# Manual

## Web-IO Analog-In
## + AC Current Transducer 0..50A

W&T

| | |
|---|---|
| Type | 10/100BaseT, 12-24V |
| Model | 57644 |
| Release | 1.5, Mai 2009 |

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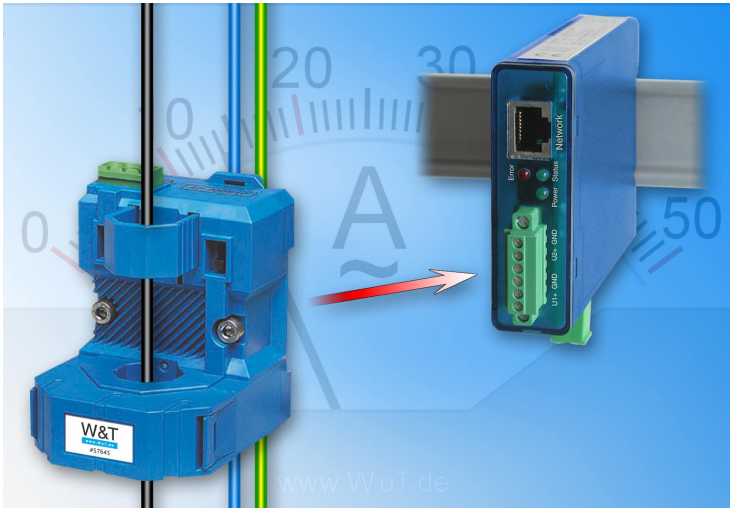
Perform work on and with W&T products only as described and after you have read and understood this manual thoroughly. Improper use may result in hazards. We are not liable for improper use. In case of doubt please check with us or your dealer first!

## Introduction

The W&T Web-IO Analog-In incl. the AC current transducer 0..50A incorporate all the functions in one box for capturing, storing and displaying your current measurement values. A variety of alarm functions is also available which can be custom implemented in your own applications or in existing systems.

This manual contains all the information you need for installing, configuring and operating the devices.



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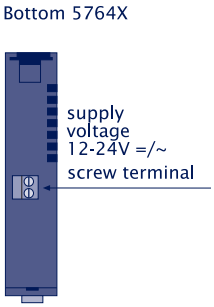
# 1 Quick Start-up

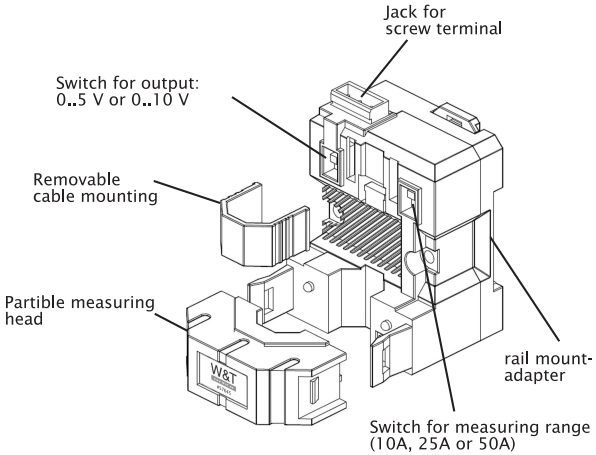
It takes only a few steps to start up the Web-IO Analog-IN module and make it visible in your network.

## 1.1 Connecting the supply voltage




Connect 12-24V AC/DC to the terminal provided using the plug-in power supply included. Polarity is uncritical.

## 1.2 Construcion of the AC current transducer 0..50A

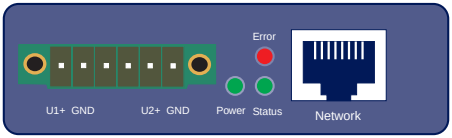


Lead the wire which should be measured through the partible measuring head.

*Please make sure that only one single cable core is leaded through the device.*

Connect the supply voltage and the measurement output with the marked pins on the screw terminal.

### 1.3 Connecting the measurement lines




Screw the measuring lines into the 6-pole female connector provided and plug it into the device.

### 1.3.1 Terminal designations

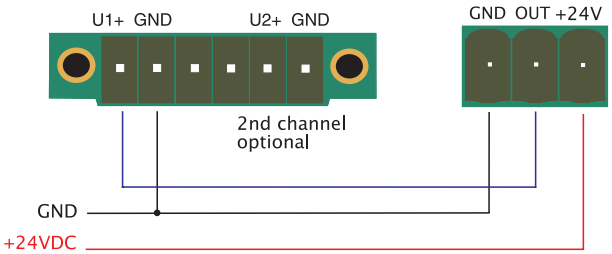
**U1+** : Voltage input 1 0..10V

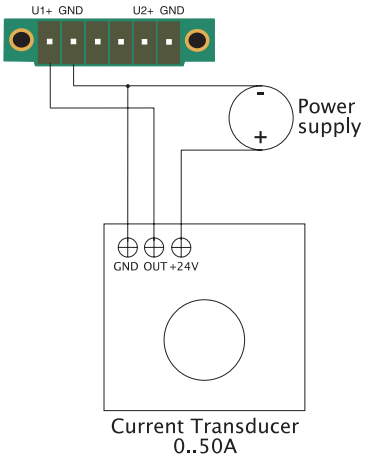
**U2+** : Voltage input 2 0..10V

**GND** : Ground

*Please note when wiring the inputs that they use the same GND internally.*

### 1.3.2 Connecting the AC current transducer to the Web-IO Analog-In



## 1.4 Assigning the IP address using „WuTility“

Once the hardware has been connected to the supply voltage as described above, you must assign the IP address needed for operation in a TCP/IP network. You can obtain the correct value for this parameter from your system administrator.

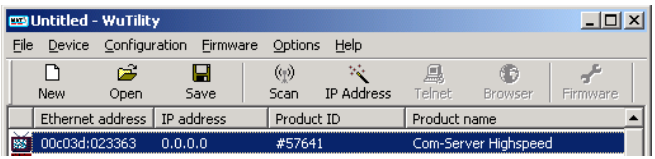
*The IP address must be unique throughout the network.*

There are various ways of assigning the IP address. To make it as convenient as possible, we have developed the „WuTility“ tool, which you can download from the WuT homepage at *http://www.wut.de*. This procedure is described in the following. A summary of the alternatives can be found in the Appendix to this manual under 6.1.

Be sure that the PC you are using to assign the IP address is located in the same sub-network as the module and that both the PC and the module are connected to the network.

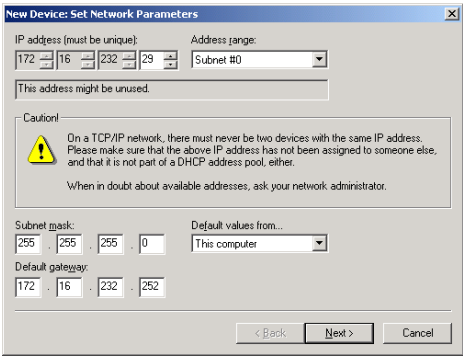
When it starts, *WuTility* automatically searches the local network for connected W&T network devices and generates an inventory list. This search process can be repeated manually as often as desired by clicking the *Scan* button:

Select from the displayed list your Web-IO Analog-In based on the MAC address:

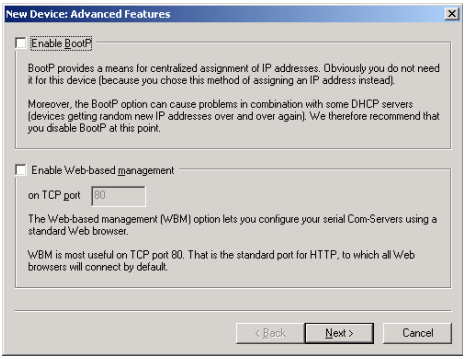


Click on the „IP address“ symbol:

In the resulting window enter the desired network parameters for the device and confirm by clicking on „Continue“.




The BOOTP client of the Web-IO Analog-In can be activated in the following window.




Clicking on the *Continue* button assigns the network parameters to the Web-IO Analog-In. All the columns in the device list in WuTility are filled with information. After clicking on the globe in the WuTility menu list your standard browser is opened and you will see the start page for the device.

## 1.5 IP assignment using DHCP protocol

Many networks use DHCY (Dynamic Host Configuration Protocol) or its predecessor BOOTP described in the following section for centralized, dynamic assignment of network parameters. By default DHCP protocol is activated, so that in network environments with dynamic IP assignment you only need to connect the Web-IO Analog-In to the network. The following parameters can be assigned using DHCP:

- IP address
- Subnet mask
- Gateway address
- DNS server
- Lease time

*To prevent undesired address assignment or address changes, we recommend deactivating DHCP, BOOTP and RARP unless these are expressly used in the respective network environment. Web-IO Analog-In with incorrectly assigned IP address can be conveniently found and reconfigured after the fact using the scan function of the WuTility management tool.*

### 1.5.1 Activating/deactivating DHCP

By default DHCP is activated. The following methods are available for deactivating or later reactivating DHCP protocol.

- **Management tool WuTility**
  Select the desired Web-IO Analog-In from the device list and click on the *IP address* button. In the first dialog window enter the new network parameters and then click on *Next*.

In the following dialog window deactivate the options *BOOTP* and *DHCP*. Click on *Next* to send the new configuration data to the Web-IO Analog-In.

- **Web Based Management**

In *Config → Device → Basic Settings → Network* you can alternately activate or deactivate both the protocols. Detailed information about this can be found in section *Assigning the basic network parameters 1.5*.

### 1.5.2 System Name

To support any automated updating of the DNS system by the DHCP server, the Web-IO Analog-In identifies itself within the DHCP protocol with its system name. The factory setting for this is *WEBIO-* followed by the last three places of the Ethernet address. For example, the default system name of a Web-IO Analog-In having Ethernet address 00:c0:3d:01:02:03 is *WEBIO-010203*. The system name of the Web-IO Analog-In can be changed using Web Based Management.

### 1.5.3 Lease time

The lease time determined and sent by the DHCP server specifies how long the IP address will remain in use. After half the lease time has expired the Web-IO Analog-In attempts to extend the time for the assigning DHCP server and to update the address. If this is not possible by the time the lease time expires, for example because the DHCP server can no longer be reached, the Web-IO Analog-In deletes the IP address and starts a cyclical search for alternative DHCP servers in order to assign a new IP address.

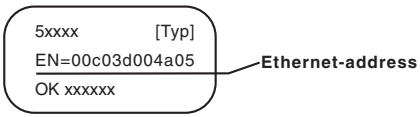
Because the clock is missing, the lease time associated with the current IP address is no longer available after a reset. Therefore, after the restart an update query is generated for the original DHCP server. If it is not available at this time, the Web-IO Analog-In deletes the IP address and starts a cyclical search for alternative DHCP servers.

If DHCP is activated, the remaining lease time together with the current IP address is shown in seconds in the menu branch *Home → Doc → Property*.

*If after the assigned lease time has expired the DHCP server cannot be reached, the Web-IO Analog-In deletes its IP address. All existing TCP/UDP connections between the Web-IO Analog-In and other network clients are closed. To prevent disturbances of this kind, we recommend setting the lease time in the DHCP server to infinite.*

### 1.5.4 Reserved IP addresses

The Web-IO Analog-In provides services which can make use of other clients in the network as needed. To open a connection they of course need the current IP address of the Web-IO Analog-In, so that in these applications it makes sense to reserve a particular IP address for the Web-IO Analog-In on the DHCP server. As a rule this is done by joining the IP address to the worldwide unique Ethernet address of the device, which can be found on the sticker on the housing.



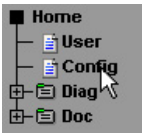

### 1.5.5 Dynamic IP addresses

Fully dynamic IP address assignment, in which the Web-IO Analog-In gets a different IP address after each restart or after the lease time has expired, is only useful in network environments with automatic cross-connection between the DHCP and DNS services. This means when a new IP address is assigned to the Web-IO Analog-In, the DHCP server then automatically updates the DNS system as well. The new address is assigned to the respective domain name. For detailed information about your network environment, consult your system administrator if in doubt.

