

Translation

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

TUV NORD

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**



(3) **Certificate Number** TÜV 12 ATEX 098523 X **issue:** 01

(4) for the product: Microwave sensors type series
VEGAFLEX FX8*(*).*VC/U/O/H****A/H/P/FX****
VEGAFLEX FX8*(*).*VC/U/O/H****A/HZ****

(5) of the manufacturer: **VEGA Grieshaber KG**

(6) Address: Am Hohenstein 113
77761 Schiltach
Germany

Order number: 8000489411

Date of issue: 2019-04-17

- (7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.
- (8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential ATEX Assessment Report No. 19 203 231180.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018

EN 60079-11:2012

EN 60079-26:2015

except in respect of those requirements listed at item 18 of the schedule.

- (10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.
- (11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. 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 product shall include the following:



II 1 G Ex ia IIC T6...T1 Ga
II 1/2 G Ex ia IIC T6...T1 Ga/Gb
II 2 G Ex ia IIC T6...T1 Gb

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified 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 notified body

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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 12 ATEX 098523 X issue 01**

(15) **Description of product**

The level measuring instrument type series VEGAFLEX FX8*(*).*VC/U/O/H****A/H/P/FX**** and VEGAFLEX FX8*(*).*VC/U/O/H****A/HZ**** as microwave sensors are used for evaluation of the distance between a product surface and the sensor via high-frequency microwave pulses. The microwave sensors emit high-frequency microwave pulses, which are carried along a measuring rod resp. a measuring cable. The electronics evaluate the delay time of the signals reflected by the product surface to calculate the distance to this surface.

Type code

VEGAFLEX FX8*(*).*VC/U/O/H****A/H/P/FX**** and
VEGAFLEX FX8*(*).*VC/U/O/H****A/HZ****

Electrical data

VEGAFLEX FX8*(*).*VC/U/O/H**A/HX****, single chamber housing, Ex i electronics and connection compartment**

Supply and signal circuit
(Terminals 1[+], 2[-])

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to a certified intrinsically safe circuit
Maximum values:

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 983 \text{ mW}$

The effective internal capacitance is negligibly small.

Effective internal inductance: $5 \mu\text{H}$

In the execution with connection cable mounted fixed, the following values have to be observed additionally:

$L_i = 0.55 \mu\text{H/m}$

$C_{i \text{ wire/wire}} = 58 \text{ pF/m}$

$C_{i \text{ wire/shield}} = 270 \text{ pF/m}$

VEGAFLEX FX8*(*).*VC/U/O/H**A/HX****, double chamber housing, Ex i connection compartment**

Supply and signal circuit
(Terminals 1[+], 2[-])

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to a certified intrinsically safe circuit
Maximum values:

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 983 \text{ mW}$

The effective internal capacitance is negligibly small.

Effective internal inductance: $10 \mu\text{H}$

In the execution with connection cable mounted fixed, the following values have to be observed additionally:

$L_i = 0.55 \mu\text{H/m}$

$C_{i \text{ wire/wire}} = 58 \text{ pF/m}$

$C_{i \text{ wire/shield}} = 270 \text{ pF/m}$

Schedule to EU-Type Examination Certificate No. TÜV 12 ATEX 098523 X issue 01

VEGAFLEX FX8*(*)*/VC/U/O/H**P/FX****, single chamber housing, Ex i electronics and connection compartment**

Supply and signal circuit
(Terminals 1[+], 2[-])

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to a certified intrinsically safe circuit
Maximum values:

$$U_i = 17.5 \text{ V}$$

$$I_i = 500 \text{ mA}$$

$$P_i = 5.5 \text{ W}$$

The apparatus is suitable for connection to a fieldbus system according to the FISCO concept (IEC 60 079-11), e. g. Profibus PA.

or

$$U_i = 24 \text{ V}$$

$$I_i = 250 \text{ mA}$$

$$P_i = 1.2 \text{ W}$$

The effective internal capacitance and inductance are negligibly small.

In the execution with connection cable mounted fixed, the following values have to be observed additionally:

$$L_i^* = 0.55 \text{ } \mu\text{H/m}$$

$$C_i^{\text{wire/wire}} = 58 \text{ pF/m}$$

$$C_i^{\text{wire/shield}} = 270 \text{ pF/m}$$

VEGAFLEX FX8*(*)*/VC/U/O/H**P/FX****, double chamber housing, Ex i connection compartment**

Supply and signal circuit
(Terminals 1[+], 2[-])

in type of protection „Intrinsic Safety“ Ex ia IIC

Only for connection to a certified intrinsically safe circuit
Maximum values:

$$U_i = 17.5 \text{ V}$$

$$I_i = 500 \text{ mA}$$

$$P_i = 5.5 \text{ W}$$

The apparatus is suitable for connection to a fieldbus system according to the FISCO concept (IEC 60 079-11), e. g. Profibus PA.

or

$$U_i = 24 \text{ V}$$

$$I_i = 250 \text{ mA}$$

$$P_i = 1.2 \text{ W}$$

The effective internal capacitance is negligibly small.

Effective internal inductance: 5 μH

In the execution with connection cable mounted fixed, the following values have to be observed additionally:

$$L_i^* = 0.55 \text{ } \mu\text{H/m}$$

$$C_i^{\text{wire/wire}} = 58 \text{ pF/m}$$

$$C_i^{\text{wire/shield}} = 270 \text{ pF/m}$$

Schedule to EU-Type Examination Certificate No. TÜV 12 ATEX 098523 X issue 01

VEGAFLEX FX8*(*)*/VC/U/O/H**AH/Z****, double chamber housing, Ex i connection compartment**

Supply and signal circuit I
(Terminals 1[+], 2[-])

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to a certified intrinsically safe circuit
Maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 131 \text{ mA}$$

$$P_i = 983 \text{ mW}$$

The effective internal capacitance is negligibly small.
Effective internal inductance: 5 μH

Supply and signal circuit II
(Terminals 7[+], 8[-])

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to a certified intrinsically safe circuit
Maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 131 \text{ mA}$$

$$P_i = 983 \text{ mW}$$

The effective internal capacitance is negligibly small.
Effective internal inductance: 5 μH

VEGAFLEX FX8*(*)*/VC/U/O/H**A/H/P/FX**** single chamber housing, Ex i electronics and connection compartment**

Display and adjustment circuit
(Terminals 5, 6, 7, 8)

in type of protection „Intrinsic Safety“ Ex ia IIC
For connection to the intrinsically safe circuit of the corresponding external indicating unit VEGADIS 81 in ignition protection type Intrinsic safety "i" (PTB 02 ATEX 2136 X).

The proof for intrinsic safety of the interconnection rendered if the total inductance and total capacitance of the connection cable $L_{\text{cable}} = 212 \mu\text{H}$ and

$$C_{\text{cable}} = 1.98 \mu\text{F} \text{ is not exceeded}$$

When using the supplied VEGA connection cable, then the permissible cable length is $L_{\text{length}} = 341 \text{ m}$.

VEGAFLEX FX8*(*)*/VC/U/O/H**A/H/P/FX**** double chamber housing, Ex i connection compartment**

Display and adjustment circuit
(Terminals 5, 6, 7, 8)

in type of protection „Intrinsic Safety“ Ex ia IIC
For connection to the intrinsically safe circuit of the corresponding external indicating unit VEGADIS 81 in ignition protection type Intrinsic safety "i" (PTB 02 ATEX 2136 X).

The proof for intrinsic safety of the interconnection rendered if the total inductance and total capacitance of the connection cable $L_{\text{cable}} = 212 \mu\text{H}$ and

$$C_{\text{cable}} = 1.98 \mu\text{F} \text{ is not exceeded}$$

When using the supplied VEGA connection cable, then the permissible cable length is $L_{\text{length}} = 341 \text{ m}$.

Schedule to EU-Type Examination Certificate No. TÜV 12 ATEX 098523 X issue 01

VEGAFLEX FX8*(*).*IVC/U/O/H**A/H/P/FX**** and VEGAFLEX FX8*(*).*IVC/U/O/H****A/HZ****, double chamber housing, Ex i electronics compartment**

Adapter circuit

(Internal plug connection)

in type of protection „Intrinsic Safety“ Ex ia IIC
For connection to the intrinsically safe circuit of the corresponding external indicating unit VEGADIS 81 in ignition protection type Intrinsic safety "i". (PTB 02 ATEX 2136 X)

The proof for intrinsic safety of the interconnection rendered if the total inductance and total capacitance of the connection cable $L_{\text{cable}} = 212 \mu\text{H}$ and

$C_{\text{cable}} = 1.98 \mu\text{F}$ is not exceeded

When using the supplied VEGA connection cable, then the permissible cable length is $L_{\text{length}} = 341 \text{ m}$.

VEGAFLEX FX8*(*).*IVC/U/O/H**A/H/P/FX**** and VEGAFLEX FX8*(*).*IVC/U/O/H****A/HZ****, single and double chamber housing, Ex i electronics and connection compartment**

Display and adjustment module resp. the interface adapter

(Spring contacts)

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to the display and adjustment module PLICSCOM or VEGACONNECT (PTB 07 ATEX 2013 X).

VEGAFLEX FX8*(*).*IVC/U/O/H**A/H/P/FX**** and VEGAFLEX FX8*(*).*IVC/U/O/H****A/HZ******

HF circuit

in type of protection „Intrinsic Safety“ Ex ia IIC
The length of the coax connection cable between the electronics housing and the sensor housing may not exceed $L_{\text{cable}} = 50 \text{ m}$ for all versions of VEGAFLEX 81, 82, 83, 86 with separate sensor.

The intrinsically circuits are safe galvanically separated from the parts which can be earthed.

Schedule to EU-Type Examination Certificate No. TÜV 12 ATEX 098523 X issue 01

Thermal data

If the VEGAFLEX FX8*(*).*IVC/U/O/H****A/H/P/FX**** and VEGAFLEX FX8*(*).*IVC/U/O/H****A/HZ**** are operated in hazardous areas for EPL Ga, EPL Ga/Gb and EPL Gb applications, the permissible temperature range on the electronics / housing as well as on the sensor (measuring part, rod) depending on the temperature class can be found in the following table:

Temperature class	Ambient temperature range (Elektronics/housing)	Medium temperature range at measuring sensor
T6	-50 °C ... +46 °C	-60°C ... +80 °C
T5	-50 °C ... +61 °C	-60°C ... +95 °C
T4	-50 °C ... +70 °C	-60°C ... +130 °C
T3	-50 °C ... +70 °C	-60°C ... +195 °C
T2	-50 °C ... +70 °C	-60°C ... +290 °C
T1	-50 °C ... +70 °C	-60°C ... +440 °C

Low-temperature execution down to -196 °C

Temperature class	Ambient temperature range (electronics)	Medium temperature range (measuring sensor)
T6	-50 °C ... +46 °C	-196°C ... +80 °C
T5	-50 °C ... +61 °C	-196°C ... +95 °C
T4	-50 °C ... +70 °C	-196°C ... +130 °C
T3	-50 °C ... +70 °C	-196°C ... +195 °C
T2	-50 °C ... +70 °C	-196°C ... +290 °C
T1	-50 °C ... +70 °C	-196°C ... +440 °C

The measuring sensors are allowed to be operated in areas for EPL Ga, EPL Ga/Gb and EPL Gb applications only if atmospheric conditions exist (Temperatures: see tables above and 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 (manual).

If the measuring sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by hot surfaces is excluded.

The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

- (16) Drawings and documents are listed in the ATEX Assessment Report No. 19 203 231180

Schedule to EU-Type Examination Certificate No. TÜV 12 ATEX 098523 X issue 01

(17) Specific Conditions for Use

1. At the plastic parts of the microwave sensors type series VEGAFLEX FX8*(*).*VC/U/O/H****A/H/P/FX**** resp. VEGAFLEX FX8*(*).*VC/U/O/H****A/HZ**** there is a danger of ignition by electrostatic discharge.
Observe manual of the manufacturer and warning label.
2. For EPL Ga resp. EPL Ga/Gb applications, at the metallic parts of the microwave sensors type series VEGAFLEX FX8*(*).*VC/U/O/H****A/H/P/FX**** resp. VEGAFLEX FX8*(*).*VC/U/O/H****A/HZ****made of light metal there is a danger of ignition by impact or friction.
Observe manual of the manufacturer.
3. For EPL Ga resp. EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the microwave sensors type series VEGAFLEX FX8*(*).*VC/U/O/H****A/H/P/FX**** resp. VEGAFLEX FX8*(*).*VC/U/O/H****A/HZ**** have to be secured effectively against these dangers.
Observe manual of the manufacturer.
4. For EPL Ga/Gb applications the medium tangent materials of the microwave sensors type series VEGAFLEX FX8*(*).*VC/U/O/H****A/H/P/FX**** resp. VEGAFLEX FX8*(*).*VC/U/O/H****A/HZ**** have to be resistant to the media.
Observe manual of the manufacturer.
5. The ambient temperature range depending on temperature class is to be taken from the operating instructions.

- (18) Essential Health and Safety Requirements
No additional ones

- End of Certificate -

Translation

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

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**



(3) **Certificate Number** TÜV 12 ATEX 098523 X **Issue:** 00

(4) for the product: Microwave sensors type series VEGAFLEX FX8*(*).*IVC/U/O/H****A/H*****

(5) of the manufacturer: **VEGA Grieshaber KG**

(6) Address: Am Hohenstein 113
77761 Schiltach
Germany

Order number: 8000462821

Date of issue: 2016-12-08

- (7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.
- (8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential ATEX Assessment Report No. 16 203 185252.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013 EN 60079-11:2012 EN 60079-26:2015

except in respect of those requirements listed at item 18 of the schedule.

- (10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.
- (11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. 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 product shall include the following:

 **II 1 G resp. II 1/2 G resp. II 2 G Ex ia IIC T6 ... T1 Ga resp. Ga/Gb resp. Gb**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified 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 notified body



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(13) SCHEDULE

(14) EU-Type Examination Certificate No. TÜV 12 ATEX 098523 X Issue 00

(15) Description of product

The microwave sensors type series VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** are used for evaluation of the distance between a product surface and the sensor via high-frequency microwave pulses. The microwave sensors emit high-frequency microwave pulses, which are carried along a measuring rod resp. a measuring cable. The electronics evaluate the delay time of the signals reflected by the product surface to calculate the distance to this surface.

Changes:

1. Extension, installation and mounting of the display and adjustment module PLICSCOM 3
2. Update of type key: FX8*(*)./VC/U/O/H****A/H*****
3. Technical update
4. Update to actual standards
5. Usage with external housings.

The specifications in the

- EC-Type Examination Certificate TÜV 12 ATEX 098523 X / Test Report 12 203 098523 and
 - 1. supplement TÜV 12 ATEX 098523 X / Test Report 13 203 119775 and
 - 2. supplement TÜV 12 ATEX 098523 X / Test Report 15 203 152559
- are also still valid for the original versions.

(16) Drawings and documents are listed in the ATEX Assessment Report No. 16 203 185252

(17) Specific Conditions for Use

1. At the plastic parts of the microwave sensors type series VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** resp. VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** there is a danger of ignition by electrostatic discharge.
Observe manual of the manufacturer and warning label.
2. For EPL Ga resp. EPL Ga/Gb applications, at the metallic parts of the microwave sensors type series VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** resp. VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
3. For EPL Ga resp. EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the microwave sensors type series VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** resp. VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** have to be secured effectively against these dangers. Observe manual of the manufacturer.
4. For EPL Ga/Gb applications the medium tangent materials of the microwave sensors type series VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** resp. VEGAFLEX FX8*(*)./VC/U/O/H****A/H***** have to be resistant to the media. Observe manual of the manufacturer

(18) Essential Health and Safety Requirements no additional ones

- End of Certificate -

Translation

2. SUPPLEMENT

to Certificate No.	TÜV 12 ATEX 098523 X
Equipment:	Guided Wave Radar sensors type series VEGAFLEX FX8*(*)..AC/U/O/H****A/H****
Manufacturer:	VEGA Grieshaber KG
Address:	Am Hohenstein 113 77761 Schiltach Germany
Order number:	8000442066
Date of issue:	2015-03-13

For the Guided Wave Radar sensors type series VEGAFLEX FX8*(*)..AC****A/H****, the following changes were performed:

- New type designation: Guided Wave Radar sensor type series VEGAFLEX FX8*(*)..AC/U/O/H****A/H****
- Different colours for the housing
- Modifications at the process connections
- Modifications at the measuring sensors
- Electrical data regarding the max. cable length to the external indication unit

Electrical data

VEGAFLEX FX8*(*)..AC/U/O/H**A/H*A/K/V/8***, 1 chamber housing, Ex-i electronics compartment)**

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 5, 6, 7, 8 or plug connector in the electronics compartment) Only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 or VEGADIS81.

The rules for the interconnection of intrinsically safe circuits between the **VEGAFLEX FX8*(*)..AC/U/O/H****A/H*A/K/V/8***** and the VEGADIS61/81 are adhered to if the complete inductance and capacitance of the connection cable between **VEGAFLEX FX8*(*)..AC/U/O/H****A/H*A/K/V/8***** and VEGADIS61/81 does not exceed the following values:

$$L_{\text{cable}} = 212 \mu\text{H}$$

$$C_{\text{cable}} = 1.98 \mu\text{F}$$

If the connection cable supplied by the manufacturer between the **VEGAFLEX FX8*(*)..AC/U/O/H****A/H*A/K/V/8***** and the VEGADIS61/81 is used, the following cable length has to be observed:

$$l_{\text{cable}} = 341 \text{ m}$$

VEGAFLEX FX8*(*) .AC/U/O/H**A/H*D/W/R***, 2 chamber housing,
Ex-i connection compartment**

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 5, 6, 7, 8 in the connection compartment) Only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 or VEGADIS81.

The rules for the interconnection of intrinsically safe circuits between the **VEGAFLEX**

FX8*(*) .AC/U/O/H**A/H*D/W/R***** and the VEGADIS61/81 are adhered to if the complete inductance and capacitance of the connection cable between **VEGAFLEX**

FX8*(*) .AC/U/O/H**A/H*D/W/R***** and VEGADIS61/81 does not exceed the following values:

$$L_{\text{cable}} = 212 \quad \mu\text{H}$$

$$C_{\text{cable}} = 1.98 \quad \mu\text{F}$$

If the connection cable supplied by the manufacturer between the **VEGAFLEX** **FX8*(*) .AC/U/O/H****A/H*D/W/R***** and the VEGADIS61/81 is used, the following cable length has to be observed:

$$l_{\text{cable}} = 341 \text{ m}$$

VEGAFLEX FX8*(*) .AC/U/O/H** A/H*Y/Q/X***, 2 chamber housing**

Ex-i connection compartment

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 5, 6, 7, 8)

and

Ex-i electronics compartment

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Plug connector) In each case only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 or VEGADIS81.

The rules for the interconnection of intrinsically safe circuits between the **VEGAFLEX FX8*(*) .AC/U/O/H**** A/H*Y/Q/X***** and the

VEGADIS61/81 are adhered to if the complete inductance and capacitance of the connection cable between **VEGAFLEX FX8*(*) .AC/U/O/H**** A/H*Y/Q/X***** and VEGADIS61/81 does not exceed the following values:

$$L_{\text{cable}} = 212 \quad \mu\text{H}$$

$$C_{\text{cable}} = 1.98 \quad \mu\text{F}$$

If the connection cable supplied by the manufacturer between the **VEGAFLEX FX8^(*)**, **AC/U/O/H^{****}** **A/H^{*Y}/Q/X^{***}** and the VEGADIS61/81 is used, the following cable length has to be observed:

$$l_{\text{cable}} = 341 \text{ m}$$

All other details remain unchanged.

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

EN 60079-0:2012

EN 60079-11:2012

EN 60079-26:2007

(16) The test documents are listed in the test report No. 15 203 152559.

(17) Special conditions for safe use

Unchanged; but see new type designation.

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified 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 notified body



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Translation
1. SUPPLEMENT

to Certificate No.	TÜV 12 ATEX 098523 X
Equipment:	Microwave sensors type series VEGAFLEX FX8*(*)AC****A/H*****
Manufacturer:	VEGA Grieshaber KG
Address:	Am Hohenstein 113 77761 Schiltach Germany
Order number:	8000420024
Date of issue:	2013-06-26

For the microwave sensors type series VEGAFLEX FX8*(*)AC****A/H*****, the following changes were performed:

- Modified PLICSCOM module with additional power limitation for the LED
- Change of components in the following circuitries: Digital part, power supply part, HF part
- Optional insertion of an adapter print instead of the operation and indication module PLICSCOM
- Permissible ambient temperature of the electronics and the electronic housings down to -50 °C

The "Special conditions for safe use and the electrical data remain unchanged. In the following, the data in dependence of the type designation are listed:

Electrical data

VEGAFLEX FX8*(*)AC**A/H*A/K/V/8***, 1 chamber housing, "Ex-i"- electronics compartment**

Supply and signal circuit in type of protection „Intrinsic Safety“ Ex ia IIC
 (Terminals 1[+], 2[-] in electronics compartment Only for connection to a certified intrinsically safe circuit

Maximum values:

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

The effective internal capacitance is negligibly small.

Effective internal inductance: 5 µH

In the execution with connection cable mounted fixed, the following values have to be observed additionally:

$L_i^* = 0.55 \text{ µH/m}$
 $C_i^*_{\text{wire/wire}} = 58 \text{ pF/m}$
 $C_i^*_{\text{wire/shield}} = 270 \text{ pF/m}$

VEGAFLEX FX8*(*)..AC**A/H*D/W/R/Y/Q/X***,**

2 chamber housing, "Ex-i"- connection compartment

Supply and signal circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 1[+], 2[-] in the connection compartment) Only for connection to a certified intrinsically safe circuit

Maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 131 \text{ mA}$$

$$P_i = 983 \text{ mW}$$

The effective internal capacitance is negligibly small.

Effective internal inductance: 10 μH

In the execution with connection cable mounted fixed, the following values have to be observed additionally:

$$L_i^* = 0.55 \text{ } \mu\text{H/m}$$

$$C_i^* \text{ wire/wire} = 58 \text{ pF/m}$$

$$C_i^* \text{ wire/shield} = 270 \text{ pF/m}$$

VEGAFLEX FX8*(*)..AC**A/H*A/K/V/8***, 1 chamber housing, "Ex-i"- electronics compartment**

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 5, 6, 7, 8 or plug connection in the electronics compartment) Only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 or VEGADIS81.

The rules for the interconnection of intrinsically safe circuits between the VEGAFLEX

FX8*(*)..AC****A/H* A/K/V/8*** and the

VEGADIS61/81 are adhered to if the complete

inductance and capacitance of the connection cable

between VEGAFLEX FX8*(*)..AC****A/H* A/K/V/8***

and VEGADIS61/81 does not exceed the following

values:

$$L_{\text{cable}} = 212 \text{ } \mu\text{H}$$

$$C_{\text{cable}} = 1.98 \text{ } \mu\text{F}$$

If the connection cable supplied by the

manufacturer between the VEGAFLEX

FX8*(*)..AC****A/H* A/K/V/8*** and the

VEGADIS61/81 is used, the following values have

to be observed:

$$L_i^* = 0.62 \text{ } \mu\text{H/m}$$

$$C_i^* \text{ wire/wire} = 132 \text{ pF/m}$$

$$C_i^* \text{ wires/shield} = 208 \text{ pF/m}$$

VEGAFLEX FX8*(*) .AC**A/H*D/W/R***, 2 chamber housing, "Ex-i"- connection compartment**

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 5, 6, 7, 8 in the connection compartment) Only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 or VEGADIS81.

The rules for the interconnection of intrinsically safe circuits between the VEGAFLEX FX8*(*) .AC****A/H*D/W/R*** and the VEGADIS61/81 are adhered to if the complete inductance and capacitance of the connection cable between VEGAFLEX FX8*(*) .AC****A/H*D/W/R*** and VEGADIS61/81 does not exceed the following values:

$$L_{\text{cable}} = 212 \mu\text{H}$$

$$C_{\text{cable}} = 1.98 \mu\text{F}$$

If the connection cable supplied by the manufacturer between the VEGAFLEX FX8*(*) .AC****A/H*D/W/R*** and the VEGADIS61/81 is used, the following values have to be observed:

$$L_i' = 0.62 \mu\text{H/m}$$

$$C_i'_{\text{wire/wire}} = 132 \text{ pF/m}$$

$$C_i'_{\text{wires/shield}} = 208 \text{ pF/m}$$

VEGAFLEX FX8*(*) .AC**A/H*Y/Q/X***, 2 chamber housing**

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 5, 6, 7, 8 in the connection compartment)

and

Operation and indication circuit in type of protection „Intrinsic Safety“ Ex ia IIC
(Plug connection in the electronics compartment)

In both cases, only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 or VEGADIS81. The rules for the interconnection of intrinsically safe circuits between the VEGAFLEX FX8*(*) .AC****A/H*Y/Q/X*** and the VEGADIS61/81 are adhered to if the complete inductance and capacitance of the connection cable between VEGAFLEX FX8*(*) .AC****A/H*Y/Q/X*** and VEGADIS61/81 does not exceed the following values:

$$L_{\text{cable}} = 212 \mu\text{H}$$

$$C_{\text{cable}} = 1.98 \mu\text{F}$$

If the connection cable supplied by the manufacturer between the VEGAFLEX FX8*(*) .AC****A/H*Y/Q/X*** and the VEGADIS61/81 is used, the following values have to be observed:

L_i	=	0.62	µH/m
C_i wire/wire	=	132	pF/m
C_i wires/shield	=	208	pF/m

VEGAFLEX FX8*(*) .AC**A/H*A/K/V/8***, 1 chamber housing, "Ex-i"- electronics compartment**

Operation and indication module circuit in type of protection „Intrinsic Safety“ Ex ia IIC
 (Spring contacts in the electronics compartment)
 Only for connection to the VEGA operation and indication module PLICSCOM or the interface adapter VEGACONNECT.

VEGAFLEX FX8*(*) .AC**A/H*D/W/R***, 2 chamber housing, "Ex-i"- electronics compartment /connection compartment**

Operation and indication module circuit in type of protection „Intrinsic Safety“ Ex ia IIC
 (Spring contacts in the connection compartment)

and

Operation and indication module circuit in type of protection „Intrinsic Safety“ Ex ia IIC
 (Spring contacts in the electronics compartment)
 In both cases, only for connection to the VEGA operation and indication module PLICSCOM or the interface adapter VEGACONNECT.

VEGAFLEX FX8*(*) .AC**A/H*Y/Q/X***, 2 chamber housing, "Ex-i"- electronics compartment**

Operation and indication module circuit in type of protection „Intrinsic Safety“ Ex ia IIC
 (Spring contacts in the connection compartment)
 Only for connection to the VEGA operation and indication module PLICSCOM or the interface adapter VEGACONNECT.

VEGAFLEX FX8*(*) .AC*****

HF circuit in type of protection „Intrinsic Safety“ Ex ia IIC
 (Coaxial connection cable)
 In the execution with coaxial connection cable between housing for the electronics and measuring sensor housing, a length of the provided cable of 50 m is permissible.

The intrinsically circuits are safe galvanically separated from the parts which can be earthed.

If the microwave sensors are used in explosion hazardous areas for EPL Ga applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics) and medium temperature range (measuring sensor)
T5	-20 °C ... +42 °C
T4, T3, T2, T1	-20 °C ... +60 °C

The measuring sensors and the electronics are allowed to be operated in an explosion hazardous area for EPL Ga applications, 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 (manual).

For the max. permissible temperature at the measuring sensor, the EN 1127-1:2011, section 6.4.2 was observed.

If the microwave sensors are used in explosion hazardous areas for EPL Ga/Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 0)
T6	-50 °C ... +46 °C	-20°C ... +60 °C
T5	-50 °C ... +61 °C	-20°C ... +60 °C
T4, T3, T2, T1	-50 °C ... +70 °C	-20°C ... +60 °C

The measuring sensors are allowed to be operated in an explosion hazardous area for EPL Ga applications, 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 (manual).

If the measuring sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

If the microwave sensors are used in explosion hazardous areas for EPL Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics)	Medium temperature range (measuring sensor)
T6	-50 °C ... +46 °C	-60 °C ... +85 °C
T5	-50 °C ... +61 °C	-60 °C ... +100 °C
T4	-50 °C ... +70 °C	-60 °C ... +135 °C
T3	-50 °C ... +70 °C	-60 °C ... +200 °C

1. Supplement to Certificate No. TÜV 12 ATEX 098523 X

T2	-50 °C ... +70 °C	-60 °C ... +300 °C
T1	-50 °C ... +70 °C	-60 °C ... +450 °C

If the measuring sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

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

VEGAFLEX FX86(*)AC****A/H*****, low-temperature execution down to -196 °C

If the microwave sensors are used in explosion hazardous areas for EPL Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics)	Medium temperature range (measuring sensor)
T6	-50 °C ... +46 °C	-196 °C ... +85 °C
T5	-50 °C ... +61 °C	-196 °C ... +100 °C
T4	-50 °C ... +70 °C	-196 °C ... +135 °C
T3	-50 °C ... +70 °C	-196 °C ... +200 °C
T2	-50 °C ... +70 °C	-196 °C ... +300 °C
T1	-50 °C ... +70 °C	-196 °C ... +450 °C

If the measuring sensors of the microwave sensors VEGAFLEX FX86(*)AC****A/H***** are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

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

The ambient temperature derating

at process temperatures up to +150 °C, +200 °C, +250 °C, +280 °C, +450 °C and down to -196 °C has to be taken from the manual of the manufacturer.

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

EN 60079-0:2012

EN 60079-11:2012

EN 60079-26:2007

(16) The test documents are listed in the test report No. 13 203 119775.

(17) Special conditions for safe use


1. At the plastic parts of the microwave sensors type series VEGAFLEX FX8*(*).AC****A/H***** there is a danger of ignition by electrostatic discharge.
Observe manual of the manufacturer and warning label.
2. For EPL Ga resp. EPL Ga/Gb applications, at the metallic parts of the microwave sensors type series VEGAFLEX FX8*(*).AC****A/H***** made of light metal there is a danger of ignition by impact or friction.
Observe manual of the manufacturer.
3. For EPL Ga resp. EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the microwave sensors type series VEGAFLEX FX8*(*).AC****A/H***** have to be secured effectively against these dangers. Observe manual of the manufacturer.
4. For EPL Ga/Gb applications the medium tangent materials of the microwave sensors type series VEGAFLEX FX8*(*).AC****A/H***** have to be resistant to the media. Observe manual of the manufacturer

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified 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 notified body



Meyer

Hanover office, Am TÜV 1, 30519 Hanover, Tel.: +49 (0) 511 986-1455, Fax: +49 (0) 511 986-1590

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 12 ATEX 098523 X

(4) for the equipment: Microwave sensors
type series VEGAFLEX FX8*(*).*C****A/H*****


(5) of the manufacturer: VEGA Grieshaber KG

(6) Address: Am Hohenstein 113
77761 Schiltach
Germany

Order number: 8000405996

Date of issue: 2012-04-17

- (7) The design of this equipment or protective system and any acceptable variation thereto are specified in the schedule to this EC-Type-Examination 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. 12 203 098523.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- EN 60079-0:2009 EN 60079-11:2007 EN 60079-26:2007
- (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 resp. II 1/2 G resp. II 2 G Ex ia IIC T6 ... T1 Ga resp. Ga/Gb resp. Gb

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified 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 notified body



Schwedt

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(13) **SCHEDULE**

(14) **EC-Type-Examination Certificate No. TÜV 12 ATEX 098523 X**

(15) Description of equipment

The microwave sensors type series VEGAFLEX FX8*(*).*C****A/H***** are used for evaluation of the distance between a product surface and the sensor via high-frequency microwave pulses.

The microwave sensors emit high-frequency microwave pulses, which are carried along a measuring rod resp. a measuring cable.

The electronics evaluate the delay time of the signals reflected by the product surface to calculate the distance to this surface.

The VEGAFLEX microwave sensors type series VEGAFLEX FX8*(*).*C****H***** are 2 wire 4-20 mA sensors with superposed HART signal.

The VEGAFLEX microwave sensors type series VEGAFLEX FX8*(*).*C****A***** are 2 wire 4-20 mA sensors with superposed HART signal and with additional SIL qualification.

Electrical data

Supply and signal circuit
(Terminals 1[+], 2[-] in the housing for the electronics resp. in the execution with the 2 cell housing in the terminal housing)

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to a certified intrinsically safe circuit

Maximum values:

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

The effective internal capacitance is negligibly small.

Effective internal inductance: $5 \mu\text{H}$
In execution with the 2 cell housing: $10\mu\text{H}$

In the execution with connection cable mounted fixed, the following values have to be observed additionally:

$L_i^* = 0.55 \mu\text{H/m}$
 $C_i^* \text{ wire/wire} = 58 \text{ pF/m}$
 $C_i^* \text{ wire/shield} = 270 \text{ pF/m}$

Operation and indication circuit
(Terminals 5, 6, 7, 8 in the housing for the electronics resp. in the terminal housing in the execution with 2 cell housing)

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 or VEGADIS81.

