



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx TUN 16.0034X

Issue No: 0

Certificate history:

Issue No. 0 (2016-12-14)

Status: Current

Page 1 of 3

Date of Issue: 2016-12-14

Applicant: NIVUS GmbH
Im Täle 2
75031 Eppingen
Germany

Equipment: Radar sensor type OFR-EV0 and OFR-EVG

Optional accessory:

Type of Protection: Intrinsic safety "I"

Marking: Ex ib IIB T4 Gb

Approved for issue on behalf of the IECEx
Certification Body:


Christian Roder

Position:

Deputy Head of the IECEx Certification Body

Signature:
(for printed version)

Date:


2016 - 12 - 14

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

TÜV NORD CERT GmbH
Hanover Office
Am TÜV 1, 30519 Hannover
Germany





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Page 2 of 3

Manufacturer: NIVUS GmbH
Im Täle 2
75031 Eppingen
Germany

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
Edition:6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[DE/TUN/ExTR16.0046/00](#)

Quality Assessment Report:

[DE/TUN/QAR13.0011/03](#)



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Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The radar sensors type OFR-EV0 and OFR-EVG are used for contact less measurement of the flow rate of liquid media, especially in waste water areas.

The permissible ambient temperature range is -20 °C ... + 60 °C.

For further information see attachement.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. At the plastic parts there is a danger of ignition by electrostatic discharge.

Observe manual of the manufacturer and warning label.

2. The metallic parts of the protective cover, if used, have to be connected with ground potential.

Annex:

[Annexe_Surface Radar OFR_xxx_TUN16.0034X.pdf](#)

The surface radar sensors type OFR-EV0 and OFR-EVG are intended for contactless velocity measurement on the surface of liquid media particularly in wastewater areas via radar technology.

The permissible ambient temperature range of the sensors is -20 °C ... 60 °C.

Electrical data

Signal- and supply circuit in type of protection Intrinsic Safety Ex ib IIB
(Plug connector only for connection to
pin 1 [+Vin] a certified intrinsically safe circuit
pin 6 [GND] maximum values:
 $U_i = 10.5 \text{ V}$
 $I_i = 640 \text{ mA}$
 $P_i = 6.72 \text{ W}$
The effective internal capacitance is negligibly small.
Effective internal Inductance: 3.5 μH

RS485 interface in type of protection Intrinsic Safety Ex ib IIB
(Plug connector maximum values:
pin 2 [RxDx+] $U_o = 10.2 \text{ V}$
pin 5 [RxDx-] $I_o = 119 \text{ mA}$
 $P_o = 304 \text{ mW}$
characteristic line: linear
The effective internal capacitance is negligibly small.
Effective internal inductance: 53 μH

Ex ib	IIB	
max. permissible external inductance	10 mH	0.95 mH
max. permissible external capacitance	2.2 μF	5.1 μF

At connection of the RS485 interface to belonging measuring transducers with active intrinsically safe circuits, the rules for the interconnection of intrinsically safe circuits have to be observed.

Maximum values:

$U_i = 15.1 \text{ V}$
 $I_i = 168 \text{ mA}$
 $P_i = 634 \text{ mW}$

Specific condition of Use:

1. At the plastic parts there is a danger of ignition by electrostatic discharge.
Observe manual of the manufacturer and warning label.
2. The metallic parts of the protective cover, if used, have to be connected with ground potential.