Version 2.0

Built on February 11, 2014

® recordum Messtechnik GmbH
Triesterstrasse 14 / Haus 1, Top 403, 2351 Wiener Neudorf, Austria
www.recordum.com

Contents

List of Figures **7**

1. Introduction **1-1**
1.1. General 1-1
1.2. Concept of the airQlog 1-1
1.2.1. Technical description 1-1
1.2.1.1. Software 1-1
1.2.1.2. Hardware 1-2
1.2.2. Packing 1-2

2. SAFETY MESSAGES **2-1**

3. How to use this manual **3-1**

4. Specifications **4-1**
4.1. General specifications 4-1
4.2. Hardware 4-1
4.3. Software 4-3
4.3.1. Already implemented protocols: 4-3
4.4. Warranty 4-3
4.4.1. Coverage 4-3
4.4.2. Equipment not manufactured by recordum® 4-4
4.4.3. Legal Note 4-4
4.5. CE Declaration of Compliance 4-5

5. Getting Started **5-1**
5.1. First Steps: Unpacking your new airQlog® 5-1
5.2. Connection possibilities 5-2
5.2.1. Firewall settings 5-3
5.2.2. Direct connection with cross patch cable 5-3
5.2.3. Connect with GPRS/3G modem 5-3
5.2.4. SIM Card 5-4
5.2.5. Connect with local network 5-4
5.2.6. Connect with ADSL or SDSL modem 5-5
5.2.7. Connect with a cable modem 5-6
5.3. Connect devices to airQlog® 5-6
5.3.1. Connect external devices using analog ports 5-6

5.3.2. Connect devices using serial ports 5-8
5.4. Initial start-up of airQlog® 5-9
5.4.1. Checklist for starting airQlog® 5-9
5.4.1.1. Default Login 5-9
5.4.2. States of the LEDs 5-9
5.4.3. Connect your PC to airQlog® 5-10
5.4.4. Required network settings on your PC 5-11
5.4.5. Required browser settings 5-12

6. User Interface **6-1**
6.1. General 6-1
6.1.1. Login 6-1
6.1.2. Supported Web Browsers 6-1
6.1.3. Architecture of airQlog®'s 6-2
6.1.4. Navigation Within Each Individual Module 6-3
6.2. Graph 6-4
6.2.1. Menu Tree 6-4
6.2.1.1. Selecting a User Defined Design 6-4
6.2.1.2. Selecting a Measurement Signal 6-5
6.2.2. Main Window 6-5
6.2.2.1. Select the Type of Graph 6-5
6.2.2.2. XY-Graph 6-5
6.2.2.3. Windrose Graph 6-7
6.2.2.4. Radar Graph 6-8
6.2.2.5. Comparison: Wind Rose - Radar Graph 6-10
6.3. Download 6-12
6.3.1. Step 1: Select parameters 6-12
6.3.2. Step 2: Configure export settings 6-13
6.3.3. Step 3: Download the data 6-16
6.4. Stationbook 6-17
6.5. Overview 6-18
6.5.1. Sensors Overview 6-18
6.5.2. Commands 6-19
6.6. Calibration 6-20
6.6.1. General 6-20
6.6.2. Claibration Check 6-20
6.7. Setup 6-22
6.7.1. Rules and Actions 6-22
6.7.1.1. Quick Setup 6-22
6.7.1.2. Actions 6-23
6.7.1.3. Rules 6-26
6.7.1.4. Defaults 6-31
6.7.2. System Info 6-32
6.7.2.1. General 6-32

6.7.2.2. Service Interface 6-36
6.7.2.2.1. LinSens Service Interface 6-36
6.7.2.2.2. LinLog Service Interface 6-45
6.7.2.3. Status History 6-47
6.7.2.4. Log Files 6-50
6.7.3. System Maintenance 6-51
6.7.3.1. Service Manager 6-51
6.7.3.2. Command Interface 6-52
6.7.3.3. Software Update 6-55
6.7.3.4. Backup 6-56
6.7.4. Extras 6-57
6.7.4.1. Campaigns 6-57
6.7.5. Configuration 6-58
6.7.5.1. Calibration Parameters 6-59
6.7.5.2. Interface Configuration 6-60
6.7.5.3. System Parameters 6-61
6.7.5.4. Customer/Station 6-63
6.7.5.5. Synchronization 6-64
6.7.5.5.1. Manually remove parameters from user interface . 6-64
6.7.6. LinLog 6-65
6.7.6.1. Configuration 6-65
6.7.7. LinOut 6-79
6.7.7.1. Configuration 6-79
6.7.8. Communication 6-81
6.7.8.1. Nameserver 6-81
6.7.8.2. Network 6-82
6.7.8.3. DynDNS 6-83
6.7.8.4. GPRS 6-85
6.7.8.5. Test Connectivity 6-88
6.7.9. User Interface 6-92
6.7.9.1. Groups 6-92
6.7.9.1.1. New Group 6-92
6.7.9.1.2. Modify Group 6-93
6.7.9.2. Users 6-93
6.7.9.2.1. New User 6-94
6.7.9.2.2. Modify User 6-94
6.7.9.3. Personal Settings 6-95

A. Software Protocols **A-1**

A.1. AK Protocol A-1
A.2. German Ambient Network Protocol A-5
A.3. modbus A-9

B. Http - Download Interface **B-1**

B.1. Available pages B-1

B.2. Available parameters B-1
B.2.1. Example: B-1
B.2.2. Authentication - Parameters for info.php and start.php B-1
B.2.3. GET - Parameters for start.php B-2
B.2.4. Url for the example B-2

Index **B-4**

List of Figures

5.1. airQlog 5-1
5.2. airQlog with removed top cover 5-2
5.3. GPRS/3G Connection 5-4
5.4. LAN Connection 5-5
5.5. xDSL Connection 5-5
5.6. Cable Modem Connection 5-6
5.7. Terminal Board 5-7
5.8. Wiring schema the terminal board 5-7
5.9. direct connection with the cross patch cable 5-10
5.10. Crossover Patch Cable 5-11
5.11. Correct TCP/IP properties 5-12
5.12. Login Screen of airQlog 5-13

6.1. Example of an XY Graph 6-6
6.2. Example of a Wind Rose Graph 6-7
6.3. Example for a Radar Graph 6-8
6.4. Comparison: Wind rose - Radar Graph 6-10
6.5. Download Screen with dummy data 6-13
6.6. Step 2 of download procedure 6-16
6.7. File was successfully generated for download 6-16
6.8. The Stationbook Module 6-17
6.9. sensors Overview 6-18
6.10. Overview Commands 6-19
6.11. Valve control 6-21
6.12. Define an eigenmeldung-Action 6-24
6.13. Define an E-mail-Action 6-25
6.14. Viewing General Settings 6-32
6.15. Viewing General Settings (continued) 6-35
6.16. Invoking the Service Interface 6-36
6.17. View of the LinSens Service Interface 6-36
6.18. Actual Values Page 6-37
6.19. Actual System Values 6-39
6.20. Status System 6-41
6.21. An excerpt from the Status List Page 6-42
6.22. Software System 6-43
6.23. Hardware 6-44
6.24. View of the LinLog Service Interface 6-45
6.25. Software Parameters 6-46

6.26. Choose a COM port 6-46
6.27. Communication 6-47
6.28. Status History 6-47
6.29. Status History 6-49
6.30. The Log Files Viewer 6-50
6.31. Service maintenance 6-51
6.32. Direct Command Interface of LinLog/LinSens 6-53
6.33. Automatic Software Update 6-55
6.34. Backup Configuration 6-56
6.35. Campaign Chart 6-57
6.36. Campaign List 6-57
6.37. Overview of the Aux Configuration 6-59
6.38. Overview of Interface Configuration 6-60
6.39. Configuration of the System Parameters: Main Configuration 6-61
6.40. Configuration of the System Parameters: Averages and air condition 6-62
6.41. Configuration of the System Parameters: Aux Configuration 6-62
6.42. Overview of the Customer/Station Interface 6-63
6.43. Synchronization Interface 6-64
6.44. Already connected devices (example) 6-65
6.45. Add new device 6-66
6.46. Select the communication port: Step1 6-67
6.47. Select the communication port: Step2 6-68
6.48. Select the communication port: Step3 6-68
6.49. select the IP address of your device and your analyzer 6-69
6.50. Select calibration timing: Step1 6-70
6.51. Select calibration timings: Step2 6-71
6.52. Choose Parameters: Step1 6-72
6.53. Choose Parameters: Step2 6-73
6.54. Behavior at zero 6-74
6.55. Calculations: Step1 6-75
6.56. Calculations: Step2 6-75
6.57. Calculations: Step 3 - Step 5 6-76
6.58. Group: Step1 6-77
6.59. Group: Step2 6-78
6.60. LinOut Values 6-79
6.61. LinOut Edit 6-80
6.62. Configuring Nameserver Settings 6-81
6.63. Further Configuring DNS Settings 6-82
6.64. Configuring Network Settings and IP Address 6-83
6.65. DynDns Daemon 6-83
6.66. Further details DynDns Daemon 6-84
6.67. Basic GPRS settings 6-85
6.68. Advanced GPRS settings 6-86
6.69. Test Connectivity 6-88
6.70. Add New Group 6-92
6.71. Modify Group 6-93

6.72. Add New User 6-93
6.73. Modify User 6-94
6.74. Edit Personal Settings 6-95

A.1. COM Port For Communication via AK and German Ambient Network Protocol A-1

1. Introduction

Thank you for choosing airQlog®. With this logger you will be able to collect data from various air quality measurement devices.

1.1. General

1.2. Concept of the airQlog

The recordum® airQlog® gathers data from various air quality instruments in a state of the art, internet based system. The key feature of the airQlog® is its easy use and in the same time reliable operation due to its powerful base. The easy use is given because of its full web oriented operation. An operator only needs the web browser of his computer, with an internet connection established. The powerful base is given by a Linux based, embedded PC running a standard SQL database system. This concept allows a high flexibility in ways of communication depending on the needs of customers around the world.

1.2.1. Technical description

1.2.1.1. Software

The software concept has the standard SQL database (postgresql) as center. All data and also the configuration settings are stored in that database. Storing information by this way gives most flexibility and a well defined internal software interface. The user interface, a php application on an Apache web server, gives the user access to the stored data and allows all configuration and maintenance necessary in a measuring station. A software called LinLog collects the data of connected instruments, calculates average values and stores those data in the database. Because more or less all ambient air analyzers have a RS232 port this interface is the standard connection. Additionally the analog inputs or the Ethernet connection can be used. To communicate with an analyzer either the analyzer has a standard protocol (Bayern/Hessen or AK) implemented or the protocol has to be implemented into the weblogger. A software program called watchdog ensures proper execution of all programs and keeps internet connection alive.

1.2.1.2. Hardware

The embedded PC is version of a Pentium 500MHz, 512 RAM with two Ethernet controllers, two serial ports and two USB connectors available. Add-on PC104 Boards expand the number of serial ports to ten (optional +4). The 2,5" 80GByte hard disk drive allows to keep all data of at least ten years. Six analog inputs and two relay contacts are available on an AD board, if more analog inputs are required more boards can be build in as an option. The power supply is designed that also meteorological sensors of the airpointer® can be connected directly to the weblogger. The so called watchdog board makes sure that the system resets itself in case of a system hang-up. Whereas a common GPRS/3G modem can be build in as an option, all other modems are connected as "stand on side" units. The airQlog® is easy to open for user access.

1.2.2. Packing

The housing is a 19" rack version, with height of approx. 9 mm and approx. 20 mm deep. It can be used as table top without brackets or with brackets mounted into a standard rack. All connectors are on one side. I.e. it can be either positioned with easy-to-access-cables or a smooth clean front cover. The customer can choose on which side the brackets are mounted, the connectors are then either on the front or on the back side of the logger.

2. SAFETY MESSAGES

Your safety and the safety of others is very important. We have provided many important safety messages in this manual. Please read these messages carefully. A safety message alerts you to potential hazards that could hurt you or others. Each safety message is associated with a safety alert symbol. These symbols are found in the manual and inside the instrument. The definition of each symbol is described below:

	GENERAL SAFETY HAZARD: Refer to the instructions for details on the specific hazard.
	CAUTION: Electrical shock hazard.
	ATTENTION: Sharp surface.
	CAUTION: Hot Surface Warning.

3. How to use this manual

In the context of some instructions relating to the operation of software a special syntax may be found: The meaning of the arrow ($\twoheadrightarrow$) is: Press the button or select the menu or folder given to the left side of the arrow and follow the respective action to the right side next.
The first step after receiving the airQlog® should be to read the Chapter 'Getting Started' starting on page 5-1. This section describes in detail which steps have to be taken in order to prepare the airQlog® for measurement and data acquisition. This sequence involves a direct connection of a computer to the airQlog® data processing unit. For a proper setup, please follow the instructions found in this chapter in exactly the order they are given there.

NOTE
Please change the default administrator password for the User Interface provided with your airQlog® (see section 6.7.9.3).

You will be asked to change the default administrator password for the User Interface provided with your airQlog® . This software provides an interface to handle data queries, visualization of data and calculation from parameters collected by the airQlog®.
For normal operation you can decide for one of several ways to communicate with the airQlog®. Please see Chapter 'Connecting the airQlog® ' starting on page 5-2 for details on how to do this.
In any case you should try to get familiar with the settings and the use of the User Interface.
After reading these chapters, you should be well prepared for handling more demanding actions via the User Interface. For this purpose, carefully read Chapter 'User Interface' starting on page 6-1.
In the following, a brief description of all sections in this manual is given.

Table of Contents Outlines the contents of the manual in the order the information is presented. This is a good overview of the topics covered in the manual. There is also a list of figures.

Specifications Section This section deals with the specification of the airQlog® and with the warranty conditions. Here you can also find all certifications and declarations.

Getting Started Section This section gives an insight in the business one has to do after receiving the airQlog®. It also explains the installation steps.

Connecting the airQlog® This section gives an overview of possible ways to connect the airQlog® with a computer.

User Interface This section explains the handling of the airQlog® and the data acquisition and graphical displays via the User Interface. Here yo can adjust an external analyzer to the airQlog® and select which parameters should be stored. Also some calculations can be carried out.

Software Protocols Outlines the protocols, which allow the user to query the present value of any system and predetermined system variables without use of the User Interface.

Download Interface Additional to the User Interface there is the possibility for programmed request cycles. Here the protocol for programmed request cycles from your workstation is described.

Index Most of the characteristic names found in the manual are listed here. The information given with these expressions can be looked up using the page number reference.

4. Specifications

4.1. General specifications

Dimensions	19" rack 3HE
Height	10 cm
Depth	20 cm
Weight	2,8kg basic version
Operating Temperature Range	5 to +40°C (internal temperature sensor) (-40 to 5°C the airQlog® is on stand by with PC and harddisk switched off to protect the harddisk)
Power Supply	60W, 85-264VAC, 1Amax. 47-63Hz

4.2. Hardware

The embedded PC is currently[1] equipped with a AMD Geode 500MHz, 512MB RAM with two Ethernet controllers, two serial and two USB ports. Add-on PC104 Boards expand the number of serial ports to ten. The 2,5" 320GByte hard disk drive allows to keep data of at least 10 years. Six analog inputs and two relay contacts are available on an AD board. If more analog inputs are required, more boards can be build in as an option. The power supply is designed that meteorological sensors of the airpointer® can be connected directly to the airQlog® . The board also works as a watchdog that makes sure that the system is rebooted by itself in case of system freeze. A most common GPRS modem can be build in as an option, all other modems are connected as "stand on side" units.
The airQlog® hardware specifications at a glance:

- CPU: AMD Geode® 500MHz
- RAM: 512MB
- Harddisk: 320GB, 2.5”
- 10 serial ports
- 2 Ethernet controller

[1] Hardware version from January 2014

- watchdog board: Restarts the system in case of a system freeze
- Analog interfaces: Integrated on watchdog board
- power supply for meteorological device directly on serial port
- optional: Integrated GPRS modem

4.3. Software

4.3.1. Already implemented protocols:

Already implemented protocols are e.g.:

- AK (used in R& P instrumentations)
- C-Link (used in Thermo Instruments)
- Bayern/Hessen protocol (used in API, Horiba, R& P, ML)
- API protocol
- Gill wind sonic protocol
- Mierij Meteo protocol
- Vaisala

NOTE
If you need another protocol please ask your distributor for availability.

4.4. Warranty

Prior to shipment, the equipment is thoroughly inspected and tested. Should functional failure occur, we assure our customers that prompt service and support will be available. All equipment originally manufactured by recordum® Messtechnik GmbH found to be defective will be repaired or replaced subject to the following considerations.

4.4.1. Coverage

All equipment is warranted for 12 months, consumables not included. Any warranty is limited to 12 months. Warranty is limited to equipment and does not cover losses such as data loss or its effects.
Warranty is to be understood as the substitution or repair at recordum® Messtechnik GmbH's or its distributors discretion without charge, including the cost of labor, of the component parts of the equipment recognized as defective at source owing to flaws in their manufacture.
All units or components should be properly packed for handling and returned freight prepaid to the distributor they were purchased from. After repair, the equipment will be returned, freight prepaid.

Our warranty commences with shipment of the equipment. After expiry of warranty period and throughout the equipment's life time, recordum® Messtechnik GmbH or its distributors readily provide on site service at reasonable prices similar to those of other manufacturers in the industry.

4.4.2. Equipment not manufactured by recordum® Messtechnik GmbH

Equipment provided but not manufactured, though normally offered by recordum® Messtechnik GmbH, is warranted and will be repaired to the extent and according to the current terms and conditions of the respective equipment manufacturer's warranty.

4.4.3. LEGAL NOTE

NOTE THAT recordum® Messtechnik GmbH, ITS DEALERS, DISTRIBUTORS, SUB-CONTRACTORS, AGENTS OR EMPLOYEES SHALL NOT IN ANY EVENT BE LIABLE FOR ANY DAMAGES INCLUDING SPECIAL, DIRECT, INDIRECT, INCIDENTAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES, EXPENSES, LOST PROFITS, LOST SAVINGS OR ANY OTHER DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE INSTRUMENT OR THE DOCUMENTATION.
All rights reserved. No part of this publication may be recorded, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of recordum® Messtechnik GmbH.
Windows®, Windows XP® and Microsoft® are trademarks of Microsoft, Corp. The recordum and airQlog logos are trademarks. The names recordum and airQlog are registered trademarks of recordum Messtechnik GmbH. All other names mentioned may be trademarks or registered trademarks of their respective owners.
Subject to change without notice. No liability for technical errors or omissions.

4.5. CE Declaration of Compliance

recordum Messtechnik GmbH

Declaration of Compliance

Manufacturer:	recordum Messtechnik GmbH Jasomirgottgasse 5 Mödling, 2340 Austria Phone: +43(0)2236/860 562 Fax: +43(0)2236/860 562-61 Email: info@recordum.com

recordum Messtechnik GmbH declares that the product specified herein

Product name:	airQlog
Description:	Data logger system
Date of marking:	30th of June 2006
in accordance with the directives	73/23/EEC (LVD) 89/336/EEC (EMC)

is in compliance with the following:

Product Safety Standards:

EN61010-1:2001 + Corrigendum:2002-08 + Corrigendum:2004-01

EMC Directive:

EN61326:1997 + A1:1998 + A2:2000 + A3:2003

Traugott Kilgus, Managing Director
30th of June 2006, Mödling

5. Getting Started

5.1. First Steps: Unpacking your new airQlog®

Setting-up airQlog®

1. **Unpack the device.**
2. **Verify that all optional hardware ordered with the unit has been installed.**
3. **If there are any damages noticeable, please contact your shipper first and then your distributor.**
4. **Make sure the device is installed in an upright position, see figure 5.1. Note that the logger needs some room above the cover unobstructed, for ventilation.**
5. **Connect the airQlog® to a 85 - 264VAC / 47-63Hz power connection.**
6. **Mount the brackets on either front of the device. Note that you can choose between an easy access to the connecting cables or a smooth front.**

Figure 5.1.: airQlog

Opening the case

1. **In case you need to make custom changes to your airQlog® , you have to open the case.**
2. **Open the case by loosening the six screws on the top.**
3. **Grab the cover on the side and remove it carefully. You might want to consider disconnecting the grounding cable attached to the cover.**
4. **If you remove the top cover, you see the interior of airQlog® as in figure 5.2.**

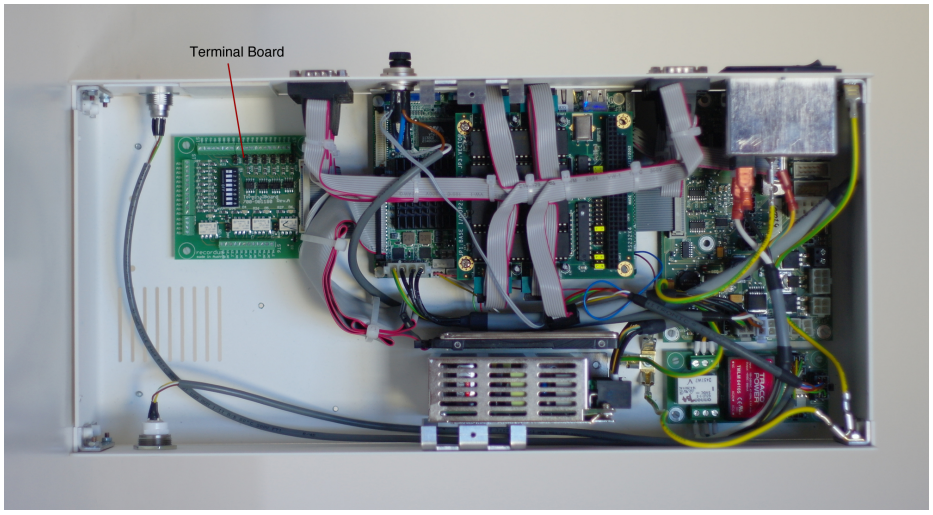


Figure 5.2.: airQlog with removed top cover

5.2. Connection possibilities

You have various options how to connect airQlog® to a local network or the internet. The User Interface of the device is browser-based, therefore you have to be able to connect to it via a network. In general you have three possibilities to establish a connection to your airQlog®:

- directly via cross patch cable (see chapter 5.2.3),
- over a local area network (LAN) (see chapter 5.2.5),
- via internet(see chapter 5.2.6).

To access the device via internet we strongly recommend a permanent connection. This guarantees permanent accessibility to the airQlog®, which a dial-up modem does not.

5.2.1. Firewall settings

For security reasons, a firewall protects the logger when it is connected to a network. The following list shows the ports which may pass and their functions. The open ports are needed to access to User Interface and allow a secure software update. Furthermore two additional ports are required for the LinLog and LinSens service interface. The only exception is the direct connection via cross patch cable, where **every port** is allowed. See table 5.1 for a detailed list which port is allowed.

80	http: User Interface
22	ssh: Online-Updates
3050	LinLog Service Interface
3051	LinSens Service Interface

Table 5.1.: Ports allowed to pass

5.2.2. Direct connection with cross patch cable

The direct connection is the easiest way to connect to your airQlog®. Keep in mind that you need to use this type of connection, if you power-up your airQlog® for the first time and to make the initial settings. How to perform the initial setup, is explained in detail in chapter 5.4. The next two paragraphs will give you a brief tutorial on how to link your PC and your airQlog® for the first time.

- Connect your PC (or notebook) using the supplied Cross Patch Network Cablewith the Ethernet port labeled 'User' on your airQlog®. Then set the network connection of your PC to receiving a dynamic IP-address.

- After you physically connected the devices enter the fixed IP-address:
  http://172.17.2.140 into your web browser. A detailed instruction for any necessary browser settings can be found in Section 5.4 'Initial Start-up'.

5.2.3. Connect with GPRS/3G modem

The option Module GPRS/3G Modemcan be ordered from your distributor. Additionally, you will need a GPRS/3G data access for mobile phones (SIM-card) from your local mobile phone network provider. Connecting to your airQlog® using GPRS/3G is schematically explained in Figure 5.3.
All necessary software configuration settings are described in detail in the manuals section 6.7.8.4 User Interface → Setup → Communication → GPRS/3G Modem.

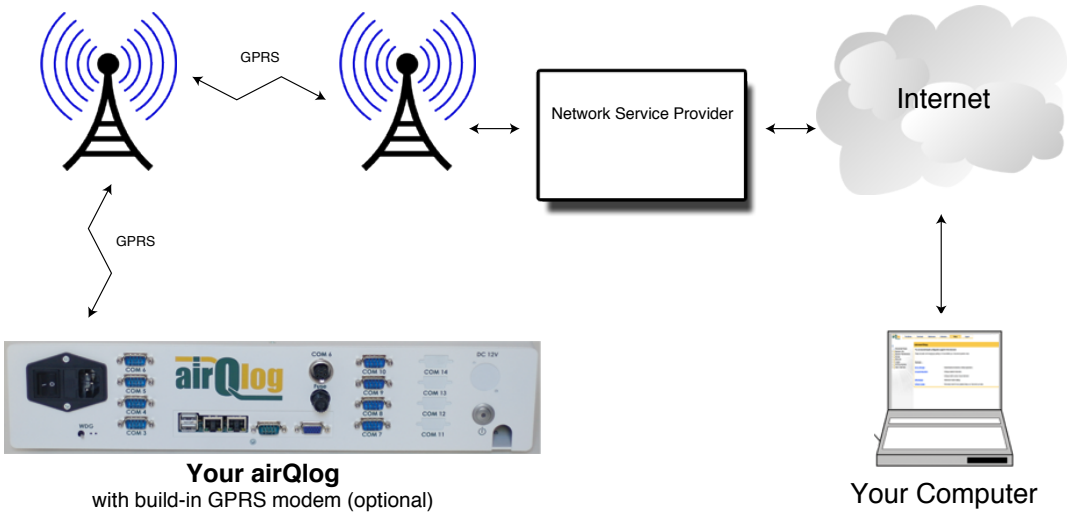


Figure 5.3.: GPRS/3G Connection

5.2.4. SIM Card

Recommended specifications of your SIM card:

- GPRS/3G – SIM Card
- At least 25 MB traffic volume/month
- Server function has to be enabled. I.e. the GPRS/3G end device has to get an public IP-address. This can be a fixed IP address or a dynamic one.
- When you activate the SIM card you have to deactivate the PIN code.

5.2.5. Connect with local network

The airQlog® can be easily included in an already existing local area network (LAN). To do so, connect the RJ-45 interface system of your airQlog® by using a Cat. 5 (or similar) network cable with your local 10Mbit/s or 100Mbit/s network (see Figure 5.4). Of course it is also possible to connect the logger to a wireless network (Wifi, WLAN). You could, for instance, connect airQlog® with a network cable to a wifi-device, which establishes the connection to the rest of the network.

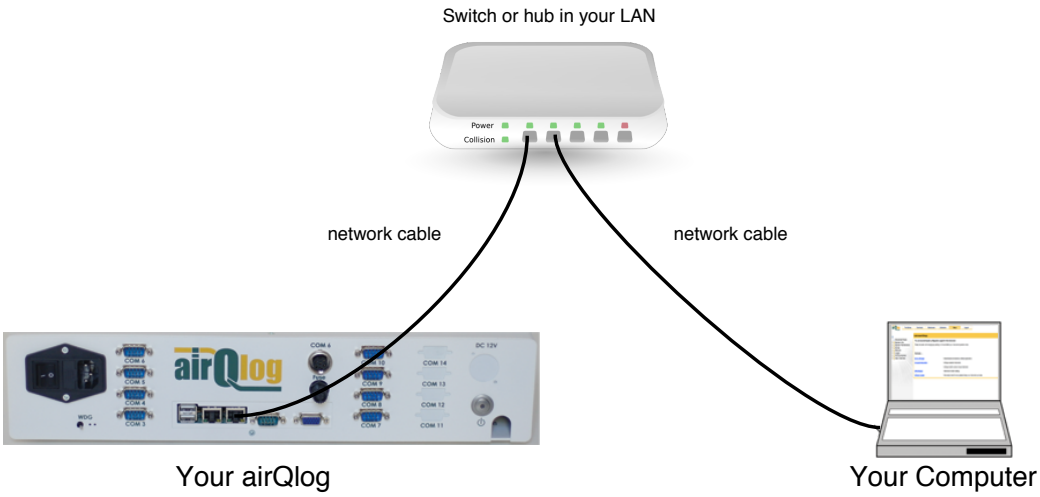


Figure 5.4.: LAN Connection

All the associated configuration settings are made with the User Interface as described in the manual's Section 6.7.8.2 User Interface → Setup → Communication → Network.

5.2.6. Connect with ADSL or SDSL modem

In case a telephone line is available at the installation site of your airQlog®, connecting to the Internet can be done by an ADSL or SDSL modem (see Figure 5.5).

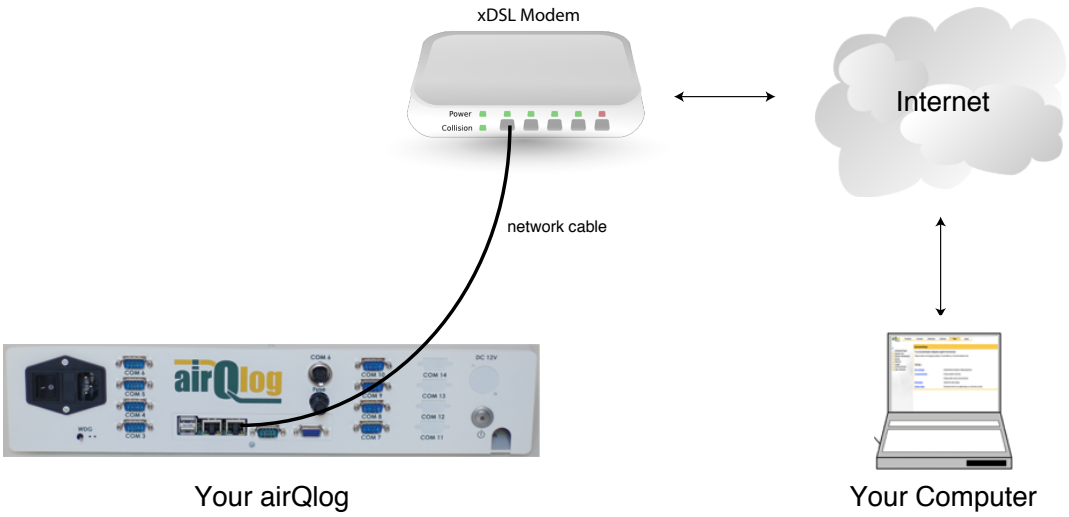


Figure 5.5.: xDSL Connection

Please contact your distributor for further information and availability.

5.2.7. Connect with a cable modem

If a broadband Internet connection via cable is available at the installation site of your airQlog®, the connection with the Internet can take place by means of a cable modem (see Figure 5.6). In this case, connecting the cable modem with the airQlog® is done by Ethernet according to the settings of a local area network.

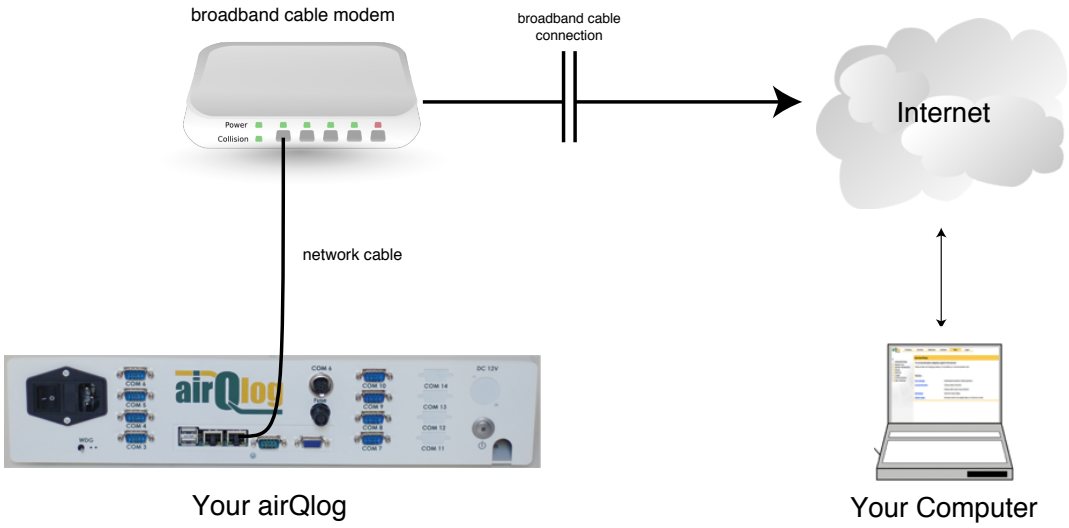


Figure 5.6.: Cable Modem Connection

5.3. Connect devices to airQlog®

5.3.1. Connect external devices using analog ports

Locate the Terminal Board in the airQlog® (see figure 5.2). To connect an external device you need to:

1. Open the case of the device (see chapter5.1).
2. Insert external cables into the cable outlet.
3. Connect incoming analog signals to a free analog port. The ports support an input of either 0-10V or 4-20mA. Per default the input is set to Volt, use the corresponding DIP Switch to select Ampere for a port.
4. To configure a connected device open the User interface and go to Setup → Logger. Section 6.7.6 of this manual refers to the configuration procedure.

Figure 5.7 shows the ports of the terminal board.

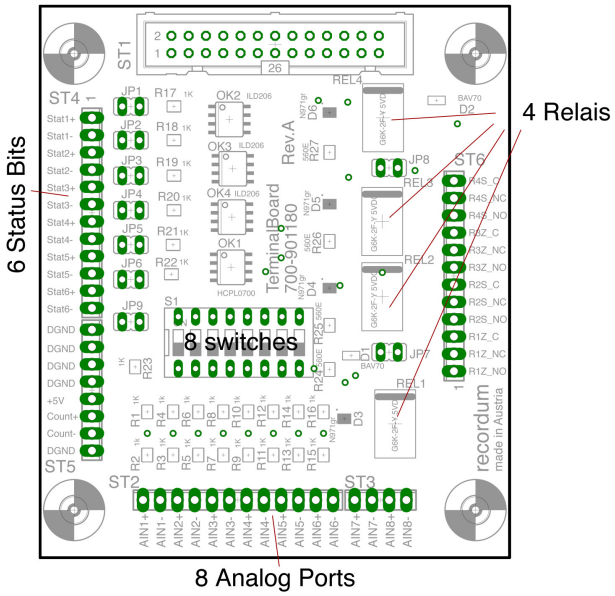


Figure 5.7.: Terminal Board

Figure 5.8 shows the wiring scheme of the board. If you are not sure how to connect an external device, please contact your distributor.

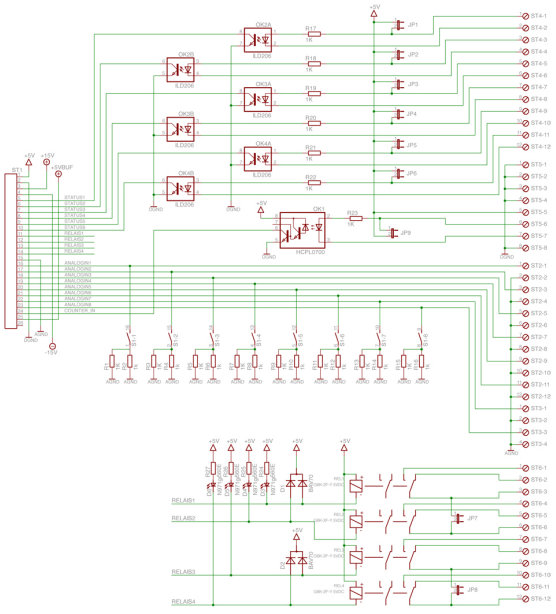


Figure 5.8.: Wiring schema the terminal board

5.3.2. Connect devices using serial ports

Please note that, the airQlog® data-logger has some serial ports preconfigured:

- COM 2 is for internal use only. This is the only COM port which cannot be used for an external device
- The round COM port 6 is prepared for meteorological devices and includes a 12 V power supply (optional: 24 V)
- COM 9 is used for analog input
- COM 10 is used for the modem

Inactive ports are covered up. If you plan on using them, you have to open the case and connect them to the connector board (see Chapter 5.1).

5.4. Initial start-up of airQlog®

5.4.1. Checklist for starting airQlog®

In order to start airQlog® you need to:

1. **Make sure that the device has enough room for ventilation and that electrical grounding is sufficient.**
2. **Connect the power chord to a power plug. The logger requires a 85 - 264AC / 47-63Hz power connection.**
3. **Connect devices as described in Chapter 5.3**
4. **To start airQlog® flip the power switch and press the power button. Note that the device requires a temperature of 5 °C or above to boot.**
5. **Wait for the device to boot up.**
6. **After pressing the power button: Check the status LEDs on the front according to the following chapter.**
7. **To perform the initial setup you need to connect a computer to the device. See chapter 5.4.3**
8. **The default login of the airQlog® can be found in the next subsection**

5.4.1.1. Default Login

The airQlog® is shipped with two predefined user accounts:

1. Default administrator:
   - Username: admin
   - Password: 1AQuality
2. Sample user account:
   - Username: user
   - Password: 1AQuality

5.4.2. States of the LEDs

The two status LEDs next to the **WDG** switch can be in different states:

- **red/green flashes alternately**: the watchdog checks the internal temperature. If one of the two integrated sensors confirms a temperature of 5 °C or above, the system is permitted to start.

- **red blinks** When the system is operation normally, the red LED switches with every trigger impulse on or off.

- **green blinks** The green LED always blinks in normal mode, but the closer the reset is, the faster the LED blinks.

- **green lights continuously** The watch dog time out is longer than 25 minutes, which is the default value. For maintenance purposes, this time can be increased to 8 hours by manually flipping the **WDG** switch.

5.4.3. Connect your PC to airQlog®

In the following section you will learn how to establish the initial connection from your PC to your airQlog®. Please note that, in case you need to change your PCs configuration, this step might require that you have **administrator rights** on your PC.

Figure 5.9.: direct connection with the cross patch cable

As you can see in figure 5.9, you need to connect your PC to the airQlog® with the cross patch cable shipped with the latter. Make sure you plug the cross patch cable to airQlog®'s Ethernet port labeled **'User'**. To successfully establish a connection between your PC and the airQlog®, check the network settings on your PC (see chapter 5.4.4).

NOTE
The cross patch cable delivered with airQlog® is just for a direct connection to a PC. It is not possible to connect the logger to a local area network (LAN) with the cross patch cable.

Figure 5.10.: Crossover Patch Cable

5.4.4. Required network settings on your PC

Please make sure that your PC's network settings are set to obtain a dynamic IP-address from a DHCP server.
The illustrations and descriptions in this chapter refer to Microsoft Windows™ XP.

Set the network connection of your PC to 'obtain an IP address automatically'.

1. **Power up your PC and log into an account with administrator rights.**
2. **Click on 'Start' → 'Control Panel' → 'Network and Sharing Center' → ''Change Adapter Settings'.**
3. **Right-Click on your Local Area-connection and select 'Properties'.**
4. **In the central list, select 'Internet Protocol(TCP/IPv4)' and click on 'Properties'.**
5. **Select 'Obtain an IP address automatically' and 'Obtain DNS server address automatically'.**
6. **Confirm changes by clicking 'OK'.**

Figure 5.11 shows how the properties windows with correct settings.

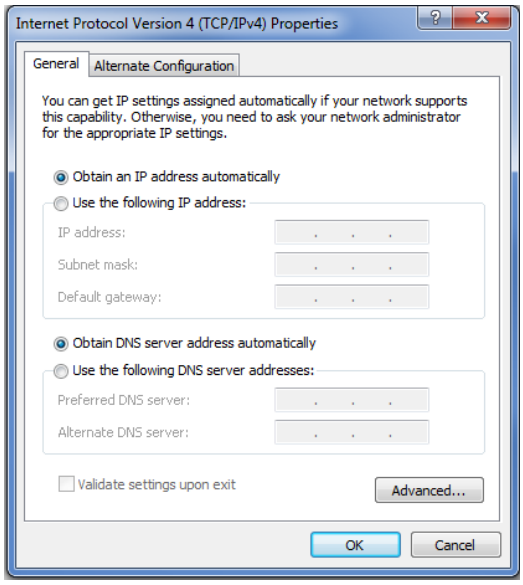


Figure 5.11.: Correct TCP/IP properties

5.4.5. Required browser settings

The administrator-software is browser based. The only requirement to the browser is the support of **JavaScript**, which should be enabled in all modern browsers. We recommend - for the correct display of the Interface - to use Mozilla Firefox (version 11 or above), Internet Explorer version (8 or above) or an equivalent browser. You can find a detailed explanation of the software in chapter 6.

To access the software:

1. **To enter menu of airQlog® type '172.17.2.140' in the browser's address-field. Note that this is the default address of the logger, when it is connected via the cross patch cable.**

2. **If the browser displays the login-screen as in figure 5.12, you have successfully reached your airQlog. You can skip the rest of this chapter and go to chapter 6 to find out how to use the software.**

3. **In case you cannot see the login-screen, try the following:**

   - If your internet connection makes use of a proxy, you should add an exception for the address '172.17.2.140'
   - If your browser does not support JavaScript or has JavaScript disabled, try a different browser or enable JavaScript in your browser's settings.

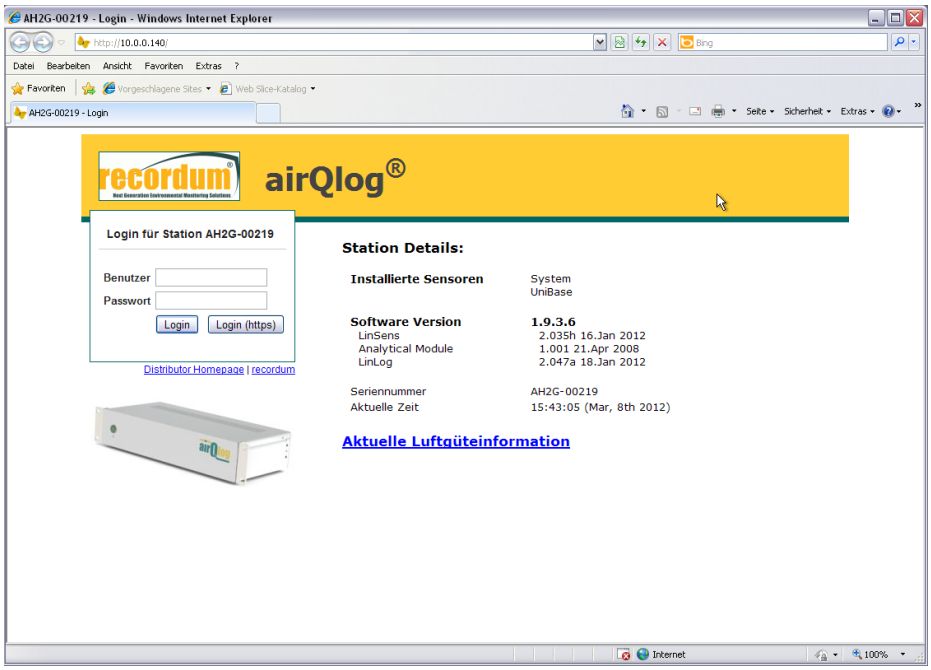


Figure 5.12.: Login Screen of airQlog

6. User Interface

6.1. General

You can configure your airQlog® completely via software. It is accessed by a web browser, where the connection with your airQlog® can be established according to Chapter 5.2.
If you are connecting the first time to your airQlog® please refer to Section 5.4 to make the appropriate settings. The pre-installed password is listed on page 5-9.

NOTE
Some settings are visible with a certain priority, only! The here described interface might only be visible for an Administrator.

6.1.1. Login

For Login to the User Interface of the airQlog® you need a user name and a password. The pre-installed password is listed on page 5-9.
For a successful Login, Java Script has to be activated in your web browser. You will find setup instructions in the Chapter 'Getting Started' in Section 5.4.5.
The password is transferred by your web browser with a random encoding to the airQlog®. This ensures that for each login your password is transferred via Internet as a different string of characters. This string of characters is useless for a third person, who may be reading this by chance as well, because it can be used only once for your very own login.

6.1.2. Supported Web Browsers

The User Interface of airQlog® runs on most modern browsers. We tested the Software on the following. Note that it might be possible to use other browsers like e.g. Opera, though these will not be mentioned in this manual. The most basic requirement a browser should meet is the support of JavaScript. Older versions of the mentioned browsers might might work as well, but these may display the website not 100% correctly.

For Microsoft Windows™

- Internet Explorer (version 8 or above)
- Mozilla Firefox (version 11 or above)
- Google Chrome (version 18)

For Linux

- Mozilla Firefox (version 11 or above)

For Mac OS X™

- Mozilla Firefox (version 11 or above)
- Safari (version 5.1 or above)

6.1.3. Architecture of airQlog®'s

The User Interface of the airQlog® consists of modules which can be selected from a horizontally arranged tab bar.
The following modules are available:

Graph

The module 'Graph' enables the presentation of measurement signals. Single measurement signals of all installed sensors are shown in diagrams as well as designs (compilation of several measurement signals) created by users. You and/or other users can call up these designs in the module 'Graph', depending on the visibility assigned.

Download

In the module Download selected measurement data can be downloaded in chosen time frame. The download configuration can be saved locally.

Stationbook

This module provides a notepad for you. Your notes are visible to all users per default, you can also set single entries to be visible only to yourself.

Overview

This module is designed to give a quick summary of selected parameters. You can see your device's measurement data at a glance. See section 6.10 for details.

Calibration

The module 'Calibration' provides you with the items "'Valve Control"' and "'Calibration"'. With "'Valve Control"' the valves of the internal zero measurement and the internal span control (optional) can be controlled. In the menu "'Calibration"' the setpoints for the calibration can be set and the calibration can be tracked.

Setup

The module ‘Setup’ provides system information, configuration of sensors, system and interfaces of the airQlog®. Furthermore, user management of the User Interface to the airQlog® is available here. I.e. the user’s personal settings to the User Interface can be adjusted according to your wishes. In the subsection ’Rules & Actions’ periodical processes can be defined. In the module ’LinLog’ the software connection to external analyzers is located. You can select which parameter should be stored and make simple calculations. Furthermore, it is possible in the ‘Setup’ module to update the software and to install, uninstall, start and stop services of the server.

Logout

Click this tab to leave the User Interface of airQlog®.

6.1.4. Navigation Within Each Individual Module

Individual modules sometimes contain a menu tree for further navigation. This menu tree can be arranged in several levels. To open or close any subtree of the menu, simply click on the item. The next chapter will give you an explicit walkthrough of the individual modules.

NOTE
Remember that the airQlog® features a very flexible design and can have numerous hardware configurations, the screenshots in this chapter might not be 100% conform with your device. Your software depends on your hardware configuration.

6.2. Graph

The module ‘Graph’ enables the presentation of measurement signals. Single measurement signals of all sensors installed are shown in diagrams as well as designs (compilation of several measurement signals) created by users. You and/or other users can call up these designs in the module ‘Graph’, depending on the visibility assigned.

The functions of the module ‘Graph’ include:

1. Creation and View of Diagrams
2. View of the measurement signals of all installed modules and sensors
3. Trace of a measurement - automatic update of the view is possible
4. View of the airQlog®'s system parameters
5. View of the signals of externally installed sensors
6. Selection of time sequence (Weekly-, Daily-, 3-hour-, 1-hour- and Manual View)
7. Selection of time resolution (different average values)
8. Selection of the diagram (xy-graph, windrose, or radar graph)
9. Default setting of the y-axis, selection between automatic and manual
10. Selection of the picture size
11. Zoom of a part of the picture
12. Reading measurement values from the graph
13. Create tables of values including average values, minimum and maximum value

6.2.1. Menu Tree

To plot any data you have to start with selecting a data source in the menu tree. Clicking an item in the sub-menu will collapse or expand the underlying parameters to select. By selecting a parameter it will show up in the main part of the ‘Graph’ window. You have the choice to either select a pre-configured design or create a new one, both possibilities will be explained in the following paragraphs.

6.2.1.1. Selecting a User Defined Design

Selecting a User Defined Design You will find previously saved designs under ‘My Designs’. If a design is already saved on the system, you can load the designs parameters into the main window, by clicking on it.

6.2.1.2. Selecting a Measurement Signal

Each of the items below ‘My Designs’ stands for a connected and configured measurement device. For the configuration of a connected device, see section 6.7. You can select an item and thereby add it to the plot as parameter. To add multiple parameters tick the corresponding check box in the main view. The airQlog® has some internal parameters, that can be displayed as well. These items can be found under ‘System’.

6.2.2. Main Window

The main view lets you define multiple settings and plot the actual graph. To print a graph you have to start with selecting some data to plot, as explained in the previous section. After you selected a parameter you can define some settings for the graph, e.g. the time period to plot. The following paragraphs describe settings and functions of a plot and how to configure them.

6.2.2.1. Select the Type of Graph

Next to the label ’Graph’ you can select the type of the graph from a dropdown menu. The available types are: XY-Graph, Wind Rose Graph, and Radar Graph. If you choose Wind Rose or Radar Graph a direction value has to be measured and selected as reference value. A direction value could be for example ’wind direction’.

6.2.2.2. XY-Graph

If you choose XY Graph, you can select up to six parameters. These parameters will be plotted versus the time axis. It is possible to configure a second Y axis under **’Advanced’**. Four types of the XY-graph are available: Line, Filled Line (the area below the measurement line is colored in the selected color), Steps, and Bar (in the selected color without border.
The graphs of the measurement values are plotted in order of the values from top to bottom. The graphs which are plotted versus the Y2 axis lie under the graphs versus the Y1 axis. Therefore those measurement values can be hidden. If there is a break in the measurement, no values will be plotted and the graph is interrupted. If this is not desired, you can select ’No Gaps’ on the right side of the graph selection under **’Advanced’**. With this option selected, the measurement values will be connected. If you do not want to show all parameters at once, deselect their graphs in the ’Advanced’ tab.

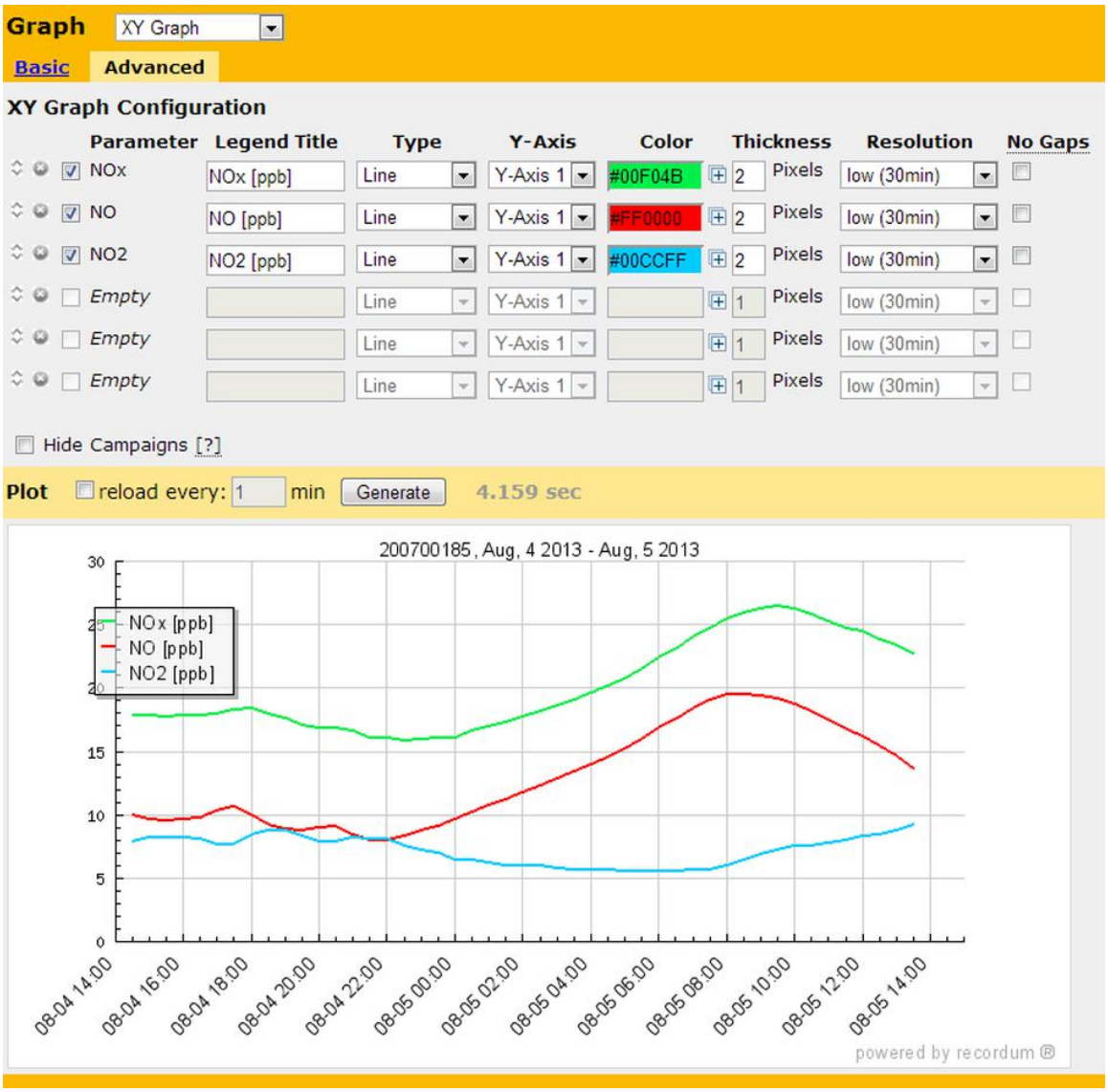


Figure 6.1.: Example of an XY Graph

6.2.2.3. Windrose Graph

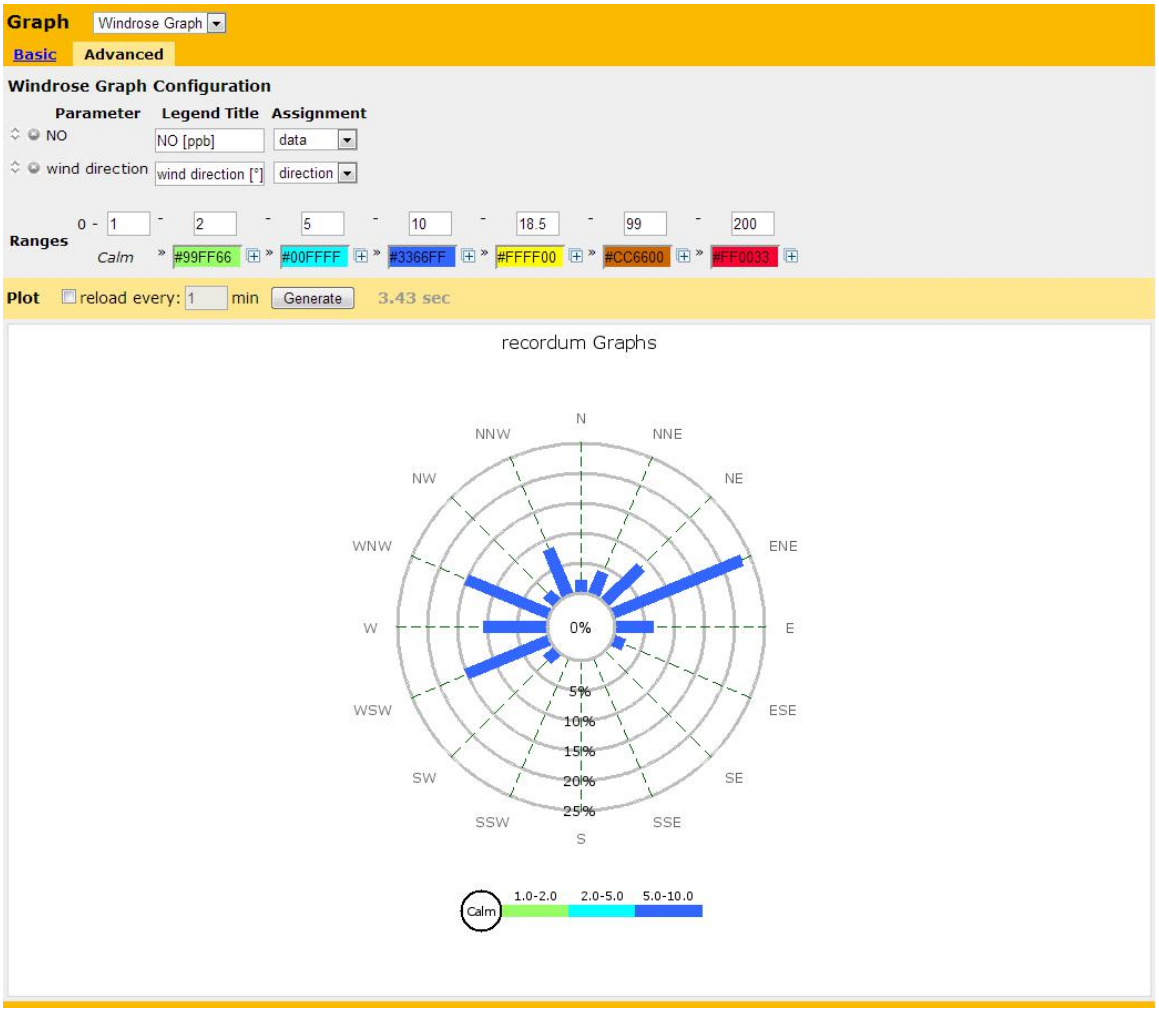


Figure 6.2.: Example of a Wind Rose Graph

If you plot your measurement values in a wind rose graph (as shown in Figure 6.2), the chosen data are plotted versus a direction value as e.g., wind direction. The parameter which indicates the direction has to be marked as 'direction' under **'advanced'**, the other parameter as 'data'. You can only select two parameter for one diagram.
In the plot following values are encoded:

- The colored bars represent the measurement values. The color code is shown in 'Ranges'. The unit of the values in 'Ranges' is the same as the unit of the measurement values which are marked as 'data'.
- The bars lie in wind direction.
- The total length of the bars indicates how often this direction was measured.
- The percentage values written inside the rings of measurement values show the percentage of measurement values which lie in this direction area during the measurement duration.

- Additionally, the single bars are color coded. The colors represent the measurement value. The height of the color bars represent how much percent of the measurement values in the respective direction lies in the respective measurement range. See Figure 6.4 and the respective description.

An example can be seen in Figure 6.4. In about 23% of the time the wind direction was ENE. When the wind blew in that direction the concentration of NO was between 5 and 10ppb.

6.2.2.4. Radar Graph

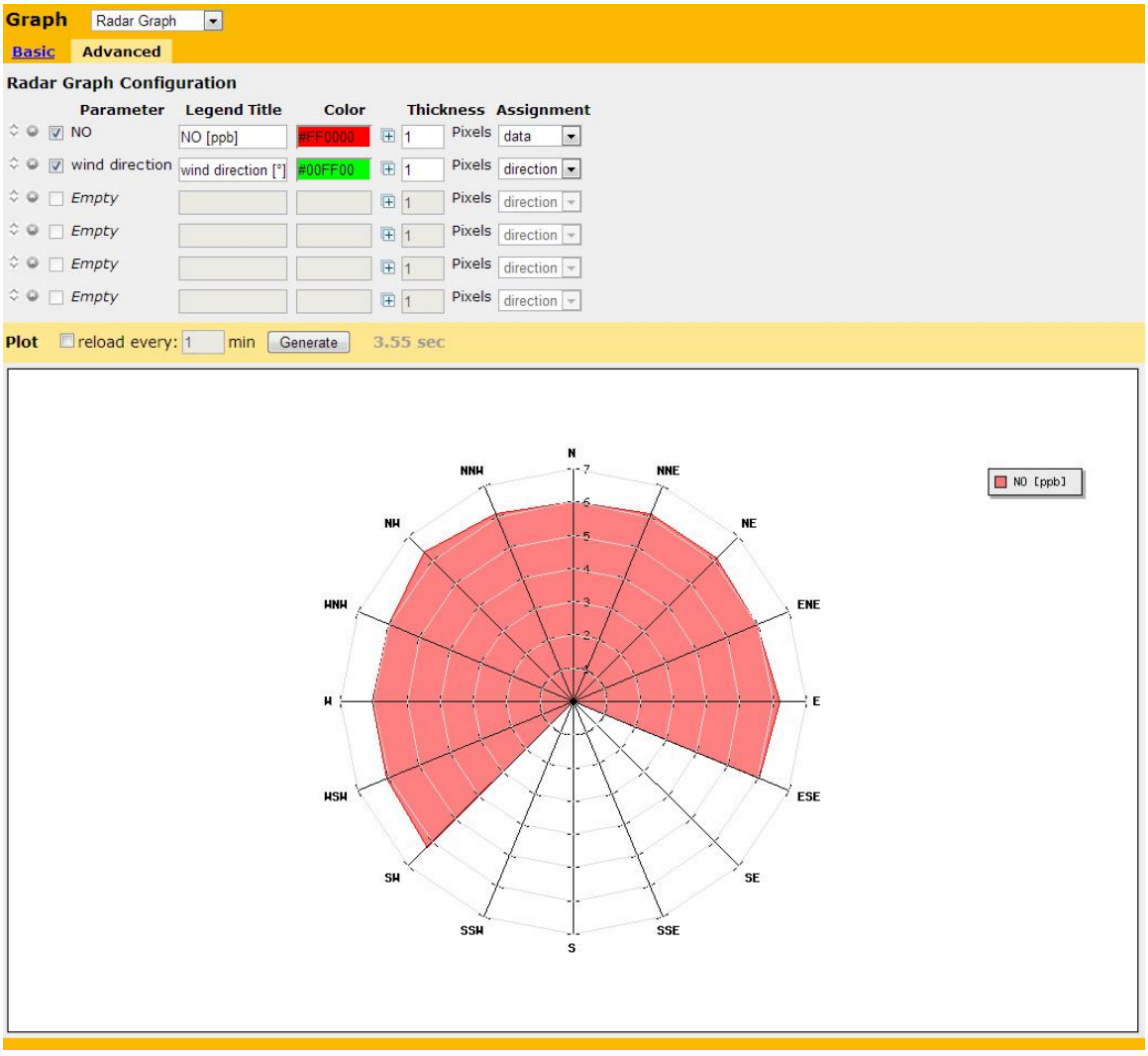


Figure 6.3.: Example for a Radar Graph

For a Radar Graph one can select up to six parameters. One of these has to be marked as 'direction' under **'Advanced'**. The other parameters are marked as 'data'. All measurement values are plotted in the respective units in the same range. This can lead to the effect that not all measurement values are visible. The parameters are shown color coded. The code can be changed in **'Advanced'**. The order of the plots is the same as the order of

parameters in the list from top to bottom. The order can be changed by clicking the small up and down arrows on the left side of the parameter name in the menu **'Advanced**'. If you do not want to show all parameters at once, deselect their graphs in the 'Advanced' tab. In Figure 6.3 you can e.g. calculate the pollution burden in a specific direction.

6.2.2.5. Comparison: Wind Rose - Radar Graph

In the Figure 6.4 the NO measurement for a specific duration is plotted versus the wind direction. On the left side the plot is shown as wind rose, respectively on the right side as a radar graph.

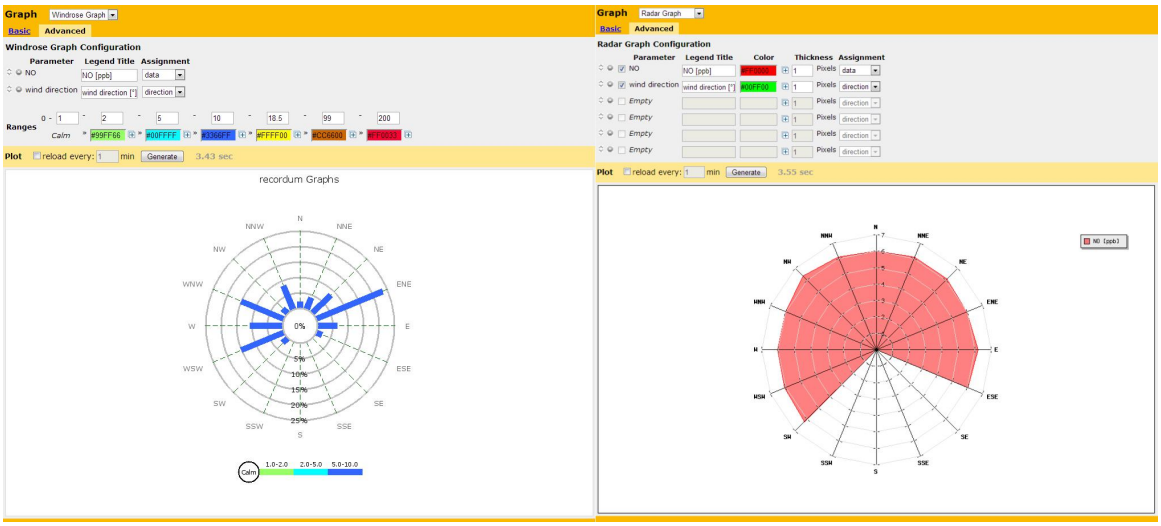


Figure 6.4.: Comparative plot of a NO measurement versus the wind direction shown in a Wind Rose (a) and a Radar Graph (b).

(a) In the Wind Rose Graph the length of the bars show on what percentage of the time the wind blew in that direction. With the color code it is shown how much NO was measured. The length of the color bars indicates the percentage of the NO measurement according the color code when the wind blew in the respective direction. In detail, the graph in Figure 6.4(a) shows that the wind blew often in the direction EstNorthEst (ENE) (approximately 23% of the measurement time). Whereas in the direction SouthWest (SW) there was rarely wind (about 1% of the measurement time).
(b) In contrast, in the Radar Graph the averaged value of the NO measurement during the selected time range for one direction is calculated and plotted versus the wind direction. This is independent of how often the wind blew in that direction. In the Plot 6.4(b) there is a similar amplitude all from SW to ESE. This indicates that the avarage value of the NO measurement was nearly the same for all wind directions measured.

The Advanced Tab lets you customize the drawing options of the graph. These depend on the type of graph you have selected in the 'Basic' tab. These options are for instance the type of the line to be drawn or the order of the parameters. Additionally it is possible to include or exclude campaigns. These can be defined in 'Setup' $\rightarrow$ 'Extras'. Campaigns are time periods during which a specific action has taken place and which measurement values have been marked. If during the shown time period a campaign has taken place, this period is marked with a line parallel to the X axis in the XY-graph. The campaign is listed in the legend. If you do not want this, click 'Hide Campaign'.

Save this design click on this link to save the current configuration for later use.

Clear parameters reverts all settings you made back to an empty selection.

Time Options With the ‘Quick’-option the measurement of the e.g., last days, can be shown. If you need other periods then the predefined, you can set a custom start/end time/date or interval with ’Period’. As standard the end point is set to ‘Auto’. This means now and if you update your graph, it will have a new end point. With this selection it is possible to observe a measurement.

Resolution There are three possibilities to average the measurement values. High resolution means every minute, middle every 10 minute and low every 30 minutes. In this Interface you can select the resolution of all selected parameters at once. The change the resolution of a specific parameter go to **’Advanced’**.

Options Notice the three small icons, labeled "Options". Clicking these:

- Enables you display single values on the graph. Drag your cursor over the graph to see the values.
- Produces a table-view of the data. **Warning:** depending on your network connection and the data size this could take some time! If ’Show Summery’ on top of the table is clicked, the minimum and the maximum of the parameters and the all over average are shown with date and time.
- Indicate if zoom is available. Zoom-in by dragging a box around the area you want to zoom into.

Generate When you are satisfied with the settings, click "Generate" to plot the graph. Notice the three small icons, labeled "Options". Clicking these:

- Enables you display single values on the graph. Drag your cursor over the graph to see the values.
- Produces a table-view of the data. Warning: depending on your network connection and the data size this could take some time!
- Indicate if zoom is available. Zoom-in by dragging a box around the area you want to zoom into.

If "reload every xx min" field is active, the graph is refreshed every selected minute. With this automatic redraw, it is possible to observe new measurement values, if the ‘End’ is set to ‘auto’.

6.3. Download

NOTE
We recommend to download your data regularly.

The **'Download'** window houses a wizard which guides you through the download of your data. Roughly explained, the wizard runs through 3 steps:

1. Select the parameters to export and which average value to take,
2. Define settings for export, like e.g. time interval,
3. Set the file properties of the exported file.

CAUTION:

You can only download data with active group and parameter name. If you have changed the name, the old data cannot be downloaded any more.

Configurations

Before you start, keep in mind that you can save a configuration of download settings for later reuse. You can select an existing configuration from the list on the top part of the 'Download' window. To **save a new configuration** click 'Create' next to "New Configuration" and give the new configuration a name. Now proceed with Step 1 described below.

6.3.1. Step 1: Select parameters

Under "Select parameters" you can see a list of installed devices. Select the desired parameters and suitable average values. When you are satisfied with your selection scroll to the bottom of the page and click next. Figure 6.5 gives you an impression how your screen may look like.
The **'Quick Download'** option allows you to download data with the same parameters as the last download. This is useful when configuration does not change too often.

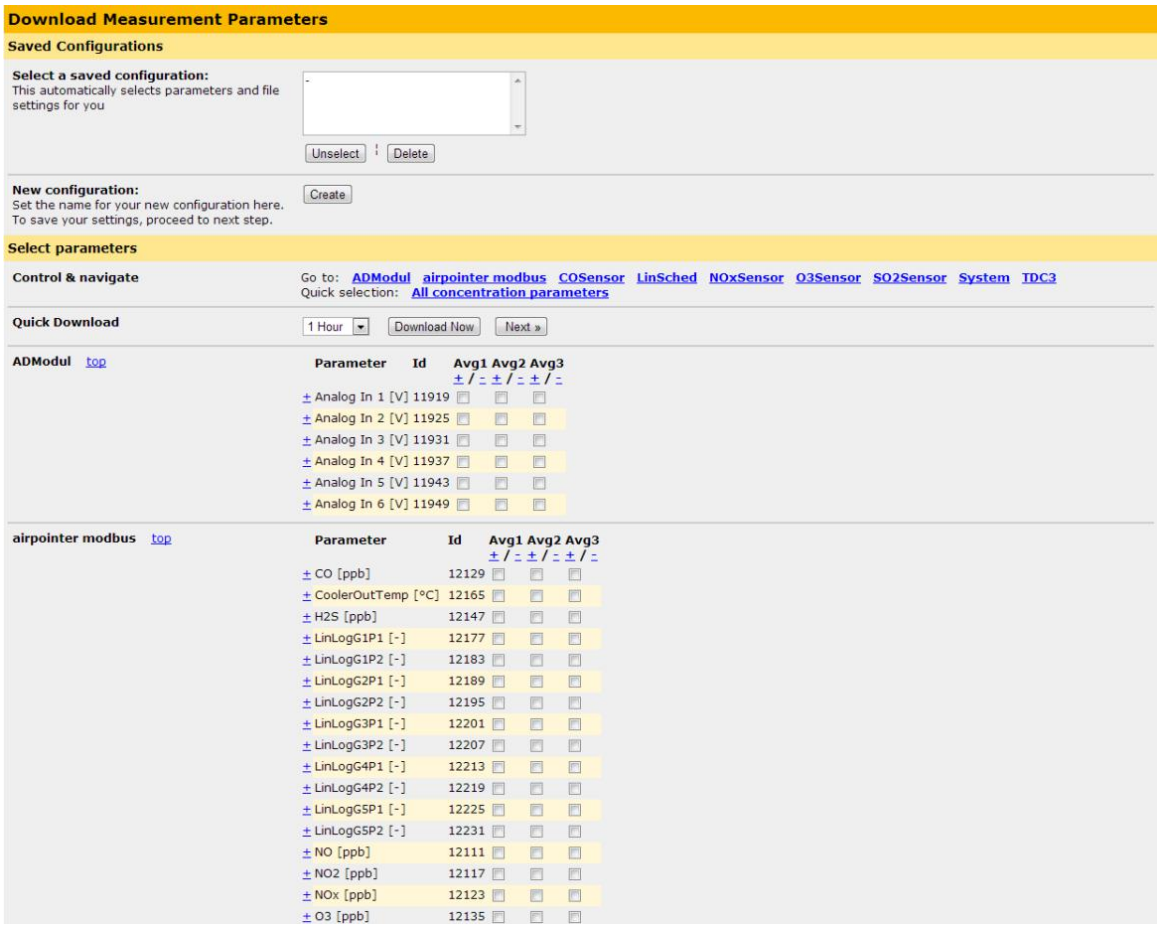


Figure 6.5.: Download Screen with dummy data

6.3.2. Step 2: Configure export settings

The next screen in the wizard (see figure 6.6) gives you the possibility to:

- **Delimit the time interval** of the exported data,
- **Define a Time Source (or reference)**. In case one sensor does not deliver constant data, you can select another measurement signal as time reference. All selected values will be documented, but only when the reference parameter is available. Table 6.1 shows an example.
- Define multiple parameters for the output file such as the file type. Adjust these parameters to suit your needs for post processing your data, with e.g. MS Excel. The default configuration is:
  - Filetype: ".csv"
  - Seperator: ";"
  - File System "UNIX"
  - Decimal Separator: "Comma"

  Status flags:

- As an option, you can add **status flags** to every parameter value.
- **Fields surrounded by quotes:** As an option, you can put each single data field of the data file in a high comma, per default disabled.
- **Interpolate non existing values:** As an option, missing datasets are filled up. The y-value for missing values is set to -9999.
- **Compression**
  - Text only: no compression
  - Zip compression: To optimize the file size, the file is zipped as standard resulting in a file ending '.zip'. In this case, your work station needs a program for unpacking data to get the data file embedded compressed in the zip file.
  - Self-extracting Zip File: Here you can generate a self-unpacking zip file. This increases you file size by about 90 kB.

Average1		Average2		Average3	
time	value	time	value	time	value
15:00	23	15:00	21	15:00	19
15:01	26				
15:02	29				
⋮	⋮				
15:15	22	15:15	25		
15:16	16				
15:17	19				
⋮	⋮				
15:30	30	15:30	26	15:30	24

Table 6.1.: Example of Time Stamp Entries Used as Source for Two Possible Compilations for Download of Averages (see Tables 6.1(a) and 6.1(b)).

(a) ‘Source of time data’ set to ‘Average1’

time	Average1	Average2	Average3
15:00	23	21	19
15:01	26		
15:02	29		
⋮	⋮		
15:15	22	25	
15:16	16		
15:17	19		
⋮	⋮		
15:30	30	26	24

(b) ‘Source of time data’ set to ‘Average2’

time	Average1	Average2	Average3
15:00	23	21	19
15:15	22	25	
15:30	30	26	24

Table 6.2.: Examples of Compilations of the Data Shown in Table 6.1. Please note that the given values may as well represent averages from different sources of signals.

Make sure to define all parameters are fitting your needs. If you encounter difficulties reading or processing the downloaded file, check these parameters. You might want to consider platform specific changes (e.g. line endings). Furthermore you have the option to compress the data as .zip File to save bandwidth. If you created a new configuration, you now have the option to save the specified parameters to it. If you did not create a new configuration of just want to download the data click on "Next". This will prepare your file for download.

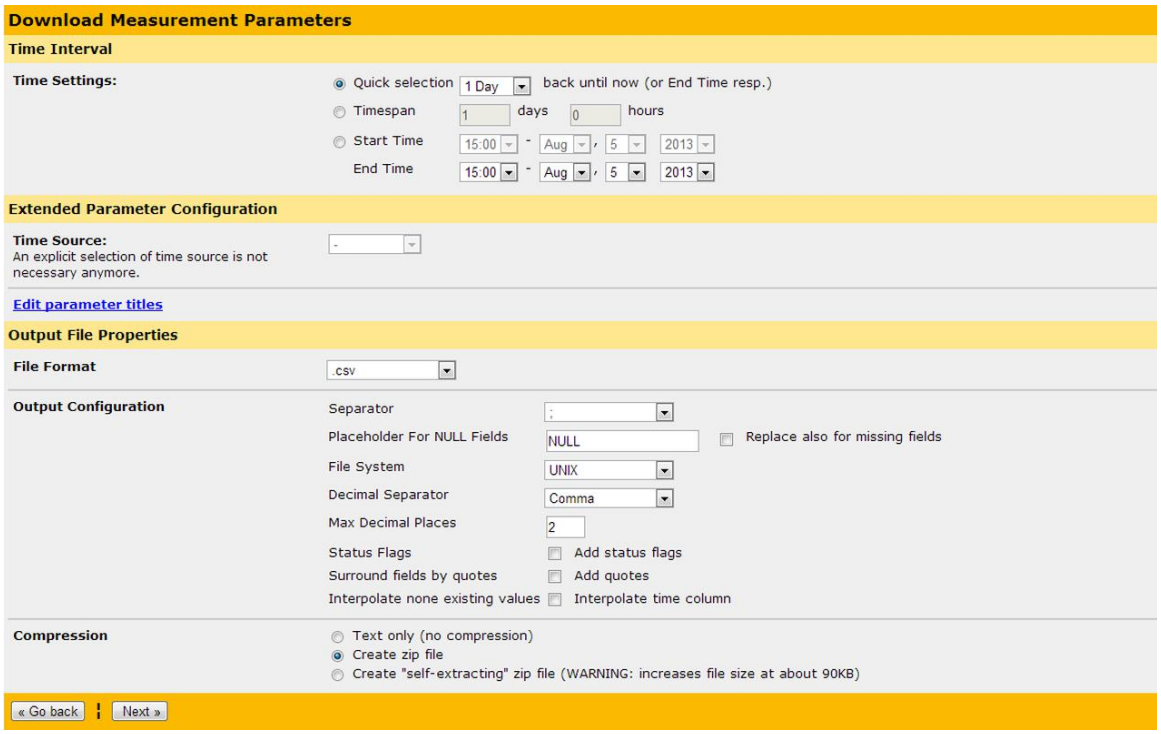


Figure 6.6.: Step 2 of download procedure

6.3.3. Step 3: Download the data

In the last screen a status bar indicates your files progress. Depending on the amount of data, this might take some time. If an error occurs, it will be displayed above the status bar. In the lower section you can see a brief summary on what data is been exported. When the file is complete, you may right-click on "Download data file" and choose "Save target as..." to finally get your file.

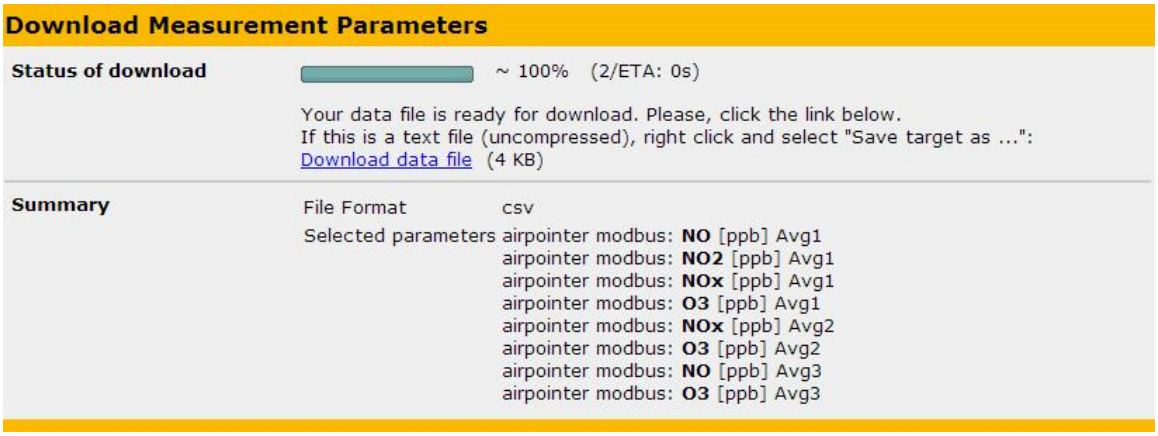


Figure 6.7.: File was successfully generated for download

6.4. Stationbook

This module provides a notepad for you. By default your notes are visible to all users. You can also set single entries to be visible only to yourself.
If you choose ‘Stationbook’ from the menu, all available entries are listed. By clicking on the title the whole note shows up, a full text search is available also. See Figure 6.8 for an example Stationbook filled with dummy data.

Figure 6.8.: The Stationbook Module

The main options are: Add, edit and delete a note. The user who added the note can set access rights, i.e. define whether others can read it.
Depending on the given rights, later editing and deleting of that particular note is also possible.
Recommended entries into the Stationbook are all operations resulting from the table Maintenance Schedule in the manual, and also:

- Relocation of your airQlog®
- Calibration accomplished on/by
- Filter replacements
- Service works
- Maintenance works
- Air condition control
- Possibly occurred errors
- Peculiarities

6.5. Overview

6.5.1. Sensors Overview

The idea behind this screen is to give the user a quick summary of selected measurement data and whether there is a fail state for a parameter. The status is set to be "Ok" in two occasions:

- There is no rule set for this Parameter value
- The values are within range which was set in the rule

If the values arent within range the status changes to "FS".

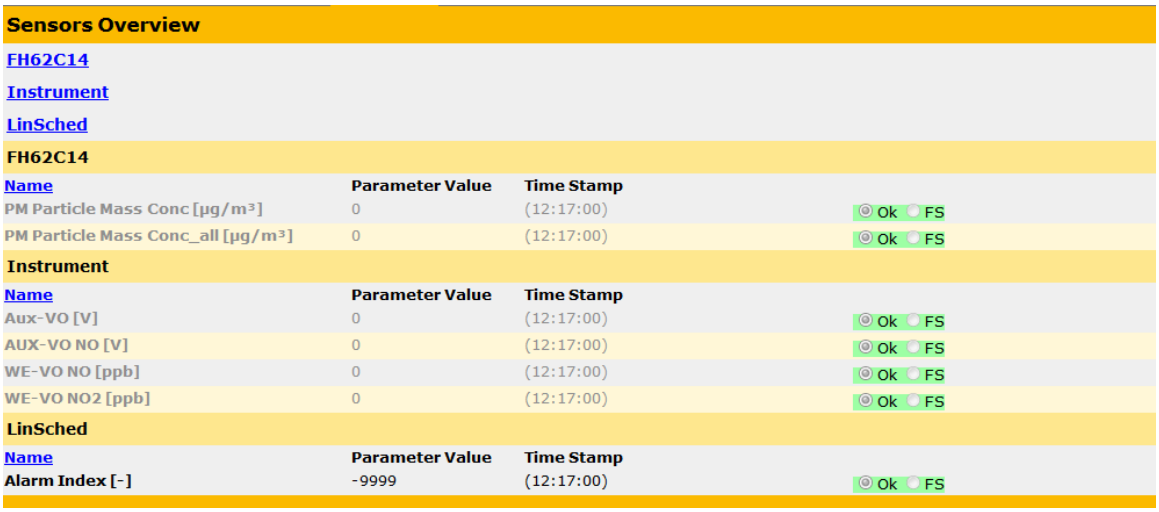


Figure 6.9.: Sensors Overview

To select the item to display:

- Go to **Setup**.
- Open **Configuration** from the subtree.
- Select **Parameters**.
- Select all parameters you want to appear in the overview by ticking their box in the "Overview" column.

It might practical to make the "Overview" your home-screen. That way you can see the selected parameters at a glance right after the login. If you want to setup the your startscreen:

- Go to **Setup**
- Open **User interface** from to subtree.
- Open **Personal Settings**
- Select "Overview" from the dropdown list labeled "Default module for startup".

6.5.2. Commands

With the "Commands" interface you can set individual modules into **maintenance mode**. Just press the corresponding button to do so. Furthermore it is possible to turn the (optional) Alarm Device on and off with a single click. If you have rules (see section 6.7.1) defined that require a **End User Acknowledge** you can reset *ALL* active rules here by clicking "Reset". As long as the cause for the rule is no longer present, any active rule will now be reset.

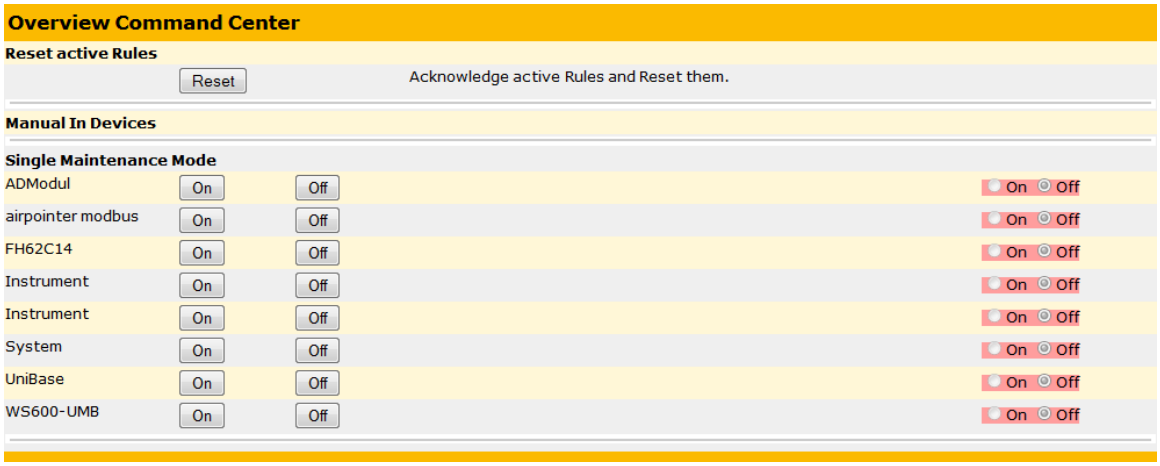


Figure 6.10.: Overview Commands

6.6. Calibration

6.6.1. General

Definition The calibration described in this section is defined as establishing a relationship between introduced gas samples and the adjusted measurement device.
This relationship is derived from the instrumental response to successive samples of different known concentrations. The airQlog® allows the definition of a zero point and a span point, hence a linear calibration relationship.

6.6.2. Claibration Check

This module provides you with the possibility to perform a calibration check, to switch the calibration valves or to track a calibration of an external analyzer.

NOTE
Please check that you have administrator rights on the airQlog® .

In order to carry out a calibration login to the User Interface. After selecting 'Start Calibration' in the module 'Calibration', you get two subsections as described below.

NOTE
A calibration check should only be carried out, if you have sufficient time!

The section calibration has two subsections:

1. Valve control

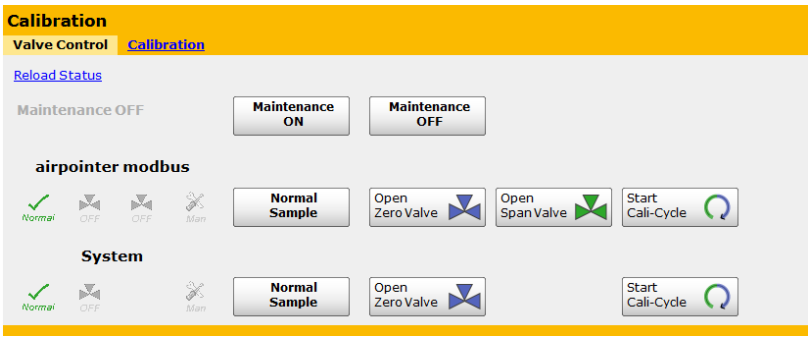


Figure 6.11.: Valve control

- If you click 'Reload Status' you will get the actual status (Maintenance ON or OFF), at once.
- Here you can activate and deactivate the maintenance mode with clicking 'Maintenance ON' and 'Maintenance OFF', respectively.
- This section provides you with the valve control (sample/Zero measurement) for the hole system (all modules are affected) or for just one module. This function is just available if the function 'CaliOn...' is activated for the system or the module, respectively. In Figure 6.11 only the system is shown.
  - 'Normal Sample': Standard measurement of sample and span gas, respectively.
  - 'Open Zero valve': The valves switch to internal zero measurement. If this is valid for the 'System', then all moduls switch to internal zero measurement. If you click it for a specific module only this module will be affected.
  - 'Start Cali-Cycle': Start of the function control: internal zero measurement followed by internal span gas measurement if your airQlog® has 'Internal Span Module' (optional) installed. Else just an internal zero point control takes place.

2. Calibration
   - Select the module
   - Set point of span gas and zero air.
   - Displayed measurement

6.7. Setup

The ‘Setup’ module provides system information, configuration of sensors, system and interfaces of the airQlog®. Furthermore, user management of the User Interface to the airQlog® is available here. Here the user’s personal settings to the User Interface can be customized.
The functions of the module ‘Setup’ include:

1. Rules and Actions
2. System Info
3. System Maintenance
4. Extras
5. Configuration
6. LinLog
7. LinOut
8. Communication
9. User Interface

6.7.1. Rules and Actions

This feature enables you to define a set of conditions and what to do, if they become true. As of this moment, this feature is still in beta phase[1].

6.7.1.1. Quick Setup

In this section we will give you a quick guide on how to setup a rule an action. In this example we want to define a threshold of the NO measurement value and get an email when this threshold is exceeded. See sections 6.7.1.4, 6.7.1.2 and 6.7.1.3 below for a detailed description of the actions and rules the airQlog® offers.

1. Define an "Action":
   - Select "R&A Actions" from the menu on the left.
   - Select the type of action from the list. In this example we select Click on **Add** to define a new action.
   - Customize the new action. Refer to section 6.7.1.2 for a detailed description of the actions.
   - Press **Save** to keep the new action OR press **Delete** to abandon it.
   - You can define default values for actions as explained in section 6.7.1.4.
2. Define a "Rule":

[1] Version from October 2012

- Select "R&A Rules" from the menu on the left.
- Select the type of rule you want to enable. Click on **Add** to define a new rule. All rules share the following attributes:
  - Name
  - Description
  - Active
  - Alarm Emphasis
  - Minimum Switch Time
  - Rule Repetition Time
  - End User Acknowledge
- Press **Save** to keep the new action OR press **Delete** to abandon it.

3. The rule is now set up. Next, you need to assign an action to the rule.
4. Assign an action to the rule.
   - Select your newly created rule.
   - Under "Assigned Actions" click on **Add**.
   - Select the action you want to assign to this rule from the list.
   - Click on **Save** to confirm your changes.

The setup is complete. Whenever the condition of the rule is fulfilled, the action is now triggered.

6.7.1.2. Actions

Before you define a rule you need to specify what to do if a rule (or condition) is fulfilled. After you defined a new action you can trigger it with the "Test" link next to its name. In most cases, an action is a notification sent to a member of staff, but an action can be flexible. The following settings must be specified for every action:

- **Name** Enter the name of the action here.
- **Description** enter a detailed description of the action.
- **Active** enable or disable an action. Any action must be set to "Active" in order to be assigned (see section 6.7.1.3) and executed.

As of this moment the following actions are available:

Digital Output If you have configered an Analyzer (6.7.6.1) with digital output you can define output here.

- Select the output port from the "Parameter" list.
- Specify whether the output is a flasher (i.e. a blinking light) or not.
- Specify whether the output is a single pulse or not.

- Digital Time On: specify the time the emitted signal is 1 (in seconds)
- Digital Time Off: specify the time the emitted signal is 0 (in seconds)
- Press **Save** to keep the new action
- Press **Delete** or **Back** to discard the new action

Eigenmeldungen This action triggers a system notification for a centralized network conforming to the UBIS© model of A-I-P[2].
Click the "Add" button to create a new action. The setup of an "Eigenmeldung" action is straight forward. Fill the parameters according to your UBIS© configuration. The fields with a bold label are mandatory entries. Choose "Save" or "Delete" with the respective button.

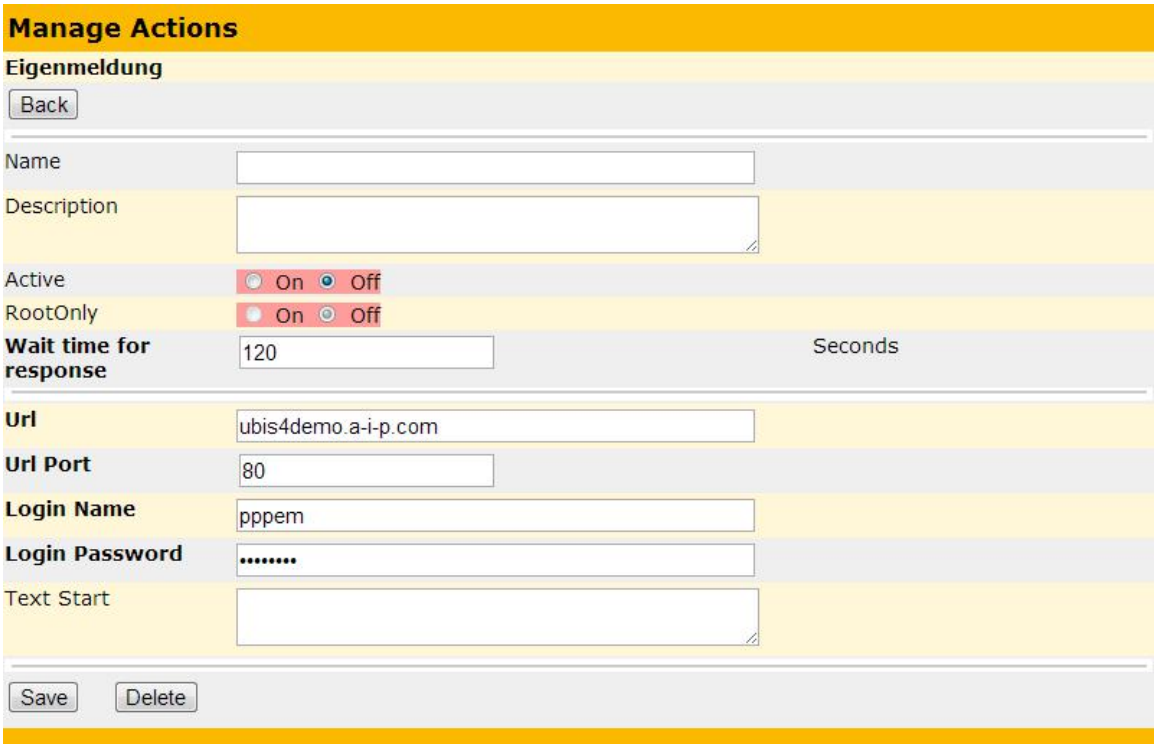


Figure 6.12.: Define an eigenmeldung-Action

E-mail In this case the action is a notification which is sent as e-mail. You can see a screenshot of the interface in figure 6.13. If you want to use the mailserver of the airQlog® enter "localhost" in the "Url" field. If you use the localhost you do not need to provide a login name or password. You must not necessarily change the "Time for response" this is an internal parameter.
To send a mail to multiple recipients, enter their addresses separated by Semicolon ";" in the "Recipient" field. The content of the three fields *Starting*, *Repeating* and *Stop* are displayed in the message's body whenever a condition or rule is valid for the first time, currently true or stopped being true respectively. Which of these states is entered depends

[2]See `http://www.a-i-p.com` for more details.

also on the active rule defined. How to define a rule is explained in section 6.7.1.3. "Save" or "Delete" the action with the respective button.

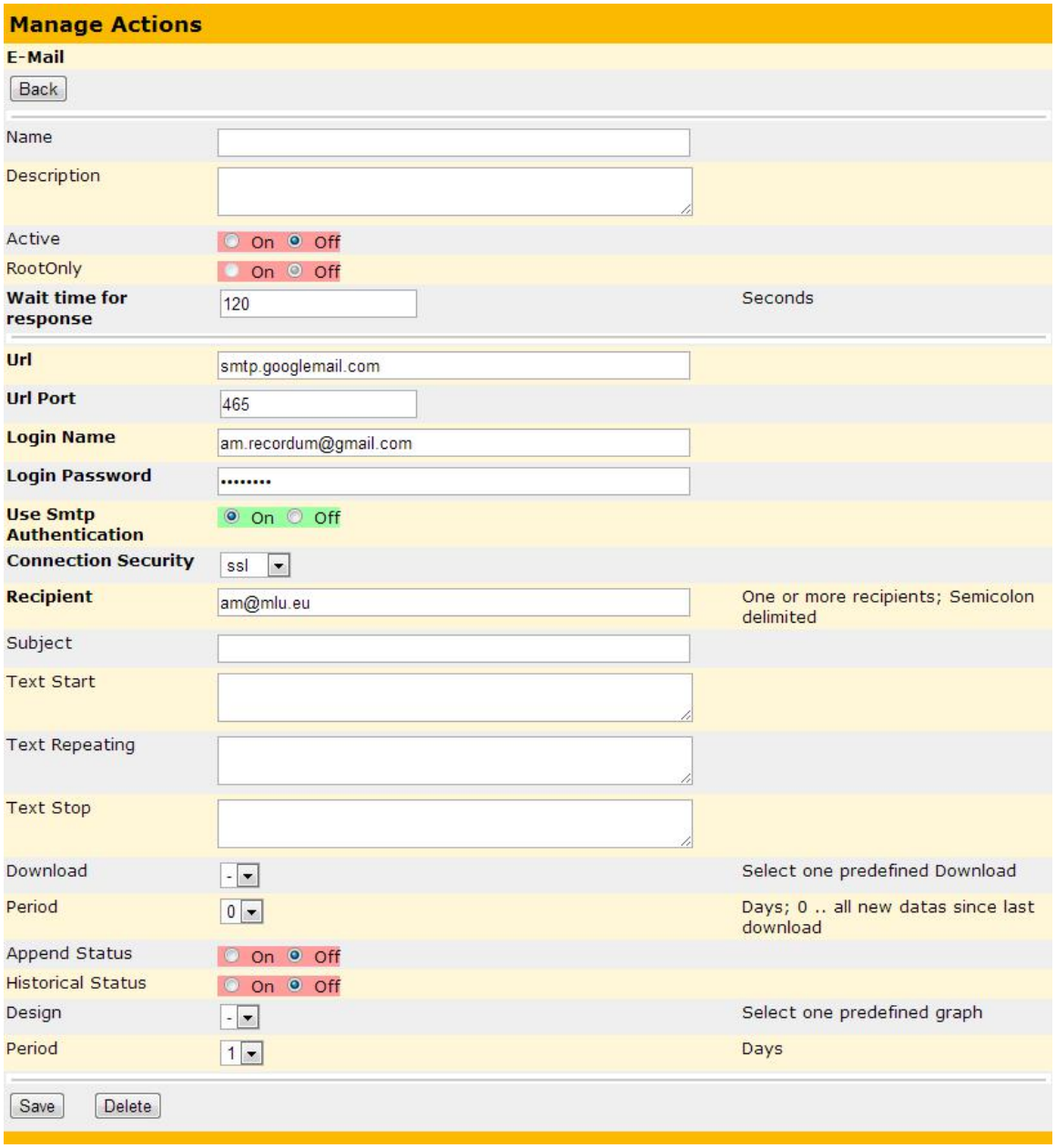


Figure 6.13.: Define an E-mail-Action

FTP Upload This feature allows yout to configure a FTP path and define which data should be uploaded.

Script This feature allows you to execute scripts given by the distributor. As far as you don't need any specific extensions the only script avaiable is the 'Backup Script'.

SMS This feature allows you to send a notification via text message.

Station Status This actions sets the airQlog® into the 'Global Station failure' mode. In this state measurement parameters will display a Failure State.

WaterSam Sample This action performs a new WaterSam sample. Specify the device to perform the sample from the **WaterSam** list.

