	2009/04/06
4.46.0139.A	2 of 2	P ATMOS Endstufe 2L 4..20mA Ex (PCB Top Solder Mask)	-	2009/04/06
4.36.0139.A	1	P ATMOS Endstufe 2L 4..20mA Ex (PCB Drilling Plan)	-	2009/04/06
4.55.0139.A	1	P ATMOS Endstufe 2L / 4..20mA (PCB Test Points)	-	2009/04/06
4.38.0139.A	1	P ATMOS Endstufe 2L 4..20mA Ex (PCB Top Assembly Print)	-	2009/04/06
4.30.0129.C	1	Frontend (Schematic)	C	2008/01/14
6.31.0796.B	1	P ATMOS Front End (BOM)	-	2008/01/15
02730752	1	FRONTEND	C	2008/01/14
02730752.03 - 4.34.0129.C	1 of 2	ATMOS FRONTEND (PCB Solder Side)	C	2008/01/14
02730752.03 - 4.35.0129.C	2 of 2	ATMOS FRONTEND (PCB Component Side)	C	2008/01/14
02730752.04 - 4.36.0129.C	1	ATMOS FRONTEND (PCB Drilling Plan)	C	2008/01/14
02730752.12 - 4.39.0129.C	1	ATMOS FRONTEND (PCB Assembly Print)	C	2008/01/14
02730752.07	1	ATMOS FRONTEND (Nutzen)	C	2008/01/14
02730752.03 - 4.47.0129.C	1 of 2	ATMOS FRONTEND (Solder Mask Solder Side)	C	2008/01/14
02730752.03 - 4.46.0129.C	2 of 2	ATMOS FRONTEND (Solder Mask Component Side)	C	2008/01/14
02730752.03 - 4.49.0129.C	1 of 2	ATMOS FRONTEND (Solder Mask Solder Side)	C	2008/01/14

Certificate issued by:





## IECEX Certificate of Conformity Annex

**Annex for Certificate No.: IECEx MSC 14.0002X      Issue No:1**

<b>Manufacturer's Documents</b>				
<b>Drawing/Document Number:</b>	<b>Page/s:</b>	<b>Title:</b>	<b>Revision Level:</b>	<b>Date: (yyyy-mm-dd)</b>
02730752.03 - 4.48.0129.C	2 of 2	ATMOS FRONTEND ( <i>Solder Mask Component Side</i> )	C	2008/01/14
01001025.05 - 4.33.0129.C	1	ATMOS FRONTEND ( <i>PCB component layout</i> )	C	2008/01/14
9.99.0141.A	1	Typenschild ATM.XXX/IS	A	2017/04/13
9.99.0136.A	2	Typenschild (ATM.xxx/Ex, ATM.xxx/N/Ex – IECEx ( <i>Nameplate</i> ))	A	2014/04/30
10.88.0092.F	4	Safety Instructions	F	2014/04/30
<b>Drawings introduced by issue 1</b>				
6.10.00868.B	1	ATM.xxx/Ex, ATM.xxx/IS 2- Leiter, 2 wire 4-20 mA	B	2017-03-08
6.10.00869.B	1	ATM.xxx/N/Ex 2- Leiter, 2 wire 4-20 mA	B	2017-03-08

**Reference document list pertaining to Issue 1 of this Certificate:**

<b>Manufacturer's Documents</b>				
<b>Drawing/Document Number:</b>	<b>Page/s:</b>	<b>Title:</b>	<b>Revision Level:</b>	<b>Date: (yyyy-mm-dd)</b>
6.60.0867.A.EX01	28	Risk assessment Pressure Transmitter Series ATM.xxx/Ex, ATM.xxx/IS Immersion Probe Series ATM.xxx/N/Ex	Version 1.7	Undated
DMM041.10.88.0435	2	Operating and Instruction Manual	F	2017-03-09

Certificate issued by:

