

# **Quick Start Manual**

## **Web-IO 12x Digital**



<b>Release</b>	<b>1.0 / October 2003</b>
<b>Type</b>	<b>57630</b>
<b>Firmware Release</b>	<b>1.34 / 2.00</b>

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Since it is possible that we make mistakes, you mustn't use any of our statements without verification. Please, inform us of any error or misunderstanding you come about, so we can identify and eliminate it as soon as possible.

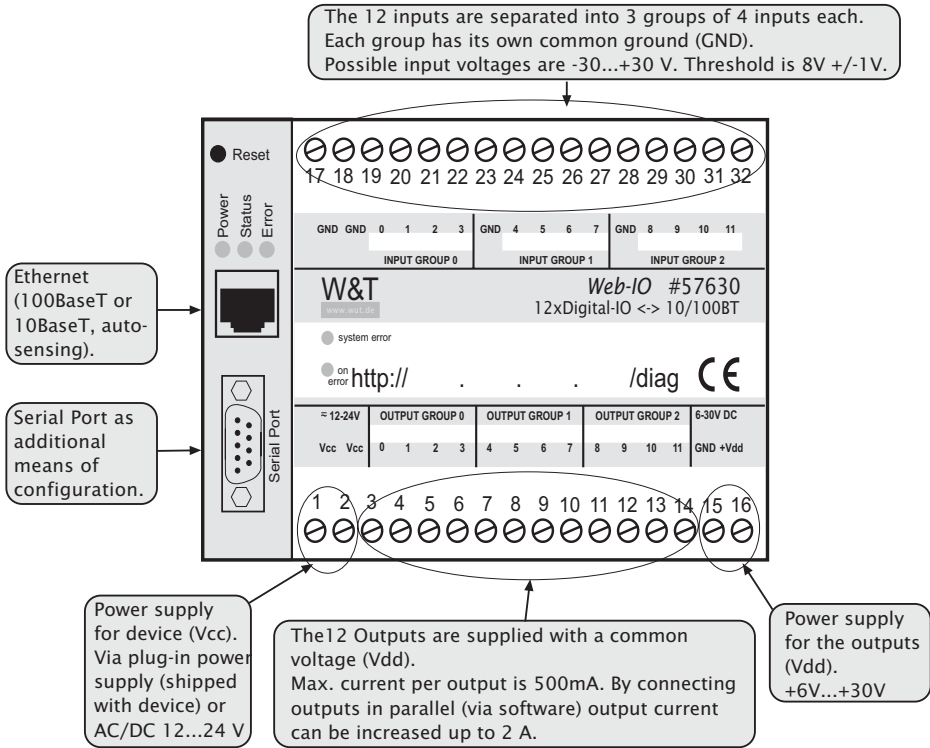
Carry out your work on or with W&T products only to the extent that they are described here and after you have completely read and understood the manual or guide. We are not liable for unauthorized repairs or tampering. When in doubt, check first with us or with your dealer.

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# 1. Hardware installation

## Connections



## Meaning of the LEDs

**Power**

Indicates that the power supply is connected.

**Status**

Flashes for every network activity of the Web-IO. Periodic blinking indicates connection to another network participant.

**Error** (blinks 1x)

The Web-IO is receiving no link pulse from the Switch or Hub. Check the cable and the Switch/Hub Port.

**Error** (blinks 2..3x)

Make a reset with the button on the housing. If the fault is not cleared, see Reference Manual.

**on error http: ...**

Internal configuration error. For an analysis call <http://<IP address of the Web-IO>/diag>, e.g. <http://172.16.232.17/diag>

**system error**

Hardware fault. Start the device again by removing and re-connecting the power supply. If not remedied see Ref. Manual.

**Error+Power+Status** Self-test fault. See Reference Manual.

## 2. Putting it into the network

### Ask the network administrator

For the configuration of a device in the network you need some information that you can usually get from the network administrator responsible.