6.7.1.3. Rules

In this section, the currently available rules are introduced. In general one can define boundaries for almost any parameter of the system. These can be used for instance for monitoring measurement data or system performance. Keep in mind, that a notification is only sent when an Action is defined and assigned to a valid rule. The following parameters are available for all rules:

- **Name** enter the name of the rule.
- **Description** enter a detailed description of the rule.
- **Active** enable or disable an rule. Any rule must be set to "Active" in order to become valid.
- **Alarm Emphasis** This parameter can be regarded as the "weight" of a rule. Any valid rule will add its emphasis value to the parameter *Alarm Index*. This parameter can be monitored by a **Measuring Signal Value**-rule (see below). As an example you could set the alarm emphasis value of a rule monitoring measurement value *A* to 50 and the value of another rule observing the value *B* to 50. You then could define an upper limit of the *AlarmIndex* parameter as 100, which will cause the third rule to be valid when rule A and B are valid.
- **Minimum Switch Time** specifies a time interval (in seconds) for the rule to stay in its current state AFTER it has switched state. E.g. the condition of a rule is triggered, the rule becomes active. Independently of the condition, the rule stays active for the time interval specified by the minimum switch time. The same holds for the disengagement of a rule. This prevents rules to be triggered too often in short time periods by fluctuating parameters.
- **Rule Repetition Time** defines a time interval to repeat a rule. E.g. a condition (for instance a measurement value is too high) is true over a long period of time, the rule is active. The triggers the assigned action after the specified repetition time (see e.g. E-mail action).
- Most of the rules allow to enable a parameter **End User Acknowledge**. With this function enabled, the user has to disengage the rule in the 'Overview' module (see section 6.10).

Calibration Data Check Define a rule to observe the calibration data, i.e. the Zero or Span value.

- Select the **parameter** to monitor from the list.
- Select the **Value Type**: either 4 for Zero or 5 for Span value.

- Set **Check Higher** to monitor an upper bound for the selected parameter. Enter the bound in the Value 1 textfield.
- Set **Check Lower** to monitor a lower bound for the selected parameter. Enter the bound in the Value 2 textfield.
- If **Valid Maintenance** is set to On, the value is monitored, when the device is in maintenance mode. However, it does not imply that the rule is valid.
- If **Valid Failure Status** is set to On, the value is monitored when the parameter currently produces a Failure State. However, it does not imply that the rule is valid.
- Enable **Valid Data Global** to only monitor the value, if the availability of data is higher than 75%. E.g. for an average over 60 seconds, there must to be more than 45 samples available.
- You can also define a custom availability limit by enabling **Valid Data Check** and providing a value in **Valid Data Percent**.
- **Triggered when missing** enable this function to trigger the rule, if the parameter is missing.
- **End User Acknowledge** When this function is enabled, the user has to disengage the rule in the 'Overview' module (see section 6.10).

Combination Rule With this rule you can combine multiple rules. It allows a logical AND, i.e. all rules are true $\rightarrow$ combination rule is true and logical OR, i.e. at least one input rule is true $\rightarrow$ combination rule is true. Tick the rules you want to combine under "Assigned Rules".

- **End User Acknowledge** When this function is enabled, the user has to disengage the rule in the 'Overview' module (see section 6.10).
- **Combination Operator** Enter 0 for an AND combination, respectively 1 for an OR.

Door Contact Alert This rule provides a general purpose alarm system triggered by an arbitrary digital/analog input.

- Select the **Parameter** to trigger the alarm.
- **Reference Number** Additionally we provide the logic to suppress the actions of an active alarm. Specify the same internal reference number as a *Manual In* rule to connect those two. E.g. The bound *Manual In* rule provides the software switch to suppress the alarm actions, though these are still valid.
- Enable **Check Higher** to set an upper bound for the monitored parameter. If you selected a digital input a value of 0.5 in Value 1 will trigger the alarm.
- Enable **Check Lower** to set a lower bound for the monitored parameter. If you selected a digital input a value of 0.5 in Value 2 will toggle off the alarm.
- **Grace Time** specifies an interval (in seconds) between the detection of the alarm and the trigger, i.e. a countdown.

Intrusion Alert If your device comes with the optional intrusion alert kit, you can define a rule here which becomes true if the device has detected unauthorized access of the main door. Only available on airQlog®.

Maintenance Mode This rule becomes valid if the device is in maintenance mode. It is possible to enable **End User Acknowledge**. When this function is enabled, the user has to disengage the rule in the 'Overview' module (see section 6.10).

Manual In This rule provides software switches to be used by other type of rules. E.g. Define a *door contact alert rule* and a *Manual In* rule. Enter the same reference number for both rules. The switch is available under: Overview → Commands. You can now suppress the alarm by enabling the switch. Provide a **Fallback Time** to disengage the switch after a specified time.

Measuring Signal Status Check This rule can be used to observe the status e.g. "Fail" of a parameter.

- Select the **parameter** you want to observe from the dropdown list.
- Select the type of the value (0..Actual value, 1,2,3..Average 1,2,3, 4..Zero, 5..Span)
- Select if the rule should trigger whether the value is not missing.
- Enter the correct value in the bitmask for the fs (fail states) and bs (Betriebsstatus, operation mode) from the following tables:

Bit	description	set value (decimal):
Bit0	Flow	1
Bit1	Pressure	2
Bit2	Temperature	4
Bit3	Lam/Source/O3Gen/Flame/HVPS	8
Bit4	wrong SensorSignal/BadCal	16
Bit5	Warmup/ below detection limit/negative/Service required/Sensor lifetime expired/old value	32
Bit6	Cali check wrong	64
Bit7	Sum Fail	128

Table 6.3.: FS Status bits

Measuring Signal Value Check With this rule it is possible to observe a measurement value.

- Select the **parameter** to monitor from the list.
- Select the **Value Type**: either 4 for Zero or 5 for Span value.

Bit	description	set value (decimal):
Bit0	Maintenance	1
Bit1	Zero	2
Bit2	Span	4
Bit3	PurgeOut/ServiceMode	8
Bit4		16
Bit5	Unit	32
Bit6	Unit	64
Bit7	UserTest On	128

Table 6.4.: BS Status bits = Operation Status bits

- Enable **Check Higher** to monitor an upper bound for the selected parameter. Enter the bound in the Value 1 textfield.
- Enable **Check Lower** to monitor a lower bound for the selected parameter. Enter the bound in the Value 2 textfield.
- Enable **Check Rising** to check if the change (absolute value) during the defined time period exceeds the limit. Enter the limit in Value 3.
- Enable **Check Falling** to check if the change (absolute value) during the defined time period exceeds the limit. Enter the limit in Value 4.
- Define the time period for rise/fall interval (0 (off) .. 60 (max) Samples).
- If **Valid Maintenance** is set to On, the value is monitored, when the device is in maintenance mode. However, it does not imply that the rule is valid.
- If **Valid Failure Status** is set to On, the value is monitored when the parameter currently produces a Failure State. However, it does not imply that the rule is valid.
- Enable **Valid Data Global** to only monitor the value, if the availability of data is higher than 75%. E.g. for an average over 60 seconds, there must to be more than 45 samples available.
- You can also define a custom availability limit by enabling **Valid Data Check** and providing a value in **Valid Data Percent**.
- **Triggered when missing** enable this function to trigger the rule, if the parameter is missing.
- Enable **End Hysteresis** to allow the value to rise or fall to a certain level (and not the triggering limit) before the rule is disengaged. Enter a **Exceedance Level** and an **Undercut Level** for disengagement of the rule.

Station Status This rule becomes valid if your device is in Station Status. In this state, all measurement parameters are set to a Failure State.

System Start This rule becomes valid if your device is started.

Time This rule is active at a defined point in time. It can be used as "is-alive"-message for instance. You can define a day and a time, which causes the rule to be triggered every 24h at this time.

Time Interval This rule is active in a specified time interval. It can be used as e.g. "is-alive"-message or for backup automation. You can define a day and a time, which causes the rule to be triggered after the specified time interval.

USV Battery This rule is active when the device is powered by the USV Battery (optional). Since this battery can only be operated for a very limited amount of time, you can trigger a message to the service personal with this rule.

6.7.1.4. Defaults

This section allows you to specify the default values for some actions. Since the actions are likely to share most of the settings, well prepared default configurations might help to create new actions. This for instance is a configuration to send a mail from the device's own webserver:

```
url: localhost
url port: 25
```

The login name and password fields can be left blank. The wait time for response is an internal parameter in case an error occurs. Just as the remaining settings, it does not need be changed.

6.7.2. System Info

Here you will find detailed information about the airQlog®. The module System Info includes:

- General
- Service Interface
- Status History
- Log Files

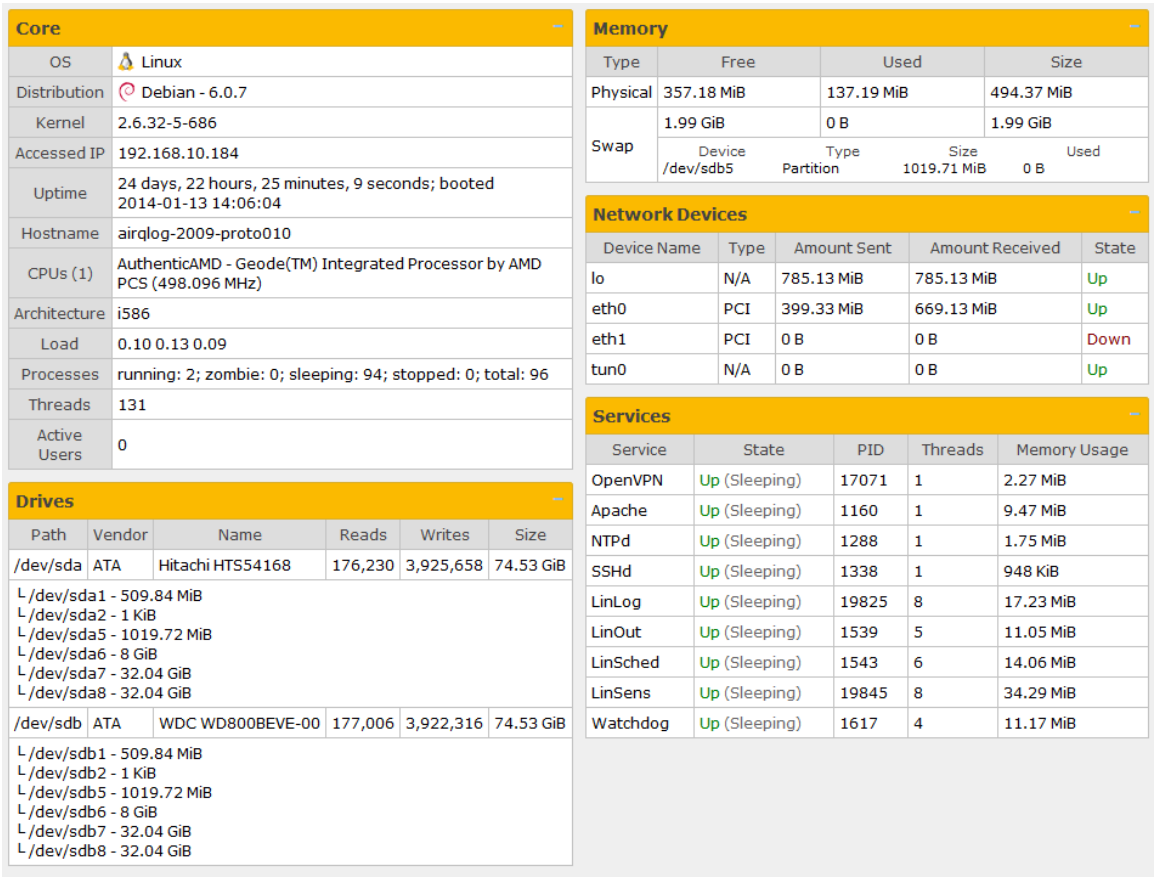
6.7.2.1. General

Title

The title of this interface is commonly presented as: 'serial number' @ 'hostname'. For example: '2007-00185' @ 'airponter-2007-00185'

OS, Distribution and Kernel:

Here you will find the 'Operating System', the 'Distribution' and the 'Kernel' number.



Core

OS	Linux
Distribution	Debian - 6.0.7
Kernel	2.6.32-5-686
Accessed IP	192.168.10.184
Uptime	24 days, 22 hours, 25 minutes, 9 seconds; booted 2014-01-13 14:06:04
Hostname	airqlog-2009-proto010
CPUs (1)	AuthenticAMD - Geode(TM) Integrated Processor by AMD PCS (498.096 MHz)
Architecture	i586
Load	0.10 0.13 0.09
Processes	running: 2; zombie: 0; sleeping: 94; stopped: 0; total: 96
Threads	131
Active Users	0

Drives

Path	Vendor	Name	Reads	Writes	Size
/dev/sda	ATA	Hitachi HTS54168	176,230	3,925,658	74.53 GiB
└ /dev/sda1 - 509.84 MiB └ /dev/sda2 - 1 KiB └ /dev/sda5 - 1019.72 MiB └ /dev/sda6 - 8 GiB └ /dev/sda7 - 32.04 GiB └ /dev/sda8 - 32.04 GiB					
/dev/sdb	ATA	WDC WD800BEVE-00	177,006	3,922,316	74.53 GiB
└ /dev/sdb1 - 509.84 MiB └ /dev/sdb2 - 1 KiB └ /dev/sdb5 - 1019.72 MiB └ /dev/sdb6 - 8 GiB └ /dev/sdb7 - 32.04 GiB └ /dev/sdb8 - 32.04 GiB					

Memory

Type	Free	Used	Size
Physical	357.18 MiB	137.19 MiB	494.37 MiB
Swap	1.99 GiB	0 B	1.99 GiB
	Device: /dev/sdb5	Type: Partition	Size: 1019.71 MiB / Used: 0 B

Network Devices

Device Name	Type	Amount Sent	Amount Received	State
lo	N/A	785.13 MiB	785.13 MiB	Up
eth0	PCI	399.33 MiB	669.13 MiB	Up
eth1	PCI	0 B	0 B	Down
tun0	N/A	0 B	0 B	Up

Services

Service	State	PID	Threads	Memory Usage
OpenVPN	Up (Sleeping)	17071	1	2.27 MiB
Apache	Up (Sleeping)	1160	1	9.47 MiB
NTPd	Up (Sleeping)	1288	1	1.75 MiB
SSHd	Up (Sleeping)	1338	1	948 KiB
LinLog	Up (Sleeping)	19825	8	17.23 MiB
LinOut	Up (Sleeping)	1539	5	11.05 MiB
LinSched	Up (Sleeping)	1543	6	14.06 MiB
LinSens	Up (Sleeping)	19845	8	34.29 MiB
Watchdog	Up (Sleeping)	1617	4	11.17 MiB

Figure 6.14.: Viewing General Settings

Accessed IP::

This is the IP-adress, trough which you currently accessed the airQlog® .

Uptime:

Time passed since the system's last restart.

Hostname:

This is the URL, where the airQlog® is accessable by a web browser.

CPUs:

This is the number of active processors in your system.

Architecture:

The architecture of the CPU. (f.e. i586 is 32bit)

Processes:

Here you can see the processes running on your system. They are divided into running, zombie, sleeping, stopped and total.

Threads:

Number of threads currently active.

Active Users:

This number does not relate to the number of logged on users to the User Interface but refers to intra-system processes.

Drives:

Here the harddrives are listed aswell as their total size and their partitions.

Memory:

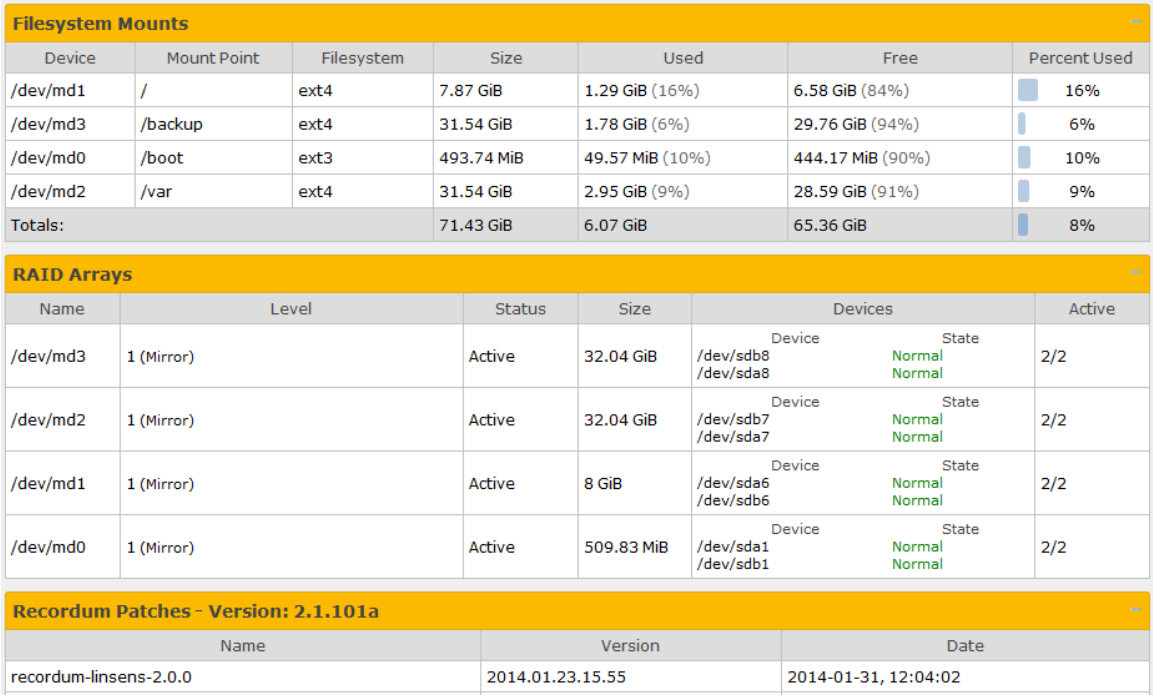
The values display the utilization of the airQlog® 's (see Figure 6.14) memory.

Network Devices:

Different devices are listed here, depending on your access to the airQlog® and the optionally installed communication modules. 'Amount Sent' and 'Amount Recived' show the complete data transmitted so far for each respective device. 'eth0' is the system interface, 'eth1' the user interface of the airQlog®. 'tun0' refers to the OpenVPN tunnel and'ppp0' to the GPRS modem (as an option).

Services:

Here different services are listed, depending on which are installed and on your access to airQlog® . Furthermore you can see their current state and their memory usage.



Filesystem Mounts

Device	Mount Point	Filesystem	Size	Used	Free	Percent Used
/dev/md1	/	ext4	7.87 GiB	1.29 GiB (16%)	6.58 GiB (84%)	16%
/dev/md3	/backup	ext4	31.54 GiB	1.78 GiB (6%)	29.76 GiB (94%)	6%
/dev/md0	/boot	ext3	493.74 MiB	49.57 MiB (10%)	444.17 MiB (90%)	10%
/dev/md2	/var	ext4	31.54 GiB	2.95 GiB (9%)	28.59 GiB (91%)	9%
Totals:			71.43 GiB	6.07 GiB	65.36 GiB	8%

RAID Arrays

Name	Level	Status	Size	Devices	Active
/dev/md3	1 (Mirror)	Active	32.04 GiB	Device State /dev/sdb8 Normal /dev/sda8 Normal	2/2
/dev/md2	1 (Mirror)	Active	32.04 GiB	Device State /dev/sdb7 Normal /dev/sda7 Normal	2/2
/dev/md1	1 (Mirror)	Active	8 GiB	Device State /dev/sda6 Normal /dev/sdb6 Normal	2/2
/dev/md0	1 (Mirror)	Active	509.83 MiB	Device State /dev/sda1 Normal /dev/sdb1 Normal	2/2

Recordum Patches - Version: 2.1.101a

Name	Version	Date
recordum-linsens-2.0.0	2014.01.23.15.55	2014-01-31, 12:04:02

Figure 6.15.: Viewing General Settings (continued)

Filesystem Mounts:

Mounted filesystems, mount point, filesystem, size, used and free space are listed here. Furthermore the blue bar shows the used space in percentage. If one partition tends to have over 90% used space, please inform your distributor's service to avoid potential data loss in the future.

RAID Arrays:

Here the RAID arrays, their level, size and state are listed.

airQlog® Patches:

Installed patches of the airQlog® software are listed here including the installation date. In bold figures the actual software version number is written.

6.7.2.2. Service Interface

Figure 6.16.: Invoking the Service Interface

6.7.2.2.1. LinSens Service Interface The LinSens Sensor Service Interface provides current sensors data of the airQlog®. Clicking one of these links will open the LinSens Sensor Service Interface in a new window.

The first line shows the operation mode of the airQlog®. Normal operation in black letters means everything is functioning well. Normal operation in red letters additionally displays the values considered to be faulty.

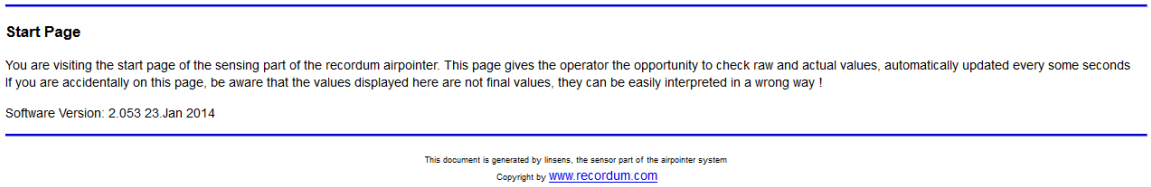


Figure 6.17.: View of the LinSens Service Interface

Home

This is the homepage with reference to the manufacturer.

Actual System Values

This survey shows the current values of all activated sensor modules (see Figure 6.18).

Actual System Values
no calibration active

System SensorInterface Board

RoomTempUp (4/35)	25.1	°C	PressPump (4/1)	316.5	mbar

Pump Control Board

AmbientTemp (4/8)	25.2	°C	DC5V (4/9)	5.17	V
PumpRoomTemp (4/7)	24.6	°C	DC12V (4/10)	12.0	V
FanPumpRoomRPM (4/13)	2700	rpm	DC15V (4/11)	14.9	V
FanSampleRPM (4/14)	3180	rpm	DCneg15V (4/12)	-15.1	V
Key 1 (4/43)	0		Key 2 (4/44)	0	

Clima Control Board

RoomTemp (4/18)	24.7	°C	CoolerOutTemp (4/19)	24.6	°C
Coolerpercent (4/20)	0.0	%	HeaterPercent (4/21)	0.0	%
ClimaActMode (4/22)	1	%	-		

Watchdog Board

DC5V_PC (4/26)	5.28	V	DC12V_Wtd (4/27)	11.87	V
Temp_PC (4/31)	25.5	°C	TempChipWatchdog (4/32)	20.9	°C
Countdown (4/28)	1459	sec	Restart in	00h 24min 19sec	
Restarts (4/29)	0		RestartSLT (4/30)	0	
FanUpSpeed (4/37)	3060	rpm			

Figure 6.18.: Actual Values Page

Parameter

The respective measurement signal.

Value

The current measurement value

Unit

and its appropriate unit.

BStatus

Status of operation, 0 = Normal operation

FStatus

Error status, 0 = OK. You will find a list of all possible error status values in the appendix A.2 ‘Software Protocols’, Section ‘German Network Protocol’ in the manual and in table 6.5.

SStatus

System status, 0 = OK

	BStatus (Operation mode)	**FStatus** (Fail Status)	**SStatus** (System Status)
Bit 0 (1)	Maintance	Flow	Timeout (Value too old)
Bit 1 (2)	Zero	Pressure	
Bit 2 (4)	Span	Temperature	
Bit 3 (8)	Origin Bit	Lamp / Source / O3Gen / Flame	
Bit 4 (16)		SensorSignals wrong / BadCal	
Bit 5 (32)		Warmup (WaterSens) / below detection limit / negative / Service required / Sensor Lifetime expired	
Bit 6 (64)		Cali check wrong	
Bit 7 (128)		Sum Fail	

Table 6.5.: Statustable

System Values (see Figure 6.19)

Actual System Values
no calibration active

Watchdog Board

DC5V_PC	5.12	V	DC12V_Wtd	11.68	V
Temp_PC	19.7	°C	TempChipWatchdog	18.8	°C
Countdown	1471	sec	Restart in	00h 24min 31sec	
Restarts	0		RestartSLT	0	

Figure 6.19.: Actual System Values

System SensorInterface Board

RoomTempUp

Temperature at the System SensorInterface Board in [°C].

Press Pump

Pump pressure in [mbar].

Pump Control Board

Ambient Temp

Indicator for ambient temperature in [°C].

Pump Room Temp (%)

(Fan running? 0=No, 100% =Yes) Pump room temperature in [°C].

Fan Pump Room

Fan rotation in pump room in [rpm].

Fan Sampling System

Fan rotation for sampling in [rpm].

DC Supply +5V, +12V, +15V, -15V

Supply voltages in [V].

Switch1, Switch2

Position of switch Maintenance On and switch Maintenance Off.

Clima Control Board

Room Temp

Temperature in analysis room in [°C].

Cooler Out Temp

Exit temperature of the air condition in [°C].

Cooler Power

Air condition running? 0 = No, 100% = Yes.

Heater Power

Heater running? 0 = No, 100% = Yes.

Act Mode

1. Cooling, 2. Heating.

next Purge

Date of next purge in year.month.day.hour.minute.second

WatchdogOn Board

+5V PC

Supply voltage for the PC in [V].

Temp PC

Temperature of the PC in [°C].

Countdown

Time until next reset of watchdog in [s].

Restarts since power on

Number of restarts since last turn-on procedure.

Restarts since last trigger

Number of restarts since last trigger.

+5V System

Actual voltage value of the system voltage in [V].

ChipTemp

Temperature of the watchdog in [°C].

Restart in 00:xx:xx

Time until next reset of watchdog in [hh:mm:ss].

Status (see Figure 6.20)

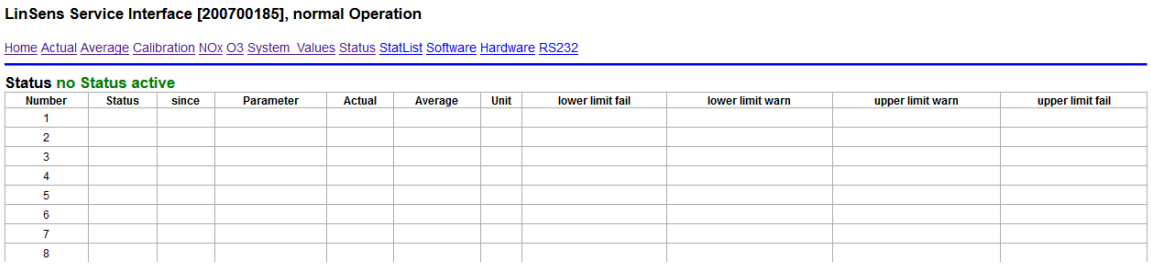


Figure 6.20.: Status System

This table shows the current error status values, in case there are any at all. If an error occurs, the point in time when it was noted first and its respective parameter, i.e. the value, lower and upper limit, lower and upper error limit are displayed.

StatList

Status List Page (press reload to update)

System

G/P	Status	Parameter	Actual	Average	Unit	lower limit fail	lower limit warn	upper limit warn	upper limit fail	Board Adr
G4P24	OK	RSCommunikation	23	23	message/sec	-	-	50	-	-
G4P25	OK	MissingBoards	0	0	Boards	-	-	-	1	-
G4P26	OK	DC5V_PC	5.13	5.13	V	-	4.00	6.50	-	253
G4P27	OK	DC12V_Wtd	11.66	11.67	V	-	10.00	14.00	-	253
G4P28	OK	Countdown	1492	1470	sec	-	-	-	-	253
G4P29	OK	Restarts	0	0		-	-	-	-	253
G4P30	OK	RestartSLT	0	0		-	-	-	-	253
G4P31	OK	Temp_PC	19.6	19.7	°C	-	10.0	50.0	-	253
G4P32	OK	TempChipWatchdog	18.8	18.8	°C	-	-	-	-	253
G4P43	OK	Key 1	-	-		-	-	-	-	-
G4P44	OK	Key 2	-	-		-	-	-	-	-
G4P45	OK	Hardware IF Buffer	0.0	0.0		-	-	-	-	-
G4P46	OK	Write DB Buffer	0.0	0.0		-	-	-	-	-

Figure 6.21.: An excerpt from the Status List Page

Status List Page shows the current error status (color coded) and value, unit, lower and upper error limit, lower and upper warning limit of each parameter from the system and the installed modules. If limits were set, OK, warning or fail status are shown. OK is written in green, warning in orange and fail in red.

NOTE

If a warn or fail status is shown, warn (in orange) or fail (in red) is written on the top left of the User Interface. This is a link to the site where the warn or fail parameter is listed.

Software (see Figure 6.22)

Software

Number	Name	Cycle Time avg [msec]	Cycle Time max [msec]	Cycle Time max since start [msec]	max at	last triggered	allowed timeout [sec]
0	Startup	11214	11214	11214	20140202 04:52:13	20140202 04:52:13	-
1	Startup syncsensors	1082	1082	1082	20140202 04:52:13	20140202 04:52:13	-
2	Startup Data, Param, Status Tables	1853	1853	1853	20140202 04:52:12	20140202 04:52:12	-
3	Write Database Thread	2	4	802	20140202 05:00:03	20140205 13:50:26	180
4	HTTP Thread	4	156	383	20140205 13:45:41	20140205 13:50:26	10
5	DataThread	35	36	191	20140204 13:30:00	20140205 13:50:26	30
7	Hardware Interface (If) Thread	37	79	553	20140202 15:45:00	20140205 13:50:26	60
8	Time in Hardware Interface Buffer	40	75	443	20140202 04:53:00	20140205 13:50:26	-
9	HW get all parameters	1463	1965	10610	20140203 08:47:37	20140205 13:50:25	-
10	ControlThread	100	102	374	20140202 15:45:00	20140205 13:50:26	60
11	StatusThread	35	37	105	20140202 12:28:00	20140205 13:50:26	180
12	Error Log Thread	10	15	68	20140202 04:52:32	20140205 13:50:26	60
14	CtrlDataIfThread	0	0	0	-	20140202 04:52:02	-

Internal Communication

RS232 Messages/sec	RS232 Messages/sec average	Boards missing	Entries in Hardware interface buffer	Entries in Write DB buffer	max Entries in Write DB	entries in Write DB Out	max Entries in Write DB Out
32	32	0	1	0	5	0	2

Software Version

Software Version LinSens	2.053	Date	23.Jan 2014
Analytical Module Version	1.001	Date	22.Apr 2008

Figure 6.22.: Software System

RS232 Messages/sec

Number of commands issued to the RS-232 bus. The lower part of the table shows commands issued last to the RS-232 bus.

Hardware (see Figure 6.23)

Hardware

n	Adress	Board	S/N	Software Version	Hardware Rev	Board Status	COM Errors	Confirmation error	active	Answer in [msec]	Last OK	do LR	last RL
1	253	Watchdog	00002	0.011	-	0	0	0	YES	31	20140207 12:20:45	-	20140131 12:04:52

Internal Communication

RS232 Messages/sec	RS232 Messages/sec average	Boards missing	Entries in Hardware interface buffer	Entries in Write DB buffer
23	23	0	0	0

Software Version

Software Version LinSens	2.053	Date	23.Jan 2014
Analytical Module Version	1.001	Date	22.Apr 2008

Figure 6.23.: Hardware

Board, S/N, Software Version, COM Errors, Active

All boards installed in the airQlog® with their respective serial number, software version and current number of communication errors are listed here. Furthermore, whether the respective board is active or not.

Software Version LinSens

Version and date of the installed LinSens Software.

Modem Power

Supply for optional module GPRS Modem On / Off.

System time

Actual time of the airQlog®.

6.7.2.2.2. LinLog Service Interface :

LinLog Service Interface (see Figure 6.24) provides current data of airQlog®'s logger. Clicking the link displays the LinLog Service Interface in a new window. You can also reach the site, if you write

```
your airpointer's IP-address/linlog
```

into your browser's address bar.

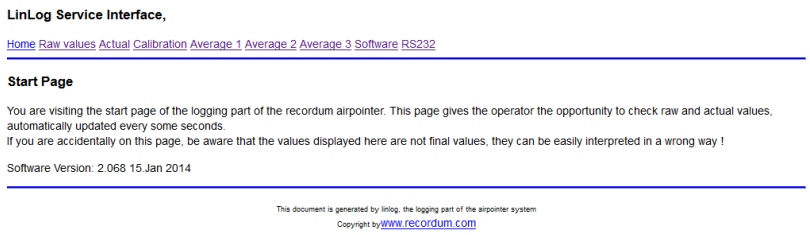


Figure 6.24.: View of the LinLog Service Interface

Home

This is the homepage with reference to the manufacturer.

Raw Values

Read in current values, arranged in groups.

Actual Values

Computed current values, arranged in groups.

Calibration

Choose group of calibration values

Average 1

Averaging of the computed current values for average 1, arranged in groups.

Average 2

Averaging of the computed current values for average 2, arranged in groups.

Average 3

Averaging of the computed current values for average 3, arranged in groups.

Software

Software

Number	Name	Cycle Time avg [msec]	Cycle Time max [msec]	Cycle Time max since start [msec]	max at	last triggered	allowed timeout [sec]
0	Startup	172	8617	8617	20140202 04:52:10	20140202 04:52:10	-
2	Error Log Thread	10	13	264	20140202 04:52:04	20140205 13:52:48	60
3	Write Database Thread	2	6	1122	20140202 05:00:04	20140205 13:52:48	180
4	HTTP Thread	3	20	28	20140205 12:27:52	20140205 13:52:47	10
5	DataThread	2	5	260	20140204 12:30:00	20140205 13:52:48	30
25	recordum modbus first src: 4	9	13	521	20140205 09:21:25	20140205 13:52:48	120
55	RSThread COM4 (55)	2980	4001	4019	20140205 02:44:05	20140205 13:52:45	60

Internal Communication

Entries in Write DB buffer	max Entries in Write DB	entries in Write DB Out	max Entries in Write DB Out
0	15	0	4

Software Version

Software Version LinLog	2.068	Date	15.Jan 2014

Figure 6.25.: Software Parameters

This page shows you some software parameters like software version number. The other parameters are for software developers.

