



(1) **EC Type Examination Certificate**

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

(3) **TÜV 01 ATEX 1771**



(4) Equipment:: Flow meter TRIO WIRL Types: V_4A/S_4A_ "Fieldbus"

(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 recorded in the confidential Report No. 139025.

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

EN 50 014:1997

EN 50 020:1994

(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 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 following:



II 2 G EEX ia IIC T4

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

Hanover, 14.11.2001

Stürwold

Head of the Certification Body

This EC-Type Examination Certificate may only be reproduced without any changes.
Excerpts or changes require approval from the TÜV Hanover/Sachsen-Anhalt e.V.

(13)

SCHEDULE

(14)

EC Type Examination Certificate No. TÜV 01 ATEX 1771

(15) Description of Equipment

The flowmeter TRIO-WIRL type V_4A/S_4A_ "Fieldbus" is applicable for measuring the flow or operating volume of vapors, gases or fluids.

Correlation of temperature category, ambient temperature and material temperature has to be taken from table 1:

Range of ambient temp.	Max. material temp.	Temp. category
-40°C...+70°C	130°C	T4
	195°C	T3
	290°C	T2
	400°C	T1

Table 1

Design	Ambient Temp.	Max. Material Temperature
Temp. 110°C at cable gland	-40°C....+70°C	400°C
Temp. 80°C at plug and cable gland	-40°C....+40°C	400°C
	-40°C....+50°C	320°C
	-40°C....+60°C	240°C
	-40°C....+70°C	160°C

Table 2

The respective temperature category for designs under table 2 depend on the material temperature in table 1. The temperatures stated are likewise valid for thermally isolated flow meters.

Electrical Data

Fieldbus connection
(Terminals 31 and 32)

Ignition Class Intrinsically Safe EEx ia IIC
to be connected to certified intrinsically safe current circuits (in accordance with FISCO model) only
Peak values: $U_i = 24 \text{ V}$
 $I_i = 380 \text{ mA}$
 $P_i = 9.12 \text{ W}$

The effective inner capacity and inductor are of a negligible low level.

Schedule to EC Type Examination Certificate No. TÜV 01 ATEX 1771

Contact Output (Terminals 41 and 42)	Ignition Class Intrinsically Safe EEx ia IIC to be connected to certified intrinsically safe current circuits with the following peak values only: U _i = 15V I _i = 30 mA P _i = 115 mW effective inner capacity C _i = 3.6 nF effective inner capacity ag. PA C _i = 3.6 nF effective inner inductor C _i = 0.133 mH
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Types VR4_ and SR4_

Sensor current circuit / Piezo Sensor (Terminals 85, 86, 87) and PT100 circuit (Terminals 81, 82, 83, 84)	Ignition Class Intrinsically Safe EEx ia IIC peak values: U _o = 8.5 V I _o = 1073 mA P _o = 2280 mW The effective inner capacity and inductor are of a negligible low value.
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Types VT4_ and ST4_

As to these types, the sensor current circuits are represented by inner intrinsically safe circuits.

The Fieldbus and contact output circuit are galvanically isolated among one another and against PA.

- (16) Test documentation is listed in test report no.: YEX 139025
- (17) Special Conditions
None
- (18) Basic Safety and Health requirements
no additional

Translated from German original



1st SUPPLEMENT
to
EC-Type Examination Certificate No. TÜV 01 ATEX 1771

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

The flowmeters TRIO WIRL Type VT4A., ST4A., VR4A.. and SR4A.. may now also be manufactured in accordance with the test documents listed in the test report. The revisions affect the use of the flowmeter in explosion hazardous areas containing combustible dust and the identification of the flowmeters.

The identification of the flowmeters will now be as follows:

Flowmeters FV4000 Type VT4A. / VR4A. and FS4000 Type ST4A. / SR4A.


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

Using the flowmeter in explosion hazardous areas containing flammable dust, only connections of intrinsically safe circuits is allowed.


The markings for use in explosion hazardous areas containing combustible dust

Flowmeters TRIO WIRL Typ VT4A. / ST4A. / VR4A, / SR4A and

Flowmeters FV4000 Typ VT4A. / VR4A. and FS4000 Typ ST4A. / SR4A. :

 II 2 D T85°C...T_{Medium} IP67

Only converters for flowmeters TRIO WIRL Types VR4A. / SR4A. and
converters for flowmeters FV4000 Types VR4A. / FS4000 SR4A :

 II 2 D T85°C IP67



1st Supplement to EC-Type Examination Certificate No. TÜV 01 ATEX 1771

Installation Information:

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. 03YEX550601

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Hannover, 20 Oct 2003

The Director