

## Operating Manual Porta Digital ATEX



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## 1. Safety Instructions

### General

Please read these instructions before setting the unit to operation. Packing material can be dangerous for children. Please remove it and store it at a place which is out of reach for children. This unit was developed and manufactured for its application. Any use other than originally intended can cause its destruction or a malfunction. In case of resulting defects of things, the unit or humans Agromatic rejects any claims of warranty or guarantee.

The opening and closing of the unit should only be made by a technician and must be made according to the country regulations. Connecting this unit is a specialist's job and may only be done according to the country's specific standards. Do only use the prescribed types of cable (see instructions) and note the advice of laying. Strong electromagnetic emissions of portable or wireless telephones can temporarily be harmful to the function of the unit. Protect the unit from dampness, vibrations, extreme temperature teinfluences and dirt.

In case you use additional equipment please use only the advised types. We kindly recommend to use the unit acc. to our guidelines in the manual!

Attention! **Caution!** For this system, components are used in zones which are subject to hazardous dust explosion prevention regulations (zone 20, 21,22). The following installation directions must strictly be observed and the installation must comply with the general country regulations. **This manual is for the customer!**

**Storage and transport: Caution!** Impact sensitive measuring unit! Transportation only in original packing and protected against humidity, heat, cold, impacts, vibrations and weights. Store the uni tat a suitable location in original packing. The location should be clean, without direct sunlight, extreme temperature changes, humidity or vibrations. Unpack very carefully.

**Safety instructions for application in dangerous explosion areas acc. to ATEX**

**Allocation of zones:** unit category (1) D acc. to guideline 2014/34/EU should be used only in zonefree surrounding. The connected temperature sensors may only be used in zone 20.

**Marking, electrical connection and parameters:** see label. The electr. parameters must not be exceeded. **Assembly, disassembly and operational conditions:** the place of installation must be protected against impacts, extreme temperatures, humidity and dirt.

The surrounding temperature is -20°C to +50°C. The Porta Digital should only be addressed and operated in zone free surrounding. During the situation of connected temperature sensor no other device should be connected to the USB interface.

**Installation:** For the electrical connection in dangerous areas regarding dust explosion the corresponding country regulations for installation and connection must be followed; e.g. no plugs may be used, connections must be acc. to ex regulations. Cable installation must be fix and protected. The installation may only be carried out by qualified technicians. The PA (potential equalization) must be directly connected to housing via shield. Make sure that between housing and building potential equalization there is no significant power difference (<1 Ohm).

**Maintenance:** Usually the Porta Digital does not require maintenance. However we recommend to check the unit for damages. Faultive parts must be replaced. Units with ATEX admission can only be repaired or replaced by manufacturer; this is also valid for the battery change. Readjustment might be necessary afterwards.

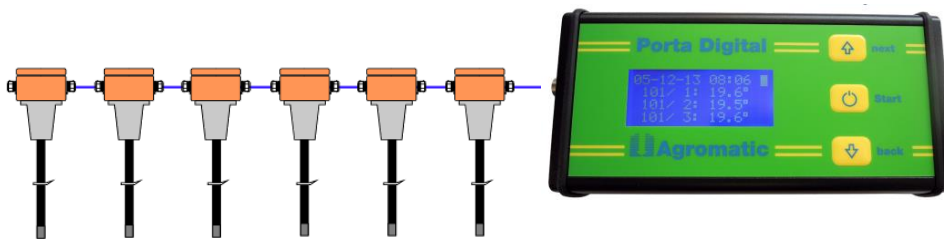
**Disposal:** at the end of the usage please take care of eco-friendly waste disposal, batteries in battery waste disposal, unit in electronic scrap

## 2. Application

### Art.-No. 1020004

The Porta Digital is designed as portable measuring unit for Agromatic Digital (2-wire) temperature monitoring systems. Up to 64 sensors can be registered and memorized.

**Attention:** The Porta Digital must only be addressed and operated in zone free surrounding. The battery is charged by means of the USB interface, moreover the data can be registered or printed via a PC.