The most important points are:

- IP-Address
- Subnet Mask
- Gateway
- IP-Address of a DNS server that can be reached (if available)
- IP-Address of an alternative DNS server (if available)
- IP-Address or hostname of a Mail-Server that can be reached, if you want to send mails with the Web-IO.

The network administrator needs to know in which part of the net you will operate the device. Above all, in large company nets, if you are not familiar with the structure of your network, information, such as location, building, „production network“, „office network“, „test network“ or „computer centre“ is helpful here.

If you also want to use advanced functions of the Web-IO, such as SNMP, Time Server Support, Socket Programming or Box-to-Box-Mode, we have produced a questionnaire that you can download from our website [www.WuT.de](http://www.WuT.de) that is an aid for trouble-free coordination with the network administrator.

### Enter IP address

The IP-Address of your Web-IO must suit the address structure of the network in which it will be used. In no way may it occur twice and, because of this, it cannot be set ex works but only assigned by the corresponding network administrator.

If your device already has an IP-Address that can be used in your net-




work and also the new address wanted is permissible in your network, the change can be made via the browser interface. However, this is not the case for the first commissioning.

Instead, you can enter the IP-Address with any of the following methods :

### ... via the „WuTility“ tool

The condition for this method is that the Web-IO is at the factory presetting (i.e. the current IP address is 0.0.0.0).

You can find the tool (for Windows 9x/NT/2000/XP) on the website [www.WuT.de](http://www.WuT.de) via the product page of the Web-IO under „Tools“. After downloading and unpacking the ZIP file you can start the program *wutility.exe* immediately.

If your Web-IO is connected to the network, select  from the symbol bar. A list of the W&T devices available in your network must now appear, among them also the new Web-IO with the symbol  and the IP-Address 0.0.0.0. Mark this line with the cursor and click  on the symbol bar. You will now be asked to enter the IP-Address in a window. Enter the address WITHOUT the leading zeros, e.g. 172.17.222.1. After confirming this with „Ok“ the address is assigned.

### ... via the network by means of ARP

The condition for this method is that the Web-IO is at the factory presetting (i.e. the current IP-Address is 0.0.0.0).

First of all read the internet address from the sticker on the Web-IO (e.g. EN=00c03d001234). Now start the command prompt or DOS Box found on

a Windows computer on the same network. Enter the following command and close with RETURN:

```
arp-s [IP-Address] [Ethernet address]
```

*Windows example:*

```
arp-s 172.17.222.1 00-c0-3d-00-12-34
```

With this you have produced a static entry in den ARP cache of the computer that you can check with the aid of the command *arp-a*. By means of a PING on the IP address entered, also executed in the DOS-Box, the actual address assignment to the Web-IO is now made. The IP-Address is taken over immediately in the non-volatile memory and therefore also remains stored after a reset or power failure:

```
ping [IP-Address]
```

As answer you will receive the following output in the DOS Box:

```
Answer from [IP address]:
```

```
Bytes=32 time[<=x]ms TTL=128
```

*Pay attention! All entries under Windows must be made WITHOUT the leading zeros as these will be interpreted wrongly and lead to a false assignment of the IP addresses. E.g. the entry of 172.17.222.1 may in no way be made in the form „172.017.222.001“!*

### ... via the serial interface

In contrast to the methods with the WuTility and with ARP, the following method can also be used if the Web-IO already has an address that is not 0.0.0.0.

The computer needs any sort of terminal program (e.g. Windows Hyperterminal). The start must be made with the following transmission parameters: 9600 Baud, 8 data bits, no parity, no handshake. The serial interface of the Web-IO is to be connected with the PC via a crossed computer/computer cable (= null modem).

Keep the button „x“ pressed, **while you** connect the supply voltage of the Web-IO. After approx. 2 seconds the following prompt appears on your screen:

*Enter IP-addr.+RETURN*

Enter the new IP-Address in the form „172.17.222.1“. After pressing the RETURN key this will immediately be accepted from the Web-IO as new address in the non-volatile memory.