RS232

Here you can check the communication via the COM ports. First, select a COM port (see Figure 6.26) to get an overview of the last communications via this port (see Figure 6.27). You can check if the communication timing (see page 6-68) is set correctly.

Figure 6.26.: Choose a COM port

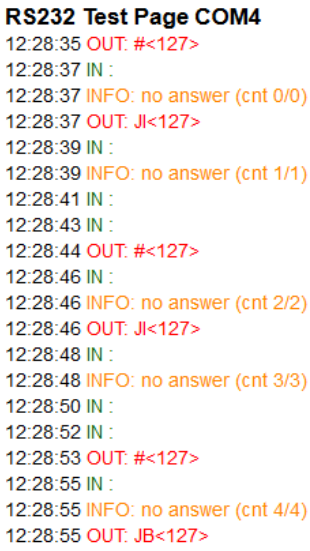


Figure 6.27.: Communication

6.7.2.3. Status History

With this feature you can list failures and warnings at a chosen time period. This are the same failures and warnings as shown up to date in the LinSens Service Interface. When you have selected the period then click ‘Show’.

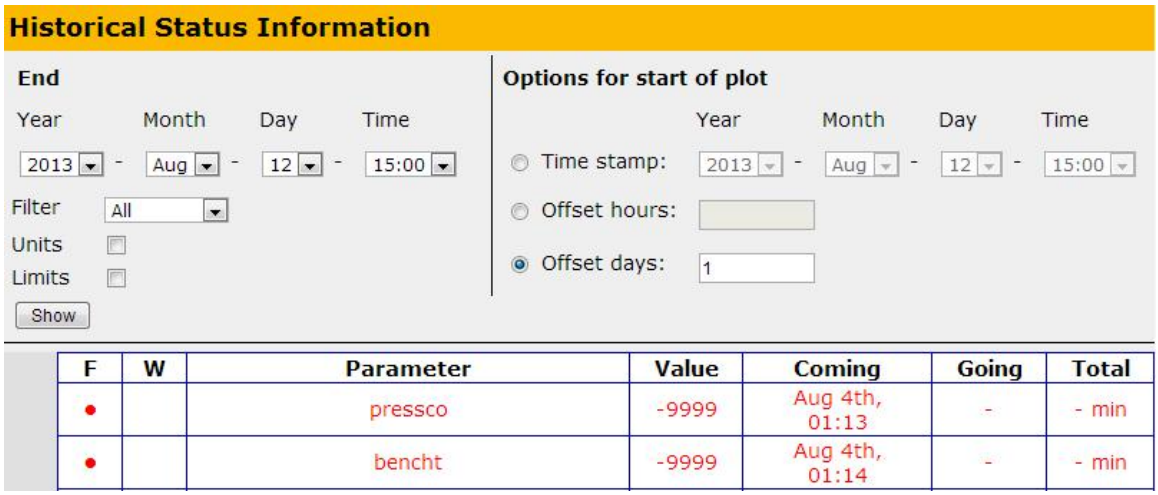


Figure 6.28.: Status History

End: For ‘End’, please select date and hour for finishing your selected time sequence.

Filter: Choose fails and warnings or just one of them.

Units: Optionally the units of parameters are shown.

Limits: Optionally the limits of parameters are listed.

Options for start of plot ‘Options for start of plot’ provides you with various features by setting the radio button in the particular line (see Figure 6.28):

Time stamp: Here you can enter an absolute date and hour (see ‘End’).

Offset hours: Entries here will be related to the date and hour of ‘End’, thus computing the start of the time sequence for your measurement data selection.

Offset days: Entries here will be related to the date and hour of ‘End’, thus computing the start of the time sequence for your measurement data selection.

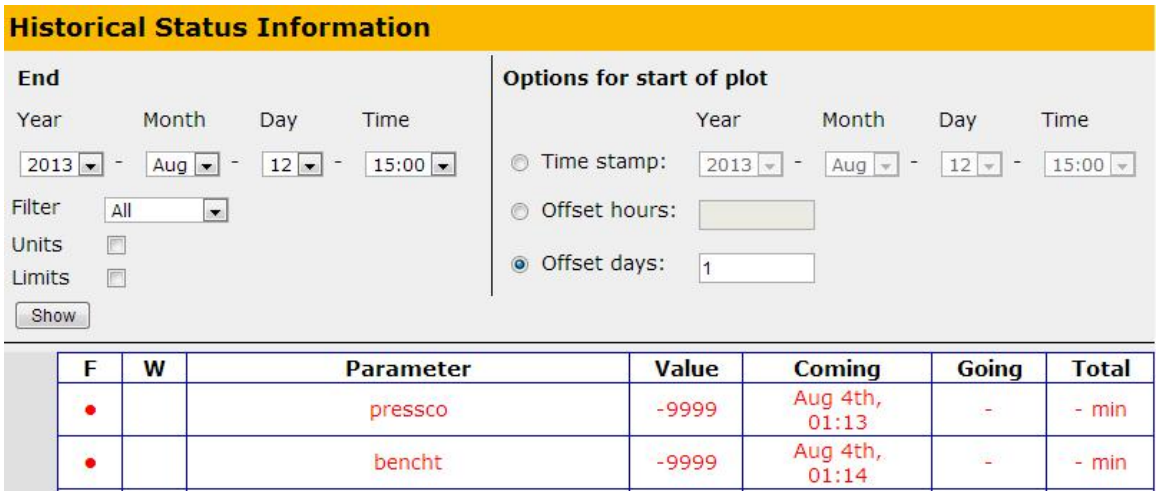


Figure 6.29.: Status History

F/W

F indicates a fail (red) and W indicates a warning (black).

Parameter/ Value

The name of the affected parameter is listed. In the following columns the value belonging to it and if chosen the unit is shown.

Coming/Going/Total

These columns show start and end date of the fails or warnings. The third column displays calculated duration of the period.

6.7.2.4. Log Files

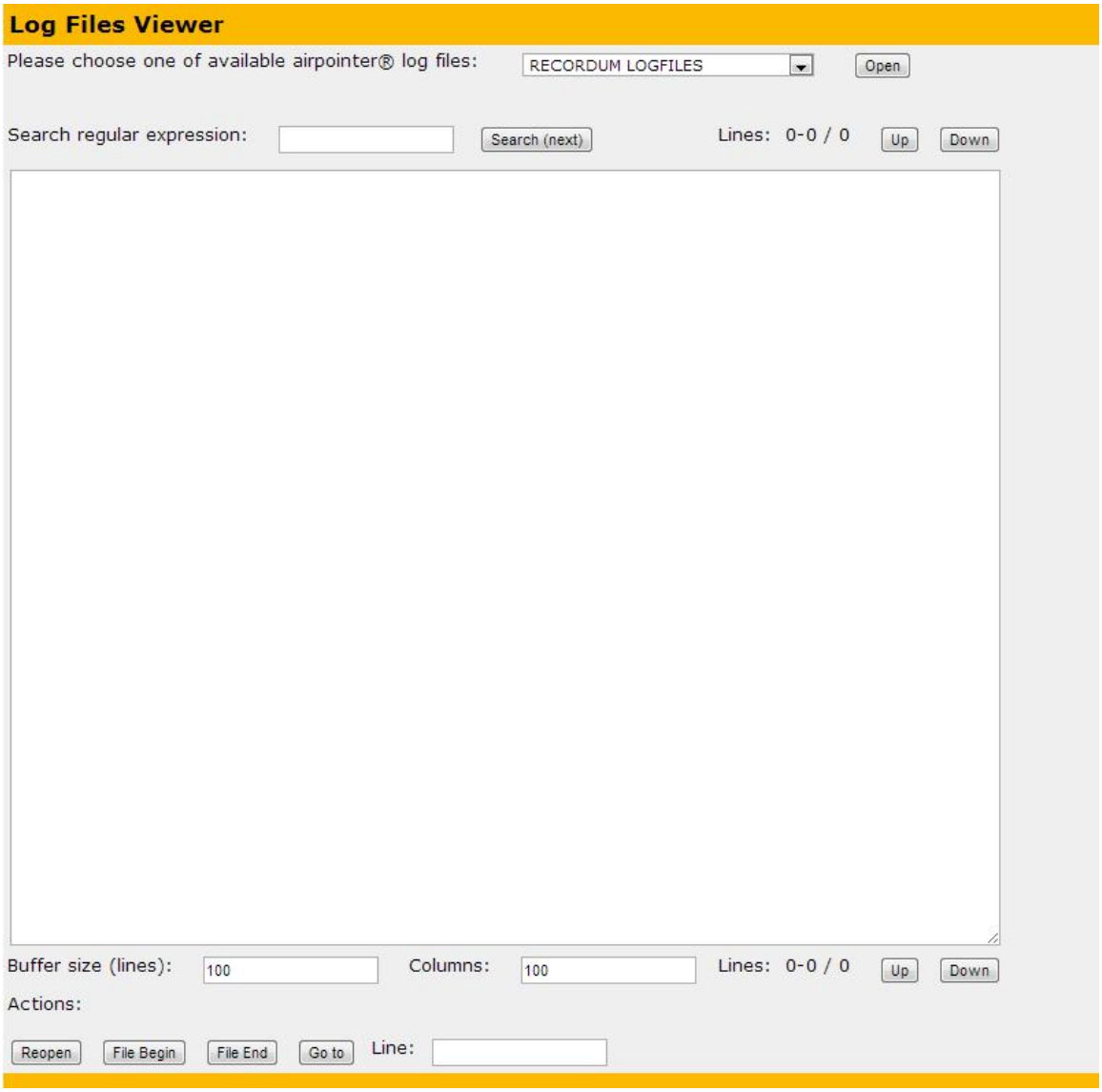


Figure 6.30.: The Log Files Viewer

Here you can view the log files of the airQlog® (see Figure 6.30). Using the scroll box, you can select your data, clicking 'Open' displays this file in the window below. Using the buttons 'Up', 'Down', 'File Begin', 'File End' and 'Go To Line', where you can enter the respective line number, you can navigate within this file.

6.7.3. System Maintenance

The module System Maintenance includes:

- Service Manager
- Command Interface
- Software
- Backup

6.7.3.1. Service Manager

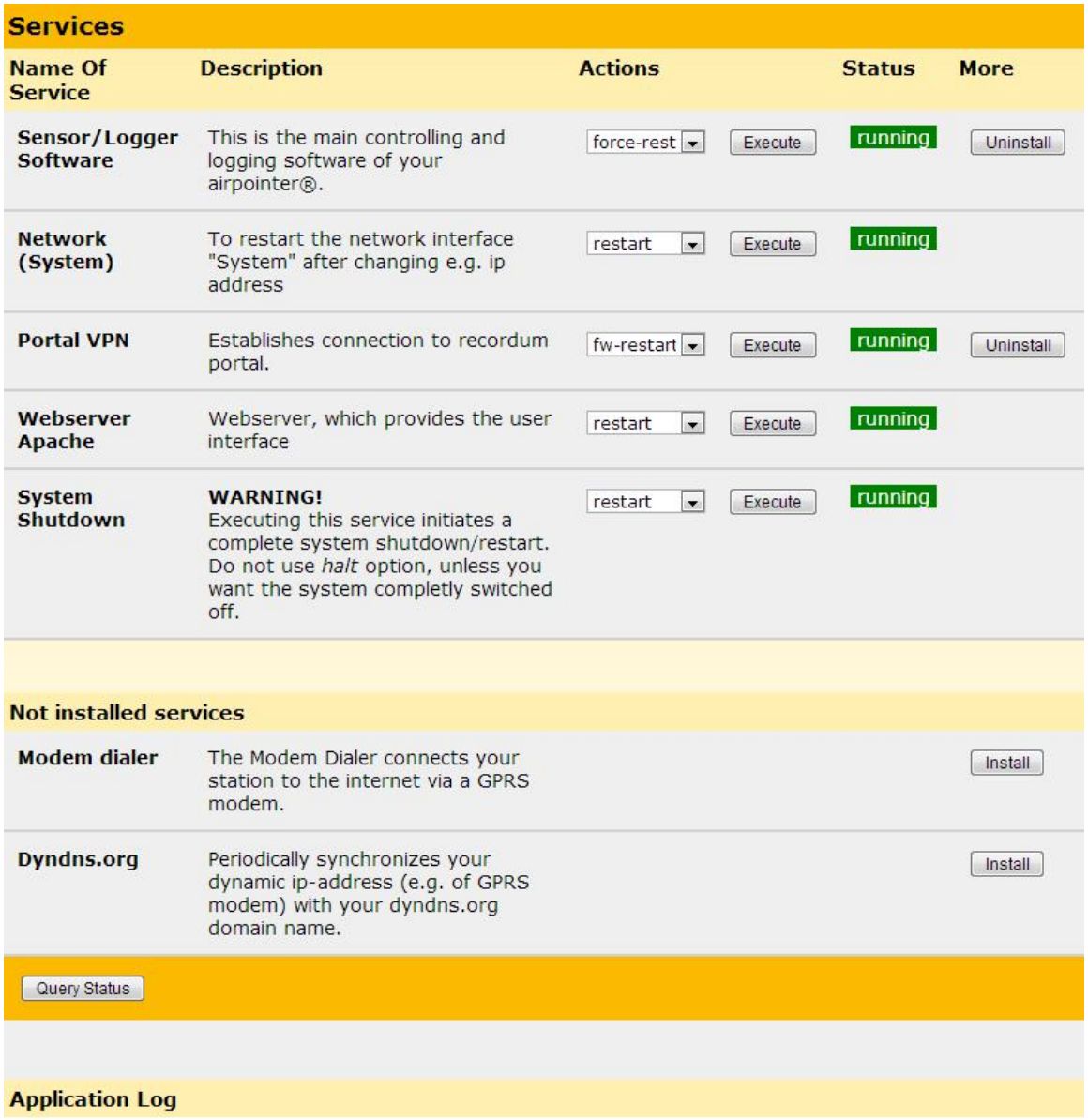


Figure 6.31.: Service maintenance

In the Service Manager software available for the airQlog® is listed. The current status of the programs is shown. Here you can stop, start, restart, install or uninstall software. Additionally you can shut down the system in this module.

CAUTION:

We strongly suggest not to remove or change any installed service. This section is meant to be used for troubleshooting. If you have reason to believe that one of these services is causing a faulty behaviour, ask your distributor for assistance.

CAUTION:

If you uninstall 'Sensor/Logger Software' no data are stored any more!

To save resources single programs can be stopped. Per default, these will start automatically when the airQlog® is restarted. If you want to stop a program permanently, you have to uninstall it. Uninstalled programs are listed separately. You can install a program with the corresponding button next to the uninstalled item.

6.7.3.2. Command Interface

NOTE
This item should only be used in case of troubleshooting during service.

If you have at least administrator rights on the airQlog® this item will be available. Figure 6.32 shows this corresponding window.

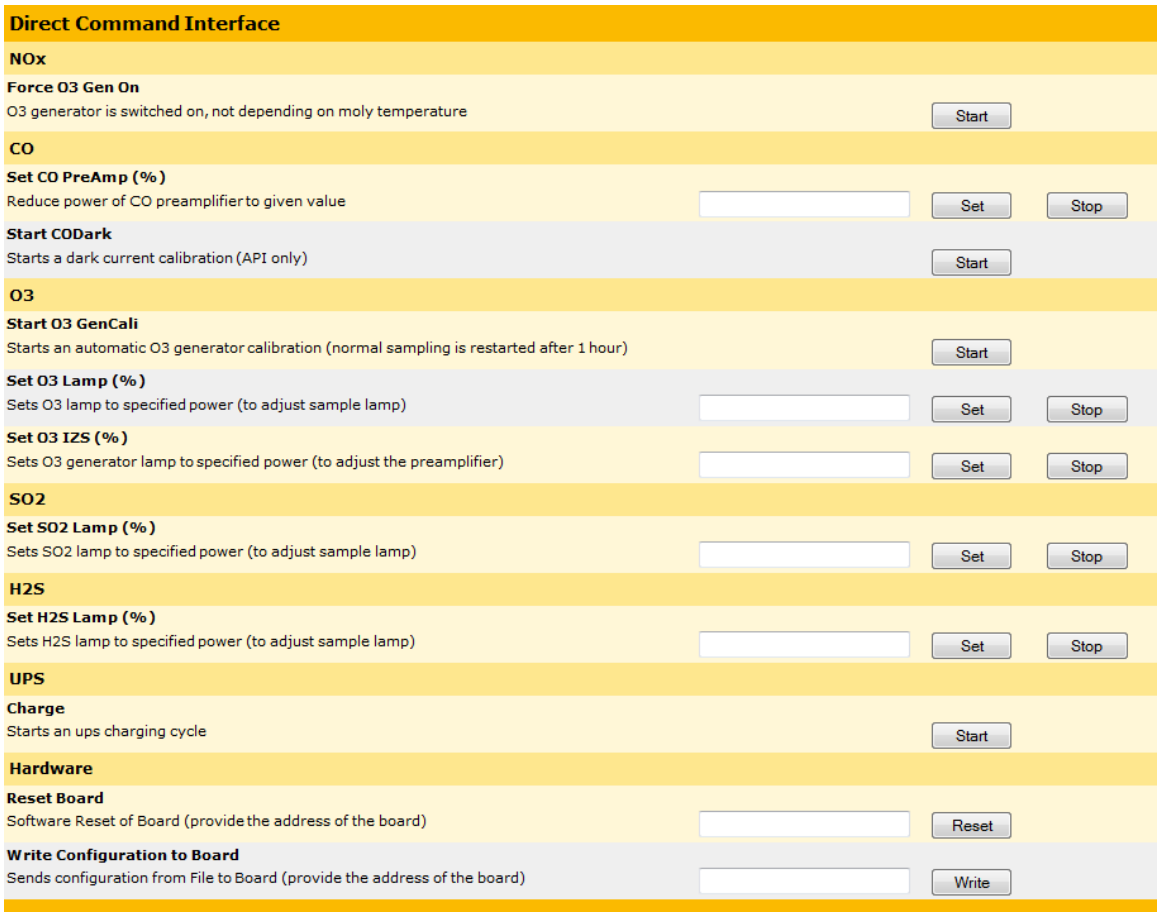


Figure 6.32.: Direct Command Interface of LinLog/LinSens

NOx

Force O3 Gen On

With this feature the ozone generator can be switched on even though the temperature of the ozone destroyer is too low.

CAUTION:

The exhaust gas may contain ozone!

CO

Set CO PreAmp (%)

Set the preamplifier of the CO module to a fixed value. This is used to adjust the potentiometer of the CO control board in the factory.

O3

Start O3 GenCali

Here you can start the measurement of the interpolation curve of the UV lamp of the Internal Span module of the ozone module. **Set O3 Lamp (%)**

Here you can choose a fixed value for the lamp voltage. Then there is no control cycle. This feature is used for adjustment of the UV lamp in the factory.

Set O3 IZS (%)

If this value is set, the ozone generator operates with a fixed voltage. This feature is used to adjust the preamplifier of the UV lamp in the factory.

SO2

Set SO2 Lamp (%)

Here you can choose a fixed value for the lamp voltage. Then there is no control cycle. This feature is used for adjustment of the UV lamp in the factory.

H2S

Set H2S Lamp (%)

Here you can choose a fixed value for the lamp voltage. Then there is no control cycle. This feature is used for adjustment of the UV lamp in the factory.

UPS

Charge

This feature meant to be a testing possibility for the airQlog® 's electronic system.

Hardware

Reset Board and Write Configuartion to Board (%)

With 'Reset Board' you can reset the software of the hadware board. By using 'Write Configuration to Board' you can write a new or individual for you designed config file to a hardware board.

6.7.3.3. Software Update

Software Updates can be downloaded quite easily. First hit ‘Scan’ to update the list for your instrument (see figure 6.33). Next hit ‘Download’ to effectivly download the newest updates. To finally install the updates press ‘Update’. If you hav any errors while updating hit ‘Fix’. ‘Test’ only shows you what updates could be downloaded and has no real relevance in everyday updating.

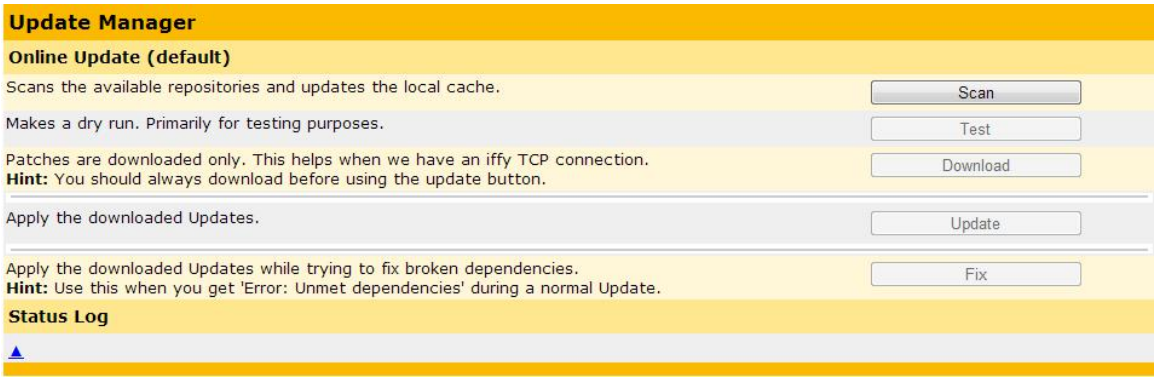


Figure 6.33.: Automatic Software Update

6.7.3.4. Backup

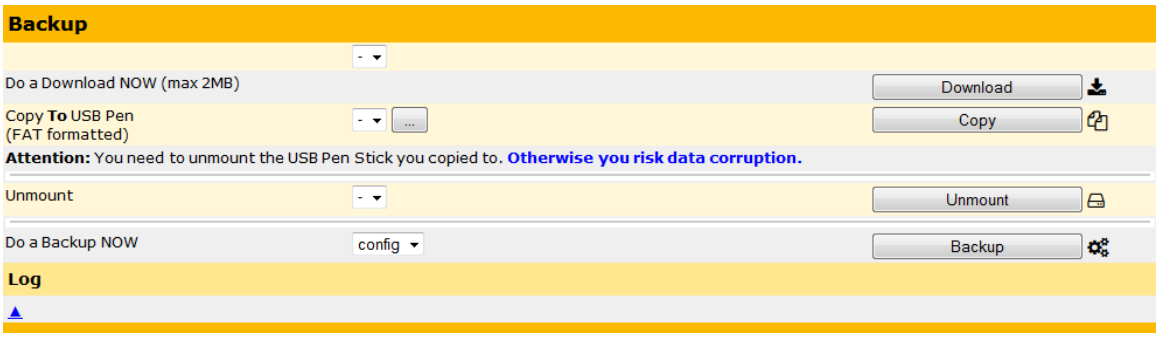


Figure 6.34.: Backup Configuration

This menu item provides you with backup copies of the airQlog® configuration (see Figure 6.34). Always execute this step after major changes in the system itself, e.g. new settings in the menu item 'Setup' → 'Communication'.
Clicking 'Backup' will start the backup of the airQlog®'s system files automatically in the background. Once backuped you can either 'Download' the backup file to your harddisk or transfer it directly to an extern devie by clicking 'Copy'.

NOTE
You always have to unmount the device you copied the backup to. Otherwise you risk data corruption.

For any reconstruction of a former configuration of the system based on these backups, please contact your distributor.

6.7.4. Extras

6.7.4.1. Campaigns

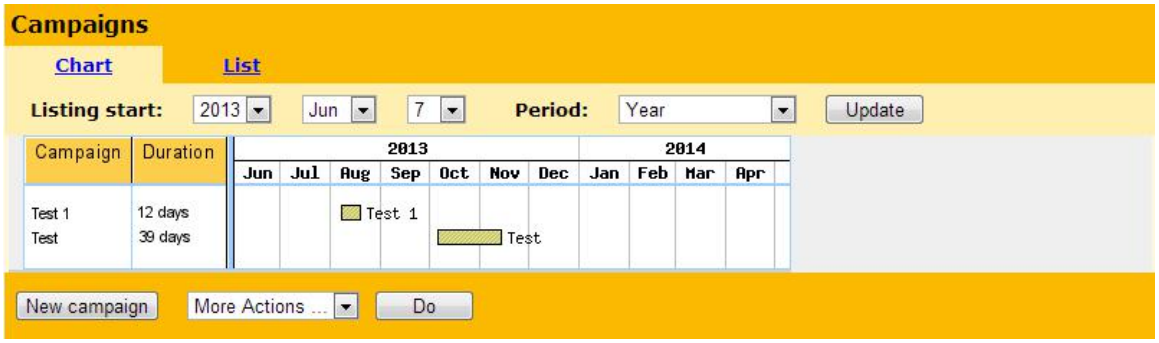


Figure 6.35.: Campaign Chart

With ‘Campaigns’ you can get a clear visualization of your collected data in a specific time frame. Think about positioning the device for a month in spot A and then moving it to spot B. Figure 6.35 shows you the chart representation of the two time frames (campaigns). The colored bars show the two campaigns where data was collected.

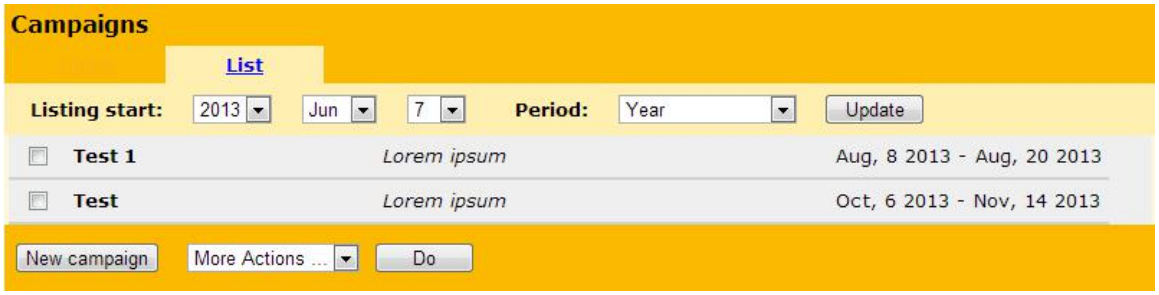


Figure 6.36.: Campaign List

6.7.5. Configuration

NOTE
If using the airQlog® not all of the provided information in the interface is relevant to you. Only the important facts will be explained in the following chapters

CAUTION:

Any change in the configuration influences the measurement. In doubt please ask your distributor.

NOTE
If you want to change the configuration parameters you have to have administrator rights at the airQlog® .

6.7.5.1. Calibration Parameters

Figure 6.37.: Overview of the Aux Configuration

If ones system has installed the Unibase-board, it is possible to recalibrate the different Analog_Ins by changing the ‘Offset’ and ‘Slope’ values.

6.7.5.2. Interface Configuration

Here you can change the default values for the network protocols AK Protocol und German Ambient Network Protocol. In picture 6.38 the parameters are listed and desribed. Further details are to be found in chapter ‘Software Protocols’. A

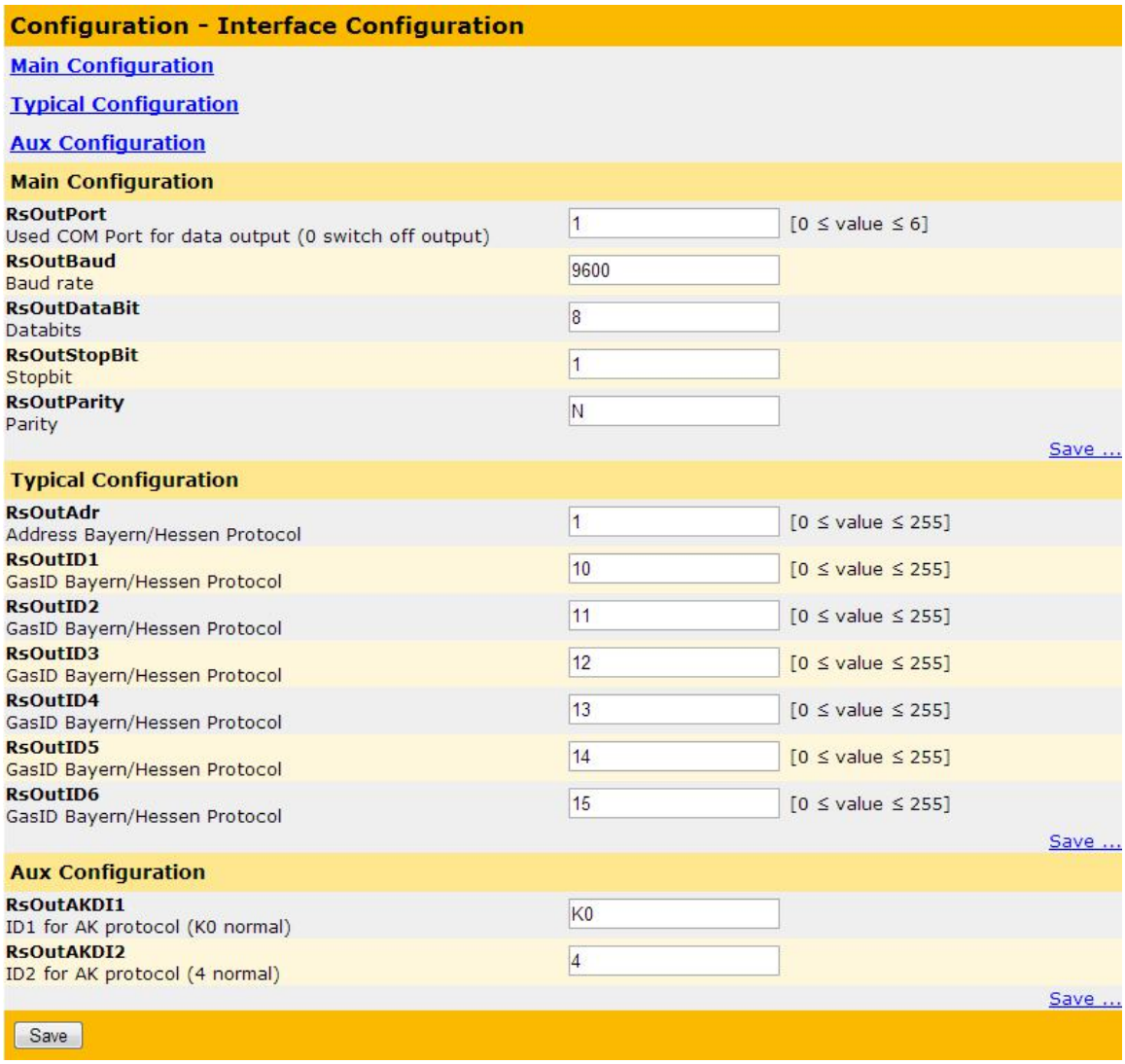


Figure 6.38.: Overview of Interface Configuration

6.7.5.3. System Parameters

Here you can change the system parameters manually. In picture the parameters are listed and described. Here you can manually set the poll intervall, the length of the average values and times of e.g. the calibration.

Main configuration:

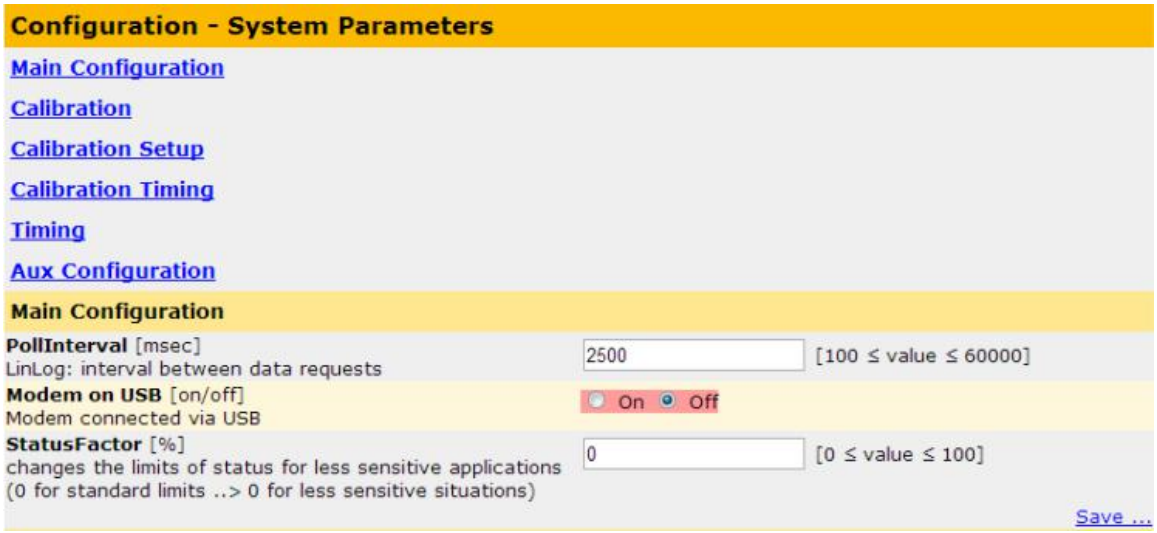


Figure 6.39.: Configuration of the System Parameters: Main Configuration

PollInterval

Here you can set the intervall between data request in the linlog.

Modem on USB

If you have connected a modem via USB you have to set this to ‘On’. Otherwise ther might be troubles recognizing your modem.