If temperature sensors are integrated in an ex-zone, no external unit must be connected to the USB interface while connecting the temperature sensors

### Options:

- Art. 1040023      Connection-/chargingcable USB to USB mini, length 1m
- Art. 1040024      Connection set for Porta Digital with M8 plug and connectionbox with M8 socket,terminals on cable harness.
- Art. 1040042      Connection set for Porta Digital with M8 plug and connectionbox with M12 socket,terminals on cable harness.
- Art. 1040025      Connectioncable with M8 plug and terminals for existing connectionbox
- Art. 1020005      PC Software Agromatic Data Viewer

## 2.1. Assignment of keys



<b>Porta Digital is switched off</b>			
	<b>Start</b> Switches on the Porta Digital. After the start the first three value of the last measurement are displayed		
	<b>Start</b> Porta Digital starts measurement  <b>Start &gt; 2sek.</b> If start button is pressed longer than 2 seconds while unit is switched off the Porta Digital switches on and starts measurement		
	<b>Next</b> Display of the next three values.		
	<b>Back</b> Display of the last three values.		
			<b>Next + Back</b> When simultaneously operating „Next“ and „Back“ display changes to the three first values of last measurement.
<b>If no key is pressed within 4 minutes, the Porta Digital switches off automatically</b>			

## 2.2. Display on LCD-Display

### 2.2.1. Show values

Line 1: date + time of measurement  
last digit = charging condition battery

Lines 2 + 3: measuring value without alarm  
CCCC = 4 digits for bin number  
SS = 2 digits for sensor number  
TTTTT = 5 digits for value

Line 4: value with alarm

2	8	-	0	2	-	1	3		0	8	:	0	0		■
C	C	C	C	/	S	S	/	T	T	T	T	T			
C	C	C	C	/	S	S	/	T	T	T	T	T			
C	C	C	C	/	S	S	/	T	T	T	T	T	/	A	

A = with alarm

### 2.2.2. Register measuring readings

Line 1: actual date + time  
last digit = charging condition battery

Line 3 flashing: display of activity  
„get sensors“ or  
„measuring“

2	8	-	0	2	-	1	3		0	8	:	0	0		■
g	e	t		s	e	n	s	o	r	s					

### 2.2.3. Traffic with ADV-2

Line 1: actual date + time  
last digit = charging condition battery

Line 3: „Locked“

2	8	-	0	2	-	1	3		0	8	:	0	0		■
					L	o	c	k	e	d					

## 2.3. Display

### Display charging condition battery

Attention: if battery is low the unit is switched off automatically resp. cannot be switched on (charge with USB-cable and PC or USB charger)

condition battery = full



battery = medium



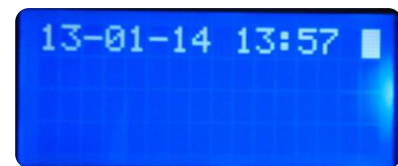
battery = low



**Attention:** during the connection of temperature sensors in an EX-zone the unit must not be connected to an USB interface.

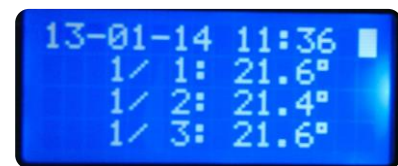
### No measurement available

If no measurement is available in the first line the actual date (TT-MM-JJ) and the actual time (HH:MM) are displayed.



### Measurement(s) available

If measurements are available the first line show date and time of the displayed values. The following lines show max. three sensors like: bin-no. (1 ... 2032) / sensors (1 ... 16): temperatures (C°) alarm or empty<sup>1</sup>

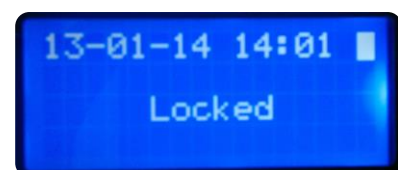


<sup>1</sup>If an "A" is displayed without temperature value so could no temperature can be measured. The reason for this is e.g.: There are two sensors with the same number in the Measuring cable available.

### Porta Digital with ADV-2 connected

(Agro Data Viewer PC-Software)

If Porta Digital is connected to ADV-2 the actual date (TT-MM-JJ) and the time (HH:MM) is displayed. „Locked "indicates that the Porta Digital can not be operated with the keys



### 3. Connection set

...with all housing and connection cable for Porta Digital, Art-No. 1040024

The connectionset is needed to read the measuring values of the monitoring cables with the Porta Digital.

The connectionset is designed for fix wall mounting.

