

Translation

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

TÜV NORD



(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**

(3) **Certificate Number** TÜV 06 ATEX 553449 X

(4) for the equipment: Suspension pressure transmitters type VEGAWELL 51/52 type WL 51/52.AI*****D*


(5) of the manufacturer: VEGA Grieshaber KG

(6) Address: Am Hohenstein 113
D-77761 Schiltach

Order number: 8000553449

Date of issue: 2006-12-04

- (7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The TÜV NORD CERT GmbH, notified body No. 0044 in accordance with Article 9 of the Council Directive of the EC of March 23, 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 to the Directive. The examination and test results are recorded in the confidential report No. 06 YEX 553449.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- EN 50014:1997 + A1 + A2 EN 50020:2002 EN 50284:1999
- (10) If the sign "X" is placed after the certificate 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, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment or protective system must include the following:

 **II 1 G or II 2 G EEx ia IIC T6**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body


Schwedt

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(13) **SCHEDULE**

(14) **EC-Type Examination Certificate No. TÜV 06 ATEX 553449 X**

(15) Description of equipment

The suspension pressure transmitters type VEGAWELL 51/52 type WL 51/52.AI*****D* are used for pressure measurement in explosion hazardous areas.

The suspension pressure transmitters are also used for process temperature measurement Pt100 via 4 wire technique.

The measuring media are allowed to be combustible liquids, gases, mists or vapours.

The suspension pressure transmitters consist of a metallic housing (optionally coated with plastic material) with partly potted electronics and a suspension cable.

The permissible ambient temperature range in the area of the measuring sensor with electronics dependent on the temperature class has to be taken from the following tables:

Application for category 1 apparatus:

Temperature class	Ambient temperature range
T6	- 20°C... + 50°C
T5, T4, T3, T2, T1	- 20°C... + 60°C

The suspension pressure transmitters are allowed to be operated in an explosion hazardous area, that requires apparatus of category 1, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).

If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data.

At the maximum permissible ambient temperatures the EN 1127-1:1999, section 6.4.2, was taken into account.

Application for category 2 apparatus:

Temperature class	Ambient temperature range
T6	- 40°C... + 66°C
T5, T4, T3, T2, T1	- 40°C... + 80°C

Schedule EC-Type Examination Certificate No. TÜV 06 ATEX 553449 X

Electrical data

Supply and signal circuit
(Wires brown [+] and blue [-])

in type of protection „Intrinsic Safety“ EEx ia IIC/IIB
only for connection to a certified intrinsically safe circuit
with linear characteristic line

maximum values:

$$\begin{aligned} U_i &= 30 \text{ V} \\ I_i &= 131 \text{ mA} \\ P_i &= 983 \text{ mW} \end{aligned}$$

$$\begin{aligned} \text{effective internal capacitance:} & \quad 2.4 \text{ nF (wire-wire)} \\ \text{effective internal capacitance:} & \quad 1.5 \text{ nF (wire-shield)} \\ \text{effective internal inductance:} & \quad 51 \text{ } \mu\text{H} \end{aligned}$$

Additionally to the values mentioned above, the
following values for L_i' and C_i' of the connection cable
mounted fixed have to be observed:

$$\begin{aligned} L_i' &= 0.6 \text{ } \mu\text{H/m} \\ C_{\text{wire/wire}}' &= 133 \text{ pF/m} \\ C_{\text{wires/shield}}' &= 215 \text{ pF/m} \end{aligned}$$

Temperature measuring circuit
(Wires white/yellow, red/black)

in type of protection „Intrinsic Safety“ EEx ia IIC/IIB
only for connection to a certified intrinsically safe circuit
maximum values:

$$\begin{aligned} U_i &= 30 \text{ V} \\ P_i &= 80 \text{ mW} \end{aligned}$$

The effective internal capacitances and inductances
are negligibly small.

The following values for L_i' and C_i' of the connection
cable mounted fixed have to be observed:

$$\begin{aligned} L_i' &= 0.6 \text{ } \mu\text{H/m} \\ C_{\text{wire/wire}}' &= 188 \text{ pF/m} \\ C_{\text{wires/shield}}' &= 555 \text{ pF/m} \end{aligned}$$

The metallic parts of the suspension pressure transmitter are electrically connected with
the shield of the connection cable mounted fixed.

The intrinsically safe circuits for the pressure signal and the temperature signal are safely
galvanically separated from each other and from parts, which can be earthed.

Schedule EC-Type Examination Certificate No. TÜV 06 ATEX 553449 X

(16) Test documents are listed in the test report No. 06 YEX 553449.

(17) Special conditions for safe use

1. At the plastic parts (cable, coating) of the suspension pressure transmitter VEGAWELL 51/52 type WL 51/52.A_****D* there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. The shield connection has to be earthed to avoid electrostatic charge. Observe manual of the manufacturer.
3. At the metallic parts of the suspension pressure transmitter VEGAWELL 51/52 type WL 51/52.A_****D* made of titanium there is a danger of ignition by impact or friction (e. g. caused by pendulum or vibration). Observe manual of the manufacturer.