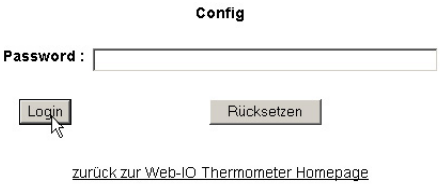
Dynamic, changing IP addresses can also be used for time server queries, sending of e-mails or other client applications in which the device itself searches for active connection to server services located in the network.

## 1.6 Assigning the basic network parameters

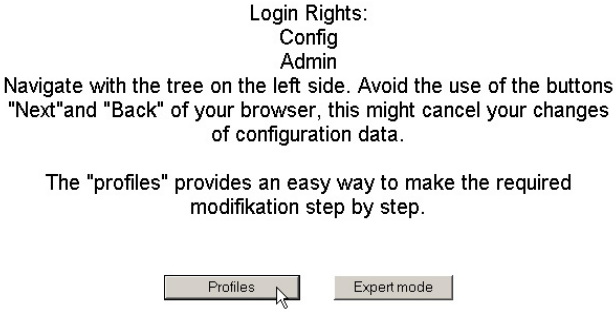
In the configuration tree at left click on **„Config“**.



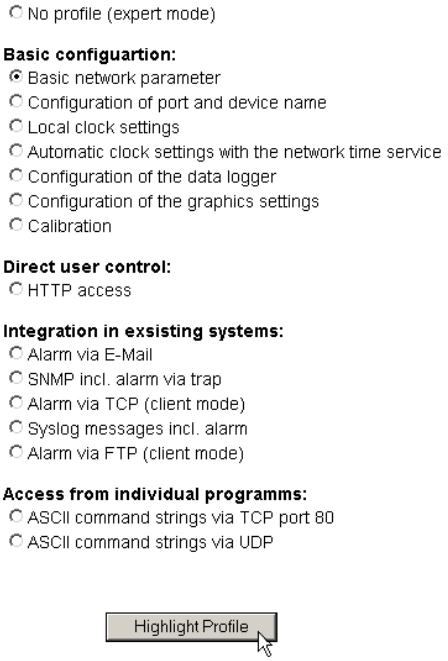

You are now prompted to enter a password. The factory default setting is for no password, so that you can simply click on the Login button without entering a password.



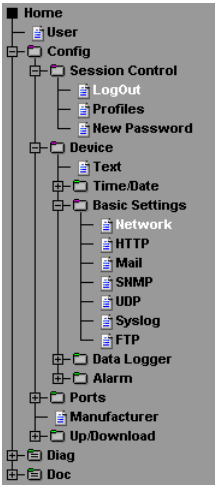

On the next page select the configuration path with the aid of the profiles.



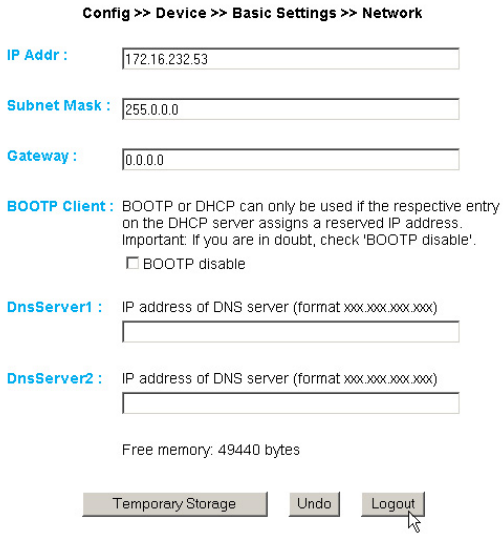

Select the profile „Basic network parameters“ and click on the „Show profile“ button.



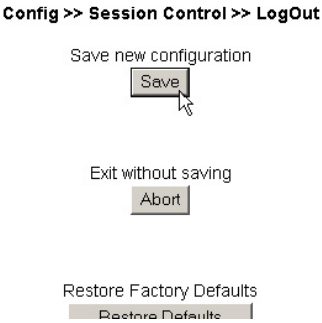

The device now automatically displays the necessary menu points for this profile. Click on **„Network“** in the configuration menu.



On the following page enter all the necessary network parameters and when you are finished click on the „Logout“ button.



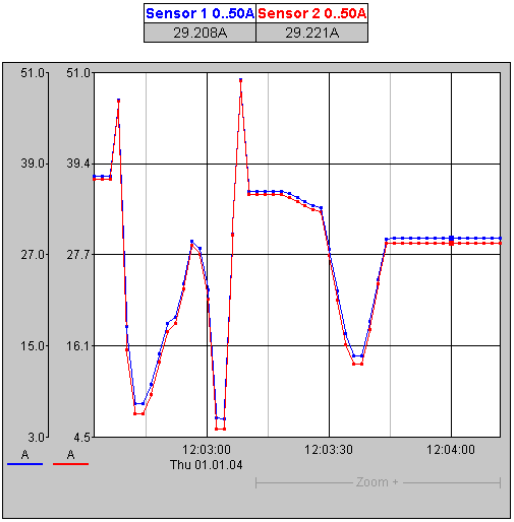

Then clicking on the „Save“ button saves the settings in the device and closes your configuration session. After the network parameters have been changed the device automatically restarts itself.




The device is now ready for use in your network. For convenience you can use the additional profiles for adapting the unit to your specific needs.

# 2 Graph Display of the Measurements

## 2.1 Basic functions




The device provides a table of the current values and a graph of the stored values.

By using the control buttons at the bottom of the page you can do the following.

Scroll the graph to right or left by the size of the display interval, to within one unit.

Scroll left or right in the graph in increments of one unit of the X-axis.

Zoom the area of the graph indicated at the lower right edge.

Zooms back to the previous zoom level.

Activates automatic refreshing of the graph.

Refreshes the display

Opens the configuration menu beneath the graph

Displays the values currently displayed in the graph in table form.

**Value visualization:**

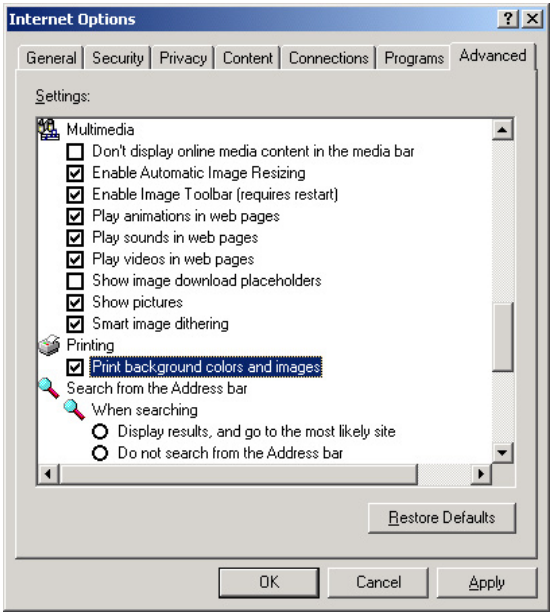
Large marker: This measured value is stored in the device data logger.

Small marker: This measured value is a volatile value which is used only for display but which is not stored in the data logger.

*When exiting the zoom level, these measurements are lost. The connectinglines are only displayed in the zoom level which represents the memory.*

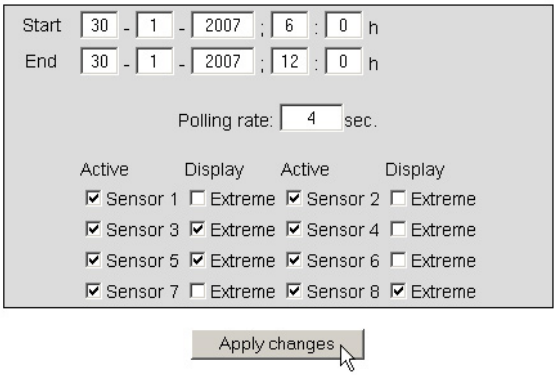
To print out the page containing the graph, it is necessary to activate printing of background colors and images in the Internet options. In Microsoft Internet Explorer this setting is found in

*Tools -> Internet options -> Advanced*




Design and positioning of the graph is configurable.

## 2.2 Config menu



The following functions are available from the configuration menu beneath the graph:

*Start:* Here you specify the starting time for the X-axis.

*End:* Here you specify the ending time for the X-axis.

*Polling Rate:* Enter here the desired refresh rate for the graph. The device provides a new value no sooner than after 4 seconds. Entering a value of less than 4 is not useful.

*Active:* Use this to turn the individual sensors on or off.

*Display, Extreme:* If a zoom level is selected in the graph in which a display point represents a measuring interval and not an individual measuring point, this function is used to display the maximum and minimum measured in this interval. If the zoom level is selected such that every measured value is displayed, this function has no effect. If the function is deactivated, the average value of the displayed interval is displayed.

*Apply changes:* Immediately applies the changes made for the graph.

## 2.3 Table

**Report: Thu 01.01.04, 09:00:00 - Thu 01.01.04, 13:00:00**

| Date | Time | | Sensor 1 0..50A | Sensor 2 0..50A |
|---|---|---|---|---|
| | | | A | A |
| Thu 01.01.04 | 12:02:24 | Max | 37.397 | 37.416 |
| | | Min | 0.000 | 0.000 |
| | | Ø | 22.201 | 22.212 |
| Thu 01.01.04 | 12:07:12 | Max | 29.209 | 29.224 |
| | | Min | 29.208 | 29.222 |
| | | Ø | 29.208 | 29.223 |
| Thu 01.01.04 | 12:12:00 | Max | 29.210 | 29.224 |
| | | Min | 29.208 | 29.222 |
| | | Ø | 29.209 | 29.223 |
| Thu 01.01.04 | 12:16:48 | Max | 29.210 | 29.225 |
| | | Min | 29.209 | 29.222 |
| | | Ø | 29.209 | 29.223 |
| Thu 01.01.04 | 12:21:36 | Max | 29.211 | 29.224 |
| | | Min | 29.209 | 29.222 |
| | | Ø | 29.209 | 29.223 |
| Thu 01.01.04 | 12:26:24 | Max | 29.210 | 29.225 |
| | | Min | 24.220 | 24.231 |
| | | Ø | 27.962 | 27.976 |

This function is used to show the currently represented values in table format. As soon as not all stored values can be displayed, the following values are shown in the table for each sensor:

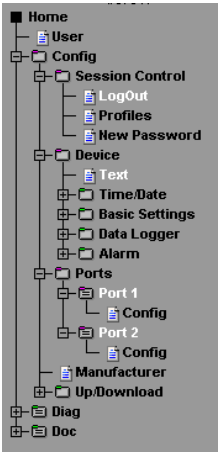
*Max:* The maximum value in the displayed interval

*Min:* The minimum value in the displayed interval

*Ø:* The average value of the displayed interval

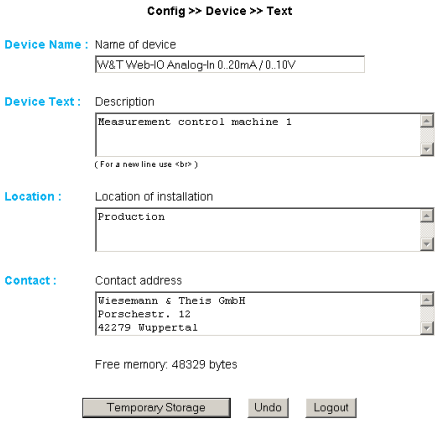
# 3 Additional basic settings

## 3.1 Configuring the port and device names

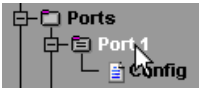



### 3.1.1 Text

Enter your personal descriptions in the field provided and then click on „Send“.



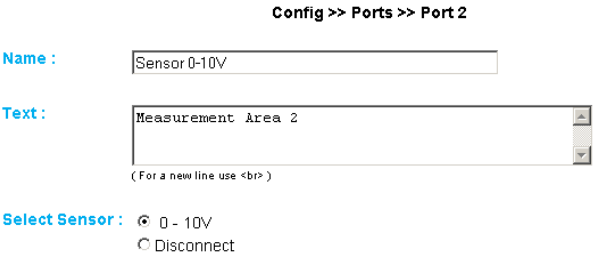
### 3.1.2 Ports



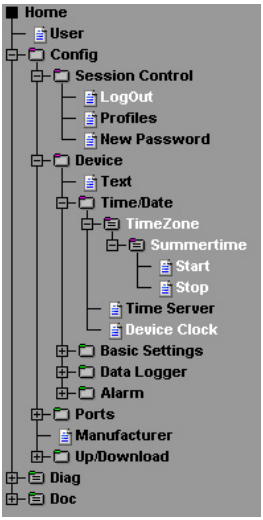

**Port 1..2:**

First enter a name and a descrptive text for the port and select the measuring range to calibrate the input circuit to your measuring location (for models 57641, 57642 only: measuring range 0..20mA or 4..20mA). To deactivate the port, select „Disconnect“.

