



# 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 TUN 07.0014X** issue No.:1

Status: **Current**

Certificate history:  
Issue No. 1 (2008-9-10)  
Issue No. 0 (2007-12-13)

Date of Issue: **2008-09-10** Page 1 of 5

Applicant: **ABB Automation Products GmbH**  
Dransfelder Straße 2  
37079 Göttingen  
Germany

Electrical Apparatus: **Vortex Flowmeter FV4000-VT4\*/VR4\***  
Optional accessory: **Swirl Flowmeter FS4000-ST4\*/SR4\***

Type of Protection: **Intrinsic safety "i", type of protection "n" electrical apparatus, protection by enclosures "tD"**

Marking: **Ex ib IIC T4...T1**  
**Ex nA [nL] IIC T4...T1**  
**Ex tD A21 IP67 TX°C**

Approved for issue on behalf of the IECEx Certification Body: **Karl-Heinz Schwedt**

Position: **Head of ExCB**

Signature:  
(for printed version)

Date:

2008-09-10

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:

**TÜV NORD CERT GmbH**  
Hanover Office  
Am TÜV 1  
30519 Hannover  
Germany





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Manufacturer: **ABB Automation Products GmbH**  
Dransfelder Straße 2  
37079 Göttingen  
Germany

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:

<b>IEC 60079-0 : 2004</b> Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
<b>IEC 60079-11 : 2006</b> Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-15 : 2005-03</b> Edition: Ed 3	Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus
<b>IEC 61241-0 : 2004</b> Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
<b>IEC 61241-1 : 2004</b> Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

*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:

DE/TUN/ExTR07.0019/00

Quality Assessment Report:

DE/TUN/QAR06.0010/01



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## Schedule

### EQUIPMENT:

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

The Vortex Flowmeter FV4000-VT4\*/VR4\* and the Swirl Flowmeter FS4000-ST4\*/SR4\* transporting and metering the flowrate of liquids, gases (including unstable gases) and steam and measuring the actual volume flow at operating conditions. They measure in mass or normal flow units at constant operating conditions (pressure, temperature) and the saturated steam flow in mass units under varying temperature / pressure conditions when a temperature sensor (option) is installed in the instrument.

### CONDITIONS OF CERTIFICATION: YES as shown below:

The intrinsically safe circuits and the switching output may be connected only by intrinsically safe circuits or non-intrinsically safe circuits. A combination is not allowed.  
The pollution level must not exceed the pollution degree 3 for the macro environment of the device.  
The over voltage category III / II must not be exceeded by connected non mains / mains circuits.



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**EQUIPMENT(continued):**

The marking for mounting in explosion hazardous areas of zone 1: Ex ib IIC T4...T1.  
 The marking for mounting in explosion hazardous areas of zone 2: Ex nA [nL] IIC T4...T1  
 The marking for mounting in explosion hazardous areas of zone 22: Ex tD A21 IP6X TX°C

Type of protection	Permitted range of the ambient temperature	Maximum fluid temperature [°C]	Temperature class
Ex ib IIC resp. Ex nA [nL] IIC	-40 °C ≤ T <sub>a</sub> ≤ +70 °C	130	T4
		195	T3
		290	T2
		400	T1

Type of protection	Permitted range of the ambient temperature	Version	MODEL No.	Surface temperature TX
Ex tD A21 IP6X	-20°C ≤ T <sub>a</sub> ≤ +60°C	VORTEX-Kompakt	VT41	(T85...T <sub>Fluid</sub> )°C
		SWIRL-Kompakt	ST41	
		VORTEX-Remote	VR41	T85 °C
		SWIRL-Remote	SR41	



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

The changes refer to the electrical construction of the Vortex Flowmeter FV4000-VT4\*/VR4\* and the Swirl Flowmeter FS4000-ST4\*/SR4\*. The 'Conditions of Certification' are changed. The electrical data, the ambient temperature and all other details remain unchanged.