Translation

(1) EC-Type Examination Certificate

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

(3)	**Certificate Number**	**TÜV 07 ATEX 553685 X**
(4)	for the equipment:	Terminal housing VEGABOX02 type BOX02.C_***
(5)	of the manufacturer:	VEGA Grieshaber KG
(6)	Address:	Am Hohenstein 113 D-77761 Schiltach
	Order number:	8000553685
	Date of issue:	2007-05-16

(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. 07203553685.

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

EN 60079-0:2004 EN 50020:2002 EN 60079-26:2004

(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 Ex ia IIC T6

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(13) **S C H E D U L E**

(14) **EC-Type Examination Certificate No. TÜV 07 ATEX 553685 X**

(15) Description of equipment

The terminal housing VEGABOX02 type BOX02.C_*** is a pressure compensation housing to connect sensor circuits of pressure transmitters of the company VEGA Grieshaber to the associated evaluation instruments.
The following executions are manufactured:

- Terminal housing VEGABOX02 only with built-in terminals, type designation BOX02.C_A**
- Terminal housing VEGABOX02 with built-in terminals and a certified intrinsically safe temperature transmitter (DMT 98 ATEX E 007 X with supplement 1 to 4), type designation BOX02.C_C**

The permissible ambient temperature range at the terminals / at the electronics dependent on the temperature class has to be taken from the following tables:

All types, applications for category 1-apparatus:

Temperature class	Ambient temperature range
T6 ... T1	- 20°C... + 60°C

The terminal boxes 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 operating pressures have to be taken from the manufacturer's data.

Type BOX02.C_A, applications for category 2-apparatus:**

Temperature class	Ambient temperature range
T6 ... T1	- 50°C... + 85°C

Type BOX02.C_C, applications for category 2-apparatus:**

Temperature class	Ambient temperature range
T6	- 50°C... + 60°C
T5	- 50°C... + 75°C
T4 ... T1	- 50°C... + 85°C

Electrical data

Type BOX02.C_A**

Supply and signal circuit (Terminals 1 and 2)	in type of protection „Intrinsic Safety" Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit maximum values: U_i = 30 V I_i = 150 mA P_i = 1000 mW The effective internal capacitances and inductances are negligibly small. If the provided connection cable of the manufacturer is used, the following values for Li` and Ci` have to be observed: L´ = 0.6 µH/m $C'_{wire/wire}$ = 133 pF/m $C'_{wire/shield}$ = 215 pF/m
Temperature measuring circuit (Terminals 3 ... 6)	in type of protection „Intrinsic Safety" Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit maximum values: U_i = 30 V I_i = 100 mW P_i = 500 mW The effective internal capacitances and inductances are negligibly small. If the provided connection cable of the manufacturer is used, the following values for Li` and Ci` have to be observed: L´ = 0.6 µH/m $C'_{Ader/Ader}$ = 188 pF/m $C'_{Ader/Schirm}$ = 555 pF/m

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

Type BOX02.C_C**

Supply and signal circuit (Terminals 9[+] and 8[-] at the temperature transmitter)

in type of protection „Intrinsic Safety" Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit
maximum values:
U_i = 30 V
I_i = 130 mA
P_i = 800 mW

effective internal capacitance: 7.8 nF
effective internal inductance: 100 µH

If the provided connection cable of the manufacturer is used, the following values for Li´ and Ci´ have to be observed additionally:
L´ = 0.6 µH/m
$C'_{wire/wire}$ = 133 pF/m
$C'_{wire/shield}$ = 215 pF/m

Temperature measuring circuit (Terminals 1 ... 4 at the temperature transmitter)

in type of protection „Intrinsic Safety Ex ia IIC/IIB
maximum values:
U_o = 11.5 V
I_o = 12.3 mA
P_o = 35.2 mW

Ex ia	IIC	IIB
max. permissible external inductance	1 mH	1 mH
max. permissible external capacitance	1.6 µF	11 µF

If the provided connection cable of the manufacturer is used, the following values for Li´ and Ci´ have to be observed additionally:
L´ = 0,6 µH/m
$C'_{wire/wire}$ = 188 pF/m
$C'_{wire/shield}$ = 555 pF/m

Supply and signal circuit to the pressure transmitter (Terminals 1 and 2)	in type of protection „Intrinsic Safety" Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit maximum values: U_i = 30 V I_i = 150 mA P_i = 1000 mW The effective internal capacitances and inductances are negligibly small. If the provided connection cable of the manufacturer is used, the following values for Li´ and Ci´ have to be observed: L´ = 0.6 µH/m $C'_{wire/wire}$ = 133 pF/m $C'_{wire/shield}$ = 215 pF/m

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

(16) Test documents are listed in the test report No. 07203553685.

(17) Special conditions for safe use

1. At the plastic parts of the terminal housing VEGABOX02 type BOX02.C_*** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.

2. Regarding the permissible ambient temperatures the following tables are valid:

All types, applications for category 1 apparatus:

Temperature class	Ambient temperature range
T6 ... T1	- 20°C... + 60°C

Type BOX02.C_A**, applications for category 2 apparatus:

Temperature class	Ambient temperature range
T6 ... T1	- 50°C... + 85°C

Type BOX02.C_C**, applications for category 2 apparatus:

Temperature class	Ambient temperature range
T6	- 50°C... + 60°C
T5	- 50°C... + 75°C
T4 ... T1	- 50°C... + 85°C

3. The terminal for earthing has to be connected with the potential equalization in the explosion hazardous area.
4. The cable shield is only allowed to be earthed at one point.
   If more than one earthing of the shield is necessary, EN 60079-14, section 12.2.2.3 has to be observed.