(18) Essential Health and Safety Requirements

no additional ones

Translation

1. SUPPLEMENT

to Certificate No. TÜV 06 ATEX 553449 X

Equipment: Suspension pressure transmitters
VEGAWELL 51/52 type WL 51/52.A_*****C/D* resp.
VEGAWELL 72 type WELL 72.A_*****C*

Manufacturer: VEGA Grieshaber KG

Address: Am Hohenstein 113
D-77761 Schiltach

Order number: 8000553816

Date of issue: 2007-06-11

The suspension pressure transmitters type VEGAWELL 51/52 type WL 51/52.A_*****C/D* resp. VEGAWELL 72 type WELL 72.A_*****C* are used for pressure measurement in explosion hazardous areas.

The measuring media are allowed to be combustible liquids, gases, mists or vapours. The changes refer to the electronic insert, the cable entry and the type designation.

Electrical data

Execution WL 51/52.A_***C/D* resp. WELL 72.A_*****C***

Supply and signal circuit in type of protection „Intrinsic Safety“ Ex ia IIC/IIB
(Wires brown [+] and blue [-]) only for connection to a certified intrinsically safe circuit with linear characteristic line

maximum values:

$$\begin{aligned} U_i &= 30 \text{ V} \\ I_i &= 131 \text{ mA} \\ P_i &= 983 \text{ mW} \end{aligned}$$

effective internal capacitance: 2.4 nF (wire-wire)
effective internal capacitance: 1.5 nF (wire-shield)
effective internal inductance: 51 μ H

Additionally to the values mentioned above, the following values for L' and C' of the connection cable mounted fixed have to be observed:

$$\begin{aligned} L' &= 0.6 \text{ } \mu\text{H/m} \\ C'_{\text{wire/wire}} &= 133 \text{ pF/m} \\ C'_{\text{wires/shield}} &= 215 \text{ pF/m} \end{aligned}$$

Execution WL 51/52.A_***D***

Temperature measuring
circuit
(Wires white/yellow,
red/black)

in type of protection „Intrinsic Safety“ Ex ia IIC/IIB
only for connection to a certified intrinsically safe circuit
maximum values:

$$U_i = 30 \text{ V}$$
$$P_i = 80 \text{ mW}$$

The effective internal capacitances and inductances are
negligibly small.

The following values for L' and C' of the connection
cable mounted fixed have to be observed:

$$L' = 0.6 \text{ } \mu\text{H/m}$$
$$C'_{\text{wire/wire}} = 188 \text{ pF/m}$$
$$C'_{\text{wires/shield}} = 555 \text{ pF/m}$$

All other details remain unchanged.

The equipment incl. of this supplement meets the requirements of these standards:

EN 60079-0:2004 EN 50 020:2002 EN 60079-26:2004

(16) The test documents are listed in the test report No. 07203553816.

(17) Special conditions for safe use

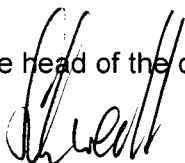
no changes

(18) Essential Health and Safety Requirements

no additional ones

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The head of the certification body



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Translation

2. SUPPLEMENT

to Certificate No. **TÜV 06 ATEX 553449 X**

Equipment: Suspension pressure transmitters
 VEGAWELL 51/52 type WL 51/52.A*****C/D* resp.
 VEGAWELL 72 type WELL 72.A*****C/D*

Manufacturer: VEGA Grieshaber KG

Address: Am Hohenstein 113
 D-77761 Schiltach

Order number: 8000554192

Date of issue: 2008-01-30

The suspension pressure transmitters type VEGAWELL 51/52 type WL 51/52.A*****C/D* resp. VEGAWELL 72 type WELL 72.A*****C/D* are used for pressure measurement in explosion hazardous areas.

The measuring media are allowed to be combustible liquids, gases, mists or vapours.

The changes refer to the electronic inserts (changes for WL50, WL50H also for VEGAWELL 72), the housings of the pressure transmitter, an additional terminal housing and the type designation.

Electrical data

Execution WL 51/52.A***C* resp. WELL 72.A*****C***

Supply and signal circuit in type of protection „Intrinsic Safety“ Ex ia IIC/IIB
 (Wires brown [+] and blue [-] only for connection to a certified intrinsically safe circuit
 resp. terminals 1 and 2) with linear characteristic line

maximum values:

$U_i = 30 \text{ V}$
 $I_i = 131 \text{ mA}$
 $P_i = 983 \text{ mW}$

effective internal capacitance: 2.4 nF (wire-wire)
 effective internal capacitance: 1.5 nF (wire-shield)
 effective internal inductance: 51 μH

Additionally to the values mentioned above, the following values for L_i' and C_i' of the connection cable mounted fixed have to be observed:

$L' = 0.6 \text{ } \mu\text{H/m}$
 $C'_{\text{wire/wire}} = 133 \text{ pF/m}$
 $C'_{\text{wires/shield}} = 215 \text{ pF/m}$