**Configuring the voltage input:**

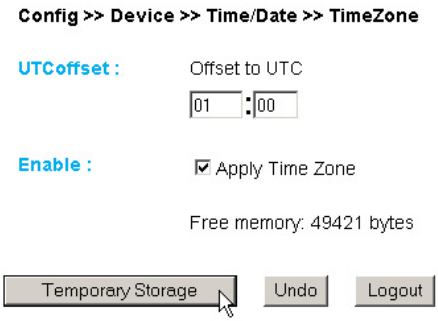


## 3.2 Local time setting



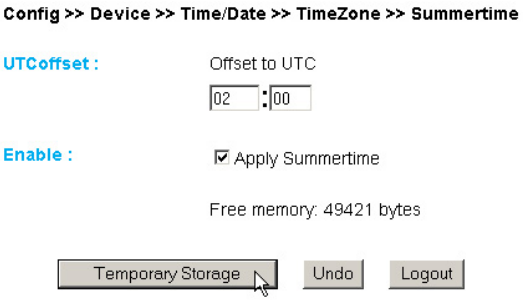

### 3.2.1 Time zone

Here you define the time zone in which the device is located. The settings refer to UTC (Coordinated Universal Time ). Then click on „Send“.



### 3.2.2 Summer time

If you want your unit to automatically switch to daylight savings time, first enter the offset to UTC. The standard value (for Germany etc.) is two hours. Activate this function by selecting „Apply Summertime“ and buffer store the settings („Send“).




#### Start/Stop

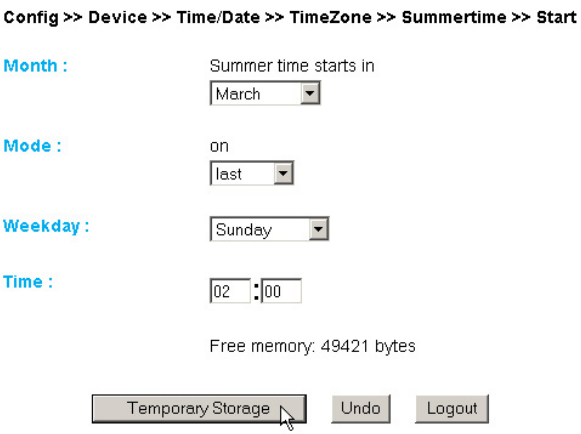
Define when daylight savings time begins and ends. The parameters are already pre-configured:

Start:

**Last Sunday** in **March** at **02:00 hours**

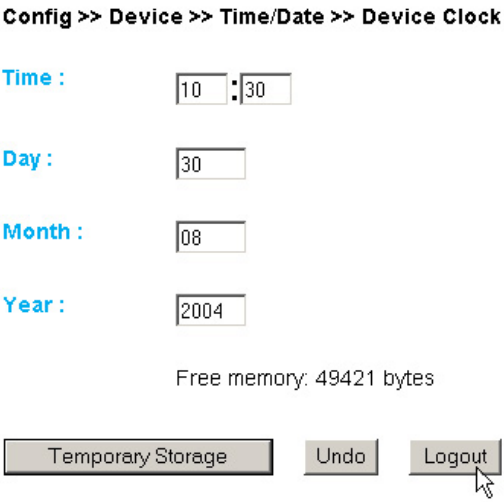
Stop:

**Last Sunday** in **October** at **03:00 hours**

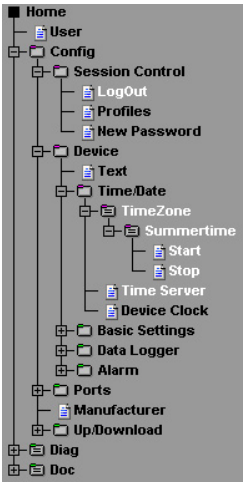



### 3.2.3 Device Clock

If you choose not to use a timeserver, this allows you to set the clock manually. Then click on „Logout“ and save your settings.

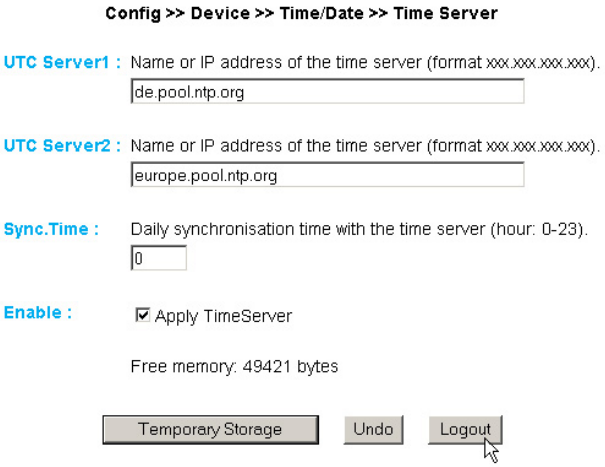


## 3.3 Automatic time setting using a networjk time service




### 3.3.1 Time Server

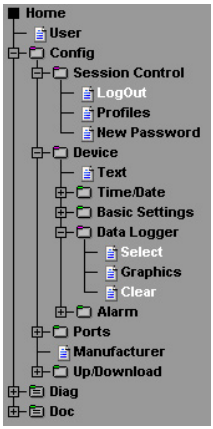
If you want to adjust the time using a time server, enter here the necessary information. The preset addresses are just an example and do not necessarily have to be used.



*If you enter a name as the address, be sure that you first have configured the Gateway and DNS server so that the device can resolve the addresses.*

Click on the „Logout“ buitton and save your settings.

## 3.4 Configuring the data logger

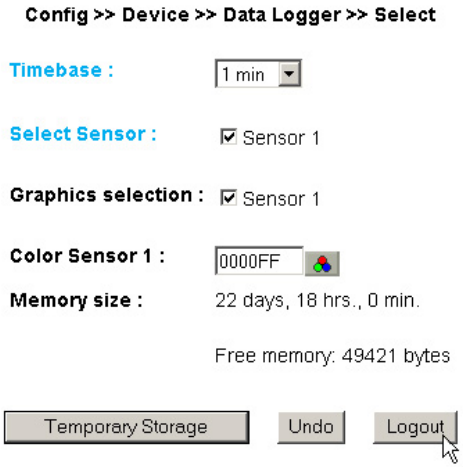



### 3.4.1 Select

Make the following settings:

**Timebase:** Defines at what time interval the measured data are stored in the data logger. The device measures in any case every four seconds.

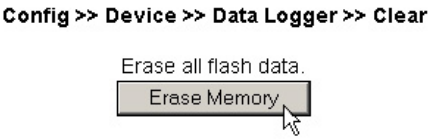
**Select Sensor:** The sensor selected here is used for saving the values in the data logger.



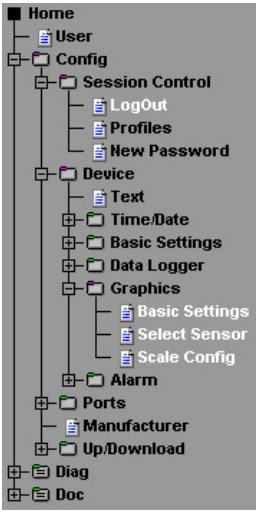

***Attention: If you change Timebase or Select Sensor the memory will be erased completely.***

### 3.4.2 Clear

Clicking on the „Clear memory“ button deletes the entire contents of the data logger.



## 3.5 Configuring the graphics display




### 3.5.1 Basic Settings

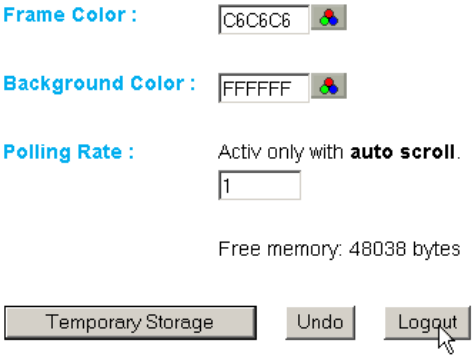
**Config >> Device >> Graphics >> Basic Settings**

**Enable :**

- ☑ Auto scroll enable
- ☑ Show table
- ☑ Show graph
- ☑ Show control buttons
- ☐ Show config menu

**Witdth :** 400

**Height :** 450




**Enable:**

*Auto scroll enable:* After opening the graphical representation, the measured values are automatically refreshed. The control buttons are not available when using the Auto Scroll function.

*Show table:* Shows the current values in table format as well.

*Show graph:* Activates graph representation of the measured values.

*Show control buttons:* Shows the control buttons.

*Show config menu:* Shows the configuration menu for the graph representation below the control buttons.

**Width:** Enter here the desired width of the graph display.

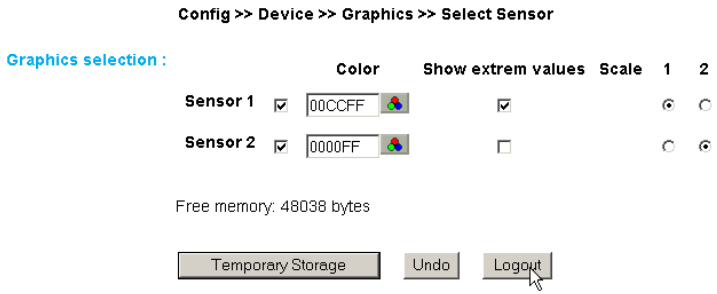
**Height:** Enter here the desired height of the graph display

**Frame Color:** Enter here the desired color for the border of the graph, or select a color from the color selector below:

**Background Color:** Select here the color for the background of the graph. This color is also used as a background for the table.

**Polling Rate:** Enter here the desired refresh rate for the graph. The device provides a new value no sooner than after 0,5 seconds. Entering a value of less than 0,5 is not useful.

### 3.5.2 Select Sensor



**Graphics Selection:**

You can set the following parameters for each sensor:

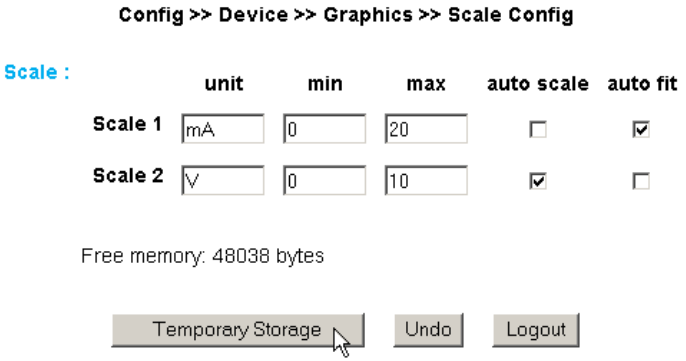
*Activate/deactivate Sensor **X**:* (Checkbox selected/deselected)

*Sensor Color:* Enter the desired sensor color, or use the color selector to choose.

*Show extreme values:* If a zoom level is selected in the graph in which a display point represents a measuring interval and not an individual measuring point, this function is used to display the maximum and minimum measured in this interval. If the zoom level is selected such that every measured value is displayed, this function has no effect. If the function is deactivated, the average value of the displayed interval is displayed.

*Scale 1 2 :* For multi-channel devices you can show multiple Y-axes at the same time in the graph. These can be for example different measurands. Specify here which scale you want to assign the respective sensor to. For single-channel devices of course only one scale is available.

### 3.5.3 Scale Config




**Scale:**

The graph can display four different scales. Each individual scale can be assigned the following parameters:

*unit:* The unit used for this scale.

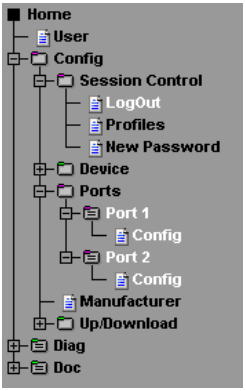
*min:* The lowest displayed value on this scale

*max:* The highest displayed value on this scale

*auto scale:* The lower and upper values for this scale are selected automatically based on the measured values, so that an optimal, dynamic display is achieved. If this function is activated, the existing parameters „min“ and „max“ are ignored.