#### **Important!**

The place of installation must be zonefree. When mounting to the wall make sure that screw joint is facing the floor (tightness).



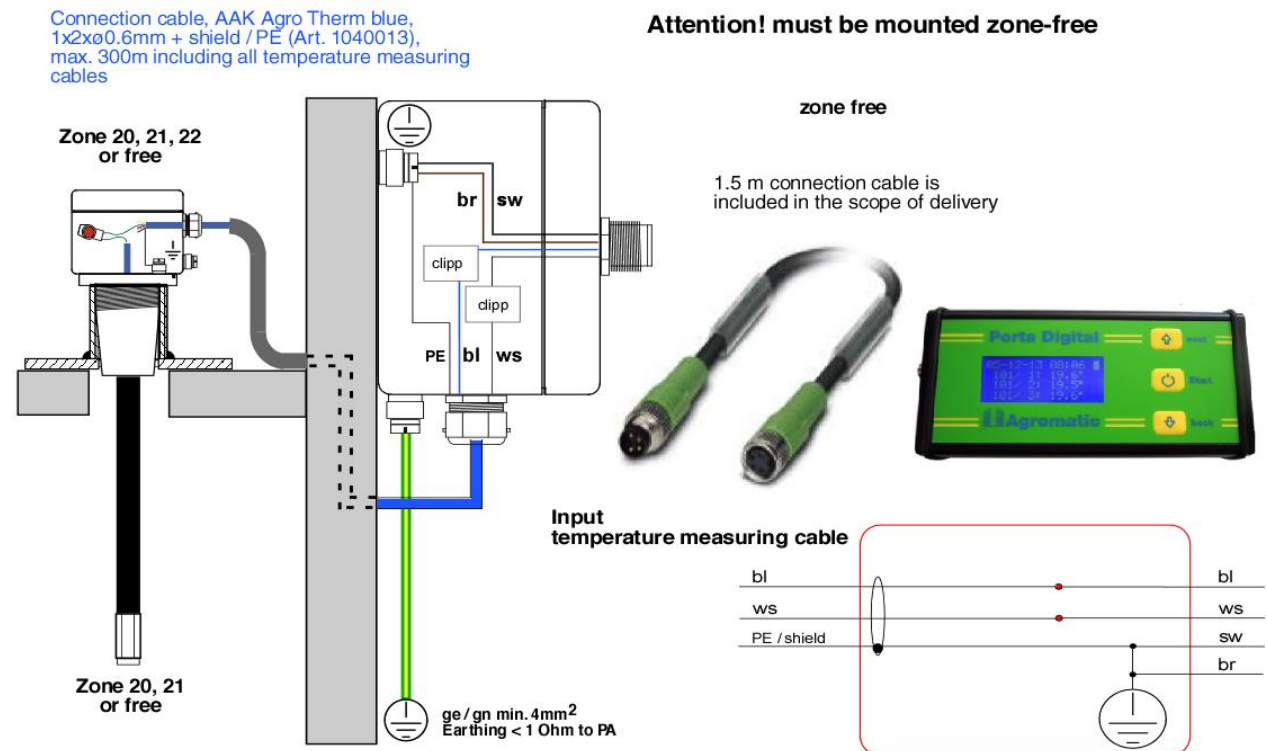
Dimensions: 85 (with gland) x 64 x 60mm (with cap)

Consisting of:

Metal wall housing IP65 with integrated M12 socket with protection cap, screwing and integrated connection terminal

Connection cable with M12 plug on M8 plug length 1.5m, Art.-No. 1040033

Mounting manual:



#### **Attention:**

Cables must be laid firmly and sufficiently protected.  
The socket outlet may only be mounted without zones.





## 4. Agromatic Data Viewer ADV-2 (PC-Software)

### Art.-No. 1020005

For memorizing / deleting and printing of measuring values, (enlarges clarity of Porta Digital) as well as automatic setting of clock, the Agromatic Data Viewer ADV-2 is needed.

We strongly recommend to order the PC-program Agromatic Data Viewer ADV-2 of Agromatic AG by E-Mail ( [info@agromatic.com](mailto:info@agromatic.com) ).

The Data Viewer automatically reads the values from the Porta Digital, time and alarms are synchronized.

The Data Viewer offers an easy analysis of the measured temperature values and their printout.