(18) Essential Health and Safety Requirements

no additional ones

Translation

1. SUPPLEMENT

to Certificate No.	**TÜV 07 ATEX 553685 X**
Equipment:	Terminal housing VEGABOX02 type BOX02.C_***
Manufacturer:	VEGA Grieshaber KG
Address:	Am Hohenstein 113 77761 Schiltach Germany
Order number:	8000556239
Date of issue:	2011-04-18

In the future, the terminal housing VEGABOX02 type BOX02.C_*** may also be manufactured according to the documents listed in the test report.
The changes refer to

- the installation of a new, separately certified temperature transmitter; type BOX02.C_C**
- the tables for the permissible ambient temperature ranges
- the electrical data and
- the marking

This reads:
II 1 G Ex ia IIC T6 Ga resp. II 2 G Ex ia IIC T6 Gb

The permissible ambient temperature range at the terminals / at the electronics dependent on the temperature class has to be taken from the following tables:

Type BOX02.C_A with terminals, applications as category 1-apparatus:**

Temperature class	Ambient temperature range
T6 ... T1	-20 °C... +60 °C

The terminal boxes 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 operating pressures have to be taken from the manufacturer's data.

Type BOX02.C_A with terminals, applications as category 2-apparatus:**

Temperature class	Ambient temperature range
T6 ... T1	-50 °C... +85 °C

Type BOX02.C_C with inserted temperature transmitter, applications as category 1-apparatus:**

Temperature class	Ambient temperature range
T6	-20 °C... +44 °C
T5	-20 °C... +56 °C
T4 ... T1	-20 °C... +60 °C

The terminal boxes 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 operating pressures have to be taken from the manufacturer's data.
At the maximum permissible ambient and medium temperatures, the EN 1127-1:2008, section 6.4.2 was taken into account.

Type BOX02.C_C with inserted temperature transmitter, applications as category 2-apparatus:**

Temperature class	Ambient temperature range
T6	-50°C... +60 °C
T5	-50°C... +75 °C
T4 ... T1	-50°C... +85 °C

Electrical data

Type BOX02.C_A**

Supply and signal circuit
(Terminals 1 and 2)

in type of protection „Intrinsic Safety" Ex ia IIC/IIB
only for connection to a certified intrinsically safe circuit
maximum values:
U_i = 30 V
I_i = 150 mA
P_i = 1000 mW
The effective internal inductances and capacitances are negligibly small.

If the provided connection cable of the manufacturer is used, the following values for Li´ and Ci´ have to be observed additionally:
L' = 0.6 µH/m
$C'_{wire/wire}$ = 133 pF/m
$C'_{wire/shield}$ = 215 pF/m

Temperature measuring circuit (Terminals 3 … 6)	in type of protection „Intrinsic Safety Ex ia IIC/IIB maximum values: U_i = 30 V I_i = 100 mA P_i = 500 mW The effective internal inductances and capacitances are negligibly small. If the provided connection cable of the manufacturer is used, the following values for Li´ and Ci´ have to be observed additionally: L´ = 0,6 µH/m $C'_{wire/wire}$ = 188 pF/m $C'_{wire/shield}$ = 555 pF/m

The intrinsically safe supply and signal circuit is safely galvanically separated from the intrinsically safe temperature measuring circuit and from parts, which can be earthed.

Type BOX02.C_C with inserted temperature transmitter**

Supply and signal circuit (Terminals 9[+] and 8[-] at the temperature transmitter)	in type of protection „Intrinsic Safety“ Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit maximum values: U_i = 30 V I_i = 130 mA P_i = 800 mW effective internal inductance: 100 µH effective internal capacitance: 7.8 nF If the provided connection cable of the manufacturer is used, the following values for Li` and Ci` have to be observed: L´ = 0.6 µH/m $C'_{wire/wire}$ = 133 pF/m $C'_{wire/shield}$ = 215 pF/m
Temperature measuring circuit (Terminals 1…4 at the temperature transmitter)	in type of protection „Intrinsic Safety“ Ex ia IIC/IIB only for connection to a certified intrinsically safe circuit maximum values: U_o = 6.5 V I_o = 9.3 mA P_o = 15.2 mW The effective internal inductances are negligibly small. Effective internal capacitance: 208 nF

Ex ia	IIC	IIB
max. permissible external inductance	365 mH	1644 mH
max. permissible external capacitance	24 µF	570 µF

If the provided connection cable of the manufacturer is used, the following values for Li` and Ci` have to be observed additionally:

L' = 0.6 µH/m
$C'_{wire/wire}$ = 188 pF/m
$C'_{wire/shield}$ = 555 pF/m

Supply and signal circuit to the pressure transmitter (Terminals 1, 2)

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

Maximum values:

U_i = 30 V
I_i = 150 mA
P_i = 1000 mW

The effective internal inductances and capacitances are negligibly small.

If the provided connection cable of the manufacturer is used, the following values for Li` and Ci` have to be observed:

L' = 0.6 µH/m
$C'_{wire/wire}$ = 133 pF/m
$C'_{wire/shield}$ = 215 pF/m

The intrinsically safe supply and signal circuit to the pressure transmitter is safely galvanically separated from the other intrinsically safe circuits and from parts, which can be earthed.

The equipment according to this supplement meets the requirements of these standards:

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

(16) The test documents are listed in the test report No. 11 203 556239.

(17) Special conditions for safe use

1. At the plastic parts of the terminal housing VEGABOX02 type BOX02.C_*** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. The terminal for earthing has to be connected with the potential equalization in the explosion hazardous area.
3. The cable shield is only allowed to be earthed at one point.
   If more than one earthing of the shield is necessary; EN 60079-14 has to be observed.
4. The permissible ambient temperature ranges have to be taken from the instructions of the manufacturer.

(18) Essential Health and Safety Requirements

no additional ones

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