

Instruction manual for Sampler Terminal Box

(Original Instruction Manual – German)



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Translation

If the device is sold to a country in the European Economic Area (EEA) this instruction handbook must be translated into the language of the country in which the device is to be used.

Should the translated text be unclear, the original instruction handbook (German) must be consulted or the manufacturer contacted for clarification.

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Names

The use of general descriptive names, trade names, trademarks and the like in this handbook does not entitle the reader to assume they may be used freely by everyone. They are often protected registered trademarks even if not marked as such.

1 Contents

1.1 Table of Contents

1	Contents	4
1.1	Table of Contents	4
1.2	Declaration of conformity	5
1.3	Ex Certificate	6
2	Overview and use in accordance with the requirements	7
2.1	Overview	7
2.2	Use in accordance with the requirements	7
2.2.1	Ex-Approval	7
3	Specifications	8
4	General Notes on Safety and Danger	8
4.1	Danger Notes	8
4.1.1	General Danger Notes	8
4.1.2	Special Danger Notes	8
4.2	Device Identification	9
4.3	Installation of Spare Parts and Parts subject to Wear and Tear	9
4.4	Shutdown Procedure	9
4.5	User's Responsibilities	10
5	Storing, Delivery and Transport	11
5.1	Receipt	11
5.1.1	Delivery	11
5.2	Storing	11
5.3	Transport	11
5.4	Return	11
6	Installation	12
6.1	Installation and Connection	12
6.1.1	General	12
6.1.2	Connection to the measurement device PCM Pro	12
6.1.3	Connection to the sampler	12
6.1.4	Enclosure Dimensions	13
7	Parameter setting	14
7.1.1	Parameter Menu "Digital Outputs "	14
8	Troubleshooting	17
9	Maintenance and Cleaning	17
10	Dismantling/Disposal	17
11	Table of Pictures	17

EU Konformitätserklärung

EU Declaration of Conformity

Déclaration de conformité UE

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Für das folgend bezeichnete Erzeugnis:

For the following product:

Le produit désigné ci-dessous:

Bezeichnung:	“Ex“ Probenehmer Anschlussbox
<i>Description:</i>	<i>“Ex” Sampler terminal Box</i>
<i>Désignation:</i>	<i>“Ex” Box de connexion préleveur</i>
Typ / Type:	PCP0 PRN ANST01

erklären wir in alleiniger Verantwortung, dass die auf dem Unionsmarkt ab dem Zeitpunkt der Unterzeichnung bereitgestellten Geräte die folgenden einschlägigen Harmonisierungsvorschriften der Union erfüllen:

we declare under our sole responsibility that the equipment made available on the Union market as of the date of signature of this document meets the standards of the following applicable Union harmonisation legislation:

nous déclarons, sous notre seule responsabilité, à la date de la présente signature, la conformité du produit pour le marché de l'Union, aux directives d'harmonisation de la législation au sein de l'Union:

- 2014/30/EU
- 2014/34/EU
- 2011/65/EU

Bei der Bewertung wurden folgende einschlägige harmonisierte Normen zugrunde gelegt bzw. wird die Konformität erklärt in Bezug die nachfolgend genannten anderen technischen Spezifikationen:

The evaluation assessed the following applicable harmonised standards or the conformity is declared in relation to other technical specifications listed below:

L'évaluation est effectuée à partir des normes harmonisées applicable ou la conformité est déclarée en relation aux autres spécifications techniques désignées ci-dessous:

- EN 61326-1:2013
- EN 60079-0:2012 +A11:2013
- EN 60079-11:2012

Ex-Kennzeichnung / *Ex-designation* / *Marquage Ex* :

 II (2) G [Ex ib] IIB

EG-Baumusterprüfbescheinigung / *EC-Type Examination Certificate* / *Attestation d'examen «CE» de type:*

TÜV 08 ATEX 555028

Notifizierte Stelle (Kennnummer) / *Notified Body (Identif. No.)* / *Organisme notifié (N° d'identification)*

TÜV Nord CERT GmbH, Am TÜV 1, 30519 Hannover, Allemagne

(0044)

Diese Erklärung wird verantwortlich für den Hersteller:

This declaration is submitted on behalf of the manufacturer:

Le fabricant assume la responsabilité de cette déclaration:

NIVUS GmbH
Im Täle 2
75031 Eppingen
Allemagne

abgegeben durch / *represented by* / *faite par:*

Marcus Fischer (Geschäftsführer / *Managing Director* / *Directeur général*)

Eppingen, den 26.07.2017

Gez. *Marcus Fischer*

1.3 Ex Certificate




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 08 ATEX 555028

(4) for the component: Sampler Terminal Box type PCP0PRNANST01

(5) of the manufacturer: **Nivus GmbH**

(6) Address: Im Täle 2
75031 Eppingen
Germany

Order number: 8000555028

Date of issue: 2009-02-04

(7) This component of an equipment or protective system and any acceptable variation thereto are specified in the schedule to this 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. 08 203 555028.