**Attention:** The Porta Digital may only be connected to a PC if no sensors are connected which are in an ex zone.

### 4.1. Installation

#### System requirements

Windows 7, 8 or XP (32- or 64 Bit)

The „Microsoft .Net Framework 4 Client Profile“ must be installed.

USB 2.0 connection

#### First installation

##### USB-Driver

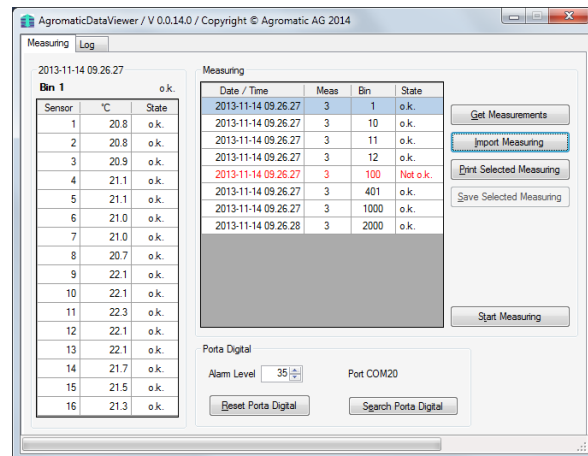
**Important: DO NOT CONNECT** the Porta Digital to the PC.

Install the file „CDM v2.08.30 WHQL Certified.exe“

(<http://www.ftdichip.com/Drivers/VCP.htm>) by double click.

##### ADV-2

1. Install the file „SetupAdv-2.msi“ on the PC by double click
2. Connect Porta Digital with PC via USB cable
3. Wait for approx. 10 seconds
4. Start ADV-2 from the harddisc by double click
5. Porta Digital will search



## Updates of ADV-2

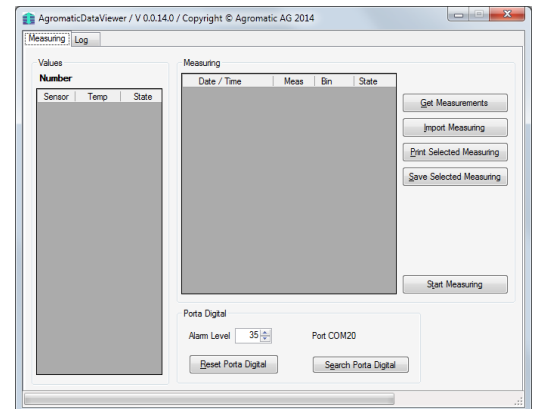
Install the file „SetupAdv-2.msi“ on PC by doubleclick. If installation is denied deinstall the latest version of ADV-2 via system control.

## Starting the ADV-2 Software

ADV-2 is started by doubleclick like usual.  
Multistart is impossible.

## Frame „Measuring“

After the start the ADV-2 shows the main frame showing the version number and the alarm value detected by the Porta Digital as well as the actual COM-Port.



## Get Measurements

After clicking „Get Measurements“ the ADV-2 reads all values. This may take some time.

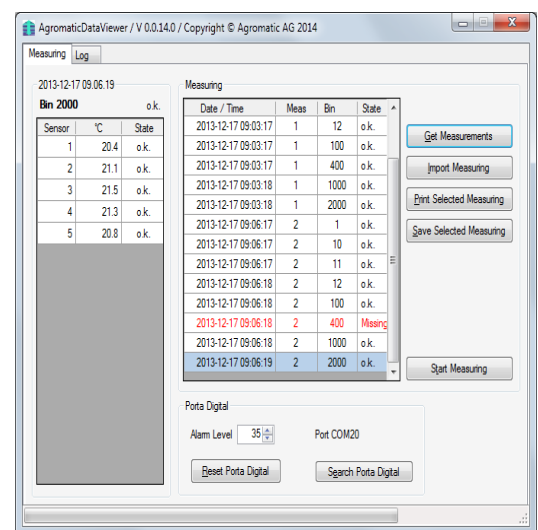
Then the measurements are displayed (right data chart).

After that the last measurement is selected and displayed in the left data chart. By clicking in the right data range the values of different measurements will be displayed.

In the column „State“ additional items are shown  
o.k. = i.O.