*auto fit:* If this function is activated, the scale is corrected so that only whole-number values are shown on the display grid. *Auto fit* automatically activates the *auto scale* function.

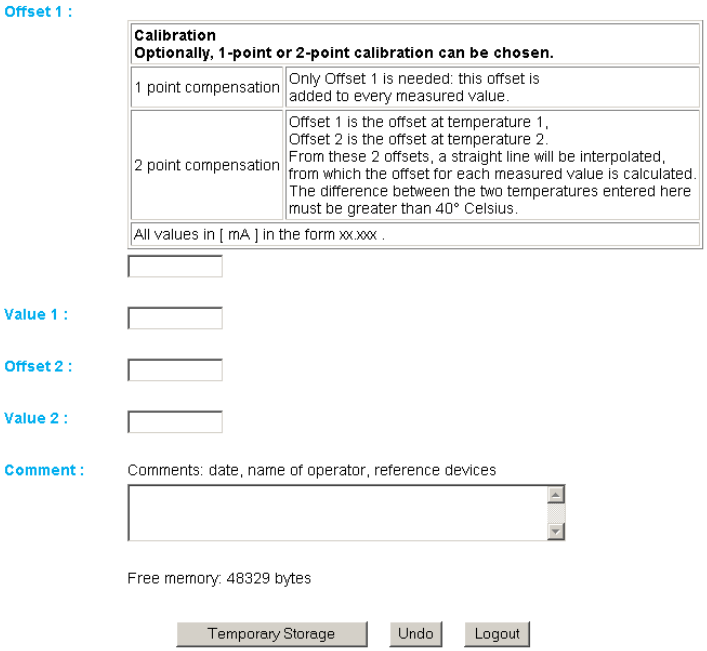
## 3.6 Calibration




You can calibrate the port with the help of single-point, two-point reference measurements and corresponding offset value entries.

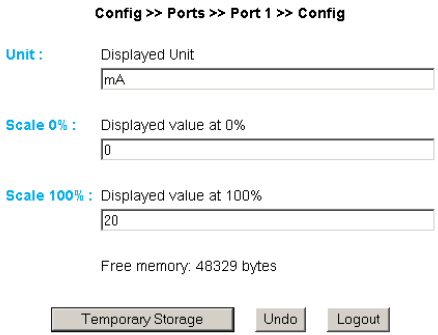
In single-poing compensation the entered value is added to the measured value, whereas in two-point compensation a straight line is calculated for compensating the entire measuring range.

The user can enter a comment for remembering calibration procedures.

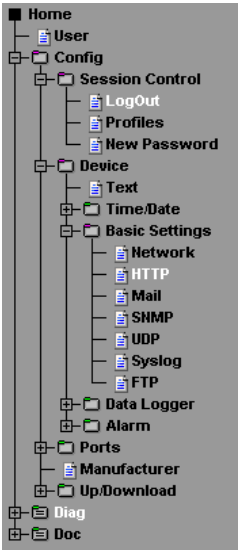



## Config:

If you want the measured value to correspond to a certain physical quantity (e.g. 10mA corresponds to 50hPa), you can configure the display value for 0% to 100% of the measuring range including the associated unit. This configuration is used for all outputs.

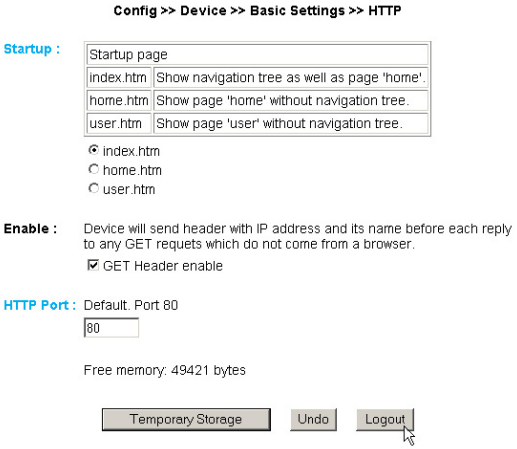


## 3.7 Browser access




### 3.7.1 HTTP

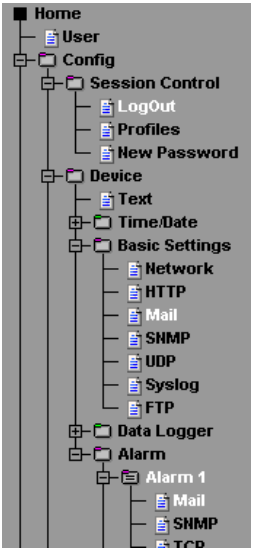
**Startup:** Here you specify which HTML page should be displayed when the device starts up.



**HTTP Port:** You can use this port to access the device. The default setting is the standard HTTP Port 80. If you would like to use a different port, it may have to be explicitly indicated when the page is opened:

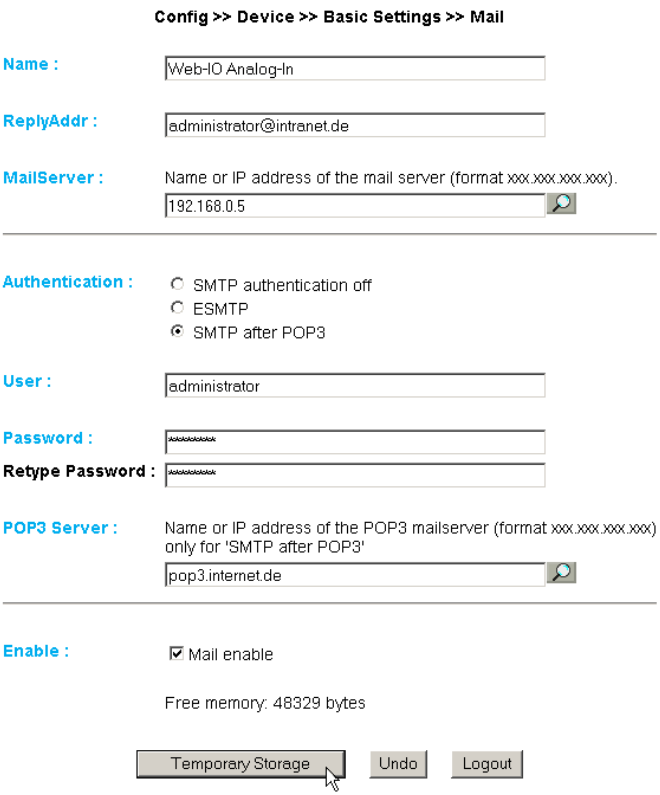
```
http://webio:<PortNr>
```

## 3.8 E-mail alarms




### 3.8.1 Basic Settings -> Mail

Here you make the basic settings for sending alarms via e-mail.




The e-mail function allows you to forward an information or alarm mail to one or more e-mail or SMS recipients.

**Name:** Enter here the name that should appear as the sender.

**ReplyAddr:** This is the reply address with which the device identifies itself.

**MailServer:** In the next step set the IP address of your mail server or its host name (for a configured DNS server) you want the device to use. If the e-mail port does is not the standard port 25, you may append the port to the address using a colon:

```
mail.provider.de:476
```

**Authentication:** If the mail server requires authentication, set here the corresponding procedure for user identification.

***SMTP authentication off:*** No authentication

***ESMTP:*** A user name and password are required for logging in to the mail server.

***SMTP after POP3:*** For an SMTP access it is necessary to first make access using POP3 so that the user can be identified. For this setting enter in addition an associated POP3 server.

**Enable:** Be sure that the checkbox „Mail enable“ for sending e-mail is checked.

### 3.8.2 Alarm X

Here you configure the desired alarm conditions.

**Config >> Device >> Alarm >> Alarm 1**

**Trigger :**

- ☑ Sensor 1
- ☑ Sensor 2
- ☐ Timer
- ☐ Cold Start
- ☐ Warm Start

---

**Sensor 1 0-10V**

**Min :** Limit in [ V ] (Form: xx.xxx).
2

**Max :** Limit in [ V ] (Form: xx.xxx).
6

**Hysteresis :** Hysteresis in [ V ] (Form: xx.xxx).
1

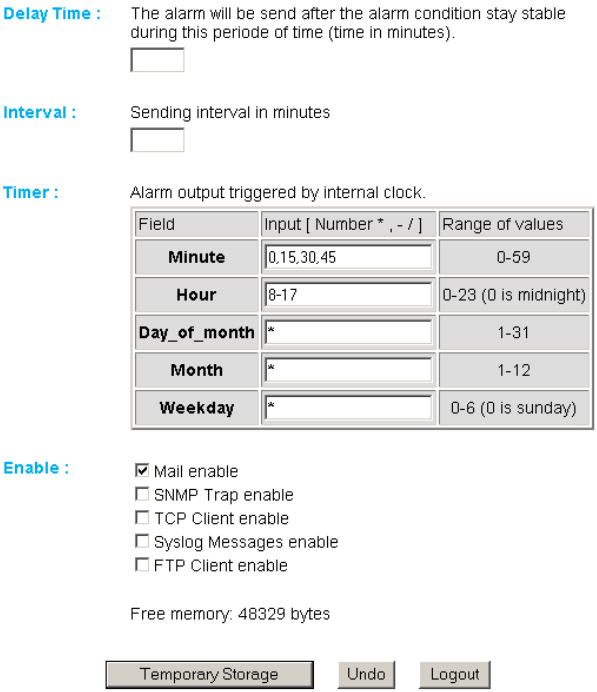
---

**Sensor 2 0-10V**

**Min :** Limit in [ V ] (Form: xx.xxx).
1

**Max :** Limit in [ V ] (Form: xx.xxx).
5

**Hysteresis :** Hysteresis in [ V ] (Form: xx.xxx).
1




**Trigger:** Here you define the trigger for the alarm e-mail. Multiple selections are allowed.

To send a message wihtout an alarm condition, check only the „Timer“ box.

**Min./Max.:** Specifies the lower and upper limit. The range within these limits is considered „valid“.

**Hysteresis:** You can also specify a hysteresis value based on which the alarm status is reset. This function prevents ‚flickering‘ arou9nd the limit value.

**Delay Time:** Triggering of the alarm is delayed by this time (in minutes) for momentary limit violations.

**Interval:** Enter here the send interval (in minutes) at which a message should be sent assuming the alarm function is enabled. If you want to send just a single message, enter here an „E“.

**Timer:** This timer interval is based on the CRON service such as is used in Linux/Unix systems. Valid characters are:

* : stands for all valid values in the respective input field (e.g. all minutes or all hours)

- : specifies a range of from ... to .. For example, weekday „2-4“ stands for Tuesday to Thursday, whereas entering a „*“ triggers the timer on all weekdays.

/ : Interval within the entered range , e.g. minute „0-45/2“ starts the timer in the range between the 0th and 45th minute every two minutes (0, 2, 4, 6 ,8, 10, ... , 44).

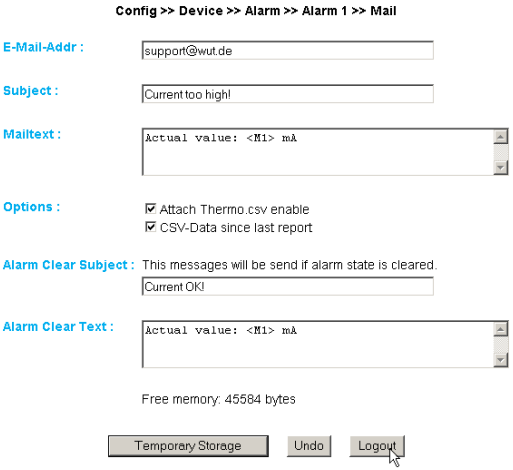
, : specifies an absolute value. For example minute 0, 15, 30 starts the timer on the hour, quarter-hour and half=hour.

This function requires that the „Timer“ box be checked.

**Enable:** For selecting the type of message. For an e-mail alarm check the Mail enable“ box.

### 3.8.3 Alarm X -> Mail

The actual content of the e-mail is selected under this menu item.




**E-Mail-Addr:** Enter here the e-mail address of the recipient. To send the e-mail to multiple recipients, separate the addresses from each other with a semicolon.