Pay attention! The characters entered are first of all not displayed on the screen. First after pressing the RETURN key will the entire address be returned and displayed by the terminal program. The Web-IO syntax errors acknowledges the Web-IO with the message „FAIL“. In this case repeat the entry and confirm again with RETURN.

### Warning about DHCP and BOOTP

DHCP and its predecessor BOOTP are processes for the automatic allocation of IP-Addresses that are also supported by Web-IO. For every Reset the Web-IO tries to get an IP-Address by means of a BOOTP request.

The condition for this is that a DHCP- or BOOTP-Server is in operation in the network concerned.

If you want to use this function coordination with the responsible network administrator is necessary. The Web-IO can only be used with BOOTP or DHCP if a corresponding entry in the DHCP-Server assigns a reserved IP-Address.



*If you do **not** want to use BOOTP or DHCP, **or if you are in doubt**, you should immediately call up the Web interface after manual entry of the IP-Address and there under **Config>> Device >> Basic Settings>> Network** switch **off** the function **BOOTP Enable** in order to avoid side effects.*

# 3. Configuration via browser

After successful entry of the IP-Address you can call the device via a browser with the IP-Address, e.g.

```
http://172.16.232.17
```

The first menu page of the Web-IO now appears on your browser. From there you can make all other settings.

**Look for the operating mode you require on the following pages of the manual and follow the steps through the menus from top to bottom.**

**Ignore the menu points that are not explained on the sheet.**

The help texts at the menu interface of the Web-IO offer the most important information about individual parameters.



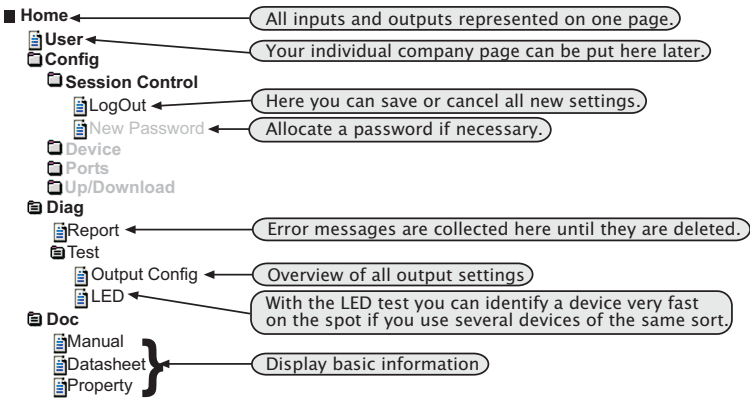
All settings are first stored permanently after a „**Log-out**“, either through the corresponding menu point (see above) or through the logout buttons on the individual menu pages.

## Information: The Reference Manual

You can find more detailed information in the extensive Reference Manual that you can download via [the website www.WuT.de](http://www.WuT.de). You can find out more

about the comprehensive information and download offers there on the last page of this Quick Start Manual.