StatusFactor

This option lets you rise up the treshold value for status signals.

Averages, air condition and additional Settings:

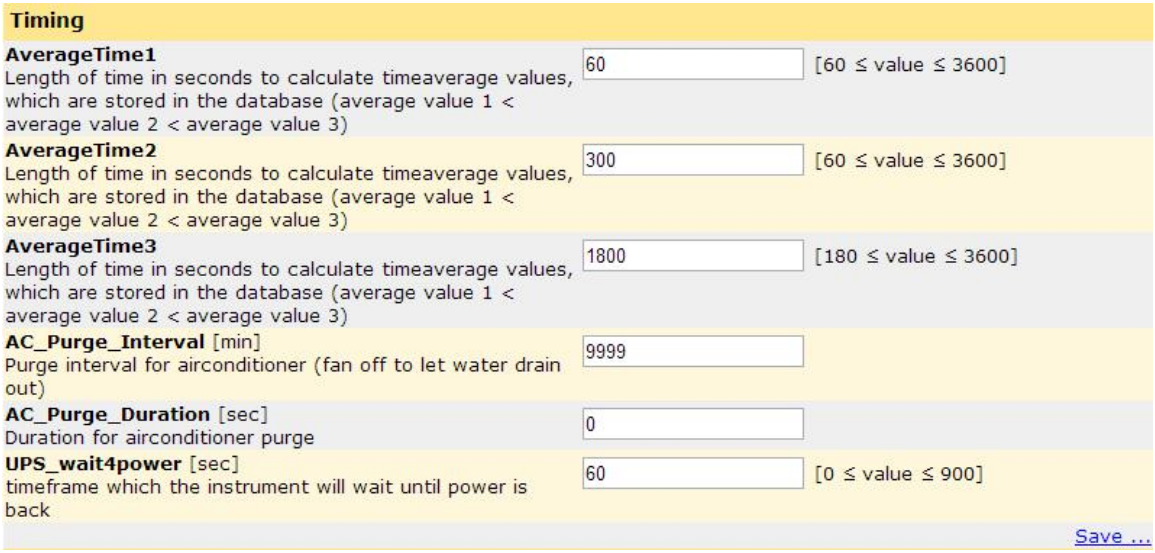


Figure 6.40.: Configuration of the System Parameters: Averages and air condition

Here one can choose the length of time in seconds to calculate timeaverage values, which are stored in the data base. And the purge interval and duration of the air condition.

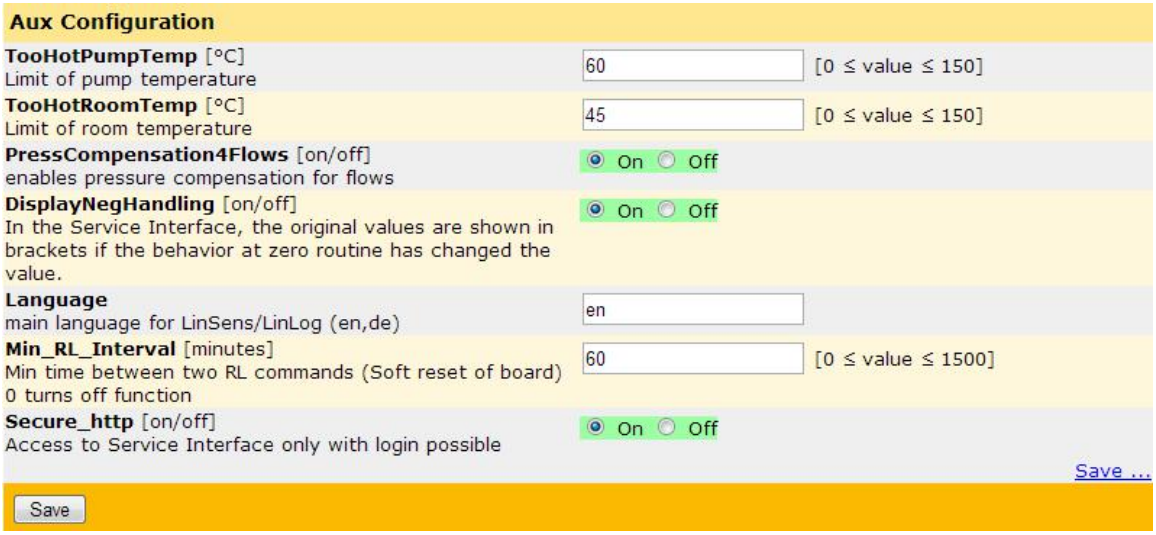


Figure 6.41.: Configuration of the System Parameters: Aux Configuration

Here one can set the maximal pump and room temperature, the handling of negative data and missing data during the automatic calibration check. Also you can set the language, accessibility andother general settings.

6.7.5.4. Customer/Station

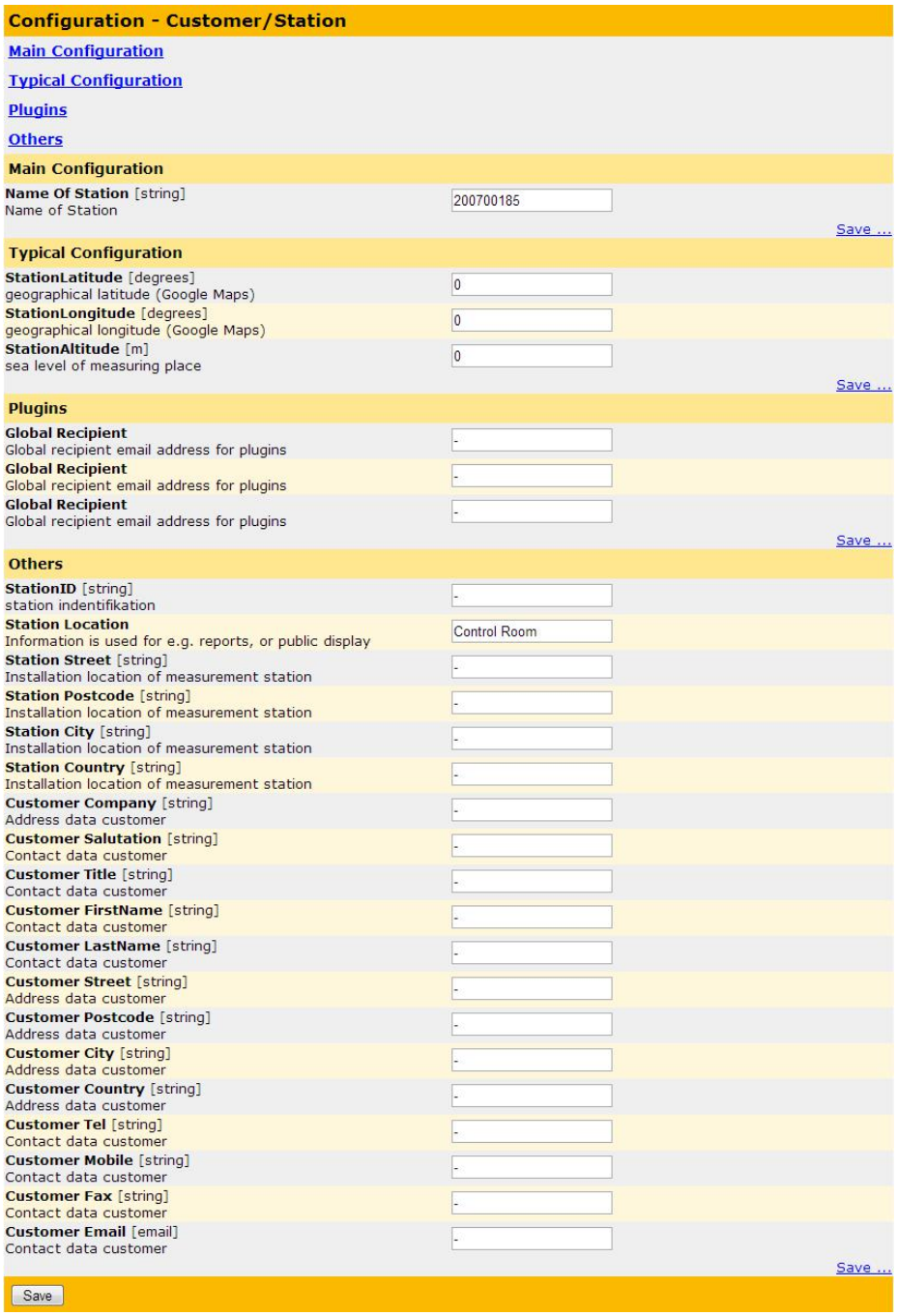


Figure 6.42.: Overview of the Customer/Station Interface

In picture 6.42 the parameters for setting customer-specific datas (adress and contact data), installation site of the measuring station and name of station are listed, described and can also be changed.

6.7.5.5. Synchronization

The synchronization process takes place automatically, e.g.: after installation of a new analyzer. To install a new analyzer see Chapter 6.7.6 ‘LinLog’.

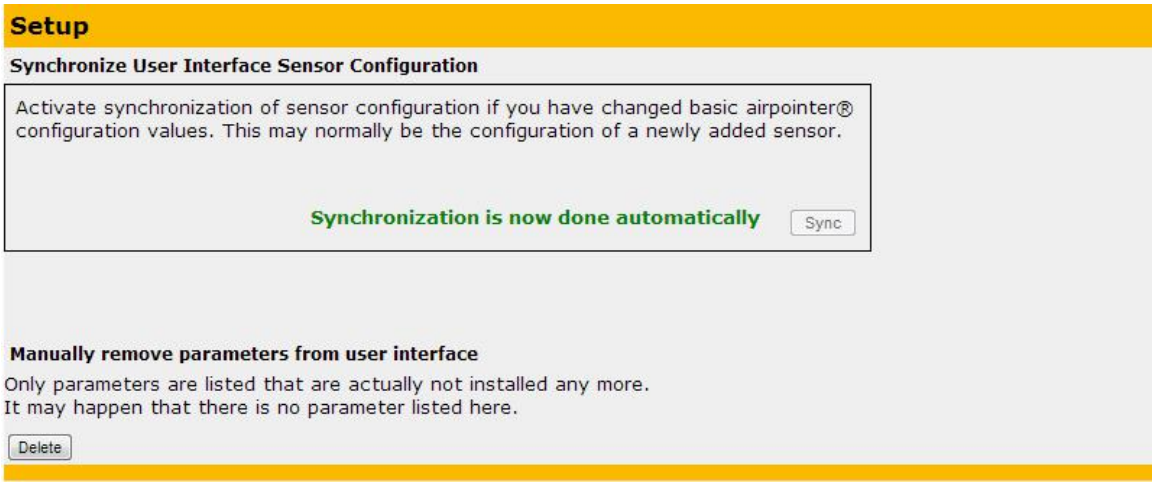


Figure 6.43.: Synchronization Interface

6.7.5.5.1. Manually remove parameters from user interface If you change your selection of used parameters the old ones are still listed e.g.: in the ‘Graph’ section (see section 6.2.2.1) marked with ’na’ but are not actualized. Here (see Figure 6.43) you find a list of these parameters.

If you are sure that you do not need one of these parameters any more you can permanently delete it from the list by clicking ’delete’. Then the parameter is not shown and the respective measurement data can not be downloaded any more.

CAUTION:

If a parameter is permanently deleted the respective measurement data can not be downloaded any more!

6.7.6. LinLog

6.7.6.1. Configuration

In the default configuration there are 10 COM ports available. Optionally you can get from 11 to 14 COM ports. This part of the Software allows you to add, edit or delete these external devices. Furthermore it is possible to choose which parameters should be stored and added to calculation.
Figure 6.44 shows an overview of already connected devices. In the top part you see current system settings.

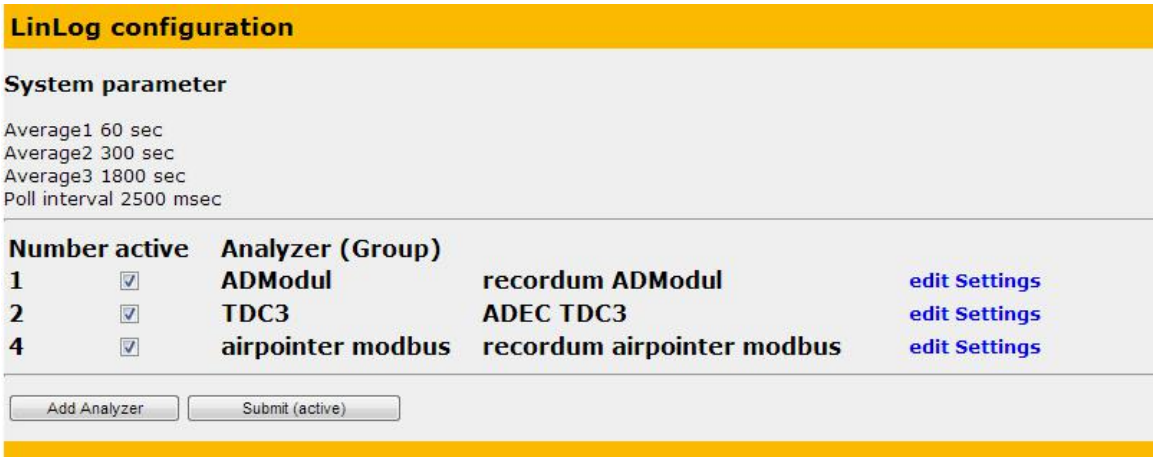


Figure 6.44.: Already connected devices (example)

The following list explains all available functions 6.44:

- **Add Analyzer:** Click to install a new analyzer.
- **Submit (active):** When you change the 'active' status of a device click 'submit' to confirm the change in status.
- **Restart to read in changes:** After editing the settings of an already connected device or after you have connected a new analyzer you have to restart the corresponding software to get the changes take effect by clicking this button.
- **Edit Settings** Change the settings of a device. See also section 6.7.6.1.

See the following section for a detailed explanation of these functions.

Add a new analyzer

CAUTION:

Please choose the name of your device and the parameters carefully. If you change it afterwards you cannot download data which was saved with the old name any more!

Click 'Add Analyzer' in Fig. 6.44 and you get Fig 6.45.

Figure 6.45.: Add new device

Select the company and the analyzer and submit your choice. If you want to connect the analyzer by LAN you have to choose the 'LAN' version listed.

NOTE
If you do not find your device in the list, check whether the analyzer supports one of the standard protocols. If not, please contact your distributor.

You get additional information about the analyzer as shown in Figure 6.45. The lines below the bars show you the number of your device, the brand and name of the analyzer and the COM Port to which it is connected. After initial creation it will show COM 0 (Baud,Data Bits, Stop Bit, parity) written in red. COM 0 is not a valid number and you have to change the COM port as shown at page 6-67.
If you have chosen a LAN analyzer you can skip to 6.7.6.1.

Note:

Shows you how you have to configure the RS232 of your analyzer so that your analyzer and the airQlog® can communicate with each other.

Parameters:

NOTE
Only selected parameters are stored and can be downloaded! If you unselect a parameter it cannot be downloaded any more. This is also valid for values which have been stored till the change!

Below the parameters are listed which the airQlog® can read out. Mark all parameters which are of interest for you and click 'submit' to confirm your choice. Please keep in mind that you can only download parameters which you have chosen. If you change your selection of parameters, parameters which are not still selected cannot be downloaded anymore.

COM Port Setup
Choose COM Port: The Com Port is set to COM1 (see Figure 6.46). If this Com Port is not free you have to change it. All COM Ports are listed including which device or group is connected to it. Select the COM Port to which you have connected your device. Now click 'Finish!' and accept the preset parameters for the COM port.

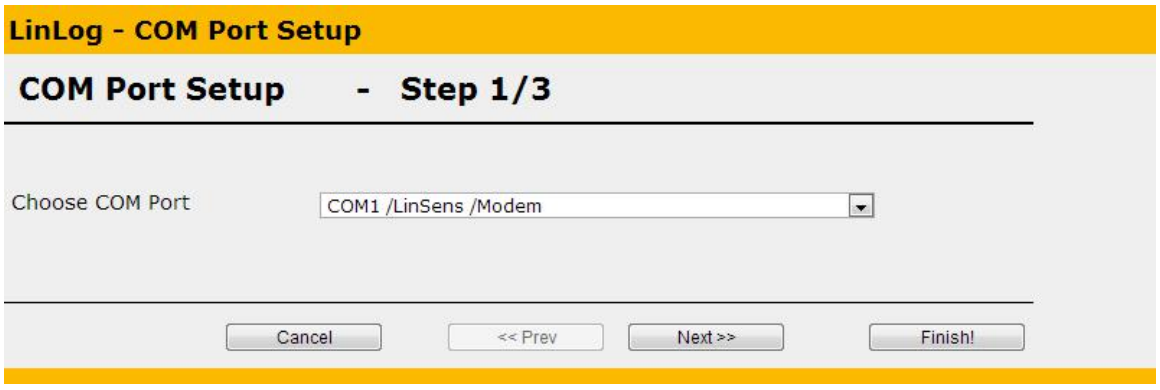


Figure 6.46.: Select the communication port: Step1

COM port Setup:
If you need expert settings for COM Port than you can go on with 'next' to set further details as shown in Figures 6.47 and 6.48.

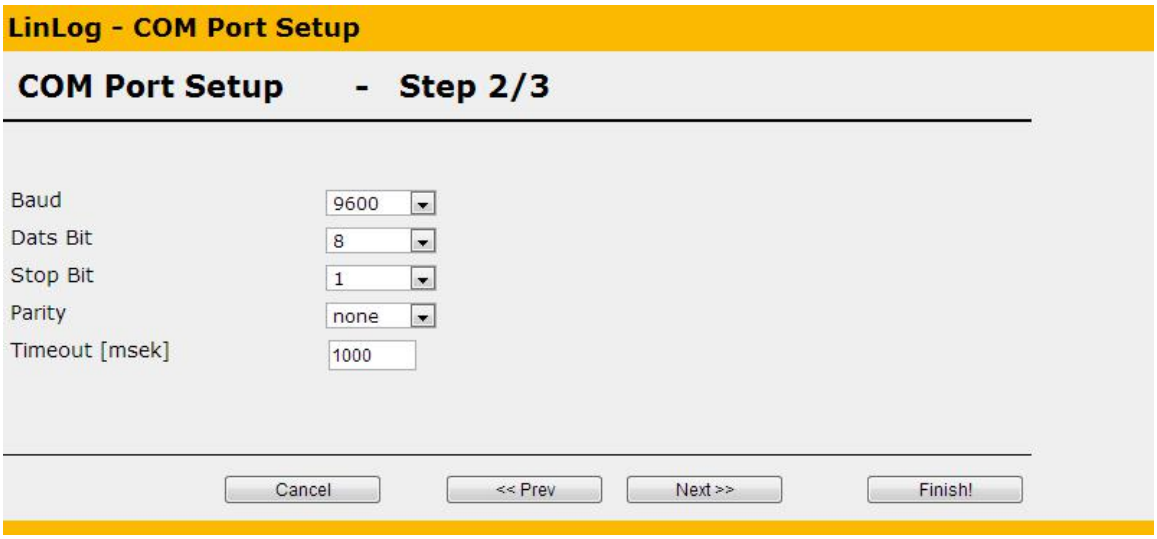


Figure 6.47.: Select the communication port: Step2

Timeout:

The time the airQlog® waits to get an answer from the device. A typical value is 1 second. You can check whether the time is set correctly, if you observe the communication of the RS232 interface.

Figure 6.48.: Select the communication port: Step3

You may also change low level RS232 communication protocols. Enter the appropriate settings for the COM port and click 'Finish!' .

IP Setup

If you have added an analyzer bay LAN you have to edit your and the analyzers IP address manually.

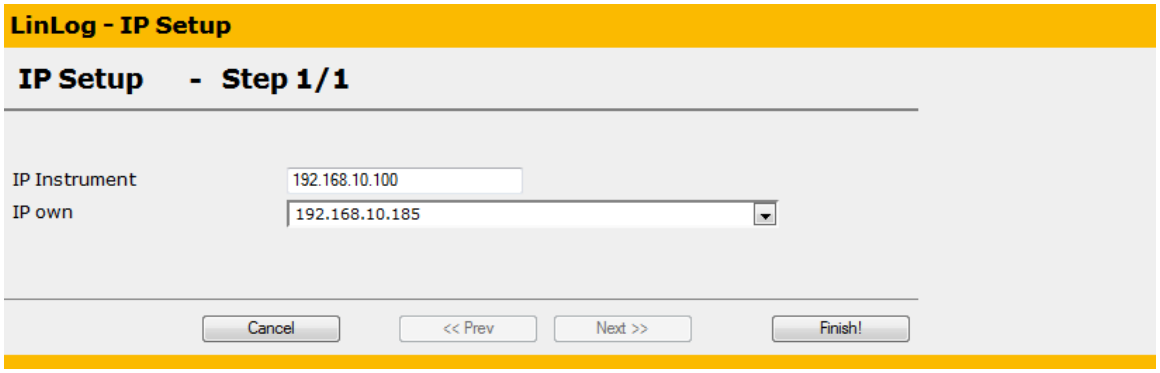


Figure 6.49.: select the IP address of your device and your analyzer

Calibration Timing:

The 'Calibration Timing' can be set for each source once. (It is no calibration but a calibration or function control.) The calibration of the analyzer is not changed.

Figure 6.50.: Select calibration timing: Step1

Starttime:

Select a date/time (year,month,day,hour) when the calibration control should start initially.

Interval:
Choose an interval when the calibration control should be repeated in hours.

Go on to Step 2 with 'next' to set timing during the function control.

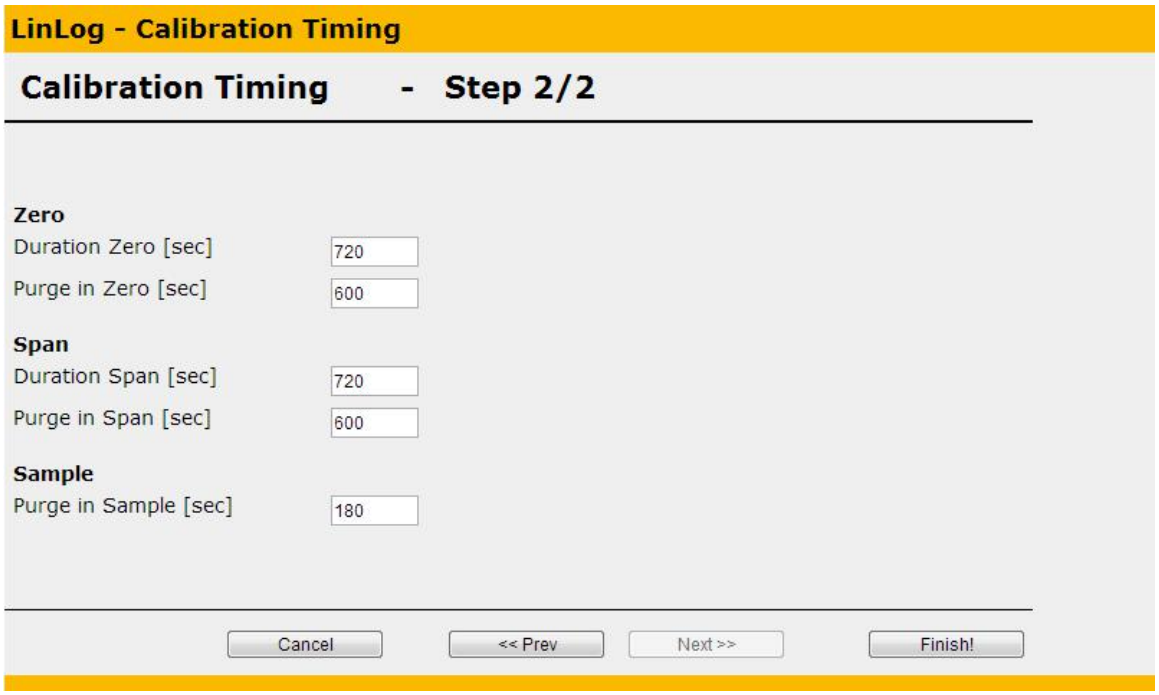


Figure 6.51.: Select calibration timings: Step2

Zero: The analyzer is set to Zero measurement
Duration Zero [sec]: How long the device is set to Zero measurement in seconds.
Purge in Zero [sec]: Duration of purge in in seconds.
The measurement values after the purge in time till the end of the duration time will be averaged. This value will be taken over as new zero value into the database.

Span: The device is set to Span measurement
Duration Span [sec]: How long the device is set to Span measurement in seconds.
Purge in Span [sec]: Duration of purge in in seconds.
The measurement values after the purge in time till the end of the duration time will be averaged. This value will be taken over as new span value into the database.

Sample: The device is set to sample measurement
Purge in Sample [sec]: Purge in time in seconds.
After the purge in time the standard measurement takes place till the next calibration control according to the set interval. The measurement values are stored in the database.

Parameter Setup:
The parameters of your analyzer (see in Figure 6.45) are listed (see Figure 6.52). Here you can rename a parameter and set slope and offset, averaging and calibration values.

Figure 6.52.: Choose Parameters: Step1

Select one parameter and go on with 'next'.

Step 2: see Figure 6.53.

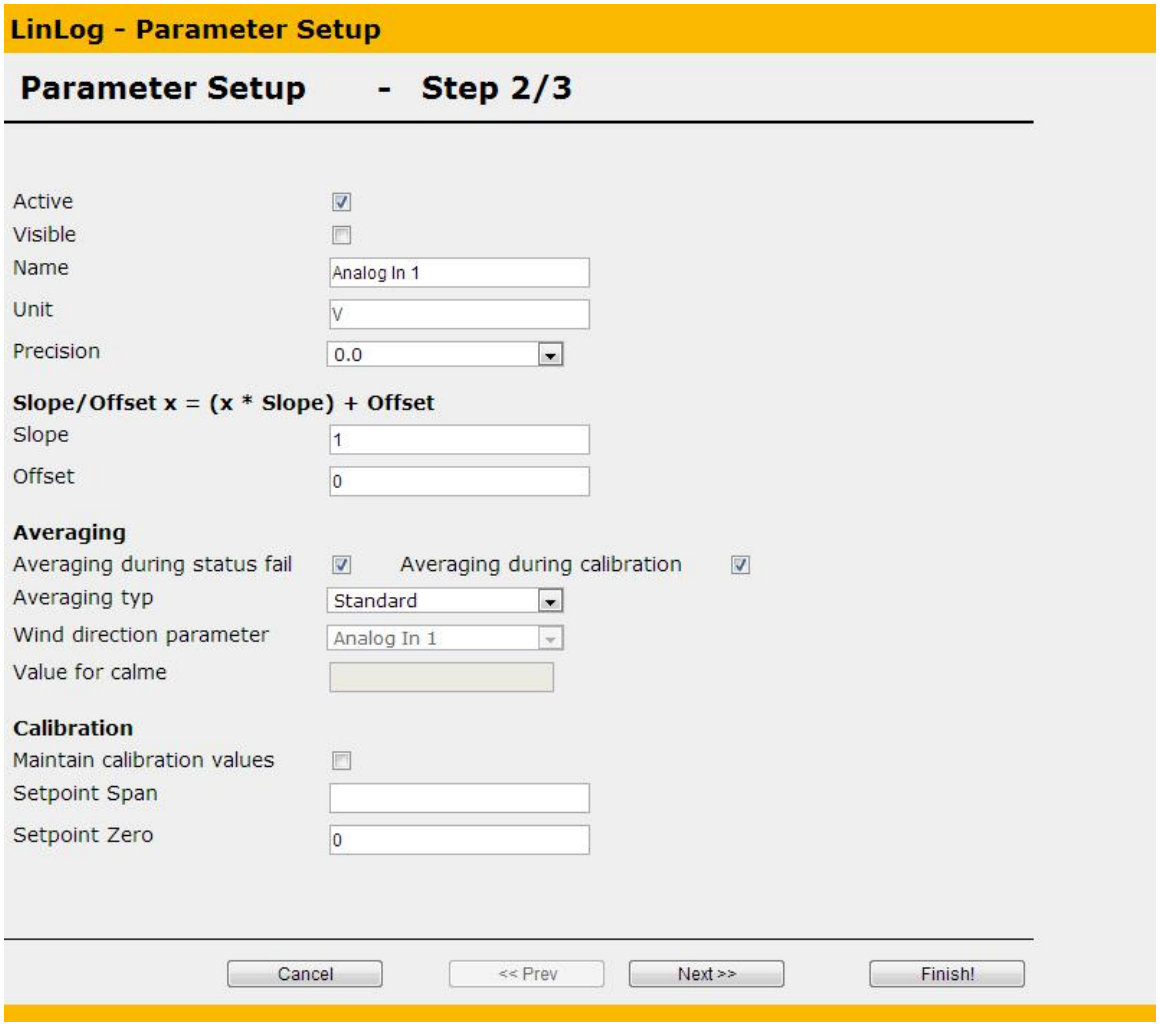


Figure 6.53.: Choose Parameters: Step2

Active: If you want to save this parameter click 'active'
Name: Select a name for this parameter
Unit: Write the unit in which your parameter is saved
Precision: The precision of the saved value (numbers after the separator)

CAUTION:

Please choose the name of your parameter carefully. If you change it afterwards you cannot download the values which were saved with the old name any more!

Slope/Offset:
Here you can set Slope and/or Offset for your parameter. This can be useful e.g.: to save all values in °C instead of Kelvin or vice versa.

Averaging:
Choose if 'Averaging during status fail' and/or 'Averaging during calibration' should take place and its values should be saved in the database.
Averaging type: Choose kind of averaging: standard, last value, wind speed vector or wind direction value.
Wind direction parameter and value for calm: if you have chosen wind speed vector or wind direction value you can set this parameters according to your needs.

Calibration:
Maintain calibration values: Click if you want so save the values during the calibration control.
Setpoint Span and Setpoint Zero: Fill in the values for your device.

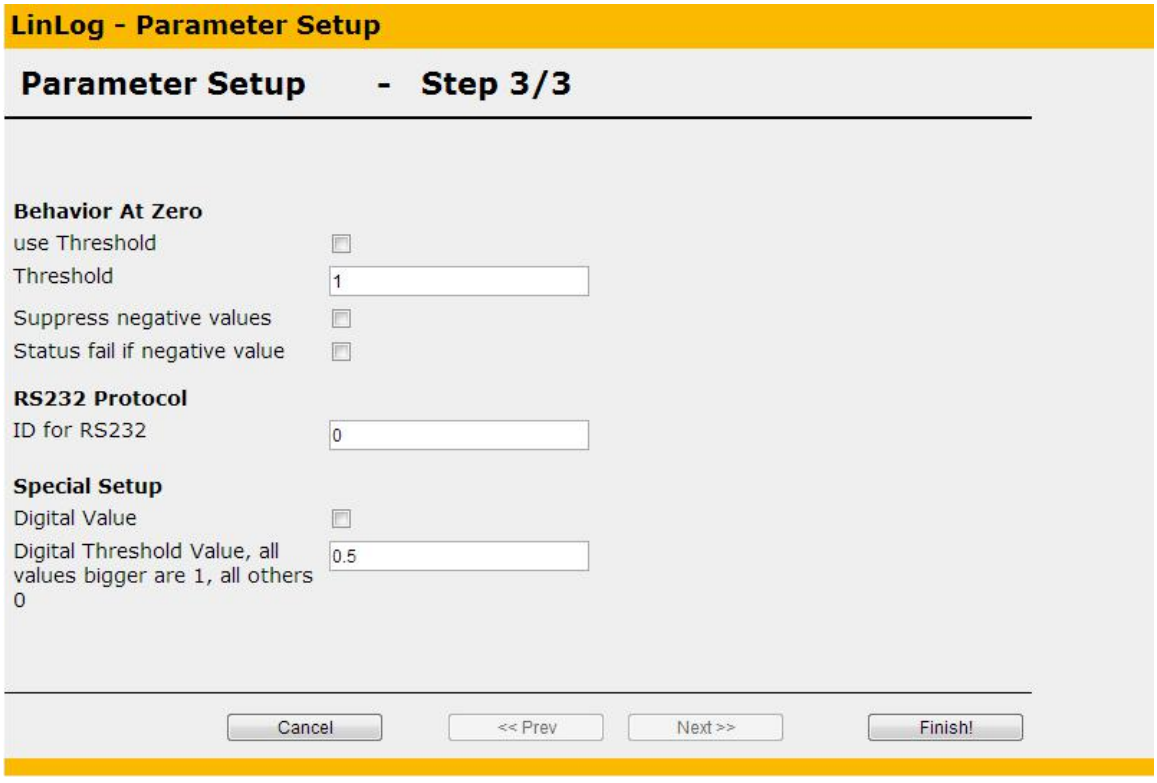


Figure 6.54.: Behavior at zero

Save the parameters of the 'Parameter Setup' by clicking 'Finish'.

Parameter Calculation Setup
You can carry out some calculations with parameters of connected analyzers. If you want to rename a parameter see page 6-72.