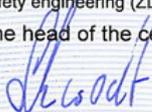
(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2006 **EN 60079-11:2007**

(10) If the sign "U" is placed after the certificate number, it indicates that this certificate must not be confounded with an EC-Type Examination Certificate which is destined for an equipment or protective system. This partial certificate must only be used as a basis for an EC-Type Examination 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 component must include the following:
 **II (2) G [Ex ib] IIB**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited 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 certification body

Schwedt

Hanover office, Am TÜV 1, 30519 Hanover, Fon +49 (0)511 986 1455, Fax +49 (0)511 986 1590

This certificate may only be reproduced without any change, schedule included.
Excerpts or changes shall be allowed by the TÜV NORD CERT GmbH

P17-F-020 06-07 page 1/3



The approval is only valid in connection with the respective indication on the transmitter's nameplate. You can find the complete Ex certificate under www.nivus.com.

2 Overview and use in accordance with the requirements

2.1 Overview



- 1 Connector Box
- 2 Connecting cable for sampler
- 3 Connecting cable with plug for PCM Pro

Fig. 2-1 Overview

2.2 Use in accordance with the requirements

The terminal box is designed for connecting a sampler for quantity-based sampling. The unit is driven by a transmitter Type PCM Pro.



The Sampler terminal box is exclusively intended to be used for purposes as described above. Modifying or using the devices for other purposes without the written consent of the manufacturer will not be considered as use in accordance with the requirements.

Damages resulting from this are left at user's risk!

2.2.1 Ex-Approval

The Terminal box always has to be installed outside of Ex-zones!
The approval is related to circuits either leading into Ex areas or out of Ex areas.

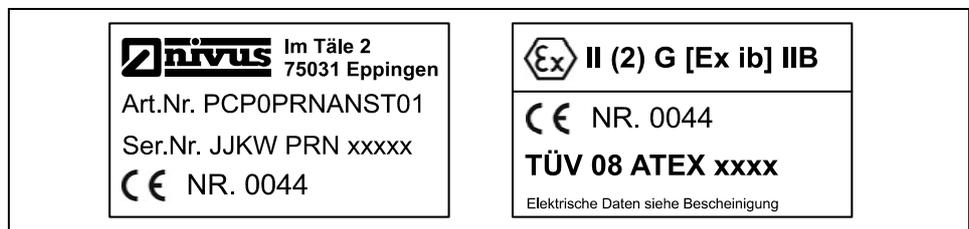


Fig. 2-2 Nameplate with Ex-Approval



The approval is only valid in connection with the respective indication on the transmitters nameplate.

3 Specifications

Power Supply	Supplied by PCM Pro
Max. switching voltage	33 V
Max. switching current	190 mA
Max. switching capacity	6,27 W
Ex-Approval	II (2) G [Ex ib] IIB
Operating temperature	-10 °C to +40 °C
Storage temperature	-20 °C to +60 °C
Dimensions	95 x 65 x 35 mm [L x W x H]
Cable length	7 m (PCM Pro → Box) 2 m (Box → Sampler)
Enclosure	Material: Aluminium Protection: IP68

4 General Notes on Safety and Danger

4.1 Danger Notes

4.1.1 General Danger Notes



Cautions
are framed and labelled with a warning triangle.



Notes
are framed and labelled with a "hand".



Danger by electric voltage
is framed and labelled with the Symbol on the left.



Warnings
are framed and labelled with a "STOP"-sign

4.1.2 Special Danger Notes



Please note that due to the operation in the waste water field transmitter, sensors and cables may be loaded with hazardous disease germs. Respective precautionary measures must be taken to avoid damage to one's health.

4.2 Device Identification

The instructions in this manual apply only for the type of device indicated on the title page.

The nameplate is fixed on the reverse side of the device and contains the following:

- name and address of manufacturer
- CE label
- type and serial number
- year of manufacture
- Ex-label (on Ex-version devices only) as mentioned in chapter 2.2.1.

It is important for queries and replacement part orders to specify type, year of manufacture and serial number (Article no. if necessary). This ensures correct and quick processing.



This instruction manual is a part of the device and must be available for the user at any time.

The safety instructions contained within must be followed.