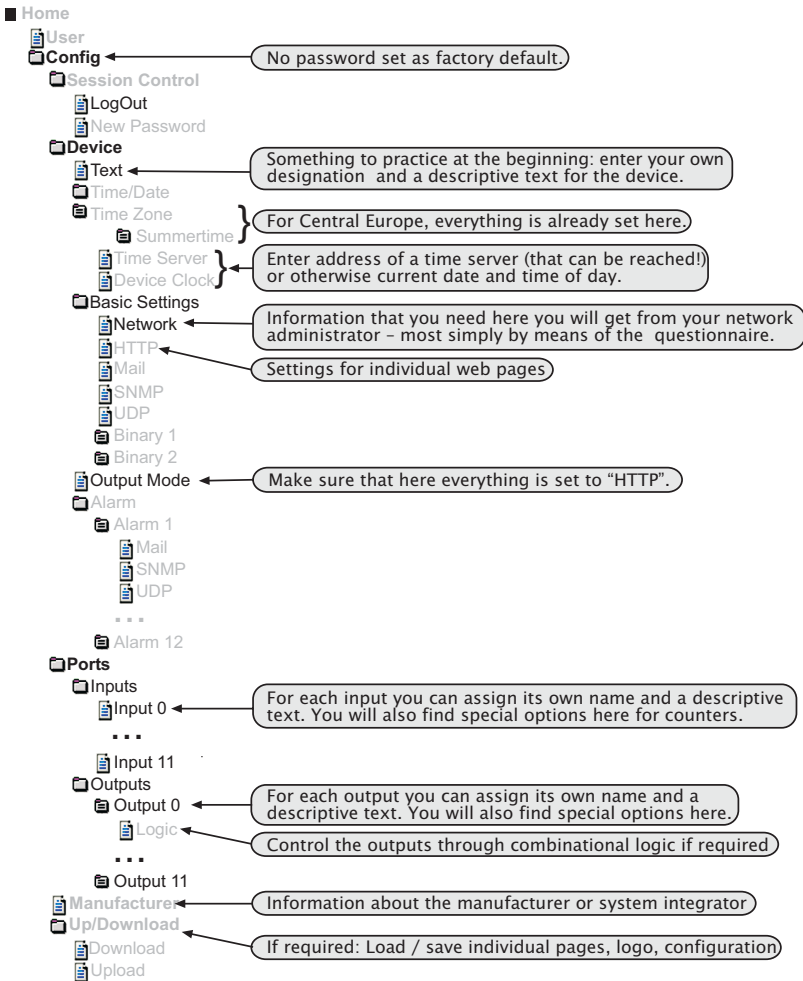
## Navigation Overview





**HTML**

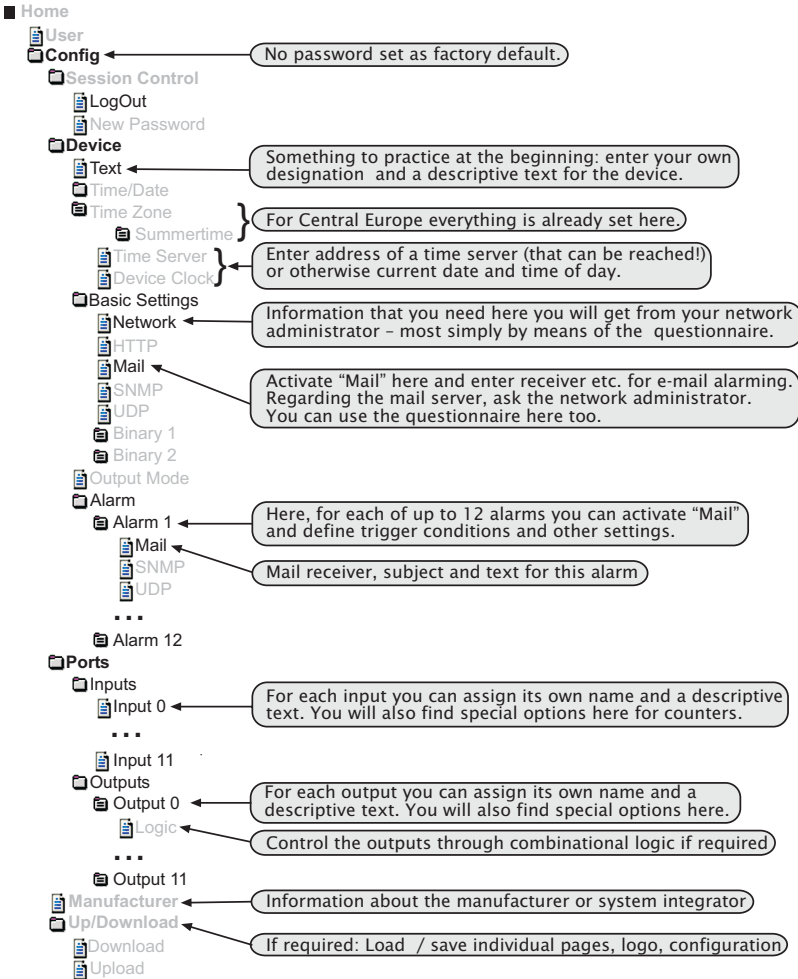
With the following settings you can configure the device so that it can be controlled and monitored with a browser.