Step 1: Select one of listed parameters of the chosen analyzer an go on with 'next'

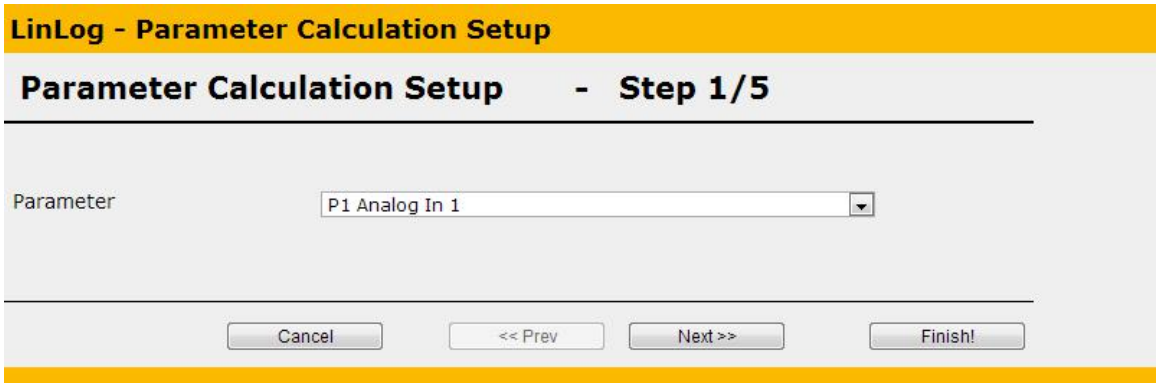


Figure 6.55.: Calculations: Step1

Step2: As shown in Figure 6.56 you can choose between a 'Fixed Value' or a measurement value. For the last click 'Input' and select a 'Source' (all possible sources/analyzers are listed) and a 'Channel' (all parameters are listed) and go an with 'next'.

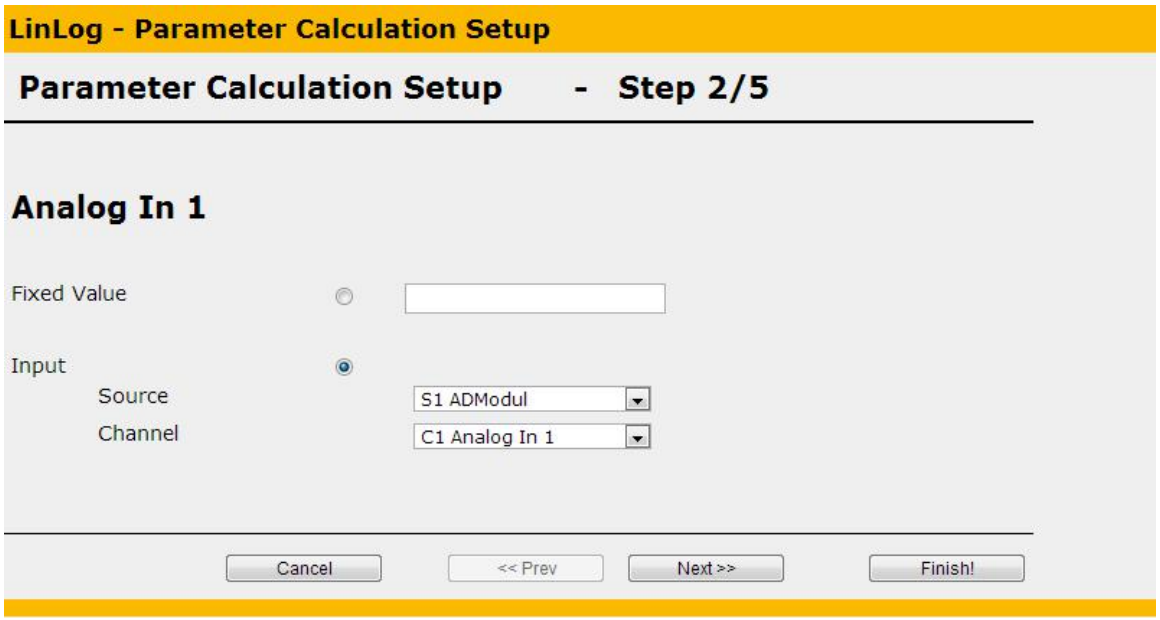


Figure 6.56.: Calculations: Step2

Step3 - Step5:
Here you can make some specialized calculations with your parameters.

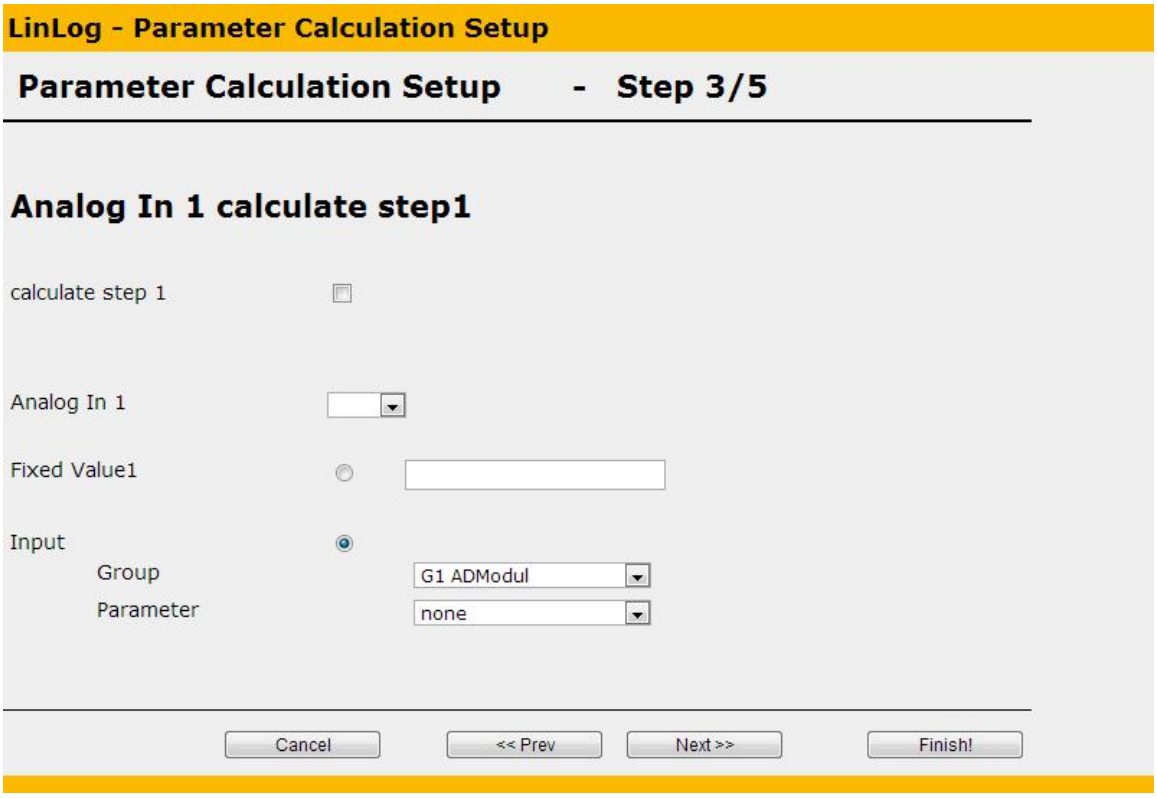


Figure 6.57.: Calculations: Step 3 - Step 5

- Click 'calculation step1'.
- Choose a calculation operation.
- If the calculation takes place with a fixed value fill in 'Fixed Value1'.
- Otherwise mark 'Input' and select a Group (analyzer) and a parameter from this group.

If you need a more specialized calculations go on with 'next' to step 4 and 5. Else go on with 'Finish!'. Then the calculations will be saved.

Group Setup

CAUTION:

Please choose the name of your device carefully. If you change it afterwards you cannot download the values which were saved with the old name any more!

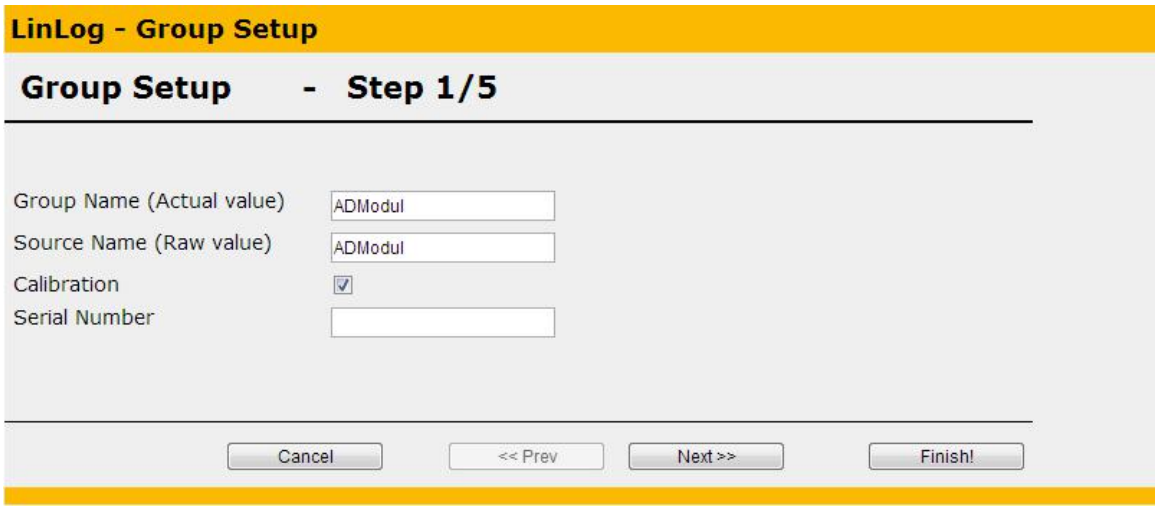


Figure 6.58.: Group: Step1

Group Name: Name of the device for the 'Actual Values'.

Source Name: Name of the device for the 'Raw Values'.

Calibration: Here you can select if a calibration control should take place. If yes, you have to fill in the 'Calibration Timing' (see page 6-70) to set up the calibration.

If you want to change the communication protocol proceed with 'next' (see Figure 6.59) otherwise store the changes with 'Finish!'.

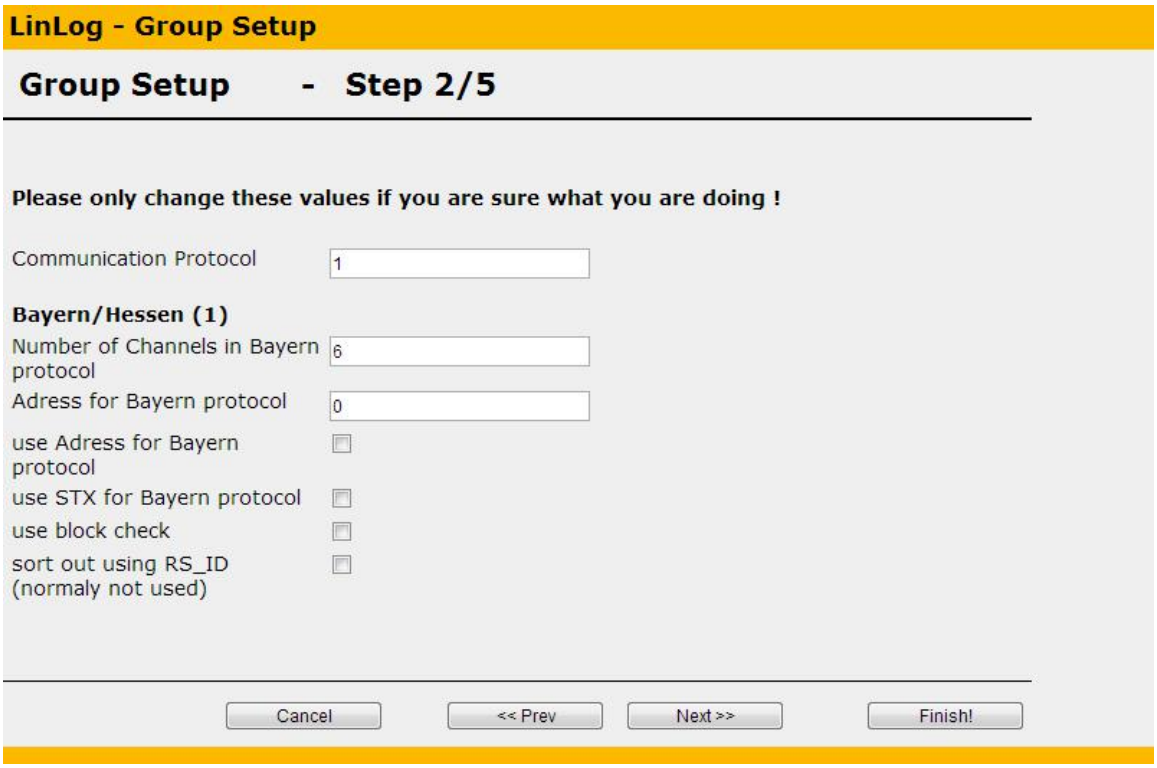


Figure 6.59.: Group: Step2

CAUTION:

Please only change the communication protocol if you are an expert!

Edit settings of an analyzer Choose the device you want to edit and click 'edit Settings'(see Fig. 6.44). You get Figure 6.45. Now you can change the settings as described in Paragraph 6.7.6.1.

NOTE

Only selected parameters are stored and can be downloaded! If you unselect a parameter it cannot be downloaded any more. This is also valid for values which have been stored before the change has been made!

Delete an analyzer Choose the device you want to delete and click 'edit Settings'(see Fig. 6.44). You get Figure 6.45. Now click 'Delete' beside the name of your device and confirm it.

6.7.7. LinOut

6.7.7.1. Configuration

LinOut Configuration

ID	Register	Name
1	0	NO
2	2	NO2
3	4	NOx
4	6	CO
5	8	O3
6	10	SO2
7	12	H2S
8	14	Part
9	16	
10	18	
11	20	
12	22	
13	24	
14	26	
15	28	
16	30	
17	32	RoomTemp
18	34	CoolerOutTemp
19	36	PumpRoomTemp
20	38	
21	40	NO
22	42	NO2
23	44	NOx
24	46	CO
25	48	O3
26	50	SO2
27	52	H2S
28	54	Part
29	56	
30	58	

Figure 6.60.: LinOut Values

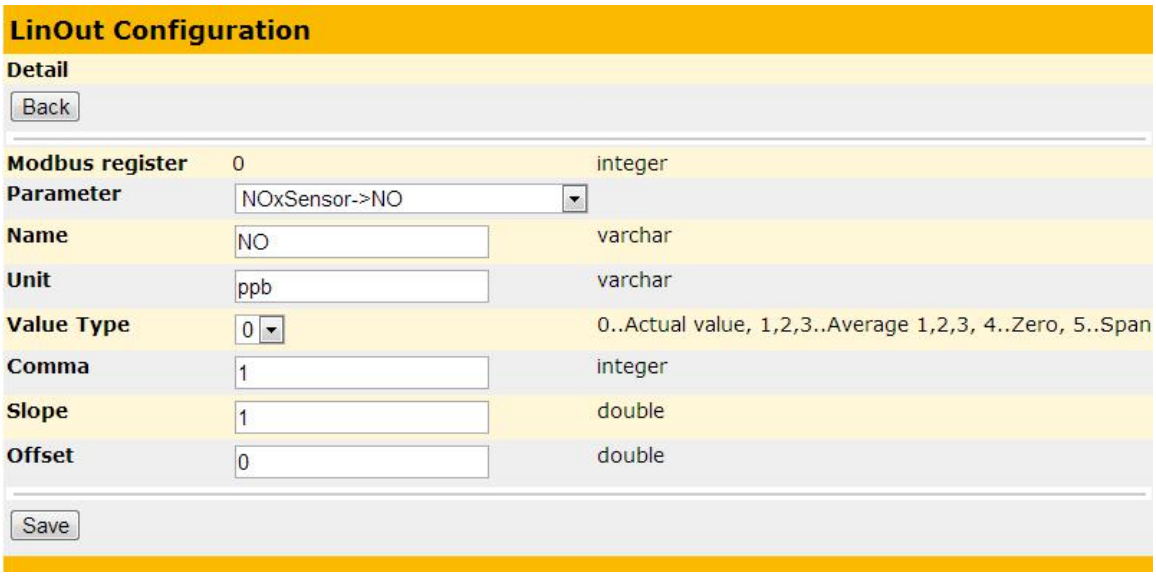


Figure 6.61.: LinOut Edit

6.7.8. Communication

Here you edit your settings on how to connect the airQlog® via a web browser.

NOTE
All settings should only be made while being on-site and having connected your notebook using the RJ-45 connector LAN 2 in the maintenance access and the cross patch cable to the airQlog® (See 'Getting Started' in Section 5.2.2). Otherwise, you may permanently loose the remote access to the airQlog®!

Please login as member of the group administrator of the airQlog® for the settings described in the following.

In case of any doubt concerning the terms used in this menu item, contact your network administrator.

NOTE
All new settings can seriously damage your system! Only proceed in case you are absolutely sure! If in doubt, please consult your network administrator!

6.7.8.1. Nameserver

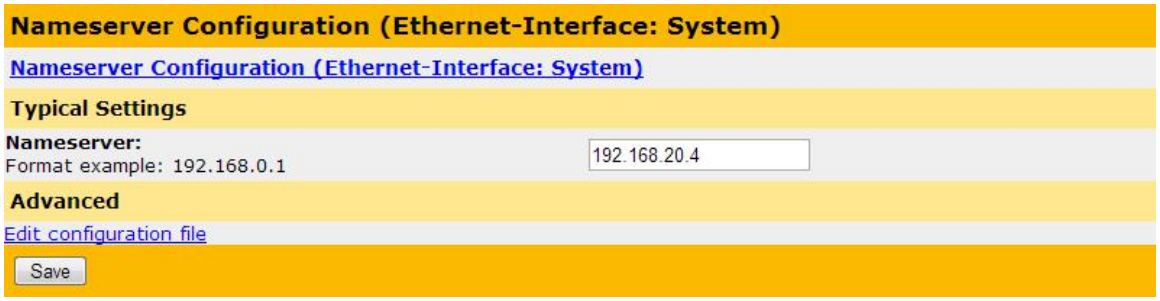


Figure 6.62.: Configuring Nameserver Settings

The standard settings can be configured as shown in Figure 6.62. Further details are listed if one click ' Edit configuration file' as shown in Figure 6.63.

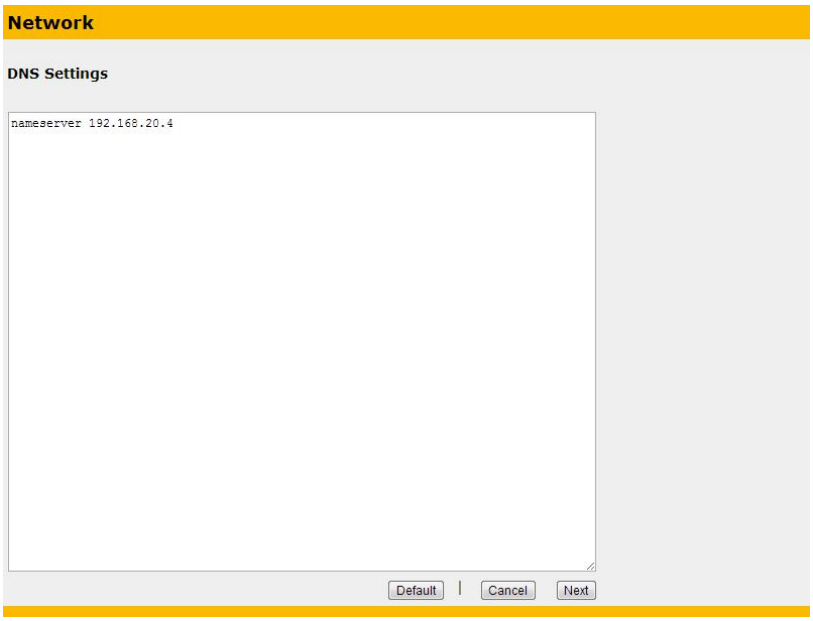


Figure 6.63.: Further Configuring DNS Settings

Please adjust only the following settings for the interface system according to your local network (see Figure 6.63). Your network administrator will provide you with the required data.
In this example your name server in the local network has the IP–address 192.168.0.4

```
nameserver 192.168.0.4
```

If this entry should not exist, please add it according to the example.
You can name up to three different servers.

6.7.8.2. Network

Settings made here relate to the network interface called ‘LAN 1’ in your airQlog® .
This interface is used if you want to integrate your airQlog® in a local network (LAN) (see Figure 6.64).
As an option, this interface can be used for connection with a Wireless LAN Router. Furthermore, you can establish via this interface an ADSL or SDSL connection to the Internet. You can connect the airQlog® to the Internet as well via this interface using a Cable Modem connection.
For further details concerning these special configurations of the airQlog® see Chapter 5.2 and please contact your distributor.
In the following you will find the settings for connecting the airQlog® to a LAN.

IP–Address The standard settings can be configured as shown in Figure 6.64.

All settings for the network interface will not be accepted, before newly starting the respective service by clicking ‘Start new’.

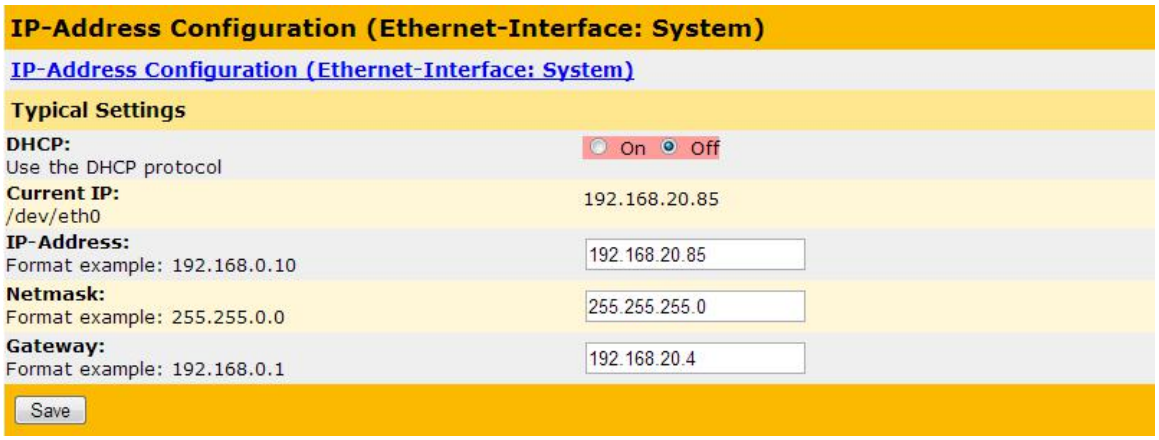


Figure 6.64.: Configuring Network Settings and IP Address of Network Interface 'System'

Please remember to only make changes of the interface if you are connected through the network interface 'LAN 2' (maintenance access) via Cross Patch Cable to the airQlog®.

6.7.8.3. DynDNS

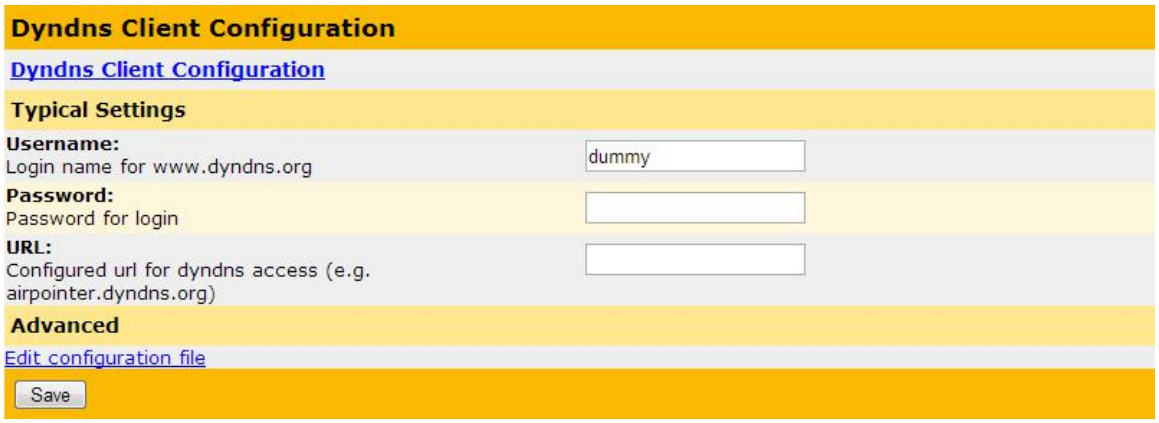


Figure 6.65.: DynDns Daemon

In case your airQlog® is connected via a GPRS Modem with the Internet Service Provider (ISP), the ISP assigns a dynamic IP–address, which will change. To make your airQlog® using a constant address, the DynDNS Service is used.
At that moment, when ISP assigns a new, dynamic IP–address to the airQlog®, a service on your airQlog® will report this new address to DynDNS.org (every 120 seconds, this service tests for a changed IP–address, so in the worst case your airQlog® can not be accessed for a maximum of 120 seconds after the ISP assigned a new, dynamic IP–address to the airQlog®). This procedure guarantees that you can always access your airQlog® via the Internet.

These services are provided for free by DynDNS.org for one e-mail address. The standard

settings can be configured as shown in Figure gprsdyn1. Further details are listed if one click ' Edit configuration file' as shown in Figure 6.66.

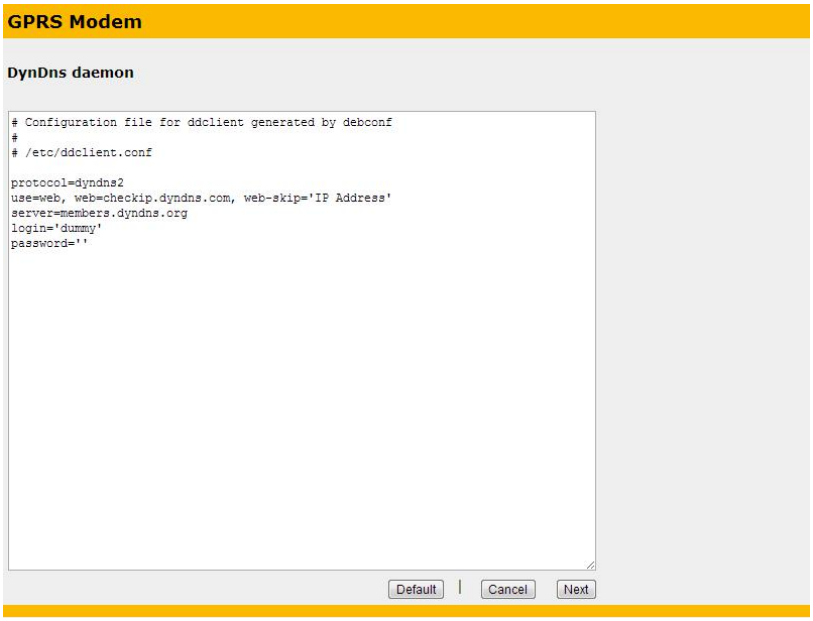


Figure 6.66.: Further details DynDns Daemon

How to gain the required DynDNS.org data:

1. Register on www.dyndns.org.

2. You will receive a confirmation mail to your mail address. After a successful log in you will select a name according to your wishes from Dynamic DNS, by which you later want to access your airQlog® via the Internet.

3. Please edit only the following settings (see also Figure 6.66):

```
login=your-login
password=your-password

server=members.dyndns.org,     \
protocol=dyndns2           \
your-dynamic-host.dyndns.org
```

login :

This is the user name of your registration with DynDNS.org.

password :

This is the password of your registration with DynDNS.org.

server :

Please do not make any changes here.

protocol :

Please do not make any changes here.

your-dynamic-host.dyndns.org :

Please change this line to your selected and registered name at DynDNS.org.

6.7.8.4. GPRS

Settings made here relate to the optional available GPRS Modem for your airQlog® . In the majority of cases you will only need to set these parameters according to your network provider settings.

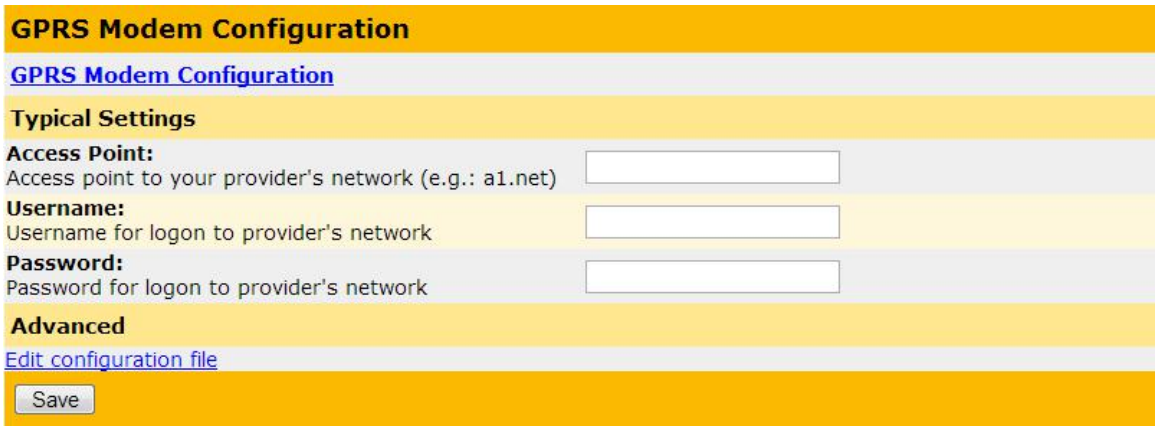


Figure 6.67.: Basic GPRS settings

In case you need advanced configuration, click on 'Edit configuration file'. In the following you will find a list of all editable parameters in the configuration file. Your local network provider will have information about these parameters for you.

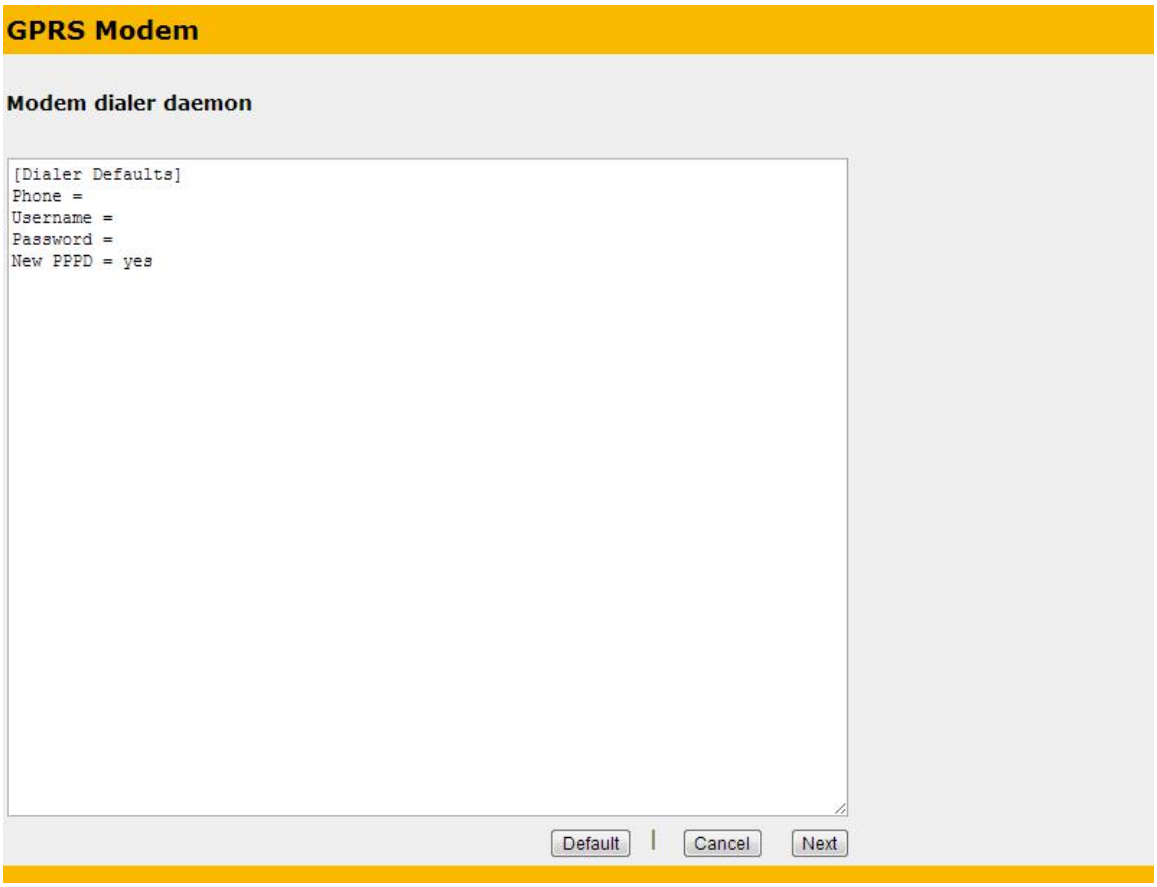


Figure 6.68.: Advanced GPRS settings

If the following entry does not exist in your configuration file, please add it. Clicking 'Default' enables to load the standard settings into the editor.

```
Init1 = ATZ
Init2 = AT+CGDCONT=1,ip,a1.net
Init3 = AT+CGQREQ=1,3,4,3,0,0

Phone = *99***1#
Username = ppp@a1plus.at
Password = whatever
Dial Command = ATDP
```

Init1 :

Do not change anything here, this command resets the modem.

Init2 :

Replace 'a1.net' by APN (Access Point Name) of your provider.

Init3 :

Do not change anything here, change the settings only according to your provider.

Phone :

Do not change anything here, change the settings only according to your provider.

Username :

Change the settings only according to your provider.

Password :

Change the settings only according to your provider.

Dial Command :

Change the settings only according to your provider.

