



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

(2) Equipment and Protective Systems intended for use in potentially hazardous atmospheres - **Directive 94/9/EC**



(3) **TÜV 00 ATEX 1521 X**

(4) Equipment: Flowmeter TRIO-WIRL Models VT42.; ST42.; VR42.; SR42.

(5) Manufacturer: ABB Automation Products GmbH

(6) Address: D-37079 Göttingen, Dransfelder Straße 2  
Germany

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

(8) The TÜV Hannover/Sachsen Anhalt e.V., TÜV Certification Body No. 0032 in accordance with the Article 9 of the Council Directive of 23 March 1994 (94/9/EC) certifies that this equipment or protective system 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 of the Directive.

The examination and test results are included in the confidential Report No. 00//PX00300.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with

**EN 50 014:1997 EN 50 018:1995 EN 50 020:1994 pr EN 50 021:1996**

(10) If the symbol "X" is placed after the certification 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 EC-Type Test Examination Certificate relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this directive apply to the manufacture and supply of this equipment or protective system.

(12) The markings for the equipment or protective system shall include the:

 **II 2 G EEx d [ib] IIC T6, II 2 G EEx ib IIC T4  
or II 3 G EEx n [L] IIC T4**

TÜV Hannover/Sachsen-Anhalt e.V.  
TÜV CERT-Certification Body  
Am TÜV 1  
D-30519 Hannover, Germany

Hannover, 21.02.2000

Stürwold

Head of the  
Certification Body

(13)

## SCHEDULE

(14) **EC-Type Examination Certificate No. TÜV 00 ATEX 1521 X**

(15) Description of the Instrument

The flowmeters TRIO-WIRL Models VT42.; ST42.; VR42.; SR42. are used to measure the flowrate or volume at operating conditions of steam, gases or liquids.

The relationships between the instrument design, Temperature Class, max. allowable ambient and fluid temperatures are listed in the following tables:

Designed for	Allowable Ambient Temperature Range	Maximum Fluid Temperature	Temperature Class
EEx 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

Designed for	Allowable Ambient Temperature Range	Maximum Fluid Temperature	Temperature Class
EEx ib IIC or EEx n [L] IIC	-55°C .. 70°C	130°C	T4
		195°C	T3
		290°C	T2
		400°C	T1

### Electrical Specifications

The allowable maximum values as a function of the Model No. and the design are listed in the following Table:

Model	Designed for EEx ib IIC	$U_i$	$I_i$	$P_i$	$C_i$	$C_i$ to PA	$L_i$	Designed for EEx d [ib] IIC or EEx n[L] IIC
		[V]	[mA]	[mW]	[nF]	[nF]	[mH]	
VT42.,ST42. VR42.,SR42.	Supply power circuit Terminals 31, 32	28	110	770	14.6	24.4	0.27	$U_m = 60 V$
	Contact output Terminals 41, 42	15	30	115	11	19.6	0.14	$U_m = 60 V$
Model	Designed for EEx ib IIC	$U_o$	$I_o$	$P_o$				
VR42., SR42. Internal circuit	Piezo-Sensor Terminals 85, 86, 87	7.2	965	1.74				
	PT100-circuit Terminals 81, 82, 83, 84							

**Schedule to EC-Type Examination Certificate No. TÜV 00 ATEX 1521 X**

(16) Test documents are listed in Test Report No.: 00/PX00300.

(17) Special Conditions

The supply power and current output circuits mentioned in the tables may be operated only as intrinsically safe or as non-intrinsically safe. A combination is not permissible. For Intrinsically safe circuits potential equalization must be established along the entire length of these circuits.

(18) Essential Health and Safety Requirements

None additional



**1st SUPPLEMENT**  
**to**  
**EC-Type Examination Certificate No. TÜV 00 ATEX 1521 X**

Manufacturer: ABB Automation Products GmbH  
Dransfelder Straße 2  
D-37079 Göttingen, Germany

The TRIO WIRL flowmeter Types VT42., ST42., VR42. and SR42. may now also be manufactured in accordance with the test documents listed in the test report. The revisions affect the circuit boards, the use of the flowmeter in explosion hazardous areas containing flammable dust and the identification of and markings for the flowmeters.

The identification of the flowmeters will now be as follows:

Flowmeter FV4000 Types VT42. / VR42. and FS4000 Types ST42. / SR42.