**Subject & Mailtext:** Specify the subject line and the mail-text of the e-mail. In these text fields the following tags will be also accepted. The device exchanges these tags with the actual values.

| W&T tag value | | Function |
|---|---|---|
| comma spelling (##,####) | dot spelling (##.####) | |
| <M1> | <m1> | *Measurand 1:* Displays the value for channel 1. |
| <M2> | <m2> | *Measurand 2:* Displays the value for channel 2. |
| <AA> | | *Alarm active:* Shows all alarms (numbers, komma separatet) which are currently active. |
| <AN> | | *Alarm sensor number:*Shows all sensors (numbers, komma separated) which match with the configured alarm values per alarm. |
| <AS> | | *Alarm sensor name:* see above, but with sensor names (komma separated) |

| W&T tag date + time | |
|---|---|
| <Z> | Displays the actual time and date as a string. |
| <$y> | *Year (####):* Displays the year. |
| <$m> | *Month (##):* Displays the month. |
| <$d> | *Day (##):* Displays the day. |
| <$h> | *Hour (##):* Displays the hour. |
| <$i> | *Minute (##):* Displays the minute. |
| <$s> | *Second (##):* Displays the second. |

**Attach thermo.csv enable:** The „Attach therno.csv enable“ option allows you to attach the entire contents of the data logger in semicolon-delineated CSV format as a mail attachment. The time base for the output corresponds to the pre-settings you have made for the data logger.

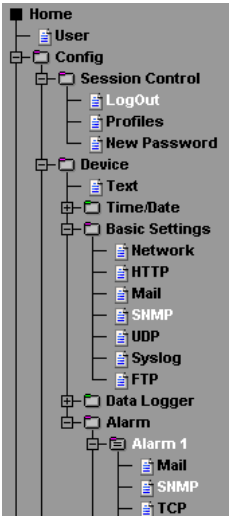
*The file is generated dynamically in the unit, so that whenthe contents of the logger is large the assembly of the CSV-file may take up to 30 seconds. During this time no other mail may be sent. Pending alarms are executed directly after the mail with attachment has been sent.*

**CSV-Data since last report:** This option causes that only the data is written into the CSV file, which is measured since the last transmission interval.

*This function only works properly if only the timer function is selected and no limit values are configured.*

**Alarm Clear Text:** In addition, an Alarm Clear message is sent when the measured value has reentered the valid zone. Here you may use the same tags as for the alarm message itself.

### 3.9 SNMP incl. alarm sending via Trap




Sending alarm messages as an SNMP trap.

### 3.9.1 Basic Settings -> SNMP

Here you define the basic settings needed for SNMP operation.

**Community String: Read:** Use this string to read the configuration in your SNMP manager.

**Community String: Read-Write:** Use this string to both read and write the configuration in your SNMP manager.

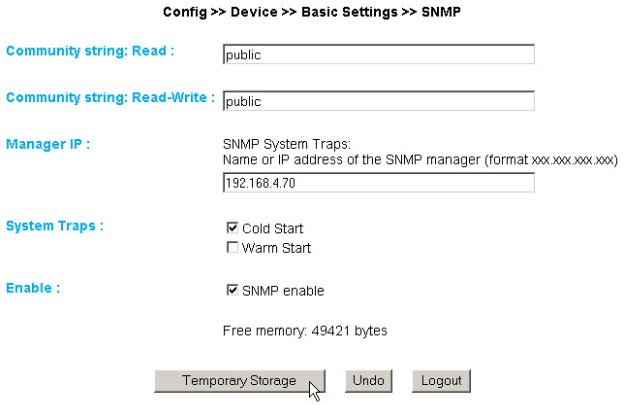
**Manager IP:** Contains the address of your SNMP manager. The SNMP messages from the W&T unit are sent to this address.

**System Traps:** Two system traps can be created.

Cold Start: When power is disconnected/fails.

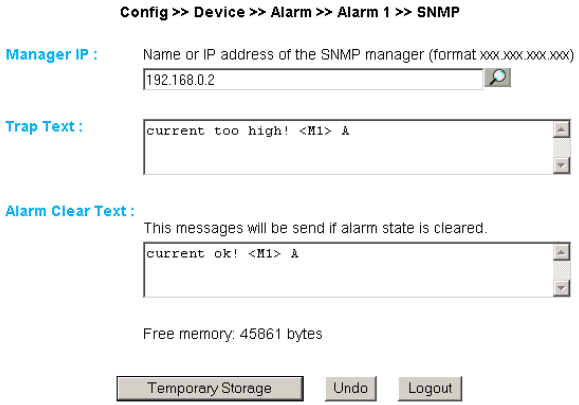
Warm Start: At device reset.

**SNMP Enable:** To use the SHMP functionality, check this box.



### 3.9.2 Alarm X -> SNMP

The actual contents of the SNMP trap is specified under this menu item.




**Manager IP:** Contains the IP address of your SNMP manager. The SNMP messages from the W&T unit are sent to this address.

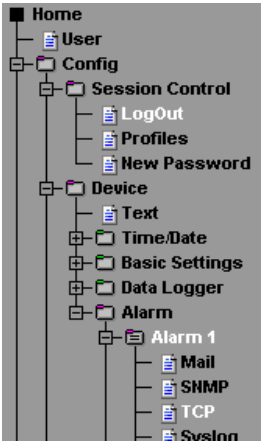
**Trap Text:** Specifies the text of the trap. In this text field the following tags will be also accepted. The device exchanges these tags with the actual values.

| W&T tag value | | Function |
|---|---|---|
| comma spelling (##,####) | dot spelling (##.####) | |
| <M1> | <m1> | *Measurand 1:* Displays the value for channel 1. |
| <M2> | <m2> | *Measurand 2:* Displays the value for channel 2. |
| <AA> | | *Alarm active:* Shows all alarms (numbers, komma separatet) which are currently active. |
| <AN> | | *Alarm sensor number:*Shows all sensors (numbers, komma separated) which match with the configured alarm values per alarm. |
| <AS> | | *Alarm sensor name:* see above, but with sensor names (komma separated) |

| W&T tag date + time | |
|---|---|
| <Z> | Displays the actual time and date as a string. |
| <$y> | *Year (####):* Displays the year. |
| <$m> | *Month (##):* Displays the month. |
| <$d> | *Day (##):* Displays the day. |
| <$h> | *Hour (##):* Displays the hour. |
| <$i> | *Minute (##):* Displays the minute. |
| <$s> | *Second (##):* Displays the second. |

**Alarm Clear Text:** In addition, an Alarm Clear message is sent when the temperature value has reentered the valid zone. Here you may use the same tags as for the alarm message itself.

### 3.10 Sending alarms via TCP (Client Mode)




Send alarm messages as a TCP packet.

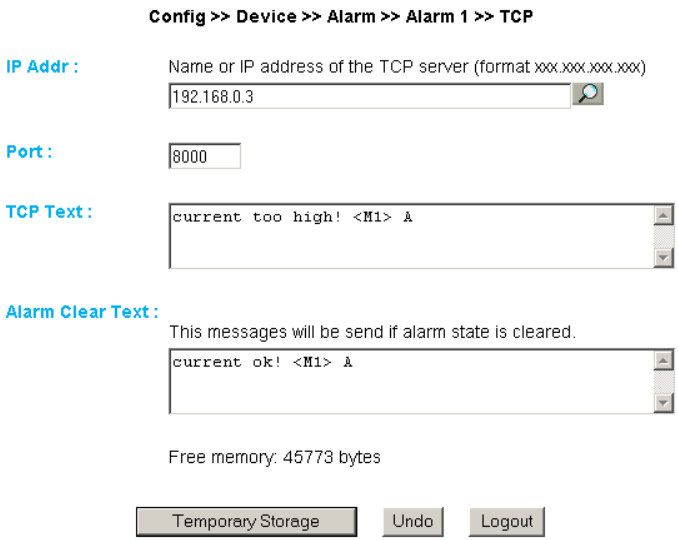
#### 3.10.1 Alarm X -> TCP:

**IP Addr:** The IP address where you want the message sent.

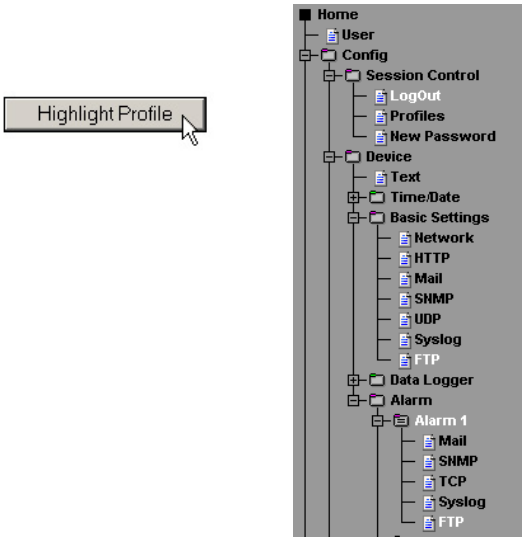
**Port:** The recipient must have a TCP server service on this port which can accept incoming connections.

**TCP Text:** The text corresponds to the same specifications as for the other message types.

**Alarm Clear Text:** s.o.




## 3.11 Sending alarms via FTP (Client Mode)




Write the measured values to an FTP server.

### 3.11.1 Basic Settings -> FTP

Here you will find the basic settings needed for FTP operation.

**FTP Server IP:** Enter here the IP address or the host name of the FTP server yhou want to send the data to.

**FTP Control Port:** This is the port needed for the connection. The standard prot for FTP accesses is 21. This port is already set as shipped, and should function on most systems right out of the box. If you require a different port, consult your network administrator.

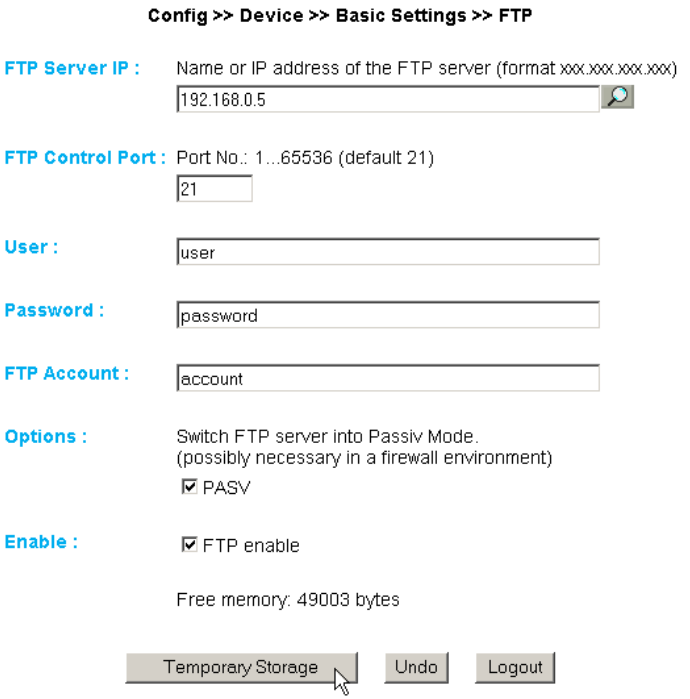
**User:** Enter the user name required for the FTP access.

**Password:** This is the password assigned to the user.

**FTP Account:** Some FTP servers require a special Account entry for the login. If this is the case for your server, enter the account name here.

**Options / PASV:** If this option is enabled the server is instructed to work in passive mode. This means that the data connection is opened by the Web-Thermo-Hygrograph. If this option is disabled the FTP server handles opening of the data connection. If the server is protected by a firewall, you are encouraged to enable the PASV option, since otherwise connection attempts could be blocked.

**Enable:** Check this box to use the FTP functionality.




### 3.11.2 Alarm X -> FTP

**FTP Local Data Port:** This is the local data port on the Web-Thermo-Hygrograph. Values between 1 and 65536 are permitted. Entering „AUTO“ causes the device to select the port dynamically.