6.7.8.5. Test Connectivity

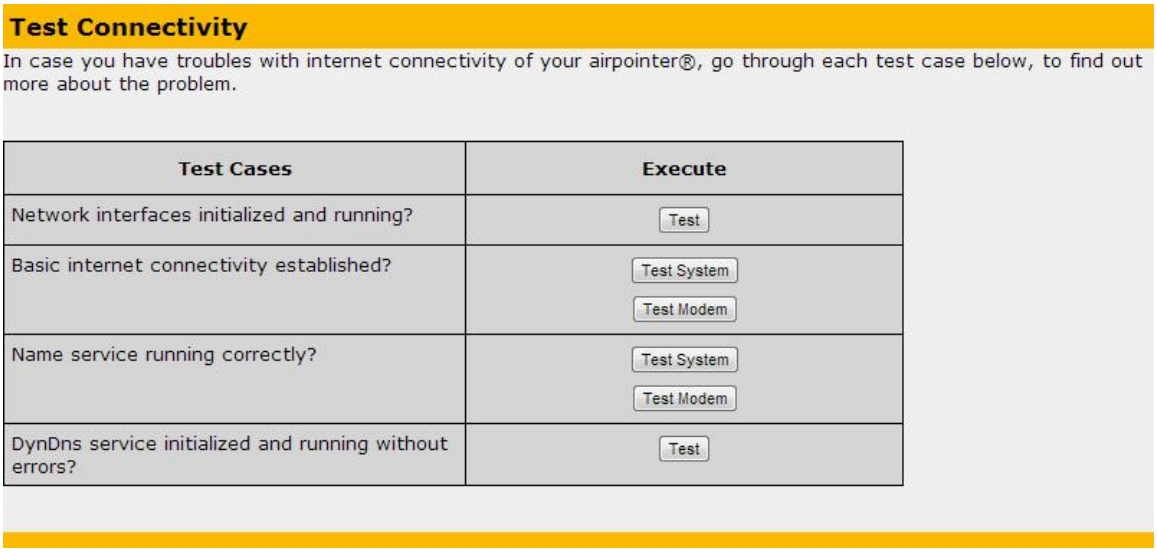


Figure 6.69.: Test Connectivity

In case of problems when connecting the airQlog® with the Internet, you can here systematically check some of the settings (see Figure 6.69).

NOTE
These tests can be made in any case while being onsite and having connected your notebook using the RJ-45 connector labeled LAN 2 and the cross patch cable to the airQlog® (See 'Getting Started' in Section 5.2.2).

For the following tests, please log in as member of the administrator group to the User Interface (http://172.17.2.140) of the airQlog®.
Click 'Test' in the respective line to carry out the tests described.

NOTE
We do recommend to carry out these tests from the beginning at the top to the end to narrow down the problem while trying to connect.

Network interfaces initialized and running?

This provides the initialized and running network interfaces for the time being

- System Interface
- User Interface
- Modem Interface

System Interface and User Interface must be running all the time. Should this be not the case, a hardware error of the respective network interface is likely to have occurred.
Further tests, in case the system should not be running:

1. Shut down the data acquisition system of your airQlog® by pressing both Maintenance Switches for at least 15 seconds.
2. Then press the switch Reset at the RDPP module to restart the data acquisition system.
3. Afterwards, repeat the test described above.
4. Now the System Interface should be running, if not, please contact your distributor's service.

The modem interface shows the status 'running' if a connection has been established with your mobile telephone network provider.
There is a variety of reasons if the modem interface shows 'not running'.

1. The option GPRS modem has not been installed in your airQlog®.
2. Has the SIM-card of your mobile telephone network provider been put in correctly?
3. Test the availability and signal-strength of the GPRS net of your mobile telephone network provider at the site of the airQlog®. The easiest way is using a mobile phone of the same provider.
4. The SIM-card of your mobile telephone network provider may be faulty or has not been cleared for GPRS. Please check the SIM-card in a mobile phone for proper function, especially GPRS function.
5. Did you deactivate the PIN query of your SIM-card? Again, the easiest way of checking is using your mobile phone.
6. Did you make all the GPRS settings in the menu item Setup $\rightarrow$ Communication GPRS Modem $\rightarrow$ Modem dialer daemon according to the instructions of your mobile telephone network provider? Please check these settings one more time. Ask the Helpdesk of your mobile telephone network provider concerning the settings of the configuration file. Especially, check the spelling of APN (Access Point Name), Phone, User name, Password, and furthermore, the additional parameter of Init1, Init2 and Init3, as well as the Dial Command.
7. In case you have the possibility, do use the SIM-card of an alternative network provider for testing.

Basic Internet connectivity established?

Depending on which interface you would like to test, click ‘Test System’ or ‘Test Modem’. A Ping to an existing IP–address in the Internet will then be carried out.

System Interface

1. Should this Ping fail, check the setting of Setup $\twoheadrightarrow$ Communication $\twoheadrightarrow$ Network $\twoheadrightarrow$ Gateway.
2. Furthermore, maybe there is no connection to the Internet using this network line at all, or the network cable has not been plugged in.

Modem Interface

If this Ping fails, but the test ‘Internet connection existing?’ for the modem interface has successfully established a connection with the Internet, please check again if the first test still shows a running modem interface.
Further tests, in case the system should not be running:

1. Shut down the data acquisition system of your airQlog® by pressing both Maintenance Switches for at least 15 seconds.
2. Then press the switch Reset at the RDPP module to restart the data acquisition system.
3. Afterwards, repeat the test described above.

Name service running correctly?

Depending on which interface you would like to test, click ‘Test System’ or ‘Test Modem’. A Ping on www.recordum.com will be then carried out in the Internet for purpose of testing.

System Interface

1. Should this Ping fail, check the DNS setting for a valid and available name server in the local network.
2. Furthermore, maybe there is no connection to the Internet using this network line, or, the network cable has not been plugged in.

Modem Interface

If this Ping fails, but the test ‘Internet connection existing?’ for the modem interface has successfully established a connection with the Internet, the nameserver addresses of the modem have not been entered at all or in a wrong way.

Check in Setup ↠ Communication ↠ Network ↠ DNS (Nameserver addresses), whether the correct name server IP–addresses of your mobile phone network provider have been entered.
Normally, this entry is done automatically when successfully establishing a connection with the GPRS modem to your mobile phone network provider.
Anyway, you can enter a valid public nameserver address in this configuration file manually as well.

DynDns service initialized and running without errors?

This service provides the possibility of accessing your airQlog® using the Internet with your name selected and defined at DynDNS.
A successful entry of the forwarding of the current IP–address (assigned by your mobile phone network provider) looks the following:

```
Subject: status report from ddclient@airpointer
Date: Tue, 22 Mar 2005 13:03:40 -0100 (GMT+1)

SUCCESS: updating your-dynamic-host.dyndns.org: good: IP address set to
84.20.165.47
```

```
Subject: status report from ddclient@airpointer
Date: Tue, 22 Mar 2005 13:03:40 -0100 (GMT+1)

WARNING: cannot connect to members.dyndns.org:80 socket: IO::Socket::INET: Bad
hostname 'members.dyndns.org'
FAILED: updating airpointer.dyndns.org: Could not connect to members.dyndns.org
```

This message appears in case the DynDNS service could not establish a connection with DynDNS.
In this case, wait at least two minutes and then check again, if a successful connection with DynDNS could be established in the meantime (DynDNS is carried out each two minutes).

```
Subject: status report from ddclient@airpointer
Date: Tue, 22 Mar 2005 13:03:40 -0100 (GMT+1)

WARNING: caught SIGTERM; exiting
```

This message appears if the data acquisition system of your airQlog® has been shut down (or if single services with the GPRS modem have been automatically finished or restarted).
It is a normal message and does not refer to an error.

6.7.9. User Interface

6.7.9.1. Groups

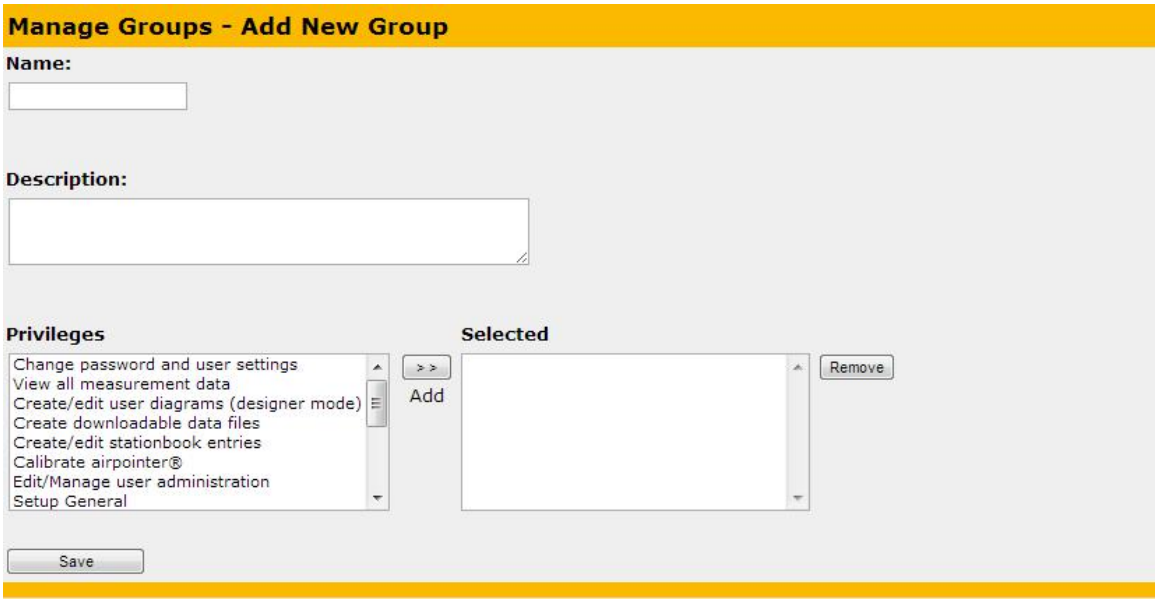


Figure 6.70.: Add New Group

The user administration of the User Interface of the airQlog® is divided into groups and users. All users are members of a group. The respective privileges for the visibility of the menu items are defined in the respective groups. The privileges of each single user depend on his belonging to the group.

6.7.9.1.1. New Group Here you can create one or more new groups according to your wishes. To do so, select a group name and as an option, a description. You will assign the privileges to the group by selecting the available privileges in the left field and add them to the current group by clicking '»'. You can take away privileges by selecting them in the right field and clicking 'Remove'. Creating a new group is reserved for users who are members of the group admin (or have similar privileges) (see Figure 6.70).

Figure 6.71.: Modify Group

6.7.9.1.2. Modify Group Here you can edit or delete already existing groups (see Figure 6.71). The standard groups ‘admin’ and ‘user’ can not be deleted. If you delete a group still containing members, only the group will be deleted, not the members themselves. These users are then assigned to the group ‘user’ (which can be edited later).

6.7.9.2. Users

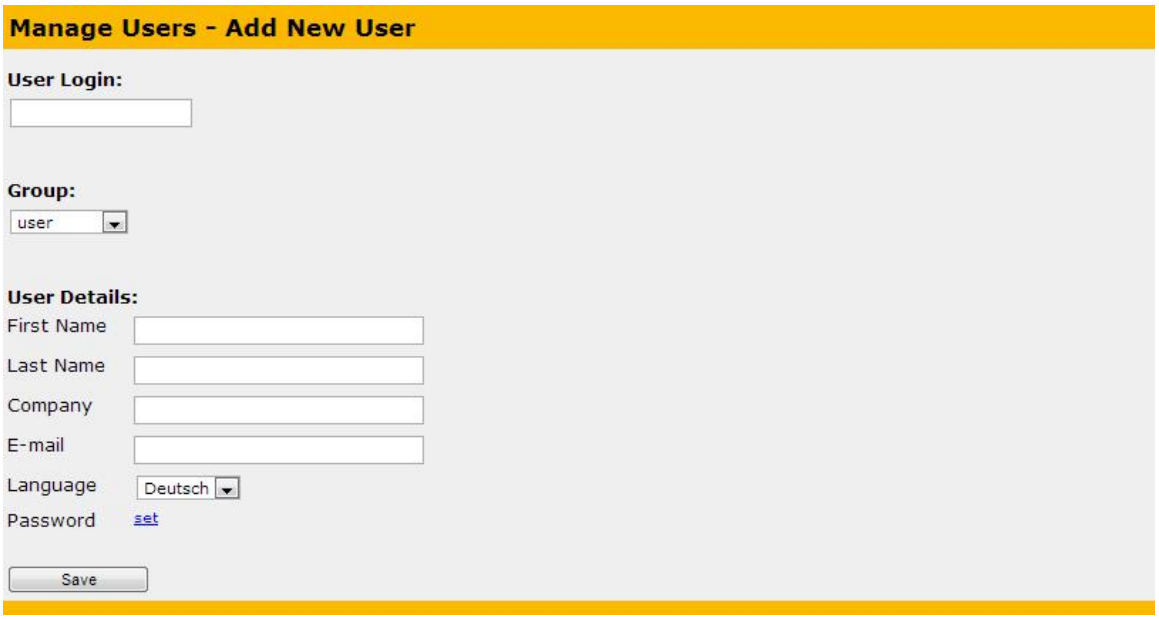


Figure 6.72.: Add New User

The user administration of the User Interface of the airQlog® is divided into groups and users. All users are members of a group. The respective privileges for the visibility of the menu items are defined in the respective groups. The privileges of each single user depend on his belonging to the group.

6.7.9.2.1. New User Here you can create users according to your wishes (see Figure 6.72). To do so, select a name for the user log in and assign it to the respective group.

Then enter name, surname, company and e-mail, these entries are optional.

For language, please select presetting for the language of the user surface for the respective user. Each user can change his language setting of the surface in the User Interface to the airQlog® at any time.

Password

Click ‘set’ and enter a password for the user just created. If you do not assign a password to the new user, the standard password ‘airpointer’ is used for this user. The user can change his password in the User Interface to the airQlog® at any time.

Creating a new user is reserved for users who are members of the group admin (or have similar privileges).

Figure 6.73.: Modify User

6.7.9.2.2. Modify User Here you can edit settings of already existing users by clicking the user name (see Figure 6.73).

The respective fields are analogous to those of creating a user.

Password

Here you can reset the password of the respective user, e.g. should the user have forgotten the password.

To do so, click ‘set’ and enter the password of the respective user.

Editing and deleting of an already existing user is reserved for users who are members of the group admin (or have similar privileges).

You can delete a user by ticking the respective user and clicking ‘delete’ (see also Figure 6.73).

6.7.9.3. Personal Settings

Figure 6.74.: Edit Personal Settings

Here you can edit your password to the User Interface of the airQlog®, and at any time change the language of the user interface for your account (see Figure 6.74).
You can define the start module as well, which is the module active after your log in.
The selection box ‘Layout’ provides you with selecting the layouts ‘Simple’ and ‘Icons’ of the User Interface to the airQlog®.
All these settings will be effective at once, a restart or a new login will be unnecessary in any case.

A. Software Protocols

To establish a highest possible degree of flexibility, the airpointer® supports two serial communication protocols: The *AK Protocol* and the *German Ambient Network Protocol*. These protocols permit a locally located computer to obtain information electronically from the unit similar to analog outputs. These protocols are described in this appendix. Use serial port 'COM 4' (see Figure A.1) for communication via these protocols.
However, use and implementation of these protocols assume a thorough understanding of the principles of serial communication.

NOTE
Normal operation via Internet and browser does not require any understanding of these protocols.

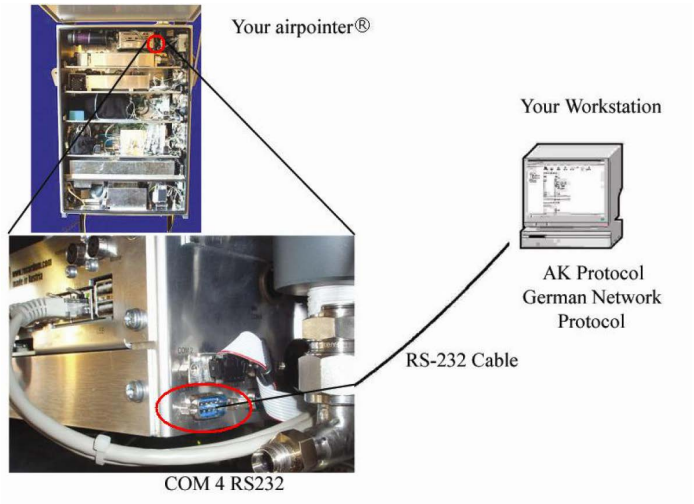


Figure A.1.: COM Port For Communication via AK and German Ambient Network Protocol

A.1. AK Protocol

The AK Protocol allows the user to query the present value of any system variable remotely. Table A.1 depicts the detailed structure of the so-called *Ask Register Command* (AREG) used for queries of current system variables of the airpointer®.

Transmission to Instrument			**Response from Instrument**			
Byte	Example	Description	B	No Err	Error	Description
1	<STX>	ASCII code 002.	1	<STX>	<STX>	ASCII code 002.
2	4	1-digit Station Number.	2	4	4	1-digit Station Number.
3	A	Ask Register command.	3	A	A	4-digit Ask Register command.
4	R		4	R	R	
5	E		5	E	E	
6	G		6	G	G	
7	␣	Space.	7	␣	␣	Space.
8	K	2-digit Channel Number.	8	0	0	Number of current status conditions.
9	0		9	␣	␣	Space.
10	␣	Space.	10	9	S	Program Register Code of the variable whose value is being requested. The PRC may be up to 3 digits long and is not in the response.
11	9	Program Register Code of the variable whose value is being requested. The PRC may be up to 3 digits long. Do not right-fill if the PRC is less than 3 characters long.	11		E	
12			12		<ETX>	
13			13	␣	<CR>	Space.
14	<ETX>	ASCII code 003.	14	9	<LF>	Current value of the variable referenced by the Ask Register command. NOTE: This value can be of varying length.
15			15	7		
16			16	4		
17			17	.		
18			18	3		
19			19	8		
20			20	<ETX>		ASCII code 003.
21			21	<CR>		Up to 3 digits appended to the end of the response transmission.
22			22	<LF>		
23	For description of Status Byte (PRC 041) refer to Table A.6(a)		23			
24			24			
25			25			
26			26			
27			27			
28			28			

Table A.1.: AK Protocol

	Value	Description		Value	Description
Concentrations	1	NOConcentration	Chip Temperatures	48	ChipTSO2
	2	NO2Concentration		49	TempChipSO2
	3	NOxConcentration		50	ChipTNOx
	4	COConcentration		51	TempChipNOx
	5	O3Concentration		52	ChipTCO
	6	SO2Concentration		53	TempChipCO
Pressures/Flow	10	PressNOx		54	ChipTO3
	11	PressCO		55	TempChipO3
	12	PressO3RefMeas		56	ChipTSys
	13	PressSys		57	TempChipSys
	14	Flow		58	TempChipPump
	15	PressSO2		59	TempChipClima
Temperatures	20	RCellT	Signals	60	PMTSigNO
	21	MolyT		61	PMTSigNOx
	22	PMTTempNOx		62	PMTSigAutoO
	23	BenchTCO		63	COMeas
	24	WheelTCO		64	CORef
	25	PDETemp		65	Ratio
	26	SampleTempCO		66	PhotoOutMeas
	27	BenchTO3		67	PhotoOutRef
	28	ScrubberO3		68	PhotoOut16
	29	Sample TempO3		69	ClimaActMode
	30	System Temp (pump)		70	FanSampleRPM
	31	Ambient Temp		71	FanPumpRoomRPM
	32	PumpRoom Temp		72	PMTSigSO2
	33	Room Temp		73	RefDetSO2
	34	CoolerOut Temp		74	PMTSigSO2Dark
	35	ScrubberCO		75	RefDetSO2Dark
	36	BenchTSO2		76	HVPS_NOx
	37	PMTTempSO2		77	HVPS_SO2
	41	Status			

Table A.2.: Program Register Codes (Byte 11) of AK Protocol for Data Requests (AREG Command)

	Value	Description		Value	Description
Power to Heaters/Lamp	80	RCellPercent	Concentration Raw Values	120	NOraw
	81	MolyPercent		121	NO2raw
	82	BenchCOPercent		122	NOxraw
	83	WheelPercent		123	COraw
	84	BenchO3Percent		124	O3raw
	85	O3ScrubberPercent		125	SO2raw
	86	COScrubPercent		130	RSCommunication
	87	IntensityO3		131	MissingBoards
	88	FanPumpRoomPercent		140	DC+5 V
	89	ClimaCoolerPercent		141	DC+12 V
	90	ClimaHeaterPercent		142	DC+15 V
	91	BenchSO2Percent		143	DC-15 V
	92	IntensitySO2		145	FanNOxRPM
Peltier Clima	100	THSAirInside		146	FanSO2RPM
	101	THSOutside		150	NO(all)
	102	THSPeltier1		151	NO2(all)
	103	THSPeltier2		152	NOx(all)
	104	THSPeltier3		153	CO(all)
	105	THSPeltier4		154	O3(all)
	106	THSPeltier5		155	SO2(all)
	107	THSPeltier6			
	108	PowerPeltier			
	109	FanInside			
	110	FanOutside			
	111	ActMode			
	112	TempChipPeltier			

Table A.3.: Program Register Codes (Byte 11) of AK Protocol for Data Requests (AREG Command) (continued)

A.2. German Ambient Network Protocol

recordum®s implementation of the German Ambient Network Protocol (see Table A.4 allows the user to request the values of predetermined system variables. Due to the definition of this protocol, it is not possible to remotely select a system variable to be queried.

Transmission to Instrument			Response from Instrument			
Byte	Example	Description	B	No Err	Error	Description
1	<STX>	ASCII code 002.	1	<STX>	<STX>	ASCII code 002.
2	D	The DA command signifies a request for data from the instrument.	2	M	M	Response identifier to the DA command.
3	A		3	D	D	
4	8	3-digit Instrument Identifier. These three bytes are optional.	4	0	0	Number of variables transmitted by the instrument. May be 01, 02, 03.
5	4		5	1	1	
6	5		6	␣	␣	Space.
7	<ETX>	ASCII code 003.	7	8	8	3-digit Instrument Identifier
8	<CRC>	High byte followed by low byte of CRC. The CRCs may be replaced by a single <CR> character.	8	4	4	
9	<CRC>		9	5	5	
			10	␣	␣	Space.
DEFINITION OF CRC BYTES The CRC bytes above (bytes 8 and 9) are the hexadecimal representation of the 'exclusive or' of bytes 1 through 7. The high byte CRC is transmitted as byte 8 and the low byte is sent as byte 9.			11	+ or -	+	Value of variable being transmitted, in the format ±NNNN+EE. For example, a value of 63.7 is represented as +0637-01. If syntax error exists or the value of the variable is 0, the instrument returns +0000+00.
			12	n	0	
			13	n	0	
			14	n	0	
			15	n	0	
			16	+ or -	+	
CURRENT OPERATING MODE (Bytes 20, 21) The two-digit hexadecimal representation of the current operating mode is determined as followed: Mode 1 2 Mode 2 4 Mode 3 8 Mode 4 10 (decimal 16) Mode S 0 Mode X 20 (decimal 32)			17	e	0	
			18	e	0	
			19	␣	␣	Space.
			20	1	1	2-digit hexadecimal representation of current instrument operating mode (descr. at left and in Table A.6(b))
			21	0	0	
			22	␣	␣	Space.
			23	0	0	2-digit hexadecimal representation of current instrument status condition(see description at left and in Table A.6(a).)
			24	0	0	
			25	␣	␣	Space.

Table A.4.: German Ambient Network Protocol

	26	0	0	3-digit Location ID
	27	0	0	
CURRENT STATUS CONDITION (Bytes 23, 24) The 2-digit hexadecimal representation of the current status condition is computed by summing up the numeric values for all current status conditions. Bytes 23 and 24 are both equal to 0, if no current status condition exists. 0 OK No current status conditions. For a description of the Status Bits refer to Table A.6(a)	28	1	1	
	29	␣	␣	Space.
	30	0	9	3-digit PRC of the variable being transmitted, zero-filled from the left. These bytes are not defined in the German Ambient Network Protocol, but are included for informational purposes.
	31	0	9	
	32	8	9	
	33	␣	␣	These bytes are not defined in the German Ambient Network Protocol, and are reserved for future definition.
	34	␣	␣	
	35	␣	␣	
	36	␣	␣	Space.
	37	<ETX>	<ETX>	ASCII code 003.
	38	<CRC>	<CRC>	High byte and low byte of CRC. The CRCs are replaced by a single <CR> if transmit byte 8 was <CR>.
DEFINITION OF CRC BYTES The CRC information in bytes 38 and 39 is the hexadecimal representation of the "exclusive or" of all response bytes. The high byte of the CRC is transmitted as byte 38 and the low byte is sent as bye 39.	39	<CRC>	<CRC>	
	40	<CR>	<CR>	Up to 3 digits appended to the end of the response transmission.
	41	<LF>	<LF>	
	42			

Table A.5.: German Ambient Network Protocol (continued)

Entry	Gas
1	NO
2	NO_2
3	NO_x
4	CO
5	O_3
6	SO_2

Table A.6.: Order of Variables Reported by the German Ambient Network Protocol (with Response Byte 4=‘0’ and 5=‘6’)

(a) Status Bits

Bit	Fail Status
0	Flow
1	Pressure
2	Temperature
3	Lamp/Source
4	Sensor Signals
5	
6	
7	Sum Fail

(b) Mode Bits

Bit	Operation Mode
0	Maintenance
1	Zero
2	Span
3	Origin
4	
5	
6	
7	

Table A.7.: Reference for ‘Status’ and ‘Mode’ in AK and German Ambient Network Protocol

A.3. modbus

Modbus is an openly published serial communications protocol developed for industrial applications. It enables communication for many devices connected to the same network.
We at recordum® use the so called 'TCP modbus'. Modbus is capeable of the most common data types like bit, integer and floats. The airpointer® modbus only uses floats as data type.
In general you need to set the modbus registers in your LinOut Interface. The LinOut Interface provides the local values from your device which can be transported via modbus to other devices. The default config shipped to you serves for most operations.

NOTE
If you want to work with modbus you always have to know the IP address of your device and its port(The standard port is 1502)

For further information about the modbus system you can visit `http://en.wikipedia.org/wiki/Modbus`.

B. Http - Download Interface

Additional to the User Interface there is the possibility for programmed request cycles. Below the protocol for programmed request cycles from your workstation is described.

B.1. Available pages

Available pages:
[airqlog IP/Name]/download/info.php
[airqlog IP/Name]/download/start.php

Page: info.php
Call "info.php" to get a list of all possible parameters.

Page: start.php
Request measurement data via calling "start.php". You have to provide at least all mandatory GET-parameters (tstart, tend, colT) and one avg[1|2|3] parameter.

B.2. Available parameters

B.2.1. Example:

Invoke download for NO2 (ParamId: 2) and CO (4) of all average values (i.e. 1,2 and 3) for the time period between 1st September 2005, 3p.m. and 5th September 2005 3a.m., using average 1 values of NO2 (2) as time data source, add status bytes for all parameters and use "no value" to fill NULL-fields. The domain name of the airQlog® is like "airqlog.domain.at", a registered user's login is "max", the users password is "secret" and this user has at least "Create downloadable data files " privileges.

B.2.2. Authentication - Parameters for info.php and start.php

Authentication - Parameters for info.php and start.php are listed and described in tabel B.1.

GET-Parameter	*Value*	*Description*	*Example*
loginstring	String	Login name of existing user	max
user_pw	String	Password for login	secret

Table B.1.: Authentication - Parameters for info.php and start.php

NOTE
Please verify that you use an existing user with at least "Create downloadable data files " privileges

B.2.3. GET - Parameters for start.php

GET - Parameters for start.php are listed and described in tabel B.2.

NOTE
Do not forget to encode the URL string approriately!

B.2.4. Url for the example

http : //airhopper.domain.at/download/start.php?loginstring = max&user$_p$w = secret&tstart = 2005 − 09 − 01, 15 : 00 : 00&tend = 2005 − 09 − 05, 03 : 00 : 00&avg1 = 2, 4&avg2 = 2, 4&avg3 = 2, 4&colT = 2, 1&null = no%20value&status

NOTE
The URL is written without spaces.

GET-Parameter	*Value*	*Description*	*Example*
tstart	YYYY-MM-DD,hh:mm:ss	Start time	2005-09-01,15:00:00
tend	YYYY-MM-DD,hh:mm:ss	End time	2005-09-05,03:00:00
colT	[P_id],[avg]	Time reference column	[2,1]
avg1 [opt.]	[P_id],[P_id],...	Parameter ids to download from average 1 source	[2],[4]
avg2 [opt.]	[P_id],[P_id],...	Parameter ids to download from average 2 source	[2],[4]
avg3 [opt.]	[P_id],[P_id],...	Parameter ids to download from average 3 source	[2],[4]
null [opt.]	String	Fill nullfields with String (default is: NULL)	no
del [opt.]	[Delimiter]	Field delimiter, possible values (default is: SEMI): SEMI;COMMA;TAB;SPACE	
dec [opt.]	[DecimalSeparator]	Decimal separator, possible values (default is: COMMA): COMMA, POINT	
interpolate [opt.]	none	If set, missing timevalues are interpolated	
quotes [opt.]	none	If set, fields are surrounded by double quotes	
nohtml [opt.]	none	If set, only csv data is sent back to client, no html code	
status [opt.]	none	If set, status bytes are added to each query value	status

Table B.2.: GET-Parameters for start.php

Index

airQlog®
  Communication, 6-81
  LinLog, 6-65
  LinOut, 6-79

Add new analyzer, 6-66
AK Protocol, A-1

Backup, 6-56

Calculation
  Parameters, 6-75
Calibration, 6-2, **6-20**
Calibration Timing, 6-70
Cat.5 network cable, 5-4
CE Declaration of Compliance, 4-5
Com Ports Setup, 6-67
Command Interface, 6-52
Communication, 6-81
  DynDNS, 6-83
  Nameserver, 6-81
  Network, 6-82
    IP–Address, 6-82
Communication time
  RS232, 6-46
Configuration, 6-58
  Calibration Parameters, 6-59
  Customer/Station, 6-63
  Interface Configuration, 6-60
  Synchronization, 6-64
  System Parameters, 6-61
Configuration of the RS232 of the analyzer, 6-66
Cross Patch Network Cable, **5-3**

Delet an analyzer, 6-78
Design
  Graph, 6-5
Download, 6-2, 6-12
DynDNS Service, 6-91

Extras, 6-57

German Ambient Network Protocol, **A-5**
GPRS, 6-85
GPRS/3G modem, **5-3**
Graph, 6-2, **6-4**
  Graph, 6-5
  Table, 6-5
Group Setup, 6-77

http - download interface, B-1
  Available pages, B-1
  Available parameters, B-1

Internet connectivity, 6-90
  Modem Interface, 6-90
  System Interface, 6-90
Introduction, 1-1
IP Setup, 6-68

Legal note, 4-4
Linlog
  Parameter Calculation Setup, 6-75
  Parameter Setup, 6-72
LinLog Service Interface, 6-45
LinSens Service Interface, **6-36**
  Actual, 6-36
  Hardware, 6-44
  Home, 6-36
  Software, 6-43
  Status, 6-41
  Status List, 6-42
  System Values
    Climate Control Board, 6-40
    Pump Control Board, 6-39
    System SensorInterface Board, 6-39
    WatchdogOn Board, 6-41
  System values, 6-39
Log Files, **6-50**

Logger
Add new analyzer, 6-66
Calibration Timing, 6-70
Com Ports Setup, 6-67
Delet an analyzer, 6-78
Edit settings, 6-78
Group Setup, 6-77
IP Setup, 6-68
Logout, 6-3

Modem Interface, 6-89, 6-90

Name Service, 6-90
Modem Interface, 6-90
System Interface, 6-90
Network Interfaces, 6-88
Modem Interface, 6-89
System Interface, 6-89
User Interface, 6-89

Overview, 6-2, 6-18

Parameter Calculation Setup, 6-75
Parameter Setup, 6-72
Slope/Offset, 6-74
Parameters
Of the analyzer, 6-66
Password, 6-94, 6-95
Ports
Setup, 6-67

Radar Graph, 6-5
RS232
Communication, 6-46

Safety messages, 2-1
Service Interface, 6-36
Setup, 6-3, **6-22–6-95**
SIM Card, 5-4
Software protocol, **A-1**
Software Update, 6-55
Station book, 6-2
Stationbook, **6-17**
Status History, 6-47
System Info, 6-32
Accessed IP, 6-33
Active Users, 6-33
Architecture, 6-33
Core, 6-32
CPUs, 6-33
Drives, 6-33
Filesystem Mounts, 6-35
General, 6-32
Hostname, 6-33
Memory, 6-34
Network Devices, 6-34
Patches, 6-35
Processes, 6-33
RAID Arrays, 6-35
Services, 6-34
Threads, 6-33
Uptime, 6-33
System Interface, **6-89**, 6-90
System Maintenance, **6-51**
Backup, 6-51

Test Connectivity, 6-88

User Interface, **6-1**, 6-89, 6-92
Architecture, 6-2
Download, 6-12
Groups
Modify, 6-93
New, 6-92
Login, 6-1
Overview, 6-18
Personal Settings, 6-95
Supported Web Browsers, 6-1
Users, 6-93
Modify, 6-94
New, 6-94

Wind rose Graph, 6-5

XY-Graph, 6-5