The allowable ambient temperature range for use of the flowmeter in explosion hazardous areas containing flammable dust is -20°C ... + 60°C.

For use of the flowmeter in explosion hazardous areas containing flammable dust, connections of intrinsically safe circuits in accordance with the electrical specifications in EC-Type Examination Certificate TÜV 00 ATEX 1521 X or non-intrinsically safe circuits with  $U_m = 60$  V is allowed.

The markings for the flowmeter used in explosion hazardous areas containing flammable dust

Flowmeters TRIO WIRL Types VT42. / ST42. / VR42. / SR42 and  
Flowmeters FV4000 Types VT42. / VR42. and FS4000 Types ST42. / SR42. :

 II 2 D T85°C ... T<sub>Medium</sub> IP67

Only converters for flowmeters TRIO WIRL Types VR42. / SR42. and  
converters for flowmeters FV4000 Types VR42. / FS4000 SR42. :

 II 2 D T85°C IP67

Use in explosion hazardous areas with gases, steam or vapors

The markings for the flowmeters TRIO WIRL Types VT42. / ST42. / VR42. / SR42. and  
flowmeters FV4000 Types VT42. / VR42. and FS4000 Types ST42. / SR42. in areas, which require  
equipment for Category 3:

 II 3 G EEx n A [L] IIC T1 ... T4



1st Supplement to EC-Type Examination Certificate TÜV 00 ATEX 1521 X

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Special Conditions:

1. The supply power and the contact output specified in the table may only be operated as intrinsically safe or non-intrinsically safe circuits. A combination is not permissible. Potential equalization must exist along the entire circuit path for intrinsically safe circuits.
2. When the protection earth conductor (PE) is connected in the connection box of the flowmeter, assure that no dangerous potential differences can exist between the protection earth (PE) and the potential equalization in the explosion hazardous area.

The remaining specifications remain unchanged.

The test documents are listed in Test Report No. 03YEX550600.

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TÜV CERT-Certification Body  
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Hannover, 20 October 2003

The Director

## 2<sup>nd</sup> SUPPLEMENT

**to Certificate Number:** **TUV 00 ATEX 1521 X**  
**Instrument:** Flowmeter  
TRIO WIRL Type VT42. / ST42. / VR42. / SR42. or  
Flowmeter  
FV4000 Type VT42 / VR42  
FS4000 Type ST42 / SR42

**Manufacturer:** ABB Automation Products GmbH

**Address:** Dransfelder Straße 2  
37079 Göttingen, Germany

**Order Number:** **8000553843**

**Issue Date:** 03 Sept. 2007

The flowmeters TRIO WIRL Type VT42. / ST42. / VR42. / SR42. or  
FV4000 Type VT42 / VR42 or FS4000 Type ST42 / SR42  
may now be manufactured in accordance with the test documents listed below. The changes affect the  
boards „Digital-Board" and „HART-I/O-Board" and the identifications.

Identifications for the flowmeters TRIO WIRL Type VT42. / ST42. / VR42. / SR42. or  
flowmeters FV4000 Type VT42 / VR42 or FS4000 Type ST42 / SR42 for equipment in areas  
with Category 3 or Category 2 requirements:



II 3 G Ex nA [L] IIC T1 ... T4



II 2 G Ex ib IIC T1 ... T4

The instruments according to this Supplement meet the requirements of the following Standards:

EN 60079-0:2004                      EN 60079-11:2007

All other specifications remain unchanged.

(16) The test documents are listed in the Test Report No. 07203553843.

(17) Special Conditions

1. The supply circuit specified in the table and the contact output may only be operated as Intrinsic Safety or Non-Intrinsic Safety. A combination is not allowed. For intrinsically safe circuits Potential Equalization must exist along the entire cable length.
2. When the Protection Earth conductor (PE) is connected in the connection area of the flowmeter, it must be assured that no dangerous potential differences may occur between the Protection Earth conductor (PE) and the Potential Equalization in the hazardous area.

2<sup>nd</sup> Supplement to Certificate Number TÜV 00 ATEX 1521 X

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(18) Basic Safety and Health Requirements

None additionally

TUV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, Germany, is accredited by the Central Office of the German States for Safety Engineering (ZLS), Ident. No. 0044, Legal successor to TUV NORD CERT GmbH & Co. KG Ident. No. 0032

The Director of the Certification Agency

A handwritten signature in black ink, appearing to read "Schwedt".

Schwedt

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