All settings are only stored permanently after a „Logout“: either through the corresponding menu point (see above) or by the logout buttons on the individual pages.

## E-Mail

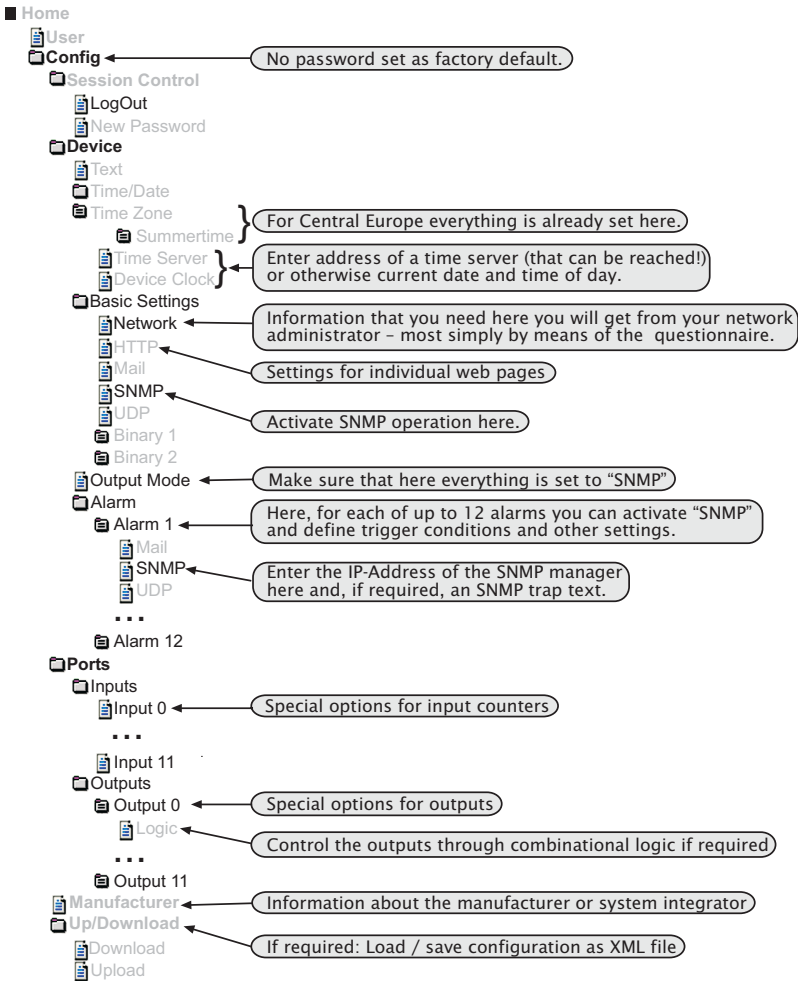
With the following settings you can configure the device so that it sends alarms for stipulated conditions by e-Mail.



All settings are only stored permanently after a „Logout“: either through the corresponding menu point (see above) or by the logout buttons on the individual pages.

**SNMP**

With the following settings you can configure the device so that all parameters can be read and set with an SNMP-capable management system. You can define trigger conditions by SNMP for traps (alarms) as well as allow control of the device outputs.



All settings are only stored permanently after a „Logout“: either through the corresponding menu point (see above) or by the logout buttons on the individual pages.

**OPC**

With the following settings you can configure the device so that it can be controlled by the standardized OPC software interface. For this you need on the server side the OPC-Server software obtainable free of charge from W&T.

