



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

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|------------------|--------------------|------------|---|--|
| Certificate No.: | IECEX CES 12.0009X | issue No.: | 1 | Certificate history: Issue No. 1 (2016-7-30) Issue No. 0 (2012-6-15) |
| Status: | Current | | | |

| | | |
|----------------|------------|-------------|
| Date of Issue: | 2016-07-30 | Page 1 of 4 |
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Applicant: **N.E.T. S.r.l.**
Via Legnano 2
I-20010 Comaredo (MI)
Italy

Equipment: **Gas detectors, Series NETC.**
Optional accessory:


Type of Protection: **Flameproof enclosures 'd', Inherently safe optical radiation "op is", Dust ignition protection by enclosure 't'**

Marking: **Ex db IIC T6, T5 Gb
Ex tb IIIC T85°C, T100°C Db
Ex db op is IIC T6, T5, T4 Gb
IP65 (only model with GD Adapter)**

Approved for issue on behalf of the IECEx
Certification Body: **Mirko Balaz**

Position: **Head of IECEx CB**

Signature:
(for printed version)



30-7-2016

Date:

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:

CESI
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

CESI

CESI S.p.A.

Testing & Certification Division
Business Area Certification
Il Responsabile

(Roberto Piccin)



PAD B6016781 (2327972) - USO RISERVATO





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Manufacturer: **N.E.T. S.r.l.**
Via Legnano 2
I-20010 Cornaredo (MI)
Italy

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 Edition: 6.0 | Explosive atmospheres - Part 0: General requirements |
| IEC 60079-1 : 2014-06 Edition: 7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" |
| IEC 60079-28 : 2006-08 Edition: 1 | Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation |
| IEC 60079-31 : 2013 Edition: 2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |

*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:

[IT/CES/ExTR12.0009/00](#)

[IT/CES/ExTR12.0009/01](#)

Quality Assessment Report:

[IT/CES/QAR08.0001/09](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Gas detectors series NETC are devices used for the detection of flammable or toxic gases. All the models are provided with a multi-core cable permanently connected to (non detachable) that through a sealed bushing allows connection to external circuits for supply/measure.

The gas detectors types NETC1, NETC2 and NETC3 are manufactured with a flameproof enclosure equipped with a sintered element; inside the enclosure are installed the sensing element and any electronic circuitry for the signal amplification or transmission.

The types NETC6, NETC7 and NETC8 are characterized by the presence of a sealed glass in place of the sintered element. Within these models of the detector are present electronic circuits that use the principle of the optical radiation (infrared or laser) to measure the concentration of the gas detected.

For further information see Annex.

CONDITIONS OF CERTIFICATION: YES as shown below:

The supply cable of the gas detector must be protected against mechanical damages caused by impact or friction. User side connection of the supply cable must be in a safe area or be protected by one of the types of protection listed in IEC 60079-0 standard.

The installation of the gas detector shall guarantee the equipotential bonding and metal continuity of the enclosure.

The gas detectors series NETC are designed for stationary installation and shall not be used for portable applications.

The flamepaths are specified in the manufacturer drawings. For information regarding the dimensions of the flameproof joints the manufacturer shall be contacted.

The conditions of the installation of the equipment are included within the safety instructions. For a safe use these mounting instructions are to be followed precisely. In case of use with enclosure subject of a separate certification for a type of protection listed in IEC60079-0 standard, the coupling enclosure/gas detector shall not affect the type of protection of the enclosure. The requested degree of protection IP shall be guaranteed.

The sealed bushing of the gas detectors has been submitted to an overpressure test of 30 bar. The gas detectors can be coupled, without any supplementary test, to explosion-proof enclosures with a reference pressure not exceeding 20 bar.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 1.1

The gas detectors, originally assessed in compliance with IEC 60079-1: 2007 and IEC 60079-31: 2008 have been re-assessed on the basis of the standard IEC 60079-1: 2014 7th edition and IEC 60079-31:2013 2nd edition.