Alarm = at least one sensor has exceeded the alarm<sup>1</sup>

Missing = at least one sensor is missing<sup>2</sup>



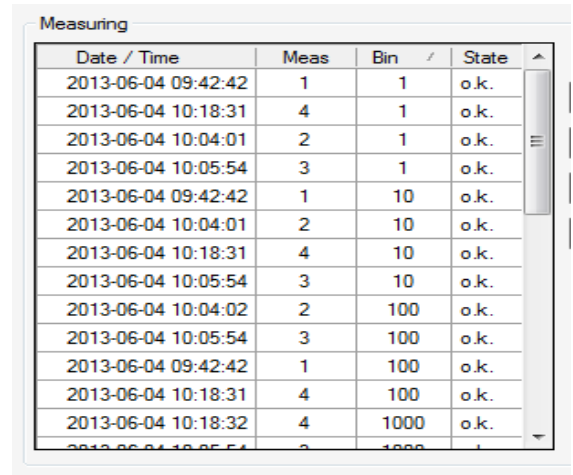
<sup>1</sup> conversion errors of the sensors are shows as 999.9°

<sup>2</sup> missing sensors can only be recognized if at least one other sensor with a higher sensor number is active

### Sorting Measurements

By clicking on the headline of a data chart the measurements can be sorted. In the example right is sorting acc. to binnumbers<sup>3</sup> (pay attention to the small triangle next to the

<sup>3</sup> the sorting is not numerical but in net-standard.

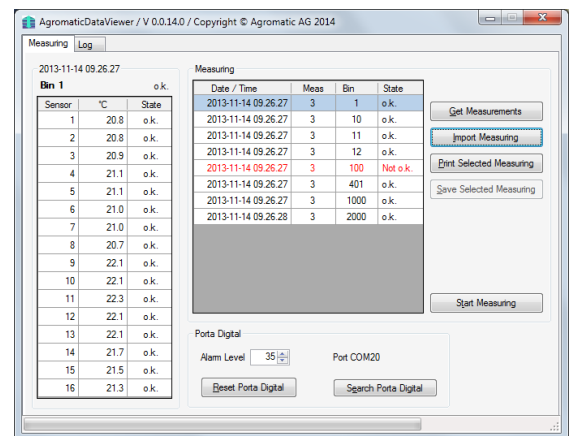
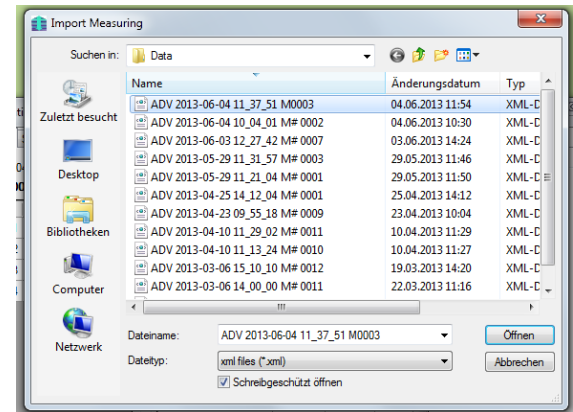


Date / Time	Meas	Bin	State
2013-06-04 09:42:42	1	1	o.k.
2013-06-04 10:18:31	4	1	o.k.
2013-06-04 10:04:01	2	1	o.k.
2013-06-04 10:05:54	3	1	o.k.
2013-06-04 09:42:42	1	10	o.k.
2013-06-04 10:04:01	2	10	o.k.
2013-06-04 10:18:31	4	10	o.k.
2013-06-04 10:05:54	3	10	o.k.
2013-06-04 10:04:02	2	100	o.k.
2013-06-04 10:05:54	3	100	o.k.
2013-06-04 09:42:42	1	100	o.k.
2013-06-04 10:18:31	4	100	o.k.
2013-06-04 10:18:32	4	1000	o.k.

### Import Measuring (look at memorized values)

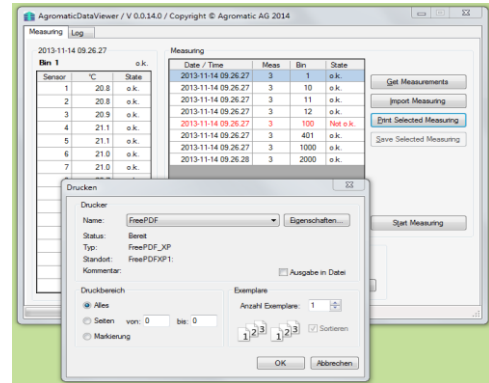
with „Import Measuring“ the memorized measurement is displayed in the original form.