**File Name:** Enter here the path to the file you want the device to access.

**FTP Alarm Text:** Specifies the text of the ftp content. In this text field the following tags will be also accepted. The device exchanges these tags with the actual values.

| W&T tag value | | Function |
|---|---|---|
| comma spelling (##,####) | dot spelling (##.####) | |
| <M1> | <m1> | *Measurand 1:* Displays the value for channel 1. |
| <M2> | <m2> | *Measurand 2:* Displays the value for channel 2. |
| <AA> | | *Alarm active:* Shows all alarms (numbers, komma separatet) which are currently active. |
| <AN> | | *Alarm sensor number:*Shows all sensors (numbers, komma separated) which match with the configured alarm values per alarm. |
| <AS> | | *Alarm sensor name:* see above, but with sensor names (komma separated) |

| W&T tag date + time | |
|---|---|
| <Z> | Displays the actual time and date as a string. |
| <$y> | *Year (####):* Displays the year. |
| <$m> | *Month (##):* Displays the month. |
| <$d> | *Day (##):* Displays the day. |
| <$h> | *Hour (##):* Displays the hour. |
| <$i> | *Minute (##):* Displays the minute. |
| <$s> | *Second (##):* Displays the second. |

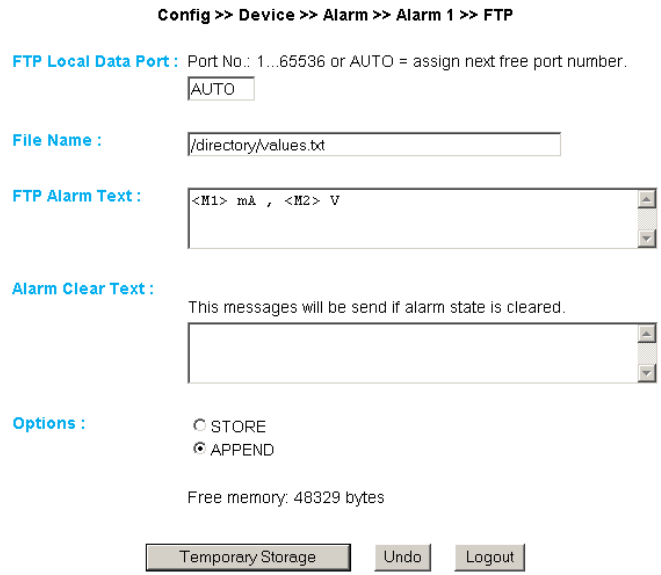
If you want a line feed after every data send, insert a CRLF by pressing the RETURN key at the end of the line.

**Alarm Clear Text:** This message is sent after the alarm state is ended. The same tags as above may be used.

**Options:**

STORE: Stores a file and writes the data into it. If this file already exists, it is overwritten.

APPEND: Appends the data to an existing file. If the file does not yet exist, it is created.




## 3.12 Sending alarms via Syslog

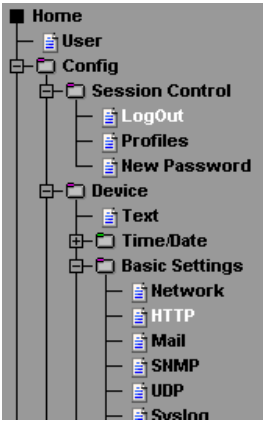
**IP Addr:** This is the IP address you want the message sent to.

**Port:** On the receiver end there must be a Syslog server service on this port which can accept incoming connections (Standard: 514).

**Syslog Text:** The text is subject to the same specifications as apply to the other message types.

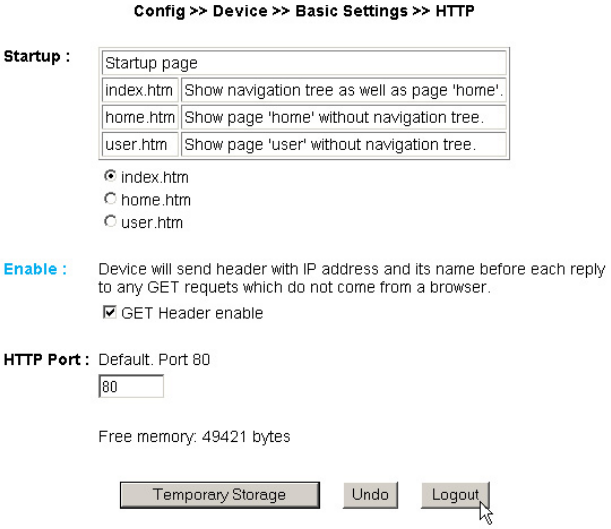
**Alarm Clear Text:** see above

## 3.13 ASCII command strings via TCP Port 80

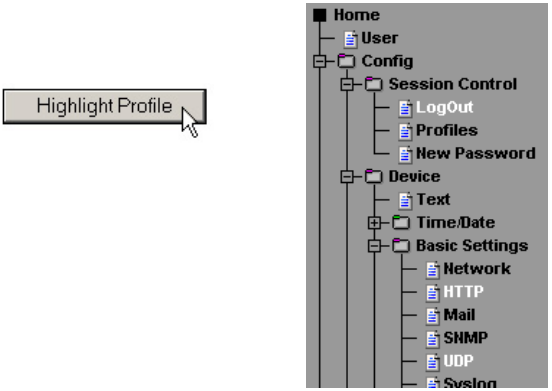



### 3.13.1 HTTP

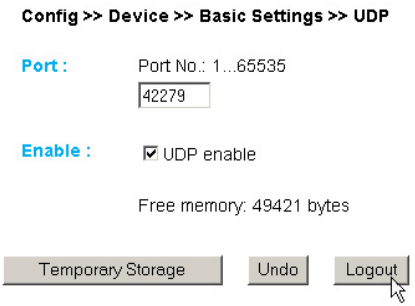
When queried by an HTTP Get command, the device can also send a header with IP address and name of the device along with the measured value. To enable this, check the corresponding box. If this function is deactivated, only the measured value is sent.



### 3.14 ASCII command strings via UDP

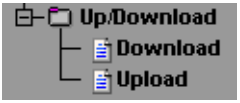



In addition to TCP/IP commands the device can also reply to UDP datagrams. For this the port which the device is supposed to „listen“ to must be set. The default setting is 42279. The enable function turns UDP on.




Here again you may include the header, which is included with the measured value.

### 3.15 UP-/Download




In the Download area yo can download the XML configuration as well as the three user pages (home.htm, user.htm, log.htm) for further processing.

With **XML** download you can read out the Web-IO Analog-In settings, make any changes and save them to the device using **XML Upload**.

*Some Web browsers the correct code is only output using „View -> Show (Frame-) source text“ after the „XML Download“ button has been actuated.*

For XML Upload you create or change a text file using the corresponding parameters and load this file into the device. The Web-IO Analog-In configuration must begin with the expression

```
<io-AIN2.3>
```

and end with the expression

```
</io-AIN2.3>
```

The sequence of the parameters you set corresponds to the sequence in the configuration menu starting with „Device“.

The syntax for configuring using XML is as follows:

```
<Option>
    <Parameter1> VALUE </Parameter1>
    <Parameter2> VALUE </Parameter2>
</Option>
```

In addition, you can exchange the user pages (user.htm, home.htm, log.htm) in the **Upload** area.

An example can be found in the Appendix (7.2).

The individual options and parameters correspond to the configuration items in the browser menu.

*Please note, especially when carrying out mass updates orconfigurations, the IP address stored in the XML file isalways sent also, and that it must first be set accordingly.*

An example can be found in the Appendix (7.2).

You may use menu item „**Upload -> GIF“** to exchange the logo displayed in the menu and save it directly in the W&T device.

# 4 Individual querying of measured values

## 4.1 Querying via TCP/IP

It is possible to use a socket connection for manually querying the current measurements in CSV format (comma separated data). This function as well is used for querying the single data without the Web interface.

Send the following string to Port 80:

```
GET  /logger.csv
```

To query the single, current measured value on Port 1, send:

```
GET /Single1
```

To query the single, current measured value on Port 2, send:

```
GET /Single2
```

## 4.2 Querying via UDP

Open a UDP connection to the IP address of the device or to the NED ID as a broadcast and Port 42279 (preset is modifiable).

Then send one of the expressions listed under 3.1 to the device and the device will return the measured values on the port you are using.

*When using multiple devices, it may be practical to send the name and the IP address of the device at the same time. To do this, activate the item „GET Header enable“ under „Config >> Device >> Basic Settings >> HTTP“.*

### 4.3 Querying via SNMP

The sensor can be queried directly using SNMP Get instructions. You reach the measuring port through the following path:

*<IP-Address>* 1.3.6.1.4.1.5040.1.2.**12**.1.3.1.1.**1** = Measured value 1 as octet string.

<IP-*Address*> 1.3.6.1.4.1.5040.1.2.**12**.1.4.1.1.**1** = Measured value as integer value in thousandths, without comma separation.

*<IP-Address>* 1.3.6.1.4.1.5040.1.2.**12**.1.3.1.1.**2** = Measured value 1 as octet string.

<IP-Adresse> 1.3.6.1.4.1.5040.1.2.**12**.1.4.1.1.**2** = Measured value 2 als Integer-Wert in tausendstel, ohne Kommatrennung.

*Use the configured SNMP-Read or Read/Write-Community for the query.*

An MIB for incorporating into management applications is available for downloading on the data sheet page of the WuT homepage at http://www.wut.de.

If you would like to use SNMP to change settings in the device (IP address, subnet mask, etc.), it is necessary to first use the SNMP manager to start a session on the device.

Entering the administrator password in the variable

```
wtWebGraphAnalogIn57644SessCntrlPassword
```

opens a session. By reading out the variable

wtWebGraphAnalogIn57644SessCntrlConfigMode

you can check whether the session was successfully opened.

1 = Session opened, device in configuration mode.
0 = Opening of the session failed. Check whether the password was incorrectly entered if a password has been assigned.

After the session has been successfully opened, the variables defined in the private MIB can be used to make any desired configuration changes.

After the configuration is finished, the session is closed by writing the variable

wtWebGraphAnalogIn57644SessCntrlLogout

wtWebGraphAnalogIn57644SessCntrlLogout=

1 All changes are saved
2 Quit without saving

If no SNMP communication takes place during an open session for a period of 5 minutes or longer, the device unilaterally quits the session and no changes are saved.

*Opening an SNMP session has priority over an HTTP login. That means: A user with Config or Adminstrator rights loses his browser access as soon as an SNMP session is opened.*

The description for the individual SNMP variables, OIDs etc. can be found in the private MIB.

# 5 Java Applets - Auto-updating in the browser

Visualizing states int he browser based on pure HTTP or HTMP allows only a snapshot. What is displayed is the status at the time the Web page was opened. The only way to see a state change is to reload the complete Web page.

A Java applet is implemented in the Web-IO Analog-In for displaying current states in the browser.

In order to enable the most flexible utilization, the Java applet invokes pre-defined Javascript functions which must be declared in the head of the HTML page.

## 5.1 Working with the Java applet

You incorporate the applet using the <applet> HTML tag, whereby the standard parameters *archive* and *code* are set as follows:

```
archive="A.jar"
code="A.class"
```

The remaining parameters are set individually based on the application.

```
name="Analog"
```

The term *Analog* was randomly selected here and can be replaced by any other desired term. The only important thing is that when invoking the applet functions using JavaScript the same name is used.

```
codebase="IP-Adresse des Web-IO Analog-In"
```

If the Web page from which the applet is loaded is loaded directly from the Web-IO as *user.htm* or *home.htm*, you can skip the *codebase* parameter.

```
width="0"      declaration in Pixel
height="0"     declaration in Pixel
```

Since the applet does not contain a visual component, *width* and *height* should always be 0.

```
mayscript
```

This option allows the Java applet to use JavaScript code in the HTML document.

In addition, several other Web-IO-specific parameters can be set, each of which is inserted in its own <param> tag:

**device**
Whole number value between 0 and 255. The *device* parameter is used for indexing when more than one Web-IO is operated on a single Web page.

If you are using only one Web-IO Analog-In, set the value to 0. For all additional devices incorporated into the Web page, the value is incremented by 1.

**showerrors**
If errors occur when using the Java applet, this parameter can be used to specify whether an error message in the form of an alert window will be output.

For *showerrors* you can set *on* or *off* as *value*.

**sensorpolling**
This parameter is used to specify when the applet is started whether the ports should be checked for their measure value at the interval set under *pollingrate*.

For *sensorpolling* you can set *on* or *off* as *value*.