4.3 Installation of Spare Parts and Parts subject to Wear and Tear

We herewith particularly emphasize that replacement parts or accessories, which are not supplied by us, are not certified by us, too. Hence, the installation and/or the use of such products may possibly be detrimental to the device's ability to work.

Damages caused by using non-original parts and non-original accessories are left at user's risk.

4.4 Shutdown Procedure



For maintenance, cleaning and repair purposes (authorized staff personnel only) the device has to be disconnected from mains.

4.5 User's Responsibilities



In the EEA (European Economic Area) national implementation of the framework directive 89/391/EEC and corresponding individual directives, in particular the directive 89/655/EEC concerning the minimum safety and health requirements for the use of work equipment by workers at work, as amended, are to be observed and adhered to.

In Germany the Industrial Safety Ordinance must be observed.

The customer must (where necessary) obtain any local **operating permits** required and observe the provisions contained therein. In addition to this, he must observe local laws and regulations on

- personnel safety (accident prevention regulations)
- safety of work materials and tools (safety equipment and maintenance)
- disposal of products (laws on wastes)
- disposal of materials (laws on wastes)
- cleaning (cleansing agents and disposal)
- environmental protection.

5 Storing, Delivery and Transport

5.1 Receipt

Please check your delivery if it is complete and in working order according to the delivery note immediately after receipt. Any damage resulting from transport or transit shall be reported to the carrier instantly. An immediate, written report must be sent to NIVUS GmbH Eppingen as well.

Please report any shortcoming due to delivery to your representative or directly to NIVUS Eppingen within two weeks in writing.



Mistakes cannot be rectified later!

5.1.1 Delivery

The standard delivery of the sampler terminal box contains:

- Terminal box with connection cable and plug for PCM Pro as well as a connection cable for the sampler.

5.2 Storing

Please observe the storage conditions as follows:

Terminal box	max. temperature:	+ 60° C
	min. temperature:	- 20° C
	max. humidity:	90 %, non-condensing

The measurement system shall be protected from corrosive or organic solvent vapours, radioactive radiation as well as strong electromagnetic radiation.

5.3 Transport

The sampler terminal box is designed for harsh industrial conditions. However do not expose it to heavy shocks, canings or vibrations. Transportation must be carried out in the original packaging.

5.4 Return

The units must be returned at customer costs to NIVUS Eppingen in the original packaging.
Otherwise the return cannot be accepted!!

6 Installation

6.1 Installation and Connection

6.1.1 General



The box shall be installed out of the Ex area!

6.1.2 Connection to the measurement device PCM Pro

The sampler terminal box is designed for connection to the PCM Pro via 7 pin plug. An appropriate socket can be found on the transmitter.



*The glands of the socket should be tightened **manually** before installation. Otherwise the protection grade IP67 is no longer guaranteed.*

6.1.3 Connection to the sampler

The box is connected to the sampler by using the pre-configured free cable ends.

There is a Reed relay (potential-free contact) inside of the connection box. Considering the specifications as described in Chapter 3, the wiring can be selected freely.

7 Parameter setting

7.1.1 Parameter Menu "Digital Outputs "



Fig. 7-1 Submenu digital outputs

Use this menu to assign the functions mentioned below to the relay inside the box.

Function

The following functions are available:

- Inactive
- flow rate output (relay will energise if the value exceeds a certain flow threshold and will de-energise if the value falls below a second threshold.)
- velocity output (relay will energise if the value exceeds a certain velocity threshold and will de-energise if the value falls below a second threshold)
- level output (relay will energise if the value exceeds a certain level threshold and will de-energise if the value falls below a second threshold.)
- pos-total impulse
- Sampler

Name

This menu can be viewed only as soon as a function has been enabled. "Name" means the name of the relay output. It is not necessary however to input a name as it currently is for device-internal use only. Set the name as described under >PAR/Measurement place/Name<.

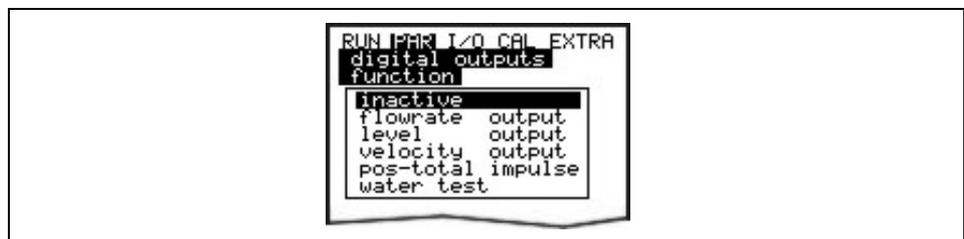


Fig. 7-2 Defining relay functions

Logic

Select between >normally open< and >normally closed< by using the >ALT< key.