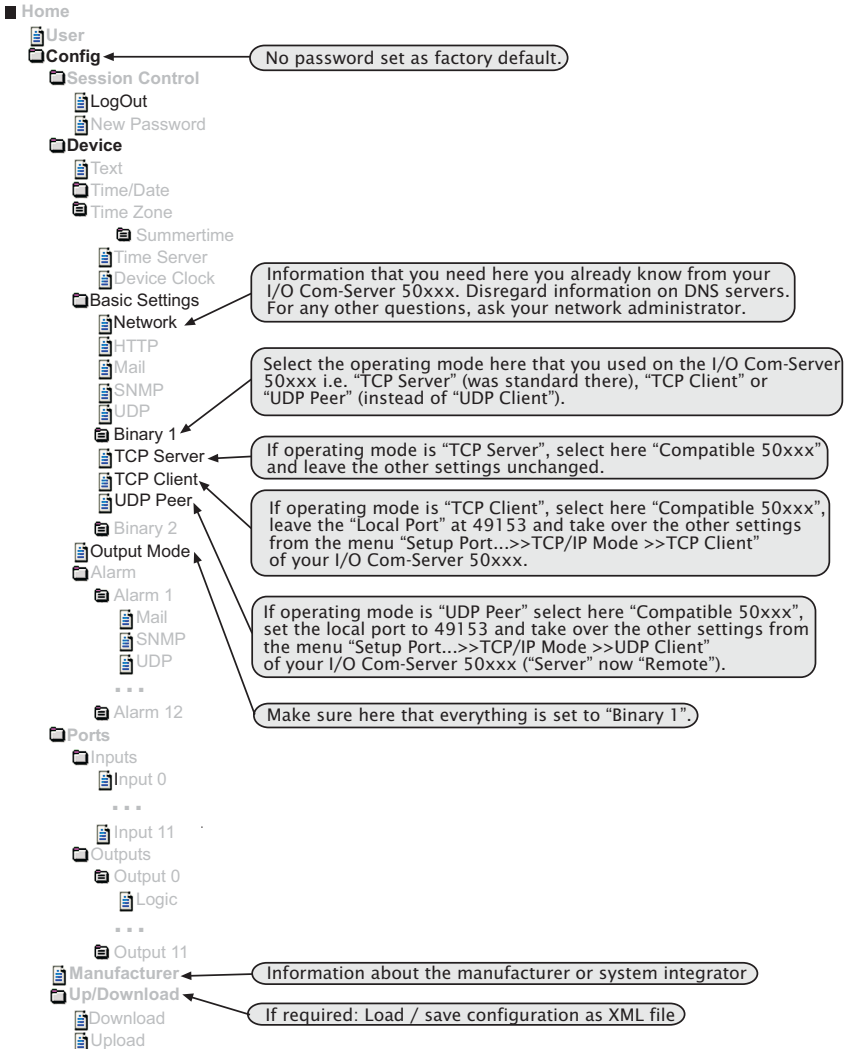
- Home
  - User
    - Config ← No password set as factory default.
    - Session Control
      - LogOut
      - New Password
  - Device
    - Text
    - Time/Date
    - Time Zone
      - Summertime
      - Time Server
      - Device Clock
  - Basic Settings
    - Network ← Information that you need here you will get from your network administrator – most simply by means of the questionnaire.
    - HTTP
    - Mail
    - SNMP
    - UDP
    - Binary 1 ← Select "TCP Server" under "Operation Mode" here.
    - TCP Server ← Select "OPC Device" under "Application Mode" here. Enter the local port for the TCP-Connection Determine the inputs which trigger the device to transmit its information to the OPC server.
    - TCP Client
    - UDP Peer
    - Binary 2
  - Output Mode
    - Alarm
      - Alarm 1
        - Mail
        - SNMP
        - UDP
        - ...
      - Alarm 12
- Ports
  - Inputs
    - Input 0 ← Special options for input counters
    - ...
    - Input 11
  - Outputs
    - Output 0 ← Special options for outputs
    - Logic
    - ...
    - Output 11
- Manufacturer ← Information about the manufacturer or system integrator
- Up/Download
  - Download ← If required: Load / save configuration as XML file
  - Upload

Instead of „Binary1“ you can also make continuous use of „Binary2“. You only need this for when you use two binary operating modes (Box2Box, OPC or Socket-Connections) at the same time in the same device.

