



TÜV AUSTRIA SERVICES GMBH testing, inspection and certification body  
 accredited by the Austrian Federal Ministry of Economy, Family and Youth



# Certificate

## EC Type Examination Certificate

(2) Equipment or protective system intended for use in  
 potentially explosive atmospheres – Directive 94/9/EC

(3) TÜV-A 11ATEX0001X

(4) Equipment: GPRS data - logger NivuLog

(5) Applicant: Nivus GmbH

(6) Address: Im Täle 2, D-75031 Eppingen; Germany



(7) This equipment or protective system and any acceptable variation  
 thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) TÜV AUSTRIA SERVICES GMBH, notified body number 0408 in accordance with article 9 of  
 Directive 94/9/EC of the European Parliament and Council of 23 March 1994, certifies that this  
 equipment or protective system has been found to comply with the design and construction of  
 equipment and protective system intended for use in potentially explosive atmospheres, given in  
 Annex II of the Directive.

The examination and test results are recorded in confidential report 2011-ET/PZW-EX-0-000055

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

|                 |                  |                  |
|-----------------|------------------|------------------|
| EN 60079-0:2006 | EN 60079-11:2007 | EN 60079-18:2004 |
|-----------------|------------------|------------------|

(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 or protective system in accordance with the Directive 94/9/EC. Further  
 requirements of the Directive apply to the manufacturing process and supply of this equipment  
 or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:

II 2 G Ex ib mb IIB T4

19.05.2011  
 Date of issue

Dipl.-Ing. Kurt Mayerhofer  
 Certification representative

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 End of validity

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(13)

## SCHEDULE

(14)

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(15) Description of Equipment

The system consists of main unit with sensor, data evaluation circuits with GPRS modem, and a snap - on, detachable battery pack for power supply. The data - logger may be operated in zone 1 and zone 2 hazardous areas. The measured data are transmitted via GPRS, stored in a central server database and exposed on the internet. In addition, settings and configurations can also be changed.

### Type Variations

| Product group | Version   | Type code     | Article number |
|---------------|---|---------------|----------------|
| NivuLog       | 2 x analog/digital input<br>and internal voltage supply     | NivuLog 2Ex   | NLM02EX        |
|               | Switchable RS232/485 interface<br>and internal power supply | NivuLog PCMEx | NLM0PCMEX      |

| Power supply | Version      | Type-code   | Article number |
|--------------|--------------|---|----------------|
| Battery pack | 4.1V, 19.2Ah | battery pack for NivuLog 2Ex<br>and NivuLog PCMEx | NLM0AP424DA    |

### Technical Data

| Electrical Data:    |         |
|---------------------|---------|
| rated voltage $U_n$ | 4,1 VDC |
| rated current $I_n$ | 1,7A    |
| rated power $P_n$   | 6,97W   |

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### Explosion protection:

|                                 |   |                      |
|---------------------------------|---|----------------------|
| equipment group:                | II  |                      |
| equipment category:             | 2 G                                       |                      |
| type(s) of protection:          | Ex ib mb (mb only valid for battery pack) |                      |
| temperature class:              | T 4                                       |                      |
| explosion group:                | II B                                      |                      |
| ambient temperature $T_{amb}$ : | -10°C to +40°C                            | (tested till: -20°C) |
| humidity:                       | 15 - 90 %                                 |                      |
| ingress protection:             | IP 64 (report)                            | IP 67 (manufacturer) |

### Electrical data of intrinsically safe electric circuits

#### Description:

#### Values:

Antenna socket - FME type (CON 1)

$R_{IN} = 50\Omega$  (antenna - input resistance)  
 $P_{MAX} = 2 W$  (HF - emitted power )

Battery pack plug (CON 3)

Pin 1: power supply  
Pin 3: +4,1V power supply  
Pin 4-6: GND power supply

$U_o = 4,1V$   
 $I_o = 1,7A$   
 $P_o = 6,97W$   
 $L_o = 5\mu H$   
 $C_o = 1000\mu F$

Ext. connection - USB - connection (CON 4)

(not employed in explosion hazardous area)

Evaluation circuit power supply (CON 5)  
- connection to CON 3

Pin 1: power supply  
Pin 3: +4,1V power supply  
Pin 4-6: GND power supply

$U_i = 6 V$   
 $I_i = 1,7 A$   
 $P_i = 6,97 W$   
 $L_i = 0$  (negligible)  
 $C_i = 780 \mu F$  (all pins)

connection – SIM - Card Slot (CON 6)

SIM - card (not to be plugged-in, unplugged or replaced in hazardous area)

External sensors (for types NivuLog 2 Ex;  
NivuLog PCM Ex with connection CON 7)

$U_o = 17,1 V$   
 $I_o = 0,2 A$   
 $P_o = 3,762 W$   
 $L_o = 50 \mu H$   
 $C_o = 2,1 \mu F$

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(16) **Test report**

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(17) **Special conditions**

- (17.1) The battery pack and main unit may be detached only using the snap - on connection No further disassembling in hazardous area is allowed. The further disassembling must be performed by the manufacturer for maintenance, outside the hazardous area.
- (17.2) The battery pack only may be changed in explosion hazardous area. Only the original charging unit may be used for the recharging of the battery pack outside the hazardous area.
- (17.3) The main unit with data evaluation circuits may be connected only to the original battery pack and no other power supplies.
- (17.4) The connection CON 4 (USB- connection) may not be used in explosion hazardous area.
- (17.5) On connection CON 6 (SIM-card slot) the SIM-card may not be changed in explosion hazardous area.
- (17.6) On the CON 1 socket may be connected only the original antenna with or without a 5m original extension cable.
- (17.7) The immersion of the apparatus may cause the dropouts of the GPRS communication.
- (17.8) To protect the enclosure against dirt keep a minimal distance of 50mm from the walls in all directions.
- (17.9) The apparatus must be marked with the warnings:

„WARNING – DO NOT OPEN INSIDE THE HAZARDOUS AREA“

„WARNING – HAZARD OF STATIC ELECTRICITY – DO NOT RUB INSIDE THE HAZARDOUS AREA“

(18) **Basic safety and health requirement**

Covered by application of above mentioned standards

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