Execution WL 51/52.A***D* resp. WELL 72.A*****D***

Supply and signal circuit (Wires brown [+] and blue [-] resp. terminals 1 and 2) in type of protection „Intrinsic Safety“ Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit with linear characteristic line

maximum values:

$$\begin{aligned} U_i &= 30 \text{ V} \\ I_i &= 131 \text{ mA} \\ P_i &= 983 \text{ mW} \end{aligned}$$

effective internal capacitance: 2.4 nF (wire-wire)
 effective internal capacitance: 1.5 nF (wire-shield)
 effective internal inductance: 51 μ H

Additionally to the values mentioned above, the following values for L' and C' of the connection cable mounted fixed have to be observed:

$$\begin{aligned} L' &= 0.6 \text{ } \mu\text{H/m} \\ C'_{\text{wire/wire}} &= 133 \text{ pF/m} \\ C'_{\text{wires/shield}} &= 215 \text{ pF/m} \end{aligned}$$

Temperature measuring circuit (Wires white/yellow, red/black resp. terminals 3 ... 6) in type of protection „Intrinsic Safety“ Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit maximum values:

$$\begin{aligned} U_i &= 30 \text{ V} \\ P_i &= 80 \text{ mW} \end{aligned}$$

The effective internal capacitances and inductances are negligibly small.

The following values for L' and C' of the connection cable mounted fixed have to be observed:

$$\begin{aligned} L' &= 0.6 \text{ } \mu\text{H/m} \\ C'_{\text{wire/wire}} &= 188 \text{ pF/m} \\ C'_{\text{wires/shield}} &= 555 \text{ pF/m} \end{aligned}$$

All types:

The cable shield resp. the earth terminals have to be connected with the potential equalization in the explosion hazardous area.

2. Supplement to Certificate No. TÜV 06 ATEX 553449 X

The permissible ambient temperature range in the area of the measuring sensor with electronics dependent on the temperature class has to be taken from the following tables:

Applications for category 1 apparatus:

Temperature class	Ambient temperature range
T6	- 20°C... + 50°C
T5, T4, T3, T2, T1	- 20°C... + 60°C

The suspension pressure transmitters are allowed to be operated in an explosion hazardous area for category 1 apparatus only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).

If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data.

For the maximum permissible ambient temperatures the EN 1127-1:1999, section 6.4.2, was taken into account.

Applications for category 2 apparatus:

Type WL 51/52.A***C/D* resp. WL 72.A*****C/D* with metallic housing**

Temperature class	Ambient temperature range
T6	- 40°C... + 66°C
T5, T4, T3, T2, T1	- 40°C... + 80°C

Type WL 51/52.A***C/D* resp. WL 72.A*****C/D* with plastic housing**

Temperature class	Ambient temperature range
T6	- 20°C... + 66°C
T5, T4, T3, T2, T1	- 20°C... + 80°C

The equipment incl. of this supplement meets the requirements of these standards:

EN 60079-0:2004 EN 60079-11:2007 EN 60079-26:2004

(16) The test documents are listed in the test report No. 07203554192.

2. Supplement to Certificate No. TÜV 06 ATEX 553449 X

(17) Special conditions for safe use

1. At the plastic parts (cable, coating, housing) of the suspension pressure transmitters there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. The shield connection has to be earthed to avoid electrostatic charge. Observe manual of the manufacturer.
3. At the metallic parts of the suspension pressure transmitters made of titanium there is a danger of ignition by impact or friction (e. g. caused by pendulum or vibration). Observe manual of the manufacturer.

All other details remain unchanged.

(18) Essential Health and Safety Requirements

no additional ones

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The head of the certification body

A handwritten signature in blue ink, appearing to read "Schwedt". The signature is written in a cursive, flowing style.

Schwedt

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Translation

3. SUPPLEMENT

to Certificate No. **TÜV 06 ATEX 553449 X**

Equipment: Suspension pressure transmitters
VEGAWELL 51/52 type WL51/52.A*****C/D**
VEGAWELL 72 type WELL 72.A*****C/D**

Manufacturer: VEGA Grieshaber KG

Address: Am Hohenstein 113
77761 Schiltach
Germany

Order number: 8000406982

Date of issue: 2012-05-08

Amendments:

In the future, the suspension pressure transmitters VEGAWELL 51/52 type WL51/52.A*****C/D** and VEGAWELL 72 type WELL 72.A*****C/D** may also be manufactured according to the test documents listed in the test report.

The equipment was evaluated according to the newest standards.

All other data apply unchanged for this supplement.

The device will then be labeled as follows:

 **II 1 G or II 2 G Ex ia IIC T6 Ga, Gb**

The equipment incl. of this supplement meets the requirements of these standards:

EN 60079-0:2009 **EN 60079-11:2007** **EN 60079-26:2007**

(16) Test documents are listed in the test report No. 12 203 100130.

(17) Special conditions for safe use

no additional ones

(18) Essential Health and Safety Requirements

no additional ones

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The head of the notified body



Schwedt