



# Certificate

## EC Type Examination Certificate

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

(3) TÜV-A 12ATEX0008X

(4) Equipment: Data - Logger Field Device NivuLog 2 Ex

(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 2012-ET/PZW-EX-0-000698.

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

EN 60079-0:2012	EN 60079-11:2007	EN 60079-18:2009
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(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 IIB T4 Gb**

for equipment and primary cell pack



**II 2 G Ex ib mb IIB T4 Gb**

for battery pack

19.07.2013  
Date of issue

Dipl.-Ing. Kurt Mayerhofer  
Certification representative

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End of validity

The duplication of this document in parts is subject to the approval by TÜV AUSTRIA SERVICES GMBH



(13)

## SCHEDULE

(14)

EC Type Examination Certificate TÜV-A 12ATEX0008X

(15) **Description of Equipment**

The system is based on Microtronics data processing system „myDatenet“. The data - logger consists of main unit with data evaluation circuits with GPRS modem and a snap - on, detachable battery pack for power supply. The measured data are transmitted via cable from the sensor unit, stored temporary and sent via GPRS to a internet server database.

### Type Variations

Product family	Version	type code	Material No.
NivuLog2Ex (external sensor)	2 x analog/digital input and internal voltage supply	NivuLog2Ex N	NLM02EXN

Power supply	Version	type code	Material No.
Battery pack (secondary cells)	4.1V, 19.2Ah	AP424DA	NLM0AP424DAN

### Electrical Data

### 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 <sub>amb</sub> :	-10°C to +40°C ( tested till : -20°C)
humidity :	15 - 90 %
ingress protection :	IP 64 (report) IP 67 (manufacturer)

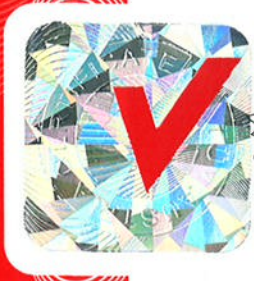


**Electrical Data:**

rated voltage $U_n$	4,1 VDC
rated current $I_n$	1,16A
rated power $P_n$	6,97W

Electrical data of intrinsically safe electric circuits:

Description:	Values:	
Antenna socket Type FME (CON 1)	intrinsically safe Ex ib	
	$R_{IN} = 50\Omega$ (antenna - input resistance)	
	$P_{MAX} = 2 W$ (max HF - emitted power)	
Battery-charging plug (only battery types CON 2)	(not used in explosion hazardous area )	
Plug connection to battery output (CON 3)	intrinsically safe Ex ib	
Pin 1: energy pack	$U_o = 4,1 V$ (battery pack)	$U_o = 6 V$ (Primary battery)
Pin 3: +4,1V energy pack	$I_o = 1,7 A$ (battery pack)	$I_o = 1,16 A$ (Primary battery)
Pin 4-6: GND energy pack	$P_o = 6,97 W$	
	$L_o = 5 \mu H$	
	$C_o = 1000 \mu F$	
Ext. connection - USB – connection (CON 4)	(not used in explosion hazardous area)	
Evaluation circuit power supply (CON 5)	intrinsically safe Ex ib	
Pin 1: energy pack	$U_i = 6 V$	
Pin 3: +4,1V energy pack	$I_i = 1,7 A$	
Pin 4, 5, 6: GND energy pack	$P_i = 6,97 W$	
	$L_i = 0$ (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 explosion hazardous area)	
„Ex ib“ connection for external sensors (CON 7) (equipment-socket/sensor cable plug)  Pin 1: power supply Pin 2: GND Pin 3: AU IN0 (sensor data) Pin 4: AU IN1 (sensor data) Pin 5,6: not contacted	equipment type	
	Option 3	
	$U_o = 25,6 V$	
	$I_o = 0,082 A$	
	$P_o = 0,532 W$	
	$L_o$	$C_o$
	1,4mH	0,39 $\mu F$
	1mH	0,42 $\mu F$
	500 $\mu H$	0,50 $\mu F$
	200 $\mu H$	0,65 $\mu F$
100 $\mu H$	0,80 $\mu F$	



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

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**(16) Test report**

2012-ET/PZW-EX-0-000698

**(17) Special conditions**

- (17.1) The battery pack and main unit may be detached only using the snap - on connection. No further disassembling in explosion hazardous area is allowed. The further disassembling must be performed by the manufacturer for maintenance, outside the explosion 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 explosion 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) must not be used in explosion hazardous area.
- (17.5) On connection CON 6 (SIM-card slot) the SIM-card must not be changed in explosion hazardous area.
- (17.6) On the CON 1 socket must 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 EXPLOSION HAZARDOUS AREA“  
„WARNING – HAZARD OF STATIC ELECTRICITY – DO NOT RUB INSIDE THE EXPLOSION HAZARDOUS AREA“

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

Covered by application of above mentioned standards  
No further requirements