The rules for the interconnection of intrinsically safe circuits between the VEGAFLEX FX8*(*).*C****A/H***** and the VEGADIS61/81 are fulfilled, if the complete inductance and capacitance of the connection cable between VEGAFLEX FX8*(*).*C****A/H***** and VEGADIS61/81 does not exceed the following values:

$L_{\text{cable}} = 212 \mu\text{H}$
 $C_{\text{cable}} = 1.98 \mu\text{F}$

If the connection cable supplied by the manufacturer between the VEGAFLEX FX8*(*).*C****A/H***** and the VEGADIS61/81 is used, the following values have to be observed:

$$L_i = 0.62 \text{ } \mu\text{H/m}$$

$$C_{i \text{ wire/wire}} = 132 \text{ pF/m}$$

$$C_{i \text{ wires/shield}} = 208 \text{ pF/m}$$

Operation and indication module circuit
(Spring contacts in the housing for the electronics and additionally in the terminal housing in the execution with 2 cell housing)

in type of protection „Intrinsic Safety“ Ex ia IIC
Only for connection to the VEGA operation and indication module PLICSCOM or the interface adapter VEGACONNECT.
In the execution with the 2 cell housing, the operation and indication module PLICSCOM or the interface adapter VEGACONNECT may only be implemented in the terminal housing, if here no external VEGA indication unit type VEGADIS61 or VEGADIS81 is connected.

HF circuit
(Coaxial connection cable)

in type of protection „Intrinsic Safety“ Ex ia IIC
In the execution with coaxial connection cable between housing for the electronics and measuring sensor housing,
a length of the provided cable of 50 m is permissible.

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

If the microwave sensors are used in explosion hazardous areas for EPL Ga applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics) and medium temperature range (measuring sensor)
T5	-20 °C ... +42 °C
T4, T3, T2, T1	-20 °C ... +60 °C

The measuring sensors and the electronics are allowed to be operated in an explosion hazardous area for EPL Ga applications, 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 (manual).

For the max. permissible ambient and medium temperature range, the EN 1127-1:2011, section 6.4.2 was observed.

Schedule EC-Type Examination Certificate No. TÜV 12 ATEX 098523 X

If the microwave sensors are used in explosion hazardous areas for EPL Ga/Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 0)
T6	-40 °C ... +46 °C	-20°C ... +60 °C
T5	-40 °C ... +61 °C	-20°C ... +60 °C
T4, T3, T2, T1	-40 °C ... +70 °C	-20°C .. +60 °C

The measuring sensors are allowed to be operated in an explosion hazardous area for EPL Ga applications, 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 (manual).

If the measuring sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

If the microwave sensors are used in explosion hazardous areas for EPL Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics)	Medium temperature range (measuring sensor)
T6	-40 °C ... +46 °C	-60 °C ... +85 °C
T5	-40 °C ... +61 °C	-60 °C ... +100 °C
T4	-40 °C ... +70 °C	-60 °C ... +135 °C
T3	-40 °C ... +70 °C	-60 °C ... +200 °C
T2	-40 °C ... +70 °C	-60 °C ... +300 °C
T1	-40 °C ... +70 °C	-60 °C ... +450 °C

If the measuring sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

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

Schedule EC-Type Examination Certificate No. TÜV 12 ATEX 098523 X

VEGAFLEX FX86(*) *C****A/H*****, low-temperature execution down to -196 °C

If the microwave sensors are used in explosion hazardous areas for EPL Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range (electronics)	Medium temperature range (measuring sensor)
T6	-40 °C ... +46 °C	-196 °C ... +85 °C
T5	-40 °C ... +61 °C	-196 °C ... +100 °C
T4	-40 °C ... +70 °C	-196 °C ... +135 °C
T3	-40 °C ... +70 °C	-196 °C ... +200 °C
T2	-40 °C ... +70 °C	-196 °C ... +300 °C
T1	-40 °C ... +70 °C	-196 °C ... +450 °C

If the measuring sensors of the microwave sensors VEGAFLEX FX86(*) *C****A/H***** are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

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

The ambient temperature derating at process temperatures up to +150 °C, +200 °C, +250 °C, +280 °C, +450 °C and down to -196 °C has to be taken from the manual of the manufacturer.

(16) Test documents are listed in the test report No. 12 203 098523

(17) Special conditions for safe use

- At the plastic parts of the microwave sensors type series VEGAFLEX FX8(*) *C****A/H***** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
- For EPL Ga resp. EPL Ga/Gb applications, at the metallic parts of the microwave sensors type series VEGAFLEX FX8(*) *C****A/H***** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
- For EPL Ga resp. EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the microwave sensors type series VEGAFLEX FX8(*) *C****A/H***** have to be secured effectively against these dangers. Observe manual of the manufacturer.
- For EPL Ga/Gb applications the medium tangent materials have to be resistant to the media. Observe manual of the manufacturer

(18) Essential Health and Safety Requirements

no additional ones