All settings are only stored permanently after a „Logout“: either through the corresponding menu point (see above) or by the logout buttons on the individual pages.

## 50xxx Compatibility Mode

Here it is shown how you configure the Web-IO for applications that you have programmed for older W&T I/O Com-Servers 50xxx. (Please see the Reference Manual for how to completely develop your own socket applications for the Web-IO).

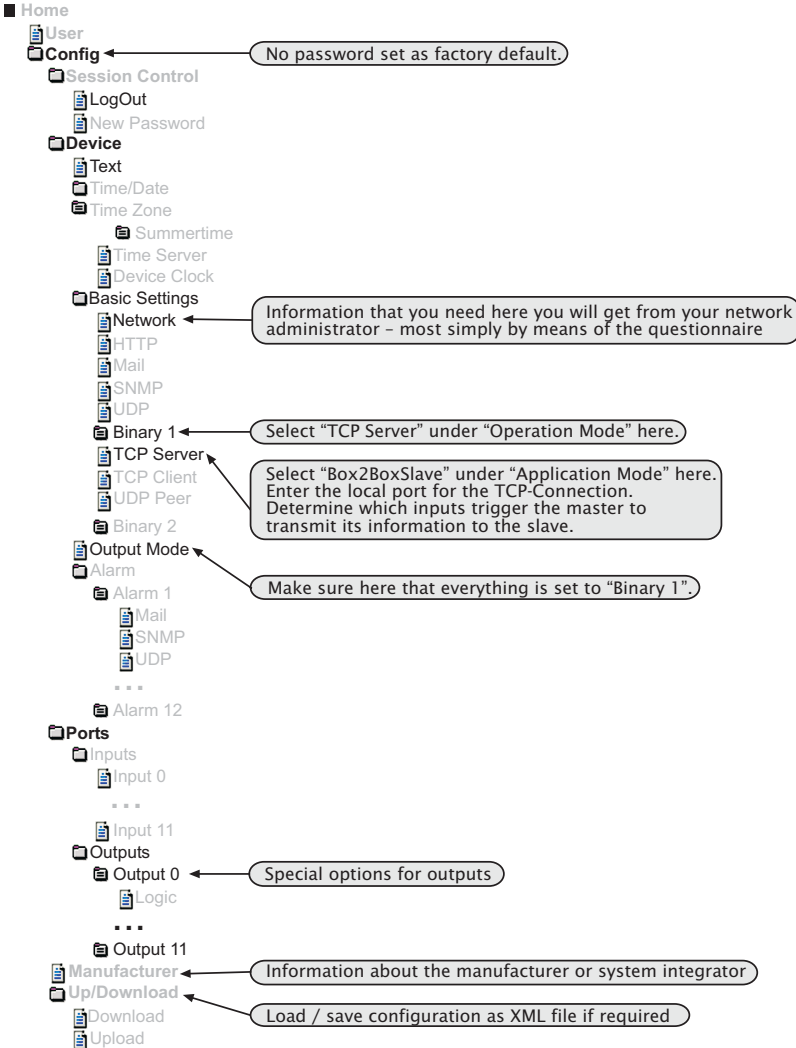


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## Box-to-Box Slave

With two devices in Box-to-Box-Mode you can „tunnel“ the digital inputs in both directions through a network. One device is configured as master, the other as slave.

