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

Certificate No.:	IECEx TUN 08.0010X issue No.:1	Certificate history: Issue No. 1 (2008-11-17) Issue No. 0 (2008-7-31)
Status:	**Current**	
Date of Issue:	**2008-11-17**	Page 1 of 4

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

Electrical Apparatus: **Flowmeter TRIO-WIRL VT42.; ST42.; VR42.; SR42.**
Optional accessory:

Type of Protection: **d, ib, [ib], nA, [nL], tD**

Marking: **Ex d [ib] IIC T6 to T1, Ex tD A21 IP 6X T85°C...TMedium, Ex ib IIC T4 to T1, Ex nA [nL] IIC T4 to T1,**

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

Position: Head of IECExCB

Signature: (for printed version)

Date: 2008-11-17

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.

Certificate issued by:

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

TÜV NORD

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 08.0010X

Date of Issue: **2008-11-17** Issue No.: **1**

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

IEC 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 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/ExTR08.0038/00

Quality Assessment Report:
DE/TUN/QAR06.0012/00

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 08.0010X

Date of Issue: **2008-11-17** Issue No.: **1**

Schedule

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

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

See Annex

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 08.0010X

Date of Issue: **2008-11-17** Issue No.: **1**

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

The changes refer to the electrical construction of the Vortex Flowmeter FV4000-VT42./VR42. and the Swirl Flowmeter FS4000-ST42./SR42.. The 'Conditions of Certification' are changed. The electrical data, the ambient temperature and all other details remain unchanged.

Annexe: 08 204 554957_annex.pdf

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

Testing Laboratory Explosion Protected Equipment and Monitoring Devices

The Flowmeter TRIO-WIRL VT42.; ST42.; VR42.; SR42. 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.

Technical Data:

Application	Permitted range of ambient temperature	Maximum medium temperature	Temperature class
Ex d [ib] IIC	-40 °C .. 60 °C	80 °C	T6
		95 °C	T5
		130 °C	T4
		195 °C	T3
		290 °C	T2
		400 °C	T1

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_{amb} ≤ + 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 IP 6X	- 20 °C ≤ T_{amb} ≤ + 60 °C	VORTEX-Kompakt	VT42	(T85…T_{Fluid}) °C
		SWIRL-Kompakt	ST42	
		VORTEX-Remote	VR42	T85 °C
		SWIRL-Remote	SR42	

Power source:

For Ex ib IIC:

Supply circuit
(terminal 31, 32)

in type of protection Intrinsic Safety Ex ib IIC
only for the connection of certified intrinsically safe circuit
with the following maximum values:
U_i = 28 V
I_i = 110 mA
P_i = 0.77 W
effective internal capacitance C_i = 14.6 nF
eff. int. cap. against equipotential bonding C_i = 24.4 nF
effective internal inductance L_i = 0.27 mH

switching output (terminal 41, 42)	in type of protection Intrinsic Safety Ex ib IIC only for the connection of certified intrinsically safe circuit with the following maximum values: U_i = 15 V I_i = 30 mA P_i = 115 mW effective internal capacitance C_i = 11.6 nF eff. int. cap. against equipotential bonding C_l = 19.6 nF effective internal inductance L_i = 0,14 mH
Type VR42 and SR42: piezo sensor (terminal 85, 86, 87) and PT circuit (terminal 81, 82, 83, 84)	in type of protection Intrinsic Safety Ex ib IIC only for the connection of certified intrinsically safe circuit with the following maximum values: U_O = 7.2 V I_O = 965 mA P_O = 1740 mW effective internal capacitance C_i = negligible small effective internal inductance L_i = negligible small

U_m = 60 V

For Ex nA [nL] IIC:

Supply circuit (terminal 31, 32)	U_B = 14…46 V I_B = 4…20 mA
switching output (terminal 41, 42)	U_B = 16…30 V I_B = 2…15 mA

U_m = 60 V

Conditions of certification

The supply circuit and the switching output mentioned in the table may only operated intrinsically safe or non intrinsically safe.
A combination is not permitted. If intrinsically safe equipotential bonding has to be realized along the wiring.
The over voltage category III / II must not be exceeded by connected non mains / mains circuits.