„Import Measuring“ can also be made without connected Porta Digital.



## Print Selected Measuring

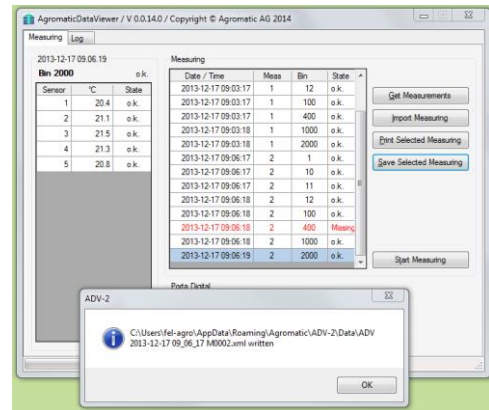
Printer can be selected.



## Save Selected Measuring (Excel – Format)

With „Save Selected Measuring“the data of the selected measuring are memorized in a XML formate. This file can be imported in the ADV-2 or displayed with Excel 2010 (or higher)<sup>1</sup>. The data name consists of:

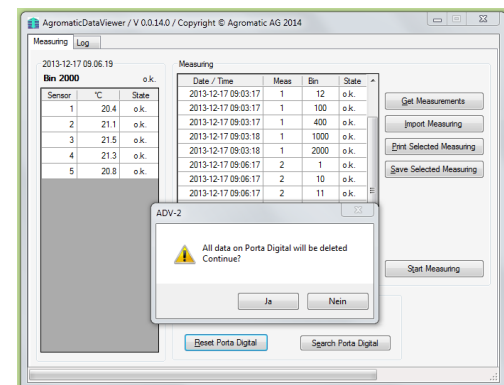
<sup>1</sup> the import in LibreOffice or OpenOffice is not possible



Titel	„ADV-2 “
Date and time of measurement	„2013-06-04 10_05_54 “
Measuringnumber	„M0003“
File type	„.xml“

## Reset Porta

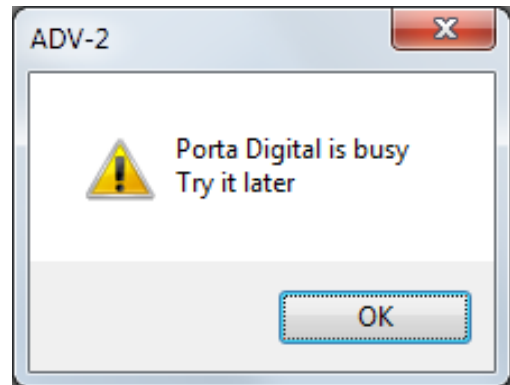
“Reset Porta” on demand deletes all measurements in Porta Digital and sets new alarm value.



## Start Measuring

Attention: **only allowed for connected zonefree silos!**

Starts a measurement on the Porta Digital. During measurement unit cannot accept further commands. If commands are transmitted by the ADV-2 the following message appears: (see picture)

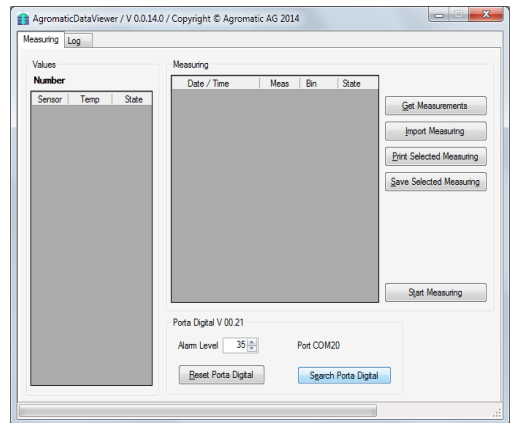


## Search Porta Digital

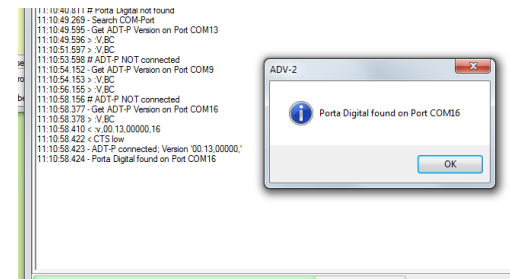
After activating "Search Porta Digital" unit starts searching port for the Porta Digital. This operation may be time consuming. During searching the log frame is displayed.