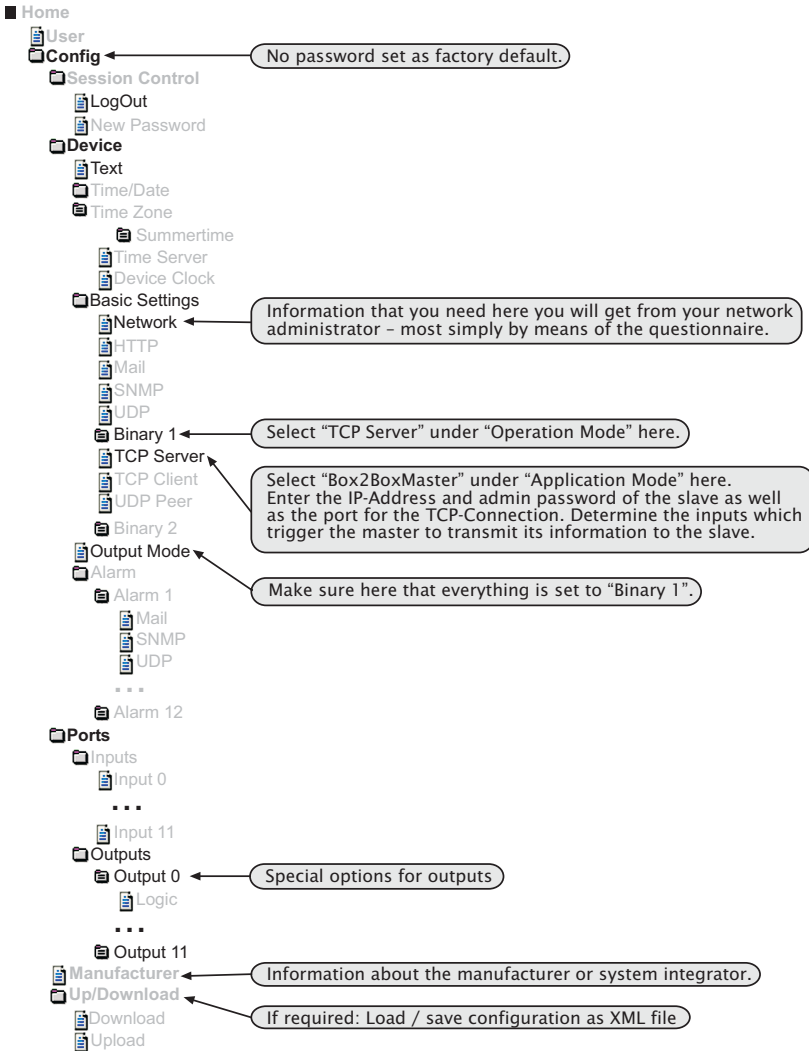


Instead of „Binary1“ you can also make continuous use of „Binary2“. You only need this in case you use two binary operating modes (Box2Box, OPC or Socket-Connections) at the same time in the same device.

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## Box-to-Box Master

With two devices in Box-to-Box-Mode you can „tunnel“ the digital inputs in both directions through a network. One device is configured as master, the other as slave. Here it is shown how you can configure the master.



Instead of „Binary1“ you can also make continuous use of „Binary2“. You only need this in case you use two binary operating modes (Box2Box, OPC or Socket-Connections) at the same time in the same device.

All settings are only stored permanently after a „Logout“: either through the corresponding menu point (see above) or by the logout buttons on the individual pages.

# Further Information and Downloads

On the website [www.WuT.de](http://www.WuT.de) you will find further information and useful aids for working with the Web-IO:

- the extensive Reference Manual in PDF format,
- the WuTility tool, with which you can not only set the IP Address but also manage all W&T devices in your network,
- the questionnaire for the coordination with the network administrator,
- current firmware versions,
- the OPC Server software,
- the SNMP MIB,
- example programs
- technical backgrounds and
- application examples.

Go to the corresponding product page, either guided by the product navigation or by entering the five digit article

no. of your Web-IO (57630) in the field „Product search by article no.“ and then by pressing „Search“. From the Web-IO data sheet you only then need to follow the link „Manual“ or „Tools“.

In addition, on the homepage, you have the opportunity of subscribing to the W&T Newsletter and so always be up to date.

If you would first like to get acquainted with the basic principles we recommend the manual "TCP/IP Ethernet and Web-IO". The programming of a few network-based applications is described in the manual „Ready in 1 day for TCP/IP sockets“.

You can order both as a book free of charge and also download „Ready in 1 day for TCP/IP sockets“ as a PDF file.