Choosing >normally open< will cause the relay to energise as soon as the threshold set has been reached, choosing >normally closed< will cause the relay to energise immediately after the parameters have been set and to de-energise as soon as the according threshold has been reached.

Trigger level

This menu can be viewed only as soon as the function >Limit contact< has been enabled.



Fig. 7-3 Relay trigger level settings

The switching behaviour depends if the switch-on point is set higher or lower than the switch-off point: threshold behaviour (ON>OFF) or as in-bounds alarm (ON<OFF).

Pos-Total Impulse

This menu is visible only if >Pos-Total impulse< has been selected as function.

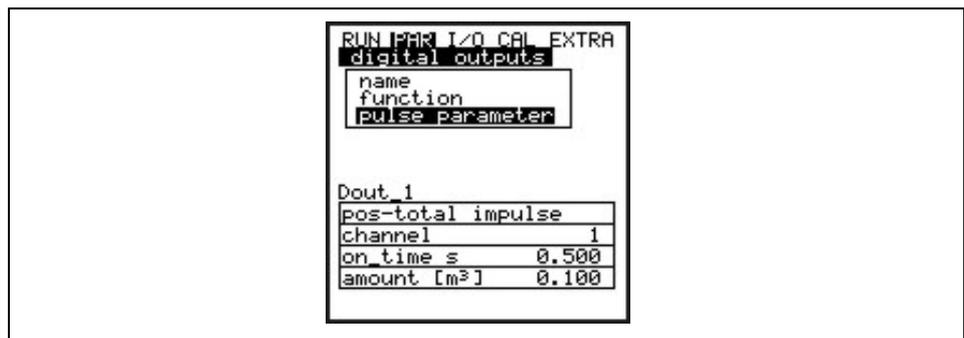


Fig. 7-4 Setting relay pulse parameters

Duration s

Enter the impulse duration here and adjust the value to the impulse counter used.

Volume [m³]

If this volume has been reached the contact will be closed for the duration set



The PCM Pro has been programmed to immediately process the impulses which have been cumulated within the memory cycle. The unit will switch over to permanent mode until the impulses have been processed if the measurement time is not sufficient.

Due to this reason it is important to adjust the number of impulses to the expected maximum volume.

Example:

measurement cycle = 5 min., duration = 0,5 s, volume 1 m³,

measured flow rate = 100 l/s

5 min x 60 s x 100 l/s / 1000 = 300 impulses x 0,5 s = 150 s

The PCM Pro will operate in permanent mode for the calculated period.

Sampling

This menu can be viewed only as soon as the function >water test< has been enabled..



Fig. 7-5 Sampling relay settings

Duration s

Set impulse duration here. Adjust the setting depending on the sampler used.

Volume [m³]

The contact will close for the duration set as soon as this volume has been reached.

Level [m]

This parameter is to protect the connected sampler. The contact will be closed only if the fill level set has been exceeded. This helps to prevent the sampler from drawing air.



The PCM Pro will operate in continuous mode if >water test< has been selected as function. The selected memory cycle now defines only the storage interval for the compact flash card. This ensures absolutely precisely timed sampling in case of reaching the volume set.

In this mode PCM Pro battery lifetime is approx 3 days.

8 Troubleshooting

Error	Possible Reason	Correction
No sampling carried out	Wrong PCM Pro parameter setting	See chapter „Parameter setting“
	Sampler input inactive	Check settings on sampler
		Adjust cycle
Wiring incorrect	Check wiring	

9 Maintenance and Cleaning



Due to using the measurement system mostly in the waste water field which may be contaminated with hazardous germs, please ensure to take respective precautions getting in contact with system, transmitter, cables and sensors.

If required clean the transmitter enclosure if with a dry, lint-free cloth. For heavy pollution NIVUS recommends the use of surface-active agents. The use of abrasive cleansing agents is not allowed.

10 Dismantling/Disposal

The device shall be disposed according to the local regulations for electronic products.

11 Table of Pictures

Fig. 2-1	Overview	7
Fig. 2-2	Nameplate with Ex-Approval.....	7
Fig. 6-1	Enclosure sampler terminal box.....	13
Fig. 6-2	PCM enclosure dimensions	13
Fig. 7-1	Submenu digital outputs	14
Fig. 7-2	Defining relay functions.....	14
Fig. 7-3	Relay trigger level settings.....	15
Fig. 7-4	Setting relay pulse parameters	15
Fig. 7-5	Sampling relay settings.....	16