**(Porta Digital must be switched on)**

The ADV-2 searches for the matching COM-Port, addressing every COM-port available.

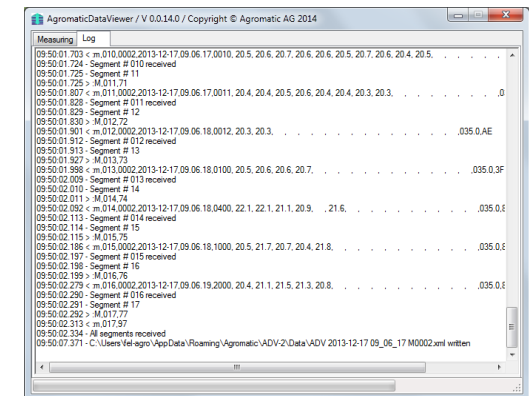


The COM-port connected to the Porta Digital will answer the request. This port identification will be stored in the file „ADV-2.settings“ when finishing the ADV-2.



## Window „Log“ (Logbuch)

In the Log-Window the data traffic between ADV-2 and Porta Digital is registered. When closing the ADV-2 the log entries are stored in the file „ADV-2.log“ (index „\Data“). The file is transcribed with every closing of the ADV-2.








## 5. Technical Data

Construction housing	Aluminium, powder-coated black
Dimensions	l x h x w = 171 x 35 x 87mm
Weight	390g
Protection class	IP 52
Permission	partial certification acc. to ATEX EN 60079-0 and EN 60079-31
Load voltage	Temperature monitoring cables in dust– Ex zone 20 max. 8.9 VDC / 0.13A / 0.24 W
Surrounding temperature	-20 to +50 °C
Storage temperature	-20 to +50 °C / max. 6 month
Air humidity	max. 95 % not condensating
Pressure	0.8 to 1.1 bar
Connections	Mini – USB M8 4-Pol socket
Temperature sensor	semiconductor 1-wire/
Amount of sensors	max. 64 at max. 300m wire in total
Int. storage	300 bins with max. 16 sensors
Measuring range	-20 °C to +55 °C
Supply	LiPo 3,7V, 1500 mAh
Charging time	7 h
Discharging time	approx. 5 h for non-stop operation
Embedded clock	date, time
Limit	adjustable via ADV-2
Operation	foil keyboard with 3 keys

All information in this list correspond to the date of issue of this manual.  
Technical improvements and alterations are term of usual reserve.

## 6. Name plate / Label

 <b>Agromatic AG</b>    CH-8637 Laupen/ZH	
Porta Digital art 1020004 SN 0614.2001	 II (1) D [Ex taD] IIIC
<b>XX-XXXXX</b> used and connected only zonefree! see manual	Supply: LiPo 3.7V DC max Out: 8.9V DC / 0.13A 0,24W T ambient: -20....+50°C

## 7. Declaration of conformity

For **ATEX /** 

Designation / Name      Temperature Monitoring Unit  
 Origin                      Agromatic AG, Goldingerstrasse 30, CH-8637 Laupen Switzerland  
 Types                        Porta Digital Art.-No. 1020004  
 Lot size                      Serial production  
 Numbers                     All numbers

We herewith declare in sole responsibility that the product referred to in this declaration corresponds to the following guidelines.

Acc. to regulations of guidelines:      LVD 2006/95/EG:2007, EMV 2004/108/EG:2007, ATEX 94/9/EG, ATEX2014/34/EU

Applied norms:                              EN61010-1: 2010  
    EN60529: 2010  
    EN61326: 2006  
    EN 60079-0:2012 + A11:2013  
    EN60079-11:2012  
    EN60079-31: 2014

Laupen, 19.11.2014

T.Diener   
**Agromatic AG**

## 8. Revision history

Document name:      E BAA Porta Digital V2.doc(x)

Version	Date	Sites	Visum	Modified
2.0	27.06.2017	All	MR	complete redesign