Variation 1.2

Updating of the identification code.

The identification of the equipment is updated by introducing the "C" suffix to the identification code of the series, changing it by NET to NETC. The codes of the equipment have been revised in order to diversify these gas detectors from other similar devices subject of a different certificate.

Variation 1.3

Constructional modification to the body of the type NETC3 and added of the new model NETC3*8 (long version).

Variation 1.4

Addition of the new models type NETC6, NETC7 and NETC8 (with combined type of protection: "Ex-dB" flameproof associated with "Ex-op is" inherently safe optical radiation according with IEC 60079-28:2006 1st edition).

Variation 1.5

Updating of the electrical characteristic for the addition of the new models.

Variation 1.6

Remove the use of the resin type GPS RE120-HA03 for the sealed cable bushing.

Prot: B6016781

Annex to certificate:

IECEx CES 12.0009X Issue No.:1 of 2016-07-30

Applicant:

N.E.T. S.r.l.

Electrical Apparatus:

**Via Legnano 2, I-20010 Cornaredo (MI), Italy
Gas detectors, Series NETC.**

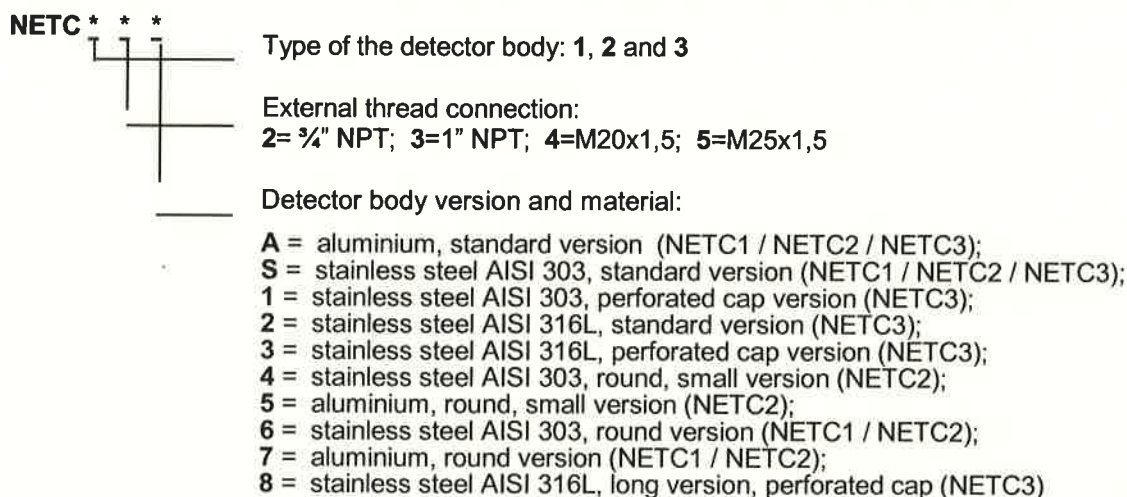
Description of equipment

Gas detectors series NETC are devices used for the detection of flammable or toxic gases. All the models are provided with a multi-core cable permanently connected to (non detachable) that through a sealed bushing allows connection to external circuits for supply/measure.

The gas detectors types NETC1, NETC2 and NETC3 are manufactured with a flameproof enclosure equipped with a sintered element; inside the enclosure are installed the sensing element and any electronic circuitry for the signal amplification or transmission.

The type NETC2 and type NETC3 may be equipped with a device (GD adapter) for the dust ingress protection of the sintered element. In this configuration the Db Equipment Protection Level is assigned to the gas detectors.