**pollingrate**
This parameter is used to specify (using *value*) at what interval (in ms) the ports should be updated.

Here is an example:

```
<applet name="Analog" archive="A.jar" code="A.class"
      codebase="http://192.168.0.5" width="0" height="0" mayscript>
    <param name="device" value="0">
    <param name="showerrors" value="off">
    <param name="sensorpolling" value="on">
    <param name="pollingrate" value="500">
</applet>
```

*Both the parameters and the values are case-sensitive.*

### 5.2 Using the applet with JavaScript

To be able to work with the applet, a corresponding JavaScript function must be declared in the header of the Web page.

```
function sensorChanged( iDevice, iSensor, iVal )
  { program code carried out when the measured value changes)
```

The above function is invoked by the applet when a change is detected on the measuring inputs. iDevice indicates on which Web-IO Analog-In a value changed. *iSensor* indicates which port (0 or 1) changed. The variable *iVal* indicates the actual measured value.

*Please note that the function name is case-sensitive.*

The following source text shows a short example for dynamic display of Port 0.

```
<html>
 <head>
    <script language="JavaScript" type="text/javascript">
    <!--
    function sensorChanged( iDevice, iSensor, iVal )
    {   if (iSensor == 0 && iDevice == 0)
      { document.getElementById( 'port' + iSensor ).firstChild.data = iVal;
      }
    }
    //-->
    </script>
  </head>
  <body>
    <applet name="Analog" archive="A.jar" code="A.class"
         codebase="http://192.168.0.5" width="0" height="0">
        <param name="device" value="0">
        <param name="showerrors" value="off">
        <param name="sensorpolling" value="on">
        <param name="pollingrate" value="4">
    </applet>
    <p>current value port 0:</p>
    <p id="port0">0</p>
  </body>
</html>
```

*When working with ports, note the following: If polling is is activated, the associated JavaScript function must be declared in the HTMP text so that there are no runtime errors.*

*A more detailed example for use of the Java applet can be found on the Web page app.htm, which can be opened in the Web-IO.*

```
Open:   http://<ip-adresse>/app.htm
```

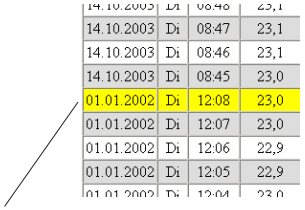
## 6 Data Logger

The Web-IO Analog-In stores all them measured values in a fixed ring memory, so that they are still intact even after a power loss or after pressing the Reset button.

*The measuring data in the data logger are obtained through the user page of the device (Home -> User bzw. http://xxx.xxx.xxx.xxx/user.htm).*

Under *Config -> Device -> Data Logger -> Memory* you can clear the memory.

An interruption of the time line, such as resulting from a reset or a subsequent time server synchronization, is represented on the data logger page as a yellow line.



| | | | |
|---|---|---|---|
| 14.10.2003 | Di | 08:47 | 23,1 |
| 14.10.2003 | Di | 08:46 | 23,1 |
| 14.10.2003 | Di | 08:45 | 23,0 |
| 01.01.2002 | Di | 12:08 | 23,0 |
| 01.01.2002 | Di | 12:07 | 23,0 |
| 01.01.2002 | Di | 12:06 | 22,9 |
| 01.01.2002 | Di | 12:05 | 22,9 |

time line interruption:
yellow marked line

*If alarm limits are set, measured values that are not within the valid range are highlighted in red.*

# 7 Appendix

## 7.1 Alternate IP address assignment

### 7.1.1 Using DHCP-/BOOTP protocol

Many networks use DHCP (Dynamic Host Configuration Protocol) or BOOTP for centralized and dynamic assigning of the IP addresses. It makes no difference to the Web-IO devices which of the two protocols is used in any given case, since DHCP is simply a downward compatible extension of BOOTP. DHCP servers also make use of requests from BOOTP clients.

The following parameters can be assigned to the Web-IO Analog-In using these protocols:

- IP address
- Subnet mask
- Gateway address

It is not possible to configure any other parameters or lease time.

**Functionality**

To obtain an IP address, the unit sends a corresponding BOOTP request as a broadcast after each new start. The reply generated by the DHCP/BOOTP server contains the IP address as well as the subnet mask and gateway address. The device immediately stores this information in its non-volatile memory.

Please consult your system administrator when starting up the device in DHCP/BOOTP networks. If the address is assigned using DHCP, you must also indicate that a reserved IP address is required. To integrate this into the respective address database, the administrator needs the Ethernet address of the device, which can be found on the housing sticker.

Once the necessary entries have been made, the device automatically retrieves the desired IP address after each reset. To ensure the Web-IO Analog-In can still be reached should the DHCP/BOOTP server be down, the previous IP address is retained if no reply is forthcoming.

*In DHCP environments the IP address to be assigned must be reserved by means of a fixed link to the Ethernet address of the device. Under Windows NT this is done in the DHCP Manager under menu item „Reservations". Linux provices the file „dhcpd.conf" for this purpose, where the corresponding entry must be made.*

### 7.1.2 ...using ARP command

The prerequisite is a PC located in the same network segment as the Web-IO Analog-In and which has TCP/IP protocol installed on it. Read off the MAC address for the device (e.g. EN=00C03D0012FF). Under Windows you first ping another network device and then use the command line indicated below to make a static entry in the ARP table of the computer:

```
arp -s <IP-Adresse> <MAC-Adresse>
```

e.g. under Windows:

```
arp -s 172.0.0.10 00-C0-3D-00-12-FF
```

e.g. under SCO UNIX:

```
arp -s 172.0.0.10 00:C0:3D:00:12:FF
```

Then ping the device again (in our example ping 172.0.0.10). The IP aeddress is now stored in the non-volatile memory.

*This method can only be used if no other IP address has already been assigned to the device, i.e. the entry is 0.0.0.0. To change an already existing IP address you must open the configuration menu from your browser.*

### 7.1.4 ...using RARP-Server (UNIX only)

Working with an RARP server activated under UNIX is based on entries in the configuration files, */etc/ethers* and */etc/hosts*. First expand */etc/ethers* by one line by assigning the Ethernet address of the device to the desired IP address. In */etc/hosts* the link is then established with an alias name. After you have connected the device in the network segment of the RARP server, you can use the network to assign the desired IP address to the device.

**Example:**

Your Web-IO Analog-In has MAC address EN=00C03D0012FF (sticker on the housing). You want to assign IP address 172.0.0.10 and alias WT_1 to it.

Entry in the file */etc/hosts:* 172.0.0.10 WT_1

Entry in the file */etc/ethers:* 00:C0:3D:00:12:FF WT_1

If the RARP daemon is not yet activated, you must start it now using the command *„rarpd -a“*.

## 7.2 Example for creating your own Web pages

You can freely configure the standard display pages of the device (user.htm, home.htm, log.htm). Special control elements can be inserted into the page using tags. In the following you will find an example for creating the page „user.htm“.

Create an HTML page which must begin with the expression

```
<user.htm>       (bzw. log.htm oder home.htm)
```

Then you enter the HTMP code.

You can display the following parameters on your page:

```
<w&t_tags=m1>
```

displays the current measured value of the first port.

```
<w&t_tags=m2>
```

displays the current measured value of the second port.

```
<w&t_tags=time>
```

inserts the current time.

```
<w&t_tags=steps>
```

inserts a list box for selecting the time steps to be displayed.

```
<w&t_tags=ok_button>
```

inserts an „OK“ button for sending the selected parameters to the device.

<w&t_tags=session>

inserts an invisible session control so that the user is not logged out from the device when leaving the page. The expression is only needed if you want to create your own button for sending. Insert this expression between *<form action>* and *</form>*.

Background color:

Background colors for the values shown in tables can be used for indicating the sensor state:

<w&t_tag=bc1>

describes a backgrouind color (BGColor) that varies with the alarm state of the first port. If there is a limit violation, this color is red. Otherwise the tag does not describe an explicit color. This tag is used for example to show limit violations in red in the log table.

<w&t_tag=bc2>

Background color for the second port.

<w&t_tag=location>

fills in the configured location settings.

<w&t_tag=contact>

fills in the configured contact settings.

<w&t_tags=sensor**x**>

inserts the name of sensor x into the page and contains a link for the complete sensor description.

<w&t_tags=device_name>

Inserts the assigned device name.

<w&t_tags=device_text>

Inserts the freely configurable descriptive text for the device.

<w&t_tags=reload_button>

inserts a „Reload“ button for reloading the current page.

<w&t_tags=previous_button>

<w&t_tags=next_button>

inserts a button for moving ahead or back in the table.

*The „Previous“ button and the „Next“ button only have any meaning in the „log.htm“ file.*

<w&t_tags=logtable>

inserts a table with the current measurements. You can navigate this table only on the „log“ page using the „Next“ and „Previous“ buttons (see above). On both the other pages (user.htm, home.htm) only the current measured values can be displayed.

Example for setting a background color in a table:

```
<tr>
    <td colspan="3" align="center">
    <table border="2">
        <tr>
            <th><w&t_tags=sensor1></th>
        </tr>
        <tr>
            <td <w&t_tags=bct>><w&t_tags=m1> A</td>
        </tr>
    </table></td>
</tr>
```

The measured value is highlighted in red when there is a limit violation.

To specify the output format for the data, insert the following line into your document:

```
<form action="log.htm" method="POST" >
....
</form>
```

CSV output can be specified using the expression

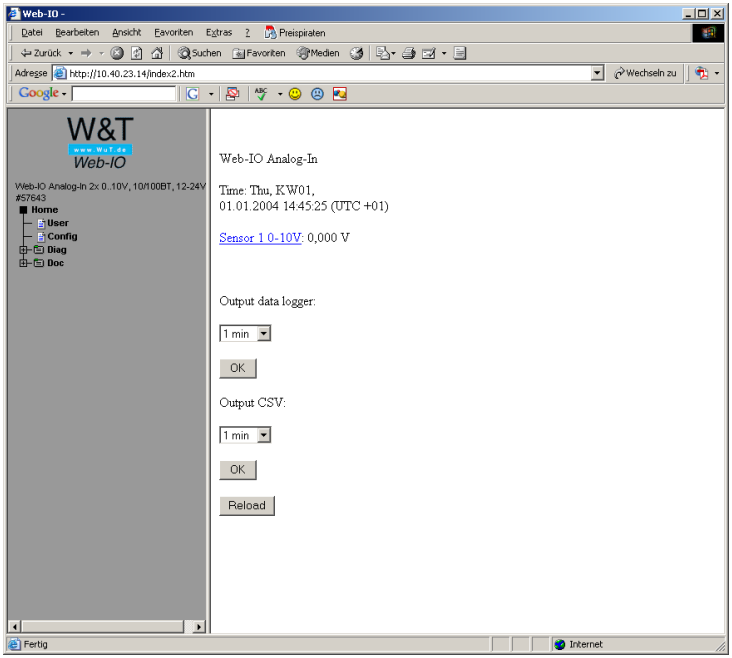
```
<form action="logger.csv" method="POST" >
....
</form>
```

*Resetting the device to its factory defaults restores the original HTML pages.*

## Example for user.htm:

```
<user.htm>
<html>
<head>
<title>Untitled Document</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
</head>

<body bgcolor="#FFFFFF" text="#000000">
<p>Web-IO Analog-In</p>
<p>Time: <w&t_tags=time></p>
<p><w&t_tags=sensor1>: <w&t_tags=ml></p>
<p> </p>

<form action="log.htm" method="POST">
    <p>Output data logger:</p>
    <p><w&t_tags=steps></p>
    <p><w&t_tags=ok_button></p>
</form>
<form action="logger.csv" method="POST">
    <p>Output CSV:</p>
    <p><w&t_tags=steps></p>
    <p><w&t_tags=ok_button></p>
</form>

<form action="user.htm" method="GET">
    <p><w&t_tags=reload_button></p>
</form>
</body>
</html>
```

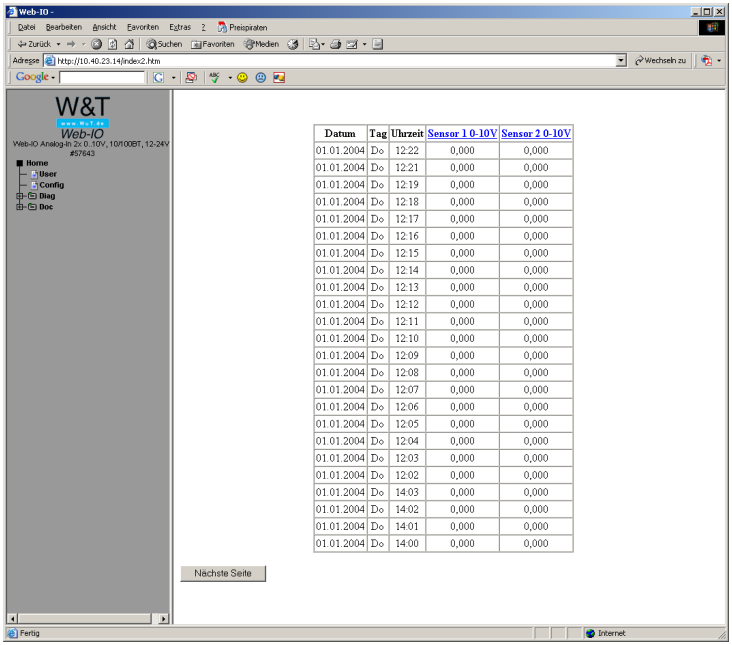
This page is displayed by the Web-IO Analog-In in the Web browser as follows:



## Example for log.htm:

```
<log.htm>
<html>
<head>
<title>Untitled Document</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
</head>

<body bgcolor="#FFFFFF" text="#000000">

<form action="log.htm" method="POST">
    <w&t_tags=previous_button>
</form>

<w&t_tags=logtable>

<form action="log.htm" method="POST">
    <w&t_tags=next_button>
</form>
</body>
</html>
```

This page is displayed by the Web-IO Analog-In in the Web browser as follows:



## 7.3 Firmware update

The operating software for the Web-IO Analog-In is being constantly enhanced. The following section describes how to upload the firmware when new versions become available.