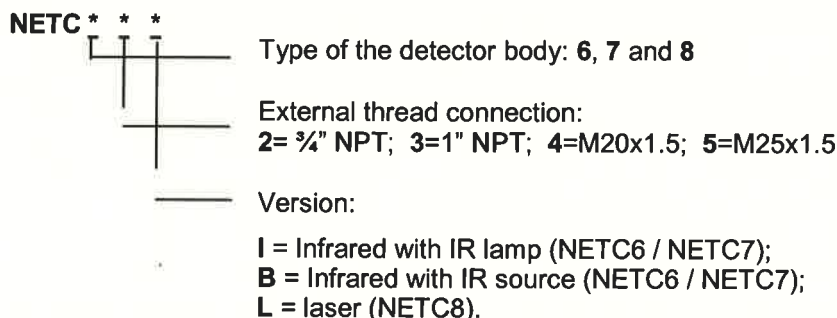
The gas detectors types NETC1, NETC2 and NETC3 are identified by the following code:



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The types NETC6, NETC7 and NETC8 are characterized by the presence of a sealed glass in place of the sintered element. Within these models of the detector are present electronic circuits that use the principle of the optical radiation (infrared or laser) to measure the concentration of the gas detected. These circuits comply with IEC 60079-28 standard and the detectors have a combined type of protection: "Ex-db" flameproof associated with "Ex-op is" inherently safe optical radiation.

The gas detectors types NETC6, NETC7 and NETC8 are identified by the following code:



The different types of sensing elements and/or electronic circuitry can be installed within the flameproof enclosure. The devices installed into enclosure must comply with defined electrical and/or dimensional limits specified in in the Manufacturer's documents in order to ensure the temperature class assigned to the equipment.

Prot: B6016781

Annex to certificate:

IECEx CES 12.0009X Issue No.:1 of 2016-07-30

Applicant:

N.E.T. S.r.l.

Via Legnano 2, I-20010 Cornaredo (MI), Italy

Electrical Apparatus:

Gas detectors, Series NETC.

Description of equipment (follows)

Gas detectors series NETC are provided with a plate (main or supplementary) on which, in addition to electrical parameters of the sensing element, is also specified the type of gas for which they are used.

Electrical characteristics

- Maximum supply voltage: 30 Vdc
- Maximum absorbed current: 400 or 500 mA (depending on the type)
- Maximum dissipated power: 0.7 W (types NETC1 and NETC2)
1.4 W (types NETC3 – long version excluded)
2.5 W (type NETC3*8 – long version)
0.9 W (types NETC6 and NETC7)
2.5 W (type NETC8)
- Degree of protection (IEC 60529): IP 65 (only model with GD Adapter).
- Ambient temperature: -40 /-30 /-20°C ÷ +40 / +45 / +50 /+55 / +60°C

The ambient temperature values above reported represent the upper and lower limits of the applicable temperature range, taking into account the constructional and functional characteristics of the gas detectors, as specified in the in the Manufacturer's documents.

In the following table are reported the temperature class (for EPL Gb) and the maximum surface temperature (for EPL Db) in function of the maximum ambient temperature and of the power dissipated within the enclosure of the gas detector.

| detector type | maximum dissipated power [W] | maximum ambient temperature [°C] | temperature class (Gb) | maximum surface temperature (Db) |
|--------------------|------------------------------|----------------------------------|------------------------|----------------------------------|
| NETC1 | 0.7 | 60 | T6 | -- |
| NETC2 | 0.7 | 50 | T6 | T85 °C |
| | | 55 | T6 | T85 °C |
| | | 60 | T5 | T100 °C |
| NETC3 | 1.4 | 55 | T6 | T85 °C |
| | | 60 | T5 | T100 °C |
| NETC3 long version | 2.5 | 45 | T6 | T85 °C |
| | | 50 | T5 | T85°C |
| | | 60 | T5 | -- |
| NETC6 (IR lamp) | 0.9 | 60 | T6 | -- |
| NETC7 (IR lamp) | 2 x 0.9 | | | |
| NETC6 (IR source) | 0.9 | 60 | T4 | -- |
| NETC7 (IR source) | 2 x 0.9 | | | |
| NETC8 | 2.5 | 40 | T6 | -- |
| | | 50 | T5 | -- |
| | | 60 | T4 | -- |