■ Where do I obtain the current firmware?

■ Firmware update over the network under Windows

### 7.3.1 Where do I obtain the current firmware?

The most up to date firmware version including the available update tools and a revision history are published on our Web pages under the following address: *http://www.wut.de*

Before downloading, first write down the 5-digit part number printed on the label of the Web-IO Analog-In. From the homepage yo ureach the product overview sorted by article numbers, from which you can get directly to the data sheet for the device. Follow the link to the current version of the firmware.

### 7.3.2 Firmware update over the network under Windows

The prerequisite is a PC running under Windows 9x/NT/2000/XP with a network connection and activated TCP/IP stack. For the update process you will need two files which, as already described, are available for downloading at *http://www.wut.de*.

· the executable update tool for sending the firmware to the Web-IO Analog-In

· the file with the new firmware you want to load into the device

No special preparation of the device is needed for the firmware update.

The *WuTility* used for the update recognizes all WuT devices located in its network and is for the most part self-explanatory. If you do have questions or if anything is unclear, please refer to the accompanying documentation or try our online help.

*Never intentionally interrupt the update process by disconnecting power or activating the Reset button. The Web-IO Analog-In will be inoperable following an incomplete firmware update.*

*Never mixes files having different version numbers in the file name. This will result in inoperability of the device.*

*The Web-IO Analog-In automatically recognizes when uploading of the new firmware is complete and performs an autonomous reset.*

### 7.3.3 LED indicators

- **Power-LED:** Indicates the presence of supply voltage. If the LED is not on, please check for proper connection of the power supply.
- **Status-LED:** Flashes whenever there is network activity. The Web-IO Analog-In is not receiving a link pulse from a hub or switch. Please check the cable or the hub/switch port.
- **Error-LED:** The Error LED uses various blink codes to indicate error conditions on the device or network port.

  **1x blinking of the Error-LED** = Check network connection. The Web-IO Analog-In is not receiving a link pulse from a hub or switch. Please check the cable or the hub/switch port.

  **2x or 3x blinking of the Error-LED** = Interrupt the power supply to perform a reset. If the error has not cleared, reset the device to its factory defaults. Since all the network settings will be reset, you should write down your network setting before performing the reset.

  ```
  Config -> Session Control -> LogOut -> Restore Defaults
  ```

  After a reset the device is restored to its factory defaults. Reconfigure your network settings.

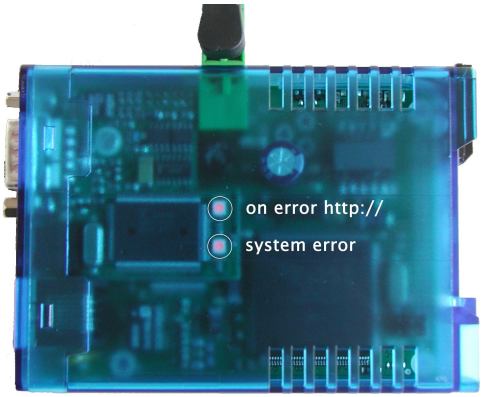
- **Power-LED Status-LED Error-LED on**
  **= Self-test error**
  The self-test performed after each reset of the device was not able to be carried out successfully - due for example to an incomplete update of the firmware. In this state the device is inoperable. Please return the device for repair.

### Auxiliary-LEDs (internal)

- **on error http://xxx.xxx.xxx.xxx/diag -LED:** Indicates internal configuration errors. For diagnostic information open page http://xxx.xxx.xxx.xxx/diag in the device.

- **system error:** Serious hardware error. Try restarting the device by interrupting turning power off and on. If the problem persists, return the unit for service.

*If the device has no IP address or the address is 0.0.0.0, the LEDs „on error“ and „system error“ remain on after a reset or new start. The system error LED flashes 3x after a short time. The LEDs do not turn off until an IP address has been assigned.*



## 7.4 Technical Data

| Prod. No.: | 57644 |
|---|---|
| **Measurement unit** | |
| Voltage input: | 2x 0..10V, 1MOhm |
| Power supply: | 12-24V AC / DC via terminal screw |
| Resolution: | 2x Voltage input: 1,25mV |
| Measuring error: | max. 0,5% FSR (Full Scale Range 0..10V) $T_A$ = 0-60°C |
| Saving frequency: | 1, 5, 15, 60 min. |
| Memory (832k): | min. 79 days, max. 17 years |
| Deviation of internal clock: | max. 4,32 min. / month |
| Data logging (request via Network and alarm trigger): | 2/second |
| Saving in internal data logger: | 1/minute |
| Galvanic isolation: | Input vs. Network: min. 500 Volt |
| Mail function: | Mail for sending alarm or reports |
| Supply voltage: | DC 12V (-5%) -34V (+5%) |
| Current consumption: | AC 9Veff (-5%) - 24Veff (+5%)<br>AVG:185mA @ 12VDC, 90mA @ 24VDC |
| Power supply: | provided power supply<br>or 12..24V AC/DC |
| Housing: | Plastic housing, 105x75x22mm |
| Weight: | approx. 200g |
| Storage temperature: | -40..+70°C |
| Operating ambient temperature: | 0..+60°C |
| | |
| **AC Current Transducer 0..50A** | |
| Output signal: | 0-5VDC or 0-10VDC (Default) |
| Frequency range: | 30-6000Hz (all waveforms) |
| Response time: | 400ms |
| Accuracy: | 1% Full Scale |
| Supply voltage: | 24VDC +/- 5% |
| Output load for voltage output: | 10kOhm min. |
| Isolation voltage: | 5000V |
| Current consumption: | <30mA |
| Operating ambient temperature: | -20..+50°C |

## 7.5 Declaration of Conformity

W&T
www.WuT.de
W&T Interfaces für TCP/IP, Ethernet, RS-232, RS-485, USB, 20mA, Glas-und Kunststoff-LWL, http, SNMP, OPC, I/O digital, I/O analog, ISA, PCI, ...

### Declaration of conformity
### according to paragraph 10.1 of directive 89/336/EWG

Wiesemann & Theis GmbH hereby confirms that the products

| | |
|---|---|
| **Web-IO 1x Thermometer** | **Model 57601** |
| **Web-IO 2x Thermometer** | **Model 57603** |
| **Web-IO 8x Thermometer** | **Model 57604** |
| **Web-Thermograph** | **Model 57605** |
| **Web-Thermo-Hygrograph** | **Model 57606** |
| **Web-IO Analog-In 0..20mA / 0..10V** | **Model 57641** |
| **Web-IO Analog-In 2x 0..20mA** | **Model 57642** |
| **Web-IO Analog-In 2x 0..10V** | **Model 57643** |

fulfill the requirements of the directives / regulations specified below:

1. Emission according to

   1.1. EN 55022 Cl. B (1998) +A1 +A2
   1.2. EN 61000-3-2 (2000)
   1.3. EN 61000-3-3 (1995) + A1

2. Noise Immunity according to EN 61000-6-2 (2001):

   2.1. EN 61000-4-2 ESD
   2.2. EN 61000-4-3 Radiated Immunity
   2.3. EN 61000-4-4 Burst
   2.4. EN 61000-4-5 Surge
   2.5. EN 61000-4-6 Conducted Immunity
   2.6. EN 61000-4-8 H-Field
   2.7. EN 61000-4-11 Supply Voltage Dips and Interruptions

3. Product-specific Low-Voltage Directive for communications technology

   3.1. EN 60950 (2003)

Wuppertal, 03/08/2006

Klaus Meyer, EMC Representative

Dipl.-Ing. Rüdiger Theis, Managing Director

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USt!D Nr.: DE121008340
Steuer Nr.: 131/5937/014

Bankverbindung:
Postbank Essen
Konto: 289397436
BLZ: 36010043

CE

**Déclaration de conformité CE**
**EC Declaration of conformity**
**EG - Konformitätserklärung**

LEM

Le fabricant

The Manufacturer

Der Hersteller

**NANALEM K.K.**

2-1-2 Nakamachi, Machida
Tokyo, 194-0021
JAPAN

déclare que le matériel ci-dessous :
hereby certifies that the appliance(s) indicated below :
bestätigt, daß das nachfolgend bezeichnetes Gerät :

Capteurs de courant/tension
Current /voltage transducers **Voir annexe**
Strom-Spannungswandler

est conforme aux exigences des directives européennes suivantes :
are in accordance with the requirements of the following EEC Directives :
die folgenden Ansprüche der EG-Richtlinien erfüllt :

**89/336/CEE, CEM, EMC, EMV**
**73/23/CEE, BT, LVD, NS**

Ce produit est conforme à la norme EN 61010 et EN 61326 et a été testé suivant cette norme.

The product is conform to the standard EN 61010 and EN 61326 and has been tested according to this standard.

Dieses Produkt ist konform der Norm EN 61010 und EN 61326 und wurde gemäss dieser Norm geprüft.

Machida, le 12.10.2005

Marc Laforet
*R&D Manager*

**NANALEM K.K.** 2-1-2 Nakamachi, Machida, Tokyo, 194-0021
JAPAN
Phone : +81 42 725 8151
Fax : +81 42 728 8119

## *TECHNICAL FAMILIES - FAMILLES TECHNIQUES*

| Family | Type | Option |
|---|---|---|
| HY | Available for type -P | Available for SP1 to SP99 |
| HX | Available for type -P -NP | Available for SP1 to SP99 |
| HAS | Available for type -S -P | Available for SP1 to SP99 |
| HAX | Available for type -S | Available for SP1 to SP99 |
| HAL | Available for type -S | Available for SP1 to SP99 |
| HTA | Available for type -S | Available for SP1 to SP99 |
| AP | Available for type B10 & B420L | |
| APR | Available for type B10 & B420L | |
| HXS | Available for type -NP | Available for SP1 to SP99 |
| HAIS | Available for type -P -TP | Available for SP1 to SP99 |
| HAZ | Available for type -SB -SRU -SBI -SRI | Available for SP1 to SP99 |
| R- | Available for type xxx/4 | |
| H-A | Available for type xxxR3 xxxS3 | |
| HAR | Available for type -S | Available for SP1 to SP99 |
| HAT | Available for type -S | Available for SP1 to SP99 |
| HTFS | Available for type -P | Available for SP1 to SP99 |
| LA 150-P | Available for type -P -TP | |
| NNC-10GFPN | | |
| NNC-10GFPN-12 | | |
| NNC-10GFP | | 400A-4V |
| NNC-40GFPN | | |
| HAC | Available for type -S | |
| LA | Available for type -PB | |
| HTC | Available for type -S | Available for SP1 to SP99 |
| CT | Available for 0.1-P, 0.2-P, 0.4-TP/SP1 | |

Marc Laforet

R&